

IV. Test Reports

This section provides test reports for the discrete evaluations conducted. Each report provides information on test description, objective, analysis methods, evaluation methods, and evaluation results.

10. Test Results: Order and Transaction Creation Documentation Evaluation (Test 10)

1.0 Description

The Order and Transaction Creation Documentation Evaluation was a comprehensive review of the public documentation that Qwest provides to the CLEC community to assist in the preparation and submission of transactions. The evaluation covers the publicly available documentation applicable for both electronic and manual interfaces used during the P-CLEC's execution of MTP Test 12.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The Qwest wholesale website provides links to multiple sources of documentation that assist CLECs with establishing a Resale or Facility-Based relationship with Qwest. Overviews, business processes, and operating standards are presented within the multiple subject links. The documentation is meant to assist CLECs in gaining a better understanding of the products and processes that will allow them to be more effective in working with the Qwest. Qwest also provides documentation to CLECs through its Account teams, training offerings, and e-mails distributed through the Wholesale Customer Notification Mailing Lists.

2.1.1 IMA EDI Documentation

Through its wholesale website, Qwest provides CLECs with access to various information about its IMA EDI interface. The IMA EDI web page provides facts and job aids to assist CLECs in implementing IMA EDI. CLECs can access supporting documentation, release notes, frequently asked questions, and details about IMA EDI.¹

The following subsections describe the Qwest IMA EDI documentation used as part of the P-CLEC's testing activities. The subsections are organized as follows:

- IMA EDI Disclosure Documentation
- IMA EDI Implementation Guidelines
- IMA Release Certification/Recertification Notices

2.1.1.1 IMA EDI Disclosure Documentation

The *Qwest IMA EDI Disclosure Announcement 409* provides access to Qwest's network disclosure documents. This announcement includes a list of disclosures sorted by release number. The disclosure documents contain the required business rules and EDI mapping documentation necessary for CLECs to successfully create and execute pre-order, order, and post-order transactions.

¹ <http://www.qwest.com/wholesale/ima/edi/index.html>



Tables 10-1.1 through 10-1.4, below, identify the EDI Disclosure documentation that Qwest published for IMA Releases 5.0, 6.0, 7.0, and 8.0, including the individual chapters, appendices, error code lists, and addenda.

Table 10-1.1: IMA EDI 5.0 Disclosure Document References

IMA EDI 5.0	Initial 06/07/00
Chapter 1 - Main Introduction	X
Chapter 2 - EDI Introduction	X
Chapter 3 - Customer Service Record Transaction Cycle	X
Chapter 4 - Address Validation Transaction Cycle	X
Chapter 5 - Check Facility Availability Query	X
Chapter 6 - Service Availability Transaction Cycle	X
Chapter 7 - CFA Validation Transaction Cycle	X
Chapter 8 - Appointment Reservation Transaction Cycle	X
Chapter 9 - Telephone Number (TN) Assignment Transaction Cycle	X
Chapter 10 - TN/Appointment Cancellation Transaction Cycle	X
Chapter 11 - DLR Return	X
Chapter 12 - Meet Point Validation	X
Chapter 13 - Raw Loop Data	X
Chapter 14 - POTS Resale Order Submittal	X
Chapter 15 - PBX Order Submittal	X
Chapter 16 - Local Number Portability Transaction Cycle	X
Chapter 17 - Interim Number Portability (INP) Order Submittal	X
Chapter 18 - Unbundled Loop Order Submittal	X
Chapter 19 - Unbundled Loop with NP Order Submittal	X
Chapter 20 - Unbundled Analog (ANA) Line-Side Switch Port	X
Chapter 21 - Unbundled Digital Line-Side Switch Port	X
Chapter 22 - Resale Private Line Order Submittal	X
Chapter 23 - Centrex Plus/Centron Services	X
Chapter 24 - BRI ISDN Resale Order Submittal	X
Chapter 25 - Directory Listing (Simple) Feature	X
Chapter 26 - Directory Listings Only Feature	X
Chapter 27 - Resale Frame Relay	X
Chapter 28 - Megabit Resale	X



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IMA EDI 5.0	Initial 06/07/00
Chapter 29 - Public Access Line Ordering	X
Chapter 30 - Public Access Line Ordering - PSP	X
Chapter 31 - Centrex 21 Resale Services	X
Chapter 32 - DID In Only Trunk	X
Chapter 33 - Design Trunk Resale	X
Chapter 34 - Unbundled Analog DID/PBX Trunk	X
Chapter 35 - DS1 DID-PBX Trunk Port Facility	X
5.0 Errors List	X
Supplemental Releases	
EDI Change Summary	6/23/00
5.0 EDI Disclosure Addendum Version 1	11/6/00



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Table 10-1.2: IMA 6.0 Disclosure Document References

IMA 6.0	Draft 11/20/00	Initial 12/08/00	Addendum		
			1 01/29/01	2 02/19/01	3 03/23/01
Chapter 00 - Table of Contents		X			
Chapter 01 - Main Introduction		X			
Chapter 02 - EDI Introduction		X			
Chapter 03 - Customer Service Record Transaction Cycle		X	X	X	
Chapter 04 - Address Validation Transaction Cycle		X	X		
Chapter 05 - Check Facility Availability Query		X			
Chapter 06 - Service Availability Transaction		X			
Chapter 07 - CFA Validation Transaction Cycle		X			
Chapter 08 - Appointment Reservation Transaction Cycle		X			
Chapter 09 - Telephone Number (TN) Reservation Transaction Cycle		X			
Chapter 10 - TN Appointment Cancellation Transaction Cycle		X			
Chapter 11 - DLR Return		X	X		X
Chapter 12 - Meet Point Validation		X	X	X	
Chapter 13 - Raw Loop Data		X	X	X	
Chapter 14 - POTS Resale Order Submittal		X	X		
Chapter 15 - PBX Order Submittal		X	X	X	
Chapter 16 - Local Number Portability Transaction Cycle		X			
Chapter 17 - Interim Number Portability Order Submittal		X			
Chapter 18 - Unbundled Loop Order Submittal		X			
Chapter 19 - Unbundled Loop with NP Order Submittal		X			
Chapter 20 - Unbundled Analog (ANA) Line-Side Switch Port		X			
Chapter 21 - Unbundled Digital Line-Side Switch Port		X	X		
Chapter 22 - Resale Private Line Order Submittal		X			
Chapter 23 - Centrex Resale Services		X	X	X	
Chapter 24 - BRI ISDN Resale Order Submittal		X			
Chapter 25 - Directory Listing (Simple) Feature		X			
Chapter 26 - Directory Listings Only Feature		X			
Chapter 27 - Resale Frame Relay		X			
Chapter 28 - Megabit Resale		X	X		
Chapter 29 - Public Access Line Ordering		X			



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IMA 6.0	Draft 11/20/00	Initial 12/08/00	Addendum		
			1 01/29/01	2 02/19/01	3 03/23/01
Chapter 30 - Public Access Line Ordering - PSP		X			
Chapter 31 - Centrex 21 Resale Services		X			X
Chapter 32 - DID in Only Trunk		X	X	X	
Chapter 33 - Design Trunk Resale		X			
Chapter 34 - Unbundled Analog-DID PBX Trunk		X			
Chapter 35 - DS1 DID-PBX Trunk Port Facility		X	X		
Chapter 36 - DS1 DID-PBX Trunks		X			
Chapter 37 - Unbundled Feeder Loop		X	X		
Chapter 38 - Unbundled Distribution Loop		X	X	X	
Chapter 38 - Unbundled Distribution Loop with Number Portability		X	X	X	
Chapter 40 - Shared Loop		X	X	X	
Chapter 41 - UNE-P POTS		X	X		
Chapter 42 - UNE-C PL		X			
Chapter 43 - PRI ISDN Facility		X	X		
Chapter 44 - PRI ISDN Trunks		X	X		
Chapter 45 - UNE-P BRI ISDN		X			X
Chapter 46 - Fatal Error Response Transaction		X			
Chapter 47 - Non-Fatal Error Response Transaction		X			
Chapter 48 - Jeopardy Transaction		X			
Chapter 49 - Firm Order Confirmation (FOC)		X	X		
Chapter 50 - Completion Response Transaction		X			
Chapter 51 - Service Request Status Inquiry Transaction		X			
Chapter 52 - Status Change Inquiry-Auto Push		X			
Chapter 53 - Functional Acknowledgment Response Transaction Cycle		X			
Appendix A - Developer Worksheets – Pre-Order	X	X	X		X
Appendix B - Developer Worksheets – Order	X	X	X	X	X
Appendix C - Developer Worksheets – Post Order	X	X	X		
6.0 Errors List		X			
6.0 EDI Disclosure Addendum Version 1			X		
6.0 EDI Disclosure Addendum Version 2				X	
6.0 EDI Disclosure Addendum Version 3					X



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Table 10-1.3: IMA EDI 7.0 Disclosure Document References

IMA EDI 7.0	Draft 12/6/00	Initial 3/19/01	Addendum											
			1	2	3	4	5	6	7	8	9			
Chapter 1 - Main Introduction		X												
Chapter 2 - EDI Introduction		X												
Chapter 3 - Customer Service Record Transaction Cycle		X	X											X
Chapter 4 - Address Validation Transaction Cycle		X	X											
Chapter 5 - Check Facility Availability Query		X												
Chapter 6 - Service Availability Transaction Cycle		X												
Chapter 7 - CFA Validation Transaction Cycle		X												
Chapter 8 - Appointment Reservation Transaction Cycle		X	X											
Chapter 9 - Telephone Number (TN) Assignment Transaction Cycle		X	X	X						X				
Chapter 10 - TN/Appointment Cancellation Transaction Cycle		X												
Chapter 11 - DLR Return		X	X											
Chapter 12 - Meet Point Validation		X												
Chapter 13 - Raw Loop Data		X												
Chapter 14 - POTS Resale Order Submittal		X	X											X
Chapter 15 - PBX Order Submittal		X	X											X
Chapter 16 - Local Number Portability Transaction Cycle		X	X											X
Chapter 17 - Interim Number Portability (INP) Order Submittal		X												X
Chapter 18 - Unbundled Loop Order Submittal		X	X											X
Chapter 19 - Unbundled Loop with NP Order Submittal		X	X											X
Chapter 20 - Unbundled Analog (ANA) Line-Side Switch Port		X												X
Chapter 21 - Unbundled Digital Line-Side Switch Port		X												X



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IMA EDI 7.0	Draft 12/6/00	Initial 3/19/01	Addendum																	
			1	2	3	4	5	6	7	8	9									
Chapter 22 - Resale Private Line Order Submittal		X		X																
Chapter 23 - Centrex Plus/Centrex Services		X		X																
Chapter 24 - BRI ISDN Resale Order Submittal		X																		
Chapter 25 - Directory Listing (Simple) Feature		X																		
Chapter 26 - Directory Listings Only Feature		X																		
Chapter 27 - Resale Frame Relay		X																		
Chapter 28 - Megabit Resale		X																		
Chapter 29 - Public Access Line Ordering		X																		
Chapter 30 - Public Access Line Ordering - PSP		X																		
Chapter 31 - Centrex 21 Resale Services		X																		
Chapter 32 - DID In Only Trunk		X																		
Chapter 33 - Design Trunk Resale		X																		
Chapter 34 - Unbundled Analog DID/PBX Trunk		X																		
Chapter 35 - DS1 DID-PBX Trunk Port Facility		X																		
Chapter 36 - DS1 DID-PBX Trunks		X																		
Chapter 37 - Unbundled Feeder Loop		X																		
Chapter 38 - Unbundled Distribution Loop		X																		
Chapter 39 - Unbundled Distribution Loop with Number Portability		X																		
Chapter 40 - Shared Loop		X																		
Chapter 41 - UNE-P POTS		X																		
Chapter 42 - UNE-C PL		X																		
Chapter 43 - PRI ISDN FACILITY		X																		
Chapter 44 - PRI ISDN Trunks		X																		



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IMA EDI 7.0	Draft 12/6/00	Initial 3/19/01	Addendum																		
			1	2	3	4	5	6	7	8	9										
Chapter 45 - UNE-P BRI ISDN		X				X															
Chapter 46 - UNE-P Centrex Plus and Centron		X				X															
Chapter 47 - UNE-P Centrex 21		X				X															
Chapter 48 - Fatal Error Response Transaction		X									X										
Chapter 49 - Non-Fatal Error Response Transaction		X								X											
Chapter 50 - Jeopardy Transaction		X												X							
Chapter 51 - Firm Order Confirmation (FOC)		X														X					
Chapter 52 - Completion Response Transaction		X																			
Chapter 53 - Service Request Status Inquiry Transaction		X																			
Chapter 54 - Status Change Inquiry - Auto Push		X									X										
Chapter 55 - Functional Acknowledgment Response Transaction Cycle		X																			
Chapter 56 - Facilities Based Directory Listings ²		X														X					
Appendix A - Developer Worksheets - Pre-Order	X	X																			
Appendix B - Developer Worksheets - Order - EUI and LSR	X	X																			
Appendix C - Developer Worksheets - Order Other	X	X																			
Appendix D - Developer Worksheets - Post Order	X	X																			
Appendix E - IMA Additional Edits		X																			
Appendix F - Developer Worksheets - Change Summary 6.0 - 7.0		X																			
Appendix G - EDI Mapping and Data Dictionary Changes 6.0 - 7.0		X																			
Appendix H - Developer Worksheets - Facility Based Directory Listings		X										X									

² Addendum 4 referenced FBDL EDI, which was not part of the IMA 7.0 release. The reference to Chapter 56 - FBDL was deleted in Addendum 6. FBDL was added as a chapter in IMA release 8.0.



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	Draft 12/6/00	Initial 3/19/01	Addendum									
			1	2	3	4	5	6	7	8	9	
IMA EDI 7.0												
Appendix I - Generic Order Flow Business Model		X				X						
7.0 Errors List		X										
7.0 EDI Disclosure Addendum Version 1			X									
7.0 EDI Disclosure Addendum Version 2			X									
7.0 EDI Disclosure Addendum Version 3				X								
7.0 EDI Disclosure Addendum Version 4					X							
7.0 EDI Disclosure Addendum Version 5						X						
7.0 EDI Disclosure Addendum Version 6							X					
7.0 EDI Disclosure Addendum Version 7								X				
7.0 EDI Disclosure Addendum Version 8									X			
7.0 EDI Disclosure Addendum Version 9										X		

IMA 7.0 Disclosure Addenda Release Dates

- Addendum 1 – May 7, 2001
- Addendum 2 – June 5, 2001; June 25, 2001 (1st Revision); July 13, 2001 (2nd Revision)
- Addendum 3 – July 13, 2001
- Addendum 4 – July 30, 2001
- Addendum 5 – August 8, 2001
- Addendum 6 – August 30, 2001
- Addendum 7 – September 14, 2001
- Addendum 8 – October 2, 2001
- Addendum 9 – October 15, 2001



Table 10-1.4: IMA EDI 8.0 Disclosure Document References

IMA EDI 8.0	Draft 4/16/01	Initial 7/17/01	Addendum															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Chapter 01 - Main Introduction		X																
Chapter 02 - EDI Introduction		X				X												X
Chapter 03 - Customer Service Record Transaction		X			X													X
Chapter 04 - Address Validation Transaction		X			X													
Chapter 05 - Facility Availability Transaction		X			X													
Chapter 06 - Service Availability Transaction		X			X													
Chapter 07 - CFA Validation Transaction		X			X													
Chapter 08 - Appointment Reservation Transaction		X			X													
Chapter 09 - Telephone Number (TN) Reservation Transaction		X			X													
Chapter 10 - TN Appointment Cancellation Transaction		X			X													
Chapter 11 - DLR Return		X			X													
Chapter 12 - Meet Point Validation		X			X													
Chapter 13 - Raw Loop Data		X			X													X
Chapter 14 - POTS Resale Order Submittal		X			X													
Chapter 15 - PBX Resale Order Submittal		X			X													
Chapter 16 - Local Number Portability Order Submittal		X			X													
Chapter 17 - Interim Number Portability Order Submittal		X			X													
Chapter 18 - Unbundled Loop Order Submittal		X			X													
Chapter 19 - Unbundled Loop with NP Order Submittal		X			X													
Chapter 20 - Unbundled Analog Line-Side Switch Port		X			X													



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IMA EDI 8:0	Draft 4/16/01	Initial 7/17/01	Addendum															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Chapter 21 - Unbundled Digital Line-Side Port Order Submittal		X	X	X														
Chapter 22 - Resale Private Line Order Submittal		X	X	X														
Chapter 23 - Centrex Plus/Centron Services		X	X	X	X													
Chapter 24 - BRI ISDN Resale Order Submittal		X	X	X	X													
Chapter 25 - Directory Listings Only Feature		X	X	X	X													
Chapter 26 - Resale Frame Relay		X	X	X	X													
Chapter 27 - Qwest DSL		X	X	X	X													
Chapter 28 - Public Access Line Ordering		X	X	X	X													
Chapter 29 - Public Access Line Ordering - PSP		X	X	X	X													
Chapter 30 - Centrex 21 Resale Services		X	X	X	X													
Chapter 31 - DID in Only Trunk		X	X	X	X													
Chapter 32 - Design Trunk Resale		X	X	X	X													
Chapter 33 - Unbundled Analog-DID PBX Trunk Port		X	X	X	X													
Chapter 34 - DS1 DID-PBX Trunk Port Facility		X	X	X	X													
Chapter 35 - DS1 DID-PBX Trunks		X	X	X	X													
Chapter 36 - Unbundled Feeder Loop		X	X	X	X													
Chapter 37 - Unbundled Distribution Loop		X	X	X	X													
Chapter 38 - Unbundled Distribution Loop with NP		X	X	X	X													
Chapter 39 - Shared Loop		X	X	X	X													
Chapter 40 - UNE-P POTS		X	X	X	X													
Chapter 41 - EEL UNE Combination		X	X	X	X													
Chapter 42 - PRI ISDN Facility		X	X	X	X													



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	Draft 4/16/01	Initial 7/17/01	Addendum														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			IMA EDI 8.0														
Chapter 43 - PRI ISDN Trunks		X	X	X											X		
Chapter 44 - UNE-P BRI ISDN		X	X	X													
Chapter 45 - UNE-P Centrex Plus and Centron		X	X	X													
Chapter 46 - UNE-P Centrex 21		X	X	X											X		
Chapter 47 - UNE-P DSS Facility		X	X	X													
Chapter 48 - UNE-P DSS Trunk		X	X	X													
Chapter 49 - UNE-P PBX Design Trunk		X	X	X													
Chapter 50 - UNE-P PBX DID in Only Trunk		X	X	X													
Chapter 51 - UNE-P PRI ISDN Facility		X	X	X													
Chapter 52 - UNE-P PRI ISDN Trunk		X	X	X													
Chapter 53 - Fatal Error Response Transaction		X	X	X													
Chapter 54 - Non-Fatal Error Response Transaction		X	X	X													
Chapter 55 - Jeopardy Transaction		X	X	X						X							
Chapter 56 - Firm Order Confirmation		X	X	X													
Chapter 57 - Completion Response Transaction		X	X	X													
Chapter 58 - Service Order Status Inquiry Transaction		X	X	X													
Chapter 59 - Status Update-Auto Push		X	X	X											X		
Chapter 60 - Functional Acknowledgment Response Transaction		X	X	X													
Chapter 61 - Facility Based Directory Listings		X	X	X													
Appendix A - Developer Worksheets - Pre-Order	X	X	X	X											X		X
Appendix B - Developer Worksheets - Order - EUJ and LSR	X	X	X	X											X		X
Appendix C - Developer Worksheets - Order Other	X	X	X	X											X		X



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	Draft 4/16/01	Initial 7/17/01	Addendum																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14			
IMA EDI 8.0																			
Appendix D - Developer Worksheets - Post Order	X	X	X	X															
Appendix E - IMA Additional Edits		X	X	X															
Appendix F - Developer Worksheets - Change Summary		X	X		X														
Appendix G - EDI Mapping and Code Conversion Changes 7.0 - 8.0		X	X																
Appendix H - Facility Based Directory Listings		X	X	X															
Appendix I - Generic Order Flow Business Model		X		X	X	X												X	
Appendix J - Product Conversions		X													X				
8.0 Errors List		X																	
8.0 EDI Disclosure Addendum Version 1			X																
8.0 EDI Disclosure Addendum Version 2			X																
8.0 EDI Disclosure Addendum Version 3				X															
8.0 EDI Disclosure Addendum Version 4					X														
8.0 EDI Disclosure Addendum Version 5						X													
8.0 EDI Disclosure Addendum Version 6							X												
8.0 EDI Disclosure Addendum Version 7								X											
8.0 EDI Disclosure Addendum Version 8									X										
8.0 EDI Disclosure Addendum Version 9										X									
8.0 EDI Disclosure Addendum Version 10											X								
8.0 EDI Disclosure Addendum Version 11												X							
8.0 EDI Disclosure Addendum Version 12													X						
8.0 EDI Disclosure Addendum Version 13														X					
8.0 EDI Disclosure Addendum Version 14																		X	



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IMA 8.0 Disclosure Addenda Release Dates

- Addendum 1 – September 4, 2001
- Addendum 2 – September 14, 2001
- Addendum 3 – October 2, 2001
- Addendum 4 – October 15, 2001; November 15, 2001 (1st Revision)
- Addendum 5 – November 2, 2001
- Addendum 6 – November 15, 2001
- Addendum 7 – November 30, 2001
- Addendum 8 – December 17, 2001
- Addendum 9 – December 21, 2001
- Addendum 10 – January 11, 2002
- Addendum 11 – January 25, 2002
- Addendum 12 – February 18, 2002
- Addendum 13 – March 4, 2002
- Addendum 14 – March 11, 2002



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Additionally, Qwest publishes an *IMA EDI Corrective Procedures and Error Codes* document that provides a general overview of IMA Erred Confirmations. This document also contains Interface Error Codes and Jeopardy Codes.

The following table identifies published versions of the *IMA EDI Corrective Procedures and Error Codes* document.

Table 10-1.5: IMA EDI Corrective Procedures and Error Codes

Version Number	Release Date
1.0	January 21, 2002

2.1.1.2 EDI Implementation Guidelines

EDI Implementation Guidelines assist CLECs with understanding and successfully managing the process of implementing EDI trading capabilities with Qwest. This document addresses the implementation process, including both business and technical information, and is divided into three sections. Following the Introduction section, the Implementation Activity section addresses Trading Partner requirements and processes in an EDI implementation project or migration. Finally, the Technical section addresses system and interface issues, as well as data syntax/business rules necessary to successfully create and submit electronic information via EDI to Qwest systems.

Table 10-1.6, below, identifies the *EDI Implementation Guidelines* published versions and release dates.

Table 10-1.6: EDI Implementation Guidelines References

Version Number	Release Date
9.1	February 18, 2002
9.0	January 21, 2002
8.0	November 30, 2001
7.0	November 9, 2001
6.0	November 11, 2001
5.0	July 25, 2001
4.0	April 23, 2001
3.0	December 08, 2000
2.0	April 12, 2000
1.0	January 7, 2000

2.1.1.3 IMA Release Certification/Recertification Notices

IMA Release Certification/Re-Certification notices provide current IMA EDI production users available options (i.e., new product certification, or recertification of existing products) for migration to the next IMA EDI release.



April 19, 2002

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The following table, Table 10-1.7, identifies *IMA Release Certification/Re-Certification* notices that Qwest issued during the course of testing.

Table 10-1.7: Release Certification/Recertification Notices

Version Number	Release Date
9.0	January 21, 2002
8.0	July 16, 2001, revised August 8, 2001
7.0	March 19, 2001
6.0	December 1, 2000

2.1.2 IMA GUI Documentation

Qwest makes available a website for IMA GUI documentation. The website provides links to IMA User tools: Change Log, IMA Connection Guide, DL Listing Guide, User's Guide, CLEC System Administration Guide, CEMR, GUI-I Charts, and Developer Worksheets.

2.1.2.1 IMA User Guide

The *IMA User Guide* provides instruction on using the IMA GUI application.³ The guide is divided into three sections addressing Pre-Order, Order, and Post-Order processes. Following an Introduction, the Pre-Order section describes how to perform Pre-Order functions. The Order section explains the IMA Order process, including creating new LSRs, using an existing LSR as a template, and retrieving saved LSRs. The Post-Order section provides information that allows users to monitor LSRs input into IMA GUI.

Table 10-1.9, below, identifies versions and release dates for the *IMA User Guide* during the course of the test.

Table 10-1.9: IMA User Guide References

Version Number	Associated Software Release	Release Date
18	IMA 9.01	March 22, 2002
17	IMA 9.0	February 22, 2002
16	IMA 8.01	November 16, 2001
15	IMA 8.0	August 17, 2001
14	IMA 7.01	July 18, 2001
13	IMA 7.01	June 15, 2001

³ Qwest used to provide an IMA Learning Guide Class Companion, which has been discontinued. The information from the Class Companion has been integrated into the IMA Users Guide.



Version Number	Associated Software Release	Release Date
12	IMA 7.0	April 20, 2001
11	IMA 6.0	December 8, 2000
10	IMA 5.01	June 16, 2000
9	IMA 5.0	April 28, 2000

2.1.2.2 CLEC System Administration Guide

The *CLEC System Administration Guide* provides information about tasks CLEC System Administrators perform. Examples of these tasks include managing accounts, personal profiles, and user access.

The following table, Table 10-1.10, shows *CLEC System Administration Guide* versions and release dates over the course of the test.

Table 10-1.10: IMA System Guide References

Version Number	Associated Software Release	Release Date
Version 15	IMA 9.0	February 22, 2002
Version 14	IMA 8.01	November 16, 2001
Version 13	IMA 8.0	August 18, 2001
Version 12	IMA 7.0	April 20, 2001
Version 11	IMA 6.0	December 8, 2000

2.1.2.3 IMA Release Notes

The IMA Release notes describe system changes and enhancements that are implemented in each IMA software release. Qwest publishes the release notes three to four weeks before the scheduled release implementation date to allow CLECs advance notice of any changes that may affect the CLECs' operations. Qwest publishes a separate document for each IMA Release. The following table, Table 10-1.11, identifies the IMA Release notes documents that Qwest published during the test.

Table 10-1.11: IMA Release Notes References

Title	Version Number	Release Date
IMA 9.01 Release Notes	Version 1	February 22, 2002
IMA 9.0 Release Notes	Version 1	February 1, 2002
IMA 8.01 Release Notes	Version 1	October 30, 2001
IMA 8.0 Release Notes	Version 1	July 27, 2001
IMA 7.01 Release Notes	Version 1	June 5, 2001
IMA 7.0 Release Notes	Version 1	March 30, 2001
IMA 6.01 Release Notes	Version 4	February 5, 2001
	Version 3	January 31, 2001



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Title	Version Number	Release Date
IMA 6.0 Release Notes	Version 2	December 8, 2000
	Version 1	November 17, 2000
IMA 5.02 Release Notes	N/A	August 8, 2000
IMA 5.01 Release Notes	N/A	June 7, 2000
IMA 5.0 Release Notes	N/A	April 7, 2000

2.1.2.4 CLEC Telephone & Address GUI (CTAG) User Guide

The *CTAG User Guide* provides detailed information on the use of Qwest's CLEC Telephone & Address GUI (CTAG) system. The CTAG system allows CLECs to validate customer addresses and reserve vanity telephone numbers for their customers. The guide provides step-by-step instructions for each function available within the CTAG system, and includes screen shots of various CTAG screens to assist users in understanding operation of the interface.

The following table, Table 10-1.12, identifies *CTAG User Guide* versions and release dates that Qwest published during the test.

Table 10-1.12: CTAG User Guide References

Version Number	Release Date
1.3	December 13, 2001
1.2	November 1, 2001
1.1	October 19, 2001
1.0	July 9, 2001

2.1.3 Product Information

Qwest publishes several documents intended to provide CLECs with information on specific products and services. Included in this group of product information is the Product Catalog (PCAT) website information, Qwest's Technical Publications, Directory Listing information, and other online tools and references. The following sections identify and describe the Qwest product information used during the test.

2.1.3.1 Product Catalog (PCAT) Website

The Product Catalog (PCAT) website provides links to products and service information for CLECs. The information facilitates CLECs' understandings of Qwest business processes, products, services, and ordering forms. Three distinct "pull-down" menus allow CLECs to choose topics relevant to their needs. Table 10-1.13, below, identifies URLs for Resale and Interconnection PCAT websites.



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Table 10-1.13: PCAT Website References

URL	Description
http://www.qwest.com/wholesale/pcat/resale.html	This URL serves as the main PCAT page for Resale products and services.
http://www.qwest.com/wholesale/pcat/interconnection.html	This URL serves as the main PCAT page for CLECs using interconnection and UNE products and services.

2.1.3.2 Technical Publications

Qwest's Technical Publications (Tech Pubs) contain detailed technical information for various products and services offered through Qwest's wholesale services. Qwest currently provides over 85 different Tech Pubs on its wholesale website. These documents include information on possible configurations of the products or services within Qwest's network, responsibilities of both Qwest and the customer in ordering and maintaining the product, performance specifications of the product, and applicable technical specifications required by a CLEC when ordering the product or service. If applicable, the Tech Pubs provide the Network Channel/Network Channel Interface (NC/NCI) code combinations compatible to the product offering.

The following table, Table 10-1.14, identifies Qwest Technical Publications used during the course of the test.

Table 10-1.14: Qwest Technical Publication References

Technical Publication Name	Issue Number & Release Date	Description
Qwest Communications International, Inc. Information Publication 77001 Acronyms, Glossary, Ordering Information and Trademarks	Issue B November 2000	The Acronyms, Glossary, Ordering Information, and Trademarks Information Publication describes the acronyms, glossary of terms, trademarks, and ordering information included in Qwest publications.
Qwest Communications International Inc. Technical Publication 77348 Qwest Dark Fiber	Issue D September 2001	The Dark Fiber Technical Publication describes the technical features of Qwest's dark fiber product offering. The document identifies distinguishing service features and defines CLEC and Qwest responsibilities, technical specifications, and valid network interfaces.
Qwest Communications International Inc. Technical Publication 77403 Unbundled Network Element Combinations Including Enhanced Extended Loop (EEL) and Loop Mux Combinations (LMC)	Issue B June 2001	The EEL Technical Publication describes the Qwest service for Unbundled Network Element Combinations including EEL and Loop Mux Combinations (LMC).



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Technical Publication Name	Issue Number & Release Date	Description
Qwest Communications International Inc. Technical Publication 77406 Interconnection Shared Loop	Issue B June 2001	The Interconnection Shared Loop Technical Publication provides CLECs with a description of Qwest's Shared Loop, its operational characteristics, and interfaces.
Qwest Communications International Inc. Technical Publication 77384 Interconnection - Unbundled Loop	Issue J September 2001	The Interconnection Unbundled Loop Technical Publication describes Qwest's Interconnection - Unbundled Loop offering for Unbundled Voiceband Channels, Digital Channels, and xDSL loops. The intent of the document is to provide a description of Qwest's Unbundled Loop, its operational characteristics and available interfaces.
Qwest Communications International Inc. Technical Publication 77203 Qwest Switched Access Service Network Channel and Network Channel Interface Code Combinations	Issue D November 2000	The Network Channel and Network Channel Interface (NC/NCI) Technical Publication provides a presentation of NC/NCI codes used to order Feature Group and Open Network Architecture (ONA) Switched Access Services.
Qwest Communications International Inc. Technical Publication 77400 Primary Rate ISDN Service	Issue A December 2001	The Primary Rate ISDN Service Technical Publication document describes the Primary Rate ISDN (PRS) service features, technical specifications, and valid interfaces.
Qwest Communications International Inc. Technical Publication 77383 Unbundled Dark Fiber	Issue G December 2001	The Unbundled Dark Fiber (UDF) Technical Publication provides a description of Qwest's UDF service. Fiber technical parameters and related design responsibilities are included. Detail provided within the document allows CLECs to make decisions about choosing to use UDF to incorporate into an end-to-end communications channel.
Qwest Communications International Inc. Technical Publication 77389 Unbundled Dedicated Interoffice Transport	Issue E November 2001	The Unbundled Dedicated Interoffice Transport (UDIT) Technical Publication provides technical information about the Unbundled Network Element (UNE) UDIT. Network Channel and Network Channel Interface codes are included to describe and order transport channels.



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Technical Publication Name	Issue Number & Release Date	Description
Qwest Communications International Inc. Service Publication 77200 Qwest DS1 Service and Qwest DS1 Rate Synchronization Service Network Channel and Network Channel Interface Code Combinations	Issue F September 2001	The DS1 and Synchronization Service Publication provides information regarding two Qwest services: Qwest DS1 Service - - Service Publication 77200 provides the Network Channel (NC) Codes and Network Channel Interface (NCI) Codes used when ordering 1.544 Mbit/s channels and selected Central Office (CO) options. Specifically, NC code definitions associated with specified service configurations, NC/NCI code compatibility tables for ordering combinations of 1.544 Mbit/s line codes, frame formats, and service options for the subject of the Service Publication; and Qwest DS1 Rate Synchronization Service - Service Publication 77200 provides End User and Carrier premises NC and NCI Codes used when ordering the service. Service Publication 77200 is used in conjunction with Qwest Technical Publication 77375, 1.544 Mbit/s Channel Interfaces, which is a reference document that provides technical interface specifications for all DS1 NCI codes that Qwest supports.
Qwest Communications International Inc. Technical Publication 77392 Qwest DSL Services	Issue I September 2001	The Qwest Digital Subscriber Lines (DSL) Services Technical Publication is a reference document providing technical disclosure information for all Qwest DSL SM Services Network Channel Interface (NCI) codes that Qwest supports.

2.1.3.3 Directory Listing Guides

Qwest Directory Listing Guides are designed to provide CLECs with information regarding processes and business rules for establishing, maintaining, changing, or deleting directory listing information. Table 10-1.15, below, represents Directory Listing Guides that were used during the test.

Table 10-1.15: Directory Listing Guides References

Document	Version Number	Release Date	Description
Directory Listing Inquiry (DLI) Qwest Preparation Guide	1.0	Feb. 25, 2002	The DLI Preparation Guide is a Qwest-specific guide that covers Facility-Based Providers using either IMA EDI or IMA GUI electronic interfaces. This guide provides the minimum data required to request directory/DA listing information associated with a particular Listed Telephone Number (LTN).
Directory Listing Inquiry System (DLIS) User Guide	1.04	Jan. 10, 2002	The DLIS User Guide assists CLECs in understanding and successfully accessing the Directory Listing Inquiry System.



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Document	Version Number	Release Date	Description
Facility Based CLEC and Reseller/Unbundled Network CLEC Directory Listing User Document	3.04	Mar. 08, 2002	The Facility-Based CLEC and Reseller/Unbundled Network CLEC Directory Listings User Document describes Qwest processes and business rules for working with CLECs to establish and maintain directory listing information throughout the Qwest 14-state local service territory.
	3.03	Feb. 26, 2002	
	3.02	Feb. 25, 2002	
	3.02	Nov. 01, 2001	
	3.0	Aug. 17, 2001	
	2.02	May 23, 2001	
	2.01	Mar. 31, 2001	
	2.0	Mar. 30, 2000	
Facility Based Directory Listing (FBDL) Guide	1.01	Dec. 20, 1999	The FBDL Guide assists CLECs in managing the process of confirming and correcting directory listing submitted to Qwest.
	9.01	Mar. 22, 2002	
	9.0	Feb. 22, 2002	
	8.01	Nov. 16, 2001	
	8.0	Aug. 17, 2001	
	7.0	Apr. 20, 2001	
6.0	Sept. 29, 2000		

2.1.3.4 Online Tools and References

Online Tools include websites and applications that Qwest makes available via the Internet. These tools provide access to a broad collection of documentation, visuals, notices, and other materials.

The following table, Table 10-1.16, provides a listing, with descriptions, of online tools used during the course of the test.

Table 10-1.16: Online Tools and References

Tool Name	URL	Description
Change Management Process (CMP) website	http://www.qwest.com/wholesale/cmp/index.html	The CMP website provides access to information and processes for Qwest's Change Management Process. The CMP website provides links to CMP calendars, OSS Hours of Availability, escalation/dispute initiation, OSS release information, CMP team meeting information, CMP Redesign information, and CLEC Points of Contact (POC) information. The website also includes archived materials for CMP team meetings, Change Requests (CR), CMP redesign meetings, document reviews, release notifications, and ongoing escalations.
Fiber Data Reports Tool	http://www.qwest.com/wholesale/loopfib	The Fiber Data Reports Tool offers CLECs



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Tool Name	URL	Description
	erinventory.html	information on fiber facilities available within Qwest's 14-state local service territory. These reports identify current fiber loop connectivity and potential spare capacity.
Resale Product Database (RPD)	http://www.qwest.com/wholesale/systems/rpd.html	The RPD is a compressed archive of HTML files accessible through the Product Database Home Page. The information in the RPD is redacted for CLEC use.
Operations Support (OSS) website	http://www.qwest.com/wholesale/systems/generalinfo.html	The OSS website provides links to overviews of the OSS that Qwest makes available to CLECs.
PIC/LPIC Verification Tools	http://www.qwest.com/wholesale/systems/picLpic.html	The PIC/LPIC Verification website allows CLECs to submit and receive batch files containing PIC/LPIC data, and view the PIC/LPIC Verification Access Request Form and Instructions. Additionally, this website contains the PIC/LPIC Verification Process Training Package (User Guide Information), and the Customer Guide for Web Access (EDATA).
Street and Wire Center Information website	http://www.qwest.com/wholesale/systems/street.html	The Street and Wire Center Information web page provides links for downloading information pertaining to street and wire center information. The information includes the Feature Availability Matrix (FAM) data, Street Address Guide Area (SAGA) data, and the PREMIS Community names document used in the preparation of orders.
Universal Service Order Codes (USOCs) and Field Identifier (FID) Overview	http://usocfidfind.qwest.com	Qwest's USOC and FID website contains an overview of, and definitions for, USOCs, and provides an overview of, and links to, the USOC/FID Finder tool. This tool allows CLECs to identify USOC and FID details for all Qwest products and services. The USOC/FID Finder tool contains all USOCs/FIDs approved by Telcordia.

2.1.4 General Documentation

Qwest's general documentation provides CLECs with information about the wholesale relationship that is not specific to a particular interface or product. This general documentation category includes Qwest's *Service Interval Guide* (SIG), LSR flow-through documentation, Wholesale Customer Notifications, Loss & Completion Report information, and Local Service Ordering Guidelines (LSOG). The following sections identify and describe each of these pieces of general documentation.



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2.1.4.1 Service Interval Guide (SIG)

The SIG provides standard provisioning intervals for all Qwest wholesale products and services. For most products, the SIG provides intervals based on the number of lines being included in the order. Also, for some products, and for large volumes of most products, due to provisioning requirements, the SIG indicates that service intervals will be determined on an individual case basis (ICB). In addition to standard provisioning intervals, the SIG also provides guidelines for timelines in which CLECs can expect to receive FOCs on orders, completion intervals for repair activities, and standard intervals for callbacks on Help Desk escalations.

Table 10-1.17, below, identifies the release dates for Qwest's publication of the SIG during the course of the test.

Table 10-1.17: Service Interval Guide References

Version Number	Release Date
N/A	March 1, 2002
N/A	February 22, 2002
N/A	February 18, 2002
N/A	February 13, 2002
N/A	January 30, 2002
N/A	December 19, 2001
N/A	December 4, 2001
N/A	November 16, 2001
N/A	November 2, 2001
N/A	October 24, 2001
N/A	October 11, 2001
N/A	October 9, 2001
N/A	October 5, 2001
N/A	September 28, 2001
N/A	September 7, 2001
N/A	August 30, 2001
N/A	August 1, 2001
N/A	July 2, 2001
N/A	June 29, 2001
N/A	June 12, 2001
N/A	May 23, 2001
N/A	May 22, 2001
N/A	May 17, 2001
N/A	April 12, 2001



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2.1.4.2 LSRs Eligible for Flow-Through document

The LSRs Eligible for Flow-Through document provides an overview of criteria for LSRs that are eligible for flow through in Qwest's ordering systems. Table 10-1.18 identifies the version numbers and release dates of Qwest's publication of LSRs Eligible for Flow-Through document during the test.

Table 10-1.18: LSRs Eligible for Flow-Through Document References

Version Number	Release Date
7.0	February 26, 2002
6.0	December 4, 2001
5.0	September 27, 2001
4.0	September 4, 2001
3.0	May 9, 2001
2.0	February 1, 2001
1.0	May 2000 (included as part of the Service Performance Indicator Definitions (PID))

2.1.4.3 Qwest Wholesale Customer Notifications

Qwest provides a website designed to allow CLECs an opportunity to manage their wholesale customer notification delivery requirements. The website provides CLECs the ability to subscribe, change, or unsubscribe to Qwest's customer notices. Notifications regarding updates, releases, and general information are sent to CLECs based on the notification types selected by the CLEC. The mailing lists are available via e-mail or postal mail.

In January 2002, Qwest implemented a Customer Notification Letter Archive (CNLA) tool that allows customers to manage their own profiles for subscribing to Qwest's notifications. The CNLA tool is a searchable database that assists CLECs in finding notices that have been released to wholesale customers. The database is searchable by announcement date, notice type (i.e., announcement, release, planned outage), category (i.e., Product, Process, System, etc.), and sub-category (i.e., announcements, meetings, UNE, billing, etc.). This tool is available via the Qwest Wholesale Customer Notifications website, and allows customers to provide necessary information that drives the delivery of Qwest's Customer Notices.



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Table 10-1.19, below, describes different types of notifications that Qwest makes available to CLECs.

Table 10-1.19: Qwest Wholesale Customer Notifications

Type of Notification	Description
CMP	Notifications about the CLEC Change Management Process (CMP).
Forecast	Notifications including quarterly or semi-annual requests from Qwest for forecast information. These forecasts are requested for LIS Trunking, Unbundled Products, Collocation, and Wireless Trunking.
General	Notifications such as meeting notices, minutes and generic announcements.
Network	Notifications including network conversions, network processes or policies and/or other technical topics associated with Qwest's network and interface.
Process	Notifications associated with various customer processes with Qwest.
Product	Notifications specifically associated with any product available (wholesale or resale/retail) from Qwest. Includes new products, augments to current products, and Qwest policies or procedures associated with products and prices/rate changes.
System	Notifications including system issues, changes, etc. associated with IMA, EDI and other electronic interfaces with Qwest.
Tariff	Notifications associated with wholesale tariff notice filings and rates.
Training	Notifications containing Qwest products and/or process training opportunities for Qwest customers.
Website	Notifications including URL changes and various updates to the Qwest wholesale Internet site.

2.1.4.4 Loss and Completion Report Documentation

The Loss and Completion Report Samples and Report Delivery Options document provides examples of Interconnect Loss and Completion reports in report format and fixed flat file format. Additionally, the document provides descriptions of methods of delivery available for reports.

The following table, Table 10-1.20, identifies release dates for Qwest's publication of the Loss and Completion Report Samples and Report Delivery Options document. Qwest now publishes the Loss and Completion Report descriptions on its wholesale website.⁴

Table 10-1.20: Loss and Completion Report Samples and Report Delivery Options References

Version Number	Release Date
N/A	March 02, 2001
N/A	February 10, 2000

⁴ <http://www.qwest.com/wholesale/clecs/output.html>



2.1.4.5 Qwest Local Service Ordering Guidelines (LSOG)

The Qwest LSOG website provides CLECs with links to documents that describe Qwest's requirements for pre-ordering and ordering Local Interconnection Products and Services. These guidelines are based on Ordering and Billing Forum (OBF) industry standards, and identify Qwest-specific fields used in ordering products and services. The documents also identify fields that Qwest does not currently use in its service area. Within each downloadable LSOG document, Qwest provides links to forms and reference materials pertinent to the document.

2.1.5 Training Materials

The final category of documentation available to assist CLECs in order and transaction creation activities is Qwest's training materials. Qwest offers CLECs a variety of training options in both classroom and web-based formats. The following sections identify the online and instructor-led training materials used during the test.

2.1.5.1 Web-based Training Applications

Qwest provides web-based training applications to CLECs, at no charge, for a wide range of product, process and system functionalities. CLECs can access web-based courses from the training section of Qwest's wholesale website at any time, and may repeat courses to refresh their knowledge of subject materials. The estimated time requirements for each course are provided in the course description in Qwest's online course catalog. The training section of the Qwest wholesale website also provides minimum system requirements necessary to run these applications.

Table 10-1.23, below, identifies web-based training applications that were completed during the course of the test.⁵

Table 10-1.23: Web-based Training Application References

Course Name	Course Type	Course Description
DS-1	Product	Qwest's web-based DS1 training course provides users with information describing the DS1 product. The course is intended to teach participants what a DS1 product is, including its features, functions, options, and configurations. The course also teaches participants how Qwest's Self-Healing Alternate Route Protection (SHARP) product supports DS1, and enables CLECs to be able to assist their customers in creating business solutions by making appropriate decisions regarding DS1 products.
EEL via IMA	Process, System	The EEL via IMA web-based training is a self-directed, web-based process and systems training course provides an overview of Enhanced Extended Loop (EEL) product as well as processes for submitting service requests via Interconnect Mediated Access (IMA). The processes covered are Pre-Order, Order, Post Order, Provisioning, Billing, and CEMR Maintenance and Repair.

⁵ This table reflects only the Web-based training applications that were completed by the P-CLEC during the course of the test, and, thus, represent the basis for the evaluation provided in Section 3.1, below. The P-CLEC did not complete all of the available Web-based training applications offered by Qwest.



Course Name	Course Type	Course Description
Frame Relay Service (FRS)	Product	The FRS training course provides users with an overview of how FRS works, the features, functions, and options available within FRS, and customer benefits and business solutions available through the service. The course also provides users with information necessary to obtain ordering procedures and pricing information.
Introduction to Service Requests and Billing for CLECs	Process, System	The Introduction to Service Requests and Billing for CLECs web-based training provides CLEC representatives with the information necessary to identify and complete ASR and LSR forms. The training course is based on case study scenarios and provides a tutorial, a practice session, and on-line support.
LIS Trunking	Product	Qwest's LIS Trunking web-based course provides participants with an overview of the LIS Trunking product. The course is designed to provide participants with information regarding interconnection options, trunk group types, trunk forecasting, record exchange, and access services. Upon completing this course, the course participant is expected to be able to access specific LIS trunking order information and assist in forecasting a CLEC's trunking needs.
Local Number Portability	Product	Qwest's web-based LNP training is intended to describe the LNP product and associated services, identify the complete pre-order, order, and post-order processes, determine the product's applicability, and use a number of resources to transfer knowledge of the product. This course provides an initial introduction of LNP products to CLECs, and is supplemented by the instructor-led LNP training.
Loss/Completion Sample Reports Job Aid	Process	The Loss/Completion Sample Reports Job Aid is intended to provide CLECs with necessary information to assist them in using Qwest Loss & Completion Reports as a business tool. The job aid includes a description of the content of Loss & Completion Reports, and information on the available delivery methods and frequency of report generation.
Self-Healing Network Services (SHNS)	Product	Qwest's SHNS web-based training course provides participants with information on what the SHNS product is and how it works. The course includes topics dealing with features and options, configurations, hardware and software requirements, applications, and customer benefits. Following completion of this course, a participant is expected to be able to assist customers in creating business solutions by making appropriate decisions regarding SHNS. The participant will also be able to access necessary information about SHNS pricing and ordering procedures.
Synchronous Service Transport (SST)	Product	The SST web-based training course is designed to teach participants about Qwest's SST product, including the product's features and configurations, bandwidth interface, and the interrelationship between SST and SONET. The course also provides a discussion of customer applications and benefits associated with SST.
Unbundled Network Elements (UNE-Loop, UNE-Switch, UDIT)	Product	The Unbundled Network Elements training course provides users with instruction in UNE products and features. The course is designed to explain the differences among the types of unbundled elements – loops, switching, and IOF transport – and to explain the processes for obtaining UNEs from Qwest. The UNEs course was later split into multiple web-based training applications.



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Course Name	Course Type	Course Description
UNE-P ISDN PRI via IMA	Process, System	UNE-P ISDN PRI via IMA is a self-directed, web-based process and systems training course provides an overview of the Unbundled Network Elements - Platform Integrated Services Digital Network-Primary Rate Interface (UNE-P ISDN PRI) product as well as the processes for submitting the service request via Interconnect Mediated Access (IMA). The processes covered are Pre-Order, Order, Post Order, Provisioning, Billing, and CEMR Maintenance and Repair.

2.1.5.2 Instructor-led Course Materials

Qwest's instructor-led training courses are traditional classroom-style courses taught by a Qwest instructor. Qwest offers the courses to CLECs at no charge, and conducts classes at various locations within its service territory. CLEC participants at Instructor-led classes receive class materials and handouts to assist in following along during the training session. In many cases, these materials can be used by the CLEC after the course is completed, as reference materials or job aids for completing certain activities.

Table 10-1.24, below, identifies the instructor-led training courses that were attended during the test.⁶

Table 10-1.24: Instructor-led Course References

Course Name	Course Type	Course Description
ASR Private Line	Process	Qwest's ASR Private Line Training is designed to provide an overview of the process for ordering Private Line services from Qwest through the ASR ordering process. The class focuses on how to interpret ASR fields required in the ordering of Private Line services, and how to build and submit a Private Line order. The course also provides participants with information on the possible network configurations for Private Line customers, and reviews the provisioning intervals for Private Line orders.
ASR Switched Access	Process	Qwest's ASR Switched Access class is designed to explain to participants the process for ordering Switched Access services through an ASR. The class focuses on the ordering requirements for Switched Access services, and how to interpret the ASR fields required in Switched Access ordering to complete an ASR order. During the Switched Access class, Qwest also provides information on the differences between Switched Access and Private Line services, and reviews the multiple components contained in a Switched Access service. Finally, the course includes information on the provisioning intervals for Switched Access orders.

⁶ This table reflects the Instructor-led training courses that the P-CLEC attended during the course of the test, and, thus, represents the basis for the evaluation provided in Section 3.1, below. The P-CLEC did not attend all of the available Instructor-led training offered by Qwest.



Course Name	Course Type	Course Description
CEMR Classic	System	Qwest's CEMR Classic training class provides participants with information and training on the CEMR application for maintenance & repair activities. The CEMR Classic course uses overviews of CEMR documentation, slide presentations, and system demonstrations by the instructor to instruct the class participants in the functionality of the CEMR application. The one-day class covers all of the functional areas of the CEMR interface, including design, non-design, and pre-validation services.
CEMR Hands-On	System	The CEMR Hands-On training course is a second instructor-led class offered by Qwest to teach CLEC participants the functionality of the CEMR application. In the hands-on course, participants benefit from live demonstrations and practices sessions to gain experience and proficiency in submitting and maintaining trouble reports in CEMR. The CEMR Hands-On Training is a one-day class.
Centrex	Process, System	Qwest's Centrex training course is designed to assist CLECs in understanding Centrex as a resale product. The course's objectives include describing the Centrex 21 and Centrex Plus resale products, explaining the differences between the two products, and enabling the class participants to use the IMA GUI to order and maintain Centrex services.
IMA Classic	System	IMA Classic is an introductory course designed to teach CLEC representatives how to use IMA GUI to enter orders and perform maintenance and repair functions. The course provides information about IMA GUI functionality, tools, and references, and demonstrates for class participants how to use IMA GUI to complete pre-order, order, and maintenance functions.
IMA Directory Listing	System	The IMA Directory Listing training course provides CLEC participants with an introduction to the processes in place to submit, change, or delete their end users' directory listing information via IMA. The course provides a review of Qwest directory listing business rules and an overview of how to complete an OBF Directory Form via IMA.
IMA Hands-On	System	The IMA "Hands On" course is designed to use an interactive software demonstration and hands-on practice to instruct CLEC representatives on the use of the IMA GUI.
Local Number Portability (LNP)	Process, System	The LNP training course introduces CLECs to the LNP product and teaches class participants how to submit orders for LNP. The course provides an overview of LNP, and covers the pre-order, order, post-order, provisioning, billing, and maintenance processes as they apply to LNP. The stated objective of the course is to provide participants with the ability to understand the LNP processes and to create and execute orders for LNP service.
POTS Product Overview	Product	Qwest's POTS Product Overview class is designed to provide participants with an introduction to available POTS products. Qwest instructors provide a general overview of POTS products, and explain the various features available when ordering POTS products.
POTS Resale	Process, System	The POTS Resale training class specifically addresses the concerns of resellers of Qwest POTS products and services. The course provides an overview of the complete ordering process for POTS Resale, from pre-order through provisioning, including the billing and maintenance processes. Upon completion of this course, participants are expected to be able to describe the available Resale POTS products available from Qwest, create and execute pre-order and order transactions, and perform maintenance transactions on POTS Resale products.



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Course Name	Course Type	Course Description
Qwest 101	Product, Process and System	<p>Qwest 101 is designed specifically to assist CLEC representatives in gaining a better understanding of the CLEC relationship and of how to conduct wholesale business with Qwest. Qwest 101 is a five-day instructor-led class that provides participants with an overview of Qwest's wholesale offerings. The course's stated objectives are:</p> <ul style="list-style-type: none"> Describe the process to become a CLEC; Identify and access web resources; Distinguish between products and services offered by Qwest; Identify and use Qwest outputs; Complete Qwest forms; Describe Qwest OSS systems <p>Upon completion of the Qwest 101 training, CLEC representatives are expected to have a sufficient understanding of their role in the CLEC relationship and should be able to provide Qwest with the necessary information to complete the CLEC start-up process.</p>
Unbundled Loop (UBL)	Process, System	<p>The UBL training class is designed to provide participants with an introduction to Qwest's UBL products and instruct CLECs on how to create and submit UBL orders. Completion of this course will enable a CLEC representative to identify and explain the unique pre-order, order, post-order, provisioning, billing, and maintenance processes in place for UBL products.</p>
UNE-P POTS	Process, System	<p>The UNE-P POTS training class provides an introduction to Qwest's UNE-P POTS products. The course includes an overview of the ordering life cycle from pre-order through provisioning, and describes the billing and maintenance processes for UNE-P POTS products. The one-day class also provides participants with information on the IMA and CEMR processes unique to UNE-P POTS, and reviews the forms and required fields to be completed when submitting UNE-P POTS product orders.</p>

2.2 Scenarios

Scenarios were not applicable to this test.



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2.3 Test Targets & Measures

The test target, or goal, was to evaluate the publicly available documentation and materials that Qwest provides to CLECs for use in preparing pre-order, order, and post-order transactions for submission via Qwest's electronic and manual interfaces. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table 10-1.25: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
IMA EDI Documentation	IMA Disclosure Documentation	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-1-1 to 10-1-6
	EDI Implementation Guidelines	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-1-7 to 10-1-12
	IMA Certification/Re-Certification Notices	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-1-13 to 10-1-18
IMA GUI Documentation	IMA User Guide	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-2-1 to 10-2-6
	CLEC System Administration Guide	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-2-7 to 10-2-12



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Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	IMA Release Notes	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-2-13 to 10-2-18
	CTAG User Guide	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-2-19 to 10-2-24
Product Information	PCAT website	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-3-1 to 10-3-6
	Technical Publications	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-3-7 to 10-3-12
	Directory Listing Guides	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-3-13 to 10-3-18
	Online Tools	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-3-19 to 10-3-24
General Documentation	Service Interval Guide	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-4-1 to 10-4-6



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Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	LSRs Eligible for Flow-Through document	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-4-7 to 10-4-12
	Wholesale Customer Notifications	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-4-13 to 10-4-18
	Loss & Completion Report documentation	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-4-19 to 10-4-24
	Local Service Ordering Guidelines (LSOG)	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-4-25 to 10-4-30
Training Documentation	Web-based training applications	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-5-1 to 10-5-6
	Instructor-led Course materials	Availability of document; Completeness of document; Clarity of document; Consistency of document; Accuracy of document; Existence of document change control	10-5-7 to 10-5-12

2.4 Evaluation Methods

In most cases, HP obtained documentation from the Qwest wholesale website. HP used the current version of each document that the P-CLEC required for its transaction testing activities. When Qwest distributed notifications indicating that it had updated documents, the P-CLEC used



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the newly released versions. HP received some documentation directly from the P-CLEC's Qwest Account Team through e-mails and meetings.

HP obtained Instructor-led course handouts through P-CLEC representatives' attendance at training classes. P-CLEC representatives also completed relevant web-based training applications. No materials were downloaded from the web-based training.

HP received Qwest Wholesale Customer Notifications via e-mail from Qwest. To receive these e-mails, HP provided Qwest with the names and e-mail addresses of P-CLEC representatives who would be responsible for receiving Qwest-CLEC communications.

2.5 Analysis Methods

HP reviewed and analyzed Qwest documentation as part of the P-CLEC's operational activities. HP reviewed the documents for completeness, consistency, and accuracy of information, clarity of content, and usability in the execution of pre-order, order, and post-order activities.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II. Summaries of HP Observations and Exceptions referenced in the comments are located in Appendix HP-A.

Table 10-1.26: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
10-1-1	IMA Disclosure documentation is readily available to CLECs.	Satisfied	<p>Qwest publishes the IMA EDI Disclosure documentation at http://www.qwest.com/disclosures/netdisclosure409.html.</p> <p>Previous to IMA Release 10.0, Qwest published draft Developer Worksheets when the scope of the release was finalized. The final Disclosure documentation was published five (5) weeks before the release implementation date. Qwest made updates and corrections to the Disclosure documentation following release implementation through the publishing of an Addendum two (2) weeks after the implementation date. This Addendum included any chapter or appendix documentation updates or system modifications identified from the release of the documentation through implementation.</p> <p>As agreed upon by Qwest and the CLEC</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>community through the CMP redesign process, beginning with IMA Release 10.0, Qwest will publish a draft of the complete Disclosure documents 73 days in advance of a release implementation. The final Disclosure documentation will be published 45 days before the release implementation. Qwest will update Disclosure documentation following the initial release through the publishing of Addenda and updated chapter or appendix documentation. An initial addendum will be released two (2) weeks after the release implementation, and additional addenda will be released on an "as needed" basis.</p> <p>HP issued Exception 2003 to address deficiencies encountered in Qwest's Disclosure documentation release schedule.</p>
10-1-2	Qwest's IMA Disclosure documentation is complete in its coverage of EDI Business Rules and mapping specifications.	Satisfied	<p>Qwest's IMA EDI Disclosure documentation is intended to provide CLECs with instructions pertaining to an EDI implementation. The IMA EDI Disclosure documents detail ordering information, business rules, and EDI interface requirements for each IMA Release.</p> <p>The Disclosure documentation is comprised of numerous chapters and appendices. Each chapter details a specific EDI pre-order, order, or post-order product or service, and includes a Business Description, Business Model, Trading Partner Access Information, Mapping Examples, and Data Element Matrix. The Appendices contain the data elements and valid values for each product.</p> <p>The P-CLEC reviewed each section relevant to its business model and developed documentation and question logs to clarify ambiguities or obtain further specificity for syntax, EDI mapping, product descriptions, or business rules. The P-CLEC maintained these logs and circulated them to Qwest on a weekly basis as part of the EDI certification and support processes. Qwest SMEs reviewed the logs and resolved the P-CLEC's issues. The logs were a catalyst for Qwest Internal Change Requests (ICRs or CRs) that resulted in changes to current or future releases of the IMA EDI Disclosure</p>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>documentation or related Qwest documents.</p> <p>The P-CLEC implemented 13 Pre-Order functions, 16 Order products and 5 Post-Order functions. In a number of instances, the P-CLEC was the first CLEC to implement a specific product, functionality or IMA Release via EDI.</p> <p>HP issued the following Incident Reports that resulted in updates to the IMA EDI Disclosure documentation:</p> <p>Observations 2004, 2005, 2008, 2009, 2014, 2017, 2020, 2021, 2023, 2024, 2026, 2044, 2049, 2053, 2064, 2069, 2073, 2078, 2082, and 2093.</p> <p>Exceptions 2005, 2008, 2009, 2014, 2016, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2050, 2051, 2060, 2063, 2068, 2070, 2076, 2077, 2078, 2080, 2081, 2082, 2083 and 2084.</p> <p>In IMA Releases 5.0 through 9.0, Qwest implemented numerous changes to improve the format, content, clarity and completeness of the IMA EDI Disclosure documentation.</p>
10-1-3	Information in the IMA Disclosure documentation can be easily understood by the intended audience.	Satisfied	<p>The IMA EDI Disclosure documents are targeted for to individuals knowledgeable in EDI, OSS, ordering and provisioning. The P-CLEC was able to use and understand these documents. Questions or issues about the Disclosures were clarified through the documentation and question logs, and the account management, EDI implementation, and support processes.</p>
10-1-4	Information in the IMA Disclosure documentation is consistent with other information provided by Qwest.	Satisfied	<p>The IMA EDI Disclosure documents are technical, ordering, and provisioning documents used in conjunction with other Qwest publications (e.g., PCAT, Job-Aids, Technical Publications, etc.).</p> <p>HP issued the following Incident Reports that resulted in updates to the IMA EDI Disclosure documentation:</p> <p>Observations 2004, 2005, 2008, 2009, 2014, 2017, 2020, 2021, 2023, 2024, 2026, 2044, 2049, 2053, 2064, 2069, 2073, 2078, 2082, 2093.</p> <p>Exceptions 2005, 2008, 2009, 2014, 2016, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2050, 2051, 2060, 2063, 2068, 2070,</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>2076, 2077, 2078, 2080, 2081, 2082, 2083, 2084.</p> <p>Qwest also generated updates to the related documents to ensure consistency across published documentation.</p>
10-1-5	The business rule and mapping specification information contained in the IMA Disclosure documentation is accurate.	Satisfied	<p>The P-CLEC implemented 13 Pre-Order functions, 16 Order products and 5 Post-Order functions. In a number of instances, the P-CLEC was the first CLEC to implement a specific product, functionality or IMA Release via EDI.</p> <p>Questions or issues about the accuracy of the Disclosures were clarified through the documentation and question logs, and the account management, EDI implementation, and support processes.</p> <p>In IMA Releases 5.0 through 9.0, Qwest implemented numerous changes to improve the format, content, clarity and completeness of the IMA EDI Disclosure documentation.</p> <p>HP issued the following Incident Reports that resulted in updates to the IMA EDI Disclosure documentation:</p> <p>Observations 2004, 2005, 2008, 2009, 2014, 2017, 2020, 2021, 2023, 2024, 2026, 2044, 2049, 2053, 2064, 2069, 2073, 2078, 2082, 2093.</p> <p>Exceptions 2005, 2008, 2009, 2014, 2016, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2050, 2051, 2060, 2063, 2068, 2070, 2076, 2077, 2078, 2080, 2081, 2082, 2083, 2084.</p>
10-1-6	Revisions to IMA Disclosure documentation are identified to the CLEC community.	Satisfied	<p>Qwest publishes revisions to the IMA EDI Disclosure documentation at http://www.qwest.com/disclosures/netdisclosure409.html.</p> <p>Qwest identifies revisions to the IMA EDI Disclosure documentation as addenda. The addenda describe the revisions to the chapters, appendices, and individual data elements.</p> <p>Qwest uses its Wholesale Customer Notification process to inform CLECs of Disclosure documentation addenda publications.</p> <p>In Observation 2024, HP documented Qwest's failure to publish to the CLEC</p>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			community identified defects, system fix implementation dates, and its process for assigning severity codes to change requests.
10-1-7	The <i>EDI Implementation Guidelines</i> are readily available to CLECs.	Satisfied	Qwest publishes the current version of the <i>EDI Implementation Guidelines</i> document at http://www.qwest.com/wholesale/ima/edi/document.html . Additionally, Qwest issues Wholesale Customer Notifications to the CLEC community when an updated version of the <i>EDI Implementation Guidelines</i> is available.
10-1-8	The <i>EDI Implementation Guidelines</i> are complete in their coverage of the requirements and processes for establishing and certifying an EDI interface with Qwest.	Satisfied	The <i>EDI Implementation Guidelines</i> describe the processes for establishing wholesale trading capabilities with Qwest to exchange pre-order, order, and post-order information via the IMA EDI interface. It also contains information about the Qwest Stand Alone Test Environment (SATE) that CLECs can use for either regression testing of EDI interface software or progression testing for an IMA Release implementation. Service Bureaus, as for an Implementation project, are also covered. The P-CLEC used the documentation in conjunction with the defined Implementation Activities and Qwest documentation. HP identified an undocumented process for the loading of Billing Account Numbers (BANs) in Observation 2007. Qwest documented the process in the <i>EDI Implementation Guidelines</i> , and revised the document again in response to HP's Exception 2076. Additionally, HP identified undocumented process for configuration requirements for dedicated connectivity in Observation 2022.
10-1-9	Information in the <i>EDI Implementation Guidelines</i> can be easily understood by the intended audience.	Satisfied	The <i>EDI Implementation Guidelines</i> are targeted to audiences familiar with OSS and EDI technologies. The P-CLEC found it could be readily used and understood. Additionally, within the guidelines, Qwest identifies related standards documentation and reference materials that support the Qwest EDI implementation.
10-1-10	Information in the <i>EDI Implementation Guidelines</i> is	Satisfied	The <i>EDI Implementation Guidelines</i> is a stand-alone process document, but does



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Test Cross-Reference	Evaluation Criteria	Result	Comments
	consistent with other information provided by Qwest.		contain a limited amount of information that is also in the IMA EDI Disclosure documentation. Qwest publishes updates to the <i>EDI Implementation Guidelines</i> when changes that are made to the IMA EDI Disclosure documentation affect the common information. The P-CLEC found the information contained in the <i>EDI Implementation Guidelines</i> to be consistent with other Qwest information.
10-1-11	The <i>EDI Implementation Guidelines</i> provide information that is accurate.	Satisfied	HP found the guidelines to be factual and accurate with regard to the P-CLEC's experiences with IMA EDI Releases 5.0, 6.0, 7.0 and 8.0. HP documented an issue regarding Qwest's transmission of 997 Functional Acknowledgements in Observation 2054. HP also documented an issue about the number of transactions contained in an EDI interchange in Exception 2021.
10-1-12	Revisions to the <i>EDI Implementation Guidelines</i> are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of changes or updates to the <i>EDI Implementation Guidelines</i> . The P-CLEC began its EDI certification activities using version 2.0 of the document, dated April 12, 2000. The document has been revised and re-published eight (8) times during the course of the test. The version numbers and publication dates of these revisions are identified in Table 10-1.6: EDI Implementation Guidelines References. Throughout the test, the P-CLEC received appropriate notification of updates.
10-1-13	IMA Recertification Notices are readily available to CLECs.	Satisfied	Qwest publishes IMA Recertification Notices at http://www.qwest.com/wholesale/ima/edi/release.html . Additionally, Qwest uses its Wholesale Customer Notification process to distribute these notices to the CLEC community. Effective February 15, 2002, Qwest makes all future IMA Recertification Notices available via its Customer Notification Letter Archive (CNLA) Tool.
10-1-14	IMA Recertification Notices	Satisfied	The IMA Recertification Notices define the



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Test Cross-Reference	Evaluation Criteria	Result	Comments
	provide a complete description of the EDI recertification requirements for upcoming IMA Releases.		<p>transactions required for recertification from the most current IMA EDI release to the upcoming implementation. They provide a complete list of transactions that need to be recertified or certified when moving to the new release.</p> <p>The recertification and release migration processes are defined in the IMA EDI Implementation Guide, version 9.1, Chapter 2 – Implementation Activities, sections “Converting to a New Release” and “Recertification Requirements.”</p> <p>HP issued Observation 2013 to document an issue with the categorization of the CSR Query in IMA EDI release 6.0.</p>
10-1-15	Information in the IMA Recertification Notices can be easily understood by the intended audience.	Satisfied	The IMA Recertification Notices are targeted to existing Qwest IMA EDI users. The P-CLEC found the notices could be readily used and understood.
10-1-16	Information in the IMA Recertification Notices is consistent with other information provided by Qwest.	Satisfied	<p>The IMA Recertification Notices are stand-alone documents issued for each IMA EDI release.</p> <p>The recertification and release migration processes are defined in the <i>EDI Implementation Guidelines</i>, version 9.1, Chapter 2 – Implementation Activities, sections “Converting to a New Release” and “Recertification Requirements.” The P-CLEC found the IMA Recertification Notices to be consistent with the process definition in the <i>EDI Implementation Guidelines</i>.</p>
10-1-17	The information contained in the IMA Recertification Notices is accurate.	Satisfied	<p>The IMA Recertification Notice document defines the transactions that need to be recertified or certified when moving to a new IMA Release.</p> <p>The P-CLEC performed recertification activities while migrating from IMA Releases 5.0 to 6.0, 6.0 to 7.0, and 7.0 to 8.0.</p> <p>Based on the P-CLEC’s experiences, HP found the IMA Recertification Notices to be factual and accurate.</p>
10-1-18	Revisions to IMA Recertification Notices are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to distribute IMA Recertification Notices to the CLEC community. Additionally, Qwest publishes



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>the notices on its wholesale website at http://www.qwest.com/wholesale/ima/edi/release.html. Effective February 15, 2002, Qwest all future IMA Recertification Notices available via its Customer Notification Letter Archive (CNLA) Tool.</p> <p>Throughout the test, the P-CLEC observed one instance in which Qwest revised an IMA Recertification Notice. The initial notice for IMA EDI Release 8.0, distributed on July 16, 2001 was revised in a notice distributed on August 15, 2001. The revised notice reflected a change in the sunset date for IMA EDI Release 6.0.</p>
10-2-1	The <i>IMA User Guide</i> is readily available to CLECs.	Satisfied	<p>Qwest publishes the <i>IMA User Guide</i> at http://www.qwest.com/wholesale/ima/gui/imauser.html.</p> <p>The URL provides a link to the index page for the current version of the guide. From the index page, CLECs can download either individual sections of the <i>IMA User Guide</i>, or the entire guide.</p>
10-2-2	The <i>IMA User Guide</i> is complete in its coverage of the set-up and use of the IMA GUI application.	Satisfied	<p>The <i>IMA User Guide</i> provides instruction for using the IMA GUI application. The document is organized in three sections: Pre-Order, Order, and Post-Order processes.</p> <p>In general, the P-CLEC found the information in the <i>IMA User Guide</i> to be complete in its coverage of the set-up and use of the IMA GUI application. However, HP issued the following incident reports documenting incomplete information.</p> <p>Observations 2014, 2023, 2078.</p> <p>Exceptions 2008, 2012 and 2016, 2059, 2063, 2069, 2072.</p>
10-2-3	Information in the <i>IMA User Guide</i> can be easily understood by the intended audience.	Satisfied	<p>The <i>IMA User Guide</i> is intended for CLECs that submit pre-order, order, and post-order transactions via the IMA GUI application. The P-CLEC could easily understand the information in the guide.</p>
10-2-4	Information in the <i>IMA User Guide</i> is consistent with other information provided by Qwest.	Satisfied	<p>In general, the P-CLEC found the information in the <i>IMA User Guide</i> to be consistent with other Qwest documentation. However, the P-CLEC did encounter conflicting information between the guide and Qwest's EDI Disclosure documentation with respect to the use of BANs. HP documented this inconsistency in Exception</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			2076. Additionally, HP issued Exception 2008 documenting inconsistencies with the IMA GUI application and the Disclosure documentation regarding valid value for REQYP.
10-2-5	The information contained in the <i>IMA User Guide</i> is accurate.	Satisfied	The <i>IMA User Guide</i> provides instructions to CLECs using the IMA GUI application. The document addresses the pre-order, order, and post-order processes, and provides step-by-step instructions for the completion of various tasks. HP issued Exception 2069, documenting the P-CLEC's inability to complete a Facilities Availability Query for ISDN-PRI services using the <i>IMA User Guide</i> and Qwest's web-based GUI training.
10-2-6	Revisions to the <i>IMA User Guide</i> are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of changes and updates to the <i>IMA User Guide</i> . Throughout the test, the P-CLEC received appropriate notification of these updates. Additionally, Qwest publishes a Revision History in the <i>IMA User Guide</i> , identifying the issue numbers, release dates, and associated IMA software releases for each publication.
10-2-7	The <i>CLEC System Administration Guide</i> is readily available to CLECs.	Satisfied	Qwest publishes the current version of the <i>CLEC System Administration Guide</i> at http://www.qwest.com/wholesale/ima/gui/imasysguide.html . From this URL, CLECs can download the entire <i>CLEC System Administration Guide</i> .
10-2-8	The <i>CLEC System Administration Guide</i> is complete in its coverage of the processes for administering CLEC access to the IMA GUI application.	Satisfied	The <i>CLEC System Administration Guide</i> provides users with complete information relating to the set-up and maintenance of accounts in IMA GUI. The guide is broken into three chapters, covering: management of administrator profiles, management of IMA accounts, and management of individual users. In general, the P-CLEC found the information in the <i>CLEC System Administration Guide</i> to be complete. However, HP issued Observation 2007, documenting the lack of information about the requirement that CLECs load and



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			manage their Billing Account Numbers (BANs) via IMA GUI. Following the resolution of Observation 2007, Qwest assumed responsibility for loading and managing CLEC BANs, and has updated the <i>CLEC System Administration Guide</i> to reflect these changes.
10-2-9	Information in the <i>CLEC System Administration Guide</i> can be easily understood by the intended audience.	Satisfied	The <i>CLEC System Administration Guide</i> is intended for CLEC Operations Center representatives responsible for managing IMA accounts. The guide includes IMA GUI screen shots to provide examples of the screens that CLEC users will encounter when performing administrative tasks in IMA GUI. The P-CLEC found the guide to be clear and easily understood.
10-2-10	Information in the <i>CLEC System Administration Guide</i> is consistent with other information provided by Qwest.	Satisfied	The <i>CLEC System Administration Guide</i> is a stand-alone document intended for CLEC representatives responsible for maintaining IMA accounts. The P-CLEC found, where information existed in multiple documents, the <i>CLEC System Administration Guide</i> was consistent with other Qwest documentation.
10-2-11	The information contained in the <i>CLEC System Administration Guide</i> is accurate.	Satisfied	The P-CLEC did not encounter any instances in which the information presented in the <i>CLEC System Administration Guide</i> was inaccurate.
10-2-12	Revisions to the <i>CLEC System Administration Guide</i> are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of changes and updates to the <i>CLEC System Administration Guide</i> . Throughout the test, the P-CLEC received appropriate notification of these updates. Additionally, the <i>CLEC System Administration Guide</i> includes a Revision History section that identifies the document release number, date of release, and corresponding IMA software release associated with each publication.
10-2-13	IMA Release Notes are readily available to CLECs.	Satisfied	Qwest publishes the IMA Release Notes documents at http://www.qwest.com/wholesale/ima/gui/release.html . This URL provides links to downloadable files containing the Release Notes documents for the current and recent past



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			IMA Releases. The page also includes a link to the Release Notes archive, which contains the Release Notes documents for all other IMA Releases.
10-2-14	The IMA Release Notes provide a complete description of the updates and changes in functionality between IMA GUI releases.	Satisfied	The IMA Release Notes documents describe system changes that Qwest implements in each IMA GUI software release. During the test, the P-CLEC used IMA Releases 6.0, 7.0, 8.0, and 9.0 of the IMA GUI application. The P-CLEC found the IMA Release Notes documents for these releases provided a complete description of the system changes implemented in the corresponding software releases.
10-2-15	Information in the IMA Release Notes can be easily understood by the intended audience.	Satisfied	The P-CLEC found the IMA Release Notes documentation to be clear and understandable. The documents include IMA GUI screen shots to support the information provided in each section.
10-2-16	Information in the IMA Release Notes is consistent with other information provided by Qwest.	Satisfied	The P-CLEC did not encounter any inconsistencies between the IMA Release Notes documents and other Qwest documentation it used during the test.
10-2-17	The information provided in the IMA Release Notes is accurate.	Satisfied	The P-CLEC did not encounter any instances in which the information published in the IMA Release Notes was inaccurate.
10-2-18	Revisions to the IMA Release Notes are identified to the CLEC community.	Satisfied	Qwest publishes an IMA Release Notes document for each IMA GUI release. Within each Release Notes document, the Revision History identifies the version numbers and release dates for all versions of the document. Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to an IMA Release Notes document. Qwest also distributes notifications when it publishes a new Release Notes document for an upcoming IMA Release. Throughout the test, the P-CLEC received appropriate notification of updates and new releases.
10-2-19	The <i>CTAG User Guide</i> is readily available to CLECs.	Satisfied	Qwest publishes the current version of the <i>CTAG User Guide</i> at http://www.qwest.com/wholesale/systems/ctag.html . From this URL, CLECs can view or download the guide.



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Test Cross-Reference	Evaluation Criteria	Result	Comments
10-2-20	The <i>CTAG User Guide</i> provides complete information about the use of the CTAG system.	Satisfied	The <i>CTAG User Guide</i> provides instructions for each function available within the CTAG system. The guide includes screen captures of various CTAG user windows to assist in understanding the operation of the interface. HP issued Observation 2065 to address the P-CLEC's finding that the <i>CTAG User Guide</i> contained incomplete information for returning TNs following reservation.
10-2-21	Information in the <i>CTAG User Guide</i> can be easily understood by the intended audience.	Satisfied	The <i>CTAG User Guide</i> is intended for CLECs that use the CTAG system to select and reserve TNs for use in ordering products and services. The guide includes screen captures of various CTAG user windows to assist its audience in understanding the operation of the system. The P-CLEC found the information in the guide could be easily understood.
10-2-22	Information in the <i>CTAG User Guide</i> is consistent with other information provided by Qwest.	Satisfied	The P-CLEC found the information in the <i>CTAG User Guide</i> was consistent with other Qwest documentation.
10-2-23	The information provided in the <i>CTAG User Guide</i> is accurate.	Satisfied	The P-CLEC referred to the <i>CTAG User Guide</i> when using the CTAG system. In general, the P-CLEC found the instructions and information in the guide to be accurate. However, the P-CLEC experienced problems reserving sequential TNs. HP issued Observation 2057, documenting the P-CLEC's inability to reserve five (5) sequential TNs, contrary to information published in the <i>CTAG User Guide</i> .
10-2-24	Revisions to the <i>CTAG User Guide</i> are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to the <i>CTAG User Guide</i> . Throughout the test, the P-CLEC received appropriate notification of these updates. Qwest also includes a Revision History in the guide that identifies the version numbers and release dates for each publication of the document.
10-3-1	PCAT website product information is readily available to CLECs.	Satisfied	CLECs can access the PCAT website product information for CLEC Resellers at http://www.qwest.com/wholesale/pcat/resale.html , or for CLEC Interconnection at http://www.qwest.com/wholesale/pcat/interconnection.html .



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The PCAT website provides links to product and service information, Qwest business processes, and ordering forms.</p> <p>In general, the P-CLEC found the PCAT website information was readily available. However HP encountered an instance where the P-CLEC could not access UNE-P EEL information. HP issued Observation 2012.</p>
10-3-2	The PCAT website product information provides complete information about available wholesale products and services.	Satisfied	<p>The PCAT website provides links to product and service information, Qwest business processes, and ordering forms. During the course of the test, the P-CLEC encountered several instances in which the PCAT website lacked complete information about certain products, services, business processes, and order forms. HP documented the P-CLEC's findings in the following Incident Reports:</p> <p>Observations 2010, 2019; 2046, 2052, 2078, 2082.</p> <p>Exceptions 2012, 2013, 2014, 2028, 2048, 2063, 2064, 2070, 2078, 2080, 2087.</p>
10-3-3	Information provided in the PCAT website product information can be easily understood by the intended audience.	Satisfied	<p>The PCAT website contains general product and service information, and detailed information on specific processes. This information is intended for use by Qwest wholesale customers. In general, the P-CLEC found the information in the PCAT website to be easily understood.</p> <p>HP issued Observation 2073 that resulted in updates to the PCAT website product information.</p>
10-3-4	The PCAT website product information is consistent with other information provided by Qwest.	Satisfied	<p>Various documents account for much of the information Qwest publishes in its PCAT. In general, Qwest maintains consistency between these sources and the PCAT information. However, the P-CLEC encountered instances in which PCAT information conflicted with other Qwest documentation. HP documented these instances in Observation 2010, and Exception 2009.</p>
10-3-5	The product information located on the PCAT website is accurate.	Satisfied	<p>The P-CLEC regularly consulted the PCAT website, and generally found the information to be accurate. However, the P-CLEC did find inaccuracies that affected its testing activities.</p> <p>However, the P-CLEC encountered</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			instances in which PCAT information located on the website was inaccurate. HP documented these instances in Exceptions 2034an 2070.
10-3-6	Revisions to PCAT website product information are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to the PCAT. Throughout the test, the P-CLEC generally received appropriate notification of these updates. Prior to posting updated information, Qwest allows CLECs to review and comment on proposed changes through its CMP "Documents in Review" website. ⁷ According to the website, CLECs must submit comments within 15 days of a document's release.
10-3-7	Qwest's Technical Publications are readily available to CLECs.	Satisfied	CLECs download Qwest Technical Publications (Tech Pubs) from an index on Qwest's wholesale website at http://www.qwest.com/techpub/ , or http://www.qwest.com/wholesale/notices/techPub.html . The index lists each Tech Pub by document number, title, issue, and release date. The index also includes a brief description of each Tech Pub.
10-3-8	Qwest's Technical Publications are complete in their coverage of the technical specifications of products and services.	Satisfied	Qwest's Tech Pubs contain detailed technical information for various products and services that Qwest offers. The documents include information on the Qwest network configurations of the product or service, Qwest and CLEC responsibilities for ordering and maintaining the product, the product performance specifications, and the technical specifications required for a CLEC to order the product or service. The Tech Pubs the P-CLEC used during the test were complete in their coverage of the technical specifications.
10-3-9	Information provided in Qwest's Technical Publications can be easily understood by the intended audience.	Satisfied	The Tech Pubs contain detailed technical specifications and engineering information and are not intended to be general information resources. The P-CLEC understood and applied the information presented in Qwest's Tech Pubs.

⁷ Qwest Change Management Process (CMP) Document Review process, <http://www.qwest.com/wholesale/cmp/review.html>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
10-3-10	Information provided in Qwest's Technical Publications is consistent with other information provided by Qwest.	Satisfied	The P-CLEC found the information in the Tech Pubs it used was consistent with other Qwest documentation.
10-3-11	The information contained in Qwest's Technical Publications is accurate.	Satisfied	The P-CLEC found, in most instances, that the information in the Tech Pubs used during the test was accurate. However, the P-CLEC did encounter order-processing errors due to inaccurate NC/NCI code information in the Tech Pubs. HP documented this issue in Exception 2028.
10-3-12	Revisions to Qwest's Technical Publications are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to its Tech Pubs. Throughout the test, the P-CLEC received appropriate notification of these updates. Prior to posting updated information, Qwest allows CLECs to review and comment on proposed changes to Tech Pubs through its CMP "Documents in Review" website. ⁸ According to the website, CLECs must submit comments within 15 days of a document's release.
10-3-13	Qwest's Directory Listing guides are readily available to CLECs.	Satisfied	The P-CLEC used a number of Qwest's Directory Listing guides. The following list identifies the guides the P-CLEC used and the associated URLs: <ul style="list-style-type: none"> ▪ <i>Directory Listing Inquiry (DLI) Qwest Preparation Guide</i>, http://www.qwest.com/wholesale/downloads/2002/020403/LSOG5-DLIV2_0.doc; ▪ <i>Directory Listing Inquiry System (DLIS) User Guide</i>, http://www.qwest.com/wholesale/downloads/2002/020322/DLIS_V1_05a.doc; ▪ <i>Facility Based CLECs and Reseller/Unbundled Network CLECs Directory Listing User Document</i>, http://www.qwest.com/wholesale/downloads/2002/020327/UserDoc03-25-02V3_06.doc; and, ▪ <i>Facility Based Directory Listing (FBDL) Guide</i>, http://www.qwest.com/wholesale/downloads/2002/020328/901directorylistings

⁸ Qwest Change Management Process (CMP) Document Review process, <http://www.qwest.com/wholesale/cmp/review.html>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			<u>032802.pdf</u> .
10-3-14	Qwest's Directory Listing guides are complete in their coverage of the Directory Listing product and associated business rules.	Satisfied	The P-CLEC used Qwest's Directory Listing guides for DL ordering activities. The P-CLEC found the documents' coverage of the Directory Listing product and business rules to be complete. However, the P-CLEC encountered instances in which PCAT information conflicted with other Qwest documentation. HP documented these instances in Observations 2084, 2085, 2087, 2093 and Exceptions 2014 and 2039.
10-3-15	Information in the Directory Listing guides can be easily understood by the intended audience.	Satisfied	In general, the P-CLEC found Qwest's Directory Listing guides presented information clearly. However, the P-CLEC did encounter problems with the clarity of the <i>Facility Based CLECs and Reseller/Unbundled Network CLECs Directory Listing User Document</i> . HP issued Observation 2085 to document these problems.
10-3-16	Information in Qwest's Directory Listing guides is consistent with other information provided by Qwest.	Satisfied	The P-CLEC generally found the information in Qwest's Directory Listing guides to be consistent. However, the P-CLEC did find inconsistencies. HP documented these in Observations 2045, 2093 and Exceptions 2053 and 2083.
10-3-17	The information contained in Qwest's Directory Listing guides is accurate.	Satisfied	The P-CLEC found the information in Qwest's Directory Listing guides to be complete and accurate.
10-3-18	Revisions to the Directory Listing guides are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to its Directory Listing guides. Throughout the test, the P-CLEC received appropriate notification of these updates. Qwest publishes a revision history in its Directory Listing guides, identifying the version numbers and release dates of each publication.
10-3-19	The online tools are readily available to CLECs.	Satisfied	The P-CLEC used the Qwest online tools identified in Table 10-1.16: Online Tools and References. HP issued the following Incident Reports to address issues the P-CLEC encountered with the availability of Qwest's online tools:



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			Observations 2027, 2042. Exception 2007.
10-3-20	The online tools are complete in the coverage they provide of their respective subjects.	Satisfied	The P-CLEC found Qwest's online tools to be complete in the coverage of their respective subjects. However, the P-CLEC did identify deficiencies with the completeness of the information that Qwest provided in its USOC and FID Overview website. HP issued Observations 2002, 2071 and Exception 2007 to document these issues.
10-3-21	Information in the online tools can be easily understood by the intended audience.	Satisfied	In general, the P-CLEC found the information in Qwest's online tools to be clear and easy to understand. However, the P-CLEC did identify inconsistencies in information provided in the online tools. HP issued Observation 2041 and Exception 2058 to document these issues.
10-3-22	Information in the online tools is consistent with other information provided by Qwest.	Satisfied	In general, the P-CLEC found the information available in Qwest's online tools to be consistent with other Qwest documentation. The P-CLEC encountered inconsistencies with only one online tool – Qwest's USOC and FID Overview website, including the USOC/FID Finder. HP documented the P-CLEC's experiences with this tool in Observation 2002 and Exception 2007.
10-3-23	The information contained in the online tools is accurate.	Satisfied	The P-CLEC found the information contained in Qwest's online tools to be accurate in general. However, the P-CLEC did encounter deficiencies in the information contained in the USOC and FID Overview website. HP issued Observation 2051 and Exception 2007 to document these issues.
10-3-24	Revisions to online tools are identified to the CLEC community.	Satisfied	Qwest uses its Wholesale Customer Notification process to inform CLECs of updates to its online tools. Throughout the test, the P-CLEC received appropriate notification of updates. However, HP issued Observation 2018 to address Qwest's identification of IP address changes for Street Address Guide (SAG) and Feature Availability Matrix (FAM) downloads less than 48 hours prior to



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			implementation of the changes.
10-4-1	The <i>Service Interval Guide</i> (SIG) is readily available to CLECs.	Satisfied	Qwest publishes the current version of the SIG at http://www.qwest.com/wholesale/guides/sig/index.html . The SIG provides Qwest standard installation intervals, timelines for the receipt of FOCs, and completion intervals for repair activities.
10-4-2	The SIG provides complete coverage of the standard installation intervals and interval business rules for all wholesale products and services.	Satisfied	In general, the P-CLEC was able to find necessary information about standard service intervals in the SIG. However, the P-CLEC was unable to locate some interval information in the document. HP issued Observation 2080 and Exceptions 2011 and 2075 to document multiple SIG deficiencies.
10-4-3	Information in the SIG can be easily understood by its intended audience.	Satisfied	While researching service intervals, the P-CLEC experienced difficulty determining which information took precedence over other information in the SIG. HP issued Observation 2080 to address these difficulties.
10-4-4	Information provided in the SIG is consistent with other information provided by Qwest.	Satisfied	The P-CLEC received conflicting information regarding Saturday's applicability to service intervals for UNE-P POTS installations. The information published in the SIG differed from information the P-CLEC received from its Qwest Service Manager. HP documented this issue in Observation 2080.
10-4-5	The information provided in the SIG is accurate.	Satisfied	The P-CLEC encountered inaccurate information in the SIG. HP issued Observation 2080 to document the multiple deficiencies the P-CLEC identified.
10-4-6	Revisions to the SIG are identified to the CLEC community.	Satisfied	When Qwest publishes updates to the SIG, it notifies the CLEC community via its Wholesale Customer Notification process. The P-CLEC found, however, that revisions to the SIG were not always identified to the CLEC community in a timely manner. In Observation 2080, HP documented an incident in which Qwest did not provide adequate notice of SIG changes to allow the P-CLEC to analyze the changes, and communicate them to appropriate internal groups to implement any required system changes.



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			HP also issued Exception 2011, noting the SIG did not contain a Change Log or Revision History to identify changes between releases of the document.
10-4-7	The <i>LSRs Eligible for Flow-Through</i> document is readily available to CLECs.	Satisfied	Qwest publishes the <i>LSRs Eligible for Flow-Through</i> document at http://www.qwest.com/wholesale/ima/edi/release.html . Additionally, Qwest publishes an IMA EDI Release Notice when it releases the <i>LSRs Eligible for Flow-Through</i> document. Effective February 15, 2002, Qwest makes all future IMA EDI Release Notices available via the Customer Notification Letter Archive (CNLA) tool. HP documented in Observation 2008 that, prior to February 1, 2001, Qwest did not publish the <i>LSRs Eligible for Flow-Through</i> document on its website, and the document was only available to CLECs as part of the PID document.
10-4-8	The <i>LSRs Eligible for Flow-Through</i> document provides a complete list of flow-through eligible wholesale products and services.	Not Applicable	The <i>LSRs Eligible for Flow-Through</i> document evolved throughout the test. Qwest revised the document to further define the types of LSRs eligible for flow-through. Please refer to KPMG's Master Test Plan Test 13 - Order Flow Through Evaluation Report and associated Observations and Exceptions for additional information..
10-4-9	Information in the <i>LSRs Eligible for Flow-Through</i> document can be easily understood by the intended audience.	Satisfied	The <i>LSRs Eligible for Flow-Through</i> document is targeted to ordering- and provisioning-knowledgeable individuals. The P-CLEC found this document could be readily used and understood.
10-4-10	Information provided in the <i>LSRs Eligible for Flow-Through</i> document is consistent with other information provided by Qwest.	Satisfied	The <i>LSRs Eligible for Flow-Through</i> document is a stand-alone document about ordering processes and performance measurements. It does contain a limited amount of information that relates to Qwest's PIDs. Qwest publishes updates to the <i>LSRs Eligible for Flow-Through</i> document when changes for flow-through occur or Qwest implements a new IMA Release.
10-4-11	The information provided in the <i>LSRs Eligible for Flow-Through</i> document is	Not Applicable	Submitting a "flow-through"-eligible LSR did not always result in the LSR flowing through Qwest's ordering systems.



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Test Cross-Reference	Evaluation Criteria	Result	Comments
	accurate.		<p>through Qwest's ordering systems.</p> <p>Please refer to KPMG's Master Test Plan Test 13 - Order Flow Through Evaluation Report and associated Observations and Exceptions for additional information.</p>
10-4-12	Revisions to the <i>LSRs Eligible for Flow-Through</i> document are identified to the CLEC community.	Satisfied	<p>Qwest publishes updates to the <i>LSRs Eligible for Flow-Through</i> document when changes to flow-through occur or Qwest implements a new IMA Release.</p> <p>The P-CLEC began certification activities using version 1.0, dated May 2000. The document has been revised and re-published six (6) times during the course of the ROC 271 test. The version numbers and publication dates of these revisions are identified in Table 10-1.18: <i>LSRs Eligible for Flow-Through Document References</i>.</p> <p>Qwest provided notification of each new release of the document to the CLEC community.</p> <p>Qwest distributes revised versions to the CLEC community, but the document does not contain a change log section or annotation of revisions. The e-mail notification associated with version 7.0 was the only notification that documented revisions included in that version.</p>
10-4-13	Qwest Wholesale Customer Notifications are readily available to CLECs.	Satisfied	<p>Qwest distributes Wholesale Customer Notifications via U.S. Mail or e-mail. CLECs must register to receive these notifications through the Wholesale Customer Notifications Mailing List Subscription Tool (CNLA Subscribe) at http://www.qwest.com/wholesale/notices/cnla/maillist.html.</p> <p>The notifications the P-CLEC received are identified in Table 10-1.19: <i>Qwest Wholesale Customer Notifications</i>. The P-CLEC received all of its notifications via e-mail only.</p> <p>Throughout the test, the P-CLEC received appropriate notification of updates.</p> <p>However, HP issued Exception 2018 to address un-announced interconnection gateway outages. Qwest responded to this Exception stating its implementation of an electronic e-mail system event notification process.</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
10-4-14	Information contained in Qwest Wholesale Customer Notifications is complete with respect to the intent of the notification.	Satisfied	The P-CLEC generally found the notifications it received to be complete with respect to the intent of the notification. However, the P-CLEC did encounter instances where the Notifications lacked complete information. HP documented the P-CLEC's findings in the following Incident Reports: Observations 2035, 2058 and 2063. Additionally, notifications generally direct the recipient to an appropriate Qwest website or documentation for greater detail.
10-4-15	Information provided in Qwest Wholesale Customer Notifications can be easily understood by the audience.	Satisfied	Qwest targets its Wholesale Customer Notifications to a wide audience. CLECs can select the notifications each individual within the organization will receive. Accordingly, Qwest expects the recipient to have knowledge of the topic areas of notifications received. The P-CLEC found that these notifications could be readily used and understood.
10-4-16	Information provided in Qwest Wholesale Customer Notifications is consistent with other information provided by Qwest.	Satisfied	Qwest Wholesale Customer Notifications generally direct the recipient to an appropriate Qwest website or documentation for greater detail. The P-CLEC did not find any inconsistencies in the information provided in the notifications it received.
10-4-17	Qwest Wholesale Customer Notifications provide accurate information.	Satisfied	If Qwest distributes a Wholesale Customer Notification that contains errors, it re-publishes the notice, usually with the term "revised," "revision," "correction," or "resend" in the subject line of the redistribution. From January 1, 2002 through April 1, 2002, Qwest distributed 30 revised notices out of a total of 786 notifications. In 2001, Qwest distributed 53 revised notices out of a total of 2043 notifications.
10-4-18	Revisions to Qwest Wholesale Customer Notifications are identified to the CLEC community.	Satisfied	Qwest publishes revisions to Wholesale Customer Notifications on an "as needed" basis. Qwest identifies revisions to Wholesale Customer Notifications by re-publishing the notices, usually with the terms "revised," "revision," "correction," or "resend" in the subject line.
10-4-19	The Loss & Completion	Satisfied	Initially, Qwest's Account Teams



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Test Cross-Reference	Evaluation Criteria	Result	Comments
	Report Information document is readily available to CLECs.		<p>distributed the <i>LOSS & COMPLETION REPORT SAMPLES And REPORT DELIVERY OPTIONS</i> document to those CLECs that requested it. The P-CLEC received two versions of the document, dated February 10, 2000 and March 21, 2001, from its Qwest Account Team.</p> <p>HP issued Observation 2040 to address Qwest's initial failure to publish this documentation on the Qwest wholesale website. Qwest now publishes the Loss & Completion Report descriptions at http://www.qwest.com/wholesale/clecs/output.html.</p>
10-4-20	The Loss & Completion Report Information document provides complete coverage of purpose, use, and formatting of L&C reports.	Satisfied	<p>Qwest revised the Loss & Completion Report Information documentation several times during the course of the test. These revisions document data formats and additional types of Qwest internal service orders that can appear on the reports.</p> <p>HP identified issues with the Loss & Completion Reports documentation in Observations 2040, 2083, 2088 and 2091.</p> <p>In the CMP, Qwest and the CLEC community are currently reviewing and revising the Loss & Completion Report process.</p>
10-4-21	Information provided in the Loss & Completion Report Information document can be easily understood by the intended audience.	Satisfied	<p>Qwest's Loss & Completion Report Information targets two distinct audiences. A CLEC's IT organization can use the technical specification portions of the documentation. A CLEC Operations Center can use the content of the Loss & Completion Report to assist in tracking submitted LSRs and the associated Qwest internal service orders.</p> <p>The P-CLEC was able to use and understand these documents.</p>
10-4-22	Information provided in the Loss & Completion Report Information document is consistent with other information provided by Qwest.	Satisfied	<p>The Loss & Completion Report Information document was initially a stand-alone technical specifications document. HP identified Loss & Completion Report documentation inconsistencies, and Qwest's failure initially to publish the document on its website, as part of Observation 2040. Qwest subsequently published the information as part of its wholesale website.</p>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			In response to HP's Observation 2088, Qwest maintains a <i>Loss/Completion Sample Report Job Aid</i> as a web-based training application. This job aid is available at http://www.qwest.com/wholesale/training/coursecatalog.html .
10-4-23	The information contained in the Loss & Completion Report Information document is accurate.	Satisfied	The Loss & Completion Report documentation was initially inaccurate with regard to data formats and types of Qwest internal service orders that can appear on the reports. HP identified issues with the Loss & Completion Reports documentation in Observations 2040, 2083, 2088, and 2091.
10-4-24	Revisions to the Loss & Completion Report Information document are identified to the CLEC community.	Satisfied	Qwest publishes revisions to Loss & Completion Report Information documents published on its wholesale website on an "as needed" basis. Qwest notifies the CLEC community of revisions via its Wholesale Customer Notification process.
10-4-25	The LSOG documents are readily available to CLECs.	Satisfied	Qwest publishes its LSOG documents at http://www.qwest.com/wholesale/clecs/lsoq.html . This URL provides links to individual LSOG documents that are organized by product. Qwest's LSOG website also provides links to applicable ordering forms.
10-4-26	The LSOG documents provide complete coverage of Qwest's ordering business rules.	Satisfied	The LSOG describes the ordering guidelines for local service, including descriptions of Qwest-specific ordering fields, and identification of fields that Qwest does not use. HP identified issues with the completeness of Qwest's LSOG documentation in the following Incident Reports: Observations 2005, 2019, 2064, 2076, 2082, 2093. Exceptions 2038, 2039, 2043, 2044, 2046, 2047, 2077, 2080, 2081, 2083, 2084.
10-4-27	Information provided in the LSOG documents can be easily understood by the intended audience.	Satisfied	The P-CLEC was able to understand the information in the LSOG documents.
10-4-28	Information provided in the LSOG documents is consistent with other information provided by Qwest.	Satisfied	The P-CLEC found that the information provided in the LSOG documents is not always consistent with other Qwest information it used. HP identified issues with the inconsistency



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			of LSOG documents and other information provided by Qwest in the following Incident Reports: Observations 2045 and 2046. Exceptions 2040, 2041, 2042, 2050.
10-4-29	The information contained in the LSOG documents is accurate.	Satisfied	The P-CLEC finds that the information contained in the LSOG documents is currently accurate. However, the P-CLEC did encounter inaccuracies with several documents and manual order forms during the test. HP documented these inaccuracies in the Observation 2050.
10-4-30	Revisions to the LSOG documents are identified to the CLEC community.	Satisfied	When Qwest publishes updates or revisions to its LSOG documentation, it notifies the CLEC community through the distribution of Wholesale Customer Notifications. Additionally, Qwest publishes a History Log within each LSOG document that identifies the revisions made in each release.
10-5-1	Qwest's web-based training applications are readily available to CLECs.	Satisfied	Qwest publishes descriptions of all web-based training applications at http://www.qwest.com/wholesale/training/coursecatalog.html . CLECs can register for, and initiate, the training applications by completing the registration form at http://www.qwest.com/wholesale/training/wbtForm.html . The P-CLEC did not experience any difficulties registering for and completing Qwest's web-based training applications.
10-5-2	Qwest's web-based training applications provide complete coverage of the subject materials.	Satisfied	The P-CLEC completed ten of the web-based training applications that Qwest makes available. These courses are identified in Table 10-1.23: Web-based Training Application References. For the most part, the P-CLEC found the training applications to be complete in their coverage of the subject matter. The P-CLEC did find incomplete information with respect to some web-based training applications. HP documented these issues in Exceptions 2004, 2012, 2059, and 2069.
10-5-3	Information contained in Qwest's web-based training	Satisfied	The P-CLEC was able to understand the content of the web-based training



April 19, 2002

10-A-58

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Test Cross-Reference	Evaluation Criteria	Result	Comments
	applications can be easily understood by the intended audience.		applications and was able to apply the training information to its operational activities.
10-5-4	Information provided in Qwest's web-based training applications is consistent with other information provided by Qwest.	Satisfied	The P-CLEC did not find any inconsistencies in the information conveyed by the training applications when compared to other Qwest documentation and information that it used.
10-5-5	The information conveyed in Qwest's web-based training applications is accurate.	Satisfied	The P-CLEC completed ten of the web-based training applications that Qwest makes available. These courses are identified in Table 10-1.23: Web-based Training Application References. Within these training applications, the P-CLEC did not observe any instances in which the information was inaccurate.
10-5-6	Revisions to Qwest's web-based training applications are identified to the CLEC community.	Satisfied	When Qwest modifies existing training applications or adds new training opportunities, it provides notice to the CLEC community through the Wholesale Customer Notification process.
10-5-7	Qwest's Instructor-led training course materials are readily available to CLECs.	Satisfied	Qwest publishes descriptions of its Instructor-led wholesale training courses at http://www.qwest.com/wholesale/training/coursecatalog.html . CLECs must register for, and attend, a session of a course to obtain the materials for that course. CLECs can register for Instructor-led courses online at http://www.qwest.com/wholesale/training/course_reg_form.html . The P-CLEC did not encounter any difficulties registering for and attending Qwest's Instructor-led training courses.
10-5-8	Qwest's Instructor-led training course materials provide complete information for the subjects of the courses.	Satisfied	The P-CLEC attended 14 of Qwest's Instructor-led training courses and reviewed the course materials. The courses that the P-CLEC attended are identified in Table 10-1.24: Instructor-led Course References. For the majority of courses the P-CLEC attended, it found the course materials were complete in their coverage of the course topics. However, in some instances, the P-CLEC found course information to be incomplete. HP issued Observations 2003 and 2006 to document deficiencies with the course materials for Qwest's IMA Classic and IMA



April 19, 2002

10-A-59

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Test Cross-Reference	Evaluation Criteria	Result	Comments
			Directory Listing training courses.
10-5-9	Information contained in Qwest's Instructor-led training course materials can be easily understood by the intended audience.	Satisfied	The course materials the P-CLEC received were generally clear and the information was understandable. However, some of the materials the P-CLEC received during the IMA training it attended were illegible. HP documented these issues as part of Observations 2003.
10-5-10	Information contained in Qwest's Instructor-led training course materials is consistent with other information provided by Qwest.	Satisfied	In general, the P-CLEC found that the information provided in the Instructor-led course materials was consistent with other Qwest documentation it used. However, during the IMA Directory Listing course, information in the course materials conflicted with information in other Qwest documents. HP documented this issue in Observation 2006.
10-5-11	The information conveyed in Qwest's Instructor-led training course materials is accurate.	Satisfied	In general, the P-CLEC found the Instructor-led materials to be accurate. However, during an IMA training course, many of the handouts the P-CLEC received contained outdated or incorrect information. The course instructor verbally corrected these inaccuracies during the course presentation. HP documented this issue in Observation 2003.
10-5-12	Revisions to Qwest's Instructor-led training course materials are identified to the CLEC community.	Satisfied	Generally, the training materials the P-CLEC obtained from Qwest's Instructor-led training courses contained revision dates identifying the most recent changes to the materials. However, HP did issue Observation 2003 to document issues with Qwest's failure to update course materials for the IMA training class.



April 19, 2002

10-A-60

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12. Test Results: Pre-ordering, Ordering and Provisioning (POP) Functional Evaluation (Test 12)

1.0 Description

The POP Functional Evaluation was a comprehensive review of the functional elements of Pre-Ordering, Ordering, Provisioning, Pre-Order/Order Data Integration, and an analysis of Qwest's performance in comparison to its retail systems. The objective of this test was to validate the existence, functionality, and behavior of Qwest interfaces and processes required for pre-ordering, ordering, and provisioning transaction requests and responses. The POP functions tested were also validated against Qwest documentation that specifies those functions that are and are not available within the Qwest Operation Support Systems (OSS).

For this evaluation, KPMG Consulting was responsible for the administration of the testing process. Hewlett-Packard Consulting (HPC), which held the role of a pseudo-Competitive Local Exchange Carrier (P-CLEC), established the processes, systems, and facilities required to process the volume and mix of transactions for the tests specified in the *Master Test Plan* (MTP).

As part of this process, HPC established connectivity to the Qwest Interconnect Mediated Access Electronic Data Interface (IMA EDI), the Interconnect Mediated Access Graphical User Interface (IMA GUI), and manual OSS interfaces. In general, the goal of HPC was to replicate to the fullest extent feasible, the responsibilities, behavior, and experiences of a CLEC attempting to conduct wholesale business with Qwest within the 13 participating states of the Regional Oversight Committee (ROC).

The participating ROC states are divided into three regions: the Western Region, covering Washington and Oregon; the Central region, covering Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming; and the Eastern Region, covering Iowa, Minnesota, Nebraska, North Dakota, and South Dakota.

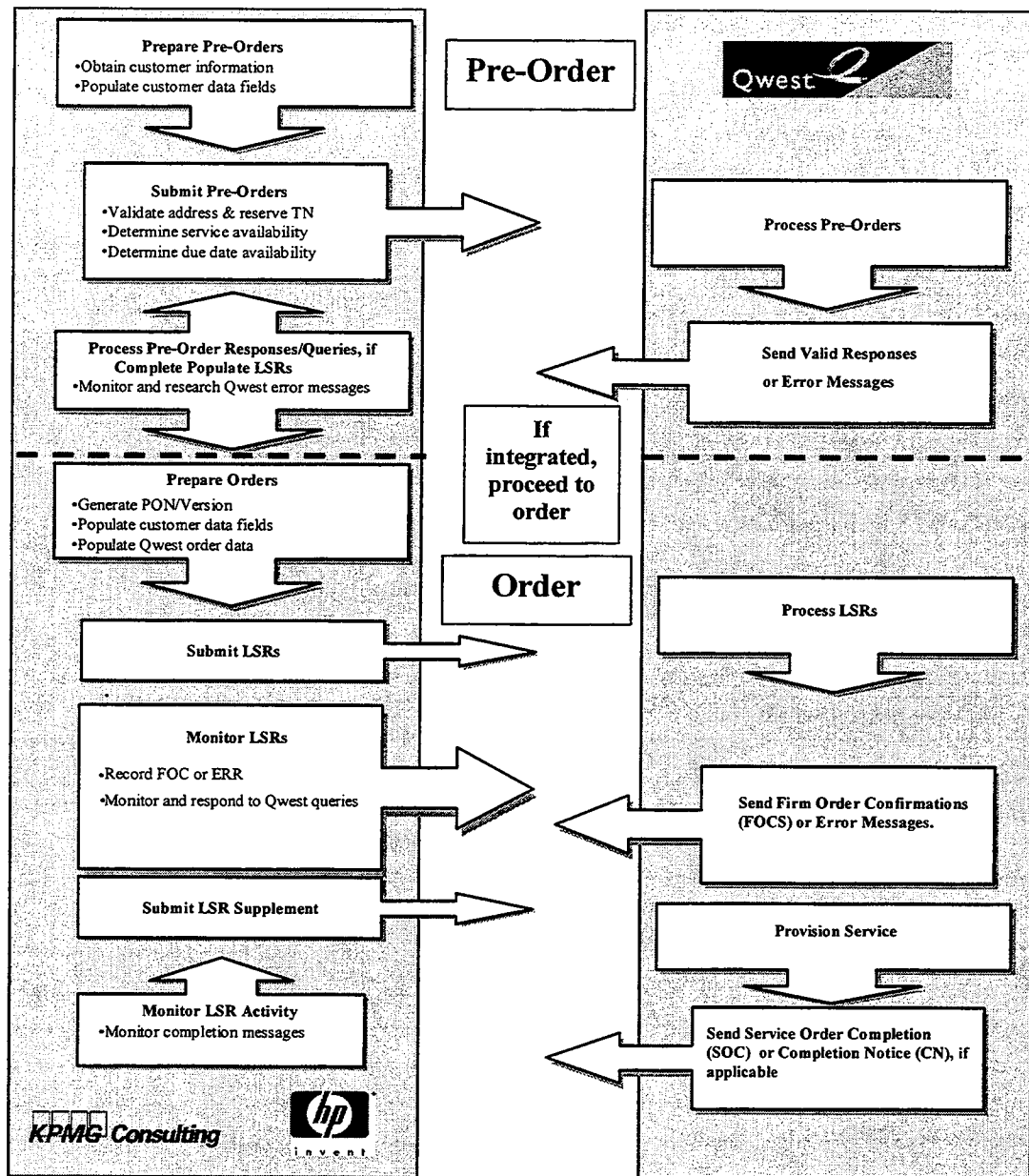
2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Figure 12-1 provides an overview of the Qwest IMA EDI and IMA GUI pre-ordering and ordering processes.

Figure 12-1: POP Functional Evaluation Transaction Overview



HPC prepared and submitted pre-order and Local Service Request (LSR) order transactions to Qwest. Qwest processed and returned valid pre-order responses, Firm Order Confirmations (FOCs), error messages, Service Order Completions (SOCs), and Completion Notices. HPC established and maintained the connectivity required for the submission of orders and pre-orders via both IMA EDI and IMA GUI.

2.2 Scenarios

The following tables identify the pre-order and order scenarios that were used in this test. Pre-order and order scenarios tested were drawn from the scenarios defined in Appendix D of the MTP. The scenarios outline, at a high level, the specific products and services to be ordered, and activity types to be requested. These scenarios were agreed upon by the ROC Technical Advisory Group (TAG).

Table 12-1: Pre-Order Test Scenarios

Activity	Residence	Business
Validate Customer Address (AVQ)	X	X
Obtain Customer Service Record (CSRQ)	X	X
Reserve Telephone Numbers (TNAQ & TNSQ)	X	X
Determine Product and Feature Availability (SAQ)	X	X
Perform Facility Availability Check (FAQ) ¹	X	X
Schedule Appointment (AAQ & ASQ)	X	X
Obtain Loop Qualification Information (RLDQ) ²	X	X
Validate Customer CFA (CFAQ)	X	X
Obtain Directory Listings Information for an Existing UNE-L Customer ³	X	X
Obtain Design Layout Record (DLRQ) ⁴	X	X
Validate Meet Point (MPQ) ⁵	X	X
Cancel an Appointment or Reserved TN (CTQ) ⁶	X	X

Table 12-2: Resale Order Test Scenarios

Activity	Res. POTS	Bus. POTS	Centrex 21	Private Line	PBX
Migration from Qwest "as is"	X	X		X	X
Migration from Qwest "as specified"	X	X	X		
CLEC to CLEC migration	X	X			
New customer	X	X	X		
Add lines (L)/trunks (T)	X (L)	X (L)	X (L)		X (T)
Feature changes to existing customer	X	X	X		
Telephone number change	X	X			
Directory change	X	X			

¹ Includes ADSL qualified facility availability.

² RLDQ pre-order was only evaluated for functionality as a result of the outcome of Exception 2063.

³ The directory listing pre-order for an existing UNE-loop customer was only evaluated for functionality per MTP Change Request #13, which was approved by the ROC TAG on September 6, 2001.

⁴ The Design Layout Record (DLRQ) pre-order was only evaluated for functionality.

⁵ The Meet Point Query (MPQ) pre-order was only evaluated for functionality as part of the overall line splitting and line sharing functionality tests.

⁶ The Cancel Transaction Query (CTQ) pre-order was only evaluated for functionality.

Activity	Res. POTS	Bus. POTS	Centrex 21	Private Line	PBX
Migrate customer with voice mail	X	X			
Moves	X	X	X		
Suspend/restore service	X	X			
Disconnect (full and partial)	X	X		X	X
PIC/LPIC ⁷ changes	X	X	X		X

Table 12-3: UNE⁸ Platform (UNE-P) Order Test Scenarios

Activity	Residential POTS	Business POTS
Migration from Qwest "as specified"	X	X
Migrate from CLEC to CLEC	X	X
New customer	X	X
Add lines (L)/trunks (T)	X (L)	X (L)
Feature changes to existing customer	X	X
Telephone number change	X	X
Directory change	X	X
Full and partial migration with Directory Listing (DL) changes	X	X
Convert from Resale products to UNE-P products	X	X
Migrate an account with Qwest initiated blocking	X	X
Migrate an account with pending service order	X	X
Establish new user with vanity telephone number (TN)		X
Moves	X	X
Suspend/restore service	X	X
Disconnect (full and partial)	X	X
Change PIC/LPIC	X	X
Migrate service to a line splitting arrangement ⁹	X	X
Line splitting customer disconnects high speed data but maintains voice service		X

⁷ Primary Interexchange Carrier (PIC); Local Primary IntraLATA Carrier (LPIC).

⁸ Unbundled Network Elements.

⁹ Line Splitting was only evaluated for functionality.

Table 12-4: UNE-Loop Order Test Scenarios

Activity	2-wire Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DS1 Capable Loop	Stand-Alone LNP ¹⁰	UDIT ¹¹	EEL ¹²	Dark Fiber	Line Sharing	Stand-Alone DL
Migrate lines from Qwest without Local Number Portability (LNP)	X	X	X	X	X			X		X	
Migrate lines from Qwest with LNP	X		X	X	X ¹³			X			
Migrate from CLEC to CLEC	X	X	X	X							
Purchase lines for a new customer	X	X	X	X	X			X			
Add new lines to existing customer	X	X	X	X	X			X			
Add new interoffice DS1/DS3 facilities							X		X		
Convert from Resale to UNE loop without LNP	X	X	X	X							
Convert from Resale to UNE loop with LNP	X			X							
Convert from UNE-P to UNE loop without LNP	X		X	X							
Convert from UNE-P to UNE loop with LNP	X			X							
Moves (outside)	X		X	X							
Disconnect (full)	X		X	X	X			X			
Add a new directory listing on existing account											X
Convert from line sharing arrangement to UNE-loop		X	X								

¹⁰The timeliness of LNP orders was tested via IMA EDI because participating CLEC's user IDs and passwords were required to submit the orders via IMA GUI. A limited number of LNP orders were submitted to verify functionality of the interface.

¹¹ Unbundled Interoffice Dedicated Transport.

¹² Enhanced Extended Loop.

¹³KPMG Consulting was unsuccessful in gaining the cooperation of any CLEC operating in Qwest territory to support LNP testing for DS1-capable loops. As a result, KPMG Consulting did not test any LNP scenarios for DS1-capable loops identified in Appendix D of the MTP.

Activity	2-wire Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DS1 Capable Loop	Stand-Alone LNP ¹⁰	UDIT ¹¹	EEL ¹²	Dark Fiber	Line Sharing	Stand-Alone DL
Port number from Qwest to CLEC without facilities						X					

2.3 Test Targets & Measures

The test targets were Qwest's pre-ordering and ordering systems accessed via IMA EDI, IMA GUI, and manual OSS interfaces. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1, "Results & Analysis."

Table 12-6: Test Target Cross Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Pre-Order	Submit Pre-Order	Clarity, accuracy, and completeness of documentation	HPC Report
		Accessibility of GUI (excluding interoffice facilities)	HPC Report
		Accessibility of computer-to-computer interface (excluding interoffice facilities)	12-1-1
		Accuracy and completeness of functionality	12-2-1 – 12-2-3
	Receive Pre-Order Response	Timeliness of response	12-3-1 – 12-3-11, 12-4-1 – 12-4-11
		Completeness of response	HPC Report
		Clarity and accuracy of error messages	HPC Report
		Accuracy, responsiveness, and completeness of Help Desk Support	HPC Report
		Usability of information	HPC Report
	Consistency with retail capability	12-11-3 – 12-11-4	
Order	Submit Order	Clarity, accuracy, and completeness of documentation	HPC Report
		Accessibility of GUI (excluding interoffice facilities)	HPC Report
		Accessibility of computer-to-computer interface (excluding interoffice facilities)	12-1-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
		Accuracy and completeness of functionality	12-5-1 – 12-5-10, 12-10-1
	Receive Order Response	Timeliness of response	12-6-1 – 12-6-6, 12-7-1 – 12-7-9, 12-8-1 – 12-8-3, 12-9-1 – 12-9-6, 12-10-2 – 12-10-5
		Completeness of response	HPC Report
		Clarity and accuracy of error messages	HPC Report
		Accuracy, responsiveness, and completeness of Help Desk Support	HPC Report
		Usability of information	HPC Report
		Consistency with retail capability	12-11-1 – 12-11-4
Provisioning	Receive Notification of Jeopardy or Delay	Receipt of notification	12-9-1 – 12-9-3
	Receive Completion Notification	Receipt of notification	12-10-1
	Provisioning of Products, Services, and Features	Timeliness of provisioning	Test 14 Provisioning Evaluation
		Frequency of delay or rescheduling of provisioning	Test 14 Provisioning Evaluation
		Accuracy and completeness of provisioning	Test 14 Provisioning Evaluation
		Completeness and consistency of process	Test 14 Provisioning Evaluation

2.4 Evaluation Methods

To allow for service request submission, Qwest provided KPMG Consulting with test bed accounts that were provisioned according to KPMG Consulting's specifications. The Pre-order and order scenarios tested, which were drawn from the scenarios defined in Appendix D of the MTP, outline, at a high level, the specific products and services that were ordered, and activity types that were requested. KPMG Consulting used test scenario descriptions, test bed accounts, and Qwest ordering documentation to develop test cases and instances for each scenario.

Each test case contained a detailed description of the case and described order requirements, including:

- Customer type (business or residential);

- Conversion activity (partial and full conversion)¹⁴;
- Disconnect;
- Feature changes;
- Flow-through designation; and
- Other information that was necessary to execute the test case.

As test administrator, KPMG Consulting provided HPC with a schedule of instances to be submitted that detailed priority, interface, and due date, when applicable, as well as the corresponding account information for each test case instance. HPC then executed the pre-order and order transactions using a variety of service delivery methods (e.g., Resale, UNE-P, UNE-Loop) and activity types (e.g., conversion “as is,” conversion “as specified”), as defined by KPMG Consulting in the test scenario descriptions (see Tables 12-1, 12-2, 12-3, and 12-4).

KPMG Consulting analyzed data provided by HPC on transaction submissions and responses, and on Qwest provisioning activities. Where available, this information was collected and maintained electronically.

Both Access Service Request (ASR) and Local Service Request (LSR) orders were tested.¹⁵ Erred as well as error-free transactions were tested. Not all orders were processed through the physical provisioning process. Some orders were future-dated, and others were canceled before provisioning activities commenced. Verification and validation of provisioning activities were performed in Test14 Provisioning Evaluation.

KPMG Consulting conducted a comparative analysis between the experiences of the P-CLEC, as well as those of real CLECs operating in the 13 participating ROC states. To this end, KPMG Consulting conducted site visits at three commercial CLEC service centers, and observed CLEC representatives submitting pre-orders and orders via IMA GUI. KPMG Consulting also conducted a comparative analysis between the P-CLEC’s transaction data and commercial CLEC data. In addition, KPMG Consulting involved CLECs in aspects of live transaction testing, such as Unbundled Dedicated Interoffice Transport (UDIT) submission, as well as the submission of orders on accounts with pending activity.

KPMG Consulting also conducted a comparative analysis of ordering and pre-ordering functionality for Qwest retail and wholesale services. By conducting interviews and observations at both Qwest and commercial CLEC call centers, KPMG Consulting examined and compared the pre-order and order requirements, required customer information, standard intervals, and expedite procedures for various products and features in the wholesale and retail environments.

Other data collected for the POP Functional Evaluation included Qwest Network Disclosures documentation, pre-order and order business rules, Qwest Service Interval Guides, Qwest

¹⁴ In the case of a full conversion, all of a customer’s lines are migrated to a new service provider. In the case of a partial conversion, some lines are migrated to a CLEC, while at least one line remains with Qwest.

¹⁵ KPMG Consulting used a commercial CLEC operating in the Qwest territory in order to support ASR testing in the form of UDIT orders. However, due to limited CLEC participation, KPMG did not have a sample size large enough to evaluate UDIT timeliness, as stipulated in the MTP.

technical publications and the *Qwest Service Performance Indicator Definitions (PID)*, Version 3.0, issued May 31, 2001.

2.4.1 EDI Functional Evaluation

As the P-CLEC, HPC used the *Local Service Ordering Guidelines (LSOG) 5 Business Rules* and Network Disclosures documentation to prepare pre-order and order transactions. The Qwest business rules detail the form, field, and value information that is required to submit valid pre-order inquiries and order requests. The Network Disclosures documentation details mapping of business field entries to EDI transaction sets, for transmission to Qwest via IMA EDI.

HPC used an internally developed application to populate pre-order and order transactions in the Formset Common Interchange Format (FCIF) file format. FCIF files were then translated into EDI format and transmitted to Qwest. Responses from Qwest were received by HPC in EDI format and translated into FCIF files.

HPC submitted stand-alone pre-orders and orders via IMA EDI so that KPMG Consulting could evaluate Qwest system functionality. When necessary, pre-orders were also submitted to obtain information required to validate customer information, or to receive input for a subsequent LSR. HPC analyzed pre-order and order field content and field formats to evaluate compliance with the Qwest business rules.

KPMG Consulting evaluated EDI order system availability throughout the duration of the POP Functional Evaluation. From April 11, 2001 through March 21, 2002, 27,485 order transactions were submitted via EDI at a frequency of one every two minutes, during Qwest hours of operation.¹⁶ Every transaction for which a Functional Acknowledgement (FA) was not received was counted against the availability percentage. Periods of planned Qwest system outages were excluded from this evaluation.

2.4.2 GUI Functional Evaluation

To prepare pre-order and order transactions, HPC used the *Local Service Ordering Guidelines (LSOG) 5 Business Rules* and various IMA GUI user guides. The Qwest business rules detail the form, field, and value information required to submit valid pre-order inquiries and order requests.

HPC populated and then submitted various types of pre-order and order transactions to Qwest. Both the IMA GUI and IMA EDI transactions submitted during the test were drawn from the same set of test case scenarios. HPC captured information (e.g., date and time-stamp) pertaining to order and pre-order submissions, and response postings.

HPC submitted stand-alone pre-orders and orders via IMA GUI so that KPMG Consulting could evaluate Qwest system functionality. When necessary, pre-orders were submitted to obtain information to validate customer information or to provide required data for a subsequent LSR.

¹⁶ Before July 1, 2001, scheduled hours of operation were defined as 6:00 AM – 10:00 PM, Monday through Friday, excluding holidays. Saturday hours of operation were defined as 6:00 AM – 8:00 PM. There were no hours of operation on Sundays and Holidays. After July 1, 2001, scheduled hours of operation are defined as 6:00 AM – 12:00 midnight, Monday through Friday, excluding holidays. Saturday hours of operation are defined as 6:00 AM – 9:00 PM, and Sunday hours of operation are defined as 12:00 noon – 6:00 PM. There are no hours of operation on Holidays.

2.5 Analysis Methods

The POP Functional Evaluation included evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. The data collected were analyzed against these evaluation criteria, which are detailed in Section 3.1 below.

IMA EDI, IMA GUI, and manual transaction responses were examined for consistency with Qwest's pre-order and order business process flow, as described in Section 2.1. KPMG Consulting evaluated the accessibility of the IMA EDI interface, the timeliness of responses, and the accuracy and completeness of functionality for both IMA EDI and IMA GUI.

In its evaluation of test performance, KPMG Consulting applied the standards documented in *Qwest Service Performance Indicator Definitions (PID)*, Version 3.0, issued May 31, 2001, with one exception; KPMG Consulting applied the *Qwest Service Performance Indicator Definitions (PID)*, Version 4.0, issued October 22, 2001, for the retest of Exception 3085 and Exception 3086. If no defined PID standard was established, KPMG Consulting used its professional judgment to evaluate performance. Results in Section 3.0 were calculated based on HPC's internal time-stamps, which may differ from the measurement points reported by Qwest. This difference is due to the fact that KPMG Consulting measures HPC's end-to-end response time, while Qwest measures processing time within its environment.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 12-7: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Results	Comments
<i>Accessibility of Computer-to-Computer Interface</i>			
12-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.	Satisfied	<p>EDI order transaction capability is consistently available during scheduled hours of operation.</p> <p>The PID (GA-2)-defined standard is 99.25% availability of the IMA EDI Interface for order transaction capability during Qwest's scheduled hours of operation.</p> <p>EDI order transaction capability was available for 99.97% of Qwest's scheduled hours of operation.</p> <p>EDI availability was evaluated using an automated system that transmitted an order transaction to Qwest, via IMA</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>EDI, every two minutes during Qwest's scheduled hours of operation. A transaction for which a Functional Acknowledgement (FA) was not received was counted against the availability percentage.</p>
<i>Pre-order Process Accuracy and Completeness</i>			
12-2-1	Qwest systems provide required pre-order functionality.	Satisfied	<p>Qwest systems provide required pre-order functionality to process 14 of 14 pre-order transaction types.</p> <p>During initial testing, HPC was unable to validate addresses (AVQs) by telephone number (TN) in IMA GUI and IMA EDI Releases 6.0 and 7.0. This problem was limited to new TNs established by CLECs in Qwest's system. HPC issued Exception 2055.</p> <p>Qwest stated that it updated its PREMIS database to support wholesale and retail accounts. In addition, Qwest completed a two-stage effort to identify and add wholesale data that was not present.</p> <p>During subsequent testing, HPC encountered the same database problems and issued an addendum to the Exception.</p> <p>Qwest subsequently completed a system fix, as well as issued a notifier to its Service Delivery Coordinators (SDCs) to ensure that the PREMIS database would be maintained correctly in the future.</p> <p>In a second retest, HPC did not uncover any additional issues. See Exception 2055 for additional information. Exception 2055 is closed.</p> <p>Also during testing, HPC was unable to complete Raw Loop Data Queries (RLDQs) by TN or address in IMA GUI and IMA EDI Releases 6.0 and 7.0. HPC issued Exception 2063.</p> <p>Qwest stated that it updated its systems to give Release 7.0 the same functionality as Release 8.0. Upon retest, HPC was able to perform the RLDQ successfully. See Exception 2063 for additional information. Exception 2063 is closed.</p> <p>See Table 12-1 for additional transaction</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			details.
12-2-2	Qwest systems provide responses to pre-order transactions submitted via IMA GUI.	Satisfied	<p>Qwest systems provide responses to pre-order transactions submitted via IMA GUI.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that 95% or more of pre-orders queries must receive a response.</p> <p>Of 4,038 pre-order queries submitted, 4,038 (100%) received a response</p> <p>In addition, the PID (PO-1C)-defined standard allows for 0.50% of pre-order queries transmitted in the reporting period to time out¹⁷ before receiving a response.</p> <p>Of 4,038 transactions submitted, none (0.0%) timed out.</p> <p>See Table 12-8 for additional transaction details.</p>
12-2-3	Qwest systems provide responses to pre-order transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provide responses to pre-order transactions submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that 95% or more of pre-orders queries must receive a response.</p> <p>Of 17,486 pre-order queries submitted, 17,422 (99.63%) received a response.</p> <p>In addition, the PID (PO-1C)-defined standard allows for 0.50% of pre-order queries transmitted in the reporting period to time out before receiving a response.</p> <p>Of 17,486 transactions submitted, 10 (0.06%) timed out.</p> <p>See Table 12-8 for additional transaction details.</p>
<i>IMA GUI Pre-order Timeliness</i>			
12-3-1	Qwest systems provide timely responses to Address Validation Queries (AVQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to AVQs submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average AVQ pre-order response receipt</p>

¹⁷ A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>within 10 seconds.</p> <p>For 1,091 AVQ responses received, the average response time was 2.83 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-2	Qwest systems provide timely responses to Telephone Number Availability Queries (TNAQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to TNAQs submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average TNAQ pre-order response receipt within 10 seconds.</p> <p>For 126 TNAQ responses received, the average response time was 2.42 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-3	Qwest systems provide timely responses to Customer Service Record Queries (CSRQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to CSRQs submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average CSRQ pre-order response receipt within 12.50 seconds.</p> <p>For 839 CSRQ responses received, the average response time was 4.79 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-4	Qwest systems provide timely responses to Appointment Availability Queries (AAQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to AAQs submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average AAQ pre-order response receipt within 10 seconds.</p> <p>For 58 AAQ responses received, the average response time was 3.07 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-5	Qwest systems provide timely responses to Facility Availability Queries (FAQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to FAQs submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average FAQ pre-order response receipt within 25 seconds.</p> <p>For 270 FAQ responses received, the average response time was 15.40 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-6	Qwest systems provide timely responses to Service Availability Queries (SAQs)	Satisfied	<p>Qwest systems provide timely responses to SAQs submitted via IMA GUI.</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
	submitted via IMA GUI.		<p>The PID (PO-1A)-defined standard is average SAQ pre-order response receipt within 25 seconds.</p> <p>For 30 SAQ responses received, the average response time was 6.23 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-7	Qwest systems provide timely responses to Qualified ADSL Facility Availability Queries (FAQs-ADSL) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to FAQs-ADSL submitted via IMA GUI.</p> <p>The PID (PO-1A)-defined standard is average FAQ-ADSL pre-order response receipt within 20 seconds.</p> <p>For 29 FAQ-ADSL responses received, the average response time was 10.50 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-8	Qwest systems provide timely responses to Connecting Facility Assignment Queries (CFAQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to CFAQs submitted via IMA GUI.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that average CFAQ pre-order responses are received within 25 seconds.</p> <p>For 780 CFAQ responses received, the average response time was 11.40 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-9	Qwest systems provide timely responses to Appointment Selection Queries (ASQs) submitted via IMA GUI.	Satisfied	<p>Qwest provides timely responses to ASQs submitted via IMA GUI.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that average ASQ pre-order responses are received within 10 seconds.</p> <p>For 39 ASQ responses received, the average response time was 1.85 seconds.</p> <p>See Table 12-8 for additional transaction details.</p>
12-3-10	Qwest systems provide timely responses to Telephone Number Selection Queries (TNSQs) submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely responses to TNSQs submitted via IMA GUI.</p> <p>In absence of an established PID, KPMG Consulting assigned a benchmark that average TNSQ pre-order responses are received within 10 seconds.</p> <p>For 109 TNSQ responses received, the</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			average response time was 0.77 seconds. See Table 12-8 for additional transaction details.
12-3-11	Qwest systems provide timely pre-order error message responses via IMA GUI.	Diagnostic	Qwest systems provide timely pre-order error message responses via IMA GUI. KPMG Consulting did not assign an evaluation result for this criterion because the related pre-order error message timeliness PID (PO-1D) is defined as "diagnostic" only. The average response time of 2.43 seconds for 655 pre-order error messages received is provided as diagnostic information only. See Table 12-9 for additional transaction details.
<i>IMA EDI Pre-order Timeliness</i> ¹⁸			
12-4-1	Qwest systems provide timely responses to Address Validation Queries (AVQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to AVQs submitted via IMA EDI. The PID (PO-1B)-defined standard is average AVQ pre-order response receipt within 10 seconds. For 6,908 AVQ responses received, the average response time was 4.00 seconds. ¹⁹ See Table 12-9 for additional transaction details.
12-4-2	Qwest systems provide timely responses to Telephone Number Availability Queries (TNAQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to TNAQs submitted via IMA EDI. The PID (PO-1B)-defined standard is average TNAQ pre-order response receipt within 10 seconds. For 1,299 TNAQ responses received, the average response time was 4.28 seconds. ²⁰ See Table 12-8 for additional transaction details.
12-4-3	Qwest systems provide timely responses to Customer Service Record Queries (CSRQs)	Satisfied	Qwest systems provide timely responses to CSRQs submitted via IMA EDI.

¹⁸ Pre-order responses received prior to August 22, 2001 (Non-Templar Interactive Agent installation completed) were excluded from the timeliness evaluation. This exclusion did not apply to SAQs. See Observations 3002, 3003, 3004, 3005, and 3006 for additional information.

¹⁹ AVQ time-out transactions were excluded from the timeliness evaluation, as defined by the PID.

²⁰ TNAQ time-out transactions were excluded from the timeliness evaluation, as defined by the PID.

Test Cross-Reference	Evaluation Criteria	Results	Comments
	submitted via IMA EDI.		The PID (PO-1B)-defined standard is average CSRQ pre-order response receipt within 12.50 seconds. For 4,326 CSRQ responses received, the average response time was 6.40 seconds. ²¹ See Table 12-8 for additional transaction details.
12-4-4	Qwest systems provide timely responses to Appointment Availability Queries (AAQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to AAQs submitted via IMA EDI. The PID (PO-1B)-defined standard is average AAQ pre-order response receipt within 10 seconds. For 275 AAQ responses received, the average response time was 5.02 seconds. See Table 12-8 for additional transaction details.
12-4-5	Qwest systems provide timely responses to Facility Availability Queries (FAQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to FAQs submitted via IMA EDI. The PID (PO-1B)-defined standard is average FAQ pre-order response receipt within 25 seconds. For 1,050 FAQ responses received, the average response time was 15.80 seconds. ²² See Table 12-8 for additional transaction details.
12-4-6	Qwest systems provide timely responses to Service Availability Queries (SAQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to SAQs submitted via IMA EDI. The PID (PO-1B)-defined standard is average SAQ pre-order response receipt within 25 seconds. For 137 SAQ responses received, the average response time was 16.90 seconds. ²³ See Table 12-8 for additional transaction details.
12-4-7	Qwest systems provide timely responses to Qualified ADSL Facility Availability Queries	Satisfied	Qwest systems provide timely responses to FAQs-ADSL submitted via IMA GUI. The PID (PO-1B)-defined standard is

²¹ CSRQ time-out transactions were excluded from the timeliness evaluation, as defined by the PID.

²² FAQ time-out transactions were excluded from the timeliness evaluation, as defined by the PID.

²³ SAQ Pre-orders include pre-Templar responses.

Test Cross-Reference	Evaluation Criteria	Results	Comments
	(FAQs-ADSL) submitted via IMA EDI.		average FAQ-ADSL pre-order response receipt within 20 seconds. For 84 FAQ-ADSL responses received, the average response time was 9.36 seconds. See Table 12-8 for additional transaction details.
12-4-8	Qwest systems provide timely responses to Connecting Facility Assignment Queries (CFAQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to CFAQs submitted via IMA EDI. In the absence of an established PID, KPMG Consulting established a benchmark that average CFAQ pre-order responses are received within 25 seconds. For 19 CFAQ responses received, the average response time was 9.79 seconds. See Table 12-8 for additional transaction details.
12-4-9	Qwest systems provide timely responses to Appointment Selection Queries (ASQs) submitted via IMA EDI.	Satisfied	Qwest provides timely responses to ASQs submitted via IMA EDI. In absence of an established PID, KPMG Consulting assigned a benchmark that average ASQ pre-order responses are received within 10 seconds. For 249 ASQ responses received, the average response time was 3.72 seconds. See Table 12-8 for additional transaction details.
12-4-10	Qwest systems provide timely responses to Telephone Number Selection Queries (TNSQs) submitted via IMA EDI.	Satisfied	Qwest systems provide timely responses to TNSQs submitted via IMA EDI. In absence of an established PID, KPMG Consulting assigned a benchmark that average TNSQ pre-order responses are received within 10 seconds. For 1,157 TNSQ responses received, the average response time was 2.20 seconds. See Table 12-8 for additional transaction details.
12-4-11	Qwest systems provide timely pre-order error message responses via IMA EDI.	Diagnostic	Qwest systems provide timely pre-order error message responses via IMA EDI. KPMG Consulting did not assign an evaluation result for this criterion because the related pre-order error message timeliness PID (PO-1D) is defined as "diagnostic" only.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>For 1,554 pre-order responses received, the average response time of 5.37 seconds is provided as diagnostic information only.</p> <p>See Table 12-9 for additional transaction details.</p>
<i>Order Process Accuracy and Completeness</i>			
12-5-1	Qwest systems or representatives provide required order transaction functionality.	Satisfied	<p>Qwest systems or representatives provide required order transaction functionality.</p> <p>Qwest systems or representatives provide appropriate functionality to process the order scenario types evaluated during the course of this test.</p> <p>See Tables 12-2 through 12-4 for additional transaction details.</p>
12-5-2	Qwest systems provide Functional Acknowledgements (FAs) in response to LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems provide FAs in response to LSRs submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that of 95% of IMA EDI orders must receive FAs.</p> <p>Of 9,963 LSRs submitted, 9,912 (99.49%) received the expected FA.</p> <p>See Table 12-14 for additional transaction details.</p>
12-5-3	Qwest provides expected order responses for LSRs submitted via IMA GUI.	Satisfied	<p>Qwest provides expected order responses for LSRs submitted via IMA GUI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that 95% of IMA GUI orders submitted must receive responses (i.e., Firm Order Confirmations or error responses) for LSRs.</p> <p>Of 490 LSRs submitted for which an order response was expected, 490 (100%) received the expected response.</p> <p>See Table 12-15 for additional transaction details.</p>
12-5-4	Qwest provides expected order responses for LSRs submitted via IMA EDI.	Satisfied	<p>Qwest provides expected order responses for LSRs submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that 95% of IMA EDI orders submitted must receive responses (i.e., Firm Order Confirmations or error responses) for LSRs.</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>Of 9,656 LSRs submitted, 9,588 (99.30%) received the expected response.²⁴</p> <p>During initial testing, HPC experienced several problems with receiving expected order responses and, as a result, issued Exceptions 2029, 2031, 2032, 2033, 2034, 2036, and 2037. Each Exception identified issues surrounding missing order responses and/or receiving order responses in the incorrect sequence.</p> <p>In each case, Qwest implemented system fixes and additional training issues as appropriate. HPC continued to monitor these issues and found no recurrences of these problems. See Exceptions 2029, 2031, 2032, 2033, 2034, 2036, and 2037 for additional information on these issues. Exceptions 2029, 2031, 2032, 2033, 2034, 2036, and 2037 are closed.</p> <p>See Table 12-15 for additional transaction details.</p>
12-5-5	Qwest systems or representatives provide rejections in response to LSRs submitted via IMA GUI.	Diagnostic	<p>Qwest systems or representatives provide rejections in response to LSRs submitted via IMA GUI.</p> <p>KPMG Consulting did not assign a result for this criterion because the percentage of rejected LSRs submitted by CLECs (PO-4A) is defined as “diagnostic” only. Therefore, the percentages given below are provided as diagnostic information only.</p> <p>For the Eastern Region, of 197 LSRs submitted, 50 (25.38%) were rejected.</p> <p>For the Central Region, of 120 LSRs submitted, 27 (22.50%) were rejected.</p> <p>For the Western Region, of 173 LSRs submitted, 35 (20.23%) were rejected.</p> <p>See Table 12-16 for additional transaction details.</p>
12-5-6	Qwest systems or representatives provide rejections in response to LSRs	Diagnostic	<p>Qwest systems or representatives provide rejections in response to LSRs submitted via IMA EDI.</p>

²⁴ Non-flow through resale and UNE-P orders submitted prior to the resolution of Observation 3001 were excluded from the calculation. See Observation 3001 for additional information.

Test Cross-Reference	Evaluation Criteria	Results	Comments
	submitted via IMA EDI.		<p>KPMG Consulting did not assign a result for this criterion because the percentage of rejected LSRs submitted by CLECs (PO-4B) is defined as “diagnostic” only. Therefore, the percentages provided below are given as diagnostic information only.</p> <p>For the Eastern Region, of 3,340 LSRs submitted, 1,119 (33.50%) were rejected.</p> <p>For the Central Region, of 3,261 LSRs submitted, 1,318 (40.42%) were rejected.</p> <p>For the Western Region, of 3,068 LSRs submitted, 982 (32.01%) were rejected.</p> <p>See Table 12-16 for additional transaction details.</p>
12-5-7	Qwest systems or representatives provide rejections in response to LSRs submitted via facsimile.	Diagnostic	<p>Qwest systems or representatives provide rejections in response to LSRs submitted via facsimile.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because the percentage of rejected LSRs submitted by CLECs (PO-4C) is defined as “diagnostic” only.</p> <p>For 86 LSRs submitted, 30 (34.88%) received the expected reject response. These results are provided as diagnostic information only.</p> <p>See Table 12-16 for additional transaction details.</p>
12-5-8	Qwest provides FOC Due Dates consistent with valid CLEC Due Date Requests.	Satisfied	<p>Qwest provides FOC Due Dates consistent with valid CLEC Due Date requests.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark that 95% of FOC Due Dates received are consistent with valid CLEC Due Date requests.</p> <p>A sample of 150 FOCs was examined to determine whether Qwest provides FOC Due Dates consistent with CLEC requests. Eleven transactions were subsequently excluded from the evaluation due to an invalid due date request identified on the LSR.</p> <p>Of the remaining 139 FOCs, 136</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			(97.84%) had the same due dates that were requested on the corresponding LSR.
12-5-9	Qwest adheres to the original confirmed Due Date provided on the Firm Order Confirmation (FOC).	Diagnostic	<p>Qwest adheres to the original confirmed Due Date provided on the Firm Order Confirmation (FOC).</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because Qwest adherence to original confirmed FOC Due Dates (PO-15) is defined as "diagnostic" only.</p> <p>Of 6,204 orders evaluated, Qwest averaged 0.05 due date changes per order. These results are provided as diagnostic information only.</p>
12-5-10	Qwest is able to account for LSRs received electronically.	Diagnostic	<p>Qwest is able to account for LSRs received electronically.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because LSR accountability by Qwest (PO-10) is defined as "diagnostic" only.</p> <p>Of 7,525 LSRs submitted, 7,107 (94.4%) were accounted for by Qwest.²⁵ These results are provided as diagnostic information only.</p>
<i>IMA GUI Order Timeliness</i>			
12-6-1	Qwest systems provide timely Firm Order Confirmations (FOCs) in response to UNE-P and Resale flow-through LSRs submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely FOCs in response to UNE-P and Resale, flow-through LSRs submitted via IMA GUI.</p> <p>The PID (PO-5A-1)-defined standard is 95% of FOCs returned within 20 minutes.</p> <p>For the Eastern Region, of 30 FOCs received, 30 (100%) were returned within 20 minutes.</p> <p>For the Central Region, of 25 FOCs received, 24 (96.00%) were returned within 20 minutes.</p> <p>For the Western Region, of 30 FOCs received, 30 (100%) were returned within 20 minutes.</p> <p>See Table 12-10 for additional transaction details.</p>

²⁵ Front-end rejects were excluded from the LSR Accountability calculation as defined by the PID.

Test Cross-Reference	Evaluation Criteria	Results	Comments
12-6-2	Qwest systems or representatives provide timely Firm Order Confirmations (FOCs) in response to UNE-P and Resale non-flow-through LSRs submitted via IMA GUI.	Satisfied	<p>Qwest systems or representatives provide timely FOCs in response to UNE-P and Resale non-flow-through LSRs submitted via IMA GUI.</p> <p>The PID (PO-5B-1)-defined benchmark is 90% of FOCs returned within 24 to 72 hours, depending on product type.</p> <p>For the Eastern Region, of 37 FOCs received, 36 (97.29%) were returned within the required time period.</p> <p>For the Central Region, of 11 FOCs received, 11 (100%) were returned within the required time period.</p> <p>For the Western Region, of 28 FOCs received, 28 (100%) were returned within the required time period.</p> <p>See Table 12-11 for additional transaction details.</p>
12-6-3	Qwest systems provide timely Firm Order Confirmations (FOCs) in response to Unbundled Loop, flow-through LSRs submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely FOCs in response to Unbundled Loop, flow-through LSRs submitted via IMA GUI.</p> <p>The PID (PO-5A-1)-defined standard is 95% of FOCs returned within 20 minutes.</p> <p>For the Eastern Region, of 22 FOCs received, 22 (100%) were returned within 20 minutes.</p> <p>For the Central Region, of 18 FOCs received, 18 (100%) were returned within 20 minutes.</p> <p>For the Western Region, of 23 FOCs received, 23 (100%) were returned within 20 minutes.</p> <p>See Table 12-10 for additional transaction details.</p>
12-6-4	Qwest systems or representatives provide timely Firm Order Confirmations (FOCs) in response to Unbundled Loop non-flow-through LSRs submitted via IMA GUI.	Satisfied	<p>Qwest systems or representatives provide timely FOCs in response to Unbundled Loop, non-flow-through LSRs submitted via IMA GUI.</p> <p>The PID (PO-5B-1)-defined standard is 90% of FOCs returned within 24 to 72 hours, depending on product type.</p> <p>For the Eastern Region, of 54 FOCs received, 49 (90.74%) were returned within the required time period.</p> <p>For the Central Region, of 37 FOCs</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>received, 34 (91.89%) were returned within the required time period.</p> <p>For the Western Region, of 55 FOCs received, 54 (98.18%) were returned within the required time period.</p> <p>See Table 12-11 for additional transaction details.</p>
12-6-5	Qwest representatives provide timely LSR Manual Rejections (Errors) in response to LSRs via IMA GUI.	Satisfied	<p>Qwest representatives provide timely LSR Manual Rejections (Errors) in response to LSRs via IMA GUI.</p> <p>The PID (PO-3A-1)-defined standard for LSRs received via IMA GUI and rejected manually is receipt within 12 hours.</p> <p>For 38 manual reject responses received, the average response time was 7.65 hours.</p> <p>See Table 12-12 for additional transaction details.</p>
12-6-6	Qwest systems provide timely LSR Automated Rejections (Errors) in response to LSRs via IMA GUI.	Satisfied	<p>Qwest systems provide timely LSR Automated Rejections (Errors) in response to LSRs via IMA GUI.</p> <p>The PID (PO-3A-2)-defined standard for LSRs received via IMA GUI and auto-rejected is receipt within 18 seconds.</p> <p>Of 74 automated reject responses received, the average response time was 4.75 seconds.</p> <p>See Table 12-12 for additional transaction details.</p>
<i>IMA EDI Order Timeliness</i>			
12-7-1	Qwest systems provide timely Functional Acknowledgements (FAs) in response to IMA EDI LSRs.	Satisfied	<p>Qwest systems provide timely FAs in response to IMA EDI LSRs.</p> <p>In absence of an established PID, KPMG Consulting established a benchmark of average response time for FAs within 18.</p> <p>During initial testing, KPMG Consulting observed that several FAs for orders submitted via IMA EDI were received within an average of 7.90 hours. During testing, Qwest notified the P-CLEC that the CLEC interactive agent was not responding to Qwest's interactive agent. KPMG Consulting issued Exception 3032.</p> <p>Qwest subsequently implemented a</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>recovery process in the interactive agent to eliminate this type of delay.</p> <p>KPMG Consulting's retesting found that FAs were received in less than 18 seconds.</p> <p>During subsequent testing, KPMG Consulting observed that of 5,853 FAs received, the average response time was 13.56 seconds. See Exception 3032 for additional information.²⁶ Exception 3032 is closed.</p> <p>See Table 12-13 for additional transaction details.</p>
12-7-2	Qwest systems provide timely Firm Order Confirmations (FOCs) in response to UNE-P and Resale flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems provide timely FOCs in response to UNE-P and Resale flow-through LSRs submitted via IMA EDI.</p> <p>The PID (PO-5A-2)-defined standard is 95% of FOCs returned within 20 minutes.</p> <p>For the Eastern Region, of 907 FOCs received, 898 (99.01%) were returned within 20 minutes.</p> <p>For the Central Region, of 771 FOCs received, 758 (98.31%) were returned within 20 minutes.</p> <p>For the Western Region, of 903 FOCs received, 902 (99.89%) were returned within 20 minutes.</p> <p>See Table 12-10 for additional transaction details.</p>
12-7-3	Qwest systems or representatives provide timely Firm Order Confirmations (FOCs) in response to UNE-P and Resale non-flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems or representatives provide timely FOCs in response to UNE-P and Resale non-flow-through LSRs submitted via IMA EDI.</p> <p>The PID (PO-5B-2)-defined standard is 90% of FOCs returned within 24 to 72 hours, depending on product type.</p> <p>During initial testing, KPMG Consulting observed that several FOC responses for Resale PBX orders submitted via IMA EDI exceeded the established PID-defined benchmark. For 39 orders received, 11 (28.0%) were returned in a time greater than 48 hours after the</p>

²⁶ Functional Acknowledgements received prior to the resolution of Exception 3032 were excluded from the timeliness evaluation.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>orders had been submitted. KPMG Consulting issued Exception 3061.</p> <p>Qwest stated that the causes for the delay in providing FOCs included routing issues and missed FOC commitments by representatives. Qwest acknowledged the disaggregation of PO-5B by interface, product level and transaction type. Qwest indicated that it would rely on the aggregate Resale and UNE-P non-flow-through timeliness evaluation to demonstrate its ability to provide timely FOCs.</p> <p>During subsequent testing, KPMG Consulting observed that FOC responses for UNE-P and Resale non-flow-through orders submitted via IMA EDI met the PID-defined benchmark.</p> <p>For the Eastern Region, of 432 FOCs received, 392 (90.74%) were received within the required time period.</p> <p>For the Central Region, of 354 FOCs received, 324 (91.53%) were received within the required time period.</p> <p>For the Western Region, of 411 FOCs received, 378 (91.97%) were received within the required time period.</p> <p>See Exception 3061 for additional information. Exception 3061 is closed/unresolved.</p> <p>See Table 12-11 for additional transaction details.</p>
12-7-4	Qwest systems provide timely Firm Order Confirmations (FOCs) in response to Unbundled Loop flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems provide timely FOCs in response to Unbundled Loop flow-through LSRs submitted via IMA EDI. The PID (PO-5A-2)-defined standard is 95% of FOCs returned within 20 minutes.</p> <p>For the Eastern Region, of 259 FOCs received, 258 (99.61%) were received within 20 minutes.</p> <p>For the Central Region, of 283 FOCs received, 282 (99.65%) were received within 20 minutes.</p> <p>For the Western Region, of 216 FOCs received, 215 (99.54%) were received within 20 minutes.</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			See Table 12-10 for additional transaction details.
12-7-5	Qwest systems or representatives provide timely Firm Order Confirmations (FOCs) in response to Unbundled Loop non-flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems or representatives provide timely FOCs in response to Unbundled Loop non-flow-through LSRs submitted via IMA EDI.</p> <p>The PID (PO-5B-2)-defined standard is 90% of FOCs returned within 24 to 72 hours, depending on product type.</p> <p>For the Eastern Region, of 530 FOCs received, 513 (96.79%) were received within the required time period.</p> <p>For the Central Region, of 483 FOCs received, 475 (98.34%) were received within the required time period.</p> <p>For the Western Region, of 504 FOCs received, 487 (96.63%) were received within the required time period.</p> <p>See Table 12-11 for additional transaction details.</p>
12-7-6	Qwest systems provide timely Firm Order Confirmations (FOCs) in response to LNP flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems provide timely FOCs in response to LNP flow-through LSRs submitted via IMA EDI.</p> <p>The PID (PO-5A-2)-defined standard is 95% of FOCs returned within 20 minutes.</p> <p>Of 69 FOCs received, 69 (100%) were returned with 20 minutes.</p> <p>See Table 12-10 for additional transaction details.</p>
12-7-7	Qwest systems or representatives provide timely Firm Order Confirmations (FOCs) in response to LNP non-flow-through LSRs submitted via IMA EDI.	Satisfied	<p>Qwest systems or representatives provide timely FOCs in response to LNP, non-flow-through LSRs submitted via IMA EDI.</p> <p>The PID (PO-5B-2)-defined standard is 90% of FOCs returned within 24 hours.</p> <p>Of 47 FOCs received, 46 (97.87%) were returned with 24 hours.</p> <p>See Table 12-11 for additional transaction details.</p>
12-7-8	Qwest representatives provide timely LSR Manual Rejections (Errors) in response to LSRs via IMA EDI.	Satisfied	<p>Qwest representatives provide timely LSR Manual Rejections (Errors) in response to LSRs via IMA EDI.</p> <p>The PID (PO-3B-1)-defined standard for LSRs received via IMA EDI and rejected</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>manually is receipt within 12 hours.</p> <p>During initial testing, KPMG Consulting observed LSRs received via IMA EDI and rejected manually that exceeded the established PID-defined benchmark. Of 235 manual reject responses received, 63 (26.8%) were returned with an average response time of 16.19 hours. KPMG Consulting issued Exception 3020.</p> <p>Qwest took the following measures to address the issue:</p> <ul style="list-style-type: none"> • Increased the Interconnect Service Center (ISC) headcount along with process improvements to help achieve in today/out today measures; • Established standard reject reasons and intervals and updated the relevant documentation both internally and externally; • Performed analysis on top reject reasons and identified and implemented system enhancements to reduce number of manual rejects; and • Conducted additional training in the centers around reject reasons and intervals. <p>During subsequent testing, KPMG Consulting observed that for 285 manual reject responses received, the average response time was 6.10 hours. See Exception 3020 for additional information.²⁷ Exception 3020 is closed. See Table 12-12 for additional transaction details.</p>
12-7-9	Qwest systems provide timely LSR Automated Rejections (Errors) in response to LSRs via IMA EDI.	Satisfied	<p>Qwest systems provide timely LSR Automated Rejections (Errors) in response to LSRs via IMA EDI.</p> <p>The PID (PO-3B-2)-defined standard for LSRs received via IMA EDI with automated rejections is receipt within 18 seconds.</p> <p>During initial testing, KPMG Consulting</p>

²⁷ Manual rejections received prior to the resolution of Exception 3020 were excluded from the timeliness evaluation.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>found that automated rejections received via IMA EDI were not satisfying the PID-defined benchmark. For 1,033 BPL errors, the average response time was 19.14 seconds. KPMG Consulting issued Exception 3105.</p> <p>Qwest stated that KPMG Consulting's calculations included the time the rejections took to move through HPC's systems, while the PID definition included only the time the transaction moved through Qwest's systems. Qwest calculated that the rejections took an average of 2.36 seconds to move through HPC's systems. By subtracting the 2.36 seconds from KPMG Consulting's average of 19.14 seconds, Qwest calculated that its automated rejections met the PID-defined standard with a 16.78-second average. In addition, Qwest presented an alternate calculation, which included HPC internal processing time, but excluded 3 outlier transactions. By excluding the 3 outliers, Qwest calculated that its rejections also met the standard with a 13.44-second average. KPMG Consulting did not exclude the 3 outliers from its calculations.</p> <p>At the conclusion of testing, KPMG Consulting determined that for 1,478 automated reject responses received, the average response time was 16.75 seconds.²⁸</p> <p>See Exception 3105 for additional information. Exception 3105 is closed.</p> <p>See Table 12-12 for additional transaction details.</p>
<i>Manual Order Timeliness</i>			
12-8-1	Qwest representatives provide timely Firm Order Confirmations (FOCs) in response to LSRs submitted via facsimile.	Satisfied	<p>Qwest representatives provide timely Firm Order Confirmations (FOCs) in response to Local Service Requests (LSRs) submitted via facsimile.</p> <p>The PID-defined standard is 90% of FOCs returned within the standard FOC interval by product category for PID PO-</p>

²⁸ Forty-nine transactions were excluded from the timeliness evaluation due to invalid start/stop times, as defined by the PID.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>5B plus 24 hours.</p> <p>During initial testing, KPMG Consulting observed that FOCs LSRs received via facsimile were not satisfying the PID-defined benchmark. Of 32 FOCs received on manual LSRs, 6 (18.75%) were received in a time greater than the standard FOC interval plus 24 hours from order submission. KPMG Consulting issued Exception 3117.</p> <p>Qwest identified a gap in its process for releasing FOCs in Interconnect Imaging Solutions (IIS), the system Qwest uses for this type of order. According to Qwest, the SDCs who processed these orders did not complete the final step of the process that releases the FOCs. Qwest's implemented enhanced quality reviews, coaching, and continued monitoring of the release process.</p> <p>During subsequent testing, KPMG Consulting's found that of 23 FOCs received, 22 (95.65%) were returned within standard FOC interval by product category for PID PO-5B plus 24 hours.</p> <p>See Exception 3117 for additional information. Exception 3117 is closed.</p> <p>See Table 12-11 for additional transaction details.</p>
12-8-2	Qwest representatives provide timely Firm Order Confirmations (FOCs) in response to Local Interconnection Service Trunk ASRs.	Unable to Determine	<p>Qwest representatives provide timely FOCs in response to Local Interconnection Service Trunk ASRs.</p> <p>KPMG Consulting used a commercial CLEC operating in Qwest territory in order to support ASR testing in the form of UDIT orders. However, due to limited CLEC participation, KPMG Consulting did not have a sample size large enough to evaluate UDIT timeliness as stipulated in the MTP. Consequently, UDIT orders were evaluated from a functionality perspective only.</p>
12-8-3	Qwest representatives provide timely LSR Rejections (Errors) in response to LSRs submitted via facsimile.	Satisfied	<p>Qwest representatives provide timely LSR Rejections (Errors) in response to LSRs submitted via facsimile.</p> <p>The PID (PO-3C)-defined standard for LSRs submitted via facsimile and</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>rejected is receipt within 24 hours.</p> <p>Of 30 manual reject responses received, the average response time was 6.53 hours.</p> <p>See Table 12-12 for additional transaction details.</p>
<i>Jeopardy Notification</i>			
12-9-1	Qwest provides Jeopardy Notices in advance of the due date for Resale products and services.	Unable to Determine	<p>Qwest provides Jeopardy Notices in advance of the due date for Resale products and services.</p> <p>The PID (PO-8)-defined standard is parity with retail service.</p> <p>During the evaluation period, Qwest did not issue any Jeopardy Notices for Resale products and services in response to test bed transactions or commercial observations. Therefore, KPMG Consulting's results are inconclusive.</p>
12-9-2	Qwest provides Jeopardy Notices in advance of the due date for UNE-P products.	Unable to Determine	<p>Qwest provides Jeopardy Notices in advance of the due date for UNE-P products.</p> <p>The PID (PO-8)-defined standard is parity with retail service.</p> <p>During the evaluation period, Qwest did not issue any Jeopardy Notices for UNE-P products and services in response to test bed transactions or commercial observations. Therefore, KPMG Consulting's results are inconclusive.</p>
12-9-3	Qwest provides Jeopardy Notices in advance of the due date for Unbundled Loop products.	Satisfied	<p>Qwest provides Jeopardy Notices in advance of the due date for Unbundled Loop products.</p> <p>The PID (PO-8)-defined standard is parity with retail service.</p> <p>In the Eastern region, for 25 Jeopardy Notices received, the average response time was 4.3 days in advance of the due date, compared to an average of 3.9 days for retail.</p> <p>In the Central region, for 12 Jeopardy Notices received, the average response time was 5.4 days in advance of the due date, compared to an average of 8.6 days for retail.</p> <p>In the Western region, for 12 Jeopardy Notices received, the average response time was 6.3 days in advance of the due</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>date, compared to an average of 3.6 days for retail.</p> <p>The initial results from the dual statistical test described in the MTP Appendix G indicated parity performance for the Eastern and Western regions, but a conflicting result for the Central region. This issue was presented to the ROC TAG for consideration on March 21, 2002, and the TAG concluded the issue should be closed as a pass.</p>
12-9-4	Qwest systems or representatives provide timely Jeopardy notices for Resale products and services.	Unable to Determine	<p>Qwest systems or representatives provide timely Jeopardy notices for Resale products and services.</p> <p>The PID (PO-9)-defined standard is parity with retail service.</p> <p>Qwest did not issue any Jeopardy Notices for Resale products and services. Therefore, KPMG Consulting's results are inconclusive.</p>
12-9-5	Qwest systems or representatives provide timely Jeopardy notices for UNE-P.	Unable to Determine	<p>Qwest systems or representatives provide timely Jeopardy notices for UNE-P.</p> <p>The PID (PO-9)-defined standard is parity with retail service.</p> <p>Qwest did not issue any Jeopardy Notices for UNE-P products and services. Therefore, KPMG Consulting's results are inconclusive.</p>
12-9-6	Qwest systems or representatives provide timely Jeopardy notices for Unbundled Loop products.	Satisfied	<p>Qwest systems or representatives provide timely Jeopardy Notices for Unbundled Loop products.</p> <p>The PID (PO-9)-defined standard is parity with retail service.</p> <p>In the Eastern region, for 49 orders received, the percentage of Jeopardy Notices received in advance of the due date was 14%, compared to 10% for retail.</p> <p>In the Central region, for 2 orders received, the percentage of Jeopardy Notices received in advance of the due date was 100%, compared to 19% for retail.</p> <p>In the Western region, for 12 orders received, the percentage of Jeopardy Notices received in advance of the due date was 8%, compared to 8% for retail.</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>The initial results from the dual statistical test described in MTP Appendix G indicated parity performance for the Eastern and Central regions, but a conflicting result for the Western region. This issue was presented to the ROC TAG for consideration on March 21, 2002, and the TAG concluded the issue should be closed as a pass.</p>
<i>Completion Notification</i>			
12-10-1	Qwest systems or representatives provide Work Completion Notifications in response to completed orders.	Satisfied	<p>Qwest systems or representatives provide work completion notifications in response to completed orders.</p> <p>In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% of the work orders for which a work completion notification was expected and actually received. Of 5,274 instances submitted for which a work completion notification was expected, 5,243 (99.41%) received the expected response.</p> <p>During initial testing, HPC observed several problems regarding completion notifications and, therefore, issued Exceptions 2035 and 2068.</p> <p>In Exception 2035, HPC said that when ordering UNE-Loop products, Qwest sent Status Update (SU) notifications indicating that HPC's order had completed and been "Posted to be billed" for orders that had either a) received an ISC-generated FATAL reject or b) had not received a completion notification. As a result of the exception, Qwest indicated that a system defect had been fixed and personnel training had been conducted to prevent the situation from re-occurring. Upon retest, HPC did not experience further problems of this kind, and the exception was closed. See Exception 2035 for additional information.</p> <p>HPC also experienced problems with missing completion notifications during testing, and consequently, issued Exception 2068. In response, Qwest categorized the orders with missing</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			<p>completion notifications into 14 distinct categories and addressed each category separately. Upon retest, HPC did not experience problems with missing completion notifications. See Exception 2068 for additional information. Exception 2068 is closed.</p> <p>See Table 12-19 for additional transaction details.</p>
12-10-2	<p>Qwest systems or representatives provide timely Work Completion Notifications in response to LSRs submitted via IMA GUI.</p>	Diagnostic	<p>Qwest systems or representatives provide timely Work Completion Notifications in response to LSRs submitted via IMA GUI.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because Work Completion Notification timeliness (PO-6A) is defined as “diagnostic” only.</p> <p>This PID requires internal Qwest system data. Thus, the results reported here, while they are for the P-CLEC, use Qwest-generated data. Therefore, KPMG Consulting cannot verify these results.</p> <p>For 188 Work Completion Notifications received, the average response time was 102.00 minutes²⁹. These results are provided as diagnostic information only.</p>
12-10-3	<p>Qwest systems or representatives provide timely Work Completion Notifications in response to LSRs submitted via IMA EDI.</p>	Diagnostic	<p>Qwest systems or representatives provide timely Work Completion Notifications in response to LSRs submitted via IMA EDI.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because Work Completion Notification timeliness (PO-6B) is defined as “diagnostic” only.</p> <p>This PID requires internal Qwest system data. Thus, the results reported here, while they are for the P-CLEC, use Qwest-generated data. Therefore, KPMG Consulting cannot verify these results.</p>

²⁹ The reported number of Work Completion Notifications received via the interface is smaller than the total number of WCNs actually received due to two factors: 1) exclusions, as defined by PID PO-6; and 2) a possible unintentional omission by KPMG Consulting. The additional WCNs will be analyzed by KPMG Consulting, and the diagnostic information will be revised in the Final Report.

Test Cross-Reference	Evaluation Criteria	Results	Comments
			Of 3,053 Work Completion Notifications received, the average response time was 143.00 minutes ²⁹ . These results are provided as diagnostic information only.
12-10-4	Qwest systems or representatives provide timely Billing Completion Notifications (BCNs) in response to LSRs submitted via IMA GUI.	Diagnostic	<p>Qwest systems or representatives provide timely BCNs in response to LSRs submitted via IMA GUI.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because Billing Completion Notification timeliness (PO-7A) is defined as "diagnostic" only.³⁰</p> <p>This PID requires internal Qwest system data. Thus, the results reported here, while they are for the P-CLEC, use Qwest-generated data. Therefore, KPMG Consulting cannot verify these results.</p> <p>For 373 Billing Completion Notifications received, 88% were received on time. These results are provided as diagnostic information only.</p>
12-10-5	Qwest systems or representatives provide timely Billing Completion Notifications (BCNs) in response to LSRs submitted via IMA EDI.	Diagnostic	<p>Qwest systems or representatives provide timely BCNs in response to LSRs submitted via IMA EDI.</p> <p>KPMG Consulting did not assign an evaluation result for this criterion because Billing Completion Notification timeliness (PO-7B) is defined as "diagnostic" only.³¹</p> <p>This PID requires internal Qwest system data. Thus, the results reported here, while they are for the P-CLEC, use Qwest-generated data. Therefore, KPMG Consulting cannot verify these results.</p> <p>Of 4,306 Billing Completion Notification received, 43% were received on time. These results are provided as diagnostic information only.</p>

³⁰ The PID defines timely BCNs as those made available (for CLECs) or posted in the billing system (for Qwest retail) in five business days.

³¹ The PID defines timely BCNs as those made available (for CLECs) or posted in the billing system (for Qwest retail) in five business days.

Test Cross-Reference	Evaluation Criteria	Results	Comments
<i>Consistency with Retail Capability</i>			
12-11-1	Product and feature offerings are defined and documented for both retail and wholesale services.	Satisfied	<p>Product and feature offerings are defined and documented for both retail and wholesale services.</p> <p>Qwest product and feature offerings can be accessed at the following Web site addresses:</p> <p>UNE-P – http://www.qwest.com/wholesale/pcat/unep.html</p> <p>Resale – http://www.qwest.com/wholesale/pcat/resalegeneral.html</p> <p>Retail (Business) – http://www.qwest.com/smallbusiness/index.html</p> <p>Retail (Residential) – http://www.qwest.com/residential/products/index.html</p> <p>Qwest made several clarifications to their product and feature ordering documentation in response to questions from HPC during the transaction portion of this test.</p> <p>KPMG Consulting reviewed the product and feature offerings available on Qwest's wholesale and retail Web sites and found them to be defined and documented.</p>
12-11-2	Product and feature offerings are comparable for both retail and wholesale services.	Satisfied	<p>Product and feature offerings are comparable for both retail and wholesale services.</p> <p>During the test, Qwest made additions to its resale product and feature documentation regarding the availability of Business Complete a Call and Call Queuing in response to questions raised by KPMG Consulting.</p> <p>KPMG Consulting reviewed and compared the product and feature offerings on Qwest's wholesale and retail Web sites. Qwest's product and feature offerings for resale and UNE-P were reviewed and found to be comparable with retail.</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
12-11-3	Pre-Order and Order capabilities are functionally equivalent for both retail and wholesale services.	Not Complete	<p>Pre-Order and Order capabilities are functionally equivalent for both retail and wholesale.</p> <p>KPMG Consulting compared the ordering capabilities for the following products/features:</p> <ul style="list-style-type: none"> • New Line / New TN; • Call Waiting; • Caller ID; • Number Blocking; • Custom / Vanity Number; and • DSL. <p>KPMG Consulting conducted both on-site interviews and observations with various Qwest representatives in retail residential and small business centers as well as similar interviews and observations at CLEC order centers. KPMG Consulting also reviewed the ordering processes used by HPC in its role as the P-CLEC.</p> <p>In the context of the above-mentioned products and features, KPMG Consulting examined the pre-order and order requirements, required customer information, standard intervals, and expedite procedures in the wholesale and retail environments.</p> <p>During observations, KPMG Consulting observed that Qwest retail representatives did not consistently adhere to the procedure for due date expedites as described on Qwest's wholesale Web site (http://www.qwest.com/wholesale/clecs/exescover.html). KPMG Consulting formally identified this issue on March 20, 2002.</p> <p>In response, Qwest indicated its intent to monitor and address improper due date expedites and to enhance the functionality of its retail ordering systems to require supervisor authorization for all expedites. Closure of this issue is pending the implementation of the system upgrade and subsequent retesting activities to</p>

Test Cross-Reference	Evaluation Criteria	Results	Comments
			verify the changes.
12-11-4	Qwest-produced measures of Preorder/Order performance results for HPC transactions are consistent with KPMG Consulting-produced HPC measures.	Not Complete	<p>During the course of KPMG Consulting's comparative analysis of Qwest-produced HPC measures to KPMG Consulting-produced HPC measures, KPMG Consulting formally identified a discrepancy in the reporting of Firm Order Confirmations (FOCs) for PID PO-5.</p> <p>As of 4/19/02, KPMG Consulting has not completed any retest activities required to close or resolve this issue.</p>

Table 12-8: Pre-order Response Timeliness & Time-Outs Received

Pre-Order Type	Interface Type	Total Transactions Sent	Pre-Order Responses Received	Error Responses Received	No Response Received	Percentage of Pre-Orders Responses Received (KPMG Consulting Standard of 95%)	Time Outs Received	Percentage Time Outs Received (PID Allows 0.50%)	Average Pre-Order Response Time	PID Base/KPMG Consulting Benchmark
All Types	EDI	17,486	15,858	1,554	64	99.63%	10	0.06%	-	-
	GUI	4,058	3,403	655	-	100%	-	-	-	-
AAQ	EDI	302	275	27	-	-	-	-	5.02 sec.	10 sec. (PID)
	GUI	59	58	1	-	-	-	-	3.07 sec.	
ASQ	EDI	261	249	12	-	-	-	-	3.72 sec.	10 sec. (KPMG Consulting)
	GUI	40	39	1	-	-	-	-	1.85 sec.	
AVQ	EDI	7,054	6,908	125	15	99.79%	6	0.09%	4.00 sec.	10 sec. (PID)
	GUI	1,138	1,091	47	-	-	-	-	2.83 sec.	
CFAQ	EDI	27	19	8	-	-	-	-	9.79 sec.	25 sec. (KPMG Consulting)
	GUI	925	780	145	-	-	-	-	11.40 sec.	
CSRQ	EDI	4,891	4,326	559	5	99.90%	1	0.02%	6.40 sec.	12.5 sec. (PID)
	GUI	1,220	839	381	-	-	-	-	4.79 sec.	
CTQ	EDI	227	185	31	11	95.15%	-	-	2.90 sec.	Functionality Evaluation Only
	GUI	23	23	-	-	-	-	-	0.61 sec.	
LLRQ	EDI	65	31	34	-	-	-	-	11.00 sec.	Functionality Evaluation Only
	GUI	5	2	3	-	-	-	-	8.50 sec.	
FAQ	EDI	1,509	1,050	438	20	98.74%	1	0.0%	15.80 sec.	25 sec. (PID)
	GUI	313	270	43	-	-	-	-	15.40 sec.	
FAQ-ADSL	EDI	115	84	31	-	-	-	-	9.36 sec.	20 sec. (PID)
	GUI	34	29	5	-	-	-	-	10.50 sec.	
MPQ	EDI	150	110	27	13	91.33%	-	-	40.56 sec.	Functionality Evaluation Only
	GUI	2	2	-	-	-	-	-	46.50 sec.	
RLDQ	EDI	111	28	83	-	-	-	-	5.93 sec.	Functionality Evaluation Only
	GUI	24	5	19	-	-	-	-	3.20 sec.	
SAQ	EDI	138	137	1	-	-	-	-	16.90 sec.	25 sec. (PID)
	GUI	32	30	2	-	-	-	-	6.23 sec.	
TNAQ	EDI	1,385	1,299	84	-	-	2	0.14%	4.28 sec.	10 sec. (PID)
	GUI	127	126	1	-	-	-	-	2.42 sec.	
TNSQ	EDI	1,251	1,157	94	-	-	-	-	2.20 sec.	10 sec. (KPMG Consulting)
	GUI	116	109	7	-	-	-	-	0.77 sec.	

Table 12-9: Pre-order Error Message Response Timeliness

Response Type	Interface Type	Average Response Time	Number of Error Responses
Pre-order Error	GUI	2.43 seconds	655
	EDI	5.37 seconds	1,554

Table 12-10: Firm Order Confirmation (FOC) Timeliness on Flow Through

Region	Product Type	Interface Type	Number of FOCs Received	Number of On-Time FOCs Received	Number/Percentage of FOCs Received On Time	PID Base
All	LNP	EDI	69	69	100%	95% returned within 20 minutes
		GUI	4	4	100%	Functionality Evaluation Only
Eastern	Resale/UNE-P	EDI	907	898	99.01%	95% returned within 20 minutes
		GUI	30	30	100%	
	UNE-Loop	EDI	259	258	99.61%	
		GUI	22	22	100%	
Central	Resale/UNE-P	EDI	771	758	98.31%	
		GUI	25	24	96.00%	
	UNE-Loop	EDI	283	282	99.65%	
		GUI	18	18	100%	
Western	Resale/UNE-P	EDI	903	902	99.89%	
		GUI	30	30	100%	
	UNE-Loop	EDI	216	215	99.54%	
		GUI	23	23	100%	

Figure 12-2: EDI Resale and UNE-P Flow Through

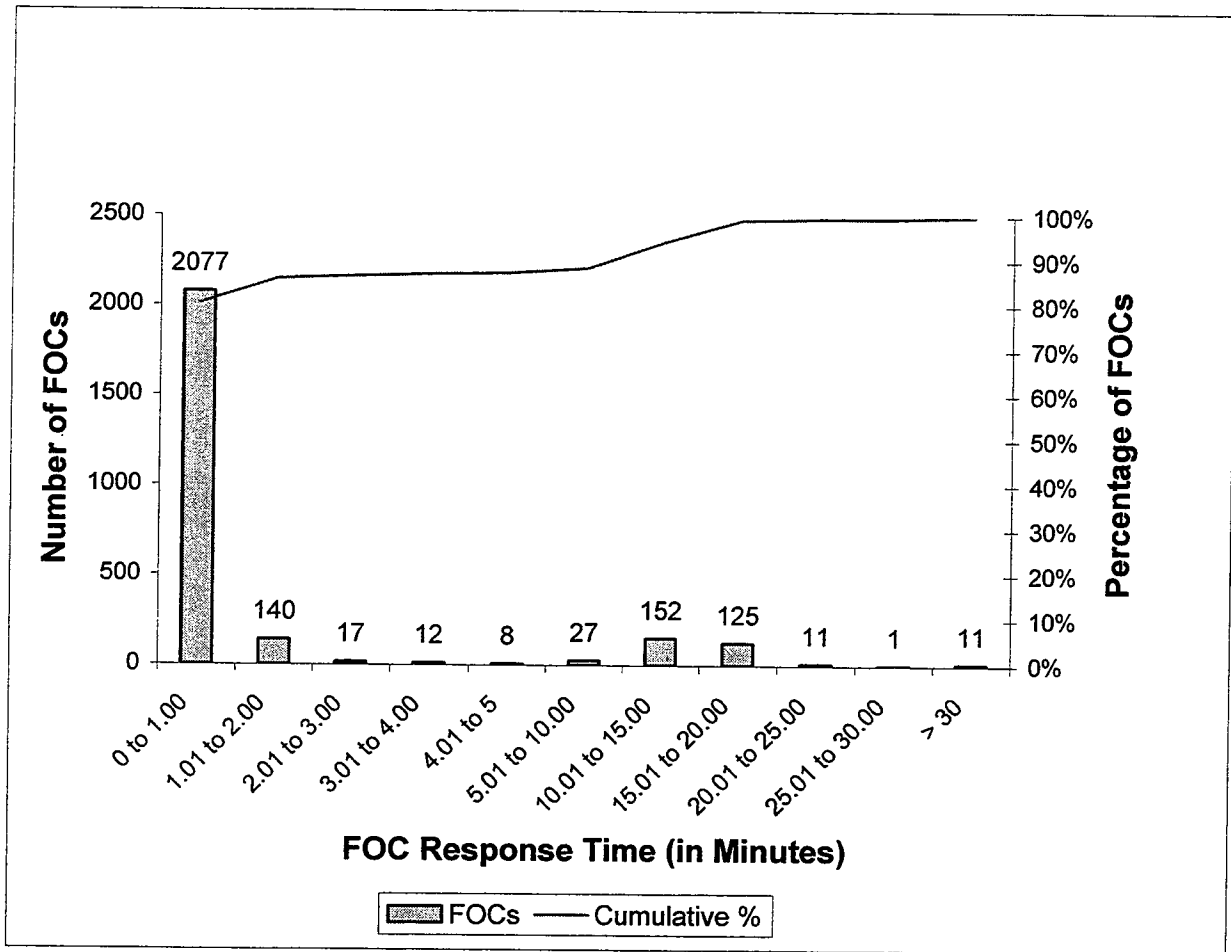


Figure 12-3: GUI Resale & UNE-P Flow Through

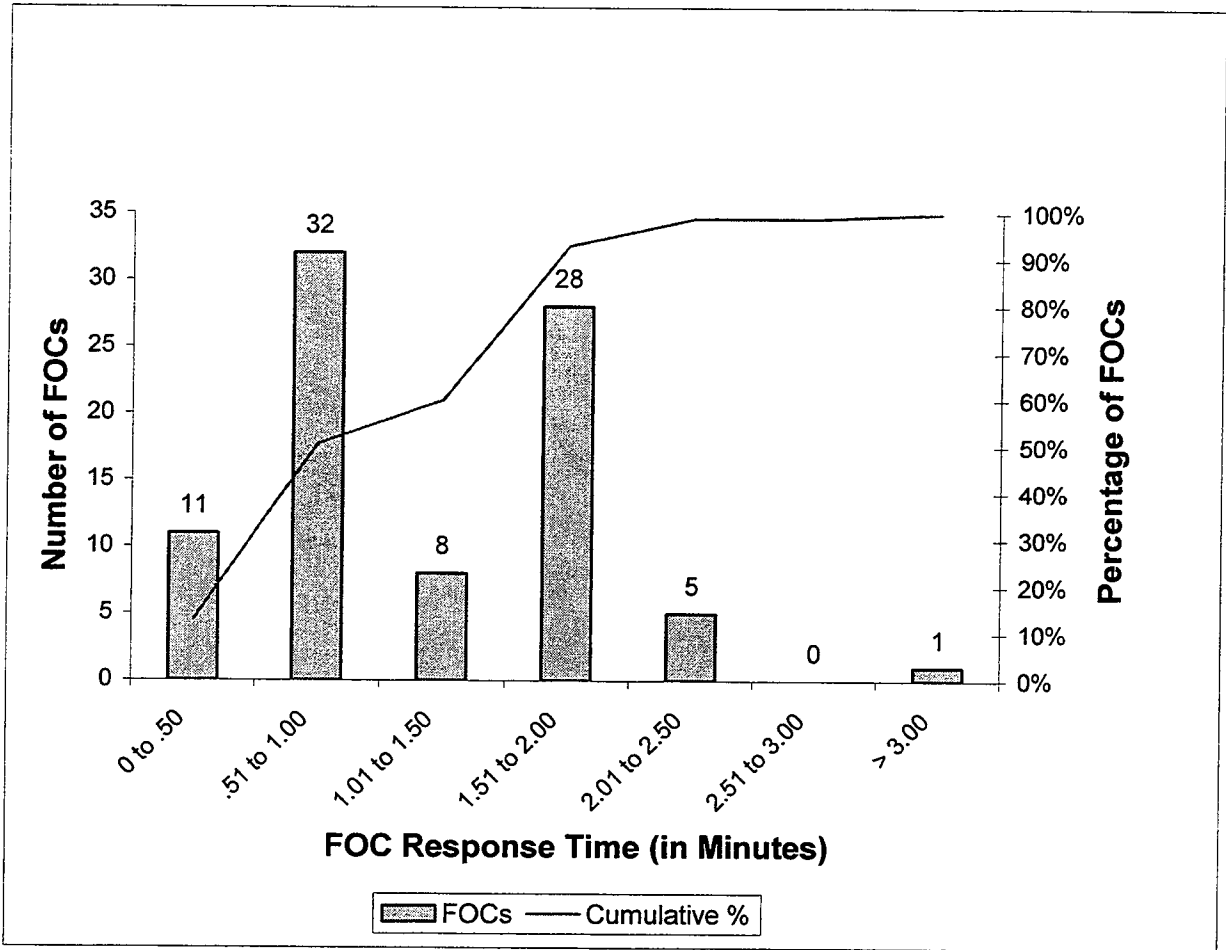


Figure 12-4: EDI UNE-Loop Flow Through

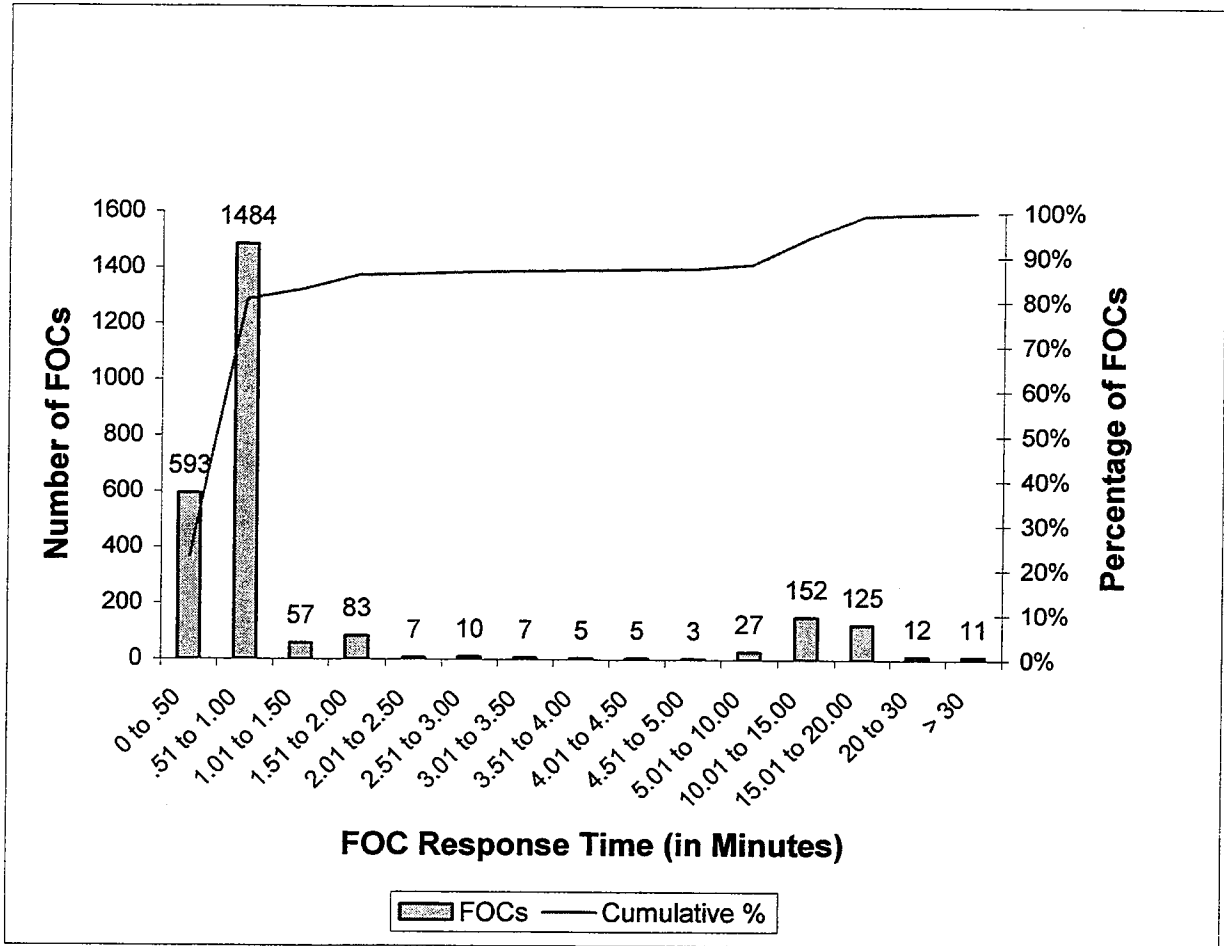


Figure 12-5: GUI UNE-Loop Flow Through

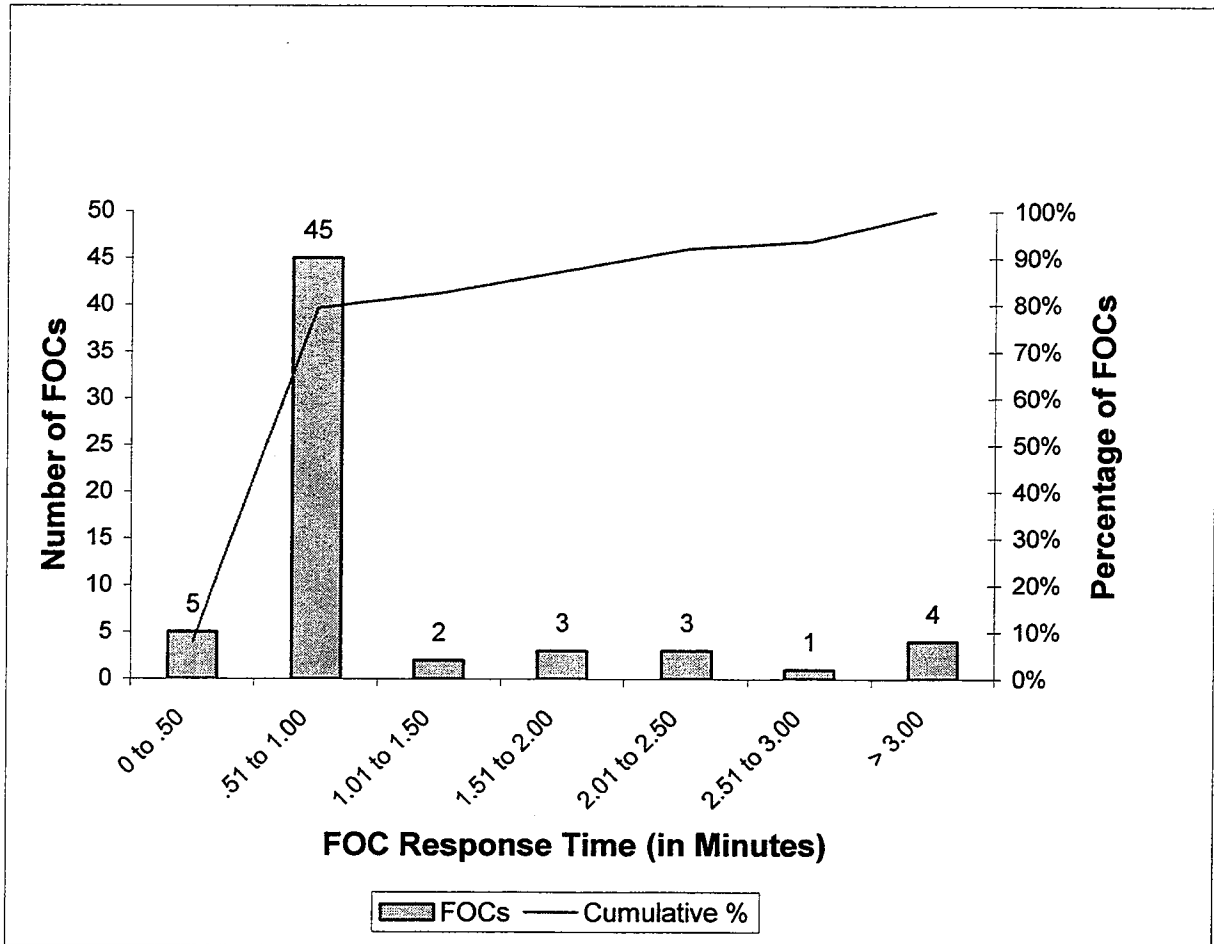


Figure 12-6: EDI LNP Flow Through

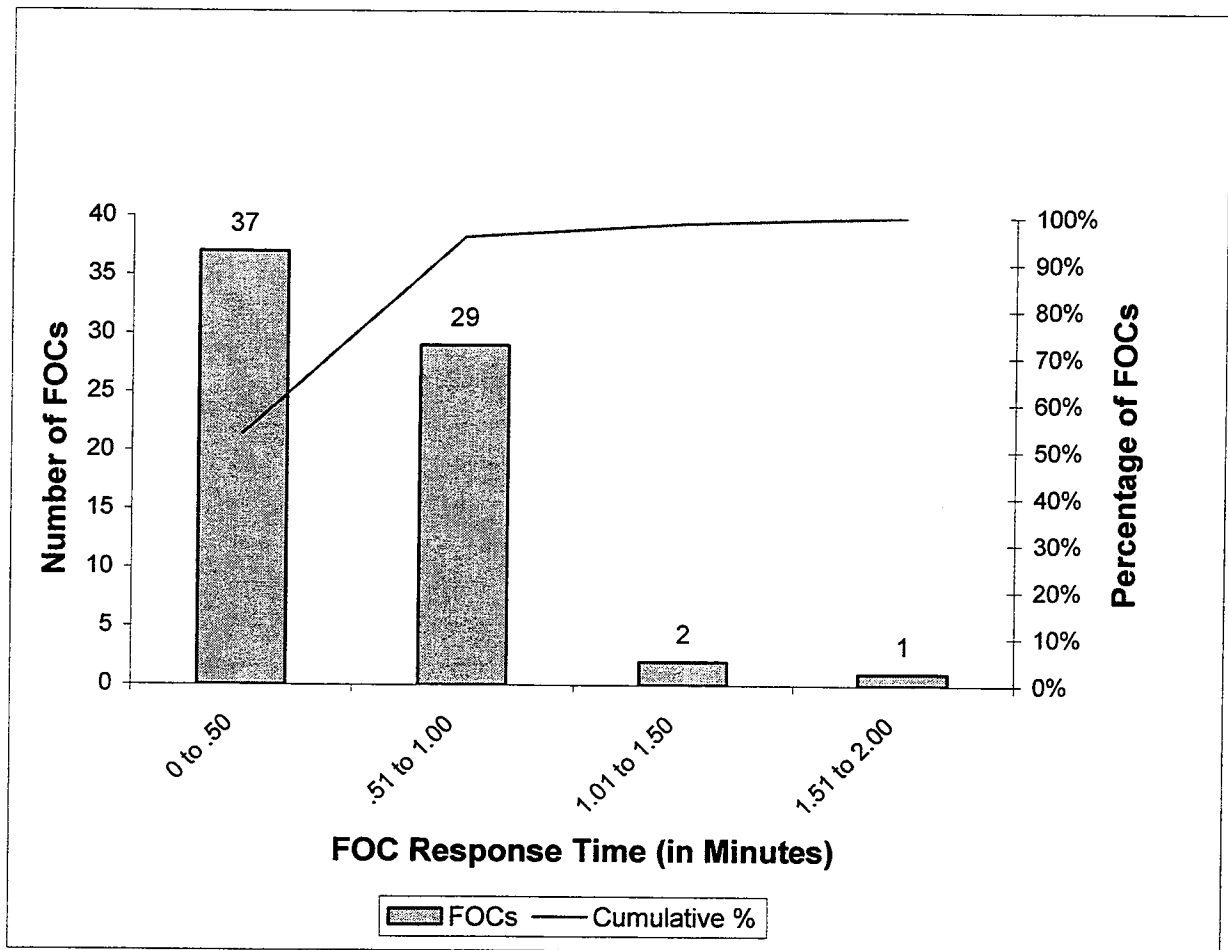


Table 12-11: Firm Order Confirmation (FOC) Timeliness on Non-Flow Through

Region	Product Type	Interface Type	Number of FOCs Received	Number of On-Time FOCs Received	Percentage of FOCs Received on Time	PID Base
All	LNP	EDI	47	46	97.87%	90% returned within 24 hours
		GUI	4	4	100%	Functionality Evaluation Only
All	All	Manual	23	22	95.65%	90% within standard FOC interval plus 24 hours
Eastern	Resale/UNE-P	EDI	432	392	90.74%	90% within standard FOC interval
		GUI	37	36	97.29%	
	UNE-Loop	EDI	530	513	96.79%	
		GUI	54	49	90.74%	
Central	Resale/UNE-P	EDI	354	324	91.53%	
		GUI	11	11	100.00%	
	UNE-Loop	EDI	483	475	98.34%	
		GUI	37	34	91.89%	
Western	Resale/UNE-P	EDI	411	378	91.97%	
		GUI	28	28	100.00%	
	UNE-Loop	EDI	504	487	96.63%	
		GUI	55	54	98.18%	

Figure 12-7: EDI Resale & UNE-P Non-Flow Through

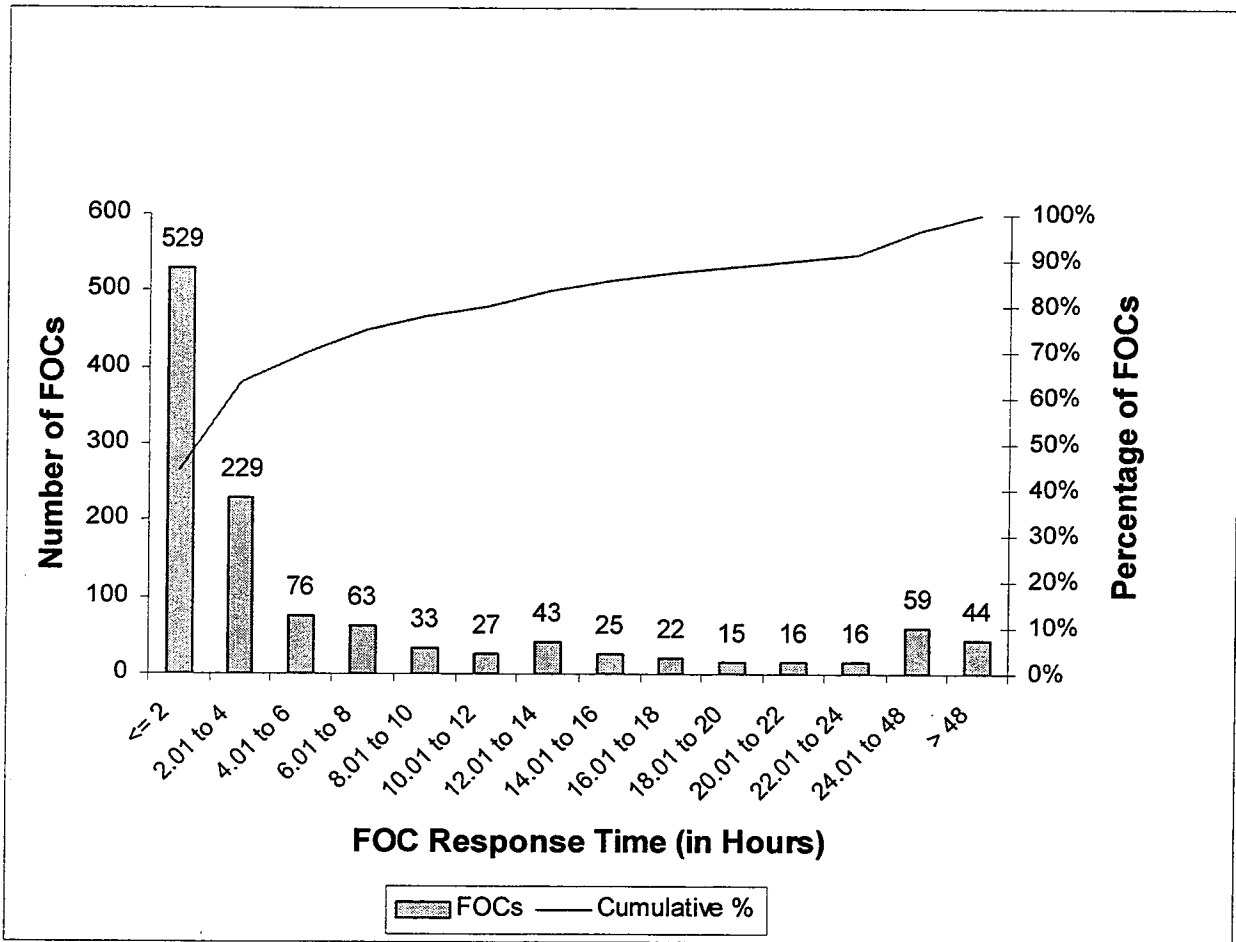


Figure 12-8: GUI Resale & UNE-P Non-Flow Through

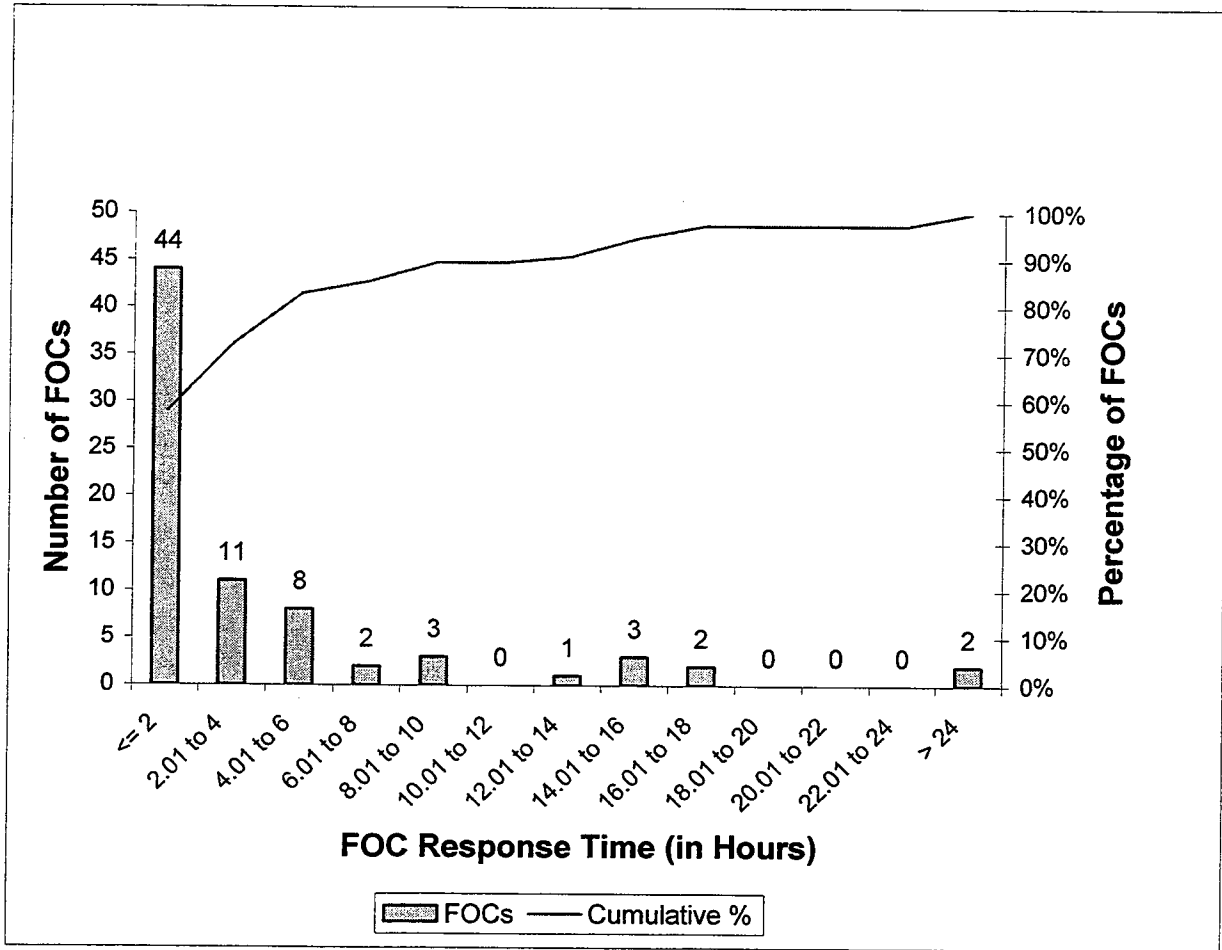


Figure 12-9: EDI UNE-Loop Non-Flow Through

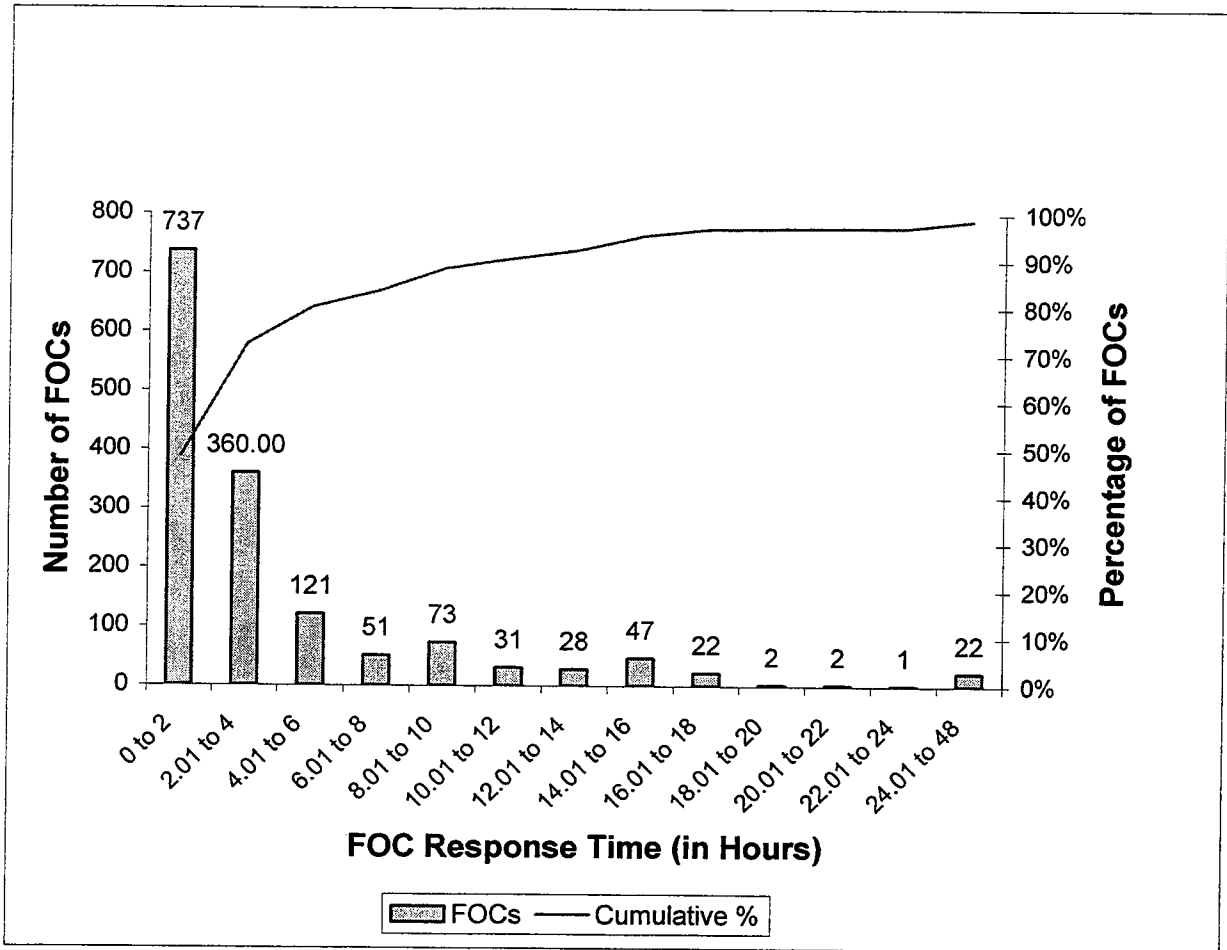


Figure 12-10: GUI UNE-Loop Non-Flow Through

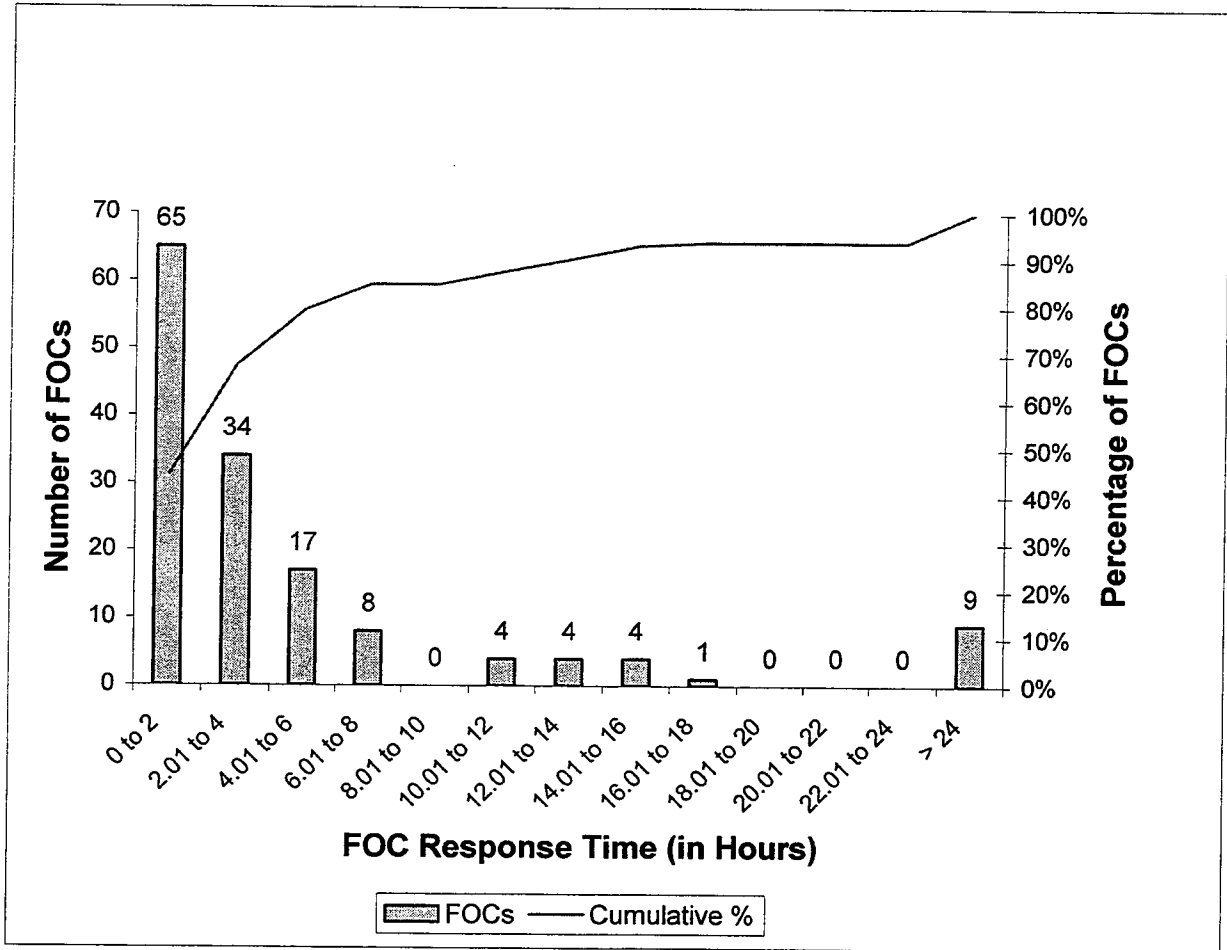


Figure 12-11: EDI LNP Non-Flow Through

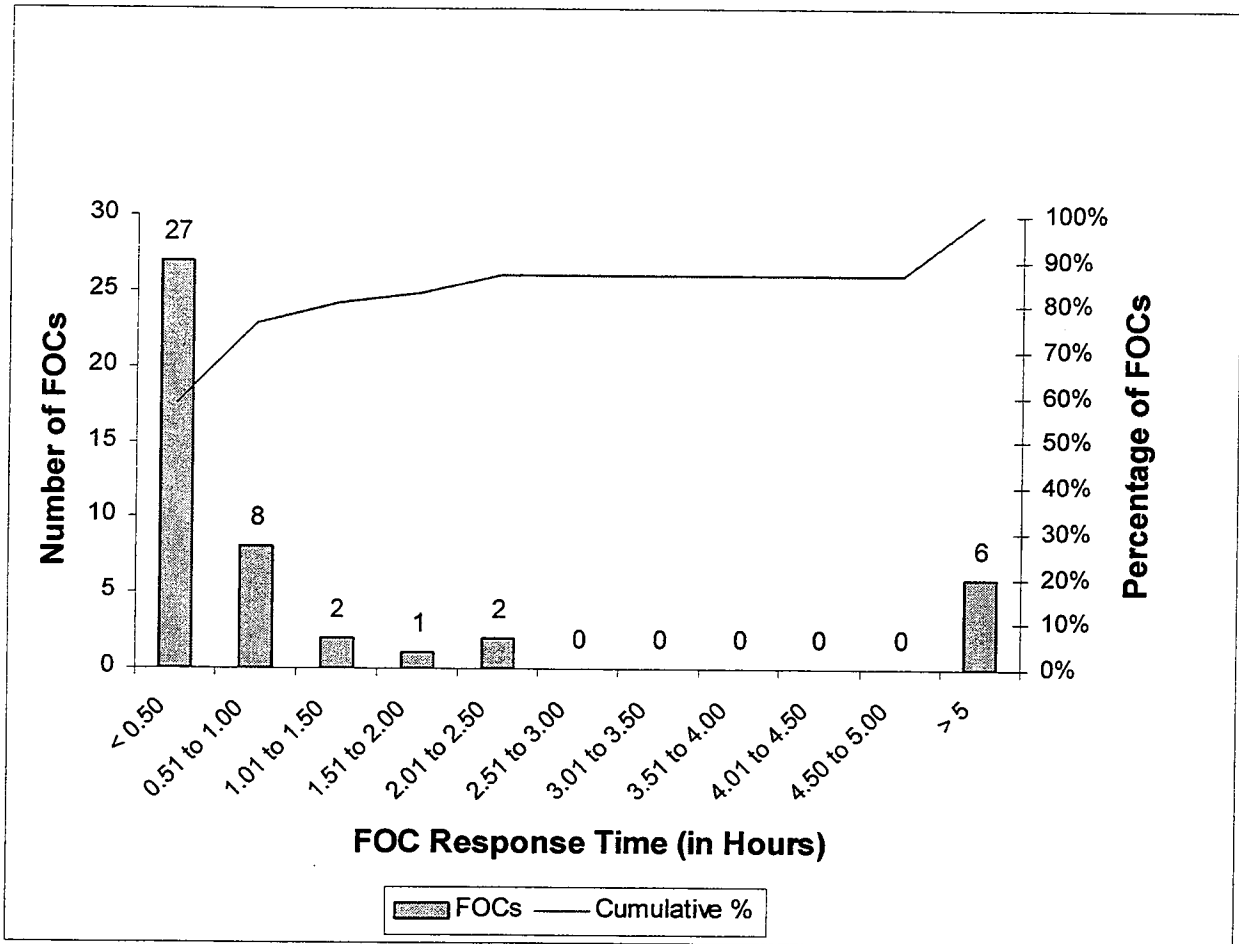


Table 12-12: Local Service Rejection Notice Interval Timeliness

Product Type	PID Base	Interface Type	Average Response Time	Number of Error Responses
LSR received via EDI and rejected manually (ISC Errors)	Returned within 12 hrs.	EDI	6.10 hrs.	285 ³²
LSR received via GUI and rejected manually (ISC Errors)		GUI	7.65 hrs.	38
LSR received via EDI and auto rejected (Auto reject)	Returned within 18 sec.	EDI	16.75 sec.	1,478 ³³
LSR received via GUI and auto rejected (Auto reject)		GUI	4.75 sec.	74
LSR received via facsimile and manually rejected	Returned within 24 hrs.	Manual	6.53 hrs.	30

³² Manual rejections received prior to the resolution of Exception 3020 were excluded from the timeliness evaluation.

³³ Forty-nine transactions were excluded from the timeliness evaluation due to invalid start/stop times, as defined by the PID.

Figure 12-12: EDI (ISC) Manual Rejects

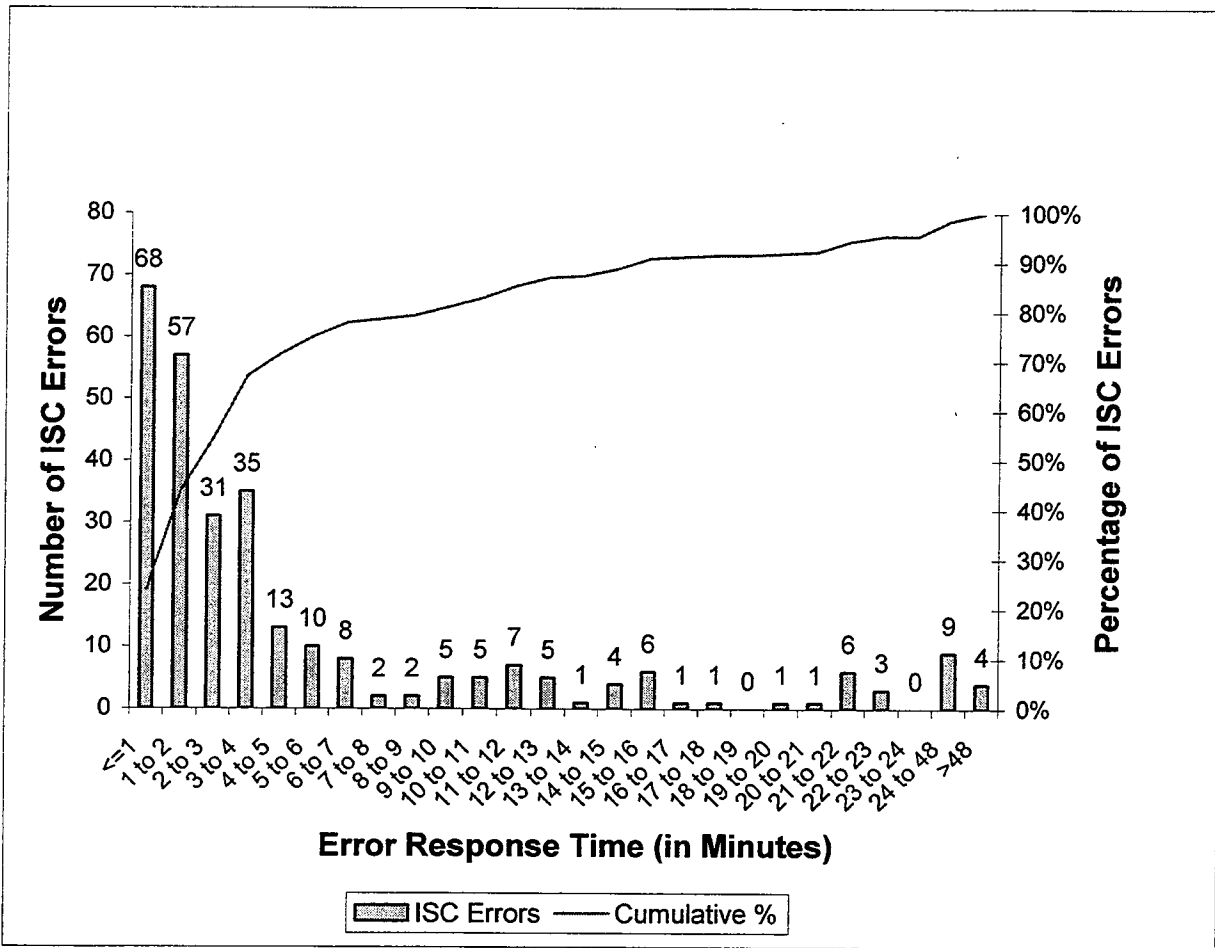


Figure 12-13: GUI (ISC) Manual Rejects

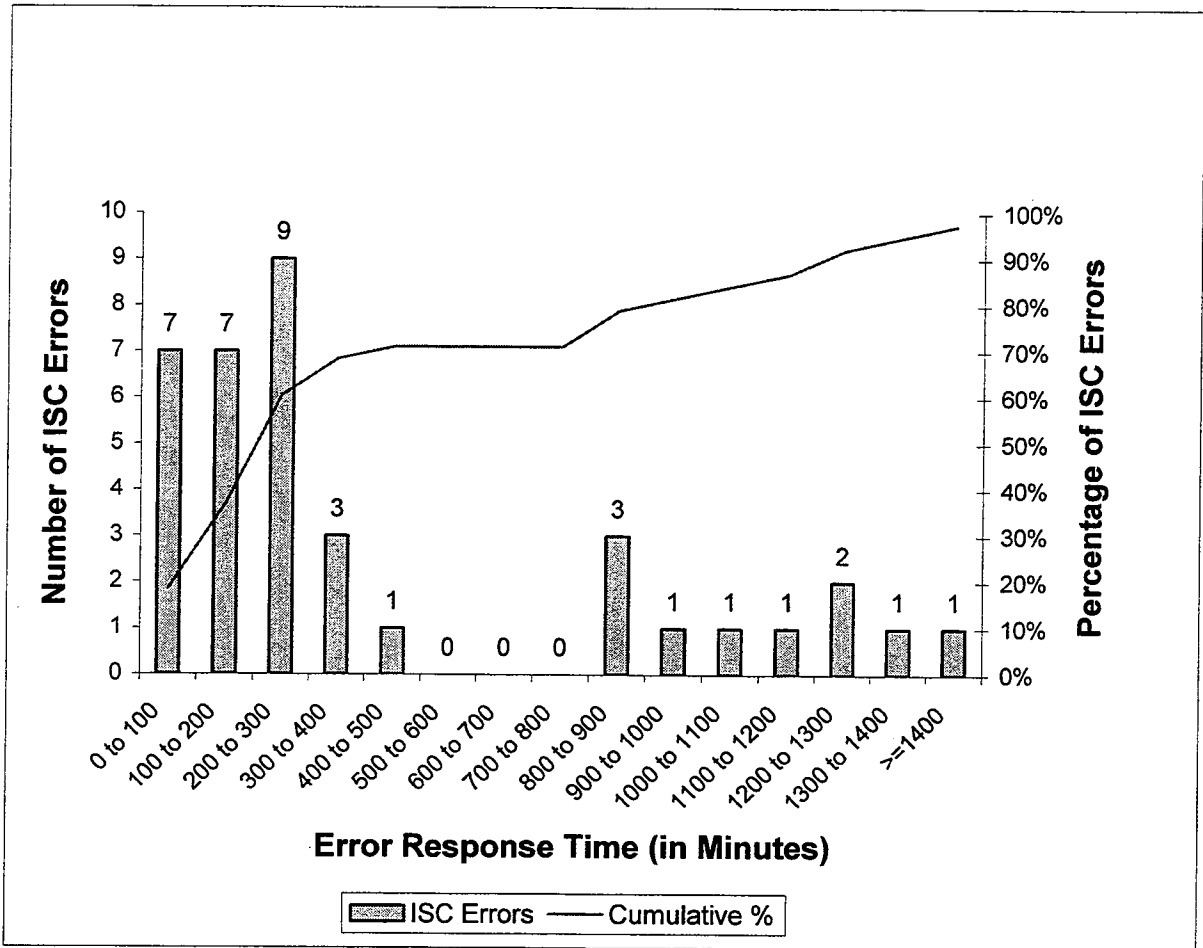


Figure 12-14: EDI (BPL) Auto-Rejects

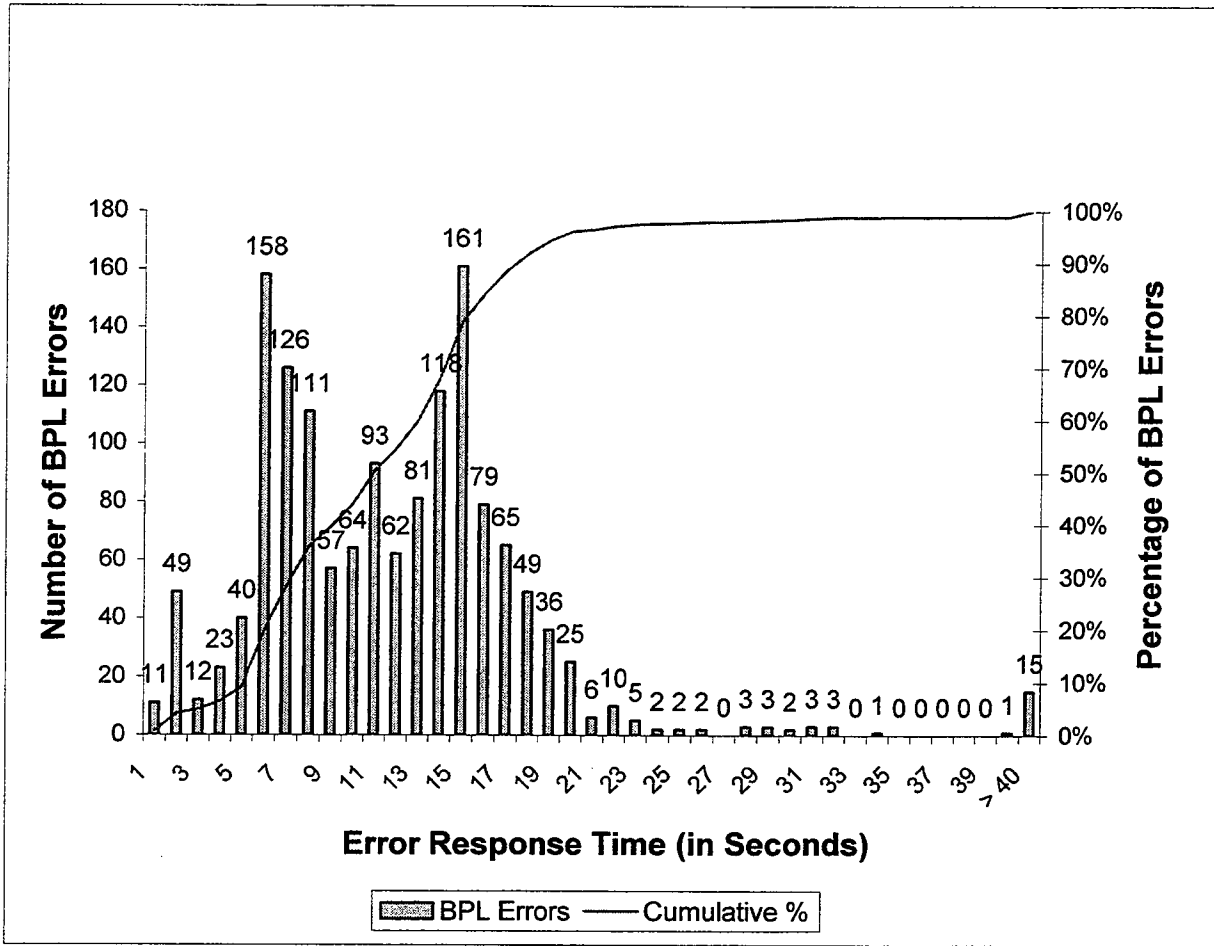


Figure 12-15: GUI (BPL) Auto-Rejects

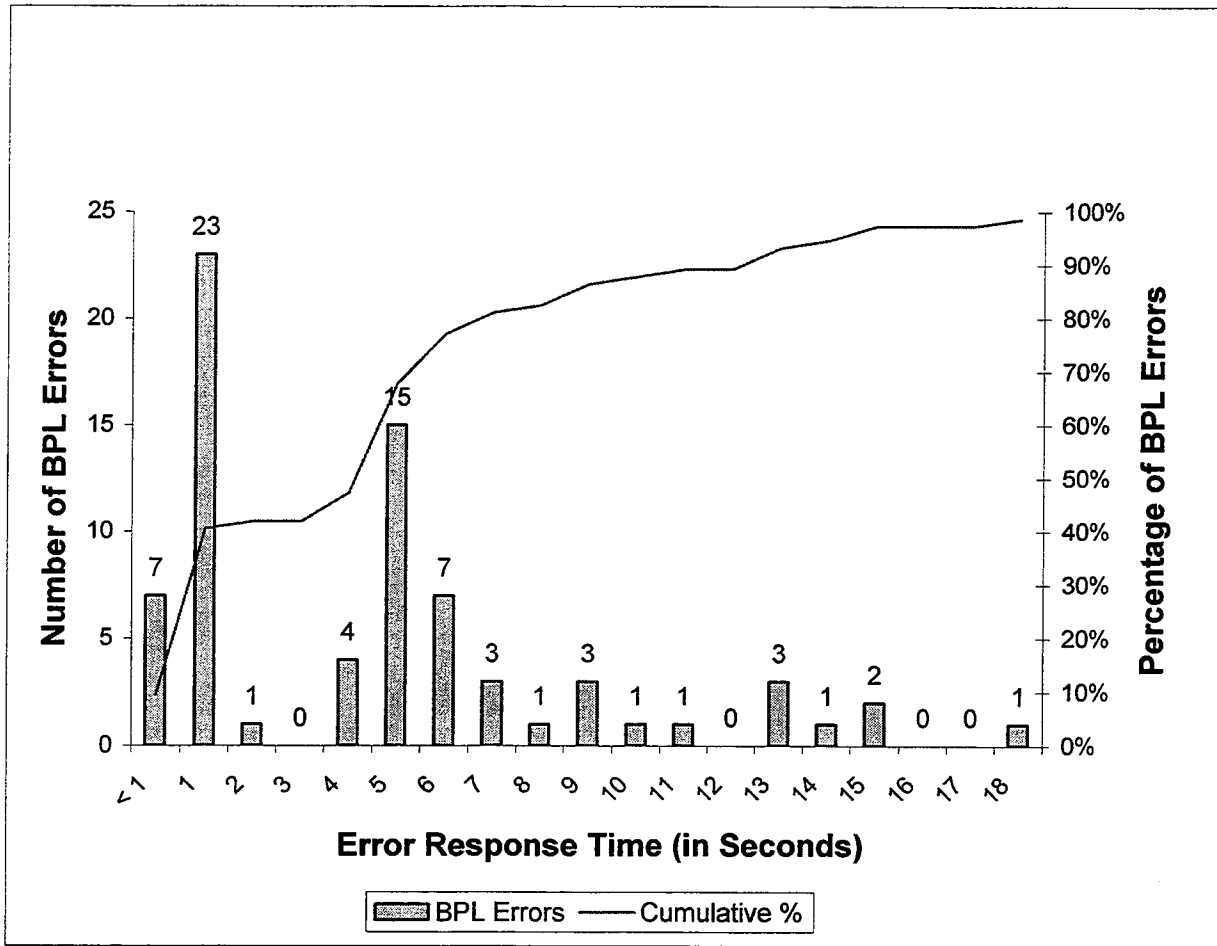


Table 12-13: Functional Acknowledgement Timeliness

	KPMG Consulting Benchmark	Average Response Time (sec)	Number of Responses
FA ³⁴	95% returned 18 seconds	13.56 seconds	5,853

³⁴ In the absence of an established PID, KPMG Consulting established a benchmark of 95% of orders received FAs within 18 seconds.

Figure 12-16: Functional Acknowledgment (FA) Timeliness

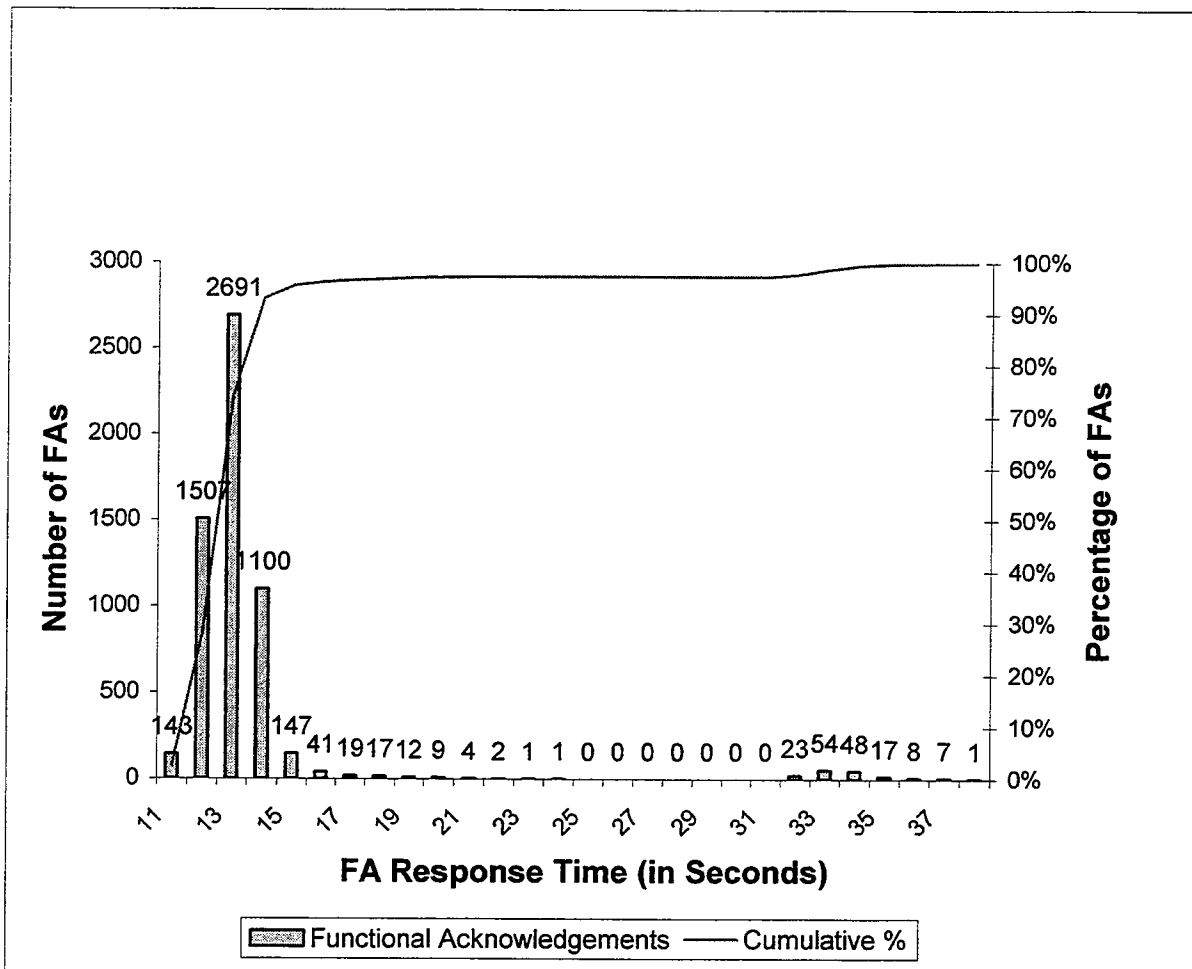


Table 12-14: Functional Acknowledgements in Response to LSRs Submitted via EDI

Interface	KPMG Consulting Benchmark	Percentage Received	Total Submitted	Number of Responses Received	Number of Missing Responses
EDI	95%	99.49%	9,963	9,912	51

Table 12-15: Expected Order Responses

Flow through/ Non-Flow through	Product Type	Interface Type	Total Transactions Sent	Number of FOC Responses Received	Number of Error Responses	No Response	KPMG Consulting Benchmark	Percentage of Expected Responses Received
All	All Types	EDI	9,656	6,169	3,419	68	95%	99.30%
		GUI	490	378	112	-	95%	100%
		Manual	86	56	30	-	95%	100%
Flow through	All Types	EDI	4947 ³⁵	3408	1522	17	95%	99.65%
		GUI	178 ³⁶	152	26	-	95%	100%
	Resale/UNE-P	EDI	3501	2581	917	3	95%	99.91%
		GUI	106	85	21	-	95%	100%
	LNP	EDI	88	69	19	-	95%	100%
		GUI	4	4	-	-	95%	100%
	UNE-Loop ³⁷	EDI	1358	758	586	14	95%	98.96%
		GUI	68	63	5	-	95%	100%
Non-Flow through	All Types	EDI	4709 ³⁸	2761	1897	51	95%	98.92%
		GUI	312 ³⁹	226	86	-	95%	100%
	Resale/UNE-P	EDI	2401	1197	1174	30	95%	98.75%
		GUI	103	76	27	-	95%	100%
	LNP	EDI	56	47	9	-	95%	100%
		GUI	5	4	1	-	95%	
	UNE-Loop	EDI	2252	1517	714	21	95%	99.11%
		GUI	204	146	58	-	95%	100%

³⁵Six orders (4 Resale/UNE-P, 1 UNE-Loop, and 1 LNP) were excluded because of invalid start/stop times, as defined by the PID.

³⁶Nineteen orders that did not receive information from HPC prior to cut-off date were excluded from this total. Two orders were excluded because of invalid start/stop times, as defined by the PID. In addition, one order was excluded because of an invalid test case.

³⁷Two FOCs for UNE-L 2 Wire Analog (Central Region) orders and one FOC for UNE-Loop 2 Wire Analog (Eastern Region) order were counted based on expected flow through indicator rather than on actual flow through indicator. KPMG Consulting did not receive the actual flow through indicator by the cut-off date.

³⁸Non-flow through resale and UNE-P orders submitted prior to the resolution of Observation 3001 were excluded. See Observation 3001 for additional information.

³⁹One order was excluded because of invalid start/stop times, as defined by the PID. In addition, one order was excluded because of an invalid test case.

Table 12-16: Rejected Percentage of LSRs

Region	Interface	Total Reject Percentage	Total Submitted	Number of Rejects
All	Facsimile	34.88%	86	30
Eastern	GUI	25.38%	197	50
	EDI	33.50%	3,340	1,119
Central	GUI	22.50%	120	27
	EDI	40.42%	3,261	1,318
Western	GUI	20.23%	173	35
	EDI	32.01%	3,068	982

Table 12-17: Rejects Received after FOC Received

Interface	Total Reject after FOC Percentage	Total Submitted	Number of Rejects after FOC
GUI	5.10%	490	25
EDI	0.94%	9,656	91
Facsimile	0%	56	0

Table 12-18: Work Completion Notifications Received

KPMG Consulting Benchmark	KPMG Consulting Percentage	Total Orders Submitted Expecting Completion	Number of Completions Received	Orders Missing Completion
95%	99.41%	5,274	5,243	31

12-A. Test Results: POP Functional Evaluation (Test 12)

1.0 Description

The POP Functional Evaluation analyzed Qwest's wholesale pre-order, order, and post-order processes. To evaluate these processes, the P-CLEC submitted transactions over Qwest's wholesale interfaces and recorded the results. The interfaces included:

- Interconnect Mediated Access (IMA) Electronic Data Interchange (EDI);
- IMA Graphical User Interface (GUI); and
- Manual processes, where applicable.

HP evaluated Qwest functionality provided to CLECs for wholesale pre-order, order, and post-order processing, and assessed how effectively CLECs can use Qwest's Operations Support Systems (OSS) interfaces. The primary focus was on transaction submissions, and receipt of pre-order, order, and post-order responses.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

CLECs perform pre-ordering, ordering, and post-ordering functions, to order Unbundled Network Element (UNE) or Resale products and services. Pre-order transactions enable the CLEC to obtain information necessary for the preparation of orders, and prevent delays when processing Local Service Requests (LSRs). For ordering products and services, CLECs prepare and submit LSRs, either electronically or manually, to Qwest. The post-order phase includes errors, jeopardies, status inquiries, status updates, Firm Order Confirmations (FOCs), and Service Order Completions (SOCs).

2.1.1 Pre-Order Transaction Processing

CLECs perform a set of pre-ordering transactions designed to prevent delays when processing an LSR for UNE or Resale products and services. Prior to submitting an LSR, the CLEC completes pre-order functions via Qwest's web-based IMA GUI or an application-to-application EDI interface. For CLECs that order products manually, Qwest's Interconnect Service Center (ISC) can assist with the completion of most pre-order functions.

Pre-order transactions are product specific, and include: Address Validation, Customer Service Record (CSR) Query, Telephone Number (TN) Reservation, Facility Availability Query, Service Availability Query, Loop Qualification, Connecting Facility Assignment (CFA) Validation, Design Layout Record (DLR) Query, Raw Loop Data Query, and Meet Point Query. Each of these transactions is explained in the segments that follow.

2.1.1.1 Address Validation

The Address Validation function enables a CLEC to match a customer address (provided by the CLEC) to an address in Qwest's OSS. A valid customer address is required to submit LSRs for products and services. If the customer address on the LSR does match, the order will be rejected.



CLECs can validate up to ten addresses in a work session. For some types of customer addresses, such as residential or small business customers, CLECs may perform address validations by using the customer's existing TN.

2.1.1.2 Customer Service Record (CSR) Query

CLECs may perform a CSR Query to review a customer's current account (i.e., the products and services to which a customer currently subscribes) when the customer requests existing service changes, or requests a service provider change. Though a CSR Query is not required for all orders, the function enables CLECs to avoid account problems when transferring customers from one provider to another. Reviewing the customer's CSR also allows the CLEC to determine the current status (e.g., "live," "suspend," etc.) of the account.

2.1.1.3 Telephone Number (TN) Reservation

The TN Reservation process allows the CLEC to reserve TNs from a bank of available numbers stored in Qwest's OSS. A TN Reservation is required to order new service, add an additional line to an existing customer account, or change a customer's existing TN. Qwest will reject orders that require a TN if the CLEC does not first reserve a number through the TN Reservation pre-order function.

2.1.1.4 Facility Availability Query

CLECs use the Facility Availability Query to verify in Qwest's OSS whether facilities currently exist or if new facilities are required to provision a customer's service request. CLECs can use the Facility Availability Query to confirm facilities exist when requesting Design Services, High Capacity Service, POTS conversions to Unbundled Loops, and POTS and ISDN facilities.

2.1.1.5 Service Availability Query

The Service Availability Query function enables the CLEC to confirm that a Qwest Central Office (CO) supports the products, services, and carriers requested by customers served by that CO. Using information from the CLEC's contract and the state in which the services are requested, the Service Availability Query function identifies and displays the Universal Service Order Codes (USOCs) that can be resold. If an LSR is submitted with invalid USOCs, the order may be rejected.

2.1.1.6 Loop Qualification

CLECs use the Loop Qualification tool to determine if a facility can handle the type and volume of ISDN lines requested, to determine if the loop is qualified to carry DSL traffic, or to determine if the line is qualified for ADSL loop compatibility. The Loop Qualification function is a query tool only and does not reserve the queried facilities.

2.1.1.7 Connecting Facility Assignment (CFA) Validation

CLECs use the CFA Validation pre-order function to determine the CFA availability at a particular location. CLECs can perform a query by cable group, which displays a list of all valid



CFAs in a cable group, and identifies both available and unavailable CFAs. CLECs can also query a single CFA to receive information about a particular slot within a cable group.¹

2.1.1.8 Design Layout Record (DLR) Query

A DLR contains technical information describing a Qwest-provided circuit's facilities and terminations. Using the DLR Query function, a CLEC can input a Circuit ID for which it has control or ownership, and submit a request for the DLR of the circuit. The function allows the CLEC to view the DLR on the screen, and e-mail or print the information.

2.1.1.9 Raw Loop Data Query

The Raw Loop Data Query enables CLECs to access raw loop data for Qwest facilities. The data is broken out by segment and sub-segment of the loop. The CLEC can perform a query for up to twenty customer TNs. For each working TN, the Raw Loop Data Query displays data for the entire loop, with a section for each loop segment and a subsection for each sub-segment of the loop segment. Additionally, CLECs can perform queries by customer address for assigned or unassigned loops. For assigned loops, the query returns loop information for Qwest-provided TNs and CLEC UNE loops at the customer address. For unassigned loops, the query returns raw loop information for spare loops at the customer address. The Query also displays data for performing calculations and determining whether the loop qualifies to carry DSL service.

2.1.1.10 Meet Point Query

The Meet Point Query pre-order function supports Qwest's Shared Loop service. CLECs can use the Meet Point Query to retrieve a list of between one and five individual meet points, or a range of meet points. IMA does not limit the size of the range. However, due to Qwest system limitations, IMA only returns the first ten meet points in a specified range. To see additional meet points in the specified range, the CLEC must adjust the range and submit a new query.

2.1.2 Order Transaction Processing

Qwest offers various ordering methods to submit service requests for UNE, Resale, or Interconnection products and services with associated features and functions. The order process starts with the CLEC's submission of a service request to Qwest. Service requests can be submitted electronically or manually. Electronic access can be achieved three different ways. First, CLECs can dial up and log on to Qwest's ordering systems from local computers. Second, CLECs can connect directly via a dedicated circuit using IMA EDI. Third, CLECs can use web access to IMA GUI. CLECs without electronic capabilities may order manually via facsimile transmission of service requests.

2.1.2.1 Ordering Interface Options

CLECs may use Telecommunications Information Access Ordering (TELIS) and IMA for the electronic submission of service requests. TELIS allows CLECs to electronically submit Access

¹ Within IMA GUI, if a CLEC queries for a single CFA, the response provides information on the requested CFA along with a list of up to nine subsequent CFAs. Within IMA EDI, the query returns only the information for the specified CFA.



Service Requests (ASRs) to order interconnection trunking and facilities between it and Qwest.² IMA allows CLECs to submit LSRs via a web-based GUI or through an application-to-application EDI interface. Manual ordering is performed via the submission of facsimiles to Qwest's service centers.

2.1.2.1.1 IMA EDI

CLECs using EDI are able to exchange business information from computer to computer in a pre-defined electronic format. CLECs submit pre-order queries and LSRs electronically to the Qwest IMA EDI interface. Responses to CLEC transactions are returned in an electronic format and may be posted directly to the CLEC's computer systems.

EDI uses clearly specified fields and formatting, eliminating the need for CLECs to enter service request information into multiple systems, and allows for automation of the CLEC's systems. CLECs that use EDI to submit pre-order, order, and post-order transactions to Qwest may choose to integrate their internal systems to eliminate the need to re-enter data from pre-order transaction responses into other pre-order queries or order transactions.³

2.1.2.1.2 IMA GUI

Qwest's IMA GUI allows CLECs to process pre-order, order, and post-order transactions through a series of browser-based screens. The information is exchanged in data file format. IMA GUI does not require the CLEC to develop its own interface, and enables the CLEC to access Qwest's OSS via web-based applications.

2.1.2.1.3 Manual Facsimile Ordering

CLECs that do not have access to Qwest's electronic interfaces may submit LSRs to Qwest via facsimile. A confirmation of receipt will be returned to the CLEC's fax machine. If the appropriate forms or fields are not complete or accurate, the service request will be returned, via a Notice of Rejection, with an explanation of what is needed to process the request. Qwest returns FOCs on manual orders via fax. Order completions are identified on the CLEC's Loss and Completion Reports.

2.1.2.2 Order Process Flows

Once CLECs perform the necessary pre-ordering functions and submit LSRs, the orders will follow one of the following order flows: Normal, Exception, Supplemental, and Jeopardy. It is also possible to follow combinations of the flows, depending on the presence and severity of errors.

2.1.2.2.1 Normal Order Flow

If a CLEC submits an LSR that complies with all of Qwest's product requirements and business rules, Qwest processes the order completely. This scenario, called the Normal Order Flow, is

² Due to the scope of the test, the P-CLEC did not submit ASR orders for products and services. As such, the P-CLEC did not use or evaluate Qwest's TELIS application.

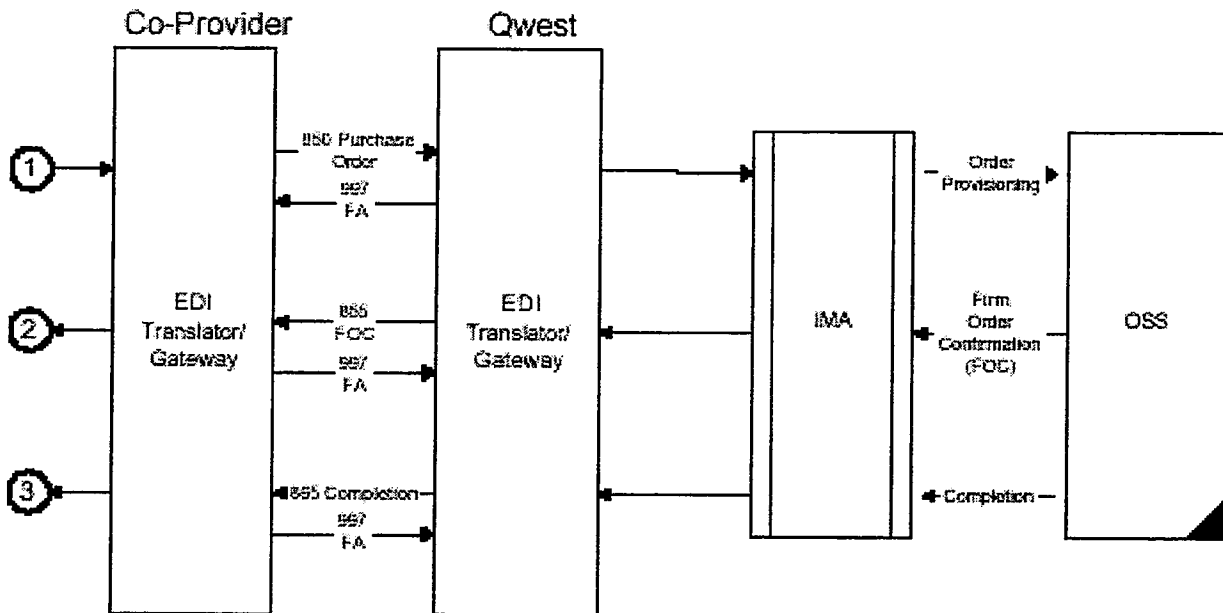
³ As part of its testing activities, HP analyzed the pre-order, order, and post-order integration capabilities of Qwest's IMA 7.0 and IMA 8.0 Releases. The results of HP's analysis are documented in Appendices HP-B and HP-C, respectively.



error-free, has no jeopardy situations, and no supplemental orders are issued against the original LSR. The processing of the LSR generates a FOC and, eventually, a SOC.

Figure 12A-1.1, below, represents the Normal Order Flow for an LSR submitted via IMA EDI.

Figure 12A-1.1: Normal Order Flow⁴



1. A Purchase Order is initiated by the CLEC, translated by the CLEC's Translator/Gateway to an 850 Purchase Order, and passed to the Qwest Translator/Gateway. Qwest's translator performs a syntax check and returns a positive 997 Functional Acknowledgment (FA) to the CLEC. The translator then maps the 850 Purchase Order to an application file format Interconnect Mediated Access (IMA). The IMA gateway is a middleware that performs order content edits and interacts with the Service Order Processor (SOP) in the Operating Support System (OSS). When the resulting service request passes all SOP edits, it becomes a pending order.
2. After the SOP accepts the pending order, a Firm Order Confirmation (FOC) message is sent to IMA. The IMA gateway formats and forwards the FOC message to the EDI Translator/Gateway, where the message is mapped into an 855 FOC and transported to the CLEC's Translator/Gateway. A 997 Functional Acknowledgment will be returned to Qwest to confirm the receipt.
3. Upon completion of the service order request, the SOP generates a Completion Notification to IMA. The IMA formats and forwards the Completion Notification to the Translator/Gateway where the message is mapped to an 855 Completion and transported to the CLEC. A 997 (FA) will be returned to Qwest to confirm the receipt.

2.1.2.2.2 Exception Order Flow

If an LSR fails IMA edits, it follows the Exception Order Flow, and Qwest's systems return the order to the CLEC with one or more error codes. The CLEC must correct the LSR before Qwest systems can process the order to completion. In most cases, a CLEC can either resubmit the request with the same PON and an incremented version number, submit a corrected LSR with a new PON, or call the service center to discuss the errors. When all errors are corrected or cleared,

⁴ This diagram is taken from Qwest IMA 8.0 Disclosure, Appendix I – Generic Order Flow Business Model, dated February 18, 2002. Available at: <http://www.qwest.com/disclosures/netdisclosure409/8/appendixi.pdf>.

Qwest systems return a FOC to the CLEC. The order then follows the Normal Order Flow. If the resubmitted LSR contains errors, it reverts back to the Exception Order Flow for further correction.

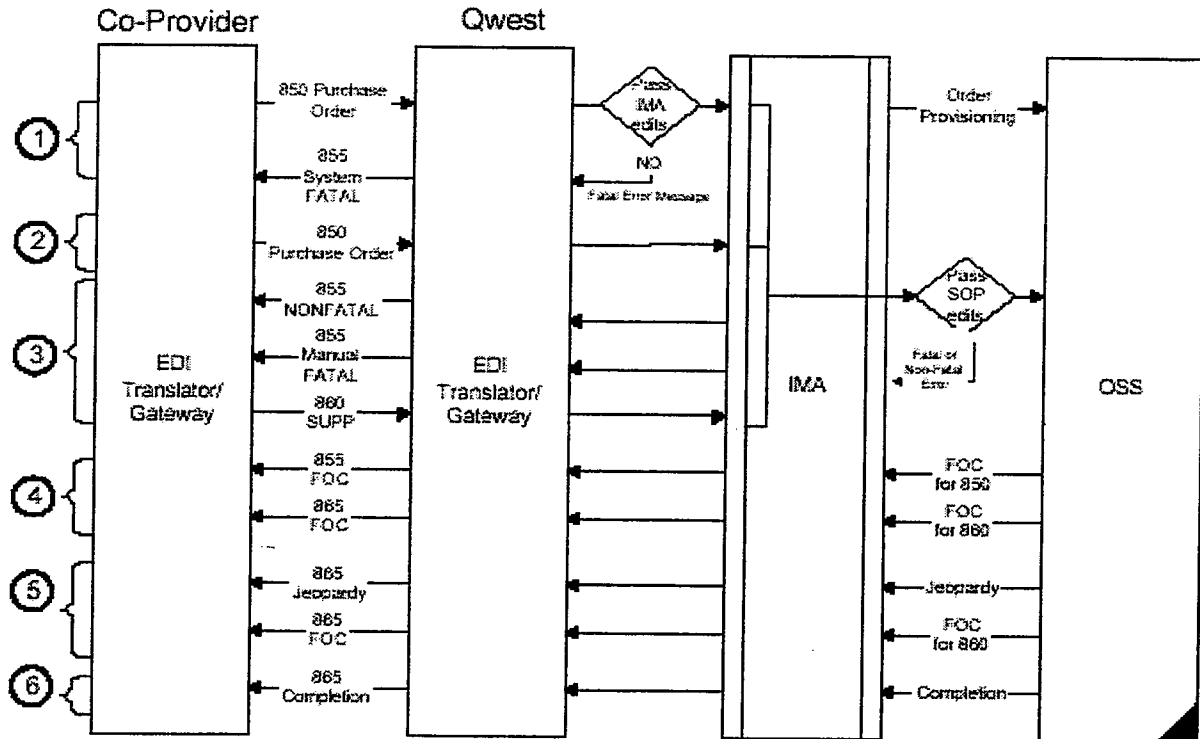
There are three categories of errors or rejects that can occur during the processing of a CLEC's LSR: non-fatal, fatal, and Central Office embargoes. Non-fatal errors are errors that an ISC representative may be able to correct with the CLEC's approval. Fatal Errors, or Fatal Rejects, occur when Qwest does not have enough data, or does not have the correct data, to process a CLEC's service request. Also, if the CLEC's LSR does not conform to certain business rules, the LSR will receive a Business Process Layer (BPL) Fatal error. An LSR that receives a Fatal Error must be re-submitted by the CLEC to be processed and provisioned. The third error category is Central Office embargoes. IMA validates whether the Desired Due Date (DDD) of the LSR falls within a published embargo period for the specified Central Office/Switch by NPA-NXX or CLLI code, and, if it does, IMA rejects with a message detailing the dates of the embargo.

In the Exception Order Flow, orders can receive Fatal or Non-fatal rejections. Fatal errors prevent the order from processing, whereas Non-fatal errors can be fixed and reprocessed. The two types of Fatal errors are system generated and manually generated. To correct a system-generated Fatal error, the CLEC must submit a corrected LSR with the original PON. Or, the CLEC may submit an entirely new PON. Manually generated fatal errors require that the CLEC submit a corrected LSR with the original PON and an incremented version number.

As with Fatal errors, the CLEC can correct Non-fatal errors by sending a revised LSR with the original PON and incremented version number. The CLEC may instead choose to call the ISC to discuss the Non-fatal errors. When discussing the errors with an ISC representative, the representative may choose to request a supplemental order or take a verbal correction from the CLEC. When the ISC representative accepts a verbal correction from the CLEC, Qwest returns a FOC to the CLEC with the CFLAG field marked and the corrections noted in the remarks section of the LSR. If the CLEC does not respond to a Non-fatal error received prior to the generation of a FOC within two ISC business hours, or received after generation of a FOC within four ISC business hours, the ISC will send a manually generated Fatal error to the CLEC, and the LSR follows the Exception Order Flow.

Figure 12A-1.2, below, represents the Exception Order Flow for an LSR submitted via IMA EDI.



Figure 12A-1.2: Exception Order Flow⁵

1. If an 850 Purchase Order fails IMA edits, an 855 System Fatal is returned to the CLEC with one or more fatal error codes.
2. The CLEC, having received the 855 System Fatal, needs to correct the 850 Purchase Order with the same PON and version or submit a new PON, and re-send the 850 Purchase Order as an original request.
3. If an 850 Purchase Order receives a Manual Fatal, the CLEC should resubmit the request with the same PON and an incremented version. If an 850 Purchase Order receives a non-fatal error, the CLEC can either resubmit the request with the same PON and an incremented version or call the service center to discuss the error(s).
4. When the 850 Purchase Order or 860 Supplemental (SUP) is posted to the SOP, an 855 FOC or an 865 FOC will be returned to the CLEC. This confirmation means the SOP has accepted the 850 Purchase Order or 860 Supplemental (SUP) and provisioning of the service has begun.
5. If an error is detected after the FOC is sent, or if there is a problem meeting the commitment on the local service request, an 865 Jeopardy Notice will be sent. If the jeopardy is caused by Qwest conditions, Qwest will negotiate a new due date and send a new FOC. If the jeopardy is caused by non-Qwest conditions, the CLEC must submit a supplemental request to correct the condition with the same PON and incremented version number as the original request. If this jeopardy caused the due date to be missed, the supplemental request must include a revised due date.
6. Upon completion of the service order request, an 865 Completion notice will be sent.

⁵ This diagram is taken from Qwest IMA 8.0 Disclosure, Appendix I – Generic Order Flow Business Model, dated February 18, 2002. Available at: <http://www.qwest.com/disclosures/netdisclosure409/8/appendixi.pdf>.

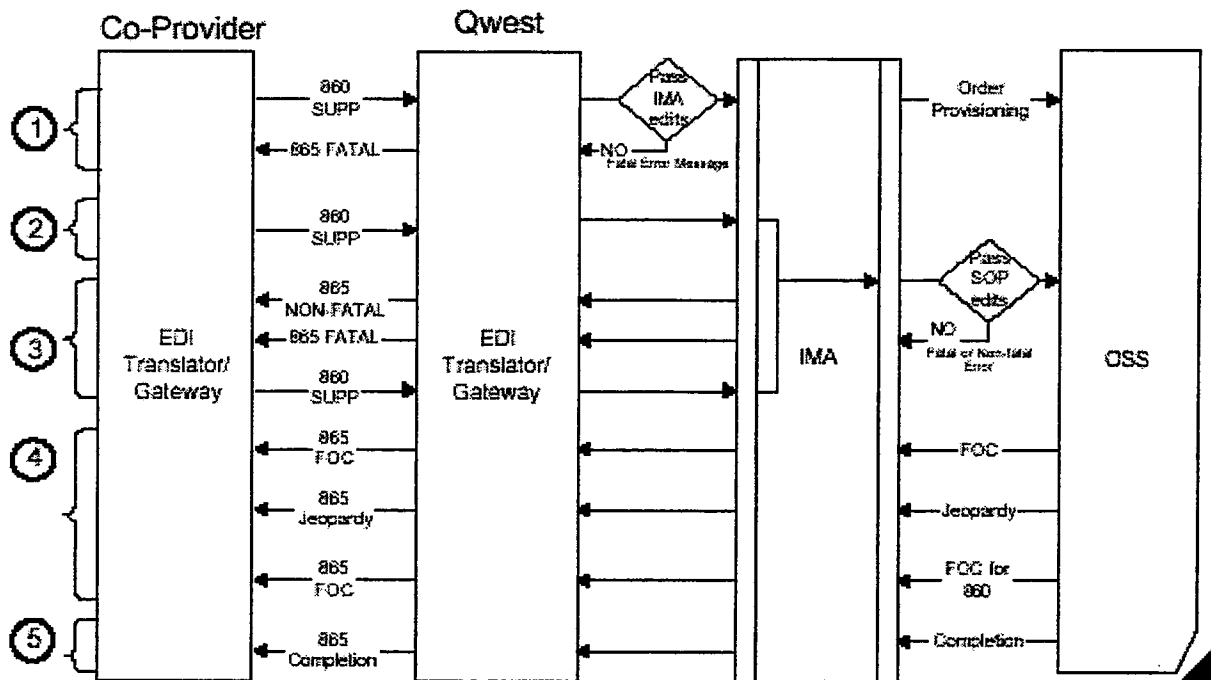
2.1.2.2.3 Supplemental Order Flow

When the CLEC has a need to change an order, it issues a Supplemental LSR, and the order follows the Supplemental Order Flow. CLECs must submit Supplemental LSRs with the original PON and an incremented version number. If the CLEC sends a Supplement prior to receiving a response for the original transaction, the Supplement replaces the original LSR. Consequently, the CLEC receives a FOC on the Supplemental order only. For every Supplemental order that is submitted, Qwest returns a FOC only if the Supplement passes all edits before the receipt of a subsequent Supplemental order. Supplemental orders follow the same steps as the Exception Order Flow or the Normal Order Flow, depending on any errors present in the LSR.

CLECs can submit three types of Supplemental orders to Qwest: cancels, due date changes, and “others.” First, a Supplement of “1-Cancel” indicates that Qwest should cancel the pending service request in its entirety. A Supplement of “2 -New Desired Due Date” indicates the pending service request requires only a change in the requested delivery date of the service. A Supplement of “3-Other” indicates CLEC is requesting any other change, or a combination of changes, for the pending service request.

Figure 12A-1.3, below, represents the Supplemental Order Flow for an LSR submitted via IMA EDI.

Figure 12A-1.3: Supplemental Order Flow⁶



1. If the 860 Supplemental (SUP) fails the IMA edits, an 865 System Fatal Error, 865 FATAL, will be returned to the CLEC with one or more fatal error codes.

⁶ This diagram is taken from Qwest IMA 8.0 Disclosure, Appendix I – Generic Order Flow Business Model, dated February 18, 2002. Available at: <http://www.qwest.com/disclosures/netdisclosure409/8/appendixi.pdf>.



2. The CLEC should resolve the errors and re-submit the 860 Supplemental (SUP). While an 860 Supplemental (SUP) is in progress, the CLEC should wait until the current 860 Supplemental (SUP) is confirmed (865 FOC) or an error is received (865 FATAL or 865 Non-Fatal) before issuing another 860 Supplemental (SUP).
3. If an 860 Purchase Order receives a non-fatal error, the CLEC can either resubmit the request with the same PON and an incremented version or call the service center to discuss the error(s). If an 860 Purchase Order receives a Manual Fatal error, the CLEC should resubmit the request with the same PON and an incremented version.
4. When the 860 Supplemental (SUP) is posted to the SOP, an 865 FOC will be returned to the CLEC. This confirmation indicates that the SOP has accepted the 860 Supplemental (SUP), and provisioning of the service has begun.

If Qwest has a problem meeting the commitment on the local service request, and the CLEC has chosen to receive notification via IMA EDI, a Jeopardy Notification will be issued. If this occurs, an 865 Jeopardy Notification is sent. If the jeopardy is caused by Qwest conditions, Qwest will negotiate a new due date and send a new FOC. If the jeopardy is caused by non-Qwest conditions, the CLEC must submit a supplemental request to correct the condition with the same PON and incremented version number as the original request. If this jeopardy caused the due date to be missed, the supplemental request must include a revised due date

If an error is found after the FOC is sent, an 865 Jeopardy will be sent.

5. Upon completion of the service order request, an 865 Completion notice will be sent.

2.1.2.2.4 Jeopardy Order Flow

If an error is detected on a CLEC's LSR after Qwest sends the FOC, or if Qwest estimates it will miss its commitment on the LSR, Qwest sends a Jeopardy Notice to the CLEC. If Qwest conditions caused the jeopardy, Qwest negotiates a new due date and sends a new FOC. If non-Qwest conditions caused the jeopardy, the CLEC must submit a Supplemental LSR, with the original PON and incremented version number, to correct the condition. If the jeopardy causes the due date to be missed, the Supplemental LSR must include a revised due date. If Qwest determines the jeopardy is caused by the CLEC, the CLEC has 30 days to submit its Supplemental LSR or the order will be canceled.

Figure 12A-1.3, above, includes a depiction of the Jeopardy Order Flow for an LSR submitted via IMA EDI. The Jeopardy Order Flow is illustrated in references 4 and 5.

2.2 Scenarios

The POP Functional Evaluation used the scenarios identified in the MTP, Appendix D. The P-CLEC submitted pre-order and order transactions based upon test cases developed by the Test Administrator from the Appendix D scenarios.

2.3 Test Targets & Measures

The test target was to evaluate the functionality of Qwest's wholesale OSS interfaces in supporting CLECs' pre-ordering, ordering, and post-ordering requirements. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."



Table 12A-1.1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Interface Availability	IMA EDI	Availability of Interface	12-1-1
	IMA GUI	Availability of Interface	12-1-2
Pre-order	IMA EDI IMA GUI	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-2-1 to 12-2-3
Resale	IMA EDI IMA GUI Manual	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-3-1 to 12-3-3
UNE-P/UNE-C	IMA EDI IMA GUI Manual	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-4-1 to 12-4-3
Unbundled Loops	IMA EDI IMA GUI Manual	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-5-1 to 12-5-3
Line Sharing/Shared Loop	IMA EDI IMA GUI Manual	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-6-1 to 12-6-3
Unbundled Dark Fiber	Manual	Completeness of Response, Clarity and Accuracy of Error Messages, Usability of Information	12-7-1 to 12-7-3

2.4 Evaluation Methods

During the period from March 2001 to April 2002, HP, in its role as the P-CLEC, submitted various pre-order, order, and post-order transactions to compile a data set of transaction responses from Qwest.

Table 12-1.2, below, provides a breakdown of the pre-order, order, and post-order transactions that the P-CLEC submitted via Qwest's interface options – IMA EDI, IMA GUI, and Manual ordering.⁷ Due to the schedule of the P-CLEC's transaction testing activities, the P-CLEC processed its electronic transactions in various IMA Releases, and prepared manual orders under both LSOG3 and LSOG5 ordering guidelines.⁸

⁷ The product categories within Table 12-1.2 include both order and post-order activities that the P-CLEC performed. Because the P-CLEC's testing activities dealt with the complete lifecycle of LSR processing, HP is evaluating both order and post-order activities as one element.

⁸ Table 12A-1.2 reflects only the manual order forms that the P-CLEC submitted to Qwest for processing. The P-CLEC prepared manual order forms under LSOG3 for its manual ordering transactions. However, the P-CLEC did not submit these LSOG3 manual orders due to open Observations and Exceptions addressing manual form deficiencies. Qwest implemented LSOG5 for



Table 12A-1.2: P-CLEC Pre-Order/Order Transactions

Product Type	IMA EDI			IMA GUI			Manual	
	6.0	7.0	8.0	6.x	7.x	8.x	LSOG3	LSOG5
Pre-Order								
Address Validation	X	X		X	X	X		
Appointment Availability	X	X		X	X			
Appointment Selection	X	X		X	X			
Cancellation	X	X		X	X			
Connecting Facility Assignment	X	X		X	X	X		
Customer Service Record	X	X		X	X	X		
Design Layout Record	X	X		X	X			
Facility Availability	X	X		X	X	X		
Meet Point	X	X		X	X			
Raw Loop Data	X	X		X	X	X		
Service Availability	X	X		X	X	X		
Telephone Number Availability	X	X		X	X			
Telephone Number Selection	X	X		X	X			
Order								
Centrex 21	X	X		X	X			
Centrex Plus	X	X		X	X			
DID In Only Trunks	X	X		X	X			
ISDN-PRI Resale Facility	X	X		X	X			
ISDN-PRI Resale Trunk	X	X		X	X			
Listing Only	X	X		X	X			X
Local Number Portability	X	X		X	X			
PBX	X	X		X	X			X
Resale POTS	X	X		X	X	X		X
Private Line	X	X		X	X			X
Shared Loop	X	X		X	X			
Unbundled Dark Fiber ⁹								
Unbundled Distribution Loop	X	X		X	X			

its manual ordering forms before these Observations and Exceptions were resolved, which resulted in the P-CLEC submitting its manual orders only under LSOG5 guidelines.

⁹ For Unbundled Dark Fiber (UDF), the P-CLEC completed Qwest's Initial Records Inquiry (IRI) and Reservation Provisioning forms. These forms were designed by Qwest, and are not based on LSOG standards. The P-CLEC did not perform any steps in the UDF process beyond submission of the Reservation Provisioning form.



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Product Type	IMA EDI			IMA GUI			Manual	
	6.0	7.0	8.0	6.x	7.x	8.x	LSOG3	LSOG5
Unbundled Loop	X	X		X	X	X		X
Unbundled Loop w/Number Portability	X	X	X	X	X			
UNE-C Private Line	X	X		X	X			
UNE-P POTS	X	X		X	X	X		X
Post-Order								
Completion	X	X		X	X			
Jeopardy (includes Non-Fatal, Fatal)	X	X		X	X	X		
LSR Status Query / Response	X	X		X	X			
Order FOC and Supplemental	X	X		X	X	X		
Status Change Inquiry- Auto Push	X	X						

To assist in its pre-order, order and post-order transaction testing activities, the P-CLEC used documentation publicly available on Qwest's wholesale website,¹⁰ or resources provided to the P-CLEC by its Account Team. HP's Test 10 report, the Order and Transaction Creation Documentation Evaluation, evaluates the effectiveness of these resources and documentation. The P-CLEC did not receive or use any materials in its pre-order, order, and post-order transaction processing that Qwest does not make available to all CLECs.

2.5 Analysis Methods

The P-CLEC recorded and tracked each transaction submitted through Qwest's OSS, and logged subsequent responses, including functional acknowledgements, FOCs, errors and rejects, jeopardy notices, and SOCs. The P-CLEC compared each response it received to its expectations. The P-CLEC based its expectations on its understanding of Qwest documentation, published process flows, and business rules.

Whenever the P-CLEC received an unexpected response from Qwest on a transaction, it reviewed the transaction details to ascertain whether the error was the result of inaccurate test case data, transaction entry error, or a Qwest system or processing issue. If the source of the error was test case data, HP worked with the Test Administrator to correct the test case data so the transaction could be resubmitted. For transaction entry errors, HP reviewed the transactions, corrected any fields that contained incorrect information or formatting, and resubmitted the test transactions. Finally, if the error was determined to have been caused by a Qwest system or processing issue, HP presented the issue in a formal Observation or Exception report.

HP used the data gathered from the submission and analysis of the P-CLEC's test transactions to determine if essential elements of Qwest's processes were present, and whether Qwest followed its published processes. Data items were analyzed against the evaluation criteria listed in Section

¹⁰ <http://www.qwest.com/wholesale>.



3.1, below, in order to assess the results of Qwest's pre-order, order, and post-order processing performance.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II. Summaries of HP Observations and Exceptions referenced in the comments, and their resolutions, are located in Appendix HP-A.

Table 12A-1.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
12-1-1	Qwest's IMA EDI interface is regularly available for CLECs to submit pre-order and order transactions and receive transaction responses.	Satisfied	The P-CLEC used the IMA EDI interface to submit transactions and receive responses of the types identified in Table 12-1.2. During testing, HP recorded those instances in which the P-CLEC was either a.) unable to submit transactions via IMA EDI; or, b.) unable to receive transaction responses via IMA EDI. The P-CLEC identified issues pertaining to these instances in the following Incident Reports. Observations: 2022, 2030, 2054, 2059. Exceptions: 2015, 2016, 2018, 2019, 2021, 2022, 2029, 2045.
12-1-2	Qwest's IMA GUI interface is regularly available for CLECs to submit pre-order and order transactions and receive transaction responses.	Satisfied	The P-CLEC used IMA GUI to submit transactions and receive responses for those transaction types identified in Table 12-1.2. HP recorded those instances in which the P-CLEC was unable to submit transactions to, or receive responses from, IMA GUI. The P-CLEC identified issues pertaining to the IMA GUI interface in the following Incident Reports. Observations: 2022, 2030, 2090. Exceptions: 2012, 2015, 2018, 2019, 2045, 2048.
12-2-1	Qwest provides complete responses to CLEC pre-order transactions.	Satisfied	The P-CLEC adhered to Qwest-provided training and documentation to complete IMA EDI and IMA GUI pre-order transactions. The P-CLEC identified issues pertaining to the completeness of responses for pre-order



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>transactions in the following Incident Reports.</p> <p>Observations: 2026, 2054, 2061, 2070, 2078, 2082.</p> <p>Exceptions: 2055, 2077.</p>
12-2-2	<p>Error messages returned for pre-order transactions clearly and accurately explain the cause and source of the transaction error.</p>	Satisfied	<p>Of the 35,780 EDI pre-order responses received during the test, the P-CLEC received 18 responses (0.05%) from Qwest that contained syntactical errors and generated a negative 997 Functional Acknowledgment (FA) from the P-CLEC's EDI translator. These errors were all the result of an error in Qwest's mapping of the PO1 segment of the 855 response to a Facilities Availability Query (FAQ) when the FAQ was submitted with a zero (0) in the WLINUM field. Qwest notified the CLEC community of this error on November 1, 2001, and corrected the issue on November 6, 2001.</p> <p>The P-CLEC processed IMA EDI and IMA GUI pre-order transactions. The P-CLEC submitted, as part of its pre-order test transactions, test cases that included planned errors.</p> <p>The P-CLEC evaluated the clarity and accuracy of the error messages and found them to be satisfactory overall. The P-CLEC identified issues pertaining to pre-order error messages in the following Incident Reports.</p> <p>Observations: 2044, 2047.</p> <p>Exceptions: 2059, 2066, 2082, 2085.</p>
12-2-3	<p>The P-CLEC was able to submit valid pre-order transactions based upon publicly available Qwest information.</p>	Satisfied	<p>The P-CLEC used publicly available Qwest documentation, provided via Account Management channels or from the Qwest wholesale website, when processing pre-order transactions for products and services. Where the P-CLEC's experience differed from Qwest documentation, the P-CLEC noted the discrepancy to Qwest and requested a change or clarification.</p> <p>HP identified issues pertaining to the usability of Qwest information in pre-order transaction processing in the following Incident Reports.</p> <p>Observations: 2014, 2057, 2078.</p> <p>Exceptions: 2048, 2059, 2063, 2069, 2072,</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
12-3-1	Qwest provides complete responses to CLEC Resale order and post-order transactions.	Satisfied	<p>2080.</p> <p>The P-CLEC used Qwest-provided training and documentation to complete IMA EDI, IMA GUI, and manual order and post-order transactions for Resale products.</p> <p>The P-CLEC identified issues pertaining to the completeness of responses for Resale transactions in the following Incident Reports.</p> <p>Observations: 2048, 2054, 2059, 2086.</p> <p>Exceptions: 2019, 2029, 2032, 2033, 2036, 2037, 2057, 2068, 2086, 2087, 2088.</p>
12-3-2	Error messages returned for Resale order and post-order transactions clearly and accurately explain the cause and source of the transaction error.	Satisfied	<p>Of the 33,358 EDI order responses received during the test, the P-CLEC did not receive any responses from Qwest that contained syntactical errors generating a negative 997 Functional Acknowledgment (FA) from the P-CLEC's EDI translator.</p> <p>The P-CLEC processed IMA EDI, IMA GUI, and manual resale order and post-order transactions. The P-CLEC submitted, as part of these test transactions, test cases that included planned errors.</p> <p>HP evaluated the clarity and accuracy of the error messages and found them to be satisfactory overall. HP identified issues pertaining to resale transaction error messages in the following Incident Reports.</p> <p>Observations: 2048, 2051, 2053, 2089, 2094.</p> <p>Exceptions: 2007, 2014, 2030, 2031, 2032, 2033, 2034, 2049, 2054, 2058, 2071, 2089.</p>
12-3-3	The P-CLEC was able to submit valid Resale order transactions based upon publicly available Qwest information.	Satisfied	<p>The P-CLEC relied on Qwest's publicly available documentation, obtained from the Qwest wholesale website and via the Qwest Account Team, to complete its Resale order and post-order transaction processing. Where the P-CLEC's experience differed from the Qwest documentation, the P-CLEC noted the discrepancy to Qwest and requested a change or clarification.</p> <p>HP identified issues pertaining to Qwest information, with regard to Resale order and post-order transaction processing, in the following Incident Reports.</p> <p>Observations: 2045, 2069.</p> <p>Exceptions: 2005, 2019, 2028, 2029, 2030,</p>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			2031, 2032, 2033, 2034, 2036, 2037, 2038, 2039, 2041, 2042, 2043, 2044, 2046, 2047, 2048, 2050, 2071, 2073, 2076, 2078, 2081.
12-4-1	Qwest provides complete responses to CLEC UNE-P and UNE-C order transactions.	Satisfied	<p>The P-CLEC adhered to Qwest-provided training and documentation to complete order and post-order transactions for UNE-P and UNE-C. The P-CLEC submitted test transactions for UNE-P and UNE-C products and services via IMA EDI, IMA GUI, and manual facsimile.</p> <p>The P-CLEC identified issues pertaining to the completeness of responses for UNE-P/UNE-C order transaction processing in the following Incident Reports.</p> <p>Observations: 2054, 2079, 2086, 2088.</p> <p>Exceptions: 2026, 2029, 2032, 2033, 2036, 2037, 2068, 2084, 2086, 2087.</p>
12-4-2	Error messages returned for UNE-P and UNE-C order transactions clearly and accurately explain the cause and source of the transaction error.	Satisfied	<p>Of the 33,358 EDI order responses received during the test, the P-CLEC did not receive any responses from Qwest that contained syntactical errors generating a negative 997 Functional Acknowledgment (FA) from the P-CLEC's EDI translator.</p> <p>The P-CLEC processed UNE-P and UNE-C order and post-order transactions via IMA EDI, IMA GUI, and manual facsimile. The P-CLEC submitted, as part of these test transactions, test cases that included planned errors.</p> <p>The P-CLEC evaluated the clarity and accuracy of the error messages and found them to be satisfactory overall. The P-CLEC identified issues pertaining to UNE-P and UNE-C error messages in the following Incident Reports.</p> <p>Observations: 2032, 2033, 2067.</p> <p>Exceptions: 2007, 2013, 2014, 2026, 2030, 2031, 2032, 2033, 2034, 2052, 2056, 2071, 2089.</p>
12-4-3	The P-CLEC was able to submit valid UNE-P and UNE-C order transactions based upon publicly available Qwest information.	Satisfied	<p>The P-CLEC used publicly available Qwest documentation, obtained via the Qwest wholesale website and the Qwest Account Team, to complete its UNE-P and UNE-C transactions. Where Qwest documentation differed from the P-CLEC's experience, the P-CLEC noted the discrepancy to Qwest and requested a change or clarification.</p> <p>The P-CLEC identified issues pertaining to</p>



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Qwest information, with regard to UNE-P and UNE-C transaction processing, in the following Incident Reports.</p> <p>Observations: 2032, 2033, 2045, 2049, 2073.</p> <p>Exceptions: 2005, 2009, 2010, 2012, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2036, 2037, 2039, 2041, 2042, 2043, 2044, 2048, 2070, 2071, 2073, 2076, 2078, 2084.</p>
12-5-1	Qwest provides complete responses to CLEC Unbundled Loop order and post-order transactions.	Satisfied	<p>The P-CLEC completed order and post-order transactions for Unbundled Loops via IMA EDI, IMA GUI, and manual facsimile.</p> <p>Qwest generally provided complete responses to the P-CLEC's Unbundled Loop transactions. HP identified issues dealing with transaction responses in the following Incident Reports.</p> <p>Observations: 2054, 2064, 2086, 2088.</p> <p>Exceptions: 2024, 2029, 2032, 2033, 2035, 2036, 2037, 2067, 2068.</p>
12-5-2	Error messages returned for Unbundled Loop order and post-order transactions clearly and accurately explain the cause and source of the transaction error.	Satisfied	<p>Of the 33,358 EDI order responses received during the test, the P-CLEC did not receive any responses from Qwest that contained syntactical errors generating a negative 997 Functional Acknowledgment (FA) from the P-CLEC's EDI translator.</p> <p>The P-CLEC processed Unbundled Loop order and post-order transactions via IMA EDI, IMA GUI, and manual facsimile. The P-CLEC submitted, as part of these test transactions, test cases that included planned errors.</p> <p>The P-CLEC identified several instances in which the error messages that Qwest returned on Unbundled Loop transactions did not clearly explain the error cause or source. HP identified these issues in the following Incident Reports.</p> <p>Observations: 2060, 2072, 2074.</p> <p>Exceptions: 2030, 2031, 2032, 2033, 2034, 2035, 2065, 2067, 2074, 2079, 2089.</p>
12-5-3	The P-CLEC was able to submit valid Unbundled Loop order and post-order transactions based upon publicly available Qwest information.	Satisfied	The P-CLEC used publicly available Qwest documentation, obtained via the Qwest wholesale website and the Qwest Account Team, to complete its Unbundled Loop transactions. Where Qwest documentation differed from the P-CLEC's experience, the



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Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>P-CLEC noted the discrepancy to Qwest and requested a change or clarification.</p> <p>The P-CLEC identified issues pertaining to Qwest information, with regard to Unbundled Loop transaction processing in the following Incident Reports.</p> <p>Observations: 2009, 2076, 2087.</p> <p>Exceptions: 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2040, 2042, 2043, 2044, 2051, 2053, 2060, 2067, 2076, 2083.</p>
12-6-1	Qwest provides complete responses to CLEC Line Sharing/Shared Loop order and post-order transactions.	Satisfied	<p>The P-CLEC completed order and post-order transactions for Line Sharing/Shared Loops via IMA EDI and IMA GUI.</p> <p>Qwest generally provided complete responses to the P-CLEC's Line Sharing/Shared Loop transactions. HP identified issues dealing with transaction responses in the following Incident Reports.</p> <p>Observations: 2054, 2086.</p> <p>Exceptions: 2008, 2029, 2032, 2033, 2036, 2037.</p>
12-6-2	Error messages returned for Line Sharing/Shared Loop order and post-order transactions clearly and accurately explain the cause and source of the transaction error.	Satisfied	<p>Of the 33,358 EDI order responses received during the test, the P-CLEC did not receive any responses from Qwest that contained syntactical errors generating a negative 997 Functional Acknowledgment (FA) from the P-CLEC's EDI translator.</p> <p>The P-CLEC processed Line Sharing/Shared Loop order and post-order transactions via IMA EDI and IMA GUI. The P-CLEC submitted, as part of these test transactions, test cases that included planned errors.</p> <p>The P-CLEC identified issues pertaining to UNE-P and UNE-C error messages in the following Incident Reports.</p> <p>Observation: 2061.</p> <p>Exceptions: 2030, 2031, 2032, 2033, 2034, 2089.</p>
12-6-3	The P-CLEC was able to submit valid Line Sharing/Shared Loop order and post-order transactions based upon publicly available Qwest information.	Satisfied	<p>The P-CLEC used publicly available Qwest documentation, obtained via the Qwest wholesale website and the Qwest Account Team, to complete its Line Sharing/Shared Loop transactions. Where Qwest documentation differed from the P-CLEC's experience, the P-CLEC noted the</p>



Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>discrepancy to Qwest and requested a change or clarification.</p> <p>HP identified issues pertaining to Qwest information, with regard to Line Sharing/Shared Loop transaction processing, in the following Incident Reports.</p> <p>Exceptions: 2008, 2029, 2030, 2031, 2032, 2033, 2034, 2036, 2037, 2042, 2043, 2044, 2076.</p>
12-7-1	Qwest provides complete responses to CLEC Unbundled Dark Fiber (UDF) transactions.	Satisfied	<p>The P-CLEC ordered UDF from Qwest via manual facsimile, using the process outlined on the Qwest wholesale website. The P-CLEC received and analyzed Qwest response to these orders.</p> <p>Qwest generally provided complete responses to the P-CLEC's UDF order transactions. HP identified issues dealing with transaction responses in the following Incident Reports.</p> <p>Observations: 2052, 2075.</p>
12-7-2	Error messages returned for Unbundled Dark Fiber (UDF) transactions clearly and accurately explain the cause and source of the transaction error.	Satisfied	<p>The P-CLEC processed Unbundled Dark Fiber orders via manual facsimile. The P-CLEC submitted, as part of these test transactions, orders that included errors.</p> <p>The P-CLEC evaluated the clarity and accuracy of the error messages and found them to be satisfactory. HP did not issue any Observations or Exceptions that dealt with error messages received for the P-CLEC's UDF orders.</p>
12-7-3	The P-CLEC was able to submit valid Unbundled Dark Fiber (UDF) transactions based upon publicly available Qwest information.	Satisfied	<p>The P-CLEC used publicly available Qwest documentation, obtained via the Qwest wholesale website and the Qwest Account Team, to complete its UDF orders. Where Qwest documentation differed from the P-CLEC's experience, the P-CLEC noted the discrepancy to Qwest and requested a change or clarification.</p> <p>HP identified issues pertaining to Qwest information, with regard to UDF order processing, in the following Incident Reports.</p> <p>Observations: 2052, 2075.</p>



12-B. Test Results: P-CLEC OSS Interface Evaluation

1.0 Description

The P-CLEC OSS Interface Evaluation analyzed the P-CLEC's ability to establish interface connectivity with Qwest to carry out various wholesale activities. The evaluation was designed to ensure a CLEC is able to use Qwest's documentation and materials to develop application-to-application interfaces to communicate with Qwest's OSS. The P-CLEC OSS Interface Evaluation covered the P-CLEC's activities for the IMA EDI implementation and release migration processes, Customer Record Information System (CRIS) 811 billing data, and Maintenance and Repair (M&R) implementation processes. This report provides a summary evaluation of these activities, as well as references to HP's documented Observations and Exceptions.

In the *Interim Report of the Activities of the P-CLEC (Interim Report)*, HP provided an initial evaluation of the P-CLEC's experiences with establishing and connecting its OSS interfaces with Qwest's OSS. The *Interim Report* covered the P-CLEC's activities through March 2001. The P-CLEC OSS Interface Evaluation provided herein covers the P-CLEC's activities and experiences from March 2001 through the end of the P-CLEC's testing activities. Please refer to the *Interim Report* for information on the P-CLEC's experiences prior to March 2001.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest has an EDI implementation process in place that assists CLECs with developing EDI interfaces. The *Qwest IMA EDI Implementation Guidelines* describe the implementation and release migration processes.

Qwest provides CLECs with several billing interface options and processes for establishing interfaces. The CRIS 811 Wholesale Invoice section describes processes that a CLEC is required to follow when establishing an interface with Qwest for receiving wholesale billing information.

Qwest also provides CLECs with several options for submitting M&R trouble tickets. The Maintenance & Repair section reviews the maintenance and repair services that Qwest provides as part of the wholesale relationship. CLECs require expedient and reliable maintenance and/or repair services for their end users—equal to that of Qwest's retail customers.

2.1.1 EDI Implementation and Release Migration

Electronic Data Interchange (EDI) is a computer-to-computer exchange of business documents in a published, predefined electronic format. Qwest's IMA EDI interface allows CLECs to submit pre-order queries and LSRs electronically, directly from its purchase order environment to the Qwest IMA EDI interface. Qwest responds to these queries in an electronic format, and these responses can be posted directly to the CLEC's computer systems.



April 19, 2002

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The sub-sections that follow detail the process for recertification, which occurs whenever Qwest issues a new IMA EDI release (for example, an upgrade from release 5.0 to 6.0). Since Qwest supports multiple EDI releases, CLECs do not need to migrate to new releases immediately.

2.1.1.1 *Recertification Requirements*

According to Qwest's *IMA EDI Implementation Guidelines*, successful implementation of an EDI interface necessitates a CLEC's full understanding of all interface requirements. The recertification process differs from the original certification process, and demonstrates a CLEC's ability to generate correct transactions when migrating to a new release. For each release, Qwest determines those Pre-Order/Post-Order functions or Product Order Activity transactions (e.g., CFAQ, Resale POTS, Unbundled Loop, etc.) that require recertification. The determination is based on the following factors:

- EDI Mapping changes; and,
- Changes to Qwest business rules.

Qwest's *IMA Release Certification/Recertification* notices provide current IMA EDI production users with available options (i.e., new product certification, or recertification of existing products) for migration to the next IMA EDI release. If there are no changes to the Pre-Order/Post-Order function or Product Order Activity transaction for the release, recertification of that transaction may be tested, but is not required. But, before a CLEC can use transactions that do *not* require recertification in a production environment, the CLEC must first verify the transport configuration parameters.

Recertification requires the CLEC to perform one or more tests in the interoperability test environment or the Stand-Alone Test Environment (SATE). The number of tests is based on the complexity of the release changes. Applicable recertification test transactions are those that a CLEC uses in production and is migrating to the new release. When migrating to a new release, it is essential that the CLEC assume responsibility for configuring its translator and its transport parameters for all transactions. The Qwest EDI team coordinates test activities with the CLEC and verifies the CLEC is ready to move into production on the new release.

2.1.2 *CRIS 811 Wholesale Invoice*

Qwest provides CRIS Billing for Resale products, specific Unbundled products, and Number Portability according to industry standard. The bills contain the monthly recurring charges (MRCs), non-recurring charges (NRCs), toll, pay per use, and usage details for a CLEC's telecommunication services. Qwest delivers one paper bill and, optionally, one electronic file for each product group by BAN and bill cycle date. A CLEC can select only one electronic output format for the CRIS Summary Bill.

2.1.2.1 *CRIS 811 Wholesale Invoice*

Wholesale summary bills provide a CLEC with *one* bill and *one* payment document for multiple accounts (sub-accounts) within the same state. Qwest delivers summary bills to CLECs each month based upon Billing Account Numbers (BANs). Qwest assigns BANs by product category. For example, a CLEC conducting business in the state of Colorado has a different BAN for each of the following product categories:



April 19, 2002

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- Resale Products;
- Unbundled Loop Products;
- UNE P/C Products;
- Shared Loop/Line Sharing Products; and,
- Unbundled Switch Products.

Additionally, in some states, Qwest assigns BANs by Class of Service within product category. For example, a CLEC conducting business in the state of Washington would have a different BAN for each of the following product categories:

- Resale Products - Business
- Resale Products - Residential

Qwest allows CLECs to receive wholesale bills via EDI. For CLECs to receive and process EDI billing transmissions, it must use the 811 Transaction Set. The 811 Transaction set requires that the CLEC have an EDI “translator” to convert the EDI data into a format that the CLEC’s billing systems can process. CRIS 811 files can be obtained via NDM (direct or dial up), File Transfer Protocol (FTP), Value Added Network (VAN), or web access.

2.1.2.2 CRIS Summary Bills – Documentation

Qwest publishes information pertaining to CRIS Billing on its wholesale website.¹ The website covers:

- Product to Billing System Matrix;
- Overview of CRIS Billing;
- Summary Billing;
- Bill Media;
- Billing Disputes;
- Adjustments;
- Bill Re-send Process; and,
- Frequently Asked Questions.

Qwest also makes available to CLECs a web-based training application, “Introduction to Service Requests and Billing for CLECs,” that contains information on CRIS Wholesale Billing. CLECs can access this training application through Qwest’s wholesale training course catalog.²

2.1.2.3 CRIS EDI (811) Transaction Documentation

When a CLEC orders EDI billing service from Qwest, Qwest directs the CLEC to the *BillMate Billing Electronic Data Interchange (EDI) Customer Guide* located on Qwest’s wholesale website.³ The guide conforms to the ANSI/ASC X12 standard for implementation guidelines and Telecommunication Industry Forum (TCIF) 811 Guidelines, authored by the Telephone Bill Work Group (TBWG).⁴ The guide has two important appendices: the *Consolidated Service Invoice/Statement – 811 TS document*; and the *Functional Acknowledgement – 997 TS document*. The appendices provide a great deal of information about the relationship of the Qwest paper bill to the various 811 segments. The *BillMate Billing EDI Customer Guide* also provides an

¹ <http://www.qwest.com/wholesale/clecs/cris.html>

² <http://www.qwest.com/wholesale/training/coursecatalog.html>

³ http://www.qwest.com/pcat/large_business/product/1,1354,540_4_8-6,00.html

⁴ TCIF documentation can be accessed on the Internet at: <http://www.atis.org/atis/tcif/edi/tbwg/5tc54hom.htm>



overview of the 811 transaction set implementation process and the exchange of EDI data with Qwest.

2.1.3 Maintenance & Repair (M&R)

Qwest provides CLECs with multiple options for mediating M&R activities for CLEC end customers. CLECs can develop an Electronic Bonding for Trouble Administration (EBTA) interface to connect directly to Qwest's Mediated Access Electronic Bonding for Trouble Administration (MEDIACC-EBTA) interface. CLECs can also use Qwest's GUI-based Customer Electronic Maintenance and Repair (CEMR) application. Or, CLECs can process M&R transactions manually by calling Qwest's repair centers.

2.1.3.1 Electronic Bonding for Trouble Administration (EBTA)

As part of its wholesale M&R offerings, Qwest provides CLECs with access to the MEDIACC-EBTA interface. MEDIACC-EBTA is an electronic gateway to the Qwest back-end systems – Work Force Administration/Control (WFA/C) and Loop Maintenance Operating System (LMOS) – used during trouble report processing. Once it has completed the EBTA implementation process with Qwest, a CLEC can access the MEDIACC-EBTA gateway through an X.25 packet switched network. Qwest requires that CLECs establish connectivity to a Qwest Data Center via a dedicated circuit for MEDIACC-EBTA. .

2.1.3.2 Customer Electronic Maintenance & Repair (CEMR)

The CEMR application is an online system that connects CLECs to Qwest internal support systems. CLECs can use CEMR to submit and maintain trouble reports on design and non-design circuits. CEMR is intended to reduce time-consuming calls to Repair Centers by allowing the CLEC to report its troubles directly and electronically into Qwest's systems.

2.1.3.2.1 CEMR Connectivity

CEMR is a web-based GUI application, and is accessible to CLECs via an Internet browser. Unlike MEDIACC-EBTA, CEMR does not require CLECs to undertake any special hardware or software development to use the interface. However, CLECs are required to obtain a Qwest Digital Certificate to access the CEMR application. The following items deal specifically with CEMR connectivity.

- Internet Access

CLECs follow specific steps to establish Internet access to the CEMR application. Qwest supports CEMR through the Netscape Internet browser only, and requires that the CLEC use a specific version of the Netscape product. CLECs must install Netscape Navigator, version 4.51, on any workstations used to access CEMR. The *CEMR User Guide* provides setup and configuration requirements for obtaining access to the CEMR application. Once the Netscape browser is installed, CLECs must adjust various settings within the browser as described in the *CEMR User Guide*.⁵

⁵ See *CEMR User Guide*, v.1.03.04, last updated December 13, 2001, "Chapter 2: Software Setup." Available at <http://www.qwest.com/wholesale/training/cemrguide.html>



- Digital Certificates

The CEMR application is protected by security protocols to ensure CLEC data confidentiality. Therefore, in addition to installing and configuring the Netscape browser, CLECs must also obtain and install Digital Certificates on any workstation the CLEC intends to use for accessing CEMR. Digital Certificates validate user identities over the Internet and enable the Qwest server to establish a secure connection to the CLEC's browser. Additionally, the certificate permits Qwest to associate the CLEC's browser to the appropriate records in the Qwest user database, thus identifying the CLEC to the application.

To obtain Digital Certificates, a CLEC must provide Qwest with the names and contact information for each user requiring access to CEMR. CLECs must obtain a separate Digital Certificate from Qwest for each user accessing CEMR. Qwest then provides the CLEC with a list of the assigned Digital Certificates identifying the certificate numbers and PIN codes associated to each user. Once the CLEC has the information for its Digital Certificates, it must download, install, and configure the certificates. The *CEMR User Guide* provides information on the Digital Certificate download and setup process.⁶ Once a CLEC has set up its Digital Certificates, it can begin to use CEMR to submit trouble reports and obtain trouble status information.

2.1.3.2.2 CEMR Documentation

Qwest makes several reference documents available to assist CLECs with using CEMR for M&R activities. The following sub-sections identify and describe Qwest's publicly available CEMR documentation.

- CEMR User Guide

The *CEMR User Guide* is the primary document that Qwest publishes to support the CEMR application. The guide contains information pertaining to CEMR access and the functional operation of the CEMR application. The guide is separated into multiple chapters, each detailing a distinct piece CEMR's overall functionality. Qwest publishes the *CEMR User Guide* on its wholesale website.⁷ Additionally, CLECs can access the guide from the CEMR application by selecting the Help icon located on the CEMR toolbar.⁸

- RCE User Guide

The *Repair Call Expert (RCE) User Guide* is available from the Qwest wholesale website, and supplements the *CEMR User Guide*. The *RCE User Guide* provides step-by-step instructions on access and use of the RCE functions within CEMR. RCE is used for non-design trouble reports only. The guide's objective is to familiarize CLECs with general scripting questions and to provide an overall introduction to the screens presented in RCE. The guide, defines various terms and acronyms applicable to RCE and, more generally, to M&R activities.

⁶ See *CEMR User Guide*, v.1.03.04, last updated December 13, 2001, "Chapter 2: Software Setup." Available at <http://www.qwest.com/wholesale/training/cemrguide.html>

⁷ <http://www.qwest.com/wholesale/training/cemrguide.html> (no revision date provided on page)

⁸ During the course of the test, two other documents, the *CEMR High Level Overview* and the *RCE for CEMR High Level Overview*, were incorporated into the *CEMR User Guide*. Qwest no longer publishes these documents separately.



- CEMR and RCE Release Notes

The CEMR and RCE Release Notes identify changes and enhancements made in each release implementation. Qwest publishes a separate Release Notes document for each release of CEMR and RCE. Release Notes are organized by date, and are posted on the Qwest wholesale website.⁹ Additionally, Qwest sends Wholesale Customer Notifications to the CLEC community when it implements new releases of CEMR and RCE. In these notifications, Qwest regularly refers to the availability of the Release Notes on its website.

2.1.3.2.3 CEMR Transaction Processing

CLECs can submit both non-design and design service trouble reports through the CEMR application. Once a CLEC submits a trouble report, CEMR allows the CLEC to perform various activities to track, change, or cancel the ticket. Should the CLEC encounter error messages while using CEMR, Qwest provides a table identifying the error messages and their meanings in the *CEMR User Guide*.¹⁰ The following sub-sections describe the CEMR application's functionalities.

- Non-Design Services

CLECs identify the line with trouble by telephone number when entering non-design service trouble reports into CEMR. Within the non-design services functionality, a CLEC can create a trouble report, submit a Mechanized Loop Test (MLT), view a Circuit History that provides details of the trouble tickets submitted for a particular account, or view a Line Record Detail that shows a quick version of the trouble ticket history. CLECs can also maintain its trouble reports and view the Transaction History of reports opened on any circuit for which the CLEC has responsibility.

Within CEMR's non-design service functionality, RCE assists with diagnosing troubles. RCE is a scripting-type application that advances users through a series of questions to assist in diagnosing problems with a customer's telephone service. Each answer the user provides assists the system in pinpointing the reported line trouble. Using the information provided by the CLEC user, RCE performs automatic validation steps and interacts with Qwest's records and repair system to isolate the location of the reported trouble. RCE also provides access to LMOS, a Qwest back-end system. Within RCE, users can perform MLTs to identify troubles on a line.

- Design Services

A Design Service is any product or service that does not have a telephone number assigned to the account. DSL, T1, Centrex, and PBX accounts, among others, are considered Design Services within CEMR. Unlike non-design services, the design service functionality within CEMR does not contain detailed questioning to pinpoint the source of reported troubles.

⁹ <http://www.qwest.com/wholesale/systems/cemrandrce.html> (last accessed on December 5, 2001)

¹⁰ See *CEMR User Guide*, version 1.03.04, Appendix C: Design and Non-Design System Messages. Available at <http://www.qwest.com/wholesale/training/cemrguide.html>.



Within CEMR's Design Services menu, CLECs can report troubles on those design service circuits for which they have ownership. Designed circuits are typically assigned an alphanumeric Circuit ID that is dissimilar to a working telephone number. A CLEC typically enters design service circuit troubles in one of four formats: Serial Number Circuit ID, Carrier Telephone Number Circuit ID, Carrier Circuit ID, or Message Trunk Circuit ID. Once a CLEC creates a trouble report, it can use the CEMR application to check the status of its transaction and view the report's current state of activity: open, closed, deferred, or completed. Additionally, CLECs can perform a number of activities on their open trouble reports within CEMR, including:

- Maintain trouble reports;
- Edit trouble reports;
- Cancel trouble reports;
- Authorize or deny closure of trouble reports;
- View the commitment time for repair of a circuit;
- View events that have occurred on an open trouble report; and,
- View the ticket history of the trouble reports or circuits.

In the *CEMR User Guide*, Qwest provides to CLECs detailed information for navigating through the design services functionality of CEMR.

- Pre-Validation Services

Pre-validation services enable CLECs to review account information without logging into IMA. Within the CEMR application, pre-validation services are available for both non-design and design services. CLECs do not have to perform pre-validations to submit CEMR trouble reports.

There are three different services available for pre-validation:

- Search and Verify Carrier Facility Assignment (CFA);
- View Design Layout Records (DLR); and,
- Validate Service Address.

CLECs access pre-validation services from the home page of the CEMR application. Once in the Pre-Validation Main Menu, CLECs can access the three services directly.

The Search and Verify CFA service allows CLECs to view their "owned" or "leased" channels, and the data that exists within the CFA for those channels. CLECs can view their CFAs at several different levels by entering the Optical Carrier (OCn) Facility. This allows users to view the data for a Synchronous Optical Network (SONET) and each of its associated T3 circuits. The other levels at which CLECs are able to view data are the T3 facility and its 28 associated T1s, the T1 and its 24 associated circuits, and the individual channels on a T1.

CLECs can view a DLR in CEMR only if the CLEC requested the DLR when it submitted its LSR for the circuit. CLECs can only view DLRs for circuits that they own or lease. CLECs can select DLRs by Serial Number, Telephone Number, Facility, or Message Trunk format. If a CLEC wants a copy of the DLR for its records, it can save the DLR as an HTML file, or print the file while in the Netscape browser.

Service Address Validation is the last pre-validation service available in the CEMR application. Once a CLEC is in the Service Address Validation screen, it must fill out required fields to receive a response from the Qwest. CLECs conduct Service Address Validations to obtain



April 19, 2002

12-B-7

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Numbering Plan Area (NPA) and Local Service Office (LSO) information for a particular address. When the CLEC submits the information, the Qwest system returns a response based on the validity of the address information submitted.

2.1.3.2.4 CEMR Help Desk

Qwest provides a CEMR Help Desk to assist CLECs with issues they encounter in the CEMR application. The CEMR Help Desk is a part of the Information Technologies Wholesale Systems Help Desk (IT-WSHD), and can be reached at the same contact numbers as those of the IT-WSHD. Additionally, CLECs can access the Help Desk telephone numbers by selecting the Product Support icon on the CEMR tool bar.

2.1.3.3 Manual Trouble Report Processing

Qwest provides CLECs with the option of submitting trouble reports via telephone. The "Submitting Trouble Reports" section of the wholesale website describes the process for submitting trouble reports by phone, and outlines how Qwest handles these manually submitted tickets.¹¹ Qwest has two centers that process manually submitted trouble reports:

- The Account Maintenance Support Center (AMSC), in which Design UNE and Complex Wholesale Product and Service repair tickets are received and processed; and,
- The Repair Call Handling Center (RCHC), in which Non-Design POTS and Non-Complex Wholesale Product and Service repair tickets are processed.

When calling the AMSC, an automated response system directs CLECs to identify whether the trouble is with a non-design or design service. Based on the option the CLEC selects, the call routes to the appropriate Qwest personnel to handle the trouble ticket.

When calling the RCHC, an automated response system prompts the CLEC to enter the telephone number of the line experiencing the trouble. Once the CLEC enters the number, the call is transferred to a Qwest employee assigned to the specific area in which the telephone number is located.

When processing manually submitted trouble reports, Qwest obtains the CLEC's identity and telephone number, and verifies the CLEC's ownership of the line for which the trouble is being reported. Additionally, Qwest representatives ask a series of questions to assist in pinpointing the source of the reported trouble. Once Qwest has obtained the necessary information to isolate the trouble, it provides the CLEC with a trouble ticket number and an appointment time for the completion of repairs.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the development and implementation of interfaces to communicate and interact with Qwest's OSS. HP, in its role as the P-CLEC, evaluated Qwest's OSS interface

¹¹ <http://www.qwest.com/wholesale/clecs/maintenance.html> (last updated January 25, 2002).



development processes against the measure of whether those processes provide a CLEC with the ability to operate and compete in the Qwest service territory.

2.4 Evaluation Methods

The P-CLEC performed certification and migration activities for IMA EDI releases 6.0, 7.0 & 8.0. From March 2001 to April 2002, HP, in its role as the P-CLEC, submitted various ordering (pre-order, order, and post-order) and M&R transactions to compile a data set of transaction responses from Qwest. Additionally, the P-CLEC received CRIS 811 Wholesale Invoices for end user products and services.

To assist with its testing activities, the P-CLEC used documentation publicly available on Qwest's wholesale website,¹² or resources provided to the P-CLEC by its Qwest Account Team. The P-CLEC did not receive or use any materials in its testing activities that Qwest does not make available to all CLECs.

2.5 Analysis Methods

For each IMA Release, the P-CLEC developed and maintained, per Qwest's EDI Certification process a *Certification Testing Log* and *Summary Worksheet* showing the scenario number, a description, and an ongoing "conversation" between the P-CLEC and Qwest regarding Certification Testing issues. During the EDI certification and release migration activities, the P-CLEC recorded and tracked each transaction submitted through Qwest's EDI gateway, and logged subsequent responses, including functional acknowledgements, FOCs, errors and rejects, jeopardy notices, and SOCs. The P-CLEC compared each response it received to its expectations. The P-CLEC based its expectations on its understanding of Qwest IMA EDI Disclosure documentation, recertification requirements, published process flows, and business rules.

Whenever the P-CLEC received an unexpected response from Qwest for an EDI certification transaction, it reviewed the transaction details to ascertain whether the error was the result of inaccurate test bed data, transaction entry error, or a Qwest system or processing issue. If the source of the error was test bed data, HP worked with the Qwest Test Bed Coordinator to correct the test bed data so the transaction could be resubmitted. For transaction entry errors, HP reviewed the transactions, corrected any fields that contained incorrect information or formatting, and resubmitted the test transactions. If the error was determined to have been caused by a Qwest system or processing issue, HP presented the issue in the EDI question and documentation logs. Where Qwest processes failed to resolve an issue, HP identified the issue in a formal Observation or Exception report.

During 2001 and 2002, the P-CLEC received CRIS 811 Wholesale Invoices via EDI. The P-CLEC compared the Qwest-generated data with the published EDI mapping specifications to determine if any inconsistencies existed that could cause EDI translation failures.

For the M&R component, HP used the experiences gathered from the P-CLEC's submission of MTP Test 16 and 18 test transactions to determine if essential elements of Qwest's M&R processes were present, and whether Qwest followed its published processes.

¹² <http://www.qwest.com/wholesale>.



3.0 Results Summary

This section provides a summary evaluation of the P-CLEC's experiences in executing the methods and processes described above.

3.1 Results & Analysis

The following subsections provide a summary of the P-CLEC's experiences during its interface development and connection to Qwest's OSS. Each subsection includes a description of any issues the P-CLEC encountered during its interface development efforts. Summaries of HP Observations and Exceptions noted in the following sections are located in Appendix HP-A.

3.1.1 EDI Implementation and Release Migration

The P-CLEC used Qwest's *IMA EDI Implementation Guidelines* and Qwest's *IMA Release Certification/Recertification* notices to conduct its recertification activities for each IMA EDI Release. Qwest and the P-CLEC conducted weekly EDI team meetings during the recertification process. During this process, the P-CLEC exchanged the following materials with Qwest:

- Project plans;
- Scenario summaries;
- Scenario templates;
- Question logs;
- Documentation logs; and,
- Testing result summaries.

The P-CLEC migration to IMA EDI Release 6.0 in February 2001 was documented in the *Interim Report*. The P-CLEC conducted migration activities for IMA EDI Release 7.0 from September 4, 2001 to October 8, 2001.

The Volume P-CLEC conducted certification activities for IMA EDI Release 7.0 from March 20, 2001 to May 4, 2001, and conducted migration activities for IMA EDI Release 8.0 from August 21, 2001 to September 17, 2001.

The following table depicts the Pre-Order, Order and Post-Order functionality that was certified by the P-CLECs for each IMA EDI Release:

Table 12B-1.1: P-CLEC IMA EDI Certified Functionality

Product Type	6.0	7.0	8.0
Pre-Order			
Address Validation	X	X	X
Appointment Availability	X	X	
Appointment Selection	X	X	
Cancellation	X	X	
Connecting Facility Assignment	X	X	X
Customer Service Record	X	X	X
Design Layout Record	X	X	



April 19, 2002

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Product Type	6.0	7.0	8.0
Facility Availability	X	X	X
Meet Point	X	X	
Raw Loop Data	X	X	X
Service Availability	X	X	X
Telephone Number Availability	X	X	
Telephone Number Selection	X	X	
Order			
Centrex 21	X	X	
Centrex Plus	X	X	
DID In Only Trunks	X	X	
ISDN-PRI Resale Facility	X	X	
ISDN-PRI Resale Trunk	X	X	
Listing Only	X	X	
Local Number Portability	X	X	
PBX	X	X	
Resale POTS	X	X	X
Private Line	X	X	
Shared Loop	X	X	
Unbundled Distribution Loop	X	X	
Unbundled Loop	X	X	X
Unbundled Loop w/Number Portability	X	X	X
UNE-C Private Line	X	X	
UNE-P POTS	X	X	X
Post-Order			
Completion	X	X	
Jeopardy (includes Non-Fatal, Fatal)	X	X	X
LSR Status Query / Response	X	X	
Order FOC and Supplemental	X	X	X
Status Change Inquiry- Auto Push	X	X	

3.1.2 CRIS 811 Wholesale Invoice

The P-CLEC implemented EDI and NDM connectivity to receive CRIS Wholesale invoices. Generating and transmitting data that does not comply with the published EDI mapping specifications will cause EDI translation failures on the CLEC side. These failures prevent CLECs from processing consolidated wholesale billing invoices. Thus, the CLEC cannot deliver



April 19, 2002

12-B-11

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the invoice data to its downstream systems in a timely manner. In 2001, the P-CLEC received 59 CRIS files. From January 1, 2002 through April 1, 2002, the P-CLEC received 21 CRIS files.

On four separate occasions, the P-CLEC identified inconsistencies between the EDI mapping specifications for the EDI 811 and the actual EDI 811 data it received from Qwest. HP identified these issues in Observations 2011 and 2028; two instances are documented in Exception 2090.

Following the fourth occurrence, Qwest implemented the following steps to prevent this situation from occurring in the future:

- Responsibility for notification of CLEC-impacting changes has been moved to Qwest IT.
- The Qwest IT Estimating Tool used by system architects to define system impacts has been enhanced to include updates or changes to the electronic bill as a work activity. This means that if Qwest makes any updates to the electronic bill, this tool will identify if any updates to the Qwest 811 TS document are needed.
- All Notifications will be published under the agreed upon CMP process guidelines.

3.1.3 Maintenance & Repair

The sections that follow describe the P-CLEC's experiences with Qwest's M&R offerings defined in section 2.1.3, above.

3.1.3.1 Electronic Bonding for Trouble Administration (EBTA)

In the *Interim Report*, HP notes that the P-CLEC followed Qwest's EBTA implementation process only through finalization of the Joint Implementation Agreement (JIA). Due to the test design, the P-CLEC did not establish a physical MEDIACC-EBTA interface with Qwest. HP provided an evaluation of the P-CLEC's experience negotiating and developing the JIA in the *Interim Report* and the *Review of Qwest Documentation and Assistance to Establish an EBTA Interface*.¹³

HP takes this opportunity to provide a follow-up evaluation of Qwest's EBTA Implementation Process. In summary, the P-CLEC raised various questions in the M&R Question Log pertaining to Qwest documentation, general process issues, and the JIA itself during the course of its negotiations with Qwest. These questions often required the input of Qwest SMEs to provide sufficient information for the P-CLEC to continue in the JIA negotiations. In general, the P-CLEC was able to obtain the necessary information from Qwest SMEs. However, on several occasions the P-CLEC was unable to obtain timely responses from Qwest SMEs for questions recorded on the M&R Question Log.

Following its release of the *Interim Report* and the *Review of Qwest Documentation and Assistance to Establish an EBTA Interface*, HP documented the P-CLEC's experiences with untimely responses in Observation 2031.

¹³ See *Interim Report of the Activities of the P-CLEC*, v.2.0, dated March 30, 2001, pp. 103-104. See also *Review of Qwest Documentation and Assistance to Establish an EB-TA Interface*, v.2.0, dated April 18, 2001.



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3.1.3.2 Customer Electronic Maintenance & Repair (CEMR)

Section 2.1.3.2 defined and summarized the functionality of the CEMR application. The following sections summarize the P-CLEC's experience using the CEMR components, including connectivity, supporting documentation, and functionality.¹⁴

3.1.3.2.1 CEMR Connectivity

In general, the P-CLEC found Qwest's process for establishing connectivity to CEMR to be easily followed. Additionally, when the P-CLEC had questions regarding setup, Qwest's E-Commerce Help Desk was able to walk the P-CLEC through the connection process.

The P-CLEC did, however, experience problems maintaining its connectivity to the CEMR interface once it was established. HP documented the P-CLEC's findings in Exception 2020.

- Internet Access

The P-CLEC was successfully able to download, install, and configure the appropriate version of Netscape Communicator. The P-CLEC downloaded Netscape Navigator, version 4.51, from the Netscape website's product archive,¹⁵ installed, and configured the browser to meet Qwest's requirements without any significant issues.

- Digital Certificates

The P-CLEC obtained Digital Certificates for the CEMR application through its Qwest Account Manager. The P-CLEC's Account Manager informed the P-CLEC of the web page that contained instructions for downloading Digital Certificates.¹⁶

The P-CLEC successfully set up each of its assigned Digital Certificates. When assistance was required, such as resetting PIN codes, the P-CLEC contacted the Qwest Help Desk. The P-CLEC did not experience any problems following the instructions and downloading its initial CEMR Digital Certificates.

3.1.3.2.2 CEMR Documentation

This section provides an evaluation of the supporting documentation the P-CLEC used in its CEMR testing activities.

¹⁴ Prior to the start of the formal CEMR functionality testing, the P-CLEC executed *scouting* transactions to pre-validate the functionality of CEMR. During this *scouting* period, the P-CLEC was responsible for generating any Observations and Exceptions. Once the *scouting* exercise was complete, and the test officially started, the Test Administrator took responsibility for generating Observations and Exceptions. When the P-CLEC encountered an issue, it would provide all relevant background information to the Test Administrator, and the Test Administrator would then issue the Observation or Exception as appropriate.

¹⁵ http://home.netscape.com/download/archive/client_archive45x.html

¹⁶ <http://ecom.qwest.com> (no revision date provided on page)



- CEMR User Guide

The P-CLEC found the *CEMR User Guide* to be well organized and beneficial for using and understanding the CEMR application. The P-CLEC encountered no issues with the guide, including the *CEMR High Level Overview* and *RCE for CEMR High Level Overview* that were previously published as separate documents.

During the course of the P-CLEC's use of CEMR, Qwest made multiple enhancements to the CEMR application. In many cases, these system enhancements required Qwest to publish updates to the *CEMR User Guide*. The P-CLEC found, in most circumstances, that Qwest provided timely notifications to the CLEC community when it published such documentation updates. However, HP issued Observation 2055 to document an instance in which Qwest distributed notification to the CLEC community of updates to the *CEMR User Guide*, but had not made the updates to the guide itself.

- RCE User Guide

The P-CLEC found the *RCE User Guide* to be informative, but in need of improvement. While using RCE, the P-CLEC identified several paths within the application that were not defined in the *RCE User Guide*. The lack of examples in the guide made it difficult for the P-CLEC to understand the full representation of RCE functionality, and the guide did not provide sufficient information as to which path the P-CLEC should select for certain activities. Additionally, it provided only brief descriptions of the screens within the RCE application.

HP issued Observation 2039 to document Qwest's initial failure to provide complete information regarding RCE functionality in the *RCE User Guide*.

On November 8, 2001, Qwest issued a Wholesale Customer Notification, stating,

*The CEMR User's Guide and the RCE User's Guide have been combined in Chapter 10 (Non-Design Services) of the CEMR User's Guide. This information was combined because the CEMR non-design functionality flows into the RCE functionality. It's a comprehensive flow from one functionality to the other.*¹⁷

The P-CLEC found the combined guide provided a much-needed comprehensive picture of how non-design functionality flows into RCE. It explains the procedures and provides screen examples for CLECs to follow while inputting trouble reports.

- CEMR and RCE Release Notes

Since Qwest publishes the CEMR and RCE Release Notes to its wholesale website and notifies the CLEC community, the P-CLEC was able to keep track of CEMR and RCE modifications, and adjust its processes accordingly. However, there were instances in which the P-CLEC found that Qwest failed to make documentation updates it stated would be made by a specific date. HP documented these instances in Observations 2037, 2038, and Exception 2025.

¹⁷ Qwest Wholesale Customer Notification, "Updated CEMR/RCE User's Guide 11-08-01," received via e-mail on November 8, 2001.



3.1.3.2.3 CEMR Transaction Processing

This section provides an evaluation of the P-CLEC's experiences processing M&R transactions via CEMR.

- Non-Design Services

During the course of its testing activities, the P-CLEC performed each of the functions for non-design trouble reports. While carrying out these activities, the P-CLEC encountered various problems with the CEMR application. The specific issues encountered by the P-CLEC are summarized below.

1. Due to the nature of the test, the P-CLEC performed certain tasks that did not replicate the actions of a real CLEC. Test bed accounts did not correlate to real service locations; consequently, the test required the P-CLEC to perform various out-of-process activities for trouble reports to circumvent the utilization of Qwest resources serving other wholesale and retail customers. The test plan necessitated developing three work-arounds to prevent unnecessary dispatches on non-design trouble reports. The Test Administrator determined which work-around would be employed for each trouble report that the P-CLEC submitted.
2. The P-CLEC encountered several deficiencies while creating non-design trouble reports within CEMR. The errors experienced by the P-CLEC forced it to resubmit numerous trouble reports, requiring the expenditure of additional time and resources to complete its activities. HP documented these issues in Observations 2036 and 2037.
3. The P-CLEC experienced various problems during its attempts to maintain trouble reports that it had created. These problems included the need to complete screens of which the P-CLEC was unaware, the inability to perform testing on accounts for which it had opened trouble reports, and the inability to enter data into CEMR to update and revise open trouble reports. HP documented the P-CLEC's experiences maintaining trouble reports in Observation 2039.
4. The P-CLEC canceled trouble reports that it had created via the CEMR application. During its attempts to cancel these trouble reports, the P-CLEC encountered some problems within CEMR. HP documented these experiences in Observation 2038, Exceptions 2023, and 2061.
5. The P-CLEC regularly tracked the status of the trouble reports that it created. Over the course of the test, the P-CLEC experienced several problems when checking the status of its trouble reports. HP documented these issues in Exception 2025.
6. Throughout its use of CEMR's non-design service functionality, the P-CLEC used the RCE application. The P-CLEC found that the RCE tool functioned relatively well, although the supporting documentation within the *RCE User Guide* lacked screen examples that would have assisted in navigation within RCE. These issues are discussed in "Section 3.1.3.2.2: CEMR Documentation."
7. In addition the RCE documentation issues, HP published Exception 2062 to report an unexpected outage in RCE.



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12-B-15

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- Design Services

During the course of its testing activities, the P-CLEC performed each of the functions for design service trouble reports. While carrying out these activities, the P-CLEC encountered various problems with the CEMR application. The specific issues encountered by the P-CLEC are summarized below.

1. Due to the nature of the test, the P-CLEC performed certain tasks that did not replicate the actions of a real CLEC. Test bed accounts did not correlate to real service locations; consequently, the test required the P-CLEC to perform various out-of-process activities for trouble reports to circumvent the utilization of Qwest resources serving other wholesale and retail customers. The test plan necessitated developing two work-arounds to prevent unnecessary dispatches on design trouble reports. The Test Administrator determined which work-around would be employed for each trouble report that the P-CLEC submitted.
2. The P-CLEC created, maintained, and canceled design service trouble reports, and tracked its open reports. HP documented the errors the P-CLEC encountered in the following Incident Reports:

Observations 2034, 2036, 2038, and 2066.

Exception 2025.

- Pre-Validation Services

During its use of the CEMR application, the P-CLEC executed multiple pre-validations. The P-CLEC found the overall functionality within each pre-validation process met its expectations.

3.1.3.2.4 CEMR Help Desk

During its use of the CEMR application, the P-CLEC contacted the CEMR Help Desk on several occasions. In general, the Help Desk was able to assist the P-CLEC. However, the P-CLEC identified a deficiency for the length of time it took the CEMR Help Desk to respond to a reported problem.¹⁸

3.1.3.3 Manual Trouble Report Processing

The P-CLEC's experience submitting trouble reports to the AMSC and RCHC call centers was favorable. Qwest employees at both centers were thorough in asking the necessary questions to isolate the sources of reported troubles. The P-CLEC also received follow-up calls when Qwest required additional information to complete repairs. When the P-CLEC sought status of a trouble report created in the CEMR application, the P-CLEC was able to obtain information from Qwest personnel.

¹⁸ Because this issue occurred following the completion of the P-CLEC's scouting activities, HP provided information pertaining to the P-CLEC's experience to the Test Administrator.



12-C. Test Results: P-CLEC Account Management Evaluation

1.0 Description

The P-CLEC Account Management Evaluation addressed all aspects of the Qwest-CLEC account relationship that arose during the P-CLEC's execution of its planned testing activities. The specific purpose behind the testing and evaluation was to ensure that the Qwest account assistance process provided to its wholesale customers allows CLECs to compete within the Qwest service territory.

HP provided an initial evaluation of Qwest's Account Management and CLEC establishment processes in the *Interim Report of the Activities of the P-CLEC (Interim Report)*. The *Interim Report* covered the P-CLEC's activities through March 2001. The P-CLEC Account Management Evaluation provided herein covers the P-CLEC's activities and experiences from March 2001 through the end of the P-CLEC's testing activities. Please refer to the *Interim Report* for information on the P-CLEC's experiences prior to March 2001.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The Business Process Description is divided into the following sub-sections:

- Securing and Contacting a Qwest Account Team;
- Account Meetings with Qwest Subject Matter Experts (SMEs);
- Maintaining Account Relationship; and
- Escalation and Customer Contact.

2.1.1 Securing and Contacting a Qwest Account Team

The Qwest Account Team is the CLEC's first point of contact when establishing a business relationship with Qwest. Qwest's wholesale website describes the Qwest Account Team roles and responsibilities.¹ The Account team is made up of two segments to assist the CLEC: the Sales Team and the Service Team.

The Sales Executive and a Sales Director comprise Qwest Sales Team. The Sales Executive is the CLEC's primary contact on the Sales Team. The Sales Director is a senior management-level representative who assists CLECs regarding issues particular to that CLEC. In general, the Sales Team assists the CLEC with the following aspects of the Qwest-CLEC relationship:

- Answering telecommunications questions pertaining to the CLEC's account;
- Providing Qwest product and sales information;
- Generating sales proposals to meet the CLEC's needs;
- Planning and developing network interconnection with Qwest;
- Handling pricing inquiries for Qwest services;

¹ <http://www.qwest.com/wholesale/clecs/accountmanagers.html>



- Establishing Interconnection Agreements (IA) and amendments, and Product contracts and amendments;
- Handling certain special requests regarding ordering;
- Providing for order escalations and expedites; and,
- Responding to complaints regarding any of the above topics.²

The Qwest Service Team includes, in the order of escalation path, a Service Manager, a Senior Service Manager, an Executive Director, and a Vice President. The CLEC primarily interacts with the Service Manager. The Senior Service Manager and Executive Director assist with the resolution of issues when the CLEC's Service Manager is unavailable or unable to provide sufficient support. The Vice President is available when the CLEC requires further escalation.

The Qwest Service Team assists CLECs in the following areas:

- Handling order acceptance, delayed orders, or cancelled orders;
- Answering questions about Interconnection Agreements (IA);
- Handling escalations, delayed order escalations or expedites;
- Providing information on major outages;
- Handling maintenance and repair escalations;
- Handling maintenance and repair post mortems (root cause analysis);
- Providing project coordination;
- Providing testing and performance reporting; and,
- Responding to complaints regarding any of the above topics.³

Qwest assigns its Sales Executives and Service Managers to CLECs based on a number of factors, including: the size of the CLEC's account, the types of products and services the CLEC intends to offer its end customers, the location of the CLEC, and the planned operating area in which the CLEC intends to do business. In some instances, Qwest assigns a single representative to fill the roles of both the Sales Executive and Service Manager for the CLEC.

2.1.2 Account Meetings with Qwest Subject Matter Experts (SMEs)

As part of the account relationship, the Qwest Account Team provides product and service information so the CLEC can conduct business effectively. If the Account Team cannot provide requested information directly, the Service Manager or Sales Executive may arrange for CLEC representatives to communicate directly with Qwest SMEs to discuss specific product or service-related issues. The SME meetings are conducted on an individual case basis, dependent on the severity and specifics of the CLEC's particular issue.

2.1.3 Maintaining Account Relationship

After the account is established, the Account Team remains the CLEC's primary contact for maintaining the account relationship. As described in section 2.1.1 above, the Qwest Account Team assists the CLEC in all areas of the wholesale relationship when the CLEC is unable to resolve issues independently. The Account Team also ensures that the quality of service provided to its CLEC customers is maintained.

² See <http://www.qwest.com/wholesale/clecs/accountmanagers.html>

³ See <http://www.qwest.com/wholesale/clecs/accountmanagers.html>



Each CLEC can request its own, customized account maintenance based on its individual needs. Consequently, the CLEC may schedule regular meetings with its Account Team, in person or via telephone, or it may initiate contact only when an issue requires escalation to and beyond the Service Manager. Qwest does not define any specific requirements for the frequency or type of interaction between CLECs and their Qwest Account Team representatives.

2.1.4 Escalation and Customer Contact

In addition to establishing and maintaining the CLEC account relationship, the Qwest Account Team also serves as Tier 3 escalation support for CLEC Help Desk tickets. When an issue or question requires escalation beyond the Interconnect Service Center (ISC) or Customer Service Inquiry and Education (CSIE) Center, a CLEC may contact its Qwest Service Manager. The Qwest Service Manager evaluates the issue and works with those Qwest departments responsible for the actual ordering and delivery of products. Through these contacts, the Qwest Service Manager attempts to resolve the issue in the manner most practical for both the CLEC and Qwest.

Table 12C-1.1, below, summarizes the escalation contacts and levels.

Table 12C-1.1: LSR Ordering Expedites and Escalations⁴

Tier	Responsibility	Functions
0	Sierra Vista Call Center Agent	CLEC initiates call
1	Customer Service Inquiry and Education Center (CSIE) Service Delivery Coordinator (SDC)	Warm Transfer or Call Center Database Ticket
2	Duty Pager	SDC provides on your request or if you ask to speak with a manager
3	Appropriate Service Manager	Referral takes place if the manager, responding to the duty pager, needs further assistance

2.2 Scenarios

Scenarios were not applicable to this portion of the test.

2.3 Test Targets & Measures

The goal of the test, or test target, was to evaluate the practical application of Qwest's Account Management processes. HP, in its role as the P-CLEC, measured Qwest's Account and Service Management processes to determine how effectively those processes provide a CLEC with the ability to operate and compete in the Qwest service territory.

⁴ Qwest Expedites and Escalations V3.0, <http://www.qwest.com/wholesale/clecs/exescoper.html>



2.4 Evaluation Methods

HP obtained data for this test by:

- Collecting requests and responses for support from the Qwest Service Management team;
- Reviewing and applying Qwest published support processes;
- Evaluating commitments and responses communicated to the P-CLEC from the Service Management Team; and
- Assessing the overall support provided by Qwest Service Management to facilitate the P-CLEC in the test activities.

The sources of the evaluation included Qwest website documentation, telephone conversations, e-mail communication, conference calls, escalations, SME meetings, and meeting minutes.

2.5 Analysis Methods

HP evaluated Qwest-generated information against P-CLEC expectations to determine whether Qwest support processes and mechanisms allowed the P-CLEC to effectively conduct business within Qwest service areas.

3.0 Results Summary

This section summarizes the evaluation of the P-CLEC's experiences with the methods and processes described above.

3.1 Results & Analysis

The Results and Analysis section is divided into the following sub-sections:

- Securing and Contacting a Qwest Account Team;
- Account Meetings with Qwest Subject Matter Experts (SMEs);
- Maintaining Account Relationship; and
- Escalations and Customer Contact.

Summaries of HP Observations and Exceptions referenced in the following sections are located in Appendix HP-A.

3.1.1 Securing and Contacting a Qwest Account Team

The Qwest Account Team assisted the P-CLEC with establishing a wholesale relationship. Throughout the test, the P-CLEC found the overall relationship with its Qwest Account Team to be positive. In general, the Qwest Service Manager assisted the P-CLEC with obtaining the necessary information to complete its start-up process.

During the course of the test, Qwest transitioned the P-CLEC to a third Account Manager. This Account Manager assumed responsibilities for both Account and Service Management based on process changes Qwest implemented.⁵ The P-CLEC experienced a smooth transition to its third Account Manager.

⁵ In the P-CLEC's experience, the same Qwest individual filled both the Account Manager and Service Manager titles.



The P-CLEC found deficiencies in Qwest information during the P-CLEC's start up process. These were documented in Exception 2001 and described in the *Interim Report*. HP subsequently closed Exception 2001.

3.1.2 Account Meetings with Qwest Subject Matter Experts (SMEs)

In the Interim Report, HP documented the P-CLEC's experience in setting up and conducting meetings with Qwest SMEs. The meetings covered in the Interim Report included the P-CLEC's Account Manager Kick-off meeting and subsequent SME meetings.

After the release of the Interim Report, the P-CLEC requested and conducted SME meetings with Qwest to resolve operational and business issues that arose during the P-CLEC's activities. Meetings were coordinated to discuss Unbundled Dark Fiber, Local Number Portability (LNP), Hi-Cap Pre-qualification, Enhanced Extended Loop (EEL), NC/NCI Codes, Street Address Guide (SAG) data, Special Billing Number (SBN), Service Interval Guide, and Directory Listings. These meetings were arranged after the Qwest Account Team and the P-CLEC agreed that specific issues required expertise to facilitate product and process discussions. While many of the SME meetings resolved the P-CLEC's issues, in some cases the Qwest experts failed to adequately address the concerns or operational issues.

HP documented these issues in the following Incident Reports.

Observations: 2040, 2041, 2052, 2067, 2073, 2076, 2080, 2081, 2092.

Exceptions: 2012, 2028, 2048, 2059, 2064, 2069, 2070, 2072, 2078, 2084.

3.1.3 Maintaining Account Relationship

Following account establishment and assignment of a Qwest Account Team, the P-CLEC worked regularly with the Service Management team to maintain a relationship that facilitated the P-CLEC's ability to do business with Qwest.⁶ The P-CLEC used various communications channels to maintain the account relationship, including:

- E-mail;
- Telephone calls (including person-to-person and conference calls);
- Face-to Face meetings;
- SME meetings (face-to-face or via conference call);
- Pagers; and,
- Facsimile.

The P-CLEC maintained its relationship with the Qwest Account Team through weekly conference calls with its Qwest Service Manager. The P-CLEC began its weekly meetings in January 2001. The conference calls created a cooperative environment for the P-CLEC to raise

⁶ During the course of the test, the P-CLEC's Service Manager, and Service Management team, also filled the role of the Sales team. Because the P-CLEC established its account, and its interconnection agreements, to cover all products and services that the P-CLEC intended to order, there was no additional sales activity required during the P-CLEC's activities. When the P-CLEC required assistance in the areas identified as the responsibilities of the Sales team, the P-CLEC presented these issues to its Service Manager.



questions regarding Qwest's CLEC support processes, Qwest products and services, and other issues for which the P-CLEC was not able to obtain solutions elsewhere within Qwest.

The P-CLEC and its Qwest Account Team developed and worked through an action item log of questions and issues that the P-CLEC encountered. The P-CLEC created the log to track issues, Qwest response times, and any Qwest activities associated with resolution of an issue. The P-CLEC maintained the log, and updated individual entries to reflect progress on open issues. The P-CLEC distributed the log to Qwest on a weekly basis. The log served as a "roadmap" for discussion, resolution, tracking, and documentation of the many issues and questions the P-CLEC presented to Qwest via the Account Team, and, as issues were resolved, the log documented the resolution of the issues.

HP found that the weekly meetings with Qwest Service Management improved the flow of information between the P-CLEC and Qwest, expedited the resolution of many outstanding operational and process issues, and facilitated the P-CLEC's business relationship with Qwest.

HP found that Qwest's published Account/Service Management guidelines, in conjunction with the approach Qwest takes to address the needs of CLECs, on a case-by-case basis for issues, special requests, escalations and other issues, was sufficient to meet the P-CLEC's needs. HP also found the communication channels used in this test effectively provided the P-CLEC with the means to manage the account relationship and address the P-CLEC's ongoing issues. Qwest's processes for maintaining the account relationship sufficiently supported the P-CLEC's efforts in obtaining information, resolving issues and escalations, and providing for the general accessibility of the Account Team to the P-CLEC.

Responses to P-CLEC escalations were generally rapid. For most issues, the P-CLEC received responses to e-mails within one business day, and received callbacks for phone calls and voice mail messages within four hours. Additionally, when the P-CLEC found it necessary to contact its Service Manager via pager, the P-CLEC generally received callbacks within two hours.

There were, however, a number of instances where internal delays strained the Account Management relationship. The Service Management team occasionally faced difficulty in obtaining answers to CLEC questions, implementing process improvements and posting documentation. Also, in some cases the Service Manager's responses to the P-CLEC did not provide an answer or solution to the P-CLEC's issue, giving Qwest the appearance that it did not have sufficient internal support mechanisms for the Service Management team. The P-CLEC also found it necessary to re-open a number of issues in the action item log due to the recurrence of problems related to product information, USOCs, Help Desk issues, and ordering processes. The Account Management action item log documents the P-CLEC's experiences in working through issues with the Qwest Account Team over the course of the test.

HP documented these issues in the following Incident Reports.

Observations: 2005, 2042, 2052, 2067, 2073, 2075, 2077, 2080.

Exceptions: 2007, 2053, 2064, 2071, 2072, 2090.



April 19, 2002

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3.1.4 Escalations and Customer Contact

The P-CLEC escalated Help Desk issues to its Qwest Service Manager when the ISC representative with whom the P-CLEC was working was unable to resolve the issue. This occurred when the P-CLEC experienced multiple instances of the same issue, such as USOC Table errors or missing Completion Notices, or when resolution was critical to complete the P-CLEC's orders in a timely manner. There were also occasions in which Qwest Help Desk representatives instructed the P-CLEC to escalate issues to its Service Manager. The P-CLEC used the same communication channels to address Help Desk escalations that it used to resolve general issues presented to its Qwest Service Manager. If the issue required immediate attention, the P-CLEC explained the need to expedite resolution to its Service Manager. In general, the P-CLEC was successfully able to resolve Help Desk escalations through its Service Manager. However, in some instances, the P-CLEC's ability to complete its testing activities was delayed due to slow resolution of escalated Help Desk issues.

HP documented these issues in the following Incident Reports.

Observation 2041.

Exceptions: 2028, 2048, 2059, 2064, 2069, 2070, 2073, 2075, 2082, 2084.



April 19, 2002

12-C-7

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12.7. Test Results: Loop Qualification Process Evaluation (Test 12.7)

1.0 Description

The Loop Qualification Process Evaluation was a review of the Digital Subscriber Line (DSL) loop qualification processes and procedures developed and employed by Qwest to support both retail and wholesale customers. Operational analysis techniques were used to determine if parity exists in the design, implementation, and use of Qwest's loop qualification process. Additionally, the Loop Qualification Evaluation assessed remedial⁴⁰ options available for both the retail and wholesale processes.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

This section provides an overview of the Qwest retail and wholesale loop qualification processes.

2.1.1 Qwest Retail Loop Qualification Process

Qwest retail customers are able to determine whether or not a loop qualifies for Digital Subscriber Line (DSL) service by using one of the following methods:

- Qwest retail Web site tool (orderdsl.qwest.com)
- Telephone inquiry
- Email or fax inquiry.

The retail Web site tool allows Qwest's end-user customers to submit a query by entering their existing telephone number (TN) to determine whether the loop dedicated to that TN qualifies for DSL service. If the customer receives a positive response, the customer can then request DSL service.

Retail customers can submit requests for DSL service via telephone, email, or fax. In these cases, a Qwest retail customer service representative performs the loop qualification by using the QCity/QServ Loop Qualification Tool.

The QCity/QServ tool allows the Qwest representative to submit a query using either the customer TN or street address. The customer TN is used for most requests. QServ returns a positive or negative response:⁴¹

- **YES** – indicates that the customer's loop qualifies for Qwest DSL service at given available data transmission speed(s), and that an order for DSL service can be submitted.

⁴⁰ Remedial options are those available to a CLEC for instances in which the loop that it is trying to qualify for Digital Subscriber Line (DSL) service does not. Examples include auto qualification capabilities and loop conditioning services for facility-based CLECs.

⁴¹ Prior to December 18, 2001, QServ included an additional "Not Determined" response. The "Not Determined" response indicated that the database did not contain sufficient information for QCity to determine whether or not the customer qualified for service.

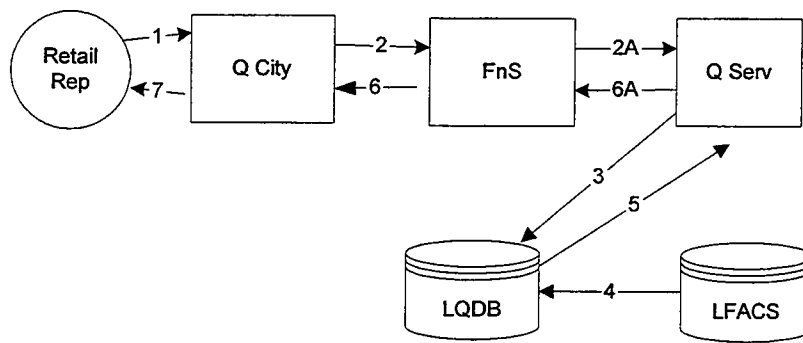
- *NO* – indicates that the customer’s loop does not qualify for DSL service. A brief explanation is provided in the query response (e.g., distance from Central Office [CO] is too great).

Qwest retail customers do not have remedial options available to them when the specified loop does not support DSL service. For example, Qwest does not provide conditioning services⁴² in order to qualify customers for DSL service if the specified loop does not support DSL service. In such instances, customers are informed that their TNs are not currently eligible for the service.

2.1.2 Qwest Retail Loop Qualification System Description

The diagram below illustrates the systems and flow that comprise Qwest’s retail loop qualification query process:

Figure 12.7-1: Qwest Retail Loop Qualification Query Process



1. Representative accesses QCity Loop Qualification by telephone number (TN); Representative enters TN.
2. QCity sends telephone number to QServ.
- 2A. Data is transferred from QCity to QServ via Fetch 'n Stuff (FnS).
3. QServ pulls Raw Loop Data (RLD) to make loop qualification determination from Loop Qualification Data Base (LQDB).
4. LQDB checks Loop Facilities Assignment & Control System (LFACS) to verify that data is current.
5. LQDB returns RLD for TN(s).
6. QServ uses RLD to determine loop qualification, and sends loop qualification results to QCity.
- 6A. Data is transferred from QServ to QCity via FnS.
7. QCity sends loop qualification results to representative.

Process Description: The QCity interface submits the query information to QServ. QServ is a middleware application that collects raw loop data from the LQDB, and uses an algorithm to determine whether or not the loop qualifies, based on the technical specifications for Qwest DSL service.

System Performance/Database Updates: The LFACS database is Qwest’s central repository for loop data. It serves as the source database for the loop data in the LQDB, which is updated with revised LFACS data on a nightly basis. The two databases are synchronized each month.

⁴² Conditioning services include removal of bridge taps and/or load coils.

As part of the loop qualification query process, the LQDB also queries a “recent changes” field in the LFACS database. If this query indicates that the LFACS information has been updated, the new LFACS information is populated into the LQDB, and is used as the basis for the loop qualification query.

2.1.3 Qwest Wholesale Loop Qualification Process

CLECs can determine whether a loop qualifies for DSL service by using one of the following methods:

- Qwest Interconnect Mediated Access (IMA)
- Qwest wholesale Web site tool
- Telephone inquiry to the Interconnect Service Center (ISC)
- Email or fax inquiry to the ISC.

IMA is the primary tool used by CLECs to perform loop qualifications. The other methods serve as backups, in the event that a CLEC experiences difficulty with the IMA tools, described below. Qwest makes several loop qualification tools available through IMA. They include:

- Qwest DSL Qualification Tool – used by resellers to qualify loops, based on the specific technical parameters for Qwest DSL service
- Asymmetrical Digital Subscriber Line (ADSL) Unbundled Loop Qualification Tool – used by facility-based CLECs to qualify loops, based on industry standard technical specifications for ADSL service
- Raw Loop Data Tool – used to access specific loop makeup characteristics, including specific loop modifications, segment characteristics, distance from the CO, and presence of load coils or bridge taps.

CLECs use the appropriate IMA tool to qualify a customer loop prior to submitting an order to Qwest for DSL service. Raw loop data can be used to examine the specific loop makeup characteristics for a discrete TN or address. In addition to using the Raw Loop Data Tool, CLECs can download bulk raw loop data in comma-delimited format, from Qwest’s Web site, for use in their own loop qualification applications.

The Qwest DSL and ADSL Unbundled Loop Qualification tools allow CLECs to submit queries by either TN or address. The IMA response for both tools indicates whether or not the specified loop qualifies for DSL service, and provides a brief description of the loop make-up characteristics.

The Qwest DSL tool provides the same response as the QCity tool described above: “yes” or “no.” The result is based on the same data and algorithms that are used in the retail loop qualification process (see Section 2.1.4 below for further detail).

Resellers of Qwest DSL service who receive a “no” response can request an auto qualification feature through IMA. This tool allows CLECs to establish an automatic query that periodically checks a loop to determine if its qualification status has changed. If a loop becomes eligible at a later date, the CLEC is notified via email. As is the case with the retail process, Qwest does not

provide resellers of Qwest DSL service conditioning services in order to qualify customers for DSL service.

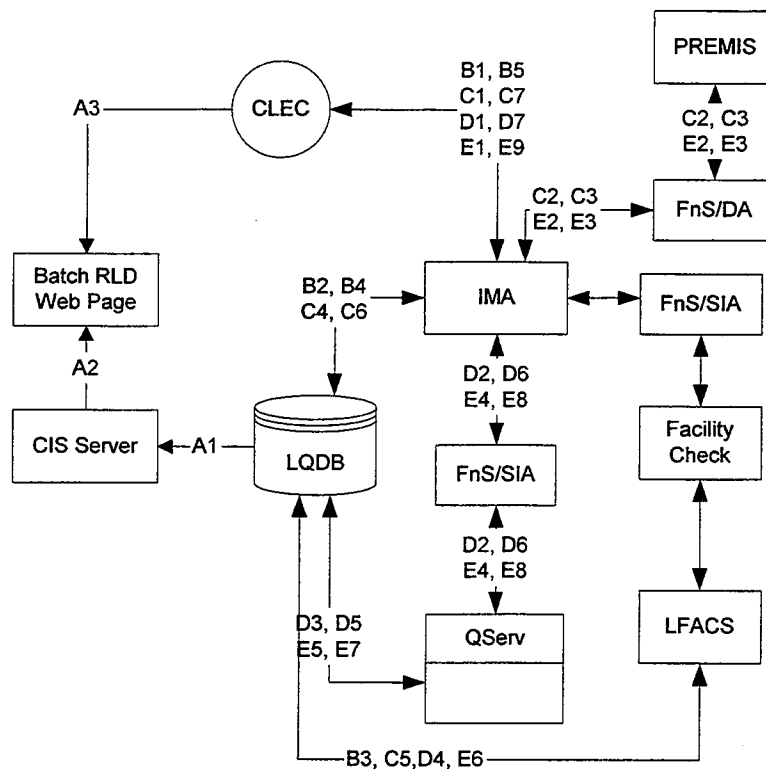
Facility-based CLECs who order unbundled loop products do have the remedial option (in addition to the auto qualification feature) of ordering loop-conditioning services from Qwest in order to qualify customers for DSL service. Examples of such options include the removal of load coils and bridge taps from a specified loop.

Qwest provides support to CLECs through its ISCs. Resellers receive support from the Complex Resale ISC in Minneapolis, MN. Facility-based DSL providers receive support from the Unbundled Loop ISC in Duluth, MN. These ISCs are staffed by Service Delivery Coordinators (SDCs), who are trained to process orders for DSL-related products and services. Resale SDCs perform loop qualifications on DSL orders using the Qwest DSL Qualification Tool, which returns loop results in the same manner (“yes” or “no”) as the tools used by CLECs. The Qwest DSL Qualification Tool is the same tool used by Qwest retail representatives.

2.1.4 Qwest Wholesale Loop Qualification System Description

The diagram below illustrates the systems and flow that comprise the CLEC loop qualification query processes:

Figure 12.7-2: Wholesale Loop Qualification System Process



A1-A3 – Batch Raw Loop Data: Raw loop data is updated nightly to the CIS server. CLECs can access this data via the Qwest Web site using a digital certificate.

B1-B5 – IMA Raw Loop Data: Raw loop data for individual TNs is accessed via IMA. Data is drawn from the LQDB. LQDB queries a field in the LFACS database to determine whether any recent updates have been made to the database. Query results are returned to the CLEC via the IMA interface.

C1-C7 – IMA Raw Loop Data: Raw loop data address queries are validated in PREMIS. The query is then submitted to the LQDB, and Raw Loop Data results are returned to the CLEC via the IMA interface.⁴³

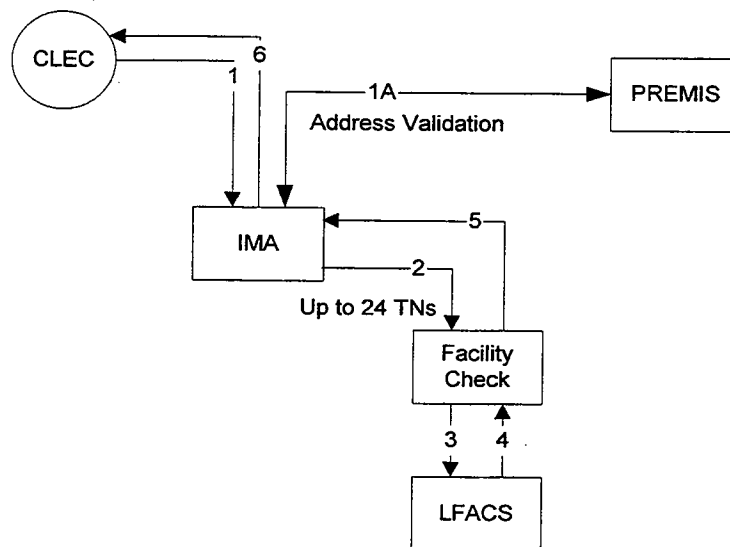
D1-D7 – Qwest DSL (Resale) Loop Qualification: Queries are submitted via IMA to QServ. QServ collects loop data from the LQDB and executes the algorithms to determine whether the specified loop qualifies based on the technical parameters for Qwest DSL service.⁴⁴

E1-E9 – Qwest DSL (Resale) Loop Qualification: Queries based on customer address follow the same process as the Resale telephone number query (D1 – D7) above, except that the query first validates the given address in PREMIS.

System Performance/Database Updates: The LFACS and LQDB databases are the same databases used for retail loop qualification. The update procedures described in Section 2.1.2 also apply to this section.

The flow for the Unbundled ADSL Loop Qualification process is depicted below. The ADSL Loop Qualification Tool is used prior to submitting a Local Service Request (LSR) for an Unbundled Local Loop. This tool enables the CLEC to verify the type of facility and the loop make-up of the Unbundled Local Loop prior to order submission.

Figure 12.7-3: Unbundled ADSL Loop Qualification Process



⁴³ FnS/DA is an acronym for Fetch 'n Stuff / Data Arbitor

⁴⁴ FnS/SIA is an acronym for Fetch 'n Stuff / Safe Information Access

1. CLEC accesses IMA for loop qualification by TN; CLEC enters TN.
- 1A. IMA accesses PREMIS to validate addresses or working TNs; PREMIS returns results.
2. IMA sends TN to Facility Check.
3. Facility Check queries LFACS to verify that data is current.
4. LFACS returns data to Facility Check for loop qualification determination.
5. Facility Check sends loop qualification result to IMA.
6. IMA sends loop qualification result to CLEC.

CLECs submit queries via IMA. Address-based queries determine the validated addresses or working TNs in PREMIS. PREMIS is the system used by IMA GUI, IMA EDI, and other applications as a source of address validation information. It is used by Qwest retail and wholesale operations. TN data is submitted to Facility Check. Facility Check draws loop make-up characteristics from the LFACS database, and performs algorithms to determine whether the loop will support DSL service. Results are then returned to the CLEC via IMA.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were the loop qualification processes and procedures used by Qwest to support both retail and wholesale customers. Processes, sub-processes, and evaluation measures are summarized in the following table.

Table 12.7-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Loop Qualification Pre-Order Query Process	Pre-Order Receipt and Logging	Consistency between wholesale and retail processes	12.7-1-1 – 12.7-1-2, 12.7-1-4, 12.7-1-7
Assemble Pre-Order Response	Delivery of Error Messages and Queries	Consistency between wholesale and retail processes	12.7-1-3
	Delivery of Response	Consistency between wholesale and retail processes	12.7-1-6, 12.7-1-8
Escalation Process	User-initiated Escalation	Consistency between wholesale and retail processes	12.7-1-3, 12.7-1-5, 12.7-1-9
Process Management	General Management Practices	Consistency between wholesale and retail processes	12.7-1-2 – 12.7-1-4
	Performance Measurement Process	Consistency between wholesale and retail processes	12.7-1-11

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Capacity Management	Capacity Management Processes and Procedures	Consistency between wholesale and retail processes	12.7-1-10

2.4 Evaluation Methods

KPMG Consulting utilized three methods of data collection for this evaluation. The evaluation included review of Qwest documentation of processes and procedures, management practices, and pre-order processes. Interviews and observations were held with Competitive Local Exchange Carriers (CLECs) to evaluate their collective experiences. KPMG Consulting used findings from Hewlett-Packard Consulting (HPC), which held the role of pseudo-CLEC (P-CLEC) during execution of Test 12, Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks. In addition, KPMG Consulting conducted interviews and on-site observations with Qwest staff responsible for loop qualification processing.

2.5 Analysis Methods

Information gathered during on-site visits, through data requests, and from HPC's P-CLEC experience was evaluated against criteria defined by KPMG Consulting during the planning phase of the test. One component of this evaluation compared Qwest personnel, processes, and systems used for wholesale loop qualification to those employed for retail loop qualification, in order to determine whether or not consistencies exist. Another component evaluated data gathered to determine if essential elements of Qwest's processes and systems are present, and whether or not defined process steps are followed.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 12.7-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
12.7-1-1	The end-user information that is required prior to the submission of a loop qualification is the same for wholesale and retail orders.	Satisfied	<p>End-user information that is required prior to the submission of a loop qualification is the same for wholesale and retail orders.</p> <p>Both retail and wholesale loop qualifications can be performed using either an end-user telephone number (TN) or street address.</p> <p>KPMG Consulting confirmed these submission requirements during interviews and observations with CLEC subject matter experts (SMEs) who are responsible for qualifying loops.</p> <p>Requirements are documented and made available to CLECs and Qwest personnel. CLEC information is available on the Qwest Web site at http://www.qwest.com/wholesale/ima/gui/document.html, and in the <i>IMA Loop Qualification and Raw Loop Data Job Aid</i>. Loop qualification information for Qwest retail customers is available at: https://orderdsl.qwest.com/order/welcome.asp.</p> <p>KPMG Consulting also observed the loop qualification process in the Qwest retail and wholesale work centers in order to confirm that these activities were accurately and consistently practiced, as defined and documented above.</p>
12.7-1-2	The loop qualification query process is consistent for retail and wholesale customers.	Satisfied	<p>The loop qualification query process is consistent for retail and wholesale customers.</p> <p>Qwest retail customers can determine whether they qualify for DSL service through one of the following means:</p> <ul style="list-style-type: none"> • Telephone inquiry • Qwest Web site query • Email or fax inquiry. <p>Qwest wholesale customers use various loop qualification tools, via IMA, to obtain comparable information for their end-user customers. Wholesale customers can also obtain loop qualification information from Qwest's ISCs via the same means listed above.</p> <p>Qwest retail processes are documented on</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>the retail Web site at https://orderdsl.qwest.com/order/welcome.asp. Qwest wholesale processes are documented on the wholesale Web site at http://www.qwest.com/wholesale/ima/gui/document.html. Qwest wholesale SDCs have access to additional process documentation via InfoBuddy, a Qwest internal, online job aid.</p> <p>During observations of Qwest retail and wholesale work center representatives, KPMG Consulting confirmed that the loop qualification process activities were accurately and consistently practiced, as defined and documented above. KPMG Consulting also observed CLEC representatives submitting loop qualification queries using the processes documented above.</p>
12.7-1-3	Processes and procedures are defined for addressing errors regarding loop qualifications in the retail and wholesale environments.	Satisfied	<p>Processes and procedures are defined for addressing errors regarding loop qualifications in the retail and wholesale environments.</p> <p>If a CLEC receives a questionable “no” response from a loop qualification query to the Qwest DSL or ADSL Unbundled Loop Tools, it may check loop make-up information in the Raw Loop Data Tool. A retail customer who receives a “no” response when inquiring about DSL availability is informed that the relevant TN is not currently eligible for the service.</p> <p>KPMG Consulting observations of representatives in the Qwest retail and wholesale work centers confirmed that these activities were accurately and consistently practiced, as defined and documented. KPMG Consulting also observed CLECs using the procedures defined for addressing errors regarding loop qualifications.</p>
12.7-1-4	The internal process flow used for loop qualification is consistent for retail and wholesale customers.	Satisfied	<p>Qwest’s internal process flow used for loop qualification is consistent for retail and wholesale customers.</p> <p>During interviews with CLEC SMEs, KPMG Consulting confirmed that the internal process flow used for wholesale loop qualifications is consistent with defined and documented Qwest processes.</p> <p>Requirements are documented and made available to CLECs and Qwest personnel.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CLEC information is available on the Qwest Web site at https://orderdsl.qwest.com/order/welcome.asp, and in Qwest's document, <i>IMA Loop Qualification and Raw Loop Data CLEC Job Aid</i>.</p> <p>During initial testing, KPMG Consulting identified apparent discrepancies with Qwest's back-end systems that provide loop qualification results. KPMG Consulting issued Exception 3038.</p> <p>After completing additional interviews and document analysis, KPMG Consulting determined that internal process flows are consistent for both retail and wholesale operations, and that back-end systems provide consistent results for both wholesale and retail queries.</p> <p>See Exception 3038 for additional information on this issue. Exception 3038 is closed.</p>
12.7-1-5	Qwest contact information is readily available for retail and wholesale customers.	Satisfied	<p>Qwest contact information is readily available for retail and wholesale customers.</p> <p>Interviews with CLEC SMEs verified that Qwest contact information is available on Qwest's Web site, and in documentation provided to CLECs by Qwest account managers. KPMG Consulting confirmed the availability of contact information with SMEs at CLECs.</p> <p>Documentation that describes the various Qwest departments and related SMEs is available to CLECs at https://www.qwest.com/wholesale/, and in the Qwest document, <i>Frequently Called Numbers – ISC – Wholesale</i>.</p> <p>KPMG Consulting verified the availability of this contact information during observations at both the Qwest wholesale and retail work centers. KPMG Consulting also observed SDCs providing contact information to end-users and CLECs. KPMG Consulting also observed CLECs accessing Qwest contact information on the Web site identified above.</p>
12.7-1-6	The customer receives confirmation of the completion of a loop qualification, or can access	Satisfied	<p>The customer receives confirmation of the completion of a loop qualification, or can access the status of loop qualifications.</p> <p>CLECs and retail end-users receive</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
	the status of loop qualifications.		<p>completion confirmations via the same vehicle through which they query. That is, if submitted in IMA, the customer will receive confirmation via IMA.</p> <p>During observations with CLEC SMEs who are responsible for receiving confirmation of loop qualification query completion, KPMG Consulting observed receipt of such confirmations.</p> <p>KPMG Consulting also observed receipt of loop qualification confirmations in the Qwest retail and wholesale work centers, to confirm that these activities were accurately and consistently practiced.</p>
12.7-1-7	Systems and processes are in place to allow wholesale and retail loop qualification queries to be performed using the customer address.	Satisfied	<p>Systems and processes are in place to allow wholesale and retail loop qualification queries to be performed using the customer address.</p> <p>The database(s) used to qualify loops is the same for both the wholesale and retail organizations. All tools (the Qwest DSL Tool, the ADSL Unbundled Loop Tool, and the Raw Loop Data Tool for wholesale and the QCity/QServ Tool for retail) may be used to conduct loop qualifications based on the customer address.</p> <p>During on-site visits with CLECs, KPMG Consulting observed loop qualification queries being performed using the customer address.</p> <p>KPMG Consulting also observed loop qualification queries being performed with customer addresses in the Qwest retail and wholesale work centers, and confirmed that these activities were accurately and consistently practiced, as defined and documented above.⁴⁵</p>
12.7-1-8	Loop qualification response types that are provided are consistent between retail and	Satisfied	Loop qualification response types that are provided are consistent between retail and wholesale customers.

⁴⁵ During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity and Standards and Benchmarks, Hewlett-Packard Consulting (HPC) identified an issue with Raw Loop Data Query pre-order functionality; see HPC's Exception 2063 for additional information. The specific discrepancy identified in E2063 is not addressed in the Test 12.7 Test Report because the issue in question has no comparable Retail equivalent. HPC Exception 2063 is closed. HPC subsequently issued Observation 2078 to monitor the above issue. The issue in question is scheduled to be resolved following Qwest's IMA version 9.0 implementation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	wholesale customers.		<p>Loop qualification queries, by both retail and wholesale customers, result in one of the following response types:</p> <ul style="list-style-type: none"> • Yes • No. <p>Interviews with both CLEC SMEs and Qwest representatives verified that loop qualification response types that are provided are consistent between retail and wholesale customers.</p> <p>KPMG Consulting observations at Qwest retail and wholesale centers, and CLEC centers verified that personnel receive the same qualification response types. Identical query types for loop qualification resulted in the same response types.</p>
12.7-1-9	The escalation process for loop qualifications is consistent for retail and wholesale customers.	Satisfied	<p>The escalation process for loop qualifications is consistent for retail and wholesale customers.</p> <p>For loop qualification queries for which the qualification tools return a “no” response, CLECs can request an auto qualification feature, which periodically checks a loop to determine whether its qualification status has changed. In addition, facility-based CLECs may request loop conditioning services.</p> <p>In addition to the specific loop qualification remedial option escalations, the general escalation process is documented and made available to CLECs and Qwest personnel. CLEC information is available on the Qwest Web site at http://www.qwest.com/wholesale/clecs/exesclover.html. Additional escalation process descriptive information is available in the Qwest documents, <i>Escalation Management Process for Design Services Bulletin Number: PB97028-5</i> and <i>Service Delivery Escalation/Status Process</i>.</p> <p>KPMG Consulting interviews with CLEC SMEs who are responsible for escalating orders confirmed that the Qwest escalation process, as defined and documented, is consistently practiced. At visits to Qwest work centers, KPMG Consulting also observed direct use of the escalation process.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
12.7-1-10	The capacity management process for loop qualification is consistent for retail and wholesale customers.	Satisfied	<p>Qwest's capacity management process for loop qualification is equivalent for retail and wholesale customers.</p> <p>Qwest's process for loop qualification capacity management is encompassed within its overall work center capacity management process.</p> <p>Qwest work center order volume is tracked, and is used to forecast future work volumes. Qwest uses this information to schedule resources for the retail and wholesale centers.</p> <p>Load and Resource Managers (LRM) are responsible for managing and monitoring order and/or call volumes, staffing levels, product trends, and capacity utilization. LRMs regularly compile various reports: actual vs. projected volumes, in today/out today, and Automatic Call Distributor (ACD) logs.</p> <p>Qwest's capacity management procedures are documented and made available to CLECs and Qwest personnel. CLEC information is available on the Qwest Web site at http://www.qwest.com/wholesale/guides/forecasting.html.</p>
12.7-1-11	Loop qualification performance measurement processes are consistent for retail and wholesale operations.	Satisfied	<p>Qwest's performance measurement processes for loop qualification are consistent for retail and wholesale operations.</p> <p>Processes are in place to measure and report on the timeliness of loop qualification query responses. Qwest uses "time in" and "time out" as measurement indicators of system timeliness.</p> <p>For the Raw Loop Data Tool, the measurement is divided into two measurements: Retrieve Request Screen and Receive Response. The Qwest DSL Tool measurement begins with the Qwest DSL Facility Request and ends with the Loop Qualification Response.</p> <p>For the ADSL Tool, there are three types of loop qualification transactions measured: a request for one line by address, a request for one line by TN, and a request for 25 lines by address. The address request measures the ADSL Request Screen and ADSL Response</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Screen. The request by TN and the ADSL Loop Qual for 25 lines measures the Loop Qualification Request window appearing in IMA and the Loop Qualification Response window appearing.</p> <p>The performance measurement process is consistent for wholesale and retail organizations at Qwest. Both organizations use the process of monitoring “time in” and “time out” to measure performance.</p> <p>The wholesale and retail center managers are responsible for the performance measurement process. Actual data and benchmarks for Qwest DSL and ADSL loop qualification are available on the Qwest Web site at http://www.qwest.com/wholesale/results/index.html. Performance measurement data for the Raw Loop Data Tool is available in the Qwest document <i>Performance Measurement Criteria for RLD Tool version 1.00</i>.</p> <p>Interviews with both CLEC SMEs and Qwest system SMEs verified that processes for performance measurement of loop qualification systems operate as defined and documented.</p>

12.8. Test Results: POP Manual Order Processing Evaluation (Test 12.8)

1.0 Description

The POP Manual Order Processing Evaluation (Test 12.8) was an operational analysis of Qwest's manual order handling processes at the Interconnect Service Centers (ISCs) that serve Competitive Local Exchange Carriers (CLECs). Manual orders include those submitted via facsimile, as well as non-flow through orders, submitted via Electronic Data Interchange (EDI) or Graphical User Interface (GUI), that require manual intervention during order processing. The test also included a review of the procedures that are in place to plan for and manage growth in order processing.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

CLECs order Qwest Wholesale Interconnection Products and Services either manually or through an electronic interface. CLECs submit Local Service Requests (LSRs) via one of three methods:

- Interconnect Mediated Access (IMA) - GUI
- IMA - EDI
- Facsimile (fax).

CLECs submit Access Service Requests (ASRs) via one of three methods:

- Telecommunication Information System (TELIS)
- Network Data Mover (NDM)
- Fax.

Orders are tracked by Purchase Order Number (PON) and LSR number or by ASR number.

2.1.1 ISC Organization and Functions

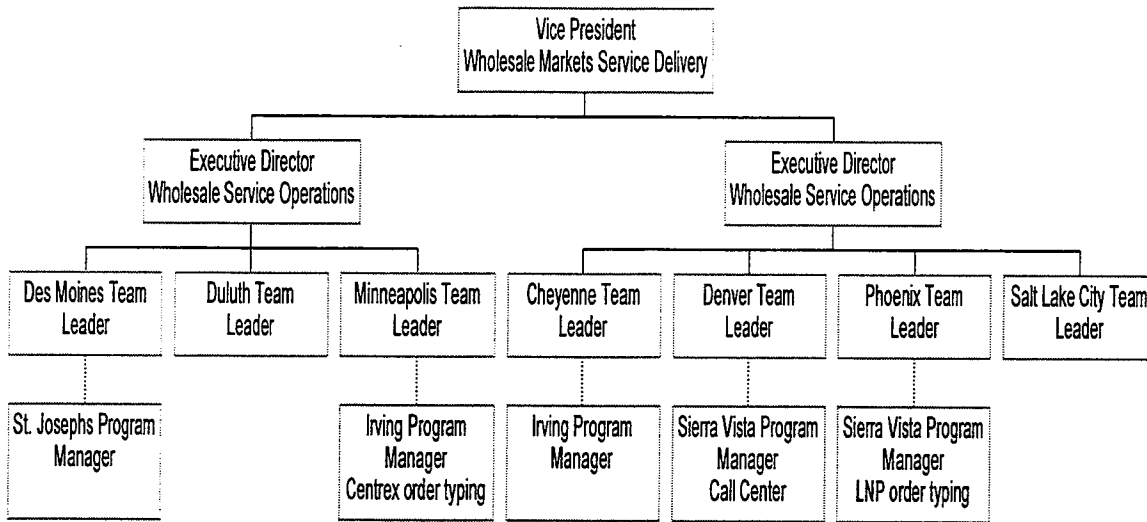
The ISCs are the primary Qwest work centers for providing CLEC pre-ordering and ordering service and support. Qwest has established 10 ISCs to assist CLECs with the processing of Local Service Requests (LSRs) and Access Service Requests (ASRs). Table 12.8-1 describes the ISC locations and respective responsibilities.

Table 12.8-1: Interconnect Service Center Organization

ISC Location	Responsibilities
Cheyenne, Wyoming	<ul style="list-style-type: none"> • Delayed LSRs and related escalations • Jeopardy notices • Resale and unbundled loop service order data entry • Faxed LSR screening
Denver, Colorado	<ul style="list-style-type: none"> • Customer Service Inquiry and Education (CSIE) Desk handling Tier 1 and 2 customer service inquiries • Process improvement • Training initiatives
Des Moines, Iowa	<ul style="list-style-type: none"> • ASR service order data entry • ASR expedites and inquiries • ASR delayed orders
Duluth, Minnesota	<ul style="list-style-type: none"> • Unbundled loop service order data entry (complex and regular)
Irving, Texas (managed by Aegis, Inc.)	<ul style="list-style-type: none"> • Resale and Centrex service order data entry • Faxed LSR indexing • Customer Service Record (CSR) retrieval
Minneapolis, Minnesota	<ul style="list-style-type: none"> • Centrex and other complex services order data entry • CSIE handling Tier 1 and 2 customer service inquiries
Phoenix, Arizona	<ul style="list-style-type: none"> • Unbundled loop and Local Number Portability (LNP) service order data entry
Salt Lake City, Utah	<ul style="list-style-type: none"> • ASR service order data entry • ASR delayed orders • ASR expedites and inquiries
Sierra Vista, Arizona (managed by Aegis, Inc.)	<ul style="list-style-type: none"> • Unbundled loop and LNP service order data entry • Tier 0 Call Center for customer service inquiries
St. Joseph, Missouri (managed by Aegis, Inc.)	<ul style="list-style-type: none"> • ASR service order data entry

Each ISC is managed by a Team Leader (Program Manager at outsourced facilities), who reports to one of two Executive Directors of the Wholesale Customer Service Operations Team. A Load and Resource Manager (LRM), Coaches, and Service Delivery Coordinators (SDCs) provide additional support to the Team Leaders. Figure 12.8-1 depicts the Qwest ISC management structure.

Figure 12.8-1: Interconnect Service Center Management Structure

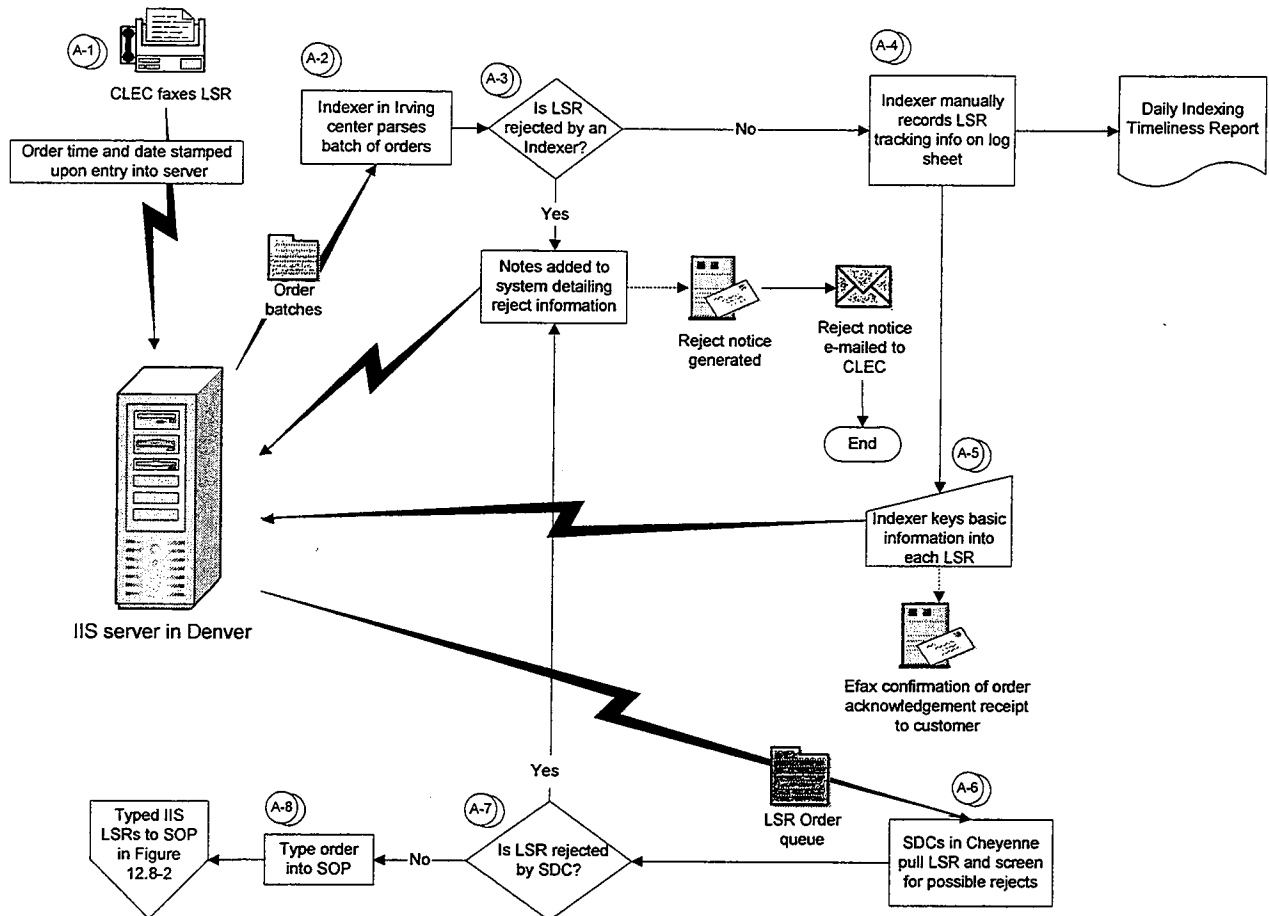


Executive Directors oversee multiple ISCs and monitor their overall performance. Team Leaders have oversight responsibilities for the day-to-day operations at individual ISCs. Each Team Leader is accountable for ensuring that his or her center’s staff adheres to procedures and meets service requirements. The Team Leader is also responsible for gathering necessary reports for process and performance management purposes. The LRM monitors order and call volumes, staffing levels, and other capacity management issues. Coaches are responsible for overseeing a group of SDCs by conducting performance analysis, providing assistance when needed, and providing reporting tools to center management.

2.1.2 Receipt and Processing of Faxed Manual Orders

Both ASRs and LSRs can be faxed to Qwest for processing. All faxed orders require manual intervention. Faxed LSRs come into Qwest via the Interconnect Imaging System Server (IIS). IIS date-stamps the faxes and groups them into batches, as illustrated in Figure 12.8-2 (step A-1). A Qwest employee, referred to as an Indexer, extracts a batch from the IIS queue and parses it into individual LSRs. The Indexer then manually assigns each a unique LSR identification number (A-2). The Indexer is responsible for pre-screening edits, such as verifying that proper fields are populated on faxed LSRs, and preparing them for processing by typing pre-order information in the order, which includes customer name, company name, telephone number, and fax number. If a faxed LSR is illegible or contains an error (A-3), the Indexer follows the error process, as described in Section 2.1.4.

Figure 12.8-2: Interconnect Imaging System Order Receipt Process



If a faxed LSR does not contain any errors, the Indexer manually records the LSR tracking information on an Indexing Daily Log sheet (A-4), and transcribes basic LSR information (e.g., customer name, contact info, service requested) from the electronic fax image onto an electronic order form in IIS (A-5). Once complete, a Functional Acknowledgement (FA) is generated by IIS, and is electronically faxed (e-faxed) back to the CLEC as proof of order receipt. Subsequently, a Service Delivery Coordinator (SDC) at the ISC extracts individual LSRs from the IIS server on a first in/first out basis and checks them for other possible reject reasons, such as incomplete or inadequate field entries (A-6). If the LSR is rejected (A-7), the SDC follows the rejection process as described in Section 2.1.4. LSRs in IIS that pass the SDC review process are typed into the Service Order Processor (SOP) by a SDC (A-8).

After the order is typed, the SOP performs automatic edits on the order (See IIS order entry point into SOP in Figure 12.8-3). If the SOP detects any errors (B-6), such as an unrecognizable field entry or missing information, the SOP alerts the SDC to the presence of the error(s) with an error

code message. The SDC retrieves the LSR from the order queue and follows the error process described in Section 2.1.4. Once the SOP determines that the order is error-free (B-6), the SDC releases the order for downstream provisioning. The SDC then electronically faxes a Firm Order Confirmation (FOC) to the CLEC (B-7).

At each step of the process, the SDC records his or her name and contact information on the order. This information is downloaded automatically into the Customer Record Management (CRM) system. CRM provides a means for tracking responsibility for the order throughout its lifecycle. CRM holds each SDC's orders in individual queues. SDCs monitor their queues to ensure that all orders are moving through downstream organizations appropriately. If a downstream organization is unable to process the order as written, the order's status is indicated as "error" in CRM, thus prompting the SDC to pull the order from IMA and address the issue. Coaches also use CRM as a source for tracking SDC order volume, and for pulling orders to check order accuracy as part of periodic quality reviews.

Qwest processes ASRs separately from LSRs. Faxed ASR orders are retrieved from the fax machine by a fax clerk and distributed to a SDC for processing. The SDC then manually inputs the order into the Exchange Access Control and Tracking (EXACT) system, which serves as the ASR order tracking and processing system. Before the order is submitted for provisioning by downstream organizations, it is translated by EXACT into the Integrated Access Billing System (IABS), and edited by the SDC for downstream billing use. At this point, it is subject to the same processes and procedures as those for an electronically submitted order.

2.1.3 Processing Non-Flow Through Orders

Most LSRs are electronically submitted to Qwest, as illustrated in Figure 12.8-3. LSRs that are sent electronically into IMA, via EDI or GUI, go through a series of electronic edits, which are performed by the Business Process Layer (BPL). The BPL is a middleware application that serves as the gateway from the CLEC's side of IMA to the Qwest side. BPL edits include checks such as ID validation and address verification. If the BPL detects an error, the LSR is sent electronically back to the CLEC, which provides the CLEC with an opportunity to correct the error and re-submit it to Qwest using the same PON. When the BPL accepts the order (B-1), IMA GUI returns a FA for GUI submitted orders, stating that BPL detected no errors. IMA EDI generates an electronic FA for EDI submitted orders.

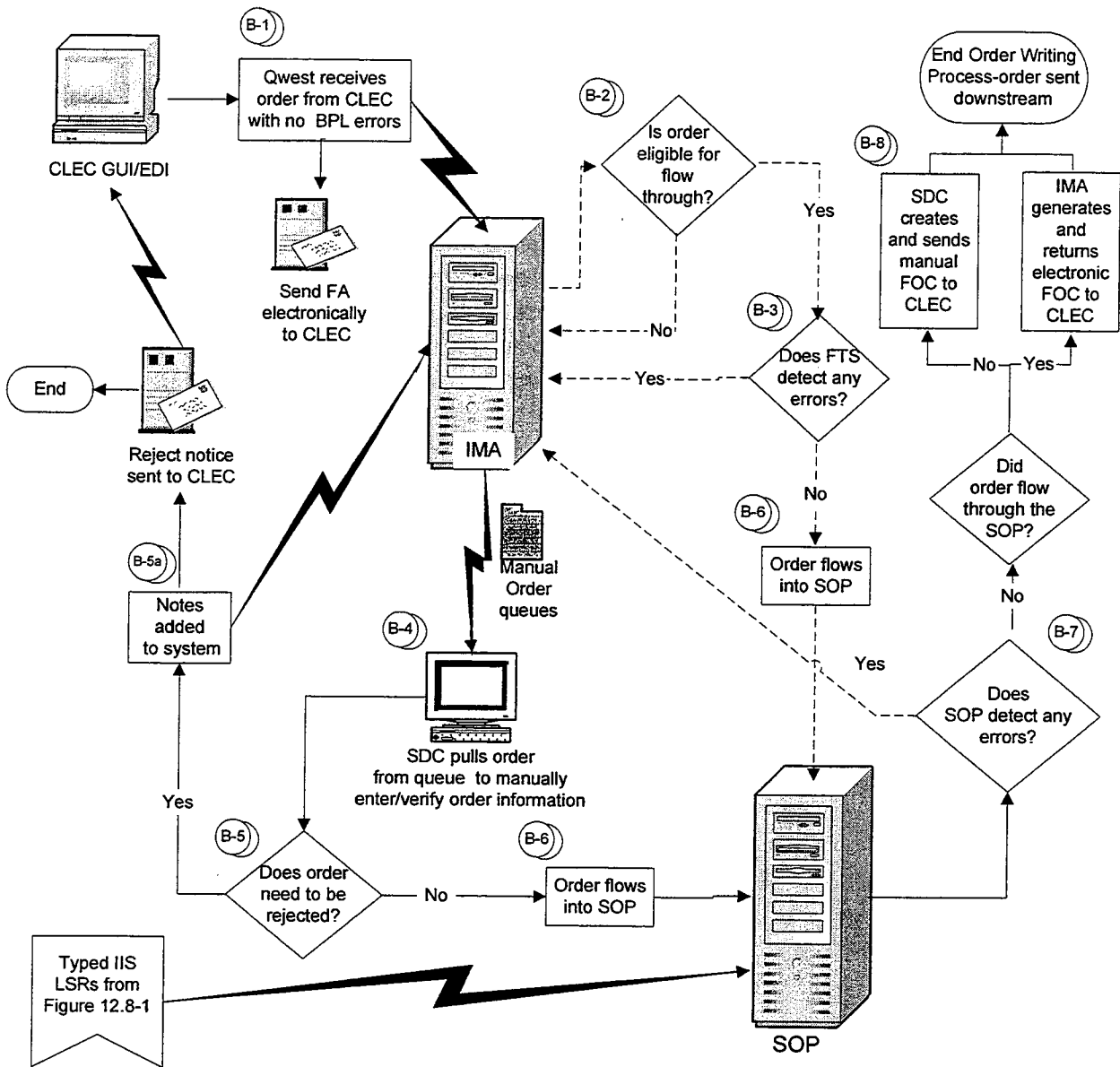
After passing BPL edits, a LSR is electronically sent to IMA. IMA determines the order's flow through eligibility based on order and product type (B-2). Non-flow through orders are routed to a queue in IMA for manual attention by a SDC. Flow through eligible orders are routed to the Flow Through System (FTS). Some LSRs are routed to FTS for partial order creation, and are then routed to a manual handling queue for completion by a SDC. Once the LSR is validated by FTS (B-3), FTS routes the LSR to the SOP for additional automatic processing (B-6). If the LSR contains errors that prevent it from flowing to the SOP (such as fields with incorrect character types or product codes), FTS routes the LSR to the manual queue in IMA (B-4). From this point forward, the LSR is considered non-flow through.

A SDC retrieves non-flow through LSRs from IMA to investigate the reason the order cannot flow through and completes typing the order, as necessary (B-4). If the order must be rejected due to the severity of the error(s) (B-5), the SDC follows the error process described in Section 2.1.4. Once the SOP determines that the order is error-free (B-7), the SDC releases the order downstream for provisioning, and then manually types and issues a FOC via IMA to the CLEC for those orders that did not flow through (B-8).

The SDC who processes a manual LSR records his or her name and contact information on the order, providing a means for tracking responsibility for the order throughout its lifecycle. The SDC monitors his or her own queue in CRM to ensure that all orders that the SDC worked are moving through downstream organizations appropriately. If a downstream organization is unable to process the order as written, the order's status is indicated as "error" in CRM, thus prompting the SDC to pull the order from IMA and address the issue. Coaches can also use CRM as a source for tracking SDC order volume, and for pulling orders to check order accuracy as part of quality review. SDCs use EXACT to monitor the status of an ASR, which includes work histories and order-related contact with CLECs.

ISC Team Leaders and Coaches monitor work queues and reports to ensure that all orders are being processed according to Qwest's established procedures and Service Interval Guidelines (SIGs). Any change to an order's status is updated automatically to IMA when a change occurs, as indicated in Figure 12.8-3. CLECs can use IMA GUI to track the status of non-flow through orders submitted via IMA GUI. The status of orders submitted via IMA EDI can be queried in IMA EDI.

Figure 12.8-3: Order Processing Overview



2.1.4 Addressing Errors in Manual and Non-Flow Through Orders

LSR order errors are classified as either non-fatal or fatal. Non-fatal errors include those such as missing contact information or a near match of a name or address. SDCs are responsible for sending a non-fatal error notice to CLECs for all types of non-fatal errors. Included on this notice are instructions for the CLEC to correct the order within a four-hour interval by either submitting a supplemental order (“supp”), or by calling the ISC for a verbal correction to be made by a SDC. If the supp or call is not received within the four-hour interval, the order is rejected as a fatal error.

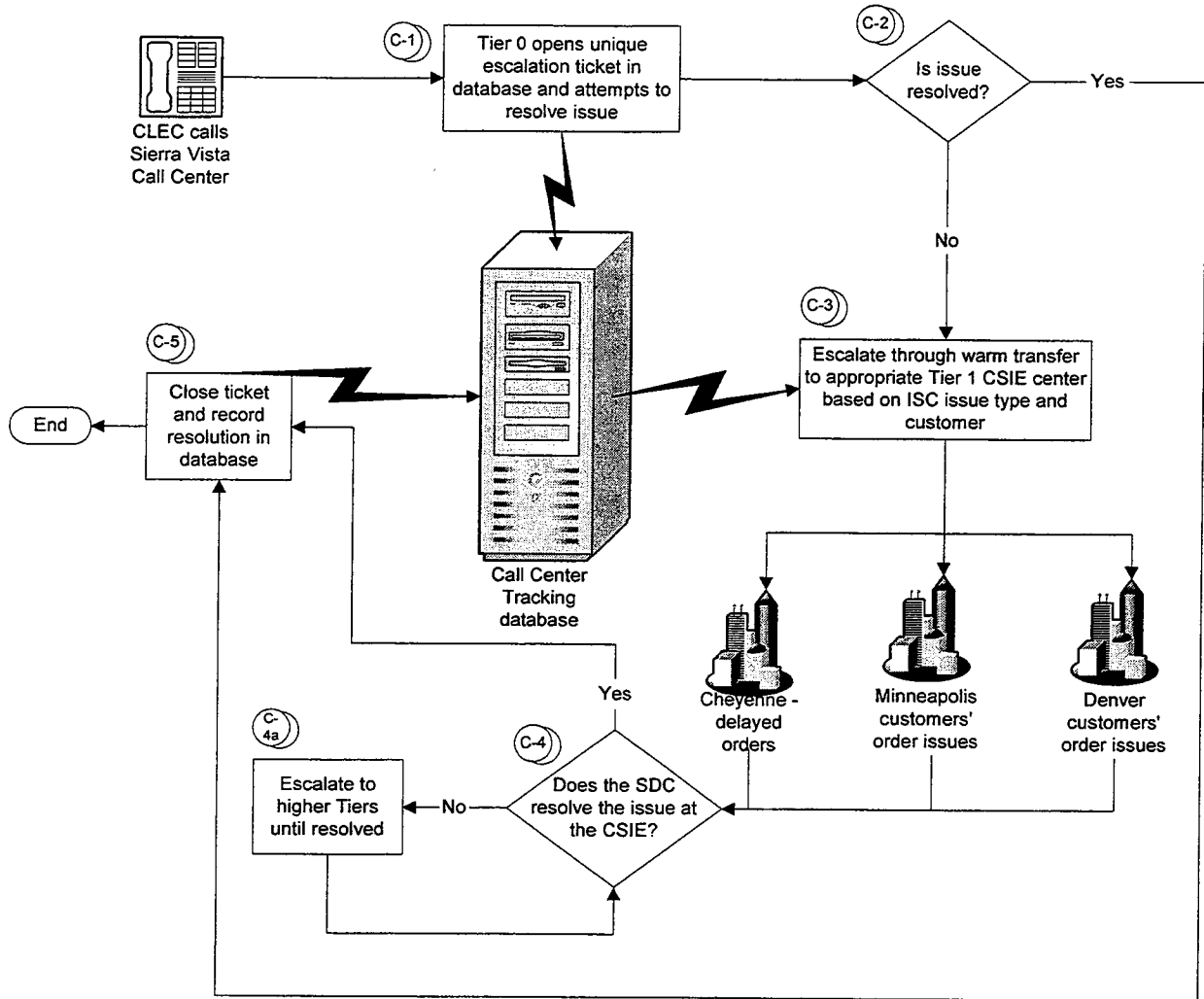
Fatal errors, which include those such as missing authorization data, missing forms, or incompatible requested features, prevent the order from being processed (B-5). For LSRs, the SDC enters notes on the order that detail information about the error and sends an electronically generated reject notice to the CLEC (B-5a). The CLEC must then submit a corrected LSR in order for the service request to be processed.

All errors on an ASR cause it to be deemed "invalid." The SDC types a letter to the CLEC, which includes the PON and error detail in the text. The letter requests that the CLEC submit a supplementary order to correct the error within 15 days. The letter is emailed or faxed, depending upon the method by which the ASR was submitted. The letter is also mailed. Invalid ASR order information is entered into an Access database, which is used by the SDC to track the due date for the supplementary order. Notes regarding the communication to the CLEC are also recorded in EXACT. If the CLEC fails to submit a supplemental ASR within 15 days, the order is manually cancelled.

2.1.5 Addressing Escalations and Inquiries

The LSR inquiry and escalation process is organized into tiers, as illustrated in Figure 12.8-4. CLECs initiate order inquiries by calling the Sierra Vista, Arizona call center, which represents Tier 0 of the process. Typical inquiries to the call center include requesting assistance in populating an order, checking order status, inquiring about a rejected order, or requesting an escalation.

Figure 12.8-4: Escalation and Inquiry Process



The Tier 0 call center representative (“call center representative”) opens an escalation ticket, to which the Call Tracking Access Database assigns a unique tracking number (C-1). The call center representative gathers basic LSR information from the caller, including the PON or LSR number, and tries to resolve the issue (C-2). Unresolved tickets that require the attention of a Subject Matter Expert (SME) are escalated, via a “warm-transfer” process, to a Tier 1 Customer Service, Inquiry, and Escalation (CSIE) SDC at the CSIE location responsible for addressing the particular type of issue (C-3). Tickets are escalated to the next appropriate tier (C-4) as necessary, until the issue is resolved (C-4a). The SDC taking responsibility for the escalation from the previous Tier enters his or her name and contact information on the escalation ticket. Once an issue is resolved, the SDC notifies the CLEC and closes the ticket in the database (C-5).

CLEC requests for ASR expedites or escalations are handled by specific teams in either the Des Moines, Iowa or Salt Lake City, Utah ISCs. All customer interactions, including those for escalations and expedites, are tracked in Lotus Notes. Notes are also added to the order in

EXACT. Critical information related to delayed orders, such as due date, reason for escalation, and external notes, is automatically downloaded from Lotus Notes into the Held Escalated Expedited Tool (HEET), an external customer-facing tool that enables a CLEC to check the status of a delayed order. CLECs direct all other order inquiries to the appropriate center, as detailed in the Escalation Tier Contact List that is provided by a Qwest Service Manager to each CLEC. CLECs can request that ASR expedites and inquiries be escalated to ISC management or the CLEC's assigned Service Manager, depending on the issue in question.

2.1.6 Process Management

Qwest process improvements can be initiated either by CLECs or by Qwest staff. If a Qwest employee identifies a gap in an internal process, he or she may contact a Coach, a member of the process team, or make an entry in the Process Improvement Tracking Tool (PITT). The Qwest Process Team is responsible for:

- Developing and maintaining Methods and Procedures for the Wholesale Service Delivery Organization
- Responding to Qwest staff questions for validation of processes
- Answering process questions from Sales and Service Managers
- Reviewing and processing Change Requests from Qwest employees and CLECs.

All changes are reflected in InfoBuddy, Qwest's internal Web-based help desk tool, and communicated to CLECs, as necessary.

Using the Change Management Process (CMP), CLECs can initiate change requests to alter products, processes, or systems. Feedback can also be voiced during quarterly executive conference calls, in customer service meetings, or through the CLECs' respective Qwest Service Managers.

2.1.7 Capacity Management

Capacity Management at Qwest is based on several elements. Historical productivity information and forecast information from CLECs is used by the IT team to develop and/or modify algorithms to assist management in the projection of business wholesale demands each quarter. This information is used to predict system performance needs, as well as assist ISC Team Leaders with staffing projections.

Reports are generated to track various capacity elements, such as volume, staff headcount, and hours worked. These reports serve as the bases for periodic review and adjustments by Load and Resource Managers (LRMs).

Each month Qwest LRMs review work schedules and submit a monthly resource plan to Team Leaders. Staffing levels and daily schedules are adjusted based on these plans. LRMs monitor ISC work queues to ensure that orders are being processed according to SIGs. LRMs also participate twice each day in an ISC-wide force loading call to review issues such as workload volume and daily error rates. As part of efforts to manage capacities, short-term adjustments can result from these calls. Work can be shared across the different ISC locations if circumstances warrant. SDCs can also be required to work overtime to manage increases in order volume.

2.1.8 Performance Measurement

ISC management and supervisory personnel monitor the performance of individual SDCs through reporting tools that track call handling and order writing productivity and quality. These tools include the Quality Team's 25 Item Checklist and the Team Productivity report.

Productivity for individual SDCs, products, and ISCs is tracked on a daily, weekly, and monthly basis. Similarly, SDC quality is observed, recorded, and tracked by supervisors on a regular basis using measures that include order accuracy and call handling performance. These measures serve as the bases for regularly scheduled and *ad hoc* performance evaluations, feedback, and follow-up training.

These measurements are also compiled into product and ISC productivity and quality reports. These data are used as the bases for SDC evaluation, capacity management, and executive reports. Public ROC 271 OSS Test Service Performance Results Reports that correspond to Performance Indicator Definitions (PIDs) are also available on Qwest's Web site⁴⁶.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were the procedures employed by Qwest to support the processing of CLEC manual orders. Processes, sub-processes, and evaluation measures are summarized in the following table.

⁴⁶ <http://www.qwest.com/wholesale/results/roc.html>

Table 12.8-2: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Receive Orders for Manual Processing	Order Receipt and Logging	Completeness of process Adherence to process	12.8-1 – 12.8-2
Process Orders Manually	Entry of Order into SOP	Completeness of process Adherence to process	12.8-1 – 12.8-2, 12.8-7
Send Order Response	Delivery of Error Messages and Queries	Completeness of process Adherence to process	12.8-8
	Delivery of Confirmations, Completions and Acknowledgements	Completeness of process Adherence to process	12.8-1 – 12.8-2, 12.8-9
Status Tracking and Reporting	Status Tracking and Reporting	Completeness of process Adherence to process	12.8-3, 12.8-7, 12.8-9
Problem Escalation	User-Initiated Escalation	Completeness of process Adherence to process	12.8-6
Process Management	General Management Practices	Completeness of process Adherence to process	12.8-3, 12.8-6, 12.8-10
	Performance Measurement Process	Completeness of process Adherence to process	12.8-3
Capacity Management	Capacity Management Processes and Procedures	Completeness of process Adherence to process	12.8-4 – 12.8-5

2.4 Evaluation Methods

KPMG Consulting utilized four methods of data collection for this evaluation:

- Documentation – Supporting documentation describing processes, operational methods and procedures, and organization charts was collected for evaluation and analysis.
- CLEC Interviews –KPMG Consulting conducted interviews with CLEC representatives to gather information related to Qwest manual order processes.
- Qwest Interviews and Observations – KPMG Consulting conducted interviews with Qwest personnel and performed on-site observations of work operations to obtain data used in the evaluation of Qwest’s manual ordering processes. Interviews took place with Qwest’s Directors, Team Leaders, Coaches, Service Delivery Coordinators (SDCs), and other SMEs, who are collectively responsible for managing manual order processes; monitoring, tracking, and reporting order status; and resolving claims, problems and issues.
- P-CLEC Findings – KPMG Consulting also collected and analyzed findings from Hewlett-Packard Consulting (HPC), which held the role of pseudo-CLEC (P-CLEC) during execution of Test 12, Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks.

2.5 Analysis Methods

Information gathered during on-site visits, through data requests, and from HPC's P-CLEC experience was evaluated against criteria defined by KPMG Consulting during the planning phase of the test. KPMG Consulting analyzed this data to determine if essential elements of Qwest's processes and systems are present, and whether or not defined process steps are followed. Where gaps were identified, KPMG Consulting issued Observations and Exceptions and, following remedial actions by Qwest, performed additional analysis.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 12.8-3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
12.8-1	Procedures for processing manually submitted orders are defined, documented, and followed.	Satisfied	<p>Procedures for processing manually submitted orders are defined, documented, and followed.</p> <p>These procedures are described in the Initial Systems Training Guide and in InfoBuddy, Qwest's internal Web-based help desk. Ordering processes and procedures are available for CLEC review at http://www.qwest.com/wholesale/clecs/ordering.html.</p> <p>KPMG Consulting observed Indexers extracting batches of LSRs from IIS, reviewing them for completeness, and parsing them for processing by a SDC.</p>
12.8-2	Procedures for processing electronically submitted non-flow through orders are defined, documented, and followed.	Satisfied	<p>Procedures for processing electronically submitted non-flow through orders are defined, documented, and followed. These procedures are described in the Initial Systems Training Guide and InfoBuddy, Qwest's internal Web-based help desk. Ordering processes and procedures are available for CLEC review at http://www.qwest.com/wholesale/clecs/ordering.html.</p> <p>Observations by KPMG Consulting confirmed adherence to the methods and procedures described by Qwest personnel in interviews, and reviewed by KPMG Consulting during documentation analysis. Qwest personnel also described their use of job aids and information found in InfoBuddy as supplements to the initial systems training that SDCs receive. KPMG Consulting observed SDCs using job aids such as the SDC Order Planning Sheet to assist in the handling of manual orders.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to the issuance of manual FOCs⁴⁷. As a result, to further investigate HPC's findings, KPMG Consulting performed additional observations, interviews, and documentation reviews. KPMG Consulting</p>

⁴⁷ See HPC Exceptions 2010, 2017, 2030, 2031, 2032, 2033, 2034, 2037, and 2054. Exception 2017 is withdrawn. Exceptions 2010, 2030, 2031, 2032, 2033, 2034, 2037, and 2054 are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>issued Exception 3078.</p> <p>Subsequently, Qwest SMEs provided additional information to KPMG Consulting regarding Qwest mechanisms and processes for issuing FOCs. Qwest also revised its internal documentation and issued a Multi-Channel Communicator (MCC) to SDCs to reinforce the processes for issuing FOCs. Copies of these documents were provided to KPMG Consulting.</p> <p>After documentation analysis and additional observations at Qwest ISCs, KPMG Consulting determined that Qwest representatives adhere to the guidelines set forth for manually issuing FOCs. See Exception 3078 for additional information. Exception 3078 is closed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations, and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
12.8-3	Performance measures and process improvement practices for manual orders are defined, tracked, reported, reviewed, and applied.	Satisfied	<p>Performance measures and process improvement practices for manual orders are defined, tracked, reported, reviewed, and applied.</p> <p>Qwest defines Performance Measurement targets, and makes them available in InfoBuddy. SDC quality of work and performance are recorded and tracked by supervisors who use the following forms:</p> <ul style="list-style-type: none"> • Quality Team's 25 Item Checklist for Number Portability Orders • In Today/Out Today Report • Team Productivity Report • Typists' Personal Log Sheet • LSR quality review forms • 12 Point Checklist • ESOI Error Report. <p>Additionally, a Qwest Quality Assurance</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Team monitors a sample of live SDC phone calls and provides immediate feedback and/or additional training, as needed. KPMG Consulting observed the Quality Assurance Team performing these activities as they are defined.</p> <p>Productivity and performance measurements are compiled in the Wholesale Markets Virtual Center Results Summary. CLECs can view Service Performance Results Reports that correspond to PIDs either for the entire Qwest region, or by state, at the following Web site: http://www.qwest.com/wholesale/results/roc.html.</p> <p>To manage process improvement, the Process Team uses staff input from the PITT to recommend and implement changes. Changes to internal processes are communicated to SDCs in MCCs, staff meetings, and/or through internal training. KPMG Consulting reviewed an example of follow-up training, the <i>Internal System Enhancement Training Guide</i>, as evidence of supplementary training for SDCs.</p> <p>CLECs can submit change requests to Qwest using the following Web site as a guide: http://www.qwest.com/wholesale/cmp/index.html.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations, and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
12.8-4	Processes and procedures are in place to evaluate manual order capacity.	Satisfied	<p>Processes and procedures are in place to evaluate manual order capacity.</p> <p>LRMs are responsible for managing order and call volumes, staffing levels, product trends, and capacity utilization. LRMs regularly use a number of tools to evaluate both short and long-term capacity. These include:</p> <ul style="list-style-type: none"> • Quarterly LRM Report

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • LRM Actual Order Volumes vs. Projected Volumes Report • Volume Tracking Report • Wholesale Markets IWSC Long Range Forecast Report. <p>Qwest uses forecasting as a capacity planning tool. Information on Qwest's forecasting procedures is available to CLECs at http://www.qwest.com/wholesale/guides/forecasting.html.</p>
12.8-5	Processes and procedures to make adjustments to manual order capacity are in place and followed.	Satisfied	<p>Processes and procedures to make adjustments to manual order capacity are in place and followed.</p> <p>Qwest follows the forecasting process and uses reporting tools as inputs to make necessary long-term adjustments to capacity. Information gathered from the CLECs regarding projected order volumes, service and facility needs, and customer trends are used by Qwest to make long-term adjustments to staffing levels.</p> <p>The ISCs are organized as "virtual centers" to assist with short-term capacity adjustments. Back-up centers are called upon to help balance temporary order volume increases, based on results of the twice-daily LRM force-loading call.</p> <p>KPMG Consulting observed LRMs during a force loading call that determined whether back-up center assistance was required. LRMs at each center reported current order volumes, and used this information to determine if back-up center assistance was necessary.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
12.8-6	Processes and procedures for manual order inquiries and escalations are defined and followed.	Satisfied	<p>Processes and procedures for customer inquiries and escalations are defined and followed.</p> <p>Documentation regarding CLEC status inquiries and escalations can be found at: http://www.qwest.com/wholesale/clecs/exescover.html.</p> <p>Following direct observations during visits to Qwest's Sierra Vista, Arizona call center, KPMG Consulting identified instances of failed attempts to "warm transfer" customers to the next tier in the CSIE process. KPMG Consulting issued Exception 3039.</p> <p>Qwest reinforced the "warm transfer" procedure when referring CLEC customers to the CSIE for further assistance and provided supporting documentation. Qwest reiterated the process to its CSIE SDCs in the form of a MCC.</p> <p>KPMG Consulting reviewed additional documentation provided by Qwest, and performed additional on-site observations to confirm that the processes were subsequently followed. See Exception 3039 for additional information on this issue. Exception 3039 is closed.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC inquiries and escalations to the ISC Help Desk⁴⁸.</p> <p>Qwest issued job aids to reinforce processes in place for addressing CLEC inquiries. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p> <p>KPMG Consulting conducted further investigation into the processes and procedures related to Qwest's handling of CLEC inquiries. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined</p>

⁴⁸ See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>that the procedures in place to address CLEC inquiries and escalations were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations, and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
12.8-7	Processes and procedures to delineate and track internal ownership of manual orders are in place and followed.	Satisfied	<p>Processes and procedures to delineate and track internal ownership of manual orders are in place and followed.</p> <p>Order entry and CSIE processes for ownership of orders/tickets are documented in InfoBuddy. KPMG Consulting observed SDCs recording their names and contact information in the CRM system when retrieving orders from work queues and when attending to escalations during the CSIE process. SDCs performed these activities as defined.</p>
12.8-8	Processes and procedures for addressing manual order errors are defined, documented, and followed.	Satisfied	<p>Processes and procedures for addressing manual order errors are defined, documented, and followed.</p> <p>Faxed orders are manually reviewed for errors by SDCs at three points:</p> <ul style="list-style-type: none"> • Upon initial receipt for legibility • Upon screening for presence of basic order requirements • Upon typing into the SOP for correct ordering and product codes. <p>Orders that have fallen out of the Flow Through System are automatically examined for errors by the SOP.</p> <p>KPMG Consulting observed SDCs addressing order errors during observations at the ISCs according to defined processes. Errors were handled according to their type (fatal or non-fatal), in accordance with the guidelines set forth in the following Web site: http://www.qwest.com/wholesale/clecs/ordering.html.</p> <p>KPMG Consulting formally identified</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations, and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues
12.8-9	Processes and procedures that allow customers to check the status of a manual order(s) are in place and followed.	Satisfied	<p>Processes and procedures that allow customers to check the status of manual orders are in place.</p> <p>Qwest's Web site (http://www.qwest.com/wholesale/clecs/ordering.html) defines measurable Qwest callback intervals for CLECs inquiring about the status of their orders. During interviews with KPMG Consulting, CLECs confirmed adherence to established callback intervals.</p> <p>CLECs can also check the status of LSRs submitted to Qwest via IMA. Details of this capability are described in the IMA User Guide at http://www.qwest.com/wholesale/ima/edi/index.html. CLECs can check the status of ASRs in the HEET and EXACT systems. Interviews with CLECs confirmed the availability of IMA to check the status of an order.</p>
12.8-10	Processes and procedures for maintaining security and data integrity are in place and followed.	Satisfied	<p>Qwest's ISC processes include procedures for maintaining security and data integrity.</p> <p>To restrict access, Qwest's order management systems are password protected and use firewalls. Systems are made available only to those individuals who must view the material to perform their assigned responsibilities.</p> <p>To gain building access, Qwest ISC locations require center staff to use passcards. Visitors to ISC locations must be signed in and escorted by a Qwest employee.</p> <p>Callers to the ISCs are required to provide the issue's unique tracking number (PON, ticket number, etc.) in order to gain further information regarding the status of an issue.</p> <p>KPMG Consulting observed SDCs requesting unique tracking numbers prior to providing status information to callers.</p>

13. Test Results: Order Flow Through Evaluation (Test 13)

1.0 Description

The Order Flow Through Evaluation assessed Qwest systems for their capability to process orders through the application-to-application interface into the back-end Qwest service ordering processing systems without human intervention. Actual flow through results of orders eligible to flow through, i.e., orders that, according to the *LSRS Eligible for Flow Through* document, did not require manual action, were tested to determine compliance with eligibility to flow through.

Flow-through (FT) eligible orders were submitted via the Interconnect Mediated Access Graphical User Interface (IMA GUI) and IMA Electronic Data Interchange (EDI) interfaces. Supplements and cancels designed to flow through were also submitted and evaluated for flow through compliance. KPMG Consulting monitored transactions to verify that they did not “fall out” for manual handling to the Qwest Interconnect Service Center (ISC) and were accepted by Qwest’s Service Order Processor (SOP) without manual intervention.

Only orders submitted by the pseudo-CLEC that were eligible to flow through were included in this evaluation. The list of order types eligible to flow through was updated during the testing period based on Qwest documentation and system changes. These additions and deletions of eligible FT orders were incorporated into the test.

This test was conducted in concert with Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks testing.

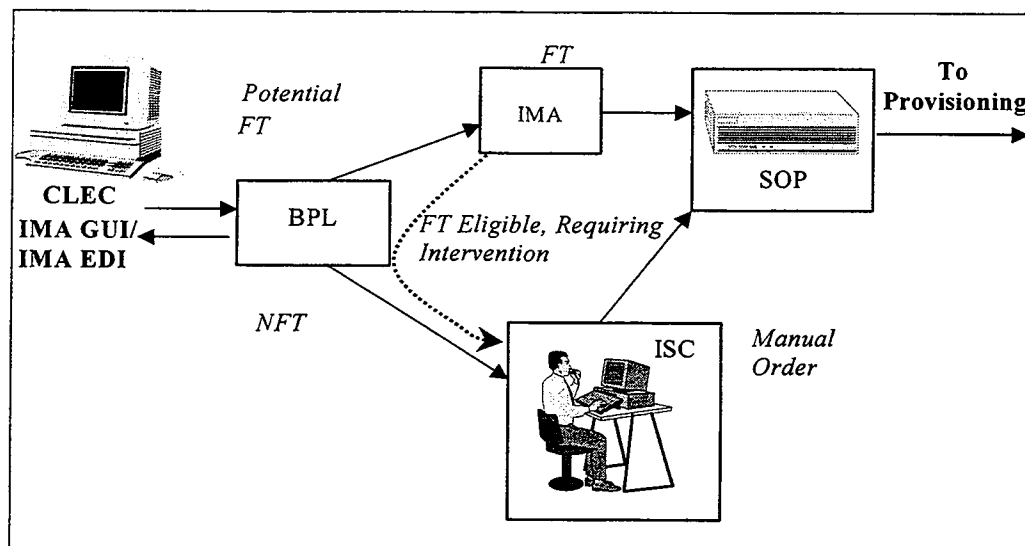
2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Figure 13-1 provides an illustration of the Qwest IMA EDI and IMA GUI ordering process and system flow for a wholesale, mechanized order from submission through service order generation.

Figure 13-1: Order Processing Overview



Electronic Local Service Requests (LSRs) can be submitted by a CLEC using two front-end interfaces: IMA EDI and IMA GUI. These orders enter Qwest's systems through a gateway system known as the Business Process Layer (BPL). Once submitted electronically, the orders are tracked within the BPL using unique Purchase Order Numbers (PONs) specified by the CLEC, and LSR ID Numbers specified by Qwest.

As the orders pass through the operations support systems (OSS), as depicted above, FT eligibility is determined using rules described in the *Qwest Order Business Rules*, and the *LSRs Eligible for Flow Through* documents. The rules categorize orders as non-flow through (NFT) or complete FT as follows:

- A NFT order enters the BPL and is routed to a Service Delivery Coordinator (SDC) at Qwest's ISC for manual entry into the SOP system.
- A FT Eligible order that requires manual intervention enters the BPL and is sent to IMA. IMA identifies the order as requiring manual attention, and routes the order to a SDC at the ISC, who completes processing the order by creating an entry into the SOP. A NFT order is not considered to be FT.
- A FT order flows through the BPL, IMA, and into SOP without manual intervention. This order type is considered complete FT.

Some order types documented as having potential FT eligibility may not ultimately flow through because of the values contained in one or more fields submitted on the actual LSR. For example, Qwest documentation might indicate that a particular order type should flow through based on service order activity, but the inclusion of a NFT Universal Service Ordering Code (USOC) on the LSR would prohibit the order from being processed as FT. Such an order would instead be designated as a NFT order.

2.2 Scenarios

Order scenarios tested were drawn from those defined in Appendix D of the *Qwest OSS Evaluation Project Master Test Plan*. The scenarios outlined, at a high level, the specific products and services ordered and activity types requested for this evaluation.

The following tables identify the flow through order scenarios that were used in this test.

Table 13-1: Resale Flow Through Order Test Scenarios

Activity	Residential POTS ⁴⁹	Business POTS
Migration from Qwest "as is"	X	X
Migration from Qwest "as specified"	X	X
CLEC to CLEC migration	X	X
New customer	X	X
Add lines	X	X
Feature changes to existing customer	X	X
Telephone number change	X	X
Directory change	X	X
Migrate customer with voice mail	X	X
Moves	X	X
Suspend/restore service	X	X
Disconnect (full and partial)	X	X
PIC/LPIC changes	X	X
Supplemental order to CANCEL	X	X

⁴⁹ Plain Old Telephone Service.

Table 13-2: UNE Platform (UNE-P) Flow Through Order Test Scenarios

Activity	Residential POTS	Business POTS
Migration from Qwest "as specified"	X	X
Migrate from CLEC to CLEC	X	X
New customer	X	X
Add lines	X	X
Feature changes to existing customer	X	X
Telephone number change	X	X
Directory change	X	X
Full and partial migration with DL changes	X	X
Convert from Resale products to UNE-P products	X	X
Migrate an account with Qwest initiated blocking	X	X
Establish new user with vanity TN		X
Moves	X	X
Suspend/restore service	X	X
Disconnect (full and partial)	X	X
Change PIC/LPIC	X	X
Supplemental Orders to CANCEL	X	X

Table 13-3: UNE Loop Flow Through Order Test Scenarios

Activity	2-wire Analog Loop	2-wire non-Loaded Loop	ISDN Capable Loop	DS1 Capable Loop	Stand-Alone LNP
Migrate lines from Qwest without LNP	X	X			
Migrate lines from Qwest with LNP	X	X			
Migrate from CLEC to CLEC	X	X			
Purchase lines for a new customer	X	X			
Add new lines to existing customer	X	X			
Convert from Resale to UNE loop without LNP	X	X			
Convert from Resale to UNE loop with LNP	X				
Convert from UNE-P to UNE loop without LNP	X	X			
Convert from UNE-P to UNE loop with LNP	X				
Moves (outside)	X	X			
Disconnect (full)	X	X	X	X	
Port number from Qwest to CLEC without facilities					X
Supplemental Orders to CANCEL	X	X	X		X

2.3 Test Targets & Measures

The test target was Qwest's capability to process FT service orders electronically, without manual intervention. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 13-4: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit Flow Through Orders	Determine if Order Should Flow Through	Applicability as flow through based on existing publicly available documentation	13-1-1
	Submit Flow Through Order through GUI	Accessibility of Interface	13-1-7 – 13-1-11
	Submit Flow Through Order through EDI	Accessibility of Interface	13-1-2 – 13-1-6
Monitor Flow-Through Order	Identify Orders that Did Flow Through	Compliance with flow through documentation	13-1-2 – 13-1-11
	Identify Orders that Did Not Flow Through	Compliance with flow through documentation	13-1-2 – 13-1-11
	Identify Causes of Order "Fall out" to Manual Processing	Compliance with flow through documentation	13-1-2 – 13-1-11

2.4 Evaluation Methods

Prior to submission of test cases for Test 12, KPMG Consulting, using Qwest's *LSRs Eligible for Flow Through* document, determined an expected FT result for each test case. Throughout this evaluation, Qwest updated its FT documentation when changes in the business rules or systems warranted such updates. With each update, KPMG Consulting conducted a documentation review and, if necessary, changed the expected FT result assigned to a discrete test case.

Qwest provided a daily FT report for all transactions submitted via IMA EDI and IMA GUI. The reports provided the actual FT results of each LSR. For each, KPMG Consulting compared the expected FT result to the actual result, as provided by Qwest. Data requests were submitted to Qwest when FT results did not appear on the report. If the actual FT result for a discrete transaction did not match KPMG Consulting's expected FT result, KPMG Consulting analyzed the test case, Qwest FT documentation, and the LSR to determine what may have prevented the order from achieving the expected FT result. To review the LSRs, KPMG Consulting used the *IMA User Guide* for 6.0, 7.0, and 8.0 and the *Qwest LSOG 5 Business Rules* for 6.0, 7.0, and 8.0.⁵⁰

If, following these steps, KPMG Consulting did not understand the reason(s) why the LSR was processed manually, then KPMG Consulting issued an Observation or Exception to Qwest, requesting an explanation. Through the Observation and Exception process, Qwest provided the

⁵⁰The *IMA User Guide* and the *Business Rules* are available on the Qwest Web site at www.qwest.com/wholesale.

reason why a FT eligible LSR received a manual FOC. KPMG Consulting reviewed the stated reason to determine its validity, based on adherence to documented FT rules, and then determined if retest activity was required.

In some cases, Qwest responded with an acknowledgement of a system defect or a documentation error, and indicated its intention to remedy the discrepancy. If a retest was deemed necessary, Hewlett-Packard Consulting (HPC) submitted the same instance, or an instance of a similar test case, to determine if system changes and/or documentation updates were implemented in accordance with published flow through guidelines. A retest was successful if the submitted service order was processed as expected.

2.5 Analysis Methods

The Order Flow Through Evaluation Test included evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. Expected FT results were subject to change during the course of the Order Flow Through Evaluation. Some transactions identified with potential FT eligibility at the start of the test were, in fact, not eligible to flow through, due to one or more of the following reasons:

- Qwest documentation was in error
- The transaction required a NFT feature (i.e., USOC and/or Field Identifier [FID])
- The transaction required a NFT supplement
- Qwest systems contained an error
- The transaction was submitted with invalid data.

The data collected were analyzed employing the evaluation criteria detailed in Section 3.1 below. Results of the Order Flow Through Evaluation reflect KPMG Consulting's analysis of the pseudo-CLEC's experience. KPMG Consulting incorporated the standards from the *Regional Oversight Committee (ROC) 271 Service Performance Indicator Definitions (PID), Version 3.0*, dated May 31, 2001 into its evaluation criteria.

In cases in which the PID standard was defined as "diagnostic," results of the specific test were not used to determine satisfied or not satisfied results. In these cases, KPMG Consulting provided test results as diagnostic information only. In cases for which no PID-defined standard was provided, KPMG Consulting applied its professional judgment to the relevant evaluation criteria.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 13-5: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Documentation Assessment</i>			
13-1-1	Qwest order FT documentation is complete, accurate, clear, and available to the CLEC community.	Satisfied	<p>The Qwest order FT documentation is complete, accurate, clear, and available to the CLEC community.</p> <p>KPMG Consulting evaluated publicly available documentation to assess clarity, available and accuracy. Additionally, documentation reviews were conducted during the course of the test if any of the flow through documentation was updated. The documents reviewed included:</p> <ul style="list-style-type: none"> • <i>LSRs Eligible for Flow Through, Versions 2.0-7.0</i> • <i>IMA User Guide for IMA 6.0, IMA 7.0, and IMA 8.0</i> • <i>Developer Worksheets (Business Rules) for IMA 6.0, IMA 7.0, and IMA 8.0.</i>
<i>IMA EDI Flow Through Performance</i>			
13-1-2	Order transactions submitted via IMA EDI flow through to the SOP.	Diagnostic	<p>The PID-defined standard for PO-2A for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>Of 3,650 order transactions submitted via IMA EDI, 1,893 (51.86%) flowed through to the SOP.</p> <p>This criterion represents the flow through percentage of all electronic transactions submitted via IMA EDI. This metric does not exclude those orders that were not eligible for flow through processing.</p>
13-1-3	Flow Through eligible Resale transactions are processed in IMA EDI in accordance with documented FT rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 831 EDI Resale transactions, initially considered flow through eligible based on Qwest's flow through documentation. Of these, 606 (72.92%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3022, 3083, 3114, and 3115 for EDI Resale LSRs that were expected to flow</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT • Inaccurate FT indicators. <p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These transactions were counted as failures.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 632, which yielded a successful flow through rate of 95.89%.</p> <p>See Exceptions 3022, 3083, 3114, and 3115 for additional information on these issues. Exceptions 3022, 3083, 3114, and 3115 are closed.</p>
13-1-4	Flow Through eligible UNE-P transactions are processed in IMA EDI in accordance with documented FT rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 566 EDI UNE-P transactions, initially considered to be flow through eligible based on Qwest's flow through documentation. Of these, 393 (69.43%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3006, 3022, 3083, 3114, 3115, and 3116 for EDI UNE-P LSRs that were expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT • Inaccurate FT indicators. <p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These transactions were counted as failures.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors, and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 414, which yielded a successful flow through rate of 94.93%.</p> <p>See Exceptions 3006, 3022, 3083, 3114, 3115, and 3116 for additional information on these issues. Exceptions 3006, 3022, 3083, 3114, 3115, and 3116 are closed.</p>
13-1-5	Flow Through eligible UNE-L transactions are processed in IMA EDI in accordance with documented FT rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 1,179 EDI UNE-L transactions, initially considered to be flow through eligible based on Qwest's flow through documentation. Of these, 778 (65.99%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Exceptions 3083, 3114, 3115, and 3116 for EDI UNE-L LSRs that were expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT • Inaccurate FT indicators. <p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These transactions were counted as failures.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 931, which yielded a successful flow through rate of 83.57%.</p> <p>See Exceptions 3083, 3114, 3115, and 3116 for additional information on these issues. Exceptions 3083, 3114, 3115, and 3116 are closed.</p>
13-1-6	<p>Qwest documented Flow Through eligible Stand Alone LNP transactions are processed in IMA EDI in accordance with documented flow through rules.</p>	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 111 EDI LNP transactions, initially considered flow through eligible based on Qwest's flow through documentation. Of these, 69 (62.16%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3114 and 3119 for EDI Stand Alone LNP LSRs that were expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • Pending Order in the SOP • Inaccurate FT indicators. <p>Qwest provided supporting data for the orders that had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through eligible orders.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based on these corrections and</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 69, which yielded a successful flow through rate of 100%.</p> <p>See Exceptions 3114 and 3119 for additional information on these issues. Exceptions 3114 and 3119 are closed.</p>
<i>IMA GUI Flow Through Performance</i>			
13-1-7	Order transactions submitted via IMA GUI flow through to the SOP.	Diagnostic	<p>The PID-defined standard for PO-2A is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>Of 331 order transactions submitted via IMA GUI, 167 (50.45%) flowed through to the SOP.</p> <p>This criterion represents the flow through percentage of all electronic transactions submitted via IMA GUI. This metric does not exclude those orders that were not eligible for flow through processing.</p>
13-1-8	Flow Through eligible Resale transactions are processed in IMA GUI in accordance with documented flow through rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 72 GUI Resale transactions, initially considered to be flow through eligible based on Qwest's flow through documentation. Of these, 51 (70.83%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3022, 3083, 3114, and 3115 for EDI Resale LSRs expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT • Inaccurate FT indicators.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not flow through, and removed these orders from the sample of flow through eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These orders were counted as failures.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 54, which yielded a successful flow through rate of 94.44%.</p> <p>See Exceptions 3022, 3083, 3114, and 3115 for additional information on these issues. Exceptions 3022, 3083, 3114, and 3115 are closed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
13-1-9	Flow Through eligible UNE-P transactions are processed in IMA GUI in accordance with documented flow through rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 47 GUI UNE-P transactions, initially considered to be flow through eligible based on Qwest's flow through documentation. Of these, 31 (65.96%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3114 and 3115 for GUI UNE-P LSRs that were expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT. <p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These orders were counted as failures.</p> <p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 32, which yielded a successful flow through rate of 96.88%.</p> <p>See Exceptions 3114 and 3115 for additional information on these issues. Exceptions 3114 and 3115 were closed.</p>
13-1-10	Flow Through eligible UNE-L transactions are processed in IMA GUI in accordance with documented flow through rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 89 GUI UNE-L transactions, initially considered flow through eligible based on Qwest's flow through documentation. Of these, 58 (65.17%) flowed through as expected.</p> <p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exceptions 3114 and 3115 for GUI UNE-L LSRs that were expected to flow through, yet failed to do so.</p> <p>In response to these Exceptions, Qwest identified the following types of conditions as having caused order fallout:</p> <ul style="list-style-type: none"> • NFT data included on service order • Pending Order in the SOP • Documentation update • System defects • Orders with conditions that are documented as NFT • Inaccurate FT indicators. <p>Qwest provided supporting data for the orders that contained NFT data or had pending order activity in the SOP. KPMG Consulting verified that the orders should not have flowed through, and removed these orders from the sample of flow through</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>eligible orders.</p> <p>Furthermore, Qwest updated documentation to clarify flow through eligibility. KPMG Consulting subsequently reviewed these updates, and determined that the updates were in compliance with actual flow through results. KPMG Consulting changed the expected flow through result assigned to specific test cases, as appropriate.</p> <p>Where required, Qwest implemented system changes to ensure compliance with published flow through rules. KPMG Consulting subsequently conducted retesting, and found that transactions were processed as expected.</p> <p>On some failed orders, KPMG Consulting expected the order to flow through based upon published rules. Qwest indicated that these orders were not capable of flowing through even though they were deemed flow through eligible. These orders were counted as failures.</p> <p>In several instances, Qwest returned incorrect FT Result Indicators on the FT report provided to KPMG Consulting. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based on these corrections and modifications, and at the conclusion of various transaction retest activities, KPMG Consulting's expected flow through transaction count was 66, which yielded a successful flow through rate of 87.88%.</p> <p>See Exceptions 3114 and 3115 for additional information on these issues. Exceptions 3114 and 3115 were closed.</p>
13-1-11	Flow Through eligible Stand Alone LNP transactions are processed in IMA GUI in accordance with documented flow through rules.	Diagnostic	<p>The PID-defined standard for PO-2B for the purpose of this test is "Diagnostic." Test results are provided as diagnostic information only.</p> <p>HPC submitted 20 GUI LNP transactions, initially considered to be flow through eligible based on Qwest's flow through documentation. Of these, 16 (80.00%) flowed through as expected.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting conducted a review of the service orders to eliminate transactions containing unintentional errors. Based on these results, KPMG Consulting issued Exception 3119 for GUI Stand Alone LNP LSRs that were expected to flow through, yet failed to do so.</p> <p>Qwest responded and indicated that it returned incorrect FT Result Indicators for some Stand Alone LNP orders. Qwest acknowledged these errors and made the necessary adjustments to its FT reporting process. KPMG Consulting updated its internal reporting mechanisms to reflect these corrections.</p> <p>Based upon these conditions, KPMG Consulting adjusted the expected flow through transaction count to 16, which yielded a successful flow through rate of 100%.</p> <p>See Exception 3119 for additional information on these issues. Exception 3119 is closed.</p>

14. Test Results: Provisioning Evaluation (Test 14)

1.0 Description

The Provisioning Evaluation was a comprehensive review of Qwest's ability to provision Competitive Local Exchange Carrier (CLEC) orders on time, and according to documented methods and procedures. This test was conducted in concert with the Pre-order, Order, and Provisioning (POP) functional testing (see Test 12: Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks).

Test 14 involved verifying that submitted pseudo-CLEC (P-CLEC) orders were:

- 1) Provisioned as requested on the Local Service Request (LSR);
- 2) Provisioned as documented in Qwest's internal and external methods and procedures; and
- 3) Provisioned on the committed due date.

Test 14 evaluated service orders that required physical provisioning and/or software changes. The test examined the following provisioning service elements:

- Directory Assistance Listings Database;
- Switch translations;
- Disconnected circuits;
- Work Completion Notifications (WCNs);
- Customer Service Records (CSRs);
- Working Lines;
- Hot Cuts with Local Number Portability (LNP);
- High-Capacity DS1 circuits;
- Enhanced Extend Loops (EELs) DS1;
- Stand alone LNP activation;
- Asymmetric Digital Subscriber Loop (ADSL) Line Sharing;
- xDSL (new loops involving ADSL, Integrated Digital Services Digital Subscriber Loop [IDSL], or High Speed Digital Subscriber Loop [HDSL]);
- Unbundled Dark Fiber (UDF); and
- Analog Loops.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The Provisioning process includes all work steps that are performed to establish services based on customer requests. A CLEC issues an LSR to Qwest to migrate, install, convert, change, or disconnect features and services. Upon receiving the LSR, Qwest validates the information within the LSR. Upon completing the validation, Qwest issues a Firm Order Confirmation (FOC) to the CLEC. The FOC provides the CLEC with the committed due date and time, as well as the service order number. Subsequent to provisioning a service request, Qwest issues a WCN, which notifies the CLEC of the completion date and related information. A business process summary is described below for each service.

Directory Assistance Database Validation - Directory assistance services include maintaining names, addresses, and telephone numbers of a CLEC's end users, as provided by the CLEC, in Qwest's directory assistance database.

A CLEC begins the directory assistance ordering process by submitting an LSR, Directory Service Request (DSR), or a Directory Listing (DL) form to Qwest, via one of the Interconnect Mediated Access (IMA) electronic interfaces, or manually via fax which is received by Qwest's fax server system (the Interconnect Imaging System Service [IISS]).

Upon receipt of the forms, Qwest enters the request into its Service Order Processor (SOP), either manually or electronically. SOP routes the directory information to the Qwest Translator/Gateway.

The Translator/Gateway performs a syntax check, and updates the Listing Service System (LSS) after the directory information passes all edits. The LSS stores all directory information for Qwest's retail and wholesale customers.

Switch Translation Validation - Switch translations refer to features and services that are updated in the recent change memory of a central office switch. Switch features and services could include items such as call waiting and call forwarding. Qwest provisions these services and features for several different switch types.

A CLEC begins the feature ordering process by submitting an LSR form to Qwest via one of the IMA electronic interfaces or manually via fax which is received by IISS.

Upon receipt of the form, Qwest enters the request into SOP, either manually or electronically. SOP routes the order information to the systems that provision the services and features.

In general, the switch translation process is automated for service and feature type orders. In some cases, a Central Office Technician (COT) must manually complete some of the steps to provision orders that are more complex.

Disconnect Validation - A CLEC disconnect request can be either a partial disconnect of the CLEC's end customer's lines, or a complete disconnect of the CLEC's end customer's account, which includes all working telephone lines. Following the disconnect of a line, a disconnect intercept message is placed on the applicable telephone number.

A CLEC begins the disconnect process by submitting an LSR form to Qwest via one of the IMA electronic interfaces, or manually via fax which is received by IISS.

Upon receipt of the form, Qwest enters the request into the SOP, either manually or electronically. SOP routes the disconnect order to systems that automatically remove all or some of the lines from service, based on the request.

Work Completion Notification Validation – When Qwest receives a LSR from a CLEC that is requesting service, Qwest provisions the service or request, as appropriate. After successfully adding, removing, or changing the requested service, Qwest provides the CLEC with a WCN that informs the CLEC of the order's completion.

Qwest provides the WCN to the CLEC, either electronically or via facsimile. Examples of service requests that generate a WCN include migrating service from one CLEC to another CLEC, or providing an additional service, such as adding three working lines.

CSR Validation – A CSR is a record that is generated after provisioning work completes. A CSR is a record of specific customer information that includes items such as name, address, telephone number, types of telecommunication services to which the customer is subscribed, and other service related data. In addition, the CSR includes details of a customer's fixed monthly charges, as billed by the local exchange carrier.

The customer information change request begins when a CLEC submits a LSR form to migrate, install, convert, change, or disconnect features and services to Qwest via one of the IMA electronic interfaces, or manually via fax which is received by IISS.

Upon receipt of the form, Qwest enters the request into SOP, either manually or electronically. SOP routes the order information to systems that validate and provision the CLEC's LSR request.

When all provisioning work is completed, Qwest creates and stores an updated CSR in Qwest's Operational and Business Support Systems (OSS/BSS).

Working Line Validation – In general, working line validation is a variation of the installation procedures for all Resale and UNE-P services that may include a coordinated installation. A coordinated installation requires the dispatching of Qwest staff to CLEC and customer locations. In this instance, the CLEC has the option of designating a specific appointment time at which the order is to be completed.

To process an order for working line service, the Qwest CLEC Coordinating Center (QCCC) coordinates the dispatching, scheduling, and provisioning among Qwest's COT, Designed Services (DS) Installation and Maintenance (I&M) Technician, Customer Communication Technician-Implementor (CCT-I), and the CLEC.

LNP Hot Cuts – Hot Cuts refers to the process of coordinating, completing, testing, and documenting conversion of an end user customer's service from Qwest Mass Market dial tone to a CLEC capable loop. For an instance in which a CLEC is using unbundled loops to serve the customer, the wire pair (loop) from the end user customer physically connects to the CLEC's switch.

The practice of converting that customer from Qwest's service to the CLEC's service requires that a technician must physically disconnect the loop from Qwest's switch, and physically connect it to a pair of wires leading to the CLEC's switch.

To process an order for LNP Hot Cut service, the QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M, CCT-I, and the CLEC.

High-Capacity Circuit Validation – DS1 service provides a CLEC with a 4-wire transmission path that carries digital signals at speeds of 1.544 Mbps simultaneously, in both directions. High-Capacity circuits can include such services as 1) Interoffice Facilities (IOF), which are DS1 circuits that run between Central Offices (COs) and a Point of Presence (POP); 2) Loops, which are DS1 circuits that run from a CO, or a POP, to a customer location; 3) HDSL; and 4) EEL DS1 High-Capacity circuits.

To process an order for High-Capacity service, the Designed Service Center (DSC) or QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

EEL Validation - An EEL is a combination of loop and dedicated interoffice transport UNEs. It provides the CLEC with the ability to access end users not located in the same Qwest serving wire center collocated by, or otherwise connected to, the CLEC. EELs are available to CLECs that provide end users with local exchange switched services. EELs may not cross Local Access and Transport Areas (LATA).

To process an order for EEL service, the DSC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

Stand Alone LNP Validation - Stand Alone LNP refers to the process of migrating a Qwest customer's existing telephone number to a CLEC. The provisioning process involves Qwest switch provisioning to install non-traditional triggers, and the installation of directory information.

To complete a Stand Alone LNP request, a CLEC submits a LSR, which includes the telephone number(s) to be ported. To process an order for Stand Alone LNP service, the QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

ADSL Line Sharing – Line Sharing (Shared Loop) is making the opportunity available for a CLEC to offer ADSL qualified advanced data services to existing Qwest end user's analog voice grade service. The CLEC uses the data portion of the loop, while Qwest maintains the voice portion of the loop.

To process an order for ADSL service, the QCCC coordinates the provisioning and dispatching between COT, DS I&M Technician, CCT-I, and the CLEC.

xDSL Validation – An xDSL capable loop is an unbundled transport that establishes a transmission path between a Qwest serving wire center network interface and the demarcation point located at the end user's designated premises. A CLEC gains access to this unbundled service at the Qwest wire center through established collocation arrangements.

To process an order for xDSL service, the QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

Dark Fiber - Unbundled Dark Fiber (UDF), also described as "spare" or "unused" fiber, is available as an IOF or Loop to the end user customer. UDF is available to CLECs as a pair of unlit, interoffice optical fibers on which Qwest provides no terminating electronic equipment, unless otherwise specified.

To process an order for Dark Fiber service, the QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

Analog Loop Validation – Analog loops establish a transmission path between a CO distribution frame (or equivalent) up to, and including, Qwest's Network Interface Device (NID) and/or demarcation point. For existing analog loops, the inside wire connection to the NID and/or demarcation point remains intact. To process an order for Analog Loop service, the QCCC coordinates the provisioning and dispatching among Qwest's COT, DS I&M Technician, CCT-I, and the CLEC.

2.2 Scenarios

Provisioning testing and analysis were based on a representative set of Resale, UNE-P, UNE-loop, and High Capacity circuit scenarios, which were identified following a series of meetings involving KPMG Consulting, The Regional Operating Committee Technical Advisory Group (ROC TAG), MTG, and other interested parties.

For many of the provisioning scenarios, CLECs conducting business within the Regional Operating committee (ROC) region took an active part in the testing process by allowing KPMG Consulting to observe commercial installations. The specific scenarios tested during the Provisioning Verification and Validation (Test 14) test included:

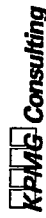
Table 14-1: UNE-L Test Scenarios

Basic Scenario	2-wire Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DSI Capable Loop	Stand-Alone LNP	UDIT	EEL (see notes)	Dark Fiber	Sub Loop	Line Sharing	Stand-Alone DL
A Migrate lines from Qwest without LNP	X	X	X	X	X			X			X	
B Migrate lines from Qwest with LNP	X		X	X	X			X				
C Migrate from CLEC to CLEC	X	X	X	X								
D Purchase lines for a new customer	X	X	X	X	X			X				
E Add new lines to existing customer	X	X	X	X	X			X				
F Add new interoffice DSI/DS3 facilities							X		X			
G Convert from Resale to UNE loop without LNP	X	X	X	X								
H Convert from Resale to UNE loop with LNP	X			X								
I Convert from UNE-P to UNE loop without LNP	X		X	X								
J Convert from UNE-P to UNE loop with LNP	X			X								
K Moves (outside)	X		X	X								
L Disconnect (full)	X		X	X	X			X				
M Add a new directory listing on existing account												X
N Convert from line sharing arrangement to UNE-loop		X	X									
O Obtain loop distribution at FDI										X		
P Port number from Qwest to CLEC without facilities						X						

Note 1: For selected test instances, post order LSR status and DLR queries were conducted.

Note 2: All directory listing offerings, including complex listings, were evaluated.

Note 3: Currently, Qwest does not have a business process for coordinating EEL migrations with number portability.



April 19, 2002

Table 14-2: Resale Test Scenarios

Basic Scenario		Residential POTS	Business POTS	ISDN PRI only	Centrex* & Centrex Plus	Private Line	PBX
A	Migration from Qwest "as is"	X	X	X	X		X
B	Migration from Qwest "as specified"	X	X		X		
C	CLEC to CLEC migration	X	X	X	X		
D	New customer	X	X	X	X	X	
E	Add lines (L)/trunks (T)/ circuits (C)	X (L)	X (L)	X (L)	X (L)	X (C)	X (T)
F	Feature changes to existing customer	X	X		X		
G	Telephone number change	X	X		X		
H	Directory change	X	X	X	X		
I	Migrate customer with voice mail	X	X				
J	Moves	X	X		X		
K	Suspend/restore service	X	X				
L	Disconnect (full and partial)	X	X	X	X	X	X
M	PIC/LPIC changes	X	X		X		X

* Includes Centrex as used by McLeod USA

Note 1: For selected test instances, post order LSR status and DLR queries were conducted.

Note 2: All directory listing offerings, including complex listings, were tested.

Table 14-3: UNE-L Test Scenarios

Basic Scenario		Residential POTS	Business POTS	ISDN PRI Only
A	Migration from Qwest "as is"	X	X	X
B	Migration from Qwest "as specified"	X	X	
C	Migrate from CLEC to CLEC	X	X	
D	New customer	X	X	X
E	Add lines (L)/trunks (T)/ circuits (C)	X (L)	X (L)	X (L)
F	Feature changes to existing customer	X	X	
G	Telephone number change	X	X	
H	Directory change	X	X	
I	Full and partial migration with DL changes	X	X	
J	Convert from Resale products to UNE-P products	X	X	X
K	Migrate an account with Qwest initiated blocking	X	X	
L	Migrate an account with pending service order	X	X	
M	Establish new user with vanity TN	X	X	
N	Moves	X	X	
O	Suspend/restore service	X	X	
P	Disconnect (full and partial)	X	X	
Q	Change PIC/LPIC	X	X	

Note 1: For selected test instances, post-order LSR status and DLR queries were conducted.

Note 2: All directory listing offerings, including complex listings, were tested.

2.3 Test Targets & Measures

The test targets were Qwest's provisioning of Resale, UNE-P, and Unbundled Network Element-Loop (UNE-L) services. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 14-4: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Provisioning Functional Evaluation	Directory Listing Provisioning	Timeliness, accuracy, and completeness of provisioning	14-1-1 – 14-1-2
	Switch Feature Provisioning	Timeliness, accuracy, and completeness of provisioning and timeliness of notifications	14-1-3 – 14-1-5
	Loop Hot Cuts	Timeliness, accuracy, and completeness of provisioning and timeliness of notifications	14-1-7, 14-1-22 – 14-1-24, 14-1-42 – 14-1-43
	New Service Adds	Timeliness, accuracy, and completeness of provisioning and notifications	14-1-8 – 14-1-9, 14-1-12 – 14-1-13, 14-1-15 – 14-1-21, 14-1-25 – 14-1-41, 14-1-44
	Local Number Portability	Timeliness, accuracy, and completeness of provisioning and notifications	14-1-7, 14-1-22 – 14-1-24, 14-1-42 – 14-1-43
	Inter-office Facilities Provisioning	Timeliness, accuracy, and completeness of provisioning and notifications	14-1-6, 14-1-10, 14-1-14, 14-1-18, 14-1-21, 14-1-25 – 14-1-30
	Provisioning Completion Notices	Timeliness, accuracy, and completeness of notices	14-1-11

2.4 Evaluation Methods

The primary focus of Test 14 was to evaluate the following:

- Accuracy – The extent to which Qwest provisioned services as specified by the CLEC;
- Timeliness – The extent to which the orders were provisioned on the committed due date and time;
- Completeness – The extent to which services, requested by the CLEC, were adequately and fully provisioned as specified within Qwest documentation;
- Timeliness and Accuracy of Notifications – The accuracy of information and timeliness of the notifications that Qwest sent to the CLECs relative to the LSR and WCN;
- Communication and Coordination – The ability of Qwest to communicate and coordinate work activities with the CLECs; and
- Compliance with Methods and Procedures (M&Ps) – Qwest’s compliance with its internal methods and procedures that directly impact the provisioning process.

KPMG Consulting collected and used data from a variety of sources, which included Qwest documentation, publicly available documentation, interviews with Qwest personnel, and interviews with CLEC personnel. Integral to the execution of the test were the outputs of P-CLEC transactions, CLEC transactions, and Qwest transactions. Below is a summary for each service evaluated:

- **Directory Assistance Database Validation** – A random sample⁵¹ of Resale and UNE-P orders was derived from the population of P-CLEC LSRs with DL requests. A comparison between the LSR and Qwest's directory assistance database screen prints occurred. KPMG Consulting witnessed Qwest personnel printing the directory assistance database screen prints.
- **Switch Translation Validation** – A random sample⁵² of Resale and UNE-P service orders was generated from the population of P-CLEC LSRs. KPMG Consulting gathered the submitted LSRs, and then used LSRs to determine if the switch translations loaded in the switch were provisioned accurately as ordered by the P-CLEC.
- **WCN** – A random sample⁵³ of Resale, UNE-P, and UNE-L orders was generated from the population of P-CLEC LSRs. FOCs and WCNs were received from orders submitted by the P-CLEC.
- **CSR** – A random sample⁵⁴ of Resale and UNE-P orders was generated from the population of P-CLEC LSRs. KPMG Consulting gathered the submitted LSR, the pre-activity CSR, and the post-activity CSR for each order.
- **Disconnect Orders** – A random sample⁵⁵ of Resale and UNE-P orders was generated from the population of P-CLEC LSRs. KPMG Consulting gathered the submitted LSRs. The disconnect features on the requests were manually tested, and the results were noted.
- **High Capacity Circuit Validation** – KPMG Consulting gathered information during installation observations in Qwest's central offices, and at customer premise locations. Installation observations included both KPMG Consulting-initiated orders, and "live" CLEC commercial installations.
- **Stand Alone LNP Validation** – Information about LNP provisioning was gathered from information stored in the Number Portability Administration Center (NPAC) system. KPMG Consulting gathered information during installation observations in Qwest's central offices. Installation observations included both KPMG Consulting-initiated orders under the aegis of a cooperative CLEC, and "live" CLEC commercial installations.
- **LNP Hot Cuts** – KPMG Consulting gathered information during installation observations in Qwest's COs. Installation observations included both KPMG Consulting initiated orders under the aegis of a cooperative CLEC, and "live" CLEC commercial installations.

⁵¹ Directory Listing Test Bed for Test 1 and Retest 1 = 457 orders; Directory Listing Test Bed for Retest 2 = 145 orders.

⁵² Switch Translation Test Bed for Test 1 and Retest 1 = 438 orders; Switch Translation Test Bed for Retest 2 = 470 orders.

⁵³ Working completion Notice Test Bed = 3919 orders.

⁵⁴ Customer Service Record Test Bed for Test 1 and Retest 1 = 528 orders; Customer Service Record Test Bed for Retest 2 = 470 orders.

⁵⁵ Disconnect Test Bed = 294 orders.

- **EEL Validation** – KPMG Consulting gathered information during installation observations in Qwest’s COs. Installation observations included both KPMG Consulting-initiated orders, and “live” CLEC commercial installations.
- **Working Line Validation** – KPMG Consulting gathered information during installation observations in Qwest COs. Installation observations involved “live” CLEC commercial installations.
- **xDSL Validation** – KPMG Consulting gathered information during installation observations in Qwest central offices, service delivery centers, and design services centers. Installation observations included “live” CLEC commercial installations.
- **ADSL Line Sharing** – KPMG Consulting gathered information during installation inspection in Qwest’s COs. Installation inspections included “live” CLEC commercial installations.
- **Analog Loop** – KPMG Consulting gathered information during installation observations in Qwest’s COs. Installation observations included “live” CLEC commercial installations.
- **Dark Fiber** – KPMG Consulting gathered information during installation observations in Qwest’s COs. Installation observations included “live” CLEC commercial installations.

2.5 Analysis Methods

The Provisioning Evaluation included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These criteria provided the framework of norms, standards, and guidelines for the Provisioning Evaluation.

The data collected were analyzed employing the evaluation methods referenced below:

- **Directory Assistance Database Validation** – KPMG Consulting analyzed directory listings to determine if each was provisioned per the specifications in the Service Request, and if the Listing Services System (LSS) was updated in a timely manner. KPMG Consulting analyzed and reported any discrepancies for each telephone number.
- **Switch Translation Validation** – KPMG Consulting analyzed submitted LSRs and switch translations loaded in the switch as provided by Qwest screen printouts. Features on the requests were compared to the switch translation screen printouts submitted by Qwest. KPMG Consulting analyzed and noted any discrepancies.
- **WCN** – KPMG Consulting analyzed the timeliness of the WCN by comparing the committed due date and the actual service completion date. KPMG Consulting analyzed and noted any discrepancies.
- **CSR** – KPMG Consulting evaluated Qwest’s ability to update a CSR accurately and on the committed due date, based on the LSR submitted by the CLEC or P-CLEC. KPMG Consulting noted and analyzed any discrepancies between accuracy and timeliness when compared to field inputs from submitted LSRs.
- **Disconnect Orders** – KPMG Consulting evaluated Qwest’s ability to properly de-provision KPMG Consulting’s requests to disconnect working telephone lines and apply an intercept

recording or blank number intercept option accurately and on the committed due date. KPMG Consulting analyzed and noted any discrepancies.

- **High Capacity Circuit Validation** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **Stand Alone LNP Validation** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting analyzed Qwest records to ensure that the number was ported on the committed due date. KPMG Consulting compared the provisioning activities with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **LNP Hot Cuts** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **EEL Validation** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **Working Line Validation** – KPMG Consulting reviewed “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **xDSL Validation** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **ADSL Line Sharing** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **Analog Loop** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.
- **Dark Fiber** – KPMG Consulting reviewed both P-CLEC orders and “live” CLEC commercial installations. KPMG Consulting compared the provisioning activities of Qwest technicians with the activities stipulated in the internal M&Ps for service activation. KPMG Consulting analyzed and noted any discrepancies.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 14-5 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Directory Assistance Database Validation</i>			
14-1-1	Qwest's directory assistance database contains required field inputs.	Satisfied	<p>Qwest's directory assistance database contains required field inputs.</p> <p>In the absence of a documented Qwest standard or Performance Indicator Definition (PID) for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>KPMG Consulting reviewed 318 directory listing orders to determine if Qwest provisioned the directory listings accurately. Of these, Qwest provisioned 305 (96%) accurately.</p>
14-1-2	Qwest's directory assistance database is updated on the committed due date.	Satisfied	<p>Qwest's directory assistance database is updated on the committed due date.</p> <p>In the absence of a documented Qwest standard or PID for provisioning timeliness, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting reviewed 256 directory listings to determine if Qwest provisioned the listings on the committed due date. Of these, Qwest provisioned 193 (75.3%) on the committed due date. As a result, KPMG Consulting issued Exception 3076.</p> <p>During retesting, KPMG Consulting reviewed 14 directory listings. Of these, Qwest provisioned 8 (57%) on the committed due date. KPMG Consulting updated Exception 3076 to reflect the additional failures.</p> <p>During a second round of retesting, KPMG Consulting reviewed 105 directory listings. Of these, Qwest provisioned 100 (95%) on the committed due date. See Exception 3076 for additional information on this issue. Exception 3076 is closed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Switch Translation Validation</i>			
14-1-3	Qwest switch translations contain required field inputs.	Satisfied	<p>Qwest switch translations contain required field inputs.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting reviewed 79 switch translations to determine if Qwest provisioned switch features accurately. Of these, Qwest provisioned 70 (88%) switch translations accurately. As a result, KPMG Consulting issued Exception 3043.</p> <p>During retesting, KPMG Consulting reviewed 102 switch translations to determine if Qwest provisioned switch features accurately. Of these, Qwest provisioned 95 (93%) switch translations accurately. KPMG Consulting updated Exception 3043 to reflect the additional failures.</p> <p>During further retesting, KPMG Consulting reviewed 107 switch translations to determine if Qwest provisioned switch features accurately. Of these, Qwest provisioned 106 (99%) of the switch translations accurately. See Exception 3043 for additional information on this issue. Exception 3043 is closed.</p>
14-1-4	Qwest switch translations for disconnect orders are de-provisioned with the proper intercept-recording message.	Satisfied	<p>Qwest switch translations for disconnect orders are de-provisioned with the proper intercept-recording message.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>KPMG Consulting reviewed 82 disconnect service orders to determine if Qwest de-provisioned the service and applied the proper intercept message as ordered by the P-CLEC. Of these, Qwest de-provisioned 81 (99%) disconnect orders accurately.</p>
14-1-5	Qwest's switch translation disconnect orders are completed on the committed due date.	Satisfied	<p>Qwest's switch translation disconnect orders are completed on the committed due date.</p> <p>In the absence of a documented Qwest standard or PID for provisioning timeliness, KPMG Consulting applied a benchmark of 95%.</p> <p>KPMG Consulting reviewed 82 disconnect service orders to determine if Qwest de-provisioned the service on the committed due date. Of these, Qwest de-provisioned 79 (96%)</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			disconnect orders on the committed due date.
<i>High-Capacity Circuit Validation</i>			
14-1-6	Qwest provisions High Capacity circuits by adhering to documented method and procedure tasks.	Satisfied	<p>Qwest provisions High Capacity circuits by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>Prior to functional testing, KPMG Consulting determined that adequately documented methods and procedures for Qwest personnel to provision High Capacity circuits did not exist. As a result of this deficiency, KPMG Consulting issued Exception 3011.</p> <p>Qwest subsequently created and/or modified its internal method and procedures for High Capacity circuit provisioning. These updated documents were distributed to CO and field personnel for immediate implementation.</p> <p>KPMG Consulting verified that these updated documents were available to Qwest personnel during field visits. KPMG Consulting closed Exception 3011.</p> <p>During initial testing, KPMG Consulting observed 170 tasks (22 High Capacity circuits). Of these, Qwest provisioned 107 (62.9%) in accordance with Qwest documented methods and procedures. As a result, KPMG Consulting issued Exception 3082.</p> <p>During retesting activities, KPMG Consulting observed 856 tasks (131 High Capacity circuits). Of these, Qwest provisioned 836 (97.7%) tasks in accordance with Qwest methods and procedures.</p> <p>See Exceptions 3011 and 3082 for additional information on these issues. Exceptions 3011 and 3082 are closed.</p>
<i>Loop Migrations (Hot Cuts)</i>			
14-1-7	Qwest provisions Loop Migrations (Hot Cuts) by adhering to documented method and procedure tasks.	Satisfied	<p>Qwest provisions Loop Migration (Hot-Cuts) by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>Prior to functional testing, KPMG Consulting determined that adequately documented methods</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>and procedures for Qwest personnel to provision Hot Cuts did not exist. As a result of this deficiency, KPMG Consulting issued Exception 3009.</p> <p>Qwest subsequently created and/or modified its internal method and procedures for Hot Cut provisioning. These updated documents were distributed to CO personnel for immediate implementation.</p> <p>KPMG consulting verified that these updated documents were available to Qwest personnel during field visits. KPMG Consulting closed Exception 3009.</p> <p>During initial testing, KPMG Consulting observed 372 tasks (48 Hot Cuts). Of these, Qwest provisioned 281 (75%) in accordance with Qwest documented methods and procedures. As a result, KPMG Consulting issued Exception 3045.</p> <p>During retesting activities, KPMG Consulting observed 1340 tasks (148 Hot Cuts). Of these, Qwest provisioned 1321 (98.6%) in accordance with Qwest methods and procedures.</p> <p>See Exceptions 3009 and 3045 for additional information on these issues. Exceptions 3009 and 3045 are closed.</p>
<i>xDSL/ADSL Line Sharing Installations</i>			
14-1-8	Qwest provisions xDSL circuits by adhering to documented method and procedure tasks.	Satisfied	<p>Qwest provisions xDSL circuits by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>KPMG Consulting observed 280 tasks (36 xDSL circuits). Of these, Qwest provisioned 277 (99%) in accordance with Qwest documented methods and procedures.</p>
14-1-9	Qwest provisions ADSL Line Sharing circuits by adhering to documented method and procedure tasks.	Satisfied	<p>Qwest provisions ADSL Line Sharing circuits by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>Prior to functional testing, KPMG Consulting determined that adequately documented methods and procedures for Qwest personnel to provision ADSL Line Sharing did not exist. As a result of this deficiency, KPMG Consulting issued</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Exception 3012.</p> <p>Qwest subsequently developed checklists to support the methods and procedures (M&P) documentation for COs when provisioning Line Sharing. These updated documents were distributed to CO personnel for immediate implementation.</p> <p>KPMG consulting verified that these updated documents were available to Qwest personnel during field visits. KPMG Consulting closed Exception 3012.</p> <p>During initial testing, KPMG Consulting observed 53 tasks (10 ADSL Line Sharing circuits). Of these, Qwest provisioned 32 (60%) tasks in accordance with Qwest documented methods and procedures. As a result, KPMG Consulting issued Exception 3046.</p> <p>During retesting, KPMG Consulting observed 773 tasks (130 ADSL Line Sharing circuits). Of these, Qwest provisioned 758 (98%) tasks in accordance with Qwest documented methods and procedures.</p> <p>See Exceptions 3012 and 3046 for additional information on these issues. Exceptions 3012 and 3046 are closed.</p>
<i>Unbundled Dark Fiber</i>			
14-1-10	Qwest provisions Unbundled Dark Fiber by adhering to documented method and procedure tasks.	Not Satisfied	<p>Qwest provisions Unbundled Dark Fiber by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting observed 115 tasks (23 Unbundled Dark Fiber circuits). Of these, Qwest provisioned 0 (0%) tasks in accordance with Qwest documented methods and procedures. As a result, KPMG Consulting issued Exception 3010.</p> <p>During retesting, KPMG Consulting reviewed 50 tasks (10 Unbundled Dark Fiber circuits). Of these, Qwest provisioned 32 (64%) in accordance with Qwest documented methods and procedures. As discussed during a ROC TAG conference call, testing was subsequently suspended because of low commercial volume. See Exception 3010 for additional information on this issue. Exception 3010 is closed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Work Completion Notification (WCN)</i>			
14-1-11	Qwest's WCN completion dates accurately reflect the service order completion due date.	Satisfied	<p>Qwest's WCN completion dates accurately reflected the service order completion due date.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>KPMG Consulting reviewed 1,096 WCNs to determine if Qwest provisioned the requested service on the committed due date. For these, Qwest generated 1,060 (97%) WCNs accurately.</p>
<i>Customer Service Records (CSR)</i>			
14-1-12	Qwest post order CSRs are consistent with required field inputs from submitted Pre-Order CSRs.	Satisfied	<p>Qwest post order CSRs are consistent with required field inputs from submitted Pre-order CSRs.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting reviewed 72 post order CSRs to determine if they were updated accurately. For these, Qwest updated 66 (92%) accurately. As a result, KPMG Consulting issued Exception 3028.</p> <p>During retesting, KPMG Consulting reviewed 51 post order CSRs to determine if they were updated accurately. For these, Qwest updated 46 (90%) accurately. KPMG amended exception 3028 to reflect the additional failures.</p> <p>During further retesting, KPMG Consulting reviewed 106 post order CSRs. For these, Qwest updated 103 (97%) accurately. See Exception 3028 for additional information on this issue. Exception 3028 is closed.</p>
<i>Customer Service Records (CSR)</i>			
14-1-13	Qwest's CSRs are updated on committed due dates.	Satisfied	<p>Qwest's CSRs are updated on committed due date.</p> <p>In the absence of a documented Qwest standard or PID for provisioning timeliness, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting reviewed 106 post order CSRs. Of these, Qwest provisioned 101 (95%) on the committed due date.</p>
<i>EEL Loop Provisioning</i>			
14-1-14	Qwest provisions EEL circuits by adhering to documented method and procedure tasks.	Not Satisfied	<p>Qwest provisions EEL circuits by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting observed 79 tasks (11 EELs). Of these, Qwest provisioned 69 (87.3%) in accordance with Qwest documented methods and procedures. As a result, KPMG issued Exception 3104.</p> <p>During retesting, KPMG Consulting observed 15 tasks (2 EELS). Of these, Qwest provisioned 9 (60%) in accordance with Qwest documented methods and procedures. See Exception 3104 for additional information on this issue. As discussed during a ROC TAG conference call, testing was subsequently suspended because of low commercial volume. See Exception 3104 for additional information on this issue. Exception 3104 is closed.</p> <p>KPMG Consulting also formally identified inconsistencies that exist in Qwest's Enhanced Extended Loop (EEL) DS1 provisioning documentation. These issues were subsequently closed/unresolved.</p>
<i>Analog Loop Provisioning</i>			
14-1-15	Qwest provisions Analog Loops by adhering to documented method and procedure tasks.	Satisfied	<p>Qwest provisioned Analog Loops by adhering to documented method and procedure tasks.</p> <p>In the absence of a documented Qwest standard or PID for accuracy of provisioning, KPMG Consulting applied a benchmark of 95%.</p> <p>During initial testing, KPMG Consulting observed 130 tasks (130 Analog Loop circuits). Of these, Qwest provisioned 95 (73%) in accordance with Qwest documented methods and procedures. KPMG Consulting issued Exception 3064.</p> <p>During initial testing, KPMG Consulting observed 842 tasks (166 Analog Loop circuits). Of these, Qwest provisioned 686 (81.5%) in accordance with Qwest documented methods and procedures. KPMG Consulting updated Exception 3064 to reflect the additional failures.</p> <p>During further retesting, KPMG Consulting observed 1,530 tasks (131 Analog Loop circuits). Of these, Qwest provisioned 1,471 (96.1%) in accordance with Qwest documented methods and procedures. See Exception 3064 for additional information on this issue. Exception 3064 is closed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			KPMG Consulting also found that Qwest's Analog Loop provisioning Work Force Administration (WFA) Operation Support System Circuit Notes (OSSCN) logs and M&P documentation appear to contain inconsistencies. KPMG Consulting formally identified this issue. Qwest subsequently updated its documentation to correct the deficiencies.
<i>Disaggregated (PID) Evaluations</i>			
14-1-16	Qwest meets the performance benchmark for PID OP-3C – Installation Commitments Met for Analog Loops.	Satisfied	Qwest provisions Analog Loops on the committed due date. The PID benchmark for Analog Loops is 90%. In the Eastern region, Qwest provisioned 168/170 (99%) on the committed due date. In the Central region, Qwest provisioned 167/180 (93%) on the committed due date. In the Western region, Qwest provisioned 157/166 (95%) on the committed due date.
14-1-17	Qwest meets the performance benchmark for PID OP-3C – Installation Commitments Met for Non-Loaded Loops.	Satisfied	Qwest provisions Non-Loaded Loops on the committed due date. The PID benchmark for Non-Loaded Loops is 90%. In the Eastern region, Qwest provisioned 56/57 (98%) on the committed due date. In the Central region, Qwest provisioned 52/52 (100%) on the committed due date. In the Western region, Qwest provisioned 63/64 (98%) on the committed due date. The target sample size of 140 orders per region was not achieved due to an unexpected outcome of a WFA script implemented to prevent dispatches for design services on test bed accounts.
14-1-18	Qwest meets the performance benchmark for PID OP-3A, B, D, & E – Installation Commitments Met for All Products.	Satisfied	For those products measured by a benchmark standard, Qwest met installation commitments. The PID benchmark is 90%. In the Eastern region, Qwest provisioned 358/376 (95%) on the committed due date. In the Central region, Qwest provisioned 271/273 (99%) on the committed due date. In the Western region, Qwest provisioned 232/238 (97%) on the committed due date.

Test Cross-Reference	Evaluation Criteria	Result	Comments
14-1-19	Qwest meets the performance benchmark for PID OP-4C – Installation Interval for Analog Loops.	Satisfied	<p>Qwest provisions Analog Loops within the installation interval.</p> <p>The PID benchmark for Analog Loops is 6 days.</p> <p>In the Eastern region, Qwest took an average of 5.5 days to install 142 orders.</p> <p>In the Central region, Qwest took an average of 5.7 days to install 103 orders.</p> <p>In the Western region, Qwest took an average of 5.9 days to install 128 orders.</p> <p>The target sample size of 140 orders per region was not achieved in the Central and Western regions due to orders that were excluded because the desired due date was greater than the standard interval.</p>
14-1-20	Qwest meets the performance benchmark for PID OP-4C – Installation Interval for Non-Loaded Loops.	Satisfied	<p>Qwest provisions Non-Loaded Loops within the installation interval.</p> <p>The PID benchmark for Non-Loaded Loops is 6 days.</p> <p>In the Eastern region, Qwest took an average of 5.13 days to install 52 orders.</p> <p>In the Central region, Qwest took an average of 5.05 days to install 44 orders.</p> <p>In the Western region, Qwest took an average of 5.19 days to install 48 orders.</p> <p>The target sample size of 140 orders per region was not achieved due to an unexpected outcome of a WFA script implemented to prevent dispatches for design services on test bed accounts and orders that were excluded because the desired due date was greater than the standard interval.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
14-1-21	Qwest meets the performance benchmark for PID OP-4A, B, D, & E – Installation Interval for All Products.	Satisfied	<p>Qwest provisions All Products within the installation interval.</p> <p>The PID benchmark is 6 days.</p> <p>In the Eastern region, Qwest took an average of 5.8 days to install 253 orders.</p> <p>In the Central region, Qwest took an average of 4.9 days to install 190 orders.</p> <p>In the Western region, Qwest took an average of 5.2 days to install 115 orders.</p> <p>The target sample size of 140 orders was not achieved in the Western region due to insufficient commercial activity from participating CLECs.</p>
14-1-22	Qwest meets the performance benchmark for PID OP- 8B – Number Portability Timeliness for LNP Loops with Coordination.	Satisfied	<p>Qwest provisions LNP Loops with coordination on time.</p> <p>The PID benchmark for LNP Loops with coordination is 95% provisioned on time.</p> <p>In the Eastern region, Qwest provisioned 129/129 (100%) on time.</p> <p>In the Central region, Qwest provisioned 96/96 (100%) on time.</p> <p>In the Western region, Qwest provisioned 76/76 (100%) on time.</p> <p>The target sample size of 140 instances was not achieved in any region due to insufficient commercial activity from participating CLECs.</p>
14-1-23	Qwest meets the performance benchmark for PID OP- 8C – Number Portability Timeliness for LNP Loops without Coordination.	Satisfied	<p>Qwest provisions LNP Loops without coordination on time.</p> <p>The PID benchmark for LNP Loops without coordination is 95% provisioned on time.</p> <p>Qwest provisioned 15/15 (100%) on time.</p> <p>The target sample size of 140 instances was not achieved due to insufficient commercial activity from participating CLECs.</p>
14-1-24	Qwest meets the performance benchmark for PID OP-13A – Coordinated Cuts on Time – Unbundled Loop.	Satisfied	<p>Qwest provisions Unbundled Loops with coordination on time.</p> <p>The PID benchmark for Unbundled Loops with coordination is 95% provisioned on time.</p> <p>In the Eastern region, Qwest provisioned 259/259 (100%) on time.</p> <p>In the Central region, Qwest provisioned 244/244 (100%) on time.</p> <p>In the Western region, Qwest provisioned 185/186 (99%) on time.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
14-1-25	Qwest meets the parity performance requirements for PID OP-3A, B, D, & E – Installation Commitments Met for All Products.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>In the Eastern region, Qwest provisioned 77/87 (89%) on the committed due date, as compared to 91% for retail orders.</p> <p>In the Central region, Qwest provisioned 112/120 (93%) on the committed due date, as compared to 89% for retail orders.</p> <p>In the Western region, Qwest provisioned 27/28 (96%) on the committed due date, as compared to 92% for retail orders.</p> <p>KPMG Consulting performed a Dual Test on the initial test results, as required in Appendix G of the MTP. The result was a “no decision” for the Eastern and Central regions and a “fail” for the Western region. KPMG Consulting formally identified this issue, which addressed the “no decision” result in the Eastern and Central regions. At the request of the TAG, additional observations were made which resulted in satisfactory results in the Eastern and Central regions.</p> <p>KPMG Consulting issued Exception 3106 for the failure in the Western region. At the request of the TAG, additional observations were made. A Dual Test was performed on the additional data and resulted in a “no decision.” The TAG reviewed the results, and determined that the Exception should be closed as resolved.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, “Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest’s wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID.”</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest’s new process for capturing data and calculating retail results for PID OP-3. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-26	Qwest meets the parity performance requirements for PID OP-3A, B, D, & E – Installation Commitments Met for DS1 Loops.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>Qwest provisioned 103/135 (77%) on the committed due date, as compared to 79% for retail orders.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP and determined that Qwest achieved a passing result.</p> <p>The target sample size of 140 was not achieved due to instances of Customer Not Ready (CNR) exclusions resulting from no access to the customer premise.</p> <p>See Section V - table V-2 Parity Results for additional transaction details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-3. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-27	Qwest meets the parity performance requirements for PID OP-4 A, B, D, & E – Installation Interval for All Products.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>In the Eastern region, Qwest took an average of 5.8 days to install 87 orders as compared to 6.2 days for retail orders.</p> <p>In the Central region, Qwest took an average of 5.6 days to install 120 orders as compared to 6.1 days for retail orders.</p> <p>In the Western region, Qwest took an average of 4.0 days to install 28 orders as compared to 4.9 days for retail orders.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP. The results were a "no decision" for the Central and Western regions. Therefore, KPMG Consulting formally identified this issue. At the request of the TAG, additional commercial observations were made. Based on these additional data, the Central region passed while the Western region resulted in a "no decision."</p> <p>Upon examination of additional data provided by Qwest on the Western region orders, KPMG Consulting agreed with Qwest's findings. This issue is resolved.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>See Section V, Table V-2 for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-4. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-28	Qwest meets the parity performance requirements for PID OP-4 A, B, D, & E – Installation Interval for DS1 Loops	Unable to Determine	<p>The PID standard for DS1 Loops is parity with the retail (18.6 days).</p> <p>Qwest took an average of 9.1 days to install 135 orders.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP, and determined that Qwest achieved a passing result.</p> <p>The target sample size of 140 was not achieved due to instances of Customer Not Ready (CNR) exclusions resulting from no access to the customer premise.</p> <p>See Section V, Table V-2 Parity Results for additional transaction details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-4. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-29	Qwest meets the parity performance requirements for PID OP-5 – New Service Installation Quality All Products.	Satisfied	<p>For those products measured by a parity standard, the percent of Qwest's installations free of trouble reports for 30 calendar days is consistent with retail results.</p> <p>The PID standard is parity with retail.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>In the Eastern region, Qwest provisioned 442/450 (98%) orders that were free of troubles 30 calendar days following installation as compared to the retail results of 72%.</p> <p>In the Central region, Qwest provisioned 358/372 (96%) orders that were free of troubles 30 calendar days following installation as compared to the retail results of 74%.</p> <p>In the Western region, Qwest provisioned 309/319 (97%) orders that were free of troubles 30 calendar days following installation as compared to the retail results of 76%.</p> <p>See Section V, Table V-2 Parity Results for additional transaction details.</p>
14-1-30	Qwest meets the parity performance requirements for PID OP-6B - Delayed Days.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>In the Eastern region, the average delay days for 12 test orders was 19.4, compared to 14.6 for retail.</p> <p>In the Central region, the average delay days for 1 test order was 11.0, compared to 23.8 for retail.</p> <p>In the Western region, the average delay days for 12 test orders was 8.0, compared to 19.6 for retail.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP. The result was a "no decision" for the Eastern region. Therefore, KPMG Consulting formally identified this issue. Based on the TAG's decision, this issue is resolved.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-6. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
14-1-31	Qwest meets the performance benchmark for PID OP-3C – Installation Commitments Met for Business POTS.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>In the Eastern region, Qwest provisioned 100% of 252 orders on the committed due date as compared to 98.5% for retail orders.</p> <p>In the Central region, Qwest provisioned 97.7% of the 128 orders on the committed due date, as compared to 98.6% for retail orders.</p> <p>In the Western region, Qwest provisioned 100% of 228 orders on the committed due date, as compared to 97.5% for retail orders.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP, and determined that Qwest passed in all three regions.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, “Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest’s wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID.”</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest’s new process for capturing data and calculating retail results for PID OP-3. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-32	Qwest meets the performance benchmark for PID OP-3C – Installation Commitments Met for Residential POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>In the Eastern region, Qwest provisioned 100% of 238 orders on the committed due date, as compared to 97.8% for retail orders.</p> <p>In the Central region, Qwest provisioned 100% of 205 orders on the committed due date, as compared to 96.5% for retail orders.</p> <p>In the Western region, Qwest provisioned 99.1% of 274 orders on the committed due date, as compared to 98.1% for retail orders.</p> <p>KPMG Consulting performed a Dual Test on initial test results, as required in Appendix G of the MTP, and determined that results for the Eastern region failed to meet the standard. KPMG Consulting issued Exception 3085. Upon retesting, Qwest achieved a passing result</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>in all three regions. Exception 3085 is closed.</p> <p>See Section V, Table V-2, for additional details. As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-3. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-33	Qwest meets the performance benchmark for PID OP-3C – Installation Commitments Met for UNE-P services.	Unable to Determine	<p>The PID standard is parity with retail service.</p> <p>In the Eastern region, Qwest provisioned 100% of 246 orders on the committed due date, as compared to 98.5% for retail orders.</p> <p>In the Central region, Qwest provisioned 100% of 274 orders on the committed due date, as compared to 99.3% for retail orders.</p> <p>In the Western region, Qwest provisioned 100% of 273 orders on the committed due date, as compared to 97.6% for retail orders.</p> <p>KPMG Consulting performed the Dual Test on the initial test results, as required in Appendix G of the MTP, and determined that Qwest failed to meet the standards in the Central and Western regions. KPMG Consulting issued Exception 3085. Upon retesting, Qwest achieved a passing result in all three regions. Exception 3085 is closed.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-3. Consequently, KPMG Consulting is unable to</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			determine a result for this criterion.
14-1-34	Qwest meets the performance benchmark for PID OP-4C – Installation Interval for Business POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>In the Eastern region, Qwest took an average of 2.2 days to install 145 orders tested, as compared to 1.5 days for retail installation.</p> <p>In the Central region, Qwest took an average of 2.3 days to install 128 orders tested, as compared to 2.0 days for retail installation.</p> <p>In the Western region, Qwest took an average of 2.5 days to install 160 orders tested, as compared to 2.2 days for retail installation.</p> <p>KPMG Consulting performed a Dual Test on the initial test results, as required in Appendix G of the MTP, and determined the Qwest failed to meet the standard in the Eastern and Western regions. Exception 3086 was issued. Upon retesting, Qwest continued to fail in the Eastern region. See Exception 3086 for additional information on this issue. Exception 3086 remains open.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-4C. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-35	Qwest meets the performance benchmark for PID OP-4C – Installation Interval for Residential POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>In the Eastern region, Qwest took an average of 2.4 days to install 150 orders tested, as compared to an average of 2.6 days for retail installation.</p> <p>In the Central region, Qwest took an average of 2.3 days to install 137 orders tested, as compared to an average of 2.9 days for retail installation.</p> <p>In the Western region, Qwest took an average of</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>2.4 days to install 143 orders tested, as compared to an average of 2.8 days for retail installation.</p> <p>KPMG Consulting performed Dual Test on the initial test results, as required in Appendix G of the MTP, and determined that Qwest failed to meet the standard in all three regions. Exception 3086 was issued. Upon retesting, Qwest achieved passing results in all three regions. However, this Exception remains open for failure of the OP4C PID for other products associated with this exception. See Exception 3086 for additional information on this issue.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-4C. Consequently, KPMG Consulting is unable to determine a result for this criterion</p>
14-1-36	Qwest meets the performance benchmark for PID OP-4C – Installation Interval for UNE-P services.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>In the Eastern region, Qwest took an average of 2.8 days to install 145 orders tested, as compared to 1.5 days for retail installation.</p> <p>In the Central region, Qwest took an average of 2.6 days to install 140 orders tested, as compared to 2.1 days for retail installation.</p> <p>In the Western region, Qwest took an average of 2.9 days to install 141 orders tested, as compared to 2.2 days for retail installation.</p> <p>KPMG Consulting performed Dual Test on the initial test results, as required in Appendix G of the MTP, and determined that Qwest failed to meet the standard in all three regions. Exception 3086 was issued. Upon retesting, Qwest failed in all three regions. See Exception 3086 for additional information on this issue. Exception 3086 remains open.</p> <p>See Section V, Table V-2, for additional details.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-4C. Consequently, KPMG Consulting is unable to determine a result for this criterion</p>
14-1-37	Qwest meets the parity performance requirements for PID OP-6A - Delayed Days Business POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>In the Eastern and Western regions, Qwest did not delay any P-CLEC orders for Business POTS.</p> <p>In the Central region, for the 3 orders delayed, Qwest took an average of 1 day to complete the orders as compared to 9.4 days for retail completion.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP, and determined that Qwest achieved a passing result in the Central region.</p> <p>See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-6. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-38	Qwest meets the parity performance requirements for PID OP-6A - Delayed Days Residential POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>Qwest did not delay any P-CLEC orders for Residential POTS. Therefore, KPMG Consulting was unable to evaluate this PID.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
14-1-39	Qwest meets the parity performance requirements for PID OP-6A - Delayed Days UNE-P POTS.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>Qwest did not delay any P-CLEC orders for UNE-P products and services. Therefore, KPMG Consulting was unable to evaluate this PID.</p>
14-1-40	Qwest meets the parity performance requirements for PID OP-6A - Delayed Days Unbundled Loops.	Unable to Determine	<p>The PID defined standard is parity with retail service.</p> <p>For the 24 Unbundled Loop P-CLEC orders delayed, Qwest took an average of 7.4 days to complete the orders as compared to 10.5 days for retail completion.</p> <p>Due to the small amount of data available, results were evaluated on a 13-state level rather than regionally.</p> <p>KPMG Consulting performed a Dual Test, as required in Appendix G of the MTP, and determined that Qwest achieved a passing result. See Section V, Table V-2, for additional details.</p> <p>As stated in the MTP, version 5.2, dated 4/9/2002, "Liberty Consulting will use (the MTP) to develop and perform an audit to insure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID."</p> <p>As of the publication of this Draft Final Report, Liberty Consulting, in its role as performance measure auditor, has not completed an audit of Qwest's new process for capturing data and calculating retail results for PID OP-6. Consequently, KPMG Consulting is unable to determine a result for this criterion.</p>
14-1-41	Qwest meets the performance benchmark for PID OP-7 – Coordinated "Hot Cut" Interval – Unbundled Loop.	Diagnostic	<p>Qwest provisions Coordinated Unbundled Loops "Hot Cuts" within the installation interval.</p> <p>The PID defined standard is Diagnostic in light of OP-13.</p> <p>In the Eastern region, Qwest provisioned 50 Coordinated Unbundled Loops "Hot Cuts" in an average of 6.2 minutes.</p> <p>In the Central region, Qwest provisioned 76 Coordinated Unbundled Loops "Hot Cuts" in an average of 6.6 minutes.</p> <p>In the Western region, Qwest provisioned 42 Coordinated Unbundled Loops "Hot Cuts" in an</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			average of 8.2 minutes. See Section V, Table V-3, Diagnostic Results, for additional transaction details.
14-1-42	Qwest meets the performance benchmark for PID OP-13B – Coordinated Cuts on Time – Unbundled Loop – Cuts Started Without CLEC Approval.	Diagnostic	Qwest provisions Coordinated Unbundled Loops without CLEC approval. The PID defined standard is Diagnostic. In The Eastern Region, Qwest provisioned 100% of Coordinated Unbundled Loops with CLEC approval. In the Central region, Qwest provisioned 99% of Coordinated Unbundled Loops with CLEC approval. In the Western region, Qwest provisioned 100% of Coordinated Unbundled Loops with CLEC approval. See Section V, Table V-3, for additional details.
14-1-43	Qwest meets the performance benchmark for PID OP-15 – Interval for Pending Orders Delayed Past Due Date – All Products.	Unable to Determine	The P-CLEC had no pending orders delayed past the due date as of the end of the reporting period ⁵⁶ .
14-1-44	Qwest-produced measures of ordering and provisioning (OP) performance results for HPC transactions are consistent with KPMG Consulting-produced HPC measures.	Not Satisfied	During the course of KPMG Consulting's comparative analysis of Qwest-produced HPC measures to KPMG Consulting-produced measures, several discrepancies were identified that affected the reporting of PID OP-4 and that could affect OP-3 and OP-6. The discrepancies included: <ul style="list-style-type: none"> • Incorrect calculation of application dates and intervals; • Inappropriate exclusions; • Missing data; and • Inaccurate documentation. As a result, KPMG Consulting issued Exception 3120. To address these issues, Qwest implemented systems fixes, conducted additional training, and revised documentation, as appropriate. As of 4/13/02, KPMG Consulting has not conducted any retest activities to confirm or validate Qwest's fixes, training, or revisions to documentation. See Exception 3120 for

⁵⁶ For purposes of this evaluation, the reporting period is defined as the start of transaction testing to the completion of the last transaction.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			additional information on this issue.

14.7. Test Results: Provisioning Process Parity Evaluation (Test 14.7)

1.0 Description

The Provisioning Process Parity Evaluation was a review of Qwest's processes, systems, and interfaces that provide provisioning support for Competitive Local Exchange Carriers (CLECs). The objective of the evaluation was to determine the extent to which wholesale processes and systems are in parity with those used by Qwest's retail operations. The evaluation focused on Qwest's operational centers, systems, and processes used to provision retail and wholesale service orders.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The following sub-sections describe Qwest's provisioning and capacity management processes, and the Qwest centers responsible for executing activities associated with these processes.

2.1.1 Provisioning Process Description – POTS and Designed Services Orders

Provisioning activities vary by order type, either for Plain Old Telephone Service (POTS), or for designed services.

POTS Orders:

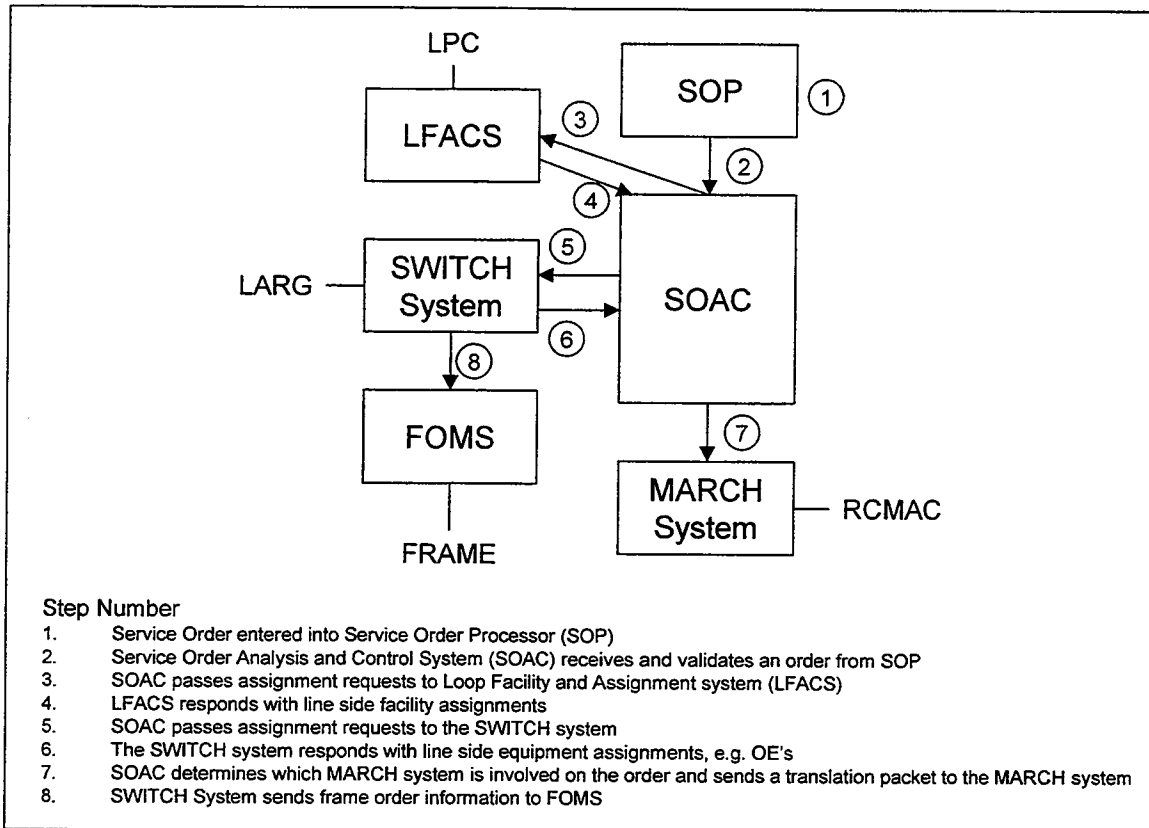
A POTS order flows into one of the three Service Order Processors (SOPs), which are aligned by Qwest region (Regional Service Order Logistics and Reference [RSOLAR] is the SOP for the Western Region, Service Order Logistics and Reference [SOLAR] is the SOP for the Eastern Region and Service Order Processing and Distribution [SOPAD] is the SOP for the Central Region). The SOP directs the order into the Service Order Analysis and Control System (SOAC), which is an operational support system that is used to coordinate order management and provisioning processes. SOAC schedules and manages tasks such as facility assignment, circuit design, and network activation.

SOAC sends orders to the Loop Facility Assignment and Control System (LFACS) for automated loop assignment; to SWITCH/Frame Operations Management System (FOMS) for automated office equipment or switch port assignment (FOMS issues the automated office equipment orders to be worked); and to the Memory Administration Recent Change History (MARCH) system for automated feature assignment. Throughout the provisioning process, SOAC relays information from various provisioning systems to SOP, where customer-facing representatives are able to obtain order status.

Most POTS orders are eligible for automated provisioning in LFACS, SWITCH/FOMS, and MARCH. Loop Provisioning Centers (LPCs), Engineering Centers, Load Resource Allocation Centers (LRACs), Central Office Resource Allocation Centers (CORACs), and the Recent Change Memory Administration Centers (RCMACs) process the remaining non-automated provisioning orders in the assignment and translation systems manually. Orders that fall out of

LFACS and SWITCH/FOMS take the form of a Request for Manual Assistance (RMA). A RMA is generated when any conditions for automated provisioning are not met. The Provisioning Analyst Workstation System (PAWS) is used to monitor and distribute RMAs for office equipment or switch ports and loop assignments to the appropriate center. Orders that are not eligible for automated provisioning in MARCH are called Pending Accepts, and are processed by the RCMAC.

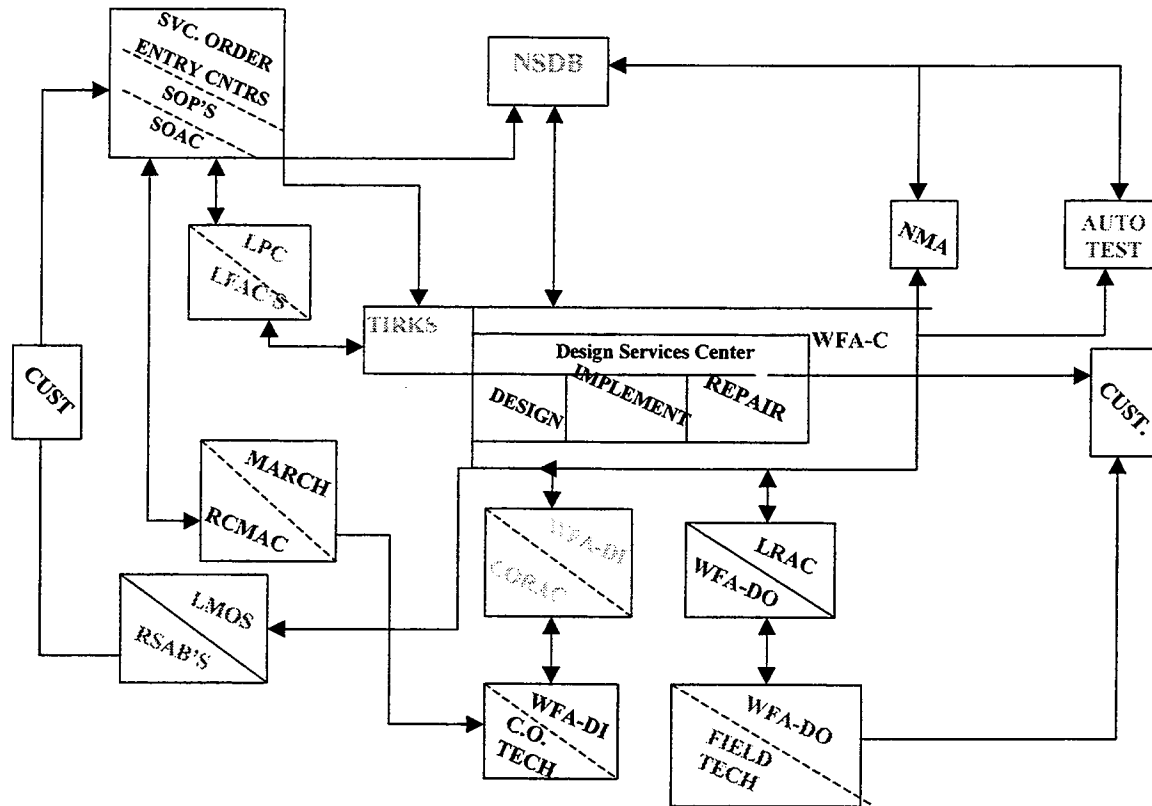
Figure 14.7-1: POTS Intersystem Order Flow



Designed Services Orders

Designed services orders flow from SOP to SOAC, from which they are directed to various downstream provisioning systems. SOAC first routes designed services orders to the Trunk Integrated Record Keeping System (TIRKS), in which a Work Order Record Detail (WORD) document is created. Orders for designed services circuits may fall out for manual handling in the assignment process, the circuit design process, and/or the translations process. Manual handling of designed services provisioning is performed by one or more of the following centers: LPC, RCMAC, Designed Services Center (DSC), Engineering (capacity provisioning), LRAC, CORAC, or the Qwest CLEC Coordination Center (QCCC).

Figure 14.7-2: Designed Service Workflow



2.1.2 Provisioning Process Description – Work Center Roles

Qwest structures provisioning activities around several work centers. A detailed description of the specific functions of each center is provided below.

Customer Service Centers

Customer Service Centers Function

Qwest operates distinct customer service centers for its retail and wholesale customers. The Interconnect Services Centers (ISC) serves wholesale customers. Retail customer service centers are organized by market segment. One such service center is the SBM Retail Sales Center, which serves small business retail customers. Orders for individual retail customers are processed by Qwest’s two centralized service centers, commonly referred to as Order Management East and Order Management West. Work within these two centers is aligned by National Accounts, Government and Education, and Growth Markets. The role of the ISC and Retail customer service centers in the provisioning process is to answer order entry questions from downstream provisioning centers.

Loop Provisioning Center (LPC)

LPC Function

The LPC's primary function is to receive and process RMAs related to orders for DS0 service and below. The LPC personnel (Consultants and Facilities Specialists) are responsible for identifying available facilities that can be assigned to orders that were not eligible for automated provisioning in LFACS.

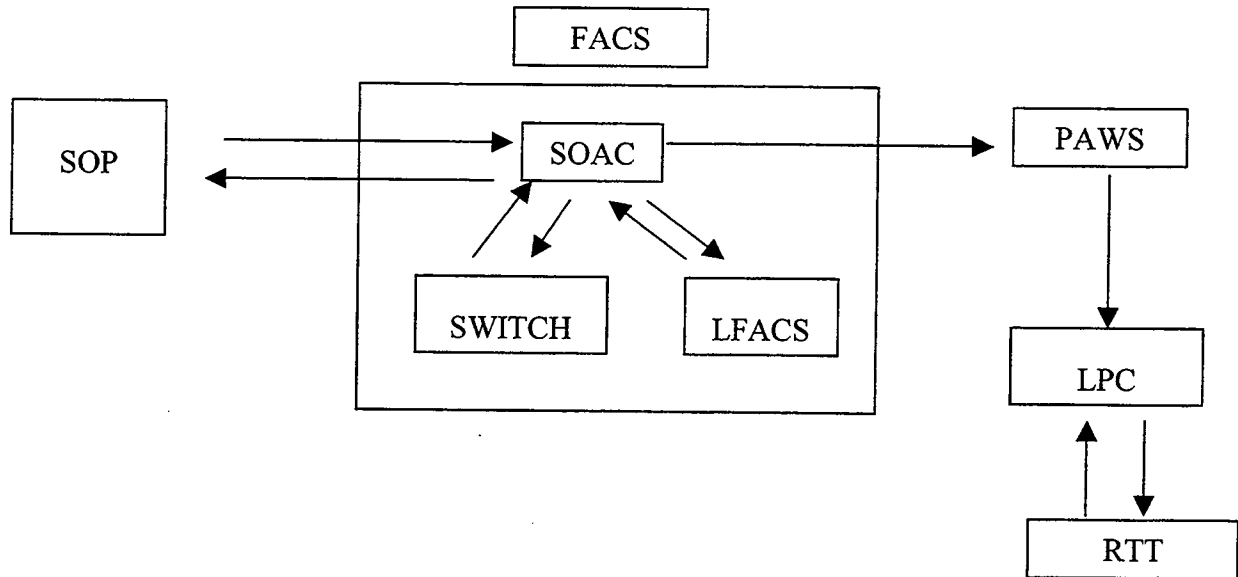
The LPC is organized into three work groups. The Production Group's main tasks are to process RMAs, and to support field technicians with installation and maintenance problems. The Delayed Order Group's main responsibility is to resolve problems with delayed orders to return them to the provisioning workflow. The Facilities Specialist Group's main responsibility is to support the engineering and construction organizations in building the Qwest network.

LPC Workflow

Work flows into the LPC in the form of RMAs and incoming phone calls. The incoming phone calls are normally routed to the Production Group from internal customers, such as field technicians, who are provisioning orders or maintaining the network. The RMAs are generated by LFACS and/or SWITCH systems, when a loop cannot be automatically provisioned. Work is routed to an Assignment Consultant, either by using the "next work" function in the PAWS system to package an order, or by an Automated Call Distributor (ACD). The Assignment Consultant either resolves the order and puts it back in the provisioning flow, or puts the order in delayed status and creates a ticket in the Referral Tracking Tool (RTT), the system used to notify Qwest's engineering center of cases for which no facilities are available to provision an order.

In attempting to resolve an RMA, the Facilities Specialist may request a network build-out by using RTT to create a ticket for engineering. In such a case, the order stays in delayed status until Engineering and Construction complete the network job and resolve the ticket in RTT. The order on hold for facilities can then be assigned and placed back into the provisioning flow. Figure 14.7-3 depicts main systems in use at the LPCs, and the information flows among them.

Figure 14.7-3: Systems Used by the LPC



LPC Methods and Procedures

M&Ps, which are consistent across LPCs, are produced and maintained by the LPC process staff. The M&Ps are stored on InfoBuddy on the Qwest intranet. Changes to M&Ps are communicated via Multi-Channel Communicators, email, voicemail, meetings, and teleconference, as appropriate.

LPC Systems

Primary systems used by the LPC personnel include LFACS, SWITCH, PAWS, and RTT. Other systems used include BOSS, CARS, the SOPS (SOLAR, RSOLAR, and SOPAD), PREMIS, Work Force Administration (WFA), LMOS, TIRKS, E-Media, InfoBuddy, Looking Glass Total View and Soft Dial Tone Manager.

Designed Services Center (DSC)

DSC Function

The DSC's primary function is to design and implement complex service orders. DSCs are arranged in the following work groups:

- The Design Group is responsible for designing circuits to provision orders. It is divided into two sub-groups: DS0 circuit design and High Capacity (Hi Cap) circuit (DS1 and above) design.
- The Implementation Group is responsible for the implementation of designed orders, including working with testers on the end-to-end acceptance testing of the circuit. The Implementation Group is divided into two sub-groups: DS0 implementation and Hi Cap implementation.
- The Delayed Order Group is responsible for resolving issues with delayed orders. (In Colorado, the Delayed Order Group is part of the Ft. Collins LRAC/CORAC instead of the Denver, Colorado DSC).

DSC Workflow Process

An order flows through the LPC for cable and pair assignment. An order that requires the assistance of the DSC flows from the LPC into TIRKS. At the start of each day, Designers access TIRKS and view the Record Issuance Date (RID) list for orders that require work. Orders are worked according to RID date, from earliest to latest, without regard for retail or wholesale origination. When the design is ready, the Designer updates the order in TIRKS. The order then resides in pending status with a WORD document that contains circuit design details attached. The Implementation Screener is then responsible for distributing the order to a tester.

The screener creates a work list and assigns each order to an available Implementer whose skill set aligns with the order type. The Implementer accesses TIRKS to view the work to be completed for a given day. He or she reviews the design and frame continuity, views the design between central offices, and conducts a pre-test on the circuit using testing tools such as OcuView.

Next, the Implementer calls the customer to confirm the order due date, time, and work to be performed. The Implementer notes all customer contacts in a log in the WFA system. The implementer supports the technician in the field to complete the end-to-end acceptance test. For example, the field technician may ask the Implementer to put dial tone on or take dial tone off the line being tested. If the termination point of the circuit is at a long distance carrier's location, the Implementer coordinates the end-to-end acceptance test with that long distance carrier's tester.

Following acceptance, the Implementer calls the customer directly to inform him or her that the work is complete. The Implementer, in a final step, logs completion information in Work Force Administration Control (WFA-C). The jeopardy response team is available throughout the process to assist in resolving field issues as they arise.

DSC Methods and Procedures

M&Ps, which are consistent across DSCs, are produced and maintained by the DSC process staff. The M&Ps are stored on the Network Complex Services (NCS) home page on the Qwest intranet. Other sources of information for DSC personnel are InfoBuddy, and the Canyon 6 Lotus Notes server. Changes to the M&Ps are communicated via Multi-Channel Communicators, email, voicemail, or meetings, as appropriate.

DSC Systems

The systems used in the DSC are LFACS, TIRKS, WFA-C, WFA-DO, Workforce Administration-Dispatch In (WFA-DI), RTT, LMOS, the SOPs (SOLAR, RSOLAR, and SOPAD), SOAC, ET, REACT 2001, Network Monitoring Analysis (NMA), Switched Access Remote Test System (SARTS), Mechanized Loop Test (MLT).

Central Office Resource Allocation Center (CORAC)

CORAC Function

The CORAC's primary function is to assign, or "load," orders to Central Office Technicians (COTs), also known as "inside techs," because they work inside the Central Office. CORACs are staffed with Load Specialists who, in addition to loading the COTs with orders, work to remove any barriers to provisioning orders on time to meet the Designed, Verified and Assigned date (DVA), which is the critical date for the central office work. Load Specialists take incoming calls mainly from COTs who need assistance. For example, a COT working an order, might request help to reach an outside field technician, who is working on the outside plant portion of the same order. CORACs load both retail and wholesale orders using the same Load Specialists. The work is due date driven, and no preference is given to retail or wholesale orders.

Load Specialists are generally divided into three workgroups; the order group, the repair group and the DVA group. Each group monitors queues in WFA-DI, and attempts to load work in time to meet order target dates. The DVA group monitors WFA-DI for orders that are "due today." These orders are loaded to a COT as soon as they appear on the DVA report, which is produced regularly throughout the day. No preference is given to retail or wholesale orders.

The CORAC interacts with various Qwest organizations, including the Central Offices, the repair center, the DSC, the QCCC, and the ISC.

CORAC Workflow Process

Orders flow into the CORAC when SOAC, the overall order process control system, determines that an inside technician is required to complete the order. Load specialists view their work lists in WFA-DI. Load Specialists working in the provisioning group load the orders to COTs using WFA-DI. A batch job, termed a "CRON" job, that automatically loads orders to the COTs, is run nightly. Load Specialists monitor WFA to load the orders that are not loaded automatically, as well as orders that drop in to WFA throughout the day. The Load Specialist's responsibility ends with loading the order to the COT.

The DVA group performs nearly identical tasks as the provisioning group, with some exceptions. The difference is that the orders on the DVA list are due present day, or are already past the due date. As DVA reports are generated every two hours, and these orders appear, they are given the highest priority. Load Specialists spend the majority of their time monitoring WFA-DI to meet their objective of loading provisioning orders the same day they are received. The Load Specialists are assigned to specific geographic areas, i.e., assigned to the various Central Offices.

They are, in other words, “turfed.” No preference is given to retail orders versus wholesale orders.

CORAC Methods and Procedures

M&Ps are produced and maintained by the CORAC process staff, and are consistent across CORACs. The M&Ps are stored on the Canyon 6 Lotus Notes server. Changes to the M&Ps are communicated via Multi-Channel Communicators, email, voicemail, or meetings, as appropriate. Load specialists access the Qwest intranet for system specific documentation, such as how to perform a certain function in WFA-DI.

CORAC Systems

The systems used in the CORACs are WFA-C, WFA-DI, LMOS, the SOPs (SOLAR, RSOLAR, SOPAD), Canyon 6 and the Qwest intranet.

Load Resource Allocation Center (LRAC)

LRAC Function

The LRAC’s primary function is to dispatch repair and provisioning orders to outside technicians, and to monitor the work to ensure that orders are completed on time. Qwest uses two types of LRACs: Mass Market LRACs, and Designed Services LRACs. The Mass Market LRACs dispatch technicians to both repair and provisioning of non-designed service orders. The Designed Services LRACs dispatch technicians to both repair and provisioning of designed service orders. Both types of LRACs service both retail and wholesale customers.

Workflow Process in the LRAC

Similar to processes at the CORAC, work flows into the LRAC when SOAC determines that a technician needs to be dispatched to complete the order. The LRAC technician is an outside, or field technician, and the system used for dispatch is WFA – Dispatch Out (WFA-DO). However, testing and acceptance of the designed services between the Mass Market LRAC and the Designed Services LRAC are coordinated differently than they are at the CORAC.

The LRAC is also staffed with Load Specialists who monitor WFA, and load orders that are not automatically loaded. A dispatch function in WFA runs nightly to automatically load orders to the technicians. TechLoad is a system that is available to the LRACs to continually re-evaluate the status of the workload, and balances the work based on current load and availability. The Load Specialists monitor field technicians’ progress throughout the day, and work proactively to prevent a missed dispatch. Once an order has been completed, the field technician calls the LRAC to request that the Load Specialist close the order in WFA-C. Alternately, some field technicians are able to enter completion information from the field using mobile devices known as Remote Access Service (RAS) boxes.

LRAC Methods and Procedures

M&Ps used at the LRACs are produced and maintained by the process staff. The M&Ps are available on the Qwest intranet using applications such as InfoBuddy, E-Media, and Canyon 6. System specific documentation is also available on the Qwest intranet.

Changes to the M&Ps are described in detail by the process staff using a MultiChannel Communicator (MCC), which is simply a formal e-mail communiqué. The MCC may contain the entire document, or it may contain a link to the Qwest intranet, where the document resides.

LRAC Systems

The primary systems used by the LRAC personnel are WFA-DO, WFA-C, the SOPs (SOLAR, RSOLAR and SOPAD), TIRKS, Appointment Scheduler, LMOS, SWITCH, Forecaster, and Force Scheduler.

Recent Change Memory Administration Center (RCMAC)

RCMAC Function

The RCMAC completes line translations for service features on orders that fall out of the MARCH system (i.e., orders that are rejected by the switch). The RCMAC is staffed with Switch Consultants, who are turfed by wire center, because each RCMAC can potentially support several types of switches. Switch Consultants are knowledgeable in the types of switches in their particular RCMAC. Work is driven primarily by due date within the MARCH system. Incoming calls are routed by a Voice Response Unit (VRU) that distributes calls based on wait time. A nighttime RCMAC is located in Boise, Idaho, and accepts inbound calls for the entire Qwest region when local RCMACs are closed. Personnel at the RCMAC have no direct interaction with CLECs, but they do interact with internal Qwest provisioning and repair functional departments. RCMACs work retail and wholesale orders without giving preference to either.

All RCMACs are currently implementing a work presentation system. The function of this system, called K2, is to prioritize work items in MARCH. The introduction of K2 in the RCMACs does not change the functions performed by the Switch Consultants, but it does change how they receive and complete the translations. When the full implementation of K2 is complete, Switch Consultants will no longer be turfed to specific wire centers. K2 will present the Switch Consultant with the next work item in sequence, which may be associated with any of the wire centers serviced by a given RCMAC.

RCMAC Workflow Process

SOAC routes an order to SWITCH/FOMS for office equipment assignment, and to Customer Number Manager (CNUM), for telephone number assignment. SOAC then routes the order to MARCH, for translation in the switch. The MARCH system evaluates whether or not the order is eligible for automated provisioning, or if manual intervention is necessary.

If MARCH determines that manual intervention is required, the service order goes into the pending accepts (PAC) status. A Switch Consultant is responsible for completing the switch translations for the PACs. A Switch Consultant is also responsible for accessing the MARCH

system, and configuring the various switches to accommodate orders that are not eligible for automated provisioning.

From a Switch Consultant's perspective, work is prioritized first, by completing trouble tickets, and secondly, by answering inbound phone calls. The MARCH system displays work in a MARCH Status Report (MSR), which shows those orders that are "due today," orders that are past due, and orders that are due at a future date. The MSR report presents dates by several dimensions, including by reject orders, delayed orders, automated provisioning orders with a frame due time of later same day, service order messages, and change orders. The morning shift works on "dial tone by 8:00⁵⁷" orders. Once the dial tone by 8:00 orders are complete, Switch Consultants work the past due orders. When past due orders are complete, the focus turns to orders that are due present day. Software Release Management (SRM) tables control the release of orders to the switch.

An order, to which a change notice is applied, prior to completion, because of a feature change, etc., is automatically routed back to MARCH for manual intervention.

RCMAC Methods and Procedures

Switch Consultants access M&Ps through InfoBuddy and E-Media. Both are available on the Qwest intranet. When changes occur to the M&Ps, RCMAC supervisors send voice mails describing the changes in detail.

RCMAC Systems

The primary systems used by the RCMAC personnel are MARCH, the SOPs (SOLAR, RSOLAR and SOPAD), LMOS, BOSS, CARS, InfoBuddy/E-Media, APRIL, WFA-DO, Predictor, and FOMS.

2.1.3 Capacity Management Process Description

The Circuit Administration Center (CAC) performs trunk-forecasting functions. The Line Access Reliability Group (LARG) and the Switch Access Reliability Group (SARG) perform switch and line forecasting functions.

The LARG and the SARG are part of one of two Network Reliability Operations Centers (NROCs), which, together, service the fourteen Qwest states. The LARG and the SARG perform the same functions and use the same M&Ps in the Denver, Colorado NROC and the Plymouth, Minnesota NROC.

The SARG is responsible for building and maintaining the network performance monitoring database. This database is the data collection system that is linked to the Engineering Monitoring and Analysis System (EMAS). EMAS collects historical data over time, and is used for trending and forecasting by switch planners in engineering (capacity provisioning).

⁵⁷ "Dial tone by 8:00" describes an order for which service must be operational by 8:00 AM.

The SARG also provides input to the LARG, which is responsible for maintaining and administering the SWITCH system. Analytical Associates in the LARG are turfed to specific wire centers, and are responsible for resolving RMAs generated by SWITCH. The Analytical Associates are responsible for issuing Service Action Requests (SARs) to engineering when capacities in their wire centers reach defined threshold values. SARs alert engineering of potential trouble that is related to capacity in a Central Office.

In addition to issuing SARs and resolving RMAs, Analytical Associates work internal orders that are mailed into a common e-mail inbox. These internal work orders include load balancing plans provided by the SARG as a result of the network monitoring, and work orders from engineering as a result of network build outs. The work orders are tracked by the Critical Central Office (CCO) list on the Qwest intranet.

The primary system that is used by the CAC to monitor trunk group traffic conditions is Data Collection Operating System™ (DCOS). For trunk sizing, a five-year forecast is prepared utilizing forecasting data provided by CLECs. Upon receipt, these data are sent to Design Services, where they are collected, interpreted, and then sent back to the CAC for entry into the forecasting systems. Additionally, the CAC and the CLECs meet quarterly to review forecasting of immediate traffic trends and issues. They review “over” and “under” utilization reports, 512 centum call seconds (CCS) reports, and jointly decide on any necessary changes.

In performing its monitoring activities, the CAC observes both CLEC and Qwest trunk blockage conditions, which affect both CLEC and Qwest traffic equally. The threshold for allowable blockage is defined as failure to complete 0.5% of the calls in progress. If a trunk-blocking trend is identified on one of the CLEC's trunks, an email notification is sent to the CLEC, indicating that a particular trunk is exceeding the trunk alignment. Immediately following email notification, a Trunk Group Service Request (TGSR) is issued to the CLEC, stating that action is required on behalf of the CLEC to resolve the blockage condition. If the CLEC wishes to order an additional trunk, the CLEC issues an Access Service Request (ASR). Qwest is responsible for processing the order (typically requiring 18 days to complete) and coordination to the point of turning the trunk up.

The CAC does not participate in the process of resolving trunk blockage beyond the initial contact to make the CLEC aware of the condition. When the trunk is turned up, the CAC becomes involved again to the extent that it confirms relief in the network.

In addition to forecasting trunk usage based on traffic measures, Qwest assembles forecasts based on anticipated product sales. Qwest's goal is to meet with each CLEC on a quarterly basis to review its current volumes, and to assess its anticipated needs for the year ahead. As not all CLECs supply forecast data, Qwest must assimilate other information, such as historical product data, market simulation data, and industry trends, to arrive at a plausible CLEC forecast. These data are gathered from historical billing data, CLEC account team data, and information from product managers.

This wholesale product forecasting effort supports resource planning for the interconnection operations, the network centers, and IT systems scalability requirements. Finance, service

delivery, wholesale interconnection operations, and the IT departments all cooperate to produce the anticipated product volume forecasts.

CAC Systems

The systems utilized by the CAC to manage network traffic are: Access Customer Terminal Location (ACTL), Trunk Record Database (TRBD), Trunk Servicing System (TSS), Traffic Information Distribution Editor (TIDE), Total Network Data System Trunking (TNDST), and Trunk Group Service Request (TGSR).

LARG Systems

The systems utilized by the LARG to maintain line side inventory are: SWITCH, PAWS, RTT, the SOPs (SOLAR, RSOLAR and SOPAD), FACS, BOSS/CARS, LMOS, TIRKS, WFA, SAR, CCO and the IPG Tracking tool.

2.2 *Scenarios*

Scenarios were not applicable to this test.

2.3 *Test Targets & Measures*

The test target was Qwest’s processes and systems that support the provisioning of products and services ordered by CLECs. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, “Test Cross-Reference,” indicates where the particular measures are addressed in section 3.1, “Results & Analysis.”

Table 14.7-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Provisioning Process Parity	Workflow Management	Consistency ⁵⁸ and repeatability ⁵⁹ as compared to Retail	14.7-1-1 – 14.7-1-20
	Workforce Management	Consistency and repeatability as compared to Retail	14.7-1-21, 14.7-1-23, 14.7-1-26, 14.7-1-29, 14.7-1-32, 14.7-1-35, 14.7-1-38
	Jeopardy Notification	Consistency and repeatability as compared to Retail	14.7-1-6 – 14.7-1-8, 14.7-1-28 – 14.7-1-30, 14.7-1-44

⁵⁸ For the purposes of this evaluation, consistency evaluation measures examined the equivalence of Qwest’s processes and procedures between wholesale and retail operations.

⁵⁹ For the purposes of this evaluation, repeatability evaluation measures examined Qwest’s recurring adherence to established procedures.

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	Service Activation Process	Consistency and repeatability as compared to Retail	14.7-1-3 – 14.7-1-7, 14.7-1-13, 14.7-1-19 – 14.7-1-21, 14.7-1-25 – 14.7-1-26, 14.7-1-28 – 14.7-1-30, 14.7-1-40 – 14.7-1-44, 14.7-1-46 – 14.7-1-50
	Service Design Process	Consistency and repeatability as compared to Retail	14.7-1-12 – 14.7-1-14, 14.7-1-30 – 14.7-1-33, 14.7-1-43
	Assignment Process	Consistency and repeatability as compared to Retail	14.7-1-10 – 14.7-1-12, 14.7-1-19 – 14.7-1-21, 14.7-1-29 – 14.7-1-31, 14.7-1-38 – 14.7-1-40, 14.7-1-46
	Capacity Management	Consistency and repeatability as compared to Retail	14.7-1-47 – 14.7-1-51

2.4 Evaluation Methods

Data for this test was obtained by visiting Qwest centers involved in the provisioning process for retail and wholesale orders. KPMG Consulting interviewed directors, managers, and first level supervisors, and conducted observations of center staff performing provisioning functions. KPMG Consulting visited like centers in the three Qwest regions to ensure that consistent methods are followed across all regions. In addition to the data gathered during interviews and observations, KPMG Consulting issued data requests to obtain copies of relevant Qwest provisioning documentation.

2.5 Analysis Methods

Information gathered during on-site visits and through data requests were evaluated against criteria defined by KPMG Consulting during the planning phase of the test. One component of this evaluation compared Qwest personnel, processes, and systems used to provision wholesale orders to those employed for retail orders, in order to determine whether or not consistencies exist. Another component evaluated data gathered to determine if essential elements of Qwest's processes and systems are present, and whether or not defined process steps are followed.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 14.7-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
14.7-1-1	The method for prioritizing orders in the order processing system(s) is the same for retail and wholesale operations.	Satisfied	<p>Once orders are accepted by the SOPs, they enter the provisioning workflow on a first-in, first-out basis. Incoming orders are date-stamped by the SOP. The orders are then systematically routed to SOAC, which schedules the handoffs to downstream provisioning systems, according to the type of service ordered.</p> <p>KPMG Consulting observed Qwest personnel interacting with the same SOP systems for both retail and wholesale orders. Orders were prioritized by due dates for retail and wholesale orders.</p>
14.7-1-2	Outputs from the order processing system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>Outputs from the SOPs flow into SOAC on a first-in, first-out basis. There are no rules in the SOPs that separate retail from wholesale orders. Once orders are accepted by the SOPs, they then flow to SOAC. SOAC is the system that directs orders to downstream provisioning tasks, such as assignments, circuit designs, translations, and technician dispatch.</p> <p>KPMG Consulting observed Qwest personnel interacting with the same SOP systems for both retail and wholesale orders. Orders were prioritized by due dates for retail and wholesale orders.</p>
14.7-1-3	Inputs to the translation system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>SOAC routes work to the translation system known as MARCH, on a first-in, first-out basis. MARCH determines whether or not the order can flow through directly to the switch without human intervention. Orders that cannot flow through automatically go into PAC status, to be processed by switch consultants in the RCMAC. Orders are routed by SOAC without regard to retail or wholesale origination.</p> <p>KPMG Consulting observed RCMAC personnel accessing both retail and wholesale orders from MARCH according to due date.</p>
14.7-1-4	The method for prioritizing orders in the translations system(s) is the same for retail and wholesale operations.	Satisfied	<p>Work flows into the RCMAC via phone calls and via the MARCH system. The MARCH system prioritizes orders by due date. MARCH produces an MSR report that sorts the orders by due today, past due, due in the future. The MSR report shows</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>these dates across several dimensions including reject orders, delayed orders, flow through orders with a time frame of due later same day, service order messages, and change orders.</p> <p>Work in the RCMAC is executed in the following order: "dial tone by 8:00" orders, past due orders, and "due today" orders. No priority is given because of an order's retail or wholesale origination.</p> <p>Inbound calls come from other centers that are involved in the order provisioning process. Inbound calls are taken by an ACD and routed to the next available switch consultant.</p> <p>RCMACs are currently implementing a work presentation system called K2. This system is operational in the Des Moines RCMAC, and was observed in operation by KPMG Consulting. K2 will act as an integrated front end to MARCH and LMOS, and will present orders to switch consultants in the order in which they are to be worked. Orders are prioritized in K2 by trouble tickets, and then due date, without regard to retail or wholesale origination.</p> <p>KPMG Consulting observed RCMAC personnel accessing both retail and wholesale orders from MARCH, according to due date.</p>
14.7-1-5	Outputs from the translations system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>Orders are released to the switch prioritized in the following order: disconnects, new orders, and change orders. Once orders are completed in the RCMAC, MARCH sends an update to SOAC, and the order is routed to the next provisioning step. No priority is given to retail or wholesale orders.</p> <p>KPMG Consulting observed RCMAC personnel accessing both retail and wholesale orders from MARCH, according to due date.</p>
14.7-1-6	Inputs to problem resolution system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>Each provisioning center is responsible for resolving errors that occur in its systems.</p> <p>The problem resolution system for LFACTS and SWITCH is PAWS. The problem resolution system for TIRKS is RTT.</p> <p>Currently, the problem resolution system for MARCH is the reject list in MARCH. A</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>new work presentation system, K2, is currently being implemented across all RCMACs. KPMG Consulting observed K2 in operation at the Des Moines, Iowa RCMAC. Once fully implemented, it will be used to prioritize rejected orders.</p> <p>SOAC routes orders systematically, as they are received. Inputs to problem resolution systems are made as problems are encountered, and no preference is given to retail or wholesale.</p> <p>KPMG Consulting observed problem resolution center personnel accessing both retail and wholesale orders from PAWS, RTT, MARCH and K2, all according to due date.</p>
14.7-1-7	The method for prioritizing orders in problem resolution system(s) is the same for retail and wholesale operations.	Satisfied	<p>Systems and methods that are used to assign priority to trouble tickets (RMAs, RTTs, rejected translations) in the provisioning centers are not differentiated by retail or wholesale operations.</p> <p>SOAC routes orders to the centers on a first-in, first-out basis. The centers prioritize work according to the critical dates appropriate to the center, as described below. When errors occur in the centers, they, too, are prioritized and worked by the appropriate critical date for that center.</p> <p>In PAWS, the critical date for POTS orders is the due date, while the critical date for designed services is the LAM date. Assignment consultants work the orders that are presented in a PAWS work list, and sort them by due date (for POTS orders) and LAM date (for designed services orders). The assignment consultants work the "specials" (designed services orders) first, and then work the POTS orders.</p> <p>In RTT, the critical date for designed services is the estimated engineering complete (EEC) date.</p> <p>In MARCH and K2, the critical date for rejected orders is the due date. Switch consultants work the orders by due date, and by the order in which calls come into the RCMAC.</p> <p>KPMG Consulting observed problem resolution center personnel accessing both</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			retail and wholesale orders from PAWS, RTT, MARCH, and K2, all according to due date.
14.7-1-8	Outputs from problem resolution system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>Resolved trouble tickets (RMAs, RTTs and rejected translations) re-enter the provisioning workflow at the point at which they fell out of the flow, and in the order in which they are resolved. All orders are prioritized by the critical dates described in 14-7-8 above, and there is no difference in Qwest's treatment of retail and wholesale orders.</p> <p>KPMG Consulting observed problem resolution center personnel accessing both retail and wholesale orders from PAWS, RTT, MARCH, and K2, all according to due date.</p>
14.7-1-9	Inputs to facilities system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>The LPC is responsible for processing facilities requests, such as cable and pair assignments and central office equipment assignments. The DSC is responsible for facilities assignments for designed services orders. SOAC routes the orders to the facilities systems, LFACS, SWITCH, and TIRKS, based on the order in which they are entered, and based on the critical dates assigned to the orders at order entry. No preference is given to retail or wholesale orders.</p> <p>KPMG Consulting observed LPC personnel accessing both retail and wholesale orders from LFACS, SWITCH, and TIRKS, according to critical date.</p>
14.7-1-10	The method for prioritizing orders in facility group system(s) is the same for retail and wholesale operations.	Satisfied	<p>Most orders are eligible for automated assignment, and do not require human intervention. For orders that require manual intervention, the execution of work in the LPC is driven by PAWS, which prioritizes POTS orders by due date, and designed services by LAM date. The delayed order group in the LPC monitors the RTT system, which tracks orders that are delayed because no facilities are available. The delayed order group's goal is to process all delayed orders on an "in today, out today" basis. No preference is given to retail or wholesale orders.</p> <p>KPMG Consulting observed LPC personnel accessing both retail and wholesale orders</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			from LFACS, SWITCH, and TIRKS, according to critical date.
14.7-1-11	Outputs from facilities system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>After orders receive assignments in LFACS and SWITCH, they flow back to SOAC to be routed to the next downstream provisioning process. RMAs are generated for orders that require manual intervention in the assignment process. Once RMAs are resolved, orders flow back to SOAC, to be routed to the next downstream provisioning process, in the order in which they are received.</p> <p>For designed services orders, TIRKS prioritizes orders by RID date. Orders that flow through TIRKS flow back to SOAC, to be routed to the next downstream provisioning process. Customer communications technicians process TIRKS orders that require manual intervention by RID date, and then flow back to SOAC to be routed to the next downstream provisioning process.</p> <p>SOAC processes the output from TIRKS, LFACS, and SWITCH, on a first-in, first-out basis, prioritized by due date. No preference is given to retail or wholesale orders.</p> <p>KPMG Consulting observed LPC personnel accessing both retail and wholesale orders from LFACS, SWITCH, and TIRKS, according to critical date.</p>
14.7-1-12	Inputs to engineering system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	<p>SOAC routes orders to TIRKS, from which a WORD document that describes the circuit makeup is automatically generated. If a circuit cannot be automatically generated, the DSC designs a circuit, and populates the WORD document with the circuit details. Once the WORD document is created, orders flow back to SOAC, to be routed to the next downstream provisioning process. Work is automatically routed by SOAC, and no preference is given to retail or wholesale orders.</p> <p>KPMG Consulting observed engineering center personnel accessing both retail and wholesale orders from TIRKS, according to critical date.</p>
14.7-1-13	The method for prioritizing orders in the engineering	Satisfied	Orders in the DSC are prioritized by RID date. Customer communications technicians

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>center for retail circuit provisioning system(s) is the same for retail and wholesale operations.</p>		<p>work the orders in TIRKS, according to the RID date, from earliest to latest, without regard for retail or wholesale origination. If a customer communications technician cannot design a solution, he or she opens an RTT ticket for engineering.</p> <p>The distribution of orders, and execution of work is prioritized according to the date and time that each order is received into engineering via TIRKS. When a retail or wholesale order flows to engineering via RTT, and cannot be completed immediately, an estimated engineering complete (EEC) date, and a ready for service (RFS) date, are assigned to the order.</p> <p>A group of quick response engineers is the first to see tickets in RTT. Tickets in a jeopardy status are prioritized first. Quick response engineers attempt to find a quick resolution to the ticket. If they cannot find a resolution, they route the tickets to a designed services engineer. The orders with the closest EEC and RFS are usually worked first, unless a special circumstance, such as an expedite or an escalation, requires a particular order to be worked first. No preference is given to retail or wholesale orders.</p> <p>KPMG Consulting observed engineering center personnel interacting with the same systems for both retail and wholesale orders. No preference is given to retail or wholesale orders.</p>
14.7-1-14	<p>Outputs from engineering system(s) are prioritized using the same method for retail and wholesale operations.</p>	Satisfied	<p>As an order is completed in TIRKS, it flows back to SOAC, to be routed to the next downstream provisioning process.</p> <p>In Outside Plant Designed Services Engineering, design engineers use automated tools to design solutions, and workflow products to hand off design documents to construction group personnel. The engineers track RTT tickets until an order is completely engineered, i.e., a solution has been designed, and construction is complete. The RTT ticket is then closed with respect to engineering, and control of the ticket is returned to the originator (either to the DSC or to the LPC).</p> <p>KPMG Consulting observed engineering</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			center personnel interacting with the same systems for both retail and wholesale orders. No preference is given to retail or wholesale orders.
14.7-1-15	Inputs to dispatch system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	WFA is the system used to dispatch technicians for both retail and wholesale orders. WFA-DI is used to dispatch work to the central office technicians. WFA-DO is used to dispatch outside technicians. Orders flow from SOAC into WFA as upstream provisioning steps are completed. KPMG Consulting observed dispatch center personnel access and process orders, and verified that the orders are prioritized by due dates without regard for retail or wholesale origination.
14.7-1-16	The method for prioritizing orders in dispatch system(s) is the same for retail and wholesale operations.	Satisfied	Load specialists are assigned, or "turfed," to geographic areas or to central offices. Within their turfs, the load specialists assign work to technicians, based upon due date and the technicians' loads and skill sets. No preference is given to dispatching retail or wholesale orders. In metro areas, a tool called Tech Load is used to automatically load work to outside technicians, based on geography, availability, and skill set. Orders that are not automatically loaded via Tech Load are loaded manually by load specialists, and are also prioritized by due date, with no preference given to retail or wholesale. KPMG Consulting observed dispatch center personnel accessing and processing orders, and verified that the orders are prioritized by due dates without regard for retail or wholesale origination.
14.7-1-17	Outputs from dispatch system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	Outputs from dispatch systems (WFA-DI and WFA-DO) are loaded to inside and outside technicians. The work is loaded based on due date and the technicians' loads and skill sets. KPMG Consulting observed dispatch center personnel interacting with the WFA-C and WFA-DO systems, and found that work is prioritized by critical date. No preference is given to retail or wholesale orders.
14.7-1-18	Inputs to inventory system(s) are prioritized using the same	Satisfied	The LARG processes RMAs that are generated by LFACS, when facilities cannot

Test Cross-Reference	Evaluation Criteria	Result	Comments
	method for retail and wholesale operations.		<p>be automatically assigned. RMAs are routed to the LARG by PAWS, and are driven by due date, without regard to retail or wholesale origin.</p> <p>The NSAC processes RMAs that are generated when orders do not flow through the CNUM system for telephone number assignment.</p> <p>KPMG Consulting observations revealed that, within PAWS, RMAs are prioritized according to due date.</p>
14.7-1-19	The method for prioritizing orders in inventory center system(s) is the same for retail and wholesale operations.	Satisfied	RMAs that are processed by service assurance technicians in the LARG, and by analytical associates in the NSAC, are prioritized according to due date. KPMG Consulting's observations revealed that work is prioritized without regard for retail or wholesale origination.
14.7-1-20	Outputs from inventory system(s) are prioritized using the same method for retail and wholesale operations.	Satisfied	KPMG Consulting interviews with Qwest SMEs revealed that when the LARG and NSAC resolve an RMA, the order, which includes assigned facilities and telephone number, automatically re-enters the provisioning flow. It is then directed by SOAC to downstream provisioning systems/processes. When the LARG adds switch inventory into the inventory database, the new inventory is available to be automatically or manually assigned to retail and wholesale orders. When the LARG performs load balancing on switches, the inventory is available in SWITCH, to be assigned to retail or wholesale orders without discrimination.
14.7-1-21	Wholesale order processing center(s) are organized with personnel who have the same abilities and skill sets as those for retail centers.	Satisfied	<p>KPMG Consulting observed both retail and wholesale order typists. The skill sets required of the order processing staff are the same for retail and wholesale.</p> <p>KPMG Consulting observed that the training received by both groups is in parity. Training is provided for the specific order entry system that a typist uses, by product group.</p>
14.7-1-22	The execution of work in the translation center(s) is the same for retail and wholesale operations.	Satisfied	Work completed in the RCMAC is driven by due date, and is executed in the same manner for both retail and wholesale orders. RCMAC personnel are not readily able to distinguish whether work is related to

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>wholesale or retail operations.</p> <p>KPMG Consulting observed switch consultants performing their work, translating both retail and wholesale orders and found no differentiation in processes.</p>
14.7-1-23	The translation center(s) are organized with personnel who have the same abilities and skill sets for retail as wholesale.	Satisfied	KPMG Consulting observed RCMAC staff (switch consultants) perform translations for retail and wholesale orders and found no differentiation in processes. Switch consultants receive an initial five-week training that is switch-specific, followed by a "nesting" period, during which new switch consultants sit with experienced consultants.
14.7-1-24	Hours of operations for translation center(s) are the same for retail and wholesale operations.	Satisfied	<p>All RCMACs perform translations for retail and wholesale orders.</p> <p>The hours of operation are generally Monday through Friday, from 6:00 or 7:00 AM, until 10:00 PM, and Saturdays, from 6:00 or 7:00 AM, until 7:00 PM.</p> <p>In addition to the hours above, the Des Moines and St. Paul RCMACs are also open on Sundays from 8:00 AM until 5:00 PM.</p> <p>The Boise nighttime RCMAC is responsible for handling work across all 14 states when the regional RCMACs are closed.</p>
14.7-1-25	The execution of work in the problem resolution center(s) is the same for retail and wholesale operations.	Satisfied	<p>Provisioning problems are resolved for both retail and wholesale orders in the following centers: LPC, DSC, LARG, NSAC and RCMAC. Problems are resolved in the LPC, NSAC and LARG via RMAs, which are routed by PAWS, and prioritized by due date. RCMAC personnel resolve rejected translations by working rejects that MARCH or K2 prioritize by due date. In all centers, problem resolution is prioritized by critical dates.</p> <p>KPMG Consulting observed problem resolution center personnel interacting with the same systems and processing work in the same manner for both retail and wholesale orders.</p>
14.7-1-26	The problem resolution center(s) are organized with personnel who have the same abilities and skill sets for retail and wholesale operations.	Satisfied	<p>Personnel in the LPC, DSC, LARG, NSAC, and RCMAC work on both retail and wholesale orders. All personnel receive the same training, as the same systems are used for retail and wholesale orders.</p> <p>KPMG Consulting observed Qwest</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			personnel who work in these centers process both wholesale and retail orders. KPMG Consulting reviewed training curricula and materials, which apply to both wholesale and retail operations.
14.7-1-27	Hours of operation for problem resolution center(s) are the same for retail and wholesale operations.	Satisfied	<p>Personnel in the LPC, DSC, LARG, NSAC, and RCMAC work on both retail and wholesale orders. Thus, the hours of operation are identical for retail and wholesale orders.</p> <p>The LPC hours of operation are listed in 14.7-1-35. The DSC hours of operation are listed in 14.7-1-38. The RCMAC hours of operation are listed in 14.7-1-29.</p> <p>The NSAC hours of operation are 6:00 AM until 10:00 PM, Monday through Friday. The LARG hours of operation are 7:00 AM until 6:00 PM, Monday through Friday.</p>
14.7-1-28	The execution of work in facilities center(s) is the same for retail and wholesale operations.	Satisfied	<p>The work of Assignment Consultants and Facilities Specialists in the LPCs is distributed by PAWS, and is based on due dates. In the execution of the work, no consideration is given to retail versus wholesale origination.</p> <p>KPMG Consulting observed LPC personnel conducting their day-to-day work, which included using the 'next work' function in PAWS. This system is used to retrieve the next work item, which is based on its due date.</p>
14.7-1-29	The facilities center(s) are organized with personnel who have the same abilities and skill sets for retail and wholesale operations.	Satisfied	<p>The same Assignment Consultants and Facilities Specialists process both retail and wholesale orders.</p> <p>New Assignment Consultants attend five weeks of initial classroom training, and two additional weeks of on-the-job training. They then attend five additional weeks of classroom training. Facilities Specialists attend five weeks of training.</p>
14.7-1-30	Hours of operation for facilities center(s) are the same for retail and wholesale operations.	Satisfied	<p>LPCs process both retail and wholesale orders. The hours of operation are the same for retail and wholesale orders.</p> <p>Ten LPCs operate within Qwest's fourteen-state region. KPMG Consulting visited LPCs in Seattle, WA, Salt Lake City, UT, and St. Paul, MN. The LPCs operate Monday through Saturday, from approximately 7:00 AM until 7:00 PM.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Shifts vary by region, and hours of operation may be extended according to seasonal demand. Managers carry pagers, and are available 24 hours a day, seven days per week, in the event of an emergency.
14.7-1-31	Execution of work in the engineering center(s) is the same for retail and wholesale operations.	Satisfied	Engineering work is driven by critical dates, such as Estimated Engineering Complete (EEC) and Ready for Service (RFS) dates. Engineers are measured on turning up circuits within specified intervals, by meeting the dates and appointment times on the orders. No bias is given to retail versus wholesale orders. KPMG Consulting observed engineers performing design work that was driven by EEC and RFS dates.
14.7-1-32	Engineering center(s) are organized with personnel who have the same abilities and skill sets for retail and wholesale operations.	Satisfied	KPMG Consulting observed engineers in the Seattle, WA, Denver, CO, and Des Moines, IA DSCs. The engineers in Seattle and Denver design services for retail customers in their geographic regions. Engineers in the Des Moines DSC design services for all CLEC-originated designed services orders, as well as for retail customers in their geographic region. KPMG Consulting interviews with Qwest SMEs revealed that new engineering staff members, who process either wholesale or retail orders, attend basic T1 circuit design training, followed by a nesting period of on-the-job training with an experienced designer. When they are ready for more advanced work, engineers progress to T3 training.
14.7-1-33	Hours of operation for Engineering center(s) are the same for retail and wholesale operations.	Satisfied	KPMG Consulting visited the Des Moines, IA DSC, at which engineers service both retail and wholesale orders for designed services. The center's hours of operation are Monday through Friday, from 7:00 AM until midnight for the design group, and from 7:00 AM until 7:00 PM for the implementation group. There is no difference in the hours of operation for designing services for retail or wholesale orders.
14.7-1-34	The execution of work in the dispatch center(s) is the same for retail and wholesale operations.	Satisfied	LRACs and CORACs dispatch work using WFA-DI (for central office technicians) and WFA-DO (for field technicians), based on order due dates. The centers dispatch

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>technicians for both retail and wholesale orders by due date.</p> <p>KPMG Consulting observed both LRAC and CORAC Load Specialists dispatching provisioning orders. The Load Specialists pull work lists from WFA and work them in due date order. Dispatches were based on specific geographic regions, and on due dates. No preference was given to retail or wholesale orders.</p>
14.7-1-35	Dispatch center(s) are organized with personnel who have the same abilities and skill sets for retail as wholesale operations.	Satisfied	<p>As load specialists in the LRACs and CORACs dispatch technicians for both retail and wholesale orders, there is no difference in the abilities and skill sets for personnel working retail and wholesale orders.</p> <p>New load specialists, who process both retail and wholesale orders, receive on-the-job training, as well as an initial "nesting" period, during which they sit with experienced Load Specialists. A Load Specialist training course is available from the Network Training and Development department, and is two to three weeks in duration.</p>
14.7-1-36	Hours of operation for dispatch center(s) are the same for retail and wholesale operations.	Satisfied	<p>LRACs and CORACs dispatch technicians for both retail and wholesale orders. There is no difference in the hours of operations for retail and wholesale operations.</p> <p>KPMG Consulting visited LRACs and CORACs in the following cities, with the following hours of operation, and functions:</p> <p><u>CORAC</u></p> <p>Minneapolis, MN –</p> <ul style="list-style-type: none"> • Operational 24 hours a day, 7 days a week. This center supports the Minneapolis Designed Services LRAC when the LRAC is closed. <p>Seattle, WA –</p> <ul style="list-style-type: none"> • Operational 24 hours a day, 7 days a week. This center supports the Seattle LRAC when the LRAC is closed. <p><u>LRAC</u></p> <p>Minneapolis, MN –</p> <ul style="list-style-type: none"> • Mass Market LRAC Operational Monday through Friday.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>4:30 AM until 8:00 PM. Off hours support is provided by the Phoenix, AZ LRAC.</p> <ul style="list-style-type: none"> • Designed Services LRAC Operational Monday through Friday, 4:30 AM until 8:00 PM. Off hours support is provided by the Minneapolis, MN CORAC. <p>Seattle, WA –</p> <ul style="list-style-type: none"> • Designed Services LRAC Operational Monday through Friday, 7:00 AM until 7:00 PM, and Saturday, 8:00 AM until 5:00 PM. Off hours support is provided by the Phoenix, AZ LRAC. <p>Salt Lake City, UT –</p> <ul style="list-style-type: none"> • Designed Services LRAC Operational Monday through Friday, 7:00 AM to 12:00 midnight, and Saturday, from 8:00 AM to 5:00 PM. Off hours support is provided by Phoenix, AZ LRAC. <p><u>Combined CORAC/LRAC</u></p> <p>Ft. Collins, CO –</p> <ul style="list-style-type: none"> • Operational 24 hours a day, 7 days a week. This center dispatches inside and outside technicians.
14.7-1-37	The execution of work in inventory center(s) is the same for retail and wholesale operations.	Satisfied	<p>The LARG, within the NROC, receives RMAs that are generated by LFACS, and processes them on a first-in, first-out basis. RMAs flow into the LARG via the PAWS system. PAWS routes work based on due dates. Service assurance technicians in the LARG are turfed by wire center. The same systems are used for both retail and wholesale orders.</p> <p>The NSAC is responsible for telephone number, Centrex, and direct inward dial (DID) administration. The analytical associates in the NSAC process RMAs that are routed to the NSAC by PAWS. PAWS prioritizes the work by due date, and presents the work items to analytical associates via the system's 'next work' function.</p> <p>KPMG Consulting observed inventory center personnel interacting with the same systems, and processing work in the same</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			manner, for both retail and wholesale orders.
14.7-1-38	Inventory center(s) are organized with personnel who have the same abilities and skill sets for retail and wholesale operations.	Satisfied	<p>Personnel at the NROC and the NSAC perform network inventory functions on the Qwest network. Personnel are the same for both retail and wholesale inventory functions. The same systems are used for both retail and wholesale operations.</p> <p>KPMG Consulting reviewed the following training manuals:</p> <ul style="list-style-type: none"> • NTD Course 6010, Initial Training Telephone Number Assignment • NTD Course 6012, RMA Resolution.
14.7-1-39	Hours of operation for inventory center(s) are the same for retail and wholesale operations.	Satisfied	<p>Switch and telephone number inventory functions are handled by the LARG and SARG (part of the NROC), and the NSAC, respectively. Qwest's two NROCs are located in Denver, CO and Plymouth, MN.</p> <p>The centers are aligned geographically, and perform the following functions: line administration, switch capacity administration, and Centrex/DID administration. Both centers perform inventory functions in support of both retail and wholesale business. There is no difference in the hours of operation for retail and wholesale operations.</p> <p>Qwest's NSAC, located in Albuquerque, NM, services all fourteen states. The NSAC's hours of operation are 6:00 PM until 10:00 PM, Monday through Friday.</p> <p>The LARG's hours of operation are 7:00 AM until 6:00 PM, Monday through Friday.</p>
14.7-1-40	M&Ps used in the translations center are the same for retail and wholesale operations.	Satisfied	RCMACs perform translations for both retail and wholesale orders. The RCMAC's M&Ps are available via E-Media on the Qwest Intranet. KPMG Consulting documentation reviews revealed that no difference exists in the M&Ps that are used for retail and wholesale translations.
14.7-1-41	M&Ps used in the problem resolution center are the same for retail and wholesale operations.	Satisfied	KPMG Consulting documentation reviews revealed that the LPCs, RCMACs, DSCs, and ISCs use the same M&Ps for both retail and wholesale orders. RTT is the system used to track facilities related trouble tickets for designed services orders. Delayed wholesale orders are processed in the same manner as delayed retail orders. RMAs

Test Cross-Reference	Evaluation Criteria	Result	Comments
			generated by LFACs and/or SWITCH are also processed in the same way, regardless of whether they are related to retail or wholesale orders. The process is also consistent for escalating a retail or wholesale order.
14.7-1-42	M&Ps used in the facilities center are the same for retail and wholesale operations.	Satisfied	Facility assignments are performed by the LPC for POTS orders, and by the DSC for designed services orders. M&Ps used by the facilities specialists in the LPCs and DSCs are produced and maintained by the process staff, and are the same for retail and wholesale orders. The M&Ps are stored on InfoBuddy and E-Media on the Qwest intranet. KPMG Consulting observed that staff in the DSC have access to M&Ps via Qwest's intranet.
14.7-1-43	M&Ps used in the engineering center are the same for retail and wholesale operations.	Satisfied	M&Ps are produced and maintained by the engineering process staff, and are standardized across engineering centers. The M&Ps are stored on E-Media and on the Network Complex Services homepage. KPMG Consulting reviewed and observed the screener process for designers and implementers in the DSC, and found no differences in the M&Ps used for retail and wholesale orders.
14.7-1-44	M&Ps used in the dispatch center are the same for retail and wholesale operations.	Satisfied	M&Ps for the LRACs and the CORACs are maintained by the process staff, and are available on Qwest intranet-based applications, such as Canyon 6 (a Lotus Notes based system), E-Media, and InfoBuddy. The same M&Ps are used for retail and wholesale operations. KPMG Consulting reviewed the CORAC loading priorities 2001 and found no differences in the M&Ps used for retail and wholesale orders.
14.7-1-45	M&Ps used in the inventory center are the same for retail and wholesale operations.	Satisfied	M&Ps used by LARG personnel are the same for retail and wholesale operations. The M&Ps are maintained by the Lead Technical Support Engineers in Denver, CO and Plymouth, MN. Standard documentation for the SWITCH system is available from the system vendor.
14.7-1-46	Processes for evaluating and adjusting system infrastructure	Satisfied	The responsibility for ensuring that service centers have the necessary system

Test Cross-Reference	Evaluation Criteria	Result	Comments
	utilization, based on current and forecasted volumes are the same for wholesale and retail operations.		<p>infrastructure available to meet work demand rests with the directors of the various centers, and is the same for wholesale and retail operations. Center directors receive input from Wholesale Finance, which is responsible for taking CLEC provided information, historical information from product management, and other relevant information, and developing an overall forecast for each period. This forecast is provided to Qwest organizations that include Service Delivery for staffing scalability, Information Technology (IT) for systems scalability, and Network for network planning.</p> <p>To requisition equipment such as personal computers and printers, center directors follow processes that are defined by Qwest's IT department.</p>
14.7-1-47	Processes for evaluating and adjusting equipment utilization, based on current and forecasted volumes, are the same for wholesale and retail operations.	Satisfied	<p>KPMG Consulting interviews with Qwest SMEs revealed that the responsibility for ensuring that service centers have the necessary system infrastructure available to meet work demand rests with the directors of the various centers, and is the same for wholesale and retail operations. The center directors use input from the Wholesale Finance department to develop their forecasts. Wholesale Finance is responsible for assimilating CLEC-provided information, historical information from product management, and other relevant information into an overall forecast for each period. This forecast is provided to Qwest organizations that include Service Delivery for staffing scalability, IT for systems scalability, and Network for network planning.</p> <p>To requisition office supplies the center directors follow the standard processes for requisition and procurement.</p>
14.7-1-48	Processes for evaluating and adjusting office space utilization, based on current and forecasted volumes, are the same for wholesale and retail operations.	Satisfied	<p>KPMG Consulting interviews with Qwest SMEs revealed that the responsibility for ensuring that service centers have the necessary office space available to meet work demand rests with the directors of the various centers, and is the same for wholesale and retail operations. The center directors receive input from the Wholesale Finance department, which is responsible</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>for assimilating CLEC provided-information, historical information from product management, and other relevant information into an overall forecast for each period. This forecast is provided to Qwest organizations that include Service Delivery for staffing scalability, IT for systems scalability, and Network for network planning.</p> <p>To change a center's office space allocation, the center director must justify his or her request for additional resources by preparing a business case. This business case is presented to his or her respective vice president(s) for approval. Once approved, the Qwest Real Estate organization assists in securing additional space.</p>
14.7-1-49	Processes for evaluating and adjusting personnel utilization, based on current and forecasted volumes, are the same for wholesale and retail operations.	Satisfied	KPMG Consulting interviews with Qwest SMEs revealed that each center's load and resource manager (LRM) develops a resource plan for the center's discrete functional areas, to identify resource availability for each month of the year. Monthly staff resource requirements forecasts are directly related to monthly service order volume forecasts. The forecasts for both retail and wholesale operations are assessed and recalculated monthly, based on forecast-to-actual analyses.
14.7-1-50	Processes for incorporating capacity management plans into the business plan are the same for wholesale and retail operations.	Satisfied	KPMG Consulting interviews with Qwest SMEs revealed that capacity management is a component of the annual budgeting process, and is the same for wholesale and retail operations. Center directors provide their vice presidents with resource forecasts during this budgeting process. Budgets are approved on a yearly basis. If a center director needs to requisition additional human or other resources at some point during the fiscal year, he or she prepares and presents a business case to his or her vice president.

14.8. Test Results: Provisioning Coordination Process Evaluation (Test 14.8)

1.0 Description

The Provisioning Coordination Process Evaluation was a review of Qwest's procedures, processes, and operational environment used to support coordinated provisioning with Competitive Local Exchange Carriers (CLECs). This evaluation examined products that require coordinated provisioning, the intent of which is to minimize end-use customer disruption during provisioning of services. An order that requires collaboration between Qwest and a CLEC, as dictated by either Qwest policy, or by CLEC request, necessitates a requirement for coordination.

An operational analysis test approach was used to evaluate Qwest's provisioning coordination processes. This analysis consisted of targeted interviews with key Qwest personnel and CLEC volunteers, along with structured reviews of Qwest process documentation, and on-site observations at Qwest centers that support the coordination process. The evaluation objectives were as follows:

- Determine the completeness and consistency of Qwest's provisioning coordination processes
- Determine whether Qwest's provisioning coordination processes are correctly documented, maintained, and published
- Determine the accuracy, completeness, and functionality of Qwest's procedures for measuring, tracking, forecasting, and maintaining provisioning coordination process performance
- Determine if Qwest's provisioning coordination processes include effective management oversight, and whether Qwest's personnel adhere to documented processes
- Determine if responsibilities for performance improvement are defined and assigned.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest operates the Qwest CLEC Coordination Center (QCCC), and the Design Service Center (DSC), to process CLEC orders that require coordinated provisioning. These centers distribute and process orders, based on service type.

2.1.1 Organization of Centers

The QCCC is a newly established organization, located in Omaha, Nebraska, that became operational on April 26, 2001. The QCCC handles provisioning coordination throughout Qwest's fourteen state footprint, and is organized into six functional groups:

Screening - This group reviews orders for accuracy, and assigns them to individual coordinators and Customer Communications Technicians Implementor (CCT-I). CCT-Is are occupational resources, who coordinate Integrated Pair Gain/Integrated Digital Loop Carrier⁶⁰ (IPG/IDLC) orders. Screeners balance daily workloads between coordinators and CCT-Is.

New Loop – This group coordinates new installation activities with other Qwest organizations and CLECs, through to order completion.

Reuse Installations (Hot Cuts) – This group coordinates the reuse of facility installation activities with other Qwest organizations and CLECs, through to order completion.

IPG/IDLC – This group is comprised of CCTs, who have a thorough technical understanding of the complexity of IPG/IDLC issues. They verify design documents for accuracy, and ensure timely dispatch of Central Office Technicians (COTs) by the Central Office Resource Administration Center (CORAC), and of field technicians by the Load Resource Administration Center (LRAC).

Warranty and Testing – This group includes Subject Matter Experts (SMEs), who have a thorough technical understanding of the complexity of maintenance and testing for Unbundled Loops. This team is responsible for supporting CLECs with coordinated installations at an agreed upon date and time.

Large Projects – This group facilitates and coordinates optimum cut times for large projects (25 lines or more) with other Qwest organizations and CLECs.

The DSC is located in Des Moines, Iowa. The DSC handles provisioning coordination throughout Qwest's fourteen state footprint, and is organized into three functional groups:

Designers – This group is responsible for designing all Unbundled Loop orders.

Implementors – This group is responsible for implementing, testing, and coordinating Unbundled Hi Cap and Basic Unbundled orders.

Tata – The DSC is also involved in an outsourcing arrangement with the Indian firm, Tata. Tata is responsible for assisting Qwest with Hi Cap design of basic T1 lines.

The Qwest coordinated provisioning process is a collaborative effort between the CLEC and key Qwest organizations. The organizations that support this process are:

- Interconnect Service Center (ISC)
- Loop Provisioning Center (LPC)
- DSC
- QCCC
- Recent Change Memory Administration Center (RCMAC)

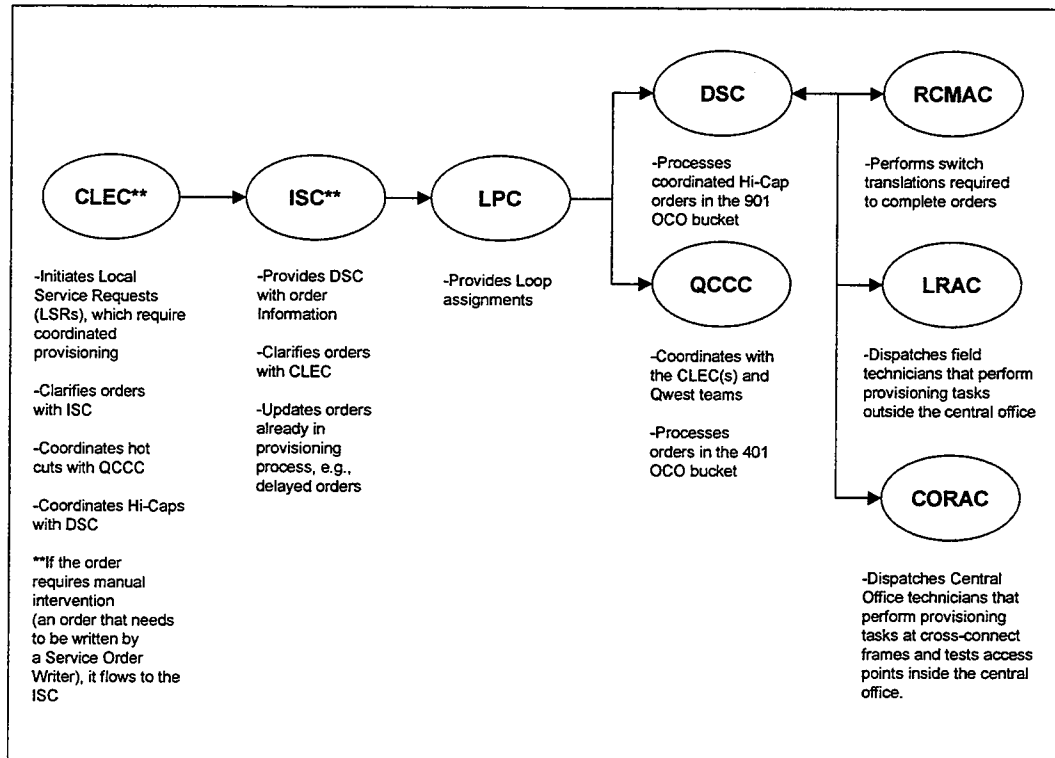
⁶⁰ Integrated Pair Gain – Multiplexing a variable number of phone conversations over a lesser number of physical facilities.
Integrated Digital Loop Carrier – Access equipment that extends central office services.

- Load and Resource Allocation Center (LRAC)
- Central Office Resource Allocation Center (CORAC).

2.1.2 Coordinated Provisioning Process

Qwest’s order process flow for working CLEC orders that require coordination is depicted in figure 14.8-1:

Figure 14.8-1: Qwest’s Coordinated Provisioning Process



To request and begin the coordinated provisioning process, a CLEC submits an order via Interconnect Mediated Access (IMA) GUI (Graphical User Interface) or IMA EDI (Electronic Data Interchange), or via the Integrated Information Server (IIS). For those orders submitted utilizing IMA, the CLEC selects an option for a coordinated install. A Universal Service Order Code (USOC) for a coordinated install is then assigned to the order. The order flows from IMA or IIS to the Service Order Processor (SOP). From SOP, the order is routed to Service Order Access and Control (SOAC), which is responsible for routing the order to all necessary downstream provisioning centers that perform provisioning activities. These include assignment, translation, circuit design, circuit provisioning, and test and turn up.

During the circuit design process, a Work Order Record Detail Document (WORD.doc) is created, either automatically, in the Trunk Integrated Record Keeping System (TIRKS), or by a designer, in the DSC. The WORD.doc and associated order details flow into Work Force Administration (WFA) for provisioning by the Implementor in the QCCC. The WORD.doc is used as a reference document by Qwest personnel, as it contains information as to whether or not the order requires a coordinated install. Overall Control Office (OCO)⁶¹ codes are defined in WFA, and designate the center responsible for order processing. The 901 OCO code represents the Des Moines, Iowa DSC, and the 401 OCO code represents the QCCC. Each center monitors and manages the work in its respective OCO work queue.

Qwest employs a process team dedicated to process and performance improvement initiatives at the QCCC. This process team, along with WFA system administrators, has initiated a revised work flow to route orders directly to the QCCC. Qwest's long-term plan is to continue to process basic unbundled services orders from across the entire Qwest footprint at the Des Moines, Iowa DSC.

QCCC occupational resources fall into three categories: screeners, coordinators, and CCT-Is. The screener assigns an order via a manual process. The process of assigning an order is defined as distributing orders to coordinators and CCT-Is. A screener scans the WORD document and service order for accuracy, including verifying facility assignments, order type, and local contact information. The screener attempts to resolve any errors that are discovered in the order. Once the order is verified for accuracy, a screener assigns it to the coordinators and CCTs. The order can be assigned to one of three groups: new loop team, re-use (hot cut), or IPG/IDLC. If the screener discovers the presence of a large number of orders for the same CLEC, at the same CO, at the same time, then the screener may attempt to renegotiate start times for one or more orders, in order to improve operational efficiency.

Coordinators are divided into one of two primary workgroups: new loop, and hot cut. Coordinator responsibilities include performing additional order screening, coordinating hot cuts, and provisioning new Unbundled Loop circuits. CCTs manage the IPG/IDLC workgroup orders, and are trained in high capacity circuit design and testing.

A screener assigns an order to coordinators and CCTs on the Work Start Date (WSD)/SCR critical date, which is Design Verify and Assign (DVA) minus one day. For those orders that are partially complete, and, therefore, require additional work, the screener can assign the order three to five days prior to its due date. The WFA-C system places date- and time-stamps on the handoff from screener to coordinator. The Operational Support System List (OSSLIST) screen in WFA-C displays orders that have been assigned to coordinators.

A "drop-in" is an order that arrives in the QCCC within two days of its due date. Due to resulting time constraints, a screener either coordinates the drop-in, or assigns the order immediately to an available coordinator or CCT.

⁶¹ The Overall Control Office is a designation in the Work Force Administration-Control (WFA-C) system for the center that is responsible for an activity or set of activities.

The QCCC serves as the OCO for all coordinated unbundled loops, new loops, and hot cuts. As a result, the QCCC monitors each installation through to its completion. The QCCC is responsible for guaranteeing the successful installation of Unbundled Loop service for customers wishing to establish communication services on facilities owned by Qwest, but leased by CLECs. The installation process is a collaborative effort between the QCCC and the CLEC.

2.1.2.1 Workflow Process for DS0 and Below Services Requiring Coordination

The following designed services are provisioned by the QCCC:

- Analog Loop
- Non-Loaded Loop
- Asymmetric Digital Subscriber Line (ADSL) Compatible Loop
- Basic Rate Integrated Services Digital Network (ISDN) Loop
- Digital Subscriber Line (xDSL) Capable Loop.

QCCC designed services requiring coordination are processed by new loop and hot cut teams. Screeners and coordinators, who are members of these teams, perform work in the sequence described below.

Screeners – Incoming orders are sent to Screeners via WFA-C. Using this system, screeners review these orders and distribute them by due date to either new loop, hot cut, or IPG/IDLC workgroups, based on order attributes and work load balancing considerations. OSSLST displays all orders that require processing. A screener, therefore, distributes an order to coordinators by referencing the OSSLST screen tables within WFA. An order is date- and time-stamped to indicate when a screener distributes it.

New Loop Coordinators – New Loop orders involve wiring the assigned facilities from Qwest's termination point to the CLEC's collocation equipment. Qwest defines collocation as the leasing of central office (CO) space to the CLEC for placement of its equipment. New loop coordinators receive new installation orders in WFA-C, and begin the process for executing a new installation order. Coordinators review the order for accuracy, and for DVA date closure⁶². DVA is the critical date on which the CORAC dispatches COTs to perform the following tasks:

- Verify receipt and accuracy of design
- Verify receipt and accuracy of plug-in equipment
- Complete and test CO wiring (this includes optioning plug-ins, alignment, and frame-to-frame continuity)
- Verify that Outside Plant (OSP) construction personnel have placed and tested required facilities
- Conduct continuity check from CO premise
- Ensure frame-to-frame continuity

⁶² Closure refers to the process of determining that a task is complete.

- Verify Transmission levels
- Verify required operational signal.

Coordinators are responsible for verifying that all DVA work steps are complete. DVA verification is done the day after the DVA date. If the DVA date has not been closed, the coordinator immediately escalates the order to the CORAC. Coordinators log work steps into the WFA Operational Support Systems Log (OSSLOG), and are also responsible for the pre-survey and due date work steps, which are described in detail below.

Pre-survey events are performed in the field for all New Loop and IPG/IDLC orders. The purpose of pre-survey events is to ensure that properly conditioned, properly working Qwest facilities are available. These events involve connection and disconnection verification, cable pair verification, coordination with internal centers, and information exchange with the CLEC. By pre-surveying prior to the due date (DD), Qwest can provide the CLEC with a Firm Order Confirmation (FOC), and help ensure the successful completion of coordinated installations on the due date.

The order Application (APP) date is the date on which Qwest receives a valid LSR, and can issue a service order. The coordinator must ensure that the pre-survey process is not being worked more than forty-eight hours prior to the order APP date. The coordinator is also responsible for monitoring an order prior to its DD, to ensure that the pre-survey process is completed, as intended, on the Record Issue Date (RID). RID is the date on which the DSC is to distribute the WORD.doc to the necessary provisioning centers. Generally, the RID occurs on the day after the APP date.

The coordinator is also responsible for confirming that the circuit meets customer requirements. This is accomplished by verifying that a field technician entered the test results into WFA-C, and by cross-referencing actual results against expected results. Once WFA-C is updated with results data, the coordinator enters the pre-survey date into the OSSOI screen in WFA-C. It is then that the field technician is “loaded” with the order by the LRAC, and enters the test results of the circuit into the WFA-C OSSLOG.

DD events for new loop orders involve final verification of correct order status, a pre-call to the CLEC for notification of a new install, new installation, CLEC dial-tone verification, CLEC notification of completion, and order completion in Qwest’s internal systems.

Hot Cuts Coordinators – Hot cut orders involve ‘lifting’ the loop from its current termination, and ‘laying’ it on a new termination that connects to the CLEC’s collocation equipment. Coordinators receive hot cut orders via WFA-C, and begin the process of executing a re-use installation order. Coordinators review the order for accuracy, and ensure that the DVA date has been completed. If a coordinator finds that the DVA date is not completed, the order is immediately escalated to the CORAC. Coordinators log work steps into the OSSLOG.

Coordinators are also responsible for DD events. DD events for hot cut orders involve final verification of order status, a pre-call to the CO, a pre-call to the CLEC, lift and lay, dial-tone verification, notification of completion, and order completion in Qwest’s internal systems.

2.1.2.2 Workflow Process for DSI Services and Above Requiring Coordination

The following designed services are provisioned by the QCCC and DSC:

- DS1 Unbundled Loop
- DS3 Capable Loop

A screener from the Implementation Group at the DSC distributes orders that are assigned to the 901 OCO work queue. The 901 OCO work queue only includes Hi Cap Coordinated Installations. Orders for Hi Caps are worked by a dedicated pool of six CCTs in the DSC. The screener assigns and distributes orders that require completion at the DSC, based on available CCT by location and product. Once an order is screened, WFA displays it to the CCT for order completion. When a CCT completes the Work Start Date (WSD) on the order in WFA, it flows downstream to a field technician. The screener conducts handoffs to both the CORAC and the LRAC, as required. Screeners and coordinators at the QCCC perform the following work:

Screeners - Screeners preview incoming orders in WFA-C, and prioritize them by due date. They also distribute orders to the IPG/IDLC team, based on order attributes and load balancing considerations. A screener distributes orders to coordinators through OSSLST screen tables within WFA. To reflect when they are distributed, orders are date- and time-stamped.

IPG/IDLC (CCTs) - An IPG/IDLC is a type of Re-use order, for which the cut, from Qwest facilities to CLEC facilities, is made at the crossbox, rather than at the CO, as for most coordinated Re-use orders. This type of order makes coordination with the outside field essential, both before and on the due date.

A Qwest field technician is required to accompany the CLEC to provide implementation support. WFA-C sends and displays an IPG/IDLC order to the CCT, from which the CCT begins the process of completing the order. Coordinators review the order for accuracy, and for DVA date closure. If the DVA date is not closed, the CCT immediately escalates the order to the CORAC. CCTs are responsible for logging work steps into the OSSLOG. Additional responsibilities of the CCTs are: Pre-survey events, which include connection and disconnection verification, cable pair verification, coordination with internal centers, and information exchange with the CLEC.

DD events for IPG/IDLC orders include final verification of correct order status, pre-call to the CLEC, dial tone verification, notification of completion, and order completion in Qwest's internal systems. CCTs may perform additional testing that is not performed by coordinators. This additional testing is performed at the CLEC's request, as dictated by the specified USOC on the order.

Designed services that contain order entry errors are handled by service order writers at the ISC. Once processed by the ISC, the order is sent to the DSC for either order completion, or for distribution to the QCCC. Designed services requiring Hi Cap coordination and basic service are completed at the DSC. With the exception of Hi Caps, designed services that require coordination are completed at the QCCC by the IPG/IDLC team.

The ISC handles resale service order typing and delayed orders that require manual intervention. The ISC supports any product ordered via a LSR.

In general, if a CLEC's order becomes delayed, a Referral Tracking Tool (RTT) ticket is created, the delayed order team at the ISC tracks the order until it leaves RTT (i.e., status is "closed" in RTT), and the order is completed in WFA (i.e., status is "accepted" by the customer). RTT is a system used by all Qwest organizations that monitor delayed orders. If an order is delayed, the delayed order group notifies the CLEC within four hours. The delayed order group is required to enter notes into the GCNOTE screen in TIRKS as an audit and control mechanism to help ensure that CLECs are being notified. When engineering personnel enter information in RTT regarding the actions to be taken to resolve the cause of the order's delay, the ISC contacts the customer again to provide an update.

2.1.3 Center Hours of Operation

The QCCC operates Monday through Friday, from 7:00 AM to 9:00 PM CST, with four work shifts per day. After-hours emergency contacts and/or the shift manager are designated on a rotating basis, and carry duty pagers.

The DSC's hours of operations vary by department. The design group is operational Monday through Friday, from 7:00 AM to 12:00 AM CST. The implementation group is operational Monday through Friday, from 7:30 AM to 7:00 PM CST.

2.1.4 Methods and Procedures

The QCCC methods and procedures (M&Ps) are documented and available to employees via the Network Complex Services (NCS) Web site, Emedia, and the intranet. M&Ps include job aids, escalation processes, and QCCC workflow processes. Process staffs exist for both product and center M&Ps, and are responsible for updating and publishing changes and additions to the M&Ps, and sending e-mails communicating changes to the affected teams. A team lead is responsible for ensuring that screeners, coordinators, and CCTs read and understand the changes.

QCCC M&Ps are established for both internal and external escalations processes. The escalation processes state that a coordinator, who calculates that an unbundled loop order is in jeopardy, or potentially may be in jeopardy, of being missed, is responsible for initiating internal or external escalation to ensure that the installation is executed by the scheduled time.

The DSC accesses M&Ps through Emedia. InfoBuddy is utilized for company wide news, or as an occasional reference tool. The management team conducts weekly meetings with the Corporate Process team to discuss general processes and work performance. If a given M&P is changed, it is discussed in the weekly meeting. The management team then communicates these changes to the implementers through email, voicemail or add it as an agenda item to discuss during their weekly team meeting.

2.1.5 Systems

Qwest utilizes several systems to manage orders that require coordinated provisioning. The primary systems used, and the functions of each, are listed in table 14.8-1.

Table 14.8-1: Qwest Systems Used for Coordinated Provisioning

System	Function(s) Performed
Work Force Administration – Control (WFA-C)	Qwest systems application used for tracking the workflow of coordinated orders.
Work Force Administration – Dispatch Out (WFA-DO)	Tracking the workflow of coordinated orders that are dispatched to field technicians.
Work force Administration – Dispatch In (WFA-DI)	Tracking the workflow of coordinated orders that are dispatched to central office technicians.
Network Complex Service (NCS) Website, Emedia, QCCC intranet, and InfoBuddy	Storage repositories for online coordinated provisioning M&Ps documentation.
Loop Maintenance Operations System (LMOS)	Qwest application used for maintaining POTS records.
Trunk Integrated Record Keeping System (TIRKS)	Qwest application used to show design records in addition to passing that information into WFA-C via a WORD document.
System for Coordinated Installation, CLEC Support, and Order Resolution (SCICSOR)	Database utilized by screeners and coaches to provide verification of work assigned by service representative, LSR and order number detail, and ‘close out’ order information. It is utilized to measure performance of order processing.

2.1.6 Training & Support

Occupational staffs at the QCCC and DSC attend an initial four-week informal on site training course that focuses on Qwest products and systems. The majority of training is through on-the-job experience, and through mentoring by experienced staff members. On occasion, additional training is available from the Qwest Marketing Team for new product road shows.

The *Unbundled Initial Training* (Version 2.0) manual serves as a reference tool to augment the initial four-week training that QCCC coordinators are given. It provides them with basic M&Ps, as well as system knowledge, to allow them to perform the coordination of new loop, hot cut, and IPG/IDLC orders. The manual also includes detailed instruction in topical areas such as QCCC major workgroups, installation options, WFA-C, receiving work, handoffs, pre-surveying, new loop processes, hot cut processes, IPG processes, and escalations.

2.1.7 Performance Evaluation Measures

The QCCC has established performance goals for both the aggregated work center and individual employees.

Metrics that focus on individual performance include the following:

- Screeners are measured on their ability to distribute work to CCTs on an “in today/out today” basis. Team Leads perform monthly quality reviews through order sampling.
- Coordinators are measured on compliance with the escalation process, the completeness of their orders in WFA, closing 100% of orders that are not in jeopardy status, and the average number of orders processed by month. Coaches review a sample of each coordinator’s work. Reviews include determining whether or not work steps were performed accurately and consistently, and verifying that all work steps were documented in the OSSLOG of WFA-C. The results of these audits are incorporated in each coordinator’s qualitative performance evaluation.
- Coaches are measured on the results of their reporting screeners’, CCTs’, and coordinators’ processing completed orders in a timely fashion.

To measure a center’s ability to process timely and complete orders, coaches must review four orders per person, per quarter, for completeness and timely processing. Coaches are also responsible for performing a root cause analysis for every missed order. Missed orders are tracked, and discussed by the QCCC management on daily status calls (Missed Review Call), which occur Monday - Friday at 4:00 PM CST.

The DSC has established monthly performance goals. The center has a goal of answering at least 80% of its incoming calls within 20 seconds or less. An Automated Call Distribution (ACD) system is utilized in the DSC for call monitoring. Supervisors monitor this system to report on the center’s overall call volume, number of calls by implementer per hour, number of abandoned calls, average call duration, and call wait time. The center’s goal is to keep call abandonment at levels below 2%. Implementers are expected to be available to take inbound calls 35% to 40% of the time.

The DSC utilizes the Performance Measurement Process (PMP) to monitor overall designers’ performance. Supervisors are required to conduct two quality reviews for each designer per month. The review consists of going through a quality checklist to ensure that orders are correctly designed, and that the proper supporting documentation was entered into each support system. The PMP also contains attendance and tardiness records. Productivity metrics, in terms of orders processed, vary by designer, and are mostly based on experience level.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was Qwest’s process for provisioning coordination. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, “Test Cross-Reference,” indicates where the particular measures are addressed in section 3.1, “Results & Analysis.”

Table 14.8-2: Test Target Cross Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Support Provisioning Coordination Process	Provisioning orders requiring coordination with CLECs	Availability of personnel, procedures and methods Completeness and consistency of processes	14.8-1-1, 14.8-1-4, 14.8-1-6 – 14.8-1-10, 14.8-1-12
	Request coordination	Completeness and consistency of processes	14.8-1-3, 14.8-1-7, 14.8-1-11
	Notification of provisioning schedule	Completeness and consistency of processes Timeliness ⁶³ of notification	14.8-1-5, 14.8-1-11
	Jeopardy notification	Completeness and consistency of processes Timeliness ⁶³ of notification	14.8-1-2, 14.8-1-8 – 14.8-1-9, 14.8-1-11
	Coordinate provisioning	Completeness and consistency of operating management practice Controllability, efficiency and reliability of process Completeness of process improvement practices Compliance with documented practices	14.8-1-1 – 14.8-1-2, 14.8-1-7 – 14.8-1-13

2.4 Evaluation Methods

KPMG Consulting utilized three methods of data collection for this evaluation:

- Interviews with Qwest personnel and CLEC volunteers, who are considered to be SMEs in the coordinated provisioning process. The objective of these interviews was to gather information regarding the coordinated provisioning process. KPMG Consulting's interviews took place with personnel who hold the following roles and responsibilities:
 - Personnel in the DSC, including the center manager and supervisor of the DSC Unbundled Implementation group
 - Personnel in the QCCC, including the Director, Screening Coach, New Loop Coach, Re-use Coach, IPG/IDLC Coach, and Process Team Leads
 - The Director, Team Leads and Translation Administrators in the RCMAC
 - Personnel in the CORAC, LRAC, ISC, and LPC, including the Director, Team Leaders, and Occupational staff

⁶³ Timeliness is not intended to imply that KPMG Consulting submitted transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the measure was established to evaluate whether or not audits and controls are in place to suggest that Qwest provides timely service for these activities.

- Personnel from CLECs.
- Reviews of internal and external documentation that supports the coordinated provisioning process. Representative examples of the types of documentation gathered by KPMG Consulting include:
 - Organization charts
 - System methods and procedures
 - Job aides
 - Training manuals
 - Process flow diagrams.
- Direct observations of Qwest personnel performing functions associated with the coordinated provisioning process. KPMG Consulting utilized these observations to verify adherence to stated and documented processes. The following list contains a representative sample of the types of Qwest work centers at which observations were conducted:
 - DSC
 - RCMAC
 - CORAC
 - LRAC
 - ISC
 - LPC.

2.5 Analysis Methods

Information gathered during on-site visits, and through data requests, was evaluated against criteria defined by KPMG Consulting during the planning phase of the test. One component of this evaluation included comparing Qwest personnel, processes, and systems used to provision wholesale orders, to those employed for retail orders, in order to determine whether or not consistencies existed between the two. Another component of this evaluation involved reviewing the data gathered, to determine if essential elements were present, and whether or not the defined process steps are followed.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 14.8-3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
14.8-1-1	Coordinated provisioning procedures exist, are documented, and are adhered to.	Satisfied	<p>Coordinated provisioning methods and procedures exist, and are documented and available to employees via the NCS Web site, Emedia, and the QCCC intranet.</p> <p>Coordinated provisioning procedures are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Screener Job Aid</i> • <i>QCCC Unbundled Loop Initial Training (Version 2.0)</i> • <i>QCCC Internal Escalation Job Aid</i> • <i>QCCC External Escalation Job Aid.</i> <p>KPMG Consulting conducted observations at the DSC and QCCC, and noted adherence to procedure.</p>
14.8-1-2	Coordinated provisioning performance measures and process improvement practices are defined, tracked, and complete.	Satisfied	<p>Coordinated provisioning performance is measured in the QCCC, at which performance goals are in place at both the center level and individual level. KPMG Consulting interviews revealed that the QCCC has a defined goal of answering 80% to 100% of incoming calls in 60 seconds or less. The QCCC maintains an Automated Call Distribution (ACD) system to measure inbound call performance.</p> <p>Individual performance is tracked via quality reviews. Coaches in the QCCC review four orders per person, per quarter, for completeness and accuracy. Coaches are also responsible for performing a root cause analysis for every missed order. Missed orders are tracked and discussed by the QCCC management on daily status calls (Missed Review Call), which occur Monday - Friday at 4:00 PM CST.</p> <p>Individuals are also measured on compliance with escalation processes, and on correctly closing all orders in WFA-C upon completion.</p> <p>Process improvement practices are documented and available. The QCCC retains hard copy documentation for every coordinated order that is processed. Each day at 4:00 PM, the QCCC conducts a missed review status call. Any Qwest</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>center that played a role in the processing of a "miss" is requested to attend. The agenda includes discussing why the "miss" occurred, and if a process improvement is needed. The process staff is responsible for updating and publishing improvement practices.</p> <p>The DSC strives to meet certain performance metrics each month. The center has a goal of answering at least 80% of its incoming calls within 20 seconds or less. An Automated Call Distribution (ACD) system is utilized in the DSC for call monitoring. Supervisors monitor this system to report on the center's overall call volume, number of calls by implementer per hour, number of abandoned calls, average call duration and call wait time. The center strives to keep call abandonment at levels below 2%. Implementers are expected to be available to take inbound calls 35% to 40% of the time. The center also maintains a policy to process orders on an "in today, out today" basis. In the designed services center monthly scorecard, for the months of June and July 2001, Qwest reported a 97% compliance with this objective. KPMG Consulting did not audit these reports, and therefore makes no assertion as to their accuracy.</p> <p>The DSC utilizes the Performance Measurement Process (PMP) to monitor overall designers' performance. Supervisors are required to conduct two quality reviews for each designer, per month. The review consists of reviewing a quality checklist to ensure that the correct order designs and proper supporting documentation were entered into each support system. The PMP also contains attendance and tardiness records. Productivity metrics, in terms of orders processed, vary by designer, and are mostly based on experience level.</p>
14.8-1-3	Coordinated provisioning request practices are defined, tracked, and practiced accurately and consistently.	Satisfied	<p>Coordinated provisioning requests are defined, tracked, and practiced accurately and consistently.</p> <p>A CLEC requests coordinated provisioning</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>via IMA and IIS. Request practices are tracked and available to Qwest and CLEC personnel on the Qwest Web site and in the following documents:</p> <ul style="list-style-type: none"> • <i>I-Chart Unbundled Loop Local Service Request</i> • http://www.qwest.com/wholesale/clecs/ordering.html. <p>KPMG Consulting observed coordinated provisioning requests at the QCCC, and noted accurate and consistent application of these practices.</p>
14.8-1-4	Coordinated provisioning identification practices are defined, tracked, and practiced accurately and consistently.	Satisfied	<p>Coordinated provisioning identification practices are defined, tracked, and available to employees via the NCS Web site, Emedia, and the QCCC intranet.</p> <p>The QCCC coordinated provisioning identification practices are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Screener Job</i> • <i>QCCC Unbundled Loop Initial Training (Version 2.0)</i>. <p>The documented procedures state that Qwest screeners review coordinated orders for completeness once they enter the QCCC.</p> <p>During our direct observations, KPMG Consulting noted that QCCC personnel accurately and consistently practiced the coordinated provisioning identification process.</p>
14.8-1-5	Coordinated provisioning scheduling practices are defined, tracked, and practiced accurately and consistently.	Satisfied	<p>Coordinated provisioning scheduling practices are defined, tracked, and available to employees via the NCS Web site, Emedia, and the QCCC intranet.</p> <p>The QCCC coordination provisioning identification practices are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Screener Job Aid</i> • <i>Unbundled Loop CFA Version M&Ps Coordinators Job Aid</i>. <p>Documented procedures state that i) screeners verify and distribute orders to coordinators; ii) coordinators ensure that hot cuts and provisioned new loops are processed in a timely fashion; and iii)</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CCTs are trained in high capacity circuit design and testing.</p> <p>The QCCC coordination provisioning identification practices are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Screener Job Aid</i> • <i>Unbundled Loop CFA Version M&Ps Coordinators Job Aid.</i> <p>Through direct observation, KPMG Consulting noted that QCCC personnel accurately and consistently practiced the scheduling process.</p>
14.8-1-6	Coordinated manual provisioning CLEC practices are defined, tracked, and practiced accurately and consistently.	Satisfied	<p>Procedures for contacting a CLEC during the coordinated event are documented and followed by QCCC coordinators. KPMG Consulting observed coordinators contacting CLECs before, and during, scheduled coordinated activities.</p> <p>QCCC coordination procedures are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Process Work Flows</i> • <i>QCCC Unbundled Loop Initial Training (Version 2.0).</i>
14.8-1-7	The QCCC's manual coordination procedures used for order processing, translations, and dispatch centers are defined, tracked, and practiced accurately and consistently.	Satisfied	<p>The QCCC's manual coordination procedures for order processing, translation, and dispatch centers are defined, tracked, and practiced accurately and consistently.</p> <p>The manual coordination procedures are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Process Work Flows</i> • <i>QCCC Unbundled Loop Initial Training (Version 2.0).</i> <p>Manual coordination procedures, which are tracked on the NCS Web site, are executed through calls from QCCC personnel to other internal Qwest organizations.</p> <p>During our direct observations, KPMG Consulting noted that QCCC personnel accurately and consistently made calls to notify other departments of upcoming coordinated activities.</p>
14.8-1-8	Error and exception processes are defined, tracked, and applied in a	Satisfied	Manual procedures exist for exception handling, such as order postponement, order cancellation, order switchback, and

Test Cross-Reference	Evaluation Criteria	Result	Comments
	consistent manner.		<p>missed order.</p> <p>During the coordinated provisioning process, for various reasons, instances sometimes arise in which an order cannot be completed. An example cause of such an instance is an order with incomplete or incorrect details. When this occurs, a jeopardy code is posted in WFA by a CCT or coordinator. That coordinator or CCT is then responsible for ensuring that the order is completed as expeditiously as possible. The actions of the coordinator include contacting all groups that have responsibility for resolving the issue(s), and continuing to coordinate and manage activities associated with resolution of the jeopardy.</p> <p>Missed orders are tracked and discussed among QCCC management on a daily missed review call, which occurs at 4:00 PM CST each business day.</p> <p>During an on-site visit at the QCCC, KPMG Consulting examined orders that had contained errors and exceptions, and found Qwest's treatment of them to be applied in a manner consistent with defined processes.</p>
14.8-1-9	Escalation practices are defined, tracked, and applied in a consistent manner.	Satisfied	<p>Order escalation procedures are defined, tracked, and applied in a consistent manner. Escalation procedures begin with a QCCC coordinator, and can escalate up to Qwest's executive level.</p> <p>QCCC coordination procedures are defined in the following documents, which KPMG consulting found readily available to QCCC personnel:</p> <ul style="list-style-type: none"> • <i>QCCC Internal Escalation Job Aid</i> • <i>QCCC External Escalation Job Aid.</i> <p>During an on-site visit at the QCCC, KPMG Consulting personnel examined orders that required escalation, and found Qwest's treatment of them to be applied in a manner consistent with defined processes.</p>
14.8-1-10	The coordinated provisioning center maintains a defined management structure and oversight process.	Satisfied	<p>The QCCC serves as the OCO for all coordinated unbundled loops, new loops, and hot cuts. As such, it monitors, and has oversight responsibilities for, each</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>installation through to completion. The QCCC is responsible for guaranteeing the successful installation of Unbundled Loop service for customers who are establishing telephone service on facilities owned by Qwest, but leased by CLECs.</p> <p>The Qwest management structure is defined in the QCCC General Information document. KPMG Consulting's interviews with, and observations of, QCCC managers validated adherence to defined processes.</p>
14.8-1-11	M&Ps supporting the QCCC's operation and interaction with internal organizations are defined, tracked, and applied in a consistent manner.	Satisfied	<p>M&Ps supporting the QCCC operation and interaction with internal organizations are defined, tracked, and available to employees via the NCS Web site, Emedia, and the QCCC intranet.</p> <p>M&Ps are defined in the following documents:</p> <ul style="list-style-type: none"> • <i>QCCC Process Work Flows</i> • <i>QCCC Unbundled Loop Initial Training (Version 2.0)</i>. <p>The QCCC is responsible for guaranteeing the successful installation of Unbundled Loop service for customers who are establishing telephone service on facilities owned by Qwest, but leased by CLECs. The installation process is a collaborative effort among the QCCC, CLEC, RCMAC, Qwest's COT assigned to the order and, in some instances, Qwest's field technician.</p> <p>KPMG Consulting personnel observed QCCC representatives processing orders, which required interaction with internal organizations, and determined the M&Ps are defined, tracked, and applied in a consistent manner.</p>
14.8-1-12	The QCCC's and DSC's methods for assigning, managing, and training personnel are defined and consistent.	Satisfied	<p>Occupational staff at the QCCC and DSC attend an initial four-week, informal, on-site training course that focuses on Qwest products and systems. This training is applied to all staff. The majority of training is through on-the-job experience, and through mentoring by experienced staff members. On occasion, additional training is available from the Qwest Marketing Team for new product road shows.</p> <p>To augment the initial four-week training,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>QCCC coordinators are provided with the Unbundled Initial Training (Version 2.0) manual, which serves as a reference tool. It provides them with basic M&Ps and system knowledge to allow them to perform the coordination of new loop, hot cut, and IPG/IDLC orders. The manual also includes detailed instruction in topical areas such as QCCC major workgroups, installation options, WFA-C, receiving work, handoffs, pre-surveying, new loop processes, hot cut processes, IPG processes, and escalations.</p> <p>Staff members in both the QCCC and DSC acquire the abilities and skill sets necessary to perform requisite job functions through training manuals, formal training sessions, and on-the-job training.</p>
14.8-1-13	The QCCC and DSCs are operational according to defined hours.	Satisfied	<p>The QCCC's and DSC's hours of operation are defined.</p> <p>During interviews, Qwest representatives stated that QCCC hours of operation are Monday through Friday, from 7:00 AM to 9:00 PM CST. The QCCC manages four work shifts during hours of operation.</p> <p>The DSC's hours of operations vary by department. The design group is operational Monday through Friday, from 7:00 AM to 12:00 AM CST. The implementation group is operational Monday through Friday, from 7:30 AM to 7:00 PM.</p> <p>KPMG Consulting personnel reviewed the hours of operation and conducted on-site observations during the defined hours of operation.</p>

15. Test Results: POP Volume Performance Test (Test 15)

1.0 Description

The POP Volume Performance Test (Test 15) was designed to evaluate systems and processes associated with the Qwest pre-order and order processes. The objective of this test was to validate the performance of the interfaces and systems at future projected transaction volumes.

The POP Volume Performance Test examined Qwest's system responses, and the timeliness thereof, for Interconnect Mediated Access Electronic Data Interface (IMA EDI) and Interconnect Mediated Access Graphical User Interface (IMA GUI) pre-order and order transactions submitted using Qwest's *Local Service Ordering Guidelines (LSOG) Business Rules*. The test used projected transaction volumes for March 2002, simulating 1) normal, 2) peak, and 3) stress volume conditions. The stress test was a "diagnostic⁶⁴" test, scheduled to run during off-peak production hours to limit the test's impact on real customers. The projected transaction volume was determined by analyzing historical Competitive Local Exchange Carrier (CLEC) ordering behavior, CLEC forecasts, and Qwest's forecasts. The majority of orders transmitted during the test were designed to flow through Qwest's order processing systems without human intervention. In addition, a limited number of non-flow-through orders that included intentional errors were submitted. The POP Volume Performance Test included stand alone pre-order and order transactions submitted concurrently with transactions for the POP Functional Evaluation (Test 12)⁶⁵.

KPMG Consulting executed volume testing on November 8, 2001 (Normal Day), November 15, 2001 (Peak Day), November 30, 2001 (Stress Day 1), and January 25, 2002 (Stress Day 2).

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

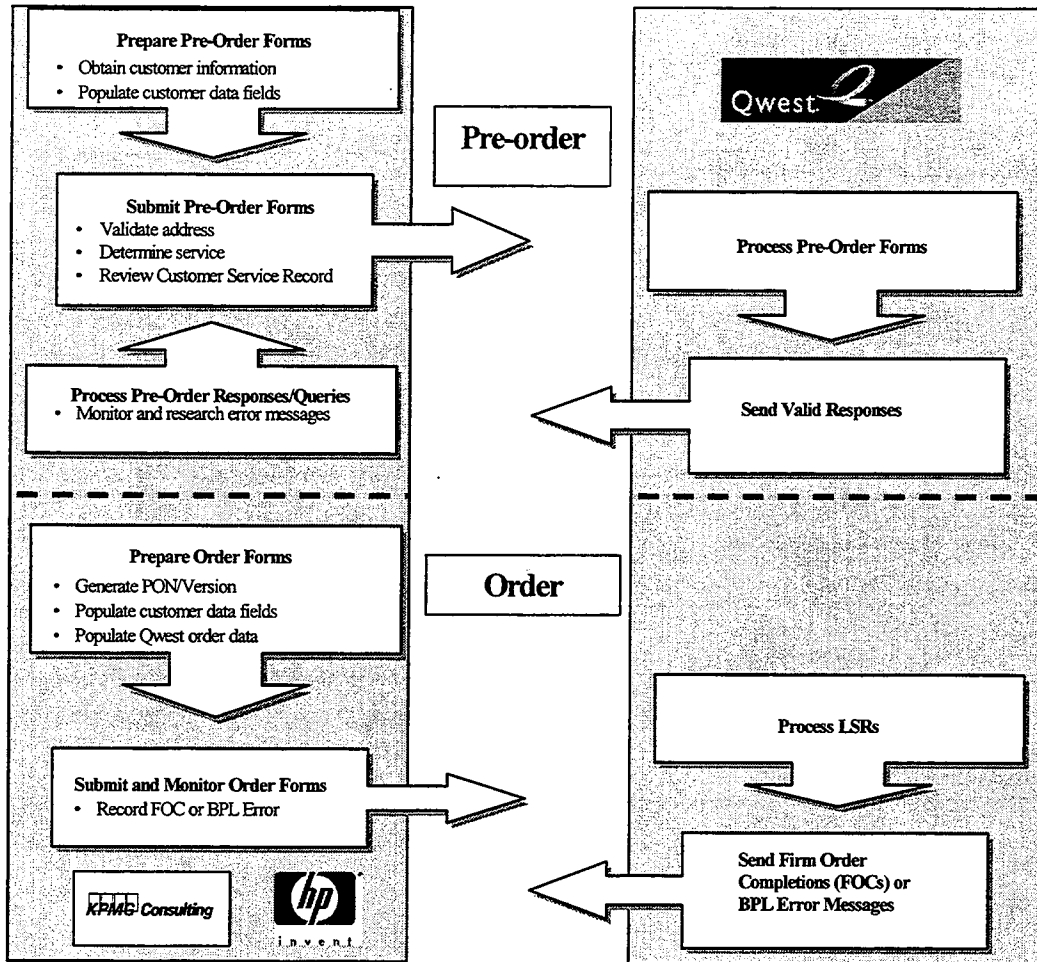
The POP Volume Performance Test employed the same connectivity process used during the POP Functional Evaluation (Test 12). Both the IMA EDI and the IMA GUI were tested using March 2002 projected volumes.

Figure 15-1 provides an overview of the Qwest IMA EDI and IMA GUI pre-ordering and ordering process.

⁶⁴ The results of the stress volume test were not used to determine satisfied or not satisfied results in Table 15-6: Evaluation Criteria and Results. Stress volume test details are reported separately, and can be found in Section 3.3.

⁶⁵ The design of the test was approved by the Regional Oversight Committee Technical Advisory Group (ROC TAG).

Figure 15-1: IMA EDI and IMA GUI Pre-Order and Order Process



Hewlett-Packard Consulting (HPC) prepared and submitted pre-order and Local Service Request (LSR) order transactions to Qwest. Qwest processed and returned valid pre-order responses, Firm Order Confirmations (FOCs), and Business Process Layer (BPL) error messages.

2.2 Scenarios

Pre-order and order scenarios tested were drawn from the scenarios defined in Appendix D of the *Qwest OSS Evaluation Project Master Test Plan*. The scenarios outline, at a high level, the specific products and services to be ordered, and activity types to be requested. These scenarios were agreed upon by the ROC TAG.

The following tables identify the pre-order and order scenarios that were used in this test.

Table 15-1: Volume Pre-Order Test Scenarios⁶⁶

Activity	Residence	Business
Validate customer address (AVQ)	X	X
Obtain Customer Service Record (CSRQ)	X	X
Validate customer CFA (CFAQ)	X	X
Perform PIC Availability Query (SAQ)		X
Validate switch type (SAQ)	X	
Perform Facility Availability Query (FAQ)	X	X
Request ISDN/ADSL facility availability (FAQ)		X
Request Raw Loop Data (RLDQ)	X	

Table 15-2: Volume Resale Order Test Scenarios

Activity	Residential POTS	Business POTS
Convert from Qwest "as is"	X	
Convert from Qwest "as specified"	X	X
Feature changes to existing customer	X	X
Disconnect ⁶⁷	X	X

Table 15-3: Volume UNE Platform (UNE-P) Order Test Scenarios

Activity	Residential POTS	Business POTS
Convert from Qwest "as specified"	X	X
Feature changes to existing customer	X	X
Disconnect ⁶⁷	X	
Convert from Resale to UNE-Platform		X

Table 15-4: Volume UNE-Loop Order Test Scenarios

Activity	Residential POTS	Business POTS
Convert to analog loop	X	X
Convert from Resale to UNE-Loop		X

2.3 Test Targets & Measures

⁶⁶ Appointment Availability Query (AAQ) allows a CLEC to reserve a specific date and time from Qwest's appointment scheduler. Telephone Number Availability Query (TNAQ) allows a CLEC to reserve an available telephone number from Qwest. These pre-orders were not performed to limit the test's impact on real customers and CLECs. Meet Point Query (MPQ) pre-order supports loop line sharing. Because there were no Line Sharing test scenarios included in Test 15, MPQ pre-orders were not included in this test.

⁶⁷ Disconnects were used as a proxy for Directory Service Request (DSR) orders.

The test targets were Qwest's pre-ordering and ordering systems accessed via IMA EDI and IMA GUI interfaces. Processes, sub-process, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 15-5: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit Pre-order Transactions	Submit Pre-orders via IMA EDI	Accessibility of IMA EDI	15-1-1, 15-1-10
	Submit Pre-orders via IMA GUI	Accessibility of IMA GUI	15-1-11, 15-1-20
	Receive Pre-order Response	Timeliness of response	15-1-2 – 15-1-8, 15-1-12 – 15-1-18
	Verify that Pre-orders were Processed	Completeness of responses	15-1-9, 15-1-19
Submit Order Transactions	Submit Orders through IMA EDI	Accessibility of IMA EDI	15-2-1 – 15-2-2, 15-2-8
	Submit Orders through IMA GUI	Accessibility of IMA GUI	15-2-9, 15-2-14
	Receive Acknowledgement	Timeliness of response	15-2-3 – 15-2-4, 15-2-10
	Verify that Orders were Processed	Completeness of responses (FOCs)	15-2-6, 15-2-12
Submit Error Transactions	Receive Order Error Responses	Timeliness of response	15-2-5, 15-2-11
	Verify that Orders were Processed and Errors were Received	Completeness of response	15-2-7, 15-2-13

2.4 Evaluation Methods

Using the test scenario descriptions, KPMG Consulting developed test cases for each scenario. Each test case contained a detailed description of the case and described order requirements, including:

- Customer type (business or residential)
- Conversion activity (partial and full conversion)⁶⁸
- Disconnect
- Feature changes

⁶⁸ In the case of a full conversion, all of a customer's lines are migrated to a new service provider. In the case of a partial conversion, some lines are migrated to a CLEC, while at least one line is retained by Qwest.

- Flow-through designation
- Other information that was necessary to execute the test case.

Each test case was then used to generate distinct instances of pre-order and order transactions. Qwest provided test bed accounts against which pre-order and order transactions were submitted. The pre-order and order transactions scenarios were executed against a variety of service delivery methods (e.g., Resale, UNE-P, UNE-Loop), and activity types (e.g., conversion “as is,” conversion “as specified”). The same set of test cases was used for testing on all days. A limited number of order transactions that included intentional error conditions were submitted to test how Qwest’s systems handled erred transactions under increased volume conditions.

KPMG Consulting projected transaction volume levels for March 2002 based on historical volumes and trends, CLEC forecasts, and Qwest forecasts. The POP Volume Performance Test forecast of transaction volumes encompassed order activity within the 14 states operating in the Qwest region. The POP Volume Performance Test was conducted in the following three phases:

- 1) One Normal test day was executed using projected normal daily volumes. IMA EDI and IMA GUI transactions were submitted between 6:00 AM and 12:00 AM.⁶⁹
- 2) The Peak test was executed using volumes equal to 150% of those used for the Normal volume test. IMA EDI and IMA GUI transactions were submitted between 6:00 AM and 12:00 AM.
- 3) The Stress test was executed using volumes equal to 250% of those used for the Normal volume test. IMA EDI and IMA GUI transaction were submitted over a single four-hour period between 7:00 PM. and 11:00 PM.

HPC submitted pre-order and order transactions over a four-day period. To ensure blindness, Qwest was not notified of the test execution dates and times for the Normal and Peak tests. Qwest was aware, however, of the time of day for the Stress test (off-peak by agreement), but was not aware of the day of execution for the Stress test. The Normal test was conducted on November 8, 2001, the Peak test was conducted on November 15, 2001, and the Stress test was conducted on November 30, 2001. Based on the results of the first Stress test⁷⁰, Qwest Communications requested that KPMG Consulting conduct an additional diagnostic Stress volume test. The second Stress test was conducted on January 25, 2002 (see Section 3.3)⁷¹.

Orders were transmitted using Qwest’s production environment. To prevent exhausting the test bed, multiple orders were submitted using the same account. To allow the repetitive use of the same accounts, Qwest disabled the pending order restriction on the volume transactions. The removal of the pending order edit allowed more than one transaction to be placed against a given volume account. At the end of each business day, Qwest ran a script to search the backend system, and cancel any pending volume transactions.

⁶⁹ These are Qwest published hours of operation for IMA availability to wholesale customers.

⁷⁰ Additional information is detailed in Section 3.3 of this report.

⁷¹ KPMG Consulting provides test results as diagnostic information only.

The majority of the orders transmitted were flow-through (FT) orders, which required no human intervention by Qwest. In addition, a limited number of non-flow-through (NFT), and FT orders populated with errors were submitted. Based on the design of the test, the NFT orders were not expected to receive responses (FOCs or errors). Erred orders included a variety of activity types, and were populated with an invalid Primary Interexchange Carrier (PIC), invalid IntraLATA Primary Interexchange Carrier (LPIC), or invalid Desired Due Date (DDD).

On each day of volume testing, submission of the planned pre-order and order transactions were distributed throughout the testing window, to represent Qwest's historical hourly order distribution. Product delivery types, pre-order types, and interface assignments (IMA EDI or IMA GUI) were distributed in accordance with forecasts. As pre-order and order volume transactions were submitted, responses were returned and recorded. A transaction was deemed complete if one of the following was received: a pre-order response, a firm order confirmation (FOC), an unexpected error response, or a functional acknowledgement (FA) for LSRs for which no response was expected (intentional error).

HPC recorded time-stamps associated with outgoing IMA EDI and IMA GUI pre-order and order submissions, as well as time-stamps associated with incoming IMA EDI and IMA GUI responses. In addition to transaction responses, other data collected for this test included the CLEC and Incumbent Local Exchange Carrier (ILEC) transaction forecasts, historical Qwest wholesale customer pre-order and order volumes, Qwest Network Disclosures documentation, the Qwest *LSOG 5 Pre-Order Business Rules*, and the Qwest *LSOG 5 Order Business Rules*.

2.5 Analysis Methods

The POP Volume Performance Test included evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. The data collected were analyzed against these evaluation criteria, which are detailed in Section 3.1, below. The analysis for timeliness and completeness of response criteria (15-1-2 through 15-1-9, 15-1-12 through 15-1-19, 15-2-3 through 15-2-7, and 15-2-10 through 15-2-13) was based on cumulative data from the Normal and Peak volume tests. Results from the Stress "diagnostic" volume test are reported separately.

Both IMA EDI and IMA GUI transaction responses were examined for consistency with the pre-order and order business process flow, as described in Section 2.1. KPMG Consulting evaluated the accessibility of each interface, as well as the presence, timeliness, and completeness of responses received via IMA EDI and IMA GUI using the information collected by HPC. The analysis of response completeness was conducted by selecting a representative sample of order and pre-order responses. The responses were then examined for compliance with Qwest order and pre-order business rules.

The POP Volume Performance Test evaluation results are intended to reflect the KPMG Consulting/Pseudo-CLEC experience. In its evaluation of test performance, KPMG Consulting applied the standards documented in *Qwest Service Performance Indicator Definitions (PID)*, Version 3.0, issued May 31, 2001. In cases for which no PID standard is established, performance was evaluated using benchmarks developed by KPMG Consulting.

Results in Section 3.0 were calculated based on HPC's internal time-stamps, which may differ in varying degrees from the results reported by Qwest using its internal measurement points. KPMG Consulting analyzed the CLEC end-to-end response time, while Qwest measures and reports processing time within its environment.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 15-6: Evaluation Criteria and Results – Normal and Peak Days⁷²

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>IMA EDI Pre-order Volume Performance Test</i>			
15-1-1	Qwest systems provide responses to pre-order transactions via IMA EDI.	Satisfied	Qwest systems provide responses to transaction requests submitted via IMA EDI. In the absence of an established PID, KPMG Consulting established a benchmark that 95% or more of pre-orders queries must receive a response. Of 25,568 pre-orders submitted, 99.98% received responses. See Table 15-1 for pre-order transaction types. See Tables 15-7 through 15-9 for detailed results.
15-1-2	Qwest systems provide timely Address Validation Query (AVQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provide timely AVQ pre-order responses via IMA EDI. The PID-defined standard is average AVQ pre-order response receipt within ten seconds. The average response time observed by KPMG Consulting for AVQs was 3.30 seconds. See Tables 15-7 through 15-9 for detailed results.

⁷² Table 15-6 includes evaluation criteria and results for testing on Normal and Peak volume days only. Results for the Stress test, presented as diagnostic information only, are provided in Tables 15-16 and 15-22.

Test Cross-Reference	Evaluation Criteria	Result	Comments
15-1-3	Qwest systems provide timely Connecting Facility Assignment Query (CFAQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provide timely CFAQ pre-order responses via IMA EDI. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less. The average response time observed by KPMG Consulting for CFAQs was 7.00 seconds. See Tables 15-7 through 15-9 for detailed results.
15-1-4	Qwest systems provide timely Customer Service Record Query (CSRQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provide timely CSRQ pre-order responses via IMA EDI. The PID-defined standard is CSRQ pre-order response receipt within 12.5 seconds. The average response time observed by KPMG Consulting for CSRQs was 5.68 seconds. See Tables 15-7 through 15-9 for detailed results.
15-1-5	Qwest systems provide timely Facility Availability Query (FAQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provide timely FAQ pre-order responses via IMA EDI. The PID-defined standard is FAQ pre-order response receipt within 25 seconds. The average response time observed by KPMG Consulting for FAQs was 13.49 seconds. See Tables 15-7 through 15-9 for detailed results.
15-1-6	Qwest systems provide timely Service Availability Query (SAQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provided timely SAQ pre-order responses via IMA EDI. The PID-defined standard is SAQ pre-order response receipt within 25 seconds. The average response time observed by KPMG Consulting for SAQs was 11.02 seconds. See Tables 15-7 through 15-9 for detailed results.
15-1-7	Qwest systems provide timely Raw Loop Data Query (RLDQ) pre-order responses via IMA EDI.	Satisfied	Qwest systems provide timely RLDQ pre-order responses via IMA EDI. The PID-defined standard is RLDQ pre-order response receipt within 20 seconds. The average response time observed by KPMG Consulting for RLDQs was 16.37

Test Cross-Reference	Evaluation Criteria	Result	Comments
			seconds. See Tables 15-7 through 15-9 for detailed results.
15-1-8	Qwest systems provide timely pre-order error messages via IMA EDI.	Diagnostic	KPMG Consulting did not assign an evaluation result for this criterion because the related pre-order error message timeliness PID (PO-1D-2) is defined as "diagnostic" only. Therefore, the average response time observed by KPMG Consulting for pre-order errors of 39.84 seconds is provided as diagnostic information only. See Tables 15-7 through 15-9 for detailed information.
15-1-9	Qwest systems provide complete pre-order responses via IMA EDI.	Satisfied	Qwest systems provide complete pre-order responses via IMA EDI. KPMG Consulting examined a sample of 500 pre-order responses for completeness, relative to the Qwest <i>Business Rules</i> . All pre-order responses received provided complete information.
15-1-10	Qwest systems are available for IMA EDI pre-order processing.	Satisfied	Qwest systems are available for IMA EDI pre-order processing. The PID-defined standard is 99% for system availability. KPMG Consulting observed that Qwest maintained 100% IMA EDI availability throughout each iteration of the test. Hours of evaluation were limited to those of the POP Volume Performance Tests. ⁷³ See Table 15-1 for pre-order transaction types.
<i>IMA GUI Pre-order Volume Performance Test</i>			
15-1-11	Qwest systems provide responses to pre-order transactions via IMA GUI.	Satisfied	Qwest systems provide responses to transaction requests submitted via IMA GUI. In the absence of an established PID, KPMG Consulting established a benchmark that 95% of expected system responses must be received. Of 17,030 pre-orders submitted, 99.98% received responses. See Table 15-1 for pre-order transaction

⁷³ Testing on Normal and Peak days was executed between 6:00 AM and 12:00 AM.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			types. See Tables 15-10 through 15-12 for detailed results.
15-1-12	Qwest systems provide timely Address Validation Query (AVQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely AVQ pre-order responses via IMA GUI. The PID-defined standard is AVQ pre-order response receipt within ten seconds. The average response time observed by KPMG Consulting for AVQs was 2.09 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-13	Qwest systems provide timely Connecting Facility Assignment Query (CFAQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely CFAQ pre-order responses via IMA GUI. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-orders must be 25 seconds or less. The average response time observed by KPMG Consulting for CFAQs was 5.43 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-14	Qwest systems provide timely Customer Service Record Query (CSRQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely CSRQ pre-order responses via IMA GUI. The PID-defined standard is CSRQ pre-order response receipt within 12.5 seconds. The average response time observed by KPMG Consulting for CSRQs was 4.19 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-15	Qwest systems provide timely Facility Availability Query (FAQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely FAQ pre-order responses via IMA GUI. The PID-defined standard is FAQ pre-order response receipt within 25 seconds. The average response time observed by KPMG Consulting for FAQs was 12.47 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-16	Qwest systems provide timely Service Availability Query (SAQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely SAQ pre-order responses via IMA GUI. The PID-defined standard is SAQ pre-order response receipt within 25 seconds. The average response time observed by

Test Cross-Reference	Evaluation Criteria	Result	Comments
			KPMG Consulting for SAQs was 6.68 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-17	Qwest systems provide timely Raw Loop Data Query (RLDQ) pre-order responses via IMA GUI.	Satisfied	Qwest systems provide timely RLDQ pre-order responses via IMA GUI. The PID-defined standard is RLDQ pre-order response receipt within 20 seconds. The average response time observed by KPMG Consulting for RLDQs was 5.17 seconds. See Tables 15-10 through 15-12 for detailed results.
15-1-18	Qwest systems provide timely pre-order error messages via IMA GUI.	Diagnostic	KPMG Consulting did not assign an evaluation result for this criterion because the PID related to pre-order error message timeliness standard (PO-1D-1) is "diagnostic" only. Therefore, the average response time observed by KPMG Consulting for pre-order errors of 23.60 seconds is provided as diagnostic information only. See Tables 15-10 through 15-12 for detailed results.
15-1-19	Qwest systems provide complete pre-order responses via IMA GUI.	Satisfied	Qwest systems provide complete pre-order responses via IMA GUI. KPMG Consulting examined a sample of 340 pre-order responses for completeness, relative to the Qwest Business Rules. All pre-order responses received provided complete information.
15-1-20	Qwest systems are available for IMA GUI pre-order processing.	Satisfied	Qwest systems are available for IMA GUI pre-order processing. The PID-defined standard is 99% for system availability. KPMG Consulting observed that Qwest maintained 100% IMA GUI and associated backend system availability throughout each iteration of the test. Hours of evaluation were limited to those of the POP Volume Performance Tests. ⁷⁴ See Table 15-1 for pre-order transaction types.

⁷⁴ Testing on Normal and Peak days was executed between 6:00 AM and 12:00 AM.

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>IMA EDI Order Volume Performance Test</i>			
15-2-1	Qwest systems provide valid functional acknowledgements (FAs) to LSR transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provided valid functional acknowledgements (FAs) to LSR transactions submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that at least 95% of all EDI orders must receive an FA.</p> <p>Of 5,940 LSRs submitted, 100% received FAs.</p> <p>See Table 15-2 through 15-4 for order transaction types submitted. See Table 15-13 for detailed results.</p>
15-2-2	Qwest systems provide valid firm order confirmations (FOCs) to valid LSR transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provided valid responses (FOCs) to valid LSR transactions submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that at least 95% of valid EDI orders must receive valid FOCs.</p> <p>Of 5,467 LSRs submitted for which a FOC was expected, 95.52% received a FOC.</p> <p>See Table 15-2 through 15-4 for order transaction types submitted. See Table 15-13 for detailed results.</p>
15-2-3	Qwest systems provide timely functional acknowledgements (FAs) to LSR transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provided timely FAs in response to LSRs submitted via IMA EDI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for FAs must be 18 seconds or less.</p> <p>The average response time observed was 12.0 seconds during Normal and Peak volume days.</p> <p>See Table 15-13 for detailed results.</p>
15-2-4	Qwest systems provide timely firm order confirmations (FOCs) to valid LSR transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provided timely FOCs in response to FT LSRs submitted via IMA EDI.</p> <p>The PID defined benchmark is 95% of FOCs returned within 20 minutes.</p> <p>Of 5,222 FOCs received, 98.58% were returned within 20 minutes.</p> <p>The average response time was 1.47 minutes during Normal and Peak volume days. See Tables 15-13, 15-17, and 15-18 for detailed results.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
15-2-5	Qwest systems provide timely error (ERR) responses to LSR transactions submitted via IMA EDI.	Satisfied	<p>Qwest systems provide timely ERRs in response to FT LSRs submitted via IMA EDI.</p> <p>The PID defined benchmark is LSR error responses returned in less than or equal to 18 seconds.</p> <p>The average response time was 16.2 seconds during Normal and Peak volume days. See Table 15-15 for detailed results.</p> <p>During testing, a system event occurred during the Normal day between the times of 1:42 PM and 2:30 PM on November 8, 2001. This event caused inconsistent processing and late responses on some orders transactions during the specified period. KPMG Consulting issued Exceptions 3084 and 3092.</p> <p>Qwest's response to the Exceptions stated that during the reported times, Qwest experienced a system problem. The Exceptions remained open pending analysis of Normal and Peak testing data. Because KPMG Consulting did not observe a similar occurrence during the Peak volume test, the Exceptions were closed. See Exceptions 3084 and 3092 for additional information on this issue.⁷⁵</p>
15-2-6	Qwest systems provide complete order responses via IMA EDI.	Satisfied	<p>Qwest systems provide complete order responses via IMA EDI.</p> <p>A sample of 230 order responses was examined for completeness, relative to the Qwest Business Rules.</p> <p>All form/field/value combinations were received as expected.</p>
15-2-7	Qwest systems provide complete order error responses via IMA EDI.	Satisfied	<p>Qwest systems provide complete order error responses via IMA EDI.</p> <p>The 112 order error responses received were examined for completeness, relative to Qwest Business Rules.</p> <p>All order error responses received provided complete information.</p>
15-2-8	Qwest systems are available for IMA EDI order	Satisfied	Qwest systems are available for IMA EDI order processing.

⁷⁵ Error responses received for transactions submitted during the system event times noted in Exceptions 3084 and 3092 were excluded from the timeliness evaluation. These errors were received after receipt of valid FOC responses.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	processing.		<p>The PID-defined standard is 99% for system availability.</p> <p>KPMG Consulting observed that Qwest maintained 100% IMA EDI availability throughout each iteration of the test. Hours of evaluation were limited to those of the POP Volume Performance Tests.⁷⁶</p> <p>See Tables 15-2 through 15-4 for order transaction types submitted.</p>
<i>IMA GUI Order Volume Performance Test</i>			
15-2-9	Qwest systems provide valid firm order confirmations (FOCs) to valid LSR transactions submitted via IMA GUI.	Satisfied	<p>Qwest systems provided valid firm order confirmations (FOCs) to valid LSR transactions submitted via IMA GUI.</p> <p>In the absence of an established PID, KPMG Consulting established a benchmark that 95% of all valid GUI orders must receive a valid FOC.</p> <p>Of 5,159 LSRs submitted for which a FOC was expected, 96.18% received a FOC.</p> <p>See Table 15-2 through 15-4 for order transaction types submitted. See Table 15-14 for detailed results.</p>
15-2-10	Qwest systems provide timely firm order confirmations (FOCs) to valid LSR transactions submitted via IMA GUI.	Satisfied	<p>Qwest systems provided timely FOCs in response to FT LSRs submitted via IMA GUI.</p> <p>The PID defined benchmark is 95% of FOCs returned within 20 minutes.</p> <p>Of the 4,962 FOCs received, 99.64% were returned within 20 minutes.</p> <p>The average response time was 0.73 minutes during Normal and Peak volume days. See Tables 15-14, 15-17, and 15-18 for detailed results.</p>
15-2-11	Qwest systems provide timely error (ERR) responses to erroneous LSR transactions submitted via IMA GUI.	Satisfied	<p>Qwest systems provide timely ERRs in response to FT LSRs submitted via IMA GUI.</p> <p>The PID defined benchmark is LSR error responses returned in less than or equal to 18 seconds.</p> <p>The average response time was 7.86 seconds during Normal and Peak volume days.</p> <p>See Table 15-16 for detailed results.</p>

⁷⁶ Testing on Normal and Peak days was executed between 6:00 AM and 12:00 AM.

Test Cross-Reference	Evaluation Criteria	Result	Comments
15-2-12	Qwest systems provide complete order responses via IMA GUI.	Satisfied	<p>Qwest systems provided sufficient order responses via IMA GUI.</p> <p>A sample of 230 order responses was examined for completeness, relative to the Qwest Business Rules.</p> <p>KPMG Consulting found missing field values in the Design Contact (DSGCON) field of the FOC responses to UNE-Loop orders.</p> <p>In KPMG Consulting's opinion, missing values in this required field does not impede CLEC business operations, as the CLEC would have populated the same field on its initial inquiry, and thus already has the information.</p>
15-2-13	Qwest systems provided complete order error responses via IMA GUI.	Satisfied	<p>Qwest systems provide complete order error responses via IMA GUI.</p> <p>The 77 GUI order errors received were examined for completeness, relative to the Qwest Business Rules.</p> <p>All form/field/value combinations were received as expected.</p>
15-2-14	Qwest systems are available for IMA GUI order processing.	Satisfied	<p>Qwest systems are available for IMA GUI order processing.</p> <p>The PID-defined standard is 99% for system availability.</p> <p>KPMG Consulting observed that Qwest maintained 100% IMA GUI availability throughout each iteration of the test. Hours of evaluation were limited to those of the POP Volume Performance Tests.⁷⁷</p> <p>See Tables 15-2 through 15-4 for order transaction types submitted.</p>

3.2 Additional Data – Normal and Peak Volume Days

⁷⁷ Testing on Normal and Peak days was executed between 6:00 AM and 12:00 AM.

Table 15-7: IMA EDI Pre-Order Response Timeliness – Combined Results for Normal and Peak Days

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	206	1	124	Diagnostic	39.84
Non-Erred Responses	25,357				
AVQ	10,212	2	61	10	3.30
CFAQ	1,179	5	28	25	7.00
CSRQ	9,664	4	46	12.50	5.68
FAQ	2,444	6	45	25	13.49
SAQ	1,251	2	29	25	11.02
RLDQ	607	8	71	20	16.37
Total Responses Received	25,563				
Time-Outs	1				
Non-Responses	4				
Total Pre-Orders Submitted	25,568				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "Diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Normal volume test was run on November 8, 2001.
6. The Peak volume test was run on November 15, 2001.

Table 15-8: Normal IMA EDI Pre-Order Response Timeliness

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	101	1	124	Diagnostic	55.27
Non-Erred Responses	7,524				
AVQ	3,043	2	61	10	3.41
CFAQ	353	5	26	25	7.17
CSRQ	2,897	4	39	12.50	5.73
FAQ	688	6	45	25	14.23
SAQ	370	2	27	25	11.75
RLDQ	173	2	71	20	14.79
Total Responses Received	7,625				
Time-Outs	1				
Non-Responses	4				
Total Pre-Orders Submitted	7,630				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Normal volume test was run on November 8, 2001.

Table 15-9: Peak Day IMA EDI Pre-Order Response Timeliness

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	105	2	121	Diagnostic	25.00
Non-Erred Responses	17,833				
AVQ	7,169	2	23	10	3.26
CFAQ	826	5	28	25	6.93
CSRQ	6,767	4	46	12.50	5.66
FAQ	1,756	6	42	25	13.20
SAQ	881	8	29	25	10.71
RLDQ	434	8	55	20	17.00
Total Responses Received	17,938				
Time-Outs	0				
Non-Responses	0				
Total Pre-Orders Submitted	17,938				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Peak volume test was run on November 15, 2001.

Table 15-10: IMA GUI Pre-Order Response Timeliness – Combined Results for Normal and Peak Days

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	72	1	122	Diagnostic	23.60
Non-Erred Responses	16,954				
AVQ	6,807	1	61	10	2.09
CFAQ	796	4	19	25	5.43
CSRQ	6,442	2	44	12.50	4.19
FAQ	1,663	4	103	25	12.47
SAQ	831	5	24	25	6.68
RLDQ	415	1	26	20	5.17
Total Responses Received	17,026				
Time-Outs	2				
Non-Responses	2				
Total Pre-Orders Submitted	17,030				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Normal volume test was run on November 8, 2001.
6. The Peak volume test was run on November 15, 2001.

Table 15-11: Normal IMA GUI Pre-Order Response Timeliness

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	8	1	122	Diagnostic	46.00
Non-Erred Responses	5,059				
AVQ	2,026	1	61	10	2.22
CFAQ	245	4	19	25	5.62
CSRQ	1,925	3	40	12.50	4.25
FAQ	491	6	103	25	13.31
SAQ	248	5	19	25	7.49
RLDQ	124	1	19	20	4.28
Total Responses Received	5,067				
Time-Outs	2				
Non-Responses	2				
Total Pre-Orders Submitted	5,071				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Normal volume test was run on November 8, 2001.

Table 15-12: Peak IMA GUI Pre-Order Response Timeliness

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)	
		Min	Max	Benchmark	KPMG Consulting
Erred Responses	64	1	46	Diagnostic	20.80
Non-Erred Responses	11,895				
AVQ	4,781	1	18	10	2.03
CFAQ	551	4	15	25	5.34
CSRQ	4,517	2	44	12.50	4.16
FAQ	1,172	4	66	25	12.12
SAQ	583	5	24	25	6.33
RLDQ	291	1	26	20	5.55
Total Responses Received	11,959				
Time-Outs	0				
Non-Responses	0				
Total Pre-Orders Submitted	11,959				

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. Benchmark of average response time is taken from the PID.
3. In the absence of an established PID, KPMG Consulting established a benchmark that the average response time for CFAQ pre-order queries must be 25 seconds or less.
4. For instances for which the benchmark is "diagnostic," KPMG Consulting provides test results as diagnostic information only.
5. The Peak volume test was run on November 15, 2001.

Table 15-13: IMA EDI Order Response Timeliness – Combined Results for Normal and Peak

Test Days	Total LSRs Submitted	Acknowledgments Received			FT Eligible LSRs Submitted	FOC Responses Received		
		Total FAs Received	% of FAs Received	Average Response Time (seconds)		Total FOCs Received	% On Time	Average Response Time (minutes)
Normal	1,804	1,804	100.00%	12.0	1,541	1,508	97.75%	1.96
Peak	4,136	4,136	100.00%	12.0	3,926	3,714	98.92%	1.27
Total Count	5,940	5,940	100.00%	12.0	5,467	5,222	98.58%	1.47

Notes:

1. Number of Flow Through eligible LSRs does not include intentional errors that were submitted.
2. The Qwest Service Performance Indicator Definitions, dated May 31, 2001, defined Flow Through Firm Order Confirmation (FOC) timeliness in PO-5A as 95% received within 20 minutes.
3. The Normal volume test was run on November 8, 2001.
4. The Peak volume test was run on November 15, 2001.

Table 15-14: IMA GUI Order Response Timeliness – Combined Results for Normal and Peak

Test Day	Total LSRs Submitted	FT-Eligible LSRs Submitted	FOC Responses Received		
			Total FOCs received	Percent On Time	Average Response Time (minutes)
Normal	1,533	1,452	1,375	99.93%	.30
Peak	3,835	3,707	3,587	99.53%	.89
Total Count	5,368	5,159	4,962	99.64%	.73

Notes:

1. Number of Flow Through eligible LSRs does not include intentional errors that were submitted.
2. The Qwest Service Performance Indicator Definitions, dated May 31, 2001, defined Flow Through Firm Order Confirmation (FOC) timeliness in PO-5A as 95% received within 20 minutes.
3. The Normal volume test was run on November 8, 2001.
4. The Peak volume test was run on November 15, 2001.

Table 15-15: IMA EDI Order Error Response Timeliness – Combined Results for Normal and Peak

Test Day	ERR			
	Number Received	Number On Time	Percent On Time	Average Response Time (seconds)
Normal	110	97	88.18%	16.2
Peak	2	1	50.00%	24.0
Total Count	112	98	87.50%	16.2

Notes:

1. The Qwest Service Performance Indicator Definitions, dated May 31, 2001, defined LSR Reject timeliness in PO-3B-2 as LSR rejects received less than or equal to 18 seconds.
2. The Normal volume test was run on November 8, 2001.
3. The Peak volume test was run on November 15, 2001.
4. Error responses received for transactions submitted during the system event times noted in Exceptions 3084 and 3092 were excluded from the timeliness evaluation. These errors were received after receipt of valid FOC responses.

Table 15-16: IMA GUI Order Error Response Timeliness – Combined Results for Normal and Peak

Test Day	ERR			
	Number Received	Number On Time	Percent On Time	Average Response Time (seconds)
Normal	77	71	92.21%	7.86
Peak	0	N/A	N/A	N/A
Total Count	77	71	92.21%	7.86

Notes:

1. The Qwest Service Performance Indicator Definitions, dated May 31, 2001, defined LSR Reject timeliness in PO-3A-2 as LSR rejects received less than or equal to 18 seconds.
2. The Normal volume test was run on November 8, 2001.
3. The Peak volume test was run on November 15, 2001.
4. Error responses received for transactions submitted during the system event times noted in Exceptions 3084 and 3092 were excluded from the timeliness evaluation. These errors were received after receipt of valid FOC responses.

Table 15-17: Firm Order Confirmation (FOC) Timeliness – Normal Day

Benchmark: 95% within 20 minutes (FOC)		EDI	GUI
Resale	Total responses	606	636
	Total on-time responses	593	635
	% On-time	97.85%	99.84%
UNE-Loop	Total responses	290	198
	Total on-time responses	287	198
	% On-time	98.97%	100.00%
UNE-P	Total responses	612	541
	Total on-time responses	594	541
	% On-time	97.06	100.00
Aggregated	Total responses	1,508	1,375
	Total on-time responses	1,474	1,374
	% On-time	97.75%	99.93%

Notes:

1. The Qwest Service Performance Indicator Definitions, dated October 22, 2001, defined Flow Through Firm Order Confirmation (FOC) timeliness in PO-5A as 95% received within 20 minutes.
2. Normal transaction totals exclude response times those for orders that were submitted during the system outage that occurred between 1:42 PM and 2:30 PM on November 8, 2001.

Table 15-18: Firm Order Confirmation (FOC) Timeliness – Peak Day

Benchmark: 95% within 20 minutes (FOC)		EDI	GUI
Resale	Total responses	1,496	1,674
	Total on-time responses	1,477	1,668
	% On-time	98.73%	99.64%
UNE-Loop	Total responses	637	476
	Total on-time responses	637	476
	% On-time	100.00%	100.00%
UNE-P	Total responses	1,581	1,437
	Total on-time responses	1,560	1,426
	% On-time	98.67%	99.23%
Aggregated	Total responses	3,714	3,587
	Total on-time responses	3,674	3,570
	% On-time	98.92%	99.53%

Note:

1. The Qwest Service Performance Indicator Definitions, dated October 22, 2001, defined Flow Through Firm Order Confirmation (FOC) timeliness in PO-5A as 95% received within 20 minutes.

Figure 15-2: IMA EDI and IMA GUI Hourly Submission Distribution – Normal Day

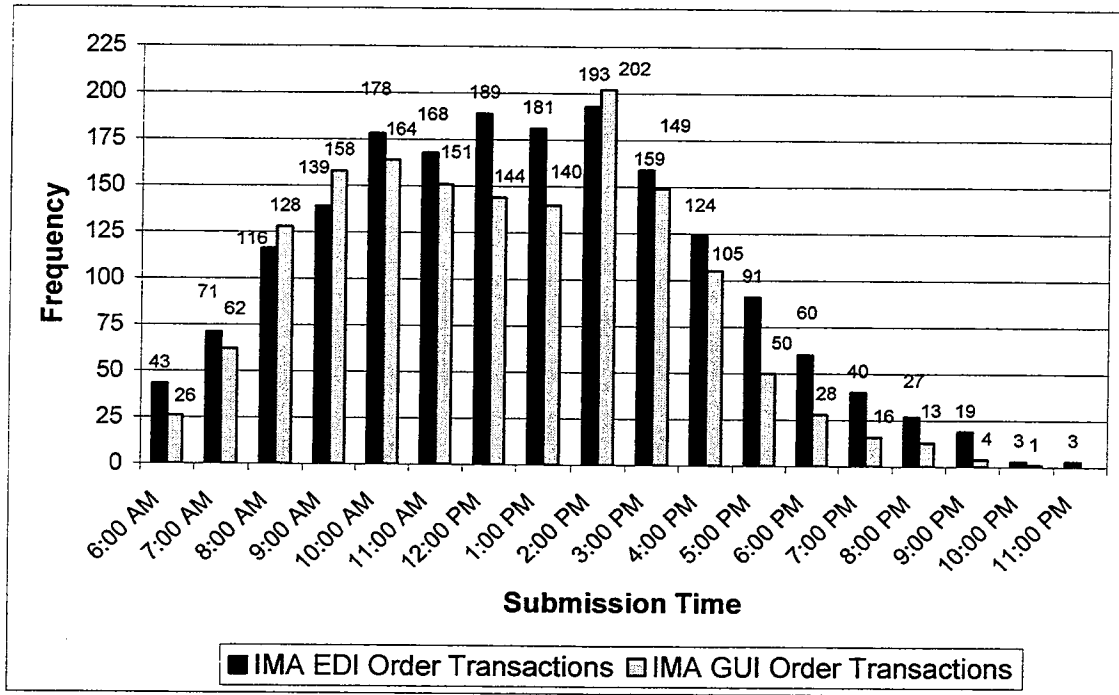


Figure 15-3: IMA EDI Response Times – Normal Day

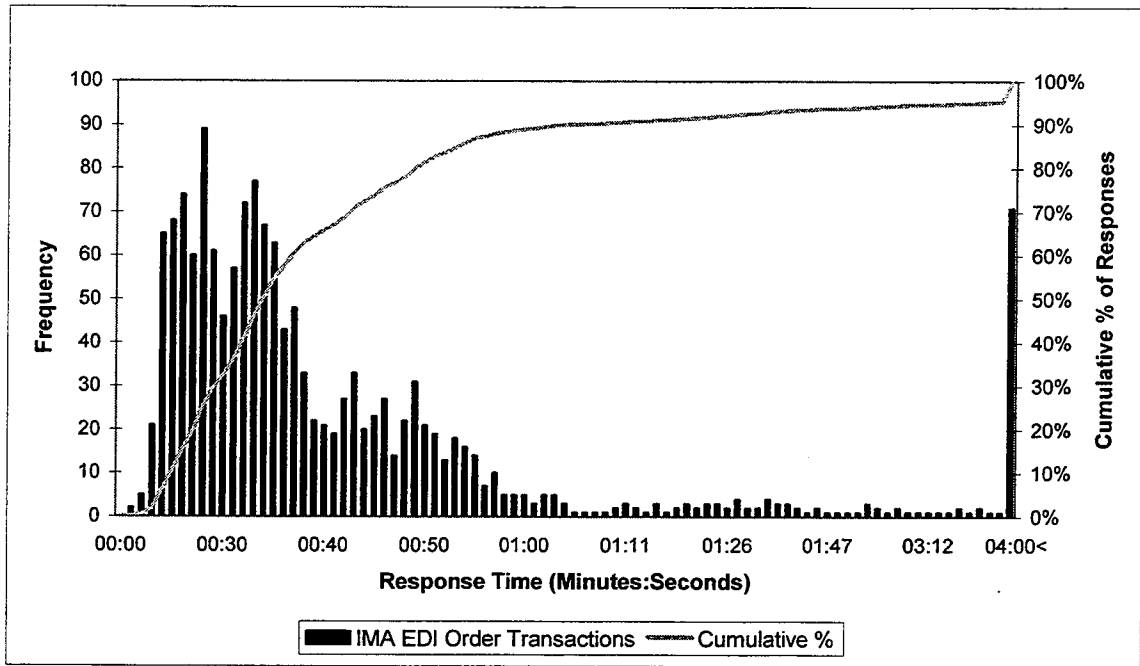


Figure 15-4: IMA GUI Order Transactions Response Times – Normal Day

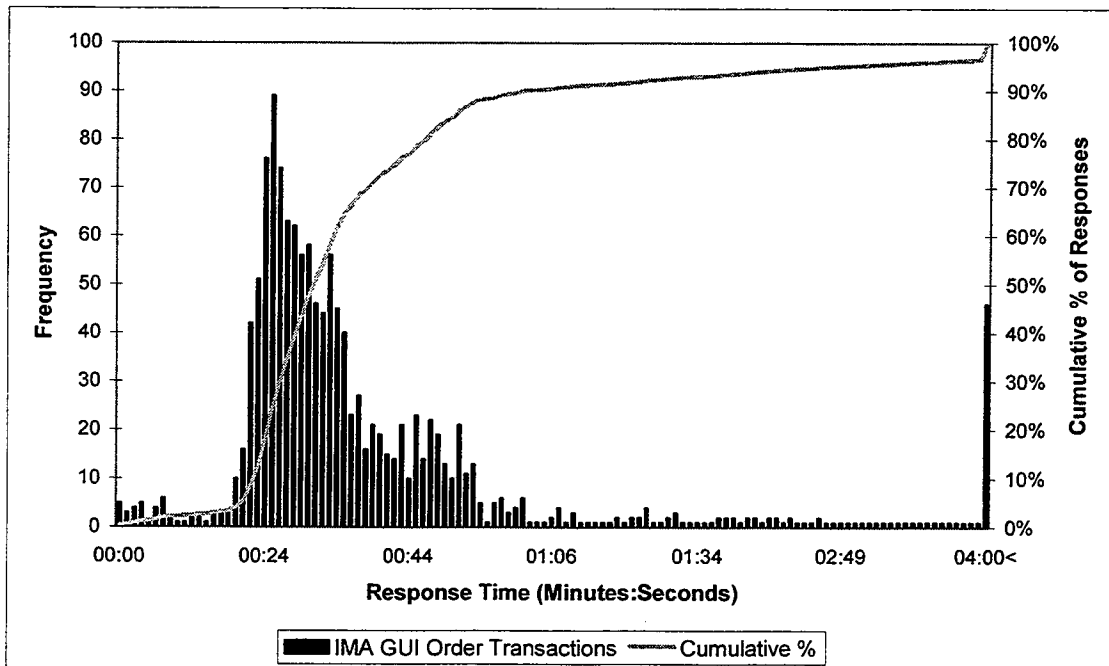


Figure 15-5: IMA EDI Hourly Performance – Normal Day

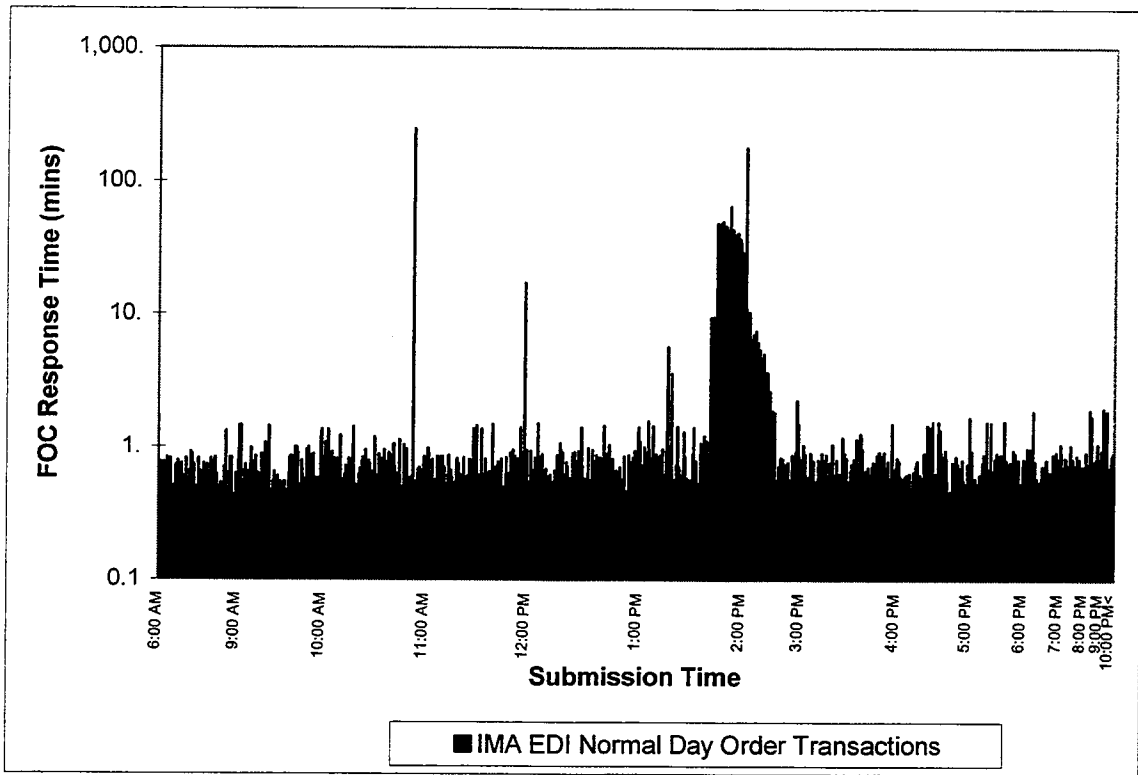


Figure 15-6: IMA GUI Hourly Performance – Normal Day

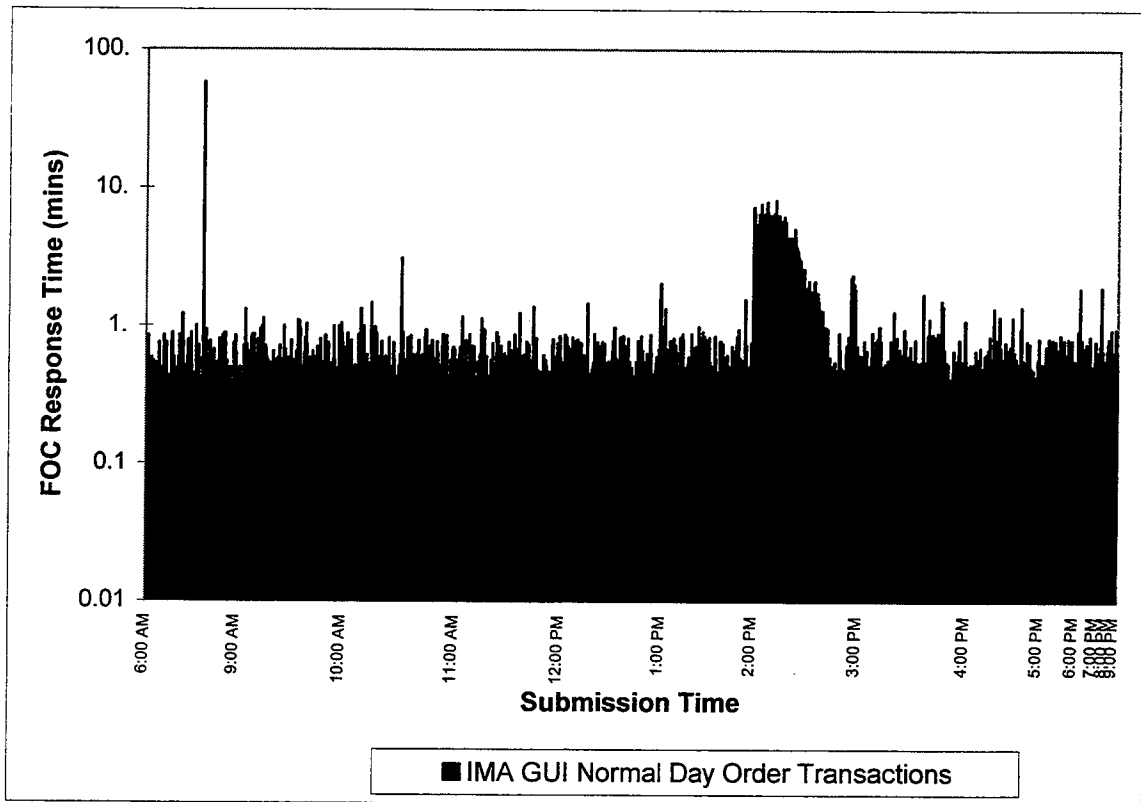


Figure 15-7: IMA EDI and IMA GUI Hourly Submission Distribution – Peak Day

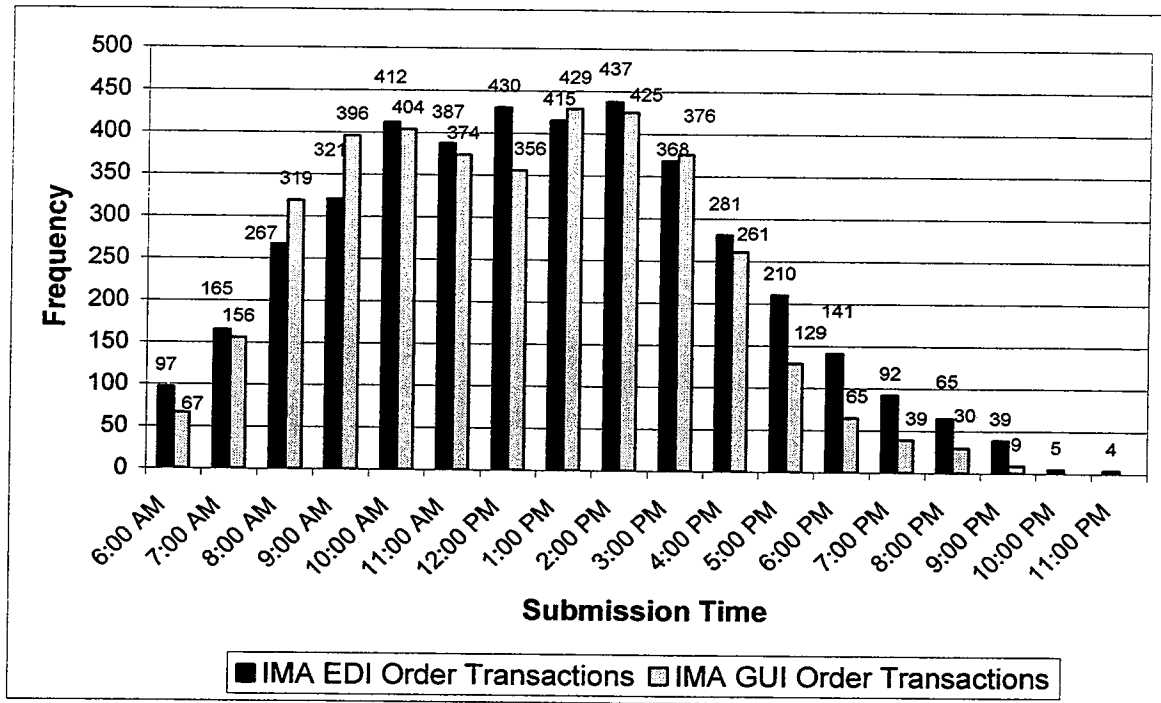


Figure 15-8: IMA EDI Response Time – Peak Day

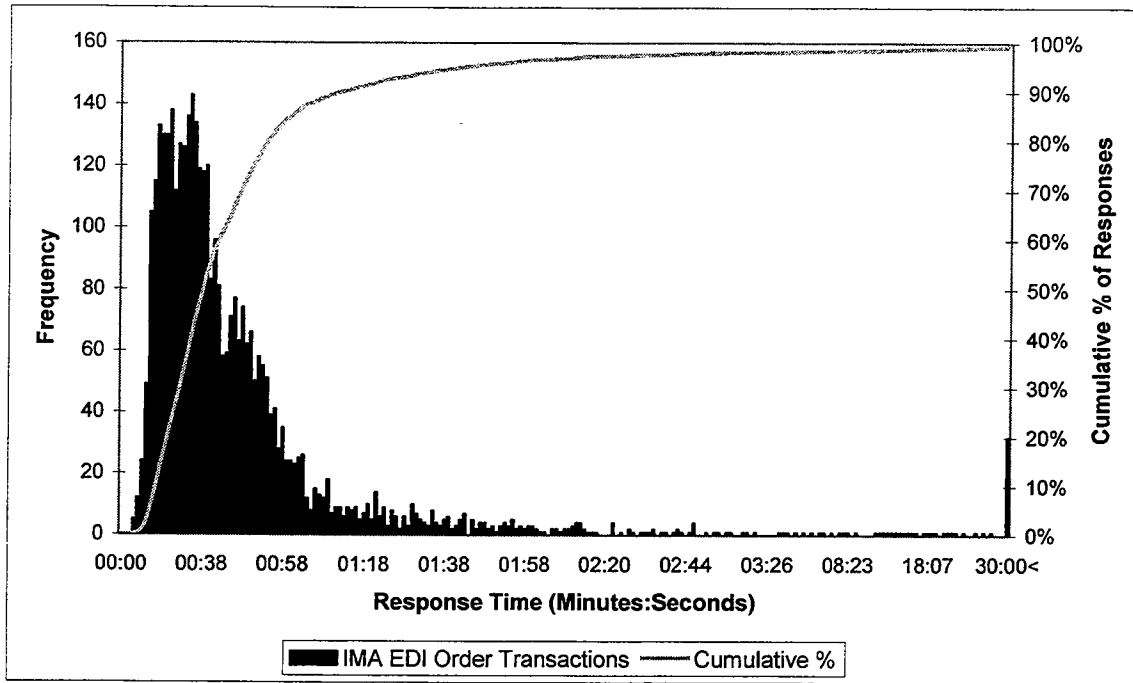


Figure 15-9: IMA GUI Response Times – Peak Day

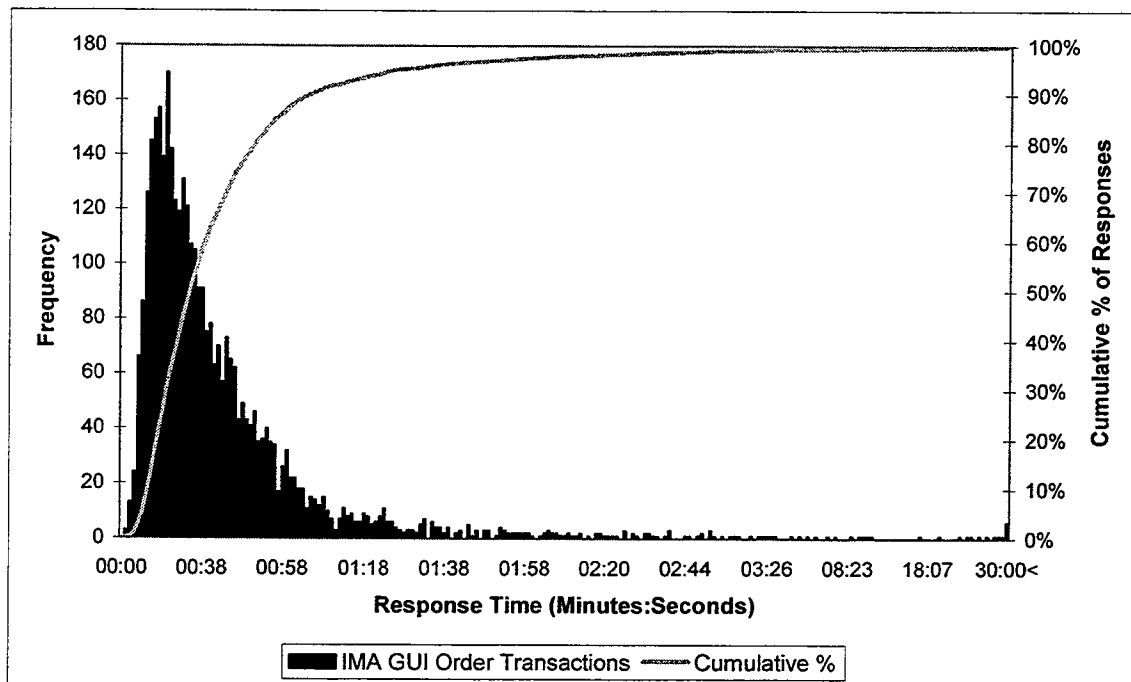


Figure 15-10: IMA EDI Hourly Performance – Peak Day

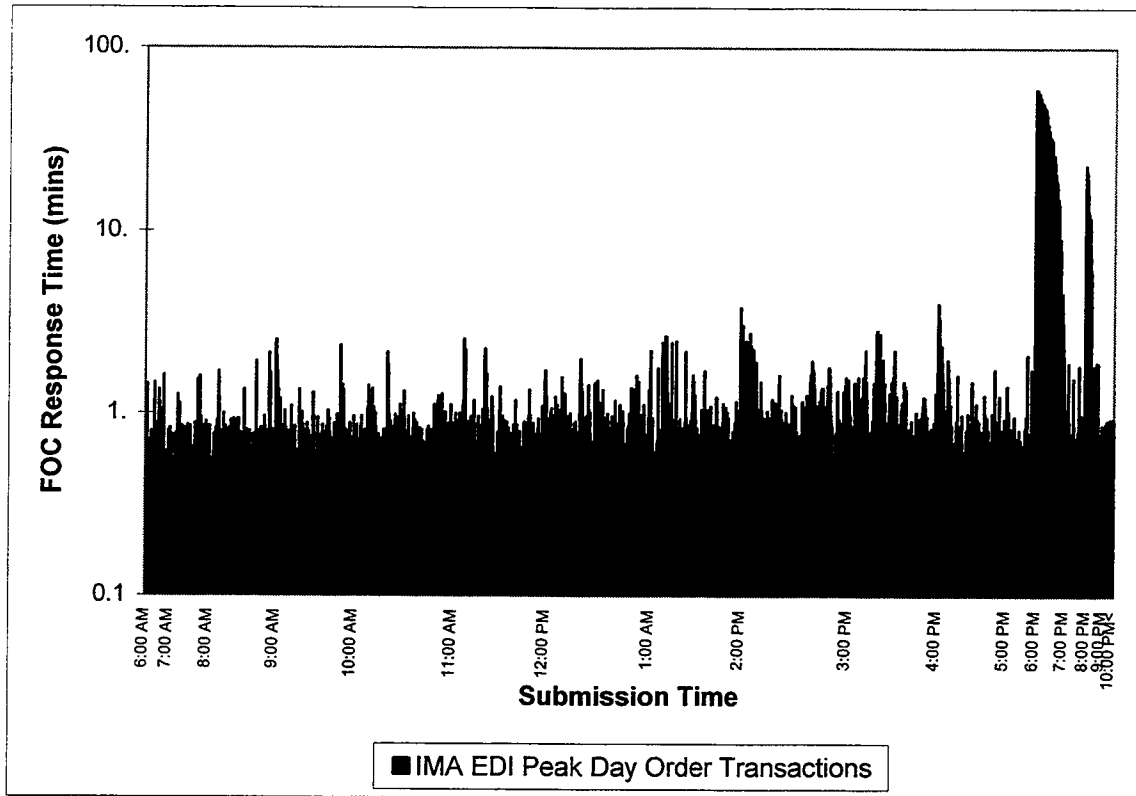
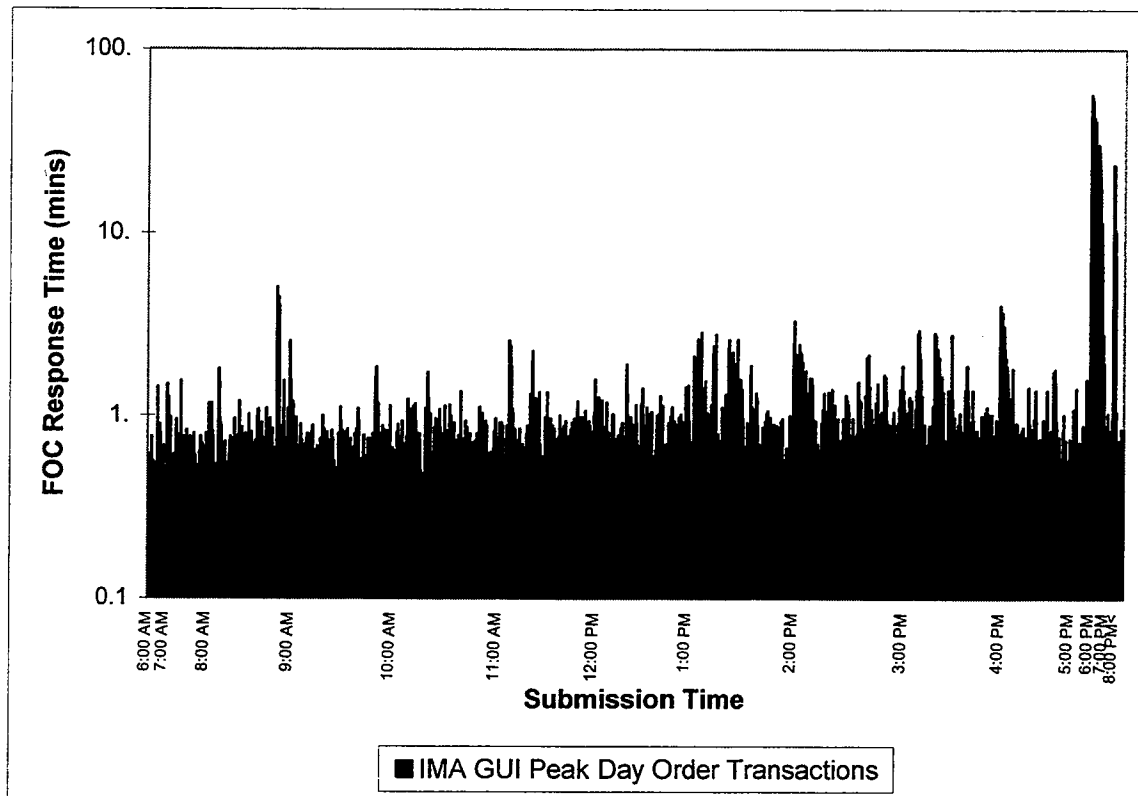


Figure 15-11: IMA GUI Hourly Performance – Peak Day



3.3 Additional Data – Stress Volume Days

The Stress volume test was a “diagnostic” test, scheduled to run during off-peak production hours to limit the test’s impact on real customers. The Stress volume test results were not used to determine the satisfied or not satisfied results presented in Table 15-6.

The first Stress test was executed on November 30, 2001. Based on the results of the first Stress volume test, and at the request of Qwest, a second Stress volume test was executed on January 25, 2002. During the first Stress test, Qwest’s IMA system fell behind in its processing of flow-through LSRs, causing flow-through queues to back up. Qwest’s flow-through queue was set up to detect untimely processing of flow-through LSRs. Any LSR that was not being processed in a “timely fashion” was flagged for manual attention. Therefore, due to the continuous load, Qwest’s IMA was unable to empty the backed up queues, and flagged these orders for manual handling in order to ensure that the orders would be processed. As a result, FOCs were returned for only 57.72% of the flow-through eligible LSRs. The remaining orders fell out for manual handling, and did not receive a response.⁷⁸

⁷⁸ See Observation 3070 for additional information on this issue.

Table 15-19: IMA EDI Pre-Order Response Timeliness - Stress Day 1

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)
		Min	Max	KPMG Consulting
Erred Responses	330	2	124	29.79
Non-Erred Responses	20,357			
AVQ	8,274	1	77	4.16
CFAQ	874	5	27	7.36
CSRQ	7,822	4	56	6.40
FAQ	1,909	6	123	13.54
SAQ	1,008	8	60	12.14
RLDQ	470	8	91	14.19
Total Responses Received	20,687			
Time-Outs	0			
Non-Responses	0			
Total Pre-Orders Submitted	20,687			

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. The Stress day 1 volume test was run on November 30, 2001.

Table 15-20: IMA GUI Pre-Order Response Timeliness – Stress Day 1

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)
		Min	Max	KPMG Consulting
Erred Responses	219	1	123	28.46
Non-Erred Responses	13,952			
AVQ	5,669	1	40	2.15
CFAQ	601	4	12	5.09
CSRQ	5,349	3	38	4.27
FAQ	1,298	4	71	11.49
SAQ	689	4	18	6.62
RLDQ	346	1	22	3.14
Total Responses Received	14,171			
Time-Outs	0			
Non-Responses	0			
Total Pre-Orders Submitted	14,171			

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. The Stress day 1 volume stress test was run on November 30, 2001.

Table 15-21: IMA EDI Pre-Order Response Timeliness - Stress Day 2

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)
		Min	Max	KPMG Consulting
Erred Responses	149	13	122	40.64
Non-Erred Responses	20,536			
AVQ	8,277	2	57	3.78
CFAQ	1,012	5	20	7.00
CSRQ	7,857	4	35	6.13
FAQ	1,908	6	120	12.73
SAQ	1,007	9	62	12.33
RLDQ	475	9	35	15.11
Total Responses Received	20,685			
Time-Outs	0			
Non-Responses	6			
Total Pre-Orders Submitted	20,691			

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. The Stress day 2 volume stress test was run on January 25, 2002.

Table 15-22: IMA GUI Pre-Order Response Timeliness – Stress Day 2

Query Type	Number of Responses	Range of Response Time (seconds)		Average Response Time (seconds)
		Min	Max	KPMG Consulting
Erred Responses	89	2	121	42.62
Non-Erred Responses	14,083			
AVQ	5,668	1	43	2.13
CFAQ	686	4	18	5.15
CSRQ	5,385	3	37	4.20
FAQ	1,309	5	109	11.11
SAQ	689	5	40	7.44
RLDQ	346	1	19	3.53
Total Responses Received	14,172			
Time-Outs	0			
Non-Responses	0			
Total Pre-Orders Submitted	14,172			

Notes:

1. A time-out transaction is defined as any pre-order transaction for which the response time duration is greater than or equal to 200 seconds.
2. The Stress day 2 volume stress test was run on January 25, 2002.

Table 15-23: IMA EDI Order Response Timeliness – Stress Days

Test Day	Total LSRs Submitted	FT-Eligible LSRs Submitted	Acknowledgments Received		FOC Responses Received		
			Total FAs Received	% of FAs Received	Number	Percent On Time	Average Response Time (minutes)
Stress Day 1	4,681	4,681	4,681	100.00%	2,702	64.02%	41.84
Stress Day 2	4,671	4,671	4,671	100.00%	4,445	100.00%	1.58

Notes:

1. Per the PID benchmark, a valid response is considered on time if it is received within 20 minutes of the submission of the corresponding LSR.
2. The Stress day 1 volume stress test was run on November 30, 2001.
3. The Stress day 2 volume stress test was run on January 25, 2002.

Table 15-24: IMA GUI Order Response Timeliness – Stress Days

Test Day	Total LSRs Submitted	FT-Eligible LSRs Submitted	Acknowledgments Received		FOC Responses Received		
			Total FAs Received	% of FAs Received	Number	Percent On Time	Average Response Time (minutes)
Stress Day 1	4,725	4,725	4,622	97.82%	2,732	63.78%	40.70
Stress Day 2	4,725	4,725	4,722	99.94%	4,655	99.95%	1.65

Notes:

1. Per the PID benchmark, a valid response is considered on time if it is received within 20 minutes of the submission of the corresponding LSR.
2. The Stress day 1 volume stress test was run on November 30, 2001.
3. The Stress day 2 volume stress test was run on January 25, 2002.

Table 15-25: IMA EDI Error Response Timeliness – Stress Days

Test Day	ERR			
	Number Received	Number On Time	Percent On Time	Average Response Time (seconds)
Stress Day 1	1	0	0%	39.0
Stress Day 2	57	47	82.46%	15.0

Notes:

1. The Stress day 1 volume stress test was run on November 30, 2001.
2. The Stress day 2 volume stress test was run on January 25, 2002.

Table 15-26: Firm Order Confirmation (FOC) Timeliness – Stress Day 1

Benchmark: 95% within 20 minutes (FOC)		EDI	GUI
Resale	Total responses	1,154	1,344
	Total on-time responses	753	885
	% On-time	65.25%	65.85%
UNE-Loop	Total responses	431	299
	Total on-time responses	233	155
	% On-time	54.06%	51.84%
UNE-P	Total responses	1,117	1,089
	Total on-time responses	744	700
	% On-time	66.61%	64.28%
Aggregated	Total responses	2,702	2,732
	Total on-time responses	1,730	1,740
	% On-time	64.03%	63.68%

Notes:

1. Per the PID, a valid response is considered on time if it is received within 20 minutes of the submission of the corresponding LSR.
2. The first Stress volume test was run on November 30, 2001.

Table 15-27: Firm Order Confirmation (FOC) Timeliness – Stress Day 2

Benchmark: 95% within 20 minutes (FOC)		EDI	GUI
Resale	Total responses	1,779	2,291
	Total on-time responses	1,779	2,289
	% On-time	100.00%	99.91%
UNE-Loop	Total responses	835	578
	Total on-time responses	835	578
	% On-time	100.00%	100.00%
UNE-P	Total responses	1,831	1,786
	Total on-time responses	1,831	1,786
	% On-time	100.00%	100.00%
Aggregated	Total responses	4,445	4,655
	Total on-time responses	4,445	4,653
	% On-time	100.00%	99.96%

Notes:

1. Per the PID, a valid response is considered on time if it is received within 20 minutes of the submission of the corresponding LSR.
2. The second Stress volume test was run on January 25, 2002.

Figure 15-12: IMA EDI and IMA GUI 1 Hourly Submission Distribution – Stress Day 1

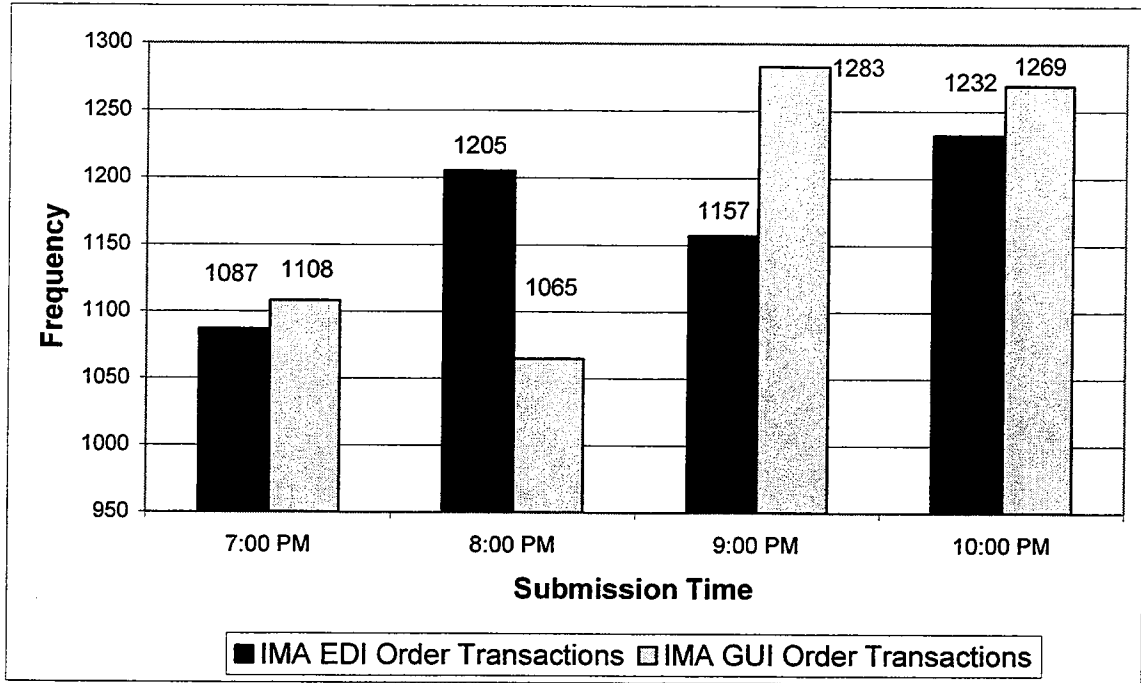


Figure 15-13: IMA EDI Response Times – Stress Day 1

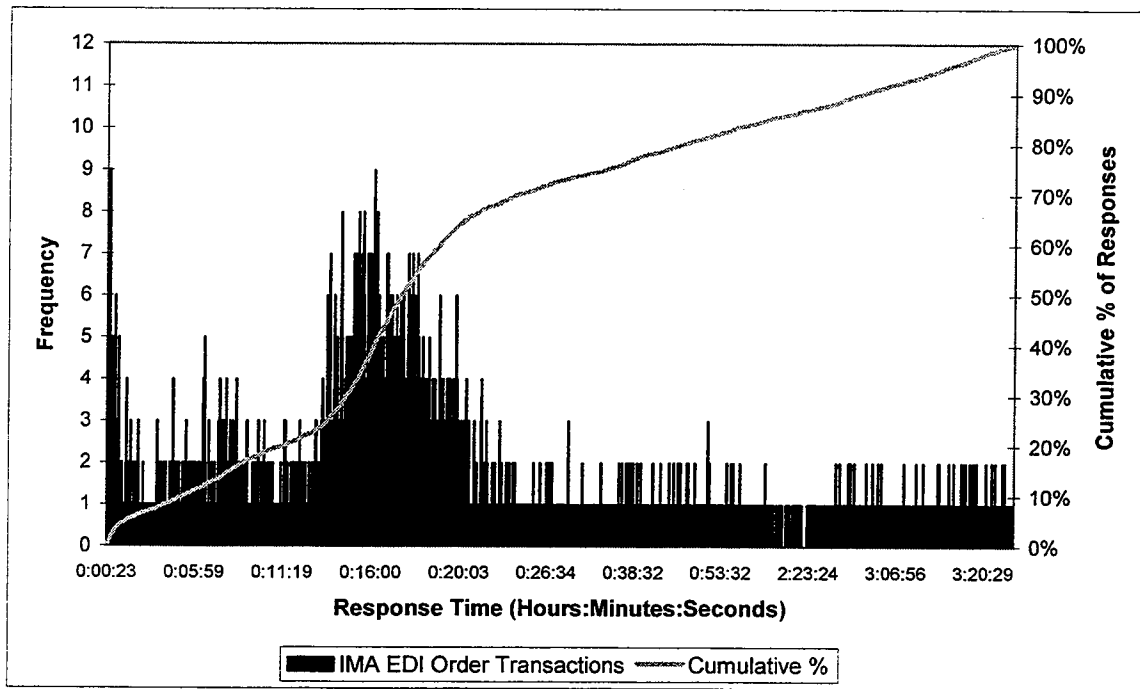


Figure 15-14: IMA GUI Response Times – Stress Day 1

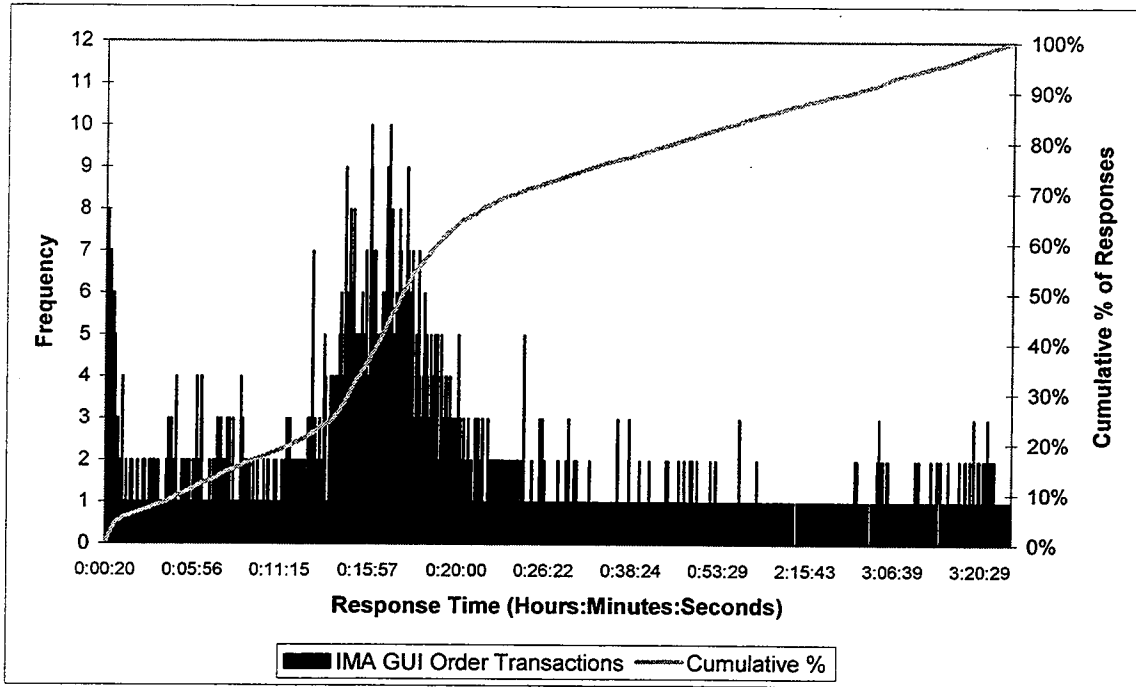


Figure 15-15: IMA EDI Hourly Performance Stress Day 1

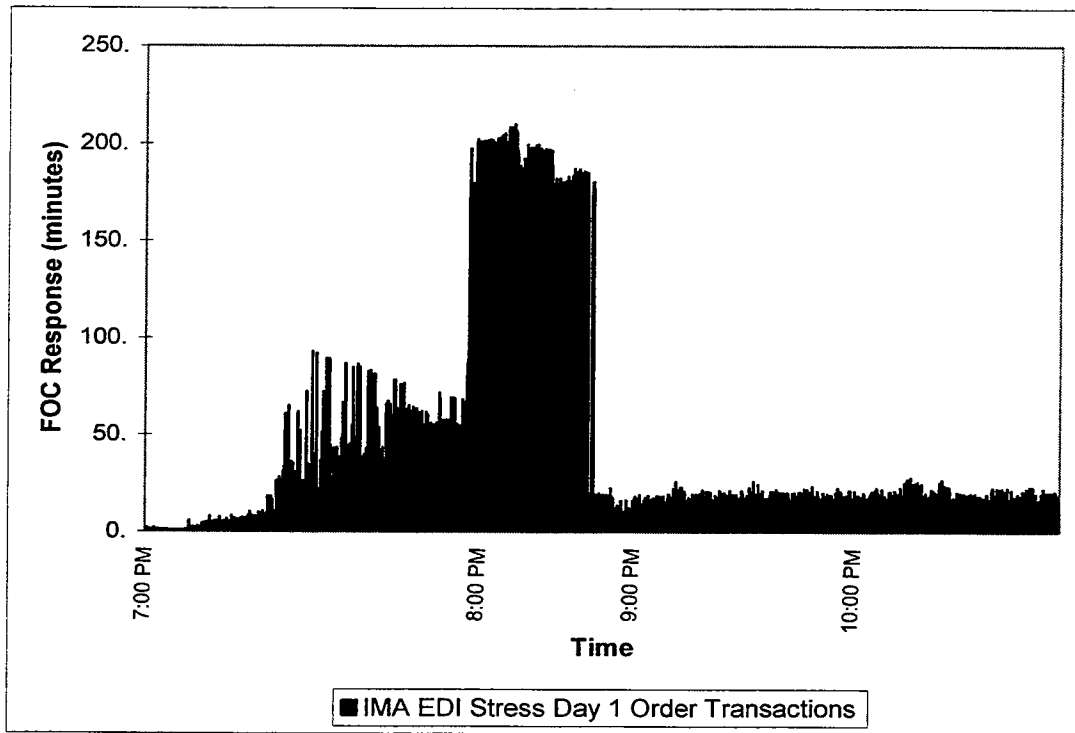


Figure 15-16: IMA GUI Hourly Performance – Stress Day 1

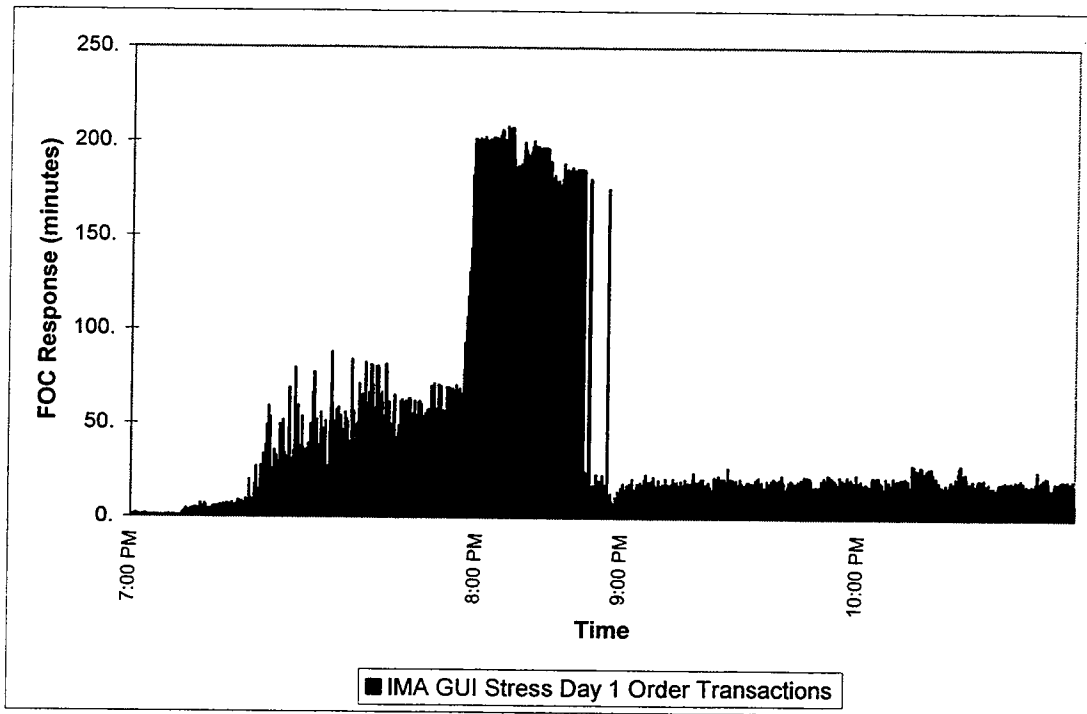


Figure 15-17: IMA EDI and IMA GUI Hourly Submission Distribution – Stress Day 2

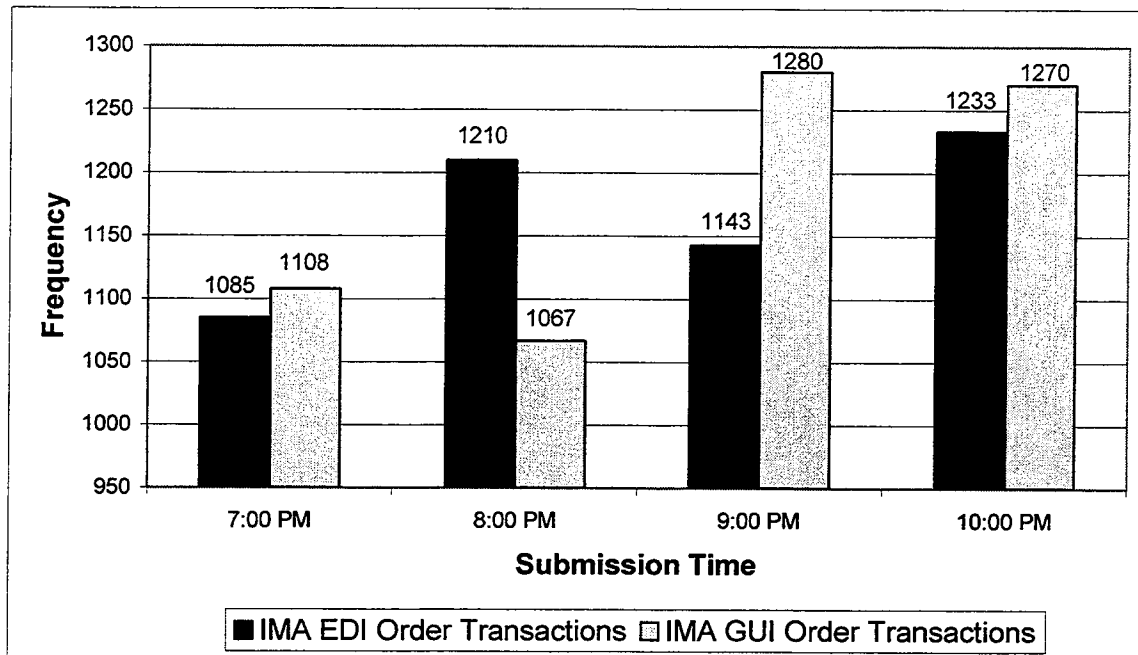


Figure 15-18: IMA EDI Response Times – Stress Day 2

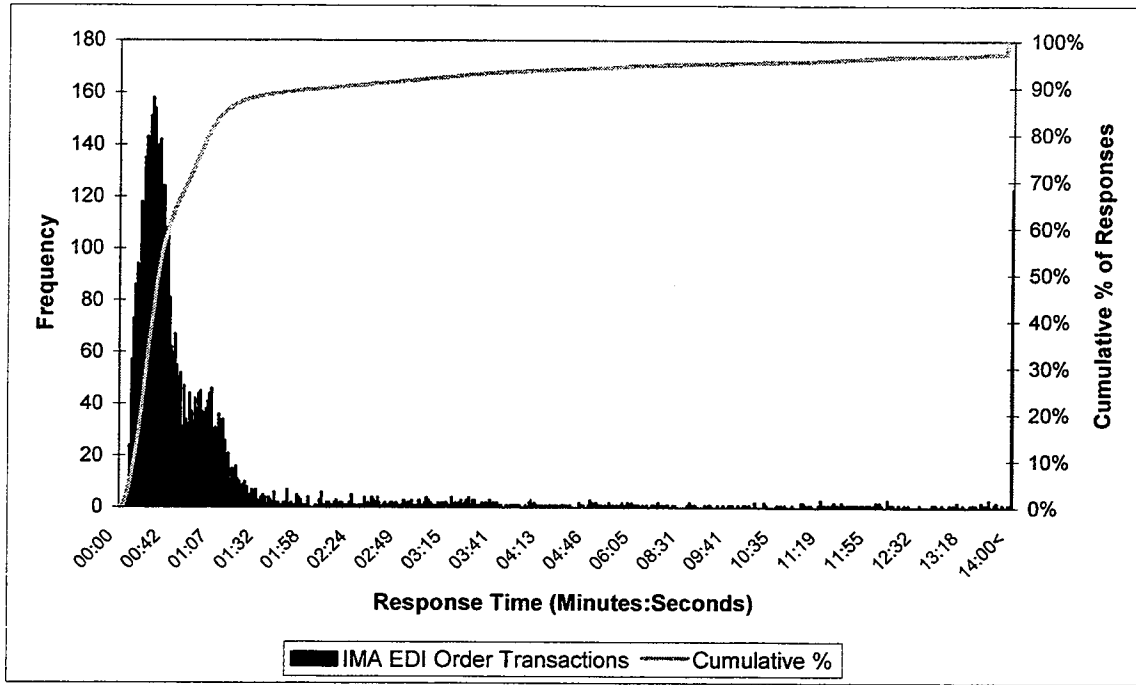


Figure 15-19: IMA GUI Response Times – Stress Day 2

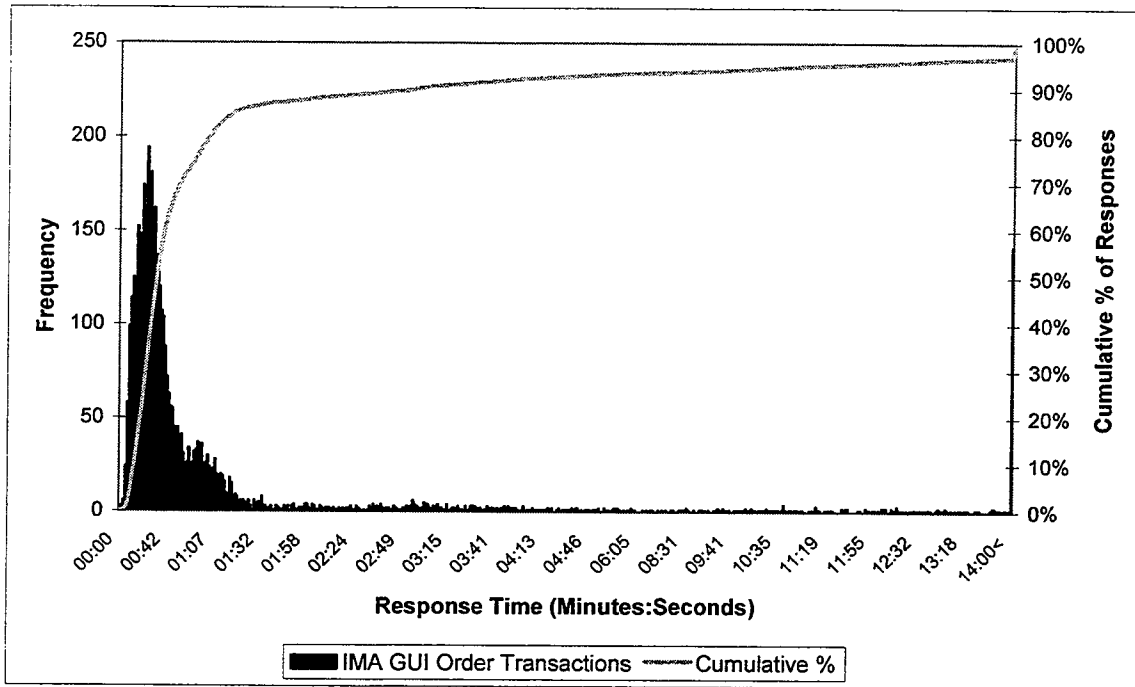


Figure 15-20: IMA EDI Hourly Performance – Stress Day 2

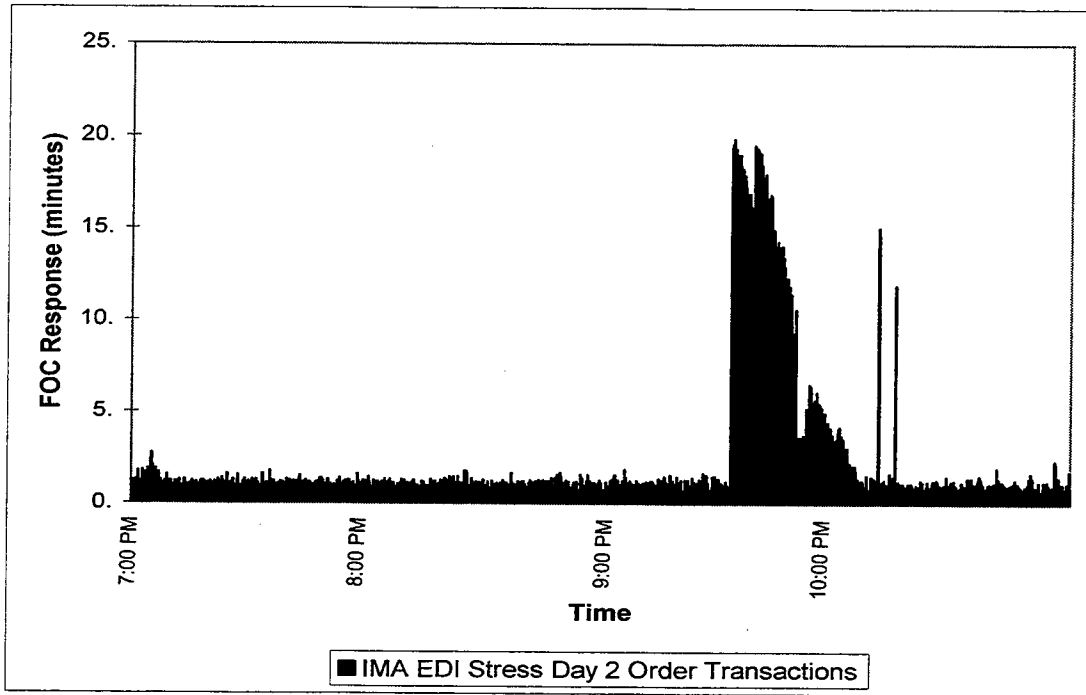
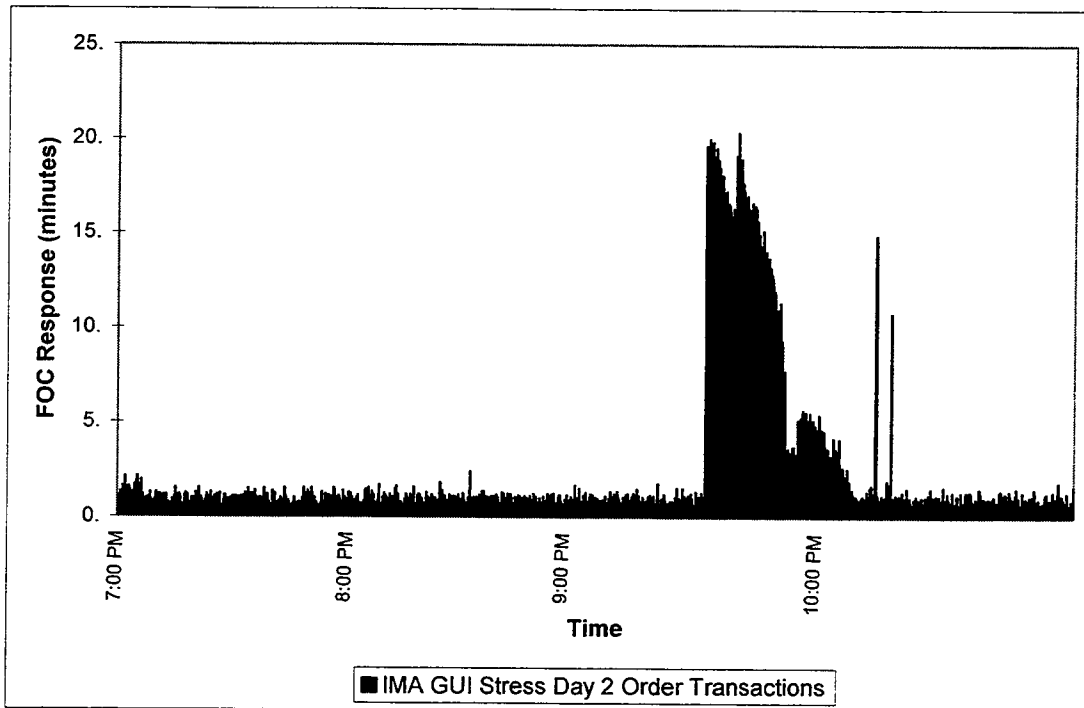


Figure 15-21: IMA GUI Hourly Performance – Stress Day 2



16. Test Results: CEMR Functional and Performance Evaluation (Test 16)

1.0 Description

The Customer Electronic Maintenance and Repair (CEMR) Functional and Performance Evaluation was a comprehensive review of the trouble administration functional elements of Qwest's CEMR Graphical User Interface (GUI), a review of CEMR's conformance to documented specifications, and an analysis of CEMR's functionality in comparison to Qwest's Retail front-end systems for trouble management.

The objective of this test was to validate the existence and behavior of CEMR functional elements as documented in the *Qwest CEMR User Guide* and other applicable documents, and to evaluate, based on both quantitative and qualitative analysis methods, the equivalence of CEMR functionality to Qwest's Retail front-end systems for trouble management. The performance evaluation was a transaction driven test designed to evaluate the CEMR system under load conditions. The behavior of CEMR was evaluated to determine system performance, in terms of response time and operability, and to identify potential performance bottlenecks. The test also evaluated whether or not performance was consistent with Qwest's documented specifications.

The test included three major phases: Phase 1 – a basic functional evaluation, Phase 2 – a comparative functional evaluation, and Phase 3 – a performance evaluation. Additional information on the test's three phases is as follows:

- **Phase 1** involved the use of scenarios created for this test, and observation of the test scenarios, to evaluate CEMR functionality, and to determine if the system behaved as documented.
- **Phase 2** involved observation of and interviews with Qwest Retail Maintenance Administrators (MA) processing trouble calls, and entering trouble reports into Qwest's Retail front-end systems, to assess Retail functionality as compared to the CEMR GUI.
- **Phase 3** involved load testing of CEMR by sending transaction sets structured to provide a transaction mix consistent with current system usage, and projected normal, peak, and stress load volumes. The baseline quantity of transactions was designated as the "normal volume." A second execution, designated "peak," used a multiple of 150% of the "normal" volumes. The "stress" execution used transaction volumes that were 250% of the volumes used for the "normal" test.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

CEMR is a front-end trouble reporting GUI provided to CLECs operating in the Qwest territory. The system provides the wholesale community with access to Qwest's legacy M&R systems that serve both wholesale and retail operations. Trouble reports (TRs) submitted via CEMR for designed services flow through the Mediated Access System (MEDIACC) directly into Work Force Administration/Control (WFA/C) for processing. TRs submitted via CEMR for non-

designed services flow through RCE for a diagnostic review; to MEDIACC for ticket ID assignment; and, finally, through LMOS for processing.

WFA/C automatically assigns an objective date and time⁷⁹ that informs the CLEC of the anticipated restoration time. WFA/C prioritizes tickets based on the type of service reported, on a first in / first out basis. Generally, high capacity circuits receive a shorter repair interval. The Loop Maintenance Operating System (LMOS) automatically assigns a commitment date and time, referred to as the appointment, and uses the commitment time to prioritize work.

Both the WFA/C and LMOS systems allow for special consideration for circuit severity, or for conditions such as medical emergencies. A detailed description of the trouble reporting process can be found in the Test 18.7, M&R Work Center Support Evaluation final report.

Figure 16-1 illustrates the back-end systems that are accessible via CEMR.

⁷⁹ Objective date and time refer to the field names in WFA in which the expected repair time is entered. As stated, an objective date and time is similar to an appointment.

Figure 16-1: Back-end M&R Systems Accessible via CEMR

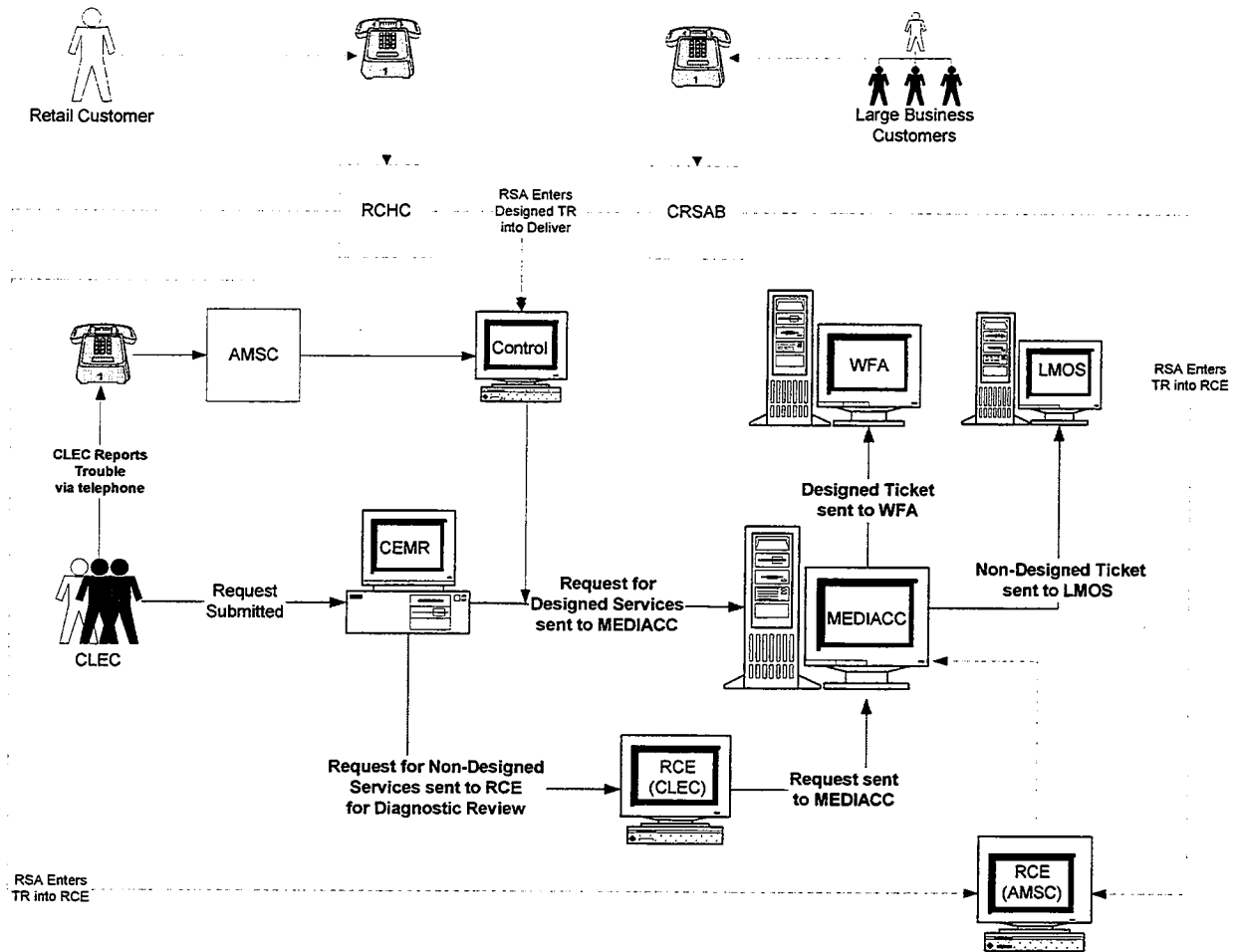


Table 16-1 details the circuit types, product support, and functions for Qwest’s M&R Core Factory Systems.

Table 16-1: Qwest Core Factory (Back-end) Systems

Core Factory Systems	Circuit Type	Product Support	M&R Activity
Loop Maintenance Operating System (LMOS)	POTS (Non-designed)	Resold Residence and Business, ISDN ⁸⁰ , Centrex, INP ⁸¹ , LNP ⁸²	Provides maintenance, access to test system, tracking, and dispatch functionality
Work Force Administration/ Control (WFA/C)	Specials (Designed)	Unbundled loops, IOF ⁸³ , Unbundled SS7 ⁸⁴	Provides maintenance, tracking, and dispatch functionality

⁸⁰ Integrated Services Digital Network.

⁸¹ Interim Number Portability.

⁸² Local Number Portability.

⁸³ Inter-Office Facilities.

The following services are available via CEMR:

- Pre-Validation Services, which allows users to:
 - Search and verify Carrier Facility Assignment (CFA) hierarchical information (SONET, T3, T1, or channel) for a specified facility or channel;
 - View the Design Layout Record (DLR) for a specified circuit; and
 - Perform Service Address validation, which provides the Numbering Plan Area (NPA) and Local Serving Office (LSO) for a valid end user service address.
- Designed Services support, which allows CLECs access to the following services for their accounts:
 - Send a request to create, edit, or cancel a Designed trouble ticket;
 - Authorize/deny closure on a Designed trouble ticket;
 - View TR history for circuits;
 - View the current status of any open TR created through CEMR; and
 - View the history of transactions.
- Non-Designed Services support, which allows CLECs access the following services for their accounts:
 - Diagnose a Non-Designed trouble fault or condition through the RCE;
 - Send a request to create, edit, or cancel a Non-Designed trouble ticket;
 - Authorize/deny closure on a Non-Designed trouble ticket;
 - Initiate a Mechanized Loop Tests (MLT) test on a Non-Designed circuit;
 - Receive MLT test results;
 - View TR history for circuits;
 - View the current status of any open TR created through CEMR; and
 - View transaction history (i.e., create, maintain, cancel, etc.).

2.2 Scenarios

2.2.1 Scenarios for Phase 1

Scenarios selected for trouble reporting included both post provisioning activity and TRs on existing service. Table 16-2 illustrates the scenarios used to test CEMR functionality, and includes the features, trouble types, and type of reports entered. These scenarios incorporated both residential and business customers with line types representative of those purchased by CLECs in the Qwest territory.

⁸⁴ Signaling System 7.

Table 16-2: Scenarios

Services Tested			CEMR Functionality							
Line	Type of Service	Original State	Create	View	Edit	Cancel	Transaction History	View Events	Report Circuit History	MLT Test
POTS	BUS	UNE-P	X	X	X	X	X	X	X	X
POTS	RES	UNE-P	X	X	X	X	X	X	X	X
POTS	BUS	UNE-L	X	X	X	X	X	X	X	
POTS	RES	UNE-L	X	X	X	X	X	X	X	
POTS	RES	UNE-EEL	X	X	X	X	X	X	X	
DS1	BUS	UNE-DS1	X	X	X	X	X	X	X	
POTS	RES	Resale	X	X	X	X	X	X	X	X
POTS	BUS	Resale	X	X	X	X	X	X	X	X
Centrex	BUS	Resale	X	X	X	X	X	X	X	X

As part of the CEMR Functional Evaluation, KPMG Consulting conducted a Post-Migration Test that entailed the submission of trouble reports on newly migrated lines (Qwest Retail to CLEC) within 24 hours of the service order due date. Observations made during this test, as well as during the M&R End-to-End Trouble Report Processing Test (Test 18), were included in the transaction count for the purpose of the CEMR Functional Evaluation. Table 16-3 summarizes the conditions tested for the line types used for this test.

Table 16-3: Test Conditions (Post-Migration Testing and Test 18)

Conditions to be Tested Across Basic Scenario	Res. Lines	Bus. Lines	UNE Loops	Centrex	Private Line	PBX
Short on outside plant facility	X	X	X	X	X	X
Open on outside plant facility	X	X	X	X	X	X
Short on line within the central office	X	X	X	X	X	
Open on line within the central office	X	X	X	X	X	X
Noise on line	X	X	X			
Echo on line	X	X				
Customer with LNP not receiving incoming calls	X	X				
Customer receiving incoming calls intended for another customer's number	X					
Call waiting not working	X	X				
Repeat dialing not working	X					
Customer cannot call 900 numbers	X					
Calls do not roll-over for customer with multi-line hunt group		X		X		
Call forwarding not working	X	X				
Caller ID not working	X	X				

Conditions to be Tested Across Basic Scenario	Res. Lines	Bus. Lines	UNE Loops	Centrex	Private Line	PBX
No dial tone on multiple lines				X		
DS1 loop MUXed to DS3 IOF not functioning			X			
Submit trouble ticket against new loop	X	X				
Conduct MLT on new CLEC service	X	X				

2.2.2 Scenarios for Phase 2

Scenarios were not applicable to this phase of the test.

2.2.3 Scenarios for Phase 3

Scenarios were not applicable to this phase of the test.

2.3 Test Targets & Measures

The test target was the maintenance and repair process for submitting trouble tickets via the CEMR system. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

2.3.1 Test Targets for Phases 1 and 2

Table 16-4: Test Target Cross-Reference – M&R CEMR Functional Evaluation

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Trouble Reporting	Create/Enter Trouble Report (TR)	Functionality exists as documented	16-1-1 – 16-1-2, 16-1-9 – 16-1-11, 16-2-1
	Modify TR	Functionality exists as documented	16-1-1, 16-1-3, 16-2-2
	Close/Cancel TR	Functionality exists as documented	16-1-1, 16-1-4, 16-2-3
	Retrieve TR Status	Functionality exists as documented	16-1-1, 16-1-5, 16-2-4
Trouble History Access	Retrieve Trouble History	Functionality exists as documented	16-1-1, 16-1-6, 16-2-5
Access To Test Capability	Initiate MLT Test	Functionality exists as documented	16-1-1, 16-1-7, 16-2-6
	Receive MLT Test Results	Functionality exists as documented	16-1-1, 16-1-8, 16-2-7

2.3.2 Test Targets for Phase 3

Table 16-5: Test Target Cross-Reference – CEMR Performance Evaluation

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Trouble Reporting	Create/Enter Trouble Report (TR)	Timeliness Accuracy	16-3-1 – 16-3-4
	Modify TR	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-5
	Close/Cancel TR	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-6
	Retrieve TR Status	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-7
Trouble History Access	Retrieve Trouble History	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-8
Access To Test Capability	Initiate MLT and Retrieve Results	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-9 – 16-3-10
Access to Line Record	Initiate Line Record Test and Retrieve Results	Timeliness Accuracy	16-3-1 – 16-3-3, 16-3-11

2.4 Evaluation Methods

2.4.1 Evaluation Methods – Phase 1

Based on the review of the *CEMR User Guide*, KPMG Consulting identified and examined the following functions available via CEMR:

- Create TR
- Line Record
- View Events
- View Design Layout Record (DLR)
- Edit TR
- DATH
- Cancel TR
- DLETH
- Initiate MLT
- DETH
- Receive MLT Response
- OSSCHI

- Search and Verify Carrier Facility Assignment (CFA)
- OSSLOG
- Service Address Validation.

To help maintain blindness, Hewlett-Packard Consulting (HPC), acting as the Pseudo-CLEC (P-CLEC), executed Test 16 transactions. HPC established a functional CLEC account with Qwest that was similar to that of all other CLEC accounts. KPMG Consulting, as test manager, was responsible for developing the test plan, designing test scenarios, and submitting them to the P-CLEC for execution. The P-CLEC, under the direction of KPMG Consulting, executed the transactions using CEMR, and maintained communication with Qwest until trouble ticket closure. This communication included calling the help desk, or a repair center, for system or trouble processing related issues. The P-CLEC also captured specific test data that was returned to KPMG Consulting for analysis.

The functional evaluation consisted of the following steps:

- KPMG Consulting conducted a review of Qwest's *CEMR User Guide* to understand how each functional request should be processed using CEMR. As part of this process, the test team evaluated the completeness and clarity of the *CEMR User Guide*.
- KPMG Consulting developed test cases for each scenario to verify that each of the functions provided via the CEMR interface performed as documented. A limited number of test cases included planned errors to validate edit rules for required and conditional fields. This verified that it was necessary for the user to complete stated required fields, and that the stated conditional fields were, in fact, conditional. KPMG Consulting did not test Optional fields because they are used for informational purposes only.
- KPMG Consulting observed and interviewed the P-CLEC as it executed the test cases to gather information about CEMR usability.
- KPMG Consulting collected screen prints to document transaction requests, and the responses generated by CEMR.
- KPMG Consulting analyzed error responses to determine underlying cause(s), such as unclear documentation, CEMR functional deficiency, or user error (i.e., data entry mistakes). KPMG Consulting corrected and resubmitted transactions that included user errors.
- KPMG Consulting observed and interviewed the P-CLEC as it opened tickets for newly migrated lines (Qwest Retail to CLEC) within 24 hours of the service order due date. The internal security of CEMR requires ownership validation with the circuit maintenance record before transactions can be performed against a circuit number. For newly provisioned lines, CEMR provides that POTS trouble reports encountering a potential "ownership check" problem be treated consistently. CEMR accepts these trouble reports provisionally, and creates a trouble report in LMOS, which is immediately routed by the system to a dedicated Qwest representative responsible for the manual review of the trouble.
- KPMG Consulting and the P-CLEC ensured that all trouble reports entered in CEMR, with the exception of those submitted in support of Test 18, were canceled after the test scenario was completed.

- Anomalies and/or discrepancies between CEMR documentation and behavior were recorded.

In order to test the functionality of the CEMR system, it was necessary to enter troubles and, in some cases, modify troubles, close troubles, and obtain a history of closed troubles. These transactions generate maintenance activity in the legacy systems that is either routed electronically to a screener for test and/or review, or routed directly to a technician pool. Therefore, a test methodology⁸⁵ was developed by Qwest to allow third party testing of the CEMR system with minimal impact to Qwest maintenance workers.

KPMG Consulting was instructed by Qwest to use these test methodologies, where appropriate. These methodologies did not affect the functional processing of the test scenarios. As a preventive measure, a specific narrative was entered in the comments field so that a Qwest employee who might intercept the report would be able to identify it as a test trouble, and not work on the reported trouble.

For Phase 1, KPMG Consulting submitted a total of 2,436 M&R transactions using CEMR. This number includes 156 transactions for newly provisioned lines within 24 hours of migration, and 998 trouble tickets reported via CEMR in support of Test 18, End-to-End Trouble Report Processing.

2.4.2 Evaluation Methods – Phase 2

KPMG Consulting performed observations of, and conducted interviews with, M&R retail work center personnel who perform trouble-processing activities, in order to identify potential substantive differences between the functionality of CEMR and the systems used in the Retail centers. Based on the known functionality of CEMR, KPMG Consulting developed a checklist for use in observing RSAs as they performed trouble administration activities employing Qwest Retail systems. The evaluation at the work centers consisted of the following KPMG Consulting activities:

- Noted the presence and behavior of functions identified on the checklist;
- Based on the review of the *CEMR User Guide* and knowledge of the CEMR interface, KPMG Consulting identified any unexpected behavior relative to the functions being observed;
- Noted any relevant additional information learned from the RSA interviews (e.g., additional capabilities, performance);
- Determined and documented similarities and differences in M&R functions that were able to be performed via the Retail trouble management and CEMR systems; and
- Performed a detailed comparison of the respective functionality and capabilities between CEMR and Retail front-end systems for trouble management.

2.4.3 Evaluation Methods – Phase 3

⁸⁵ Alternate method of processing designed to minimize the impact that the third party testers had on Qwest maintenance workers without distorting or changing basic system functionality.

Based on data received from Qwest about patterns of CEMR system usage, KPMG Consulting defined normal, peak, and stress volumes. Further, KPMG Consulting decided the volume for a peak hour would be 1.5 times that of a normal hour; and the volume for a stress hour would be 2.5 times that of a normal hour.

The test consisted of five test days – one diagnostic and two normal days, each of which consisted of twelve normal hours per day; one peak day, which consisted of six normal hours and six peak hours; and one stress day, which consisted of eight normal hours and four stress hours. Table 16-6 summarizes the different load conditions that were tested.

Table 16-6: CEMR Load Conditions

Load Conditions	Definition for Test 16 (Phase 3)
Normal hour load	Forecasted load for August 2002
Peak hour load	Load defined as 1.5 times August 2002 normal hour
Stress hour load	Load defined as 2.5 times August 2002 normal hour

2.4.3.1 Normal, Peak, and Stress Volume Derivation

The test was conducted using projected volumes for August 2002. The projected August 2002 installed base of wholesale POTS and Specials circuits was based on historical data received from Qwest. The table below shows the forecast Lines-in-Service volumes utilized for the test.

Table 16-7: Projected August 2002 Installed Base

Type of Service	Projected Lines in Service
POTS	1,047,675
Specials	2,307,400
Total	3,355,075

For the purposes of this test, KPMG Consulting used an average 3.46% monthly wholesale trouble rate⁸⁶ to estimate that the projected 1,047,675 POTS circuits would generate approximately 36,250 trouble reports per month. Similarly, based on an average 0.86% monthly trouble rate,⁸⁶ KPMG Consulting estimated that the projected 2,307,400 Specials circuits would generate approximately 19,844 troubles per month.

Next, KPMG Consulting assumed that 90% of all trouble reports would occur during the 22 weekdays in an average month. This led us to estimate that there would be 1,483 trouble reports daily for POTS and 812 for Specials.

In order to establish how many of the daily transactions would occur during the 12-hour period of the test, KPMG Consulting reviewed Qwest's M&R transaction data for January 2001 through March 2001, which indicated that approximately 83% of all transactions occur during the hours

⁸⁶ KPMG Consulting used Qwest's raw data for lines in service, and trouble reports received, to calculate the average trouble rate.

of 7:00 AM to 7:00 PM. KPMG Consulting then calculated that the POTS circuits would generate about 1,231 troubles, and Specials would generate about 674 troubles, during these 12 hours.

In order to determine the number of transactions that would be required for a normal hour on a normal day KPMG Consulting noted that there would be seven hours at the normal rate and five hours and 1.5 times the normal rate, or the equivalent of 14.5 normal hours. Therefore, during a normal hour on a normal day, KPMG Consulting estimated that POTS circuits would produce approximately 85 tickets per hour, and Specials circuits would produce about 46 per hour.

When KPMG Consulting attempted to determine the proportion of tickets to submit electronically versus manually, we discovered that the relevant data for the CEMR application was not available. However, analysis of historical data from the Interconnect Mediated Access GUI system revealed that approximately 10% of all trouble tickets arrive electronically.

KPMG Consulting assumes that, in the near future, approximately the same percentage of troubles will arrive via CEMR as will arrive via the IMA GUI. As competition increases, KPMG Consulting predicts that more CLECs will use electronically bonded systems to create trouble tickets because electronic interfaces permit a more efficient and reliable trouble administration process. KPMG Consulting assumed that an additional 17% will be added to the base rate of 10% to reflect anticipated increases in competition and electronic system usage. Thus, if 27% of wholesale troubles arrive electronically, the projected hourly number of POTS troubles is 23, and the projected hourly number for Specials circuits is 12.

Finally, KPMG Consulting researched the current commercial activity to determine what amounts, if any, to subtract from the projections above to achieve the marginal normal volumes for submission by the P-CLEC. The August 2001 baseline volume was defined as the number of Creates per hour that were likely to flow through CEMR in August 2001. Since the CEMR system only became available to the CLEC community during mid-April 2001, substantial historical data was not available. Therefore, KPMG Consulting used the *Qwest CEMR Response Time Reports* that were provided to KPMG Consulting to calculate the August 2001 baseline. The data indicated that six Creates are generated per hour for POTS circuits, and that less than one Create per hour is generated for Specials. Hence, the calculated additional volume for POTS circuits was 17 and 12 for Specials.

Table 16-8: August 2002 Normal Creates per Hour

Type of Service	Normal Creates per Hour
POTS	17
Specials	12
Total	29

2.4.3.2 Transaction Mix

KPMG Consulting gathered data from Qwest on the proportion of all transactions attributable to each transaction type. Qwest's M&R transaction data for April 2000 through March 2001 (prior to CEMR implementation) indicates that POTS *create trouble tickets* account for 13.9% of all

transactions, and Specials *create trouble tickets* account for 8.5% of all transactions. For the purposes of this evaluation, KPMG Consulting assumed that the CEMR transaction distribution will be similar. Tables 16-9 and 16-10 illustrate the transaction mix, which was derived from transaction ratios reflected in Qwest's regional wholesale data.

Table 16-9: Non-Designed M&R Transaction Mix – Percent of Total

Transaction Type	Percent of Total	Ratio to Create Transaction
Create	13.9%	1.00
Event ⁸⁷	40.7%	2.92
Cancel	1.3%	0.09
Closeout	0.0%	0.00
Add	0.2%	0.01
Modify	0.0%	0.00
Full MLT	18.4%	1.32
Line Record	2.0%	0.14
DATH	18.4%	1.32
DETH	1.7%	0.13
DLETH	3.4%	0.25
OSSCHI	NA	NA
OSSLOG	NA	NA
Total	100%	7.17

Table 16-10: Designed M&R Transaction Mix – Percent of Total

Transaction Type	Percent of Total	Ratio to Create Transaction
Create	8.5%	1.00
Event	63.9%	7.48
Cancel	1.2%	0.14
Closeout	5.1%	0.60
Add	15.1%	1.76
Modify	4.4%	0.52
Full MLT	NA	NA
Line Record	NA	NA
DATH	NA	NA
DETH	NA	NA
DLETH	NA	NA
OSSCHI	0.9%	0.10

⁸⁷ In CEMR, an Event is a status inquiry by a CLEC, related to a trouble report.

Transaction Type	Percent of Total	Ratio to Create Transaction
OSSLOG	0.9%	0.10
Total	100%	11.71

KPMG Consulting applied the ratios in Table 16-9: Non-Designed M&R Transaction Mix, and Table 16-10: Designed M&R Transaction Mix, to the create trouble report numbers developed in Table 16-8: August 2002 Normal Creates per Hour, to yield Table 16-11: Calculated August 2002 Normal Load, which follows.

Table 16-11: Calculated August 2002 Normal Hour Load (per hour)

Transaction Type	POTS	Specials
Create	17	12
Event	50	90
Cancel	2	2
Closeout	0	7
Add	0	21
Modify	0	6
Full MLT	22	NA
Line Record	2	NA
DATH	22	NA
DETH	2	NA
DLETH	4	NA
OSSCHI	NA	1
OSSLOG	NA	1
Total	121	140

Since the percentages of POTS *Closeout*, *Add*, and *Modify* transactions were zero, the calculated number of transactions was less than one per hour. An adjustment was made to include one of each of these transactions per hour. Due to limitations on the M&R volume test⁸⁸, *Create* transactions replaced *DETH*, *DLETH*, and *Closeout* transactions. The first table in each of the following pairs of tables reflects these adjustments, and the second table reflects both the adjustments and the substitutions.

⁸⁸ Since the CEMR system requires 24 hours to process *DETH* and *DLETH* transactions, *Create* transactions were substituted during test days. The *Closeout* process involved manual intervention from Qwest and, therefore, could not be replicated in a volume testing environment.

Table 16-12: Calculated August 2002 Normal Hour Load (per hour) - Adjusted

Transaction Type	POTS	Specials
Create	17	12
Event	50	90
Cancel	2	2
Closeout	1	7
Add	1	21
Modify	1	6
Full MLT	22	NA
Line Record	2	NA
DATH	22	NA
DETH	2	NA
DLETH	4	NA
OSSCHI	NA	1
OSSLOG	NA	1
Total	124	140

Table 16-13: Calculated August 2002 Normal Hour Load (per hour) – Adjusted with Substitutions

Transaction Type	POTS ⁸⁹	Specials ⁹⁰
Create	24	19
Event	50	90
Cancel	2	2
Closeout	0	0
Add	1	21
Modify	1	6
Full MLT	22	NA
Line Record	2	NA
DATH	22	NA
DETH	0	NA
DLETH	0	NA
OSSCHI	NA	1
OSSLOG	NA	1
Total	124	140

⁸⁹ Seven *Create* transactions replaced one *Closeout*, two *DETH*, and four *DLETH* transactions.

⁹⁰ Seven *Create* transactions replaced seven *Closeout* transactions.

Table 16-14: Calculated August 2002 Peak Hour Load (per hour) - Adjusted

Transaction Type	POTS	Specials
Create	29	18
Event	85	135
Cancel	3	3
Closeout	2	11
Add	2	32
Modify	2	9
Full MLT	38	NA
Line Record	4	NA
DATH	38	NA
DETH	4	NA
DLETH	7	NA
OSSCHI	NA	2
OSSLOG	NA	2
Total	214	212

Table 16-15: Calculated August 2002 Peak Hour Load (per hour) – Adjusted with Substitutions

Transaction Type	POTS ⁹¹	Specials ⁹²
Create	42	29
Event	85	135
Cancel	3	3
Closeout	0	0
Add	2	32
Modify	2	9
Full MLT	38	NA
Line Record	4	NA
DATH	38	NA
DETH	0	NA
DLETH	0	NA
OSSCHI	NA	2
OSSLOG	NA	2
Total	214	212

⁹¹ Thirteen *Create* transactions replaced two *Closeout*, four *DETH*, and seven *DLETH* transactions.

⁹² Eleven *Create* transactions replaced eleven *Closeout* transactions.

Table 16-16: Calculated August 2002 Stress Hour Load (per hour) - Adjusted

Transaction Type	POTS	Specials
Create	52	30
Event	152	225
Cancel	5	4
Closeout	3	18
Add	3	53
Modify	3	16
Full MLT	69	NA
Line Record	7	NA
DATH	69	NA
DETH	7	NA
DLETH	13	NA
OSSCHI	NA	3
OSSLOG	NA	3
Total	383	352

Table 16-17: Calculated August 2002 Stress Hour Load (per hour) – Adjusted with Substitutions

Transaction Type	POTS ⁹³	Specials ⁹⁴
Create	75	48
Event	152	225
Cancel	5	4
Closeout	0	0
Add	3	53
Modify	3	16
Full MLT	69	NA
Line Record	7	NA
DATH	69	NA
DETH	0	NA
DLETH	0	NA
OSSCHI	NA	3
OSSLOG	NA	3
Total	383	352

⁹³Twenty-three *Create* transactions replaced three *Closeout*, seven *DETH*, and thirteen *DLETH* transactions.

⁹⁴Eighteen *Create* transactions replaced eighteen *Closeout* transactions.

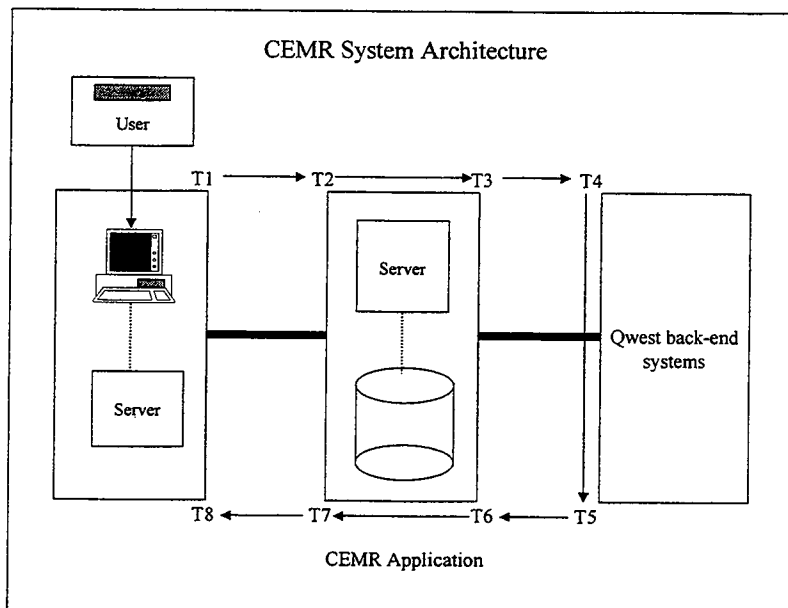
2.4.3.3 CEMR Submission and Response Time Intervals

CEMR processing required two steps. In the first step, transactions were submitted to the Qwest back-end systems using the CEMR application. This is depicted by the time intervals T1 through T4 in Figure 16-2 below. In the second step, a response was returned to the CEMR application from the Qwest systems. This is depicted by the time intervals T5 through T8 in Figure 16-2.

In Figure 16-2, intervals T1 through T8 represent a function of the combined responsiveness of the CEMR and Qwest back-end systems. This is an appropriate measure of performance under the following assumptions:

- Circuits that provide connectivity between CEMR and the Qwest back-end systems have sufficient capacity so that they are not a source of delay during testing. Under this condition, times T5 through T6, and T3 through T4, are constant and independent of transaction volume.
- The responsiveness of the Qwest back-end systems (times T4 through T5) is unaffected by wholesale volumes, which account for only a small percentage of total M&R volumes (both retail and wholesale).

Figure 16-2: CEMR Processing and Response Time Intervals



2.4.2.4 Benchmarks and Standards

There are no Performance Indicator Definitions (PIDs) applicable to CEMR's performance. In the absence of defined performance standards, KPMG Consulting assigned benchmarks for the M&R Performance component of this evaluation. These benchmarks were developed during the

P-CLEC's execution of the volume readiness testing (VRT) that was conducted in preparation for the Performance Test.

The following summarizes the approach that was used to establish the benchmarks:

- KPMG Consulting and the P-CLEC created a written specification that described the time stamping approach, and the format for data interchange between the two parties.
- After an initial burn-in period by the P-CLEC, KPMG Consulting submitted thirty-five instances of each transaction type.
- The P-CLEC captured time-stamps for each of the transactions per the written specification:
 - Start time was from the hit of the enter key at the beginning of each HTML screen.
 - End time was the receipt of the last byte of the response.
 - All intervals were for machine time only, i.e., no human data entry, or screen navigation time was recorded.
- KPMG Consulting received the time-stamp data from the P-CLEC in the format required by the written specification.
- KPMG Consulting analyzed the time-stamp data and calculated averages.
- KPMG Consulting established performance benchmark baselines using data previously provided by Qwest, the analysis described above, and its professional judgment.
- KPMG Consulting published the proposed benchmarks for review and comment by the Regional Oversight Committee (ROC) Technical Advisory Group (TAG).
- Benchmarks and standards were finalized by the parties using the customary ROC TAG collaboration process.

The P-CLEC executed the planned 35 transactions of each type between 7:00 AM and 7:00 PM on October 1, and 3, 2001. The resulting benchmark values are presented in Table 16-18.

Table 16-18: Benchmark Values

Transaction Type	POTS Benchmark	Specials Benchmark
Create	0:02:35	0:00:45
Event	0:00:22	0:00:21
Cancel	0:03:07	0:01:44
Add	0:00:24	0:00:33
Modify	0:00:24	0:00:33
Full MLT	0:01:51	NA
Line Record	0:00:41	NA
DATH	0:00:38	NA
OSSCHI	NA	0:00:39
OSSLOG	NA	0:00:41

2.5 Analysis Methods

2.5.1 Analysis Methods – Phase 1

Phase 1 of the CEMR Functional and Performance Evaluation included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided the framework and guidelines for testing activities. Using data obtained through documentation reviews and observations of the trouble reporting process, KPMG Consulting compared the information gathered to the checklist of evaluation criteria to execute Phase 1 of the test.

2.5.2 Analysis Methods – Phase 2

Phase 2 of the Evaluation also included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during Phase I of the Evaluation. These evaluation criteria provided the framework and guidelines for testing activities. Using data obtained through interviews with and observations of RSAs handling troubles, and documentation reviews, KPMG Consulting compared the information gathered to the checklist of evaluation criteria to execute Phase 2 of the test.

2.5.3 Analysis Methods – Phase 3

Phase 3 of the Evaluation also included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These criteria were established to evaluate the CEMR system performance in a volume environment for the expected responses, as well as the timeliness for each transaction type. The data gathered from the testing methodology was applied to the evaluation criteria to determine CEMR's performance, and was then analyzed according to the following standards. The CEMR system was required to return the expected response for 95% of the transactions submitted. KPMG

Consulting performed a permutation test⁹⁵ on the timeliness criteria using the benchmarks identified in Section 2.4.2.4.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 16-19: Evaluation Criteria and Results – Phase 1

Test Cross-Reference	Evaluation Criteria	Result	Comments
16-1-1	The user is able to establish connectivity to CEMR.	Satisfied	<p>The <i>Qwest CEMR User Guide</i> defines the process for establishing connectivity to the CEMR application. KPMG Consulting observed P-CLEC representatives successfully connecting to the CEMR application.</p> <p>In the course of testing, KPMG Consulting formally documented that the P-CLEC encountered an unexpected redirect message while attempting to access the CEMR system.</p> <p>Qwest identified that the redirect limits the impact of an Electronic Commerce (ECOM) software fix. No retesting was required.</p>
16-1-2	Qwest systems generate expected responses when attempting to Create/Enter a trouble report via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Create trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Create trouble ticket requests.</p> <p>KPMG Consulting observed testers creating trouble tickets following the steps outlined in the <i>CEMR User Guide</i>. Of 851 transactions submitted, 845 (99%) received responses with a commitment date and time. This number includes 304 create trouble ticket transactions submitted for M&R Test 18, and 156 create transactions for newly provisioned lines within 24 hours of migration.</p>

⁹⁵ The permutation test is a statistical test that determines the likelihood of the observed test average, given the combined test and benchmark population. Unlike the standard t-test, this test assumes no underlying distribution for the data, and is thus robust to outliers.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>In the process of reviewing the <i>CEMR User Guide</i>, KPMG Consulting found that the <i>Guide</i> did not provide a CLEC with an understanding of the type of circuits to enter into the Designed or Non-Designed menus.</p> <p>Qwest subsequently updated the <i>Guide</i> with a recommendation to use the Non-Designed window first when deciding which format and which menu to select.</p> <p>In the course of testing, KPMG Consulting identified incomplete sections of the <i>Repair Call Expert (RCE) User's Guide</i> in Exception 3033.</p> <p>Qwest responded and issued an updated version of the <i>RCE User's Guide</i>, which KPMG Consulting subsequently determined reflected an adequate level of detail and clarification. See Exception 3033 for additional information on this issue. Exception 3033 is closed.</p> <p>During testing, KPMG Consulting found that when a user attempted to submit a TR on an account for which a trouble ticket already existed, CEMR did not provide the Ticket ID required to check the status of the ticket. KPMG Consulting formally identified this issue.</p> <p>Qwest modified CEMR to provide the relevant information when a user attempts to submit a TR for an account for which a ticket already exists.</p> <p>KPMG Consulting initiated a retest and received the expected response for 10 out of 10 (100%) attempts.</p> <p>In the course of testing, KPMG Consulting formally identified that the circuit ID extension within the telephone number format varied between regions.</p> <p>Qwest explained that different service order processors are present among the various regions. Qwest further explained that the service order processor used in the Central Region converts the alphanumeric circuit ID extension of a telephone number format circuit to a wholly numeric value for storage in TIRKS. Qwest updated the <i>CEMR User Guide</i> to identify these differences and inform users as to which format is required in each region. (See Appendix A of the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<i>CEMR User Guide</i> for details of the circuit ID differences by region.)
16-1-3	Qwest systems generate expected responses when attempting to Modify a trouble report via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Modify trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Modify trouble ticket requests.</p> <p>KPMG Consulting observed testers modifying trouble tickets following the steps outlined in the <i>CEMR User Guide</i>. Of 118 transactions submitted, 117 (99%) received expected responses.</p> <p>In the course of testing, KPMG Consulting encountered inconsistencies in the status reports provided via the Inventory List, compared with those of the repair legacy system, and identified these inconsistencies in Exception 3035. In these instances, the P-CLEC requested the cancellation of a trouble via CEMR, and received a closed status before the work was completed.</p> <p>CEMR was enhanced to include a utility to monitor the transaction, and not update the status to 'closed' until the transaction was completed.</p> <p>KPMG Consulting retested the ability of the system to provide an accurate status of trouble tickets and found that 10 of the 10 accounts submitted (100%) provided the correct status. See Exception 3035 for additional information on this issue. Exception 3035 is closed.</p> <p>KPMG Consulting also formally identified instances in which the submission dates displayed on the Inventory List of the Maintain Trouble Report screen were different from the actual trouble ticket creation dates.</p> <p>Qwest explained that the CEMR Transaction History screen, and Maintain Trouble Report screen, display trouble submission dates and times in different formats. As a result, any trouble report requested through CEMR after 17:59 MDT appears on the Maintain Trouble Report screen as having been created the following day. Qwest updated the <i>CEMR User Guide</i> to identify which times are displayed in</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Mountain Time, and which are displayed in Greenwich Mean Time.</p> <p>In the course of testing, KPMG Consulting formally identified that the P-CLEC was unable to access the Maintain function of the CEMR system.</p> <p>Qwest's investigation revealed that the failure to initialize a CEMR data element allowed invalid characters to appear in the Customer Report ID field of the CEMR Maintain Non-Designed Report screen, which caused the screen to be unusable. A "patch" to the CEMR production system was required to resolve the problem.</p> <p>KPMG Consulting re-tested this scenario, was able to access the Maintain function continuously, and did not re-encounter the issue.</p> <p>In addition, KPMG Consulting formally documented problems encountered when the P-CLEC contacted Qwest's Help Desk to report an inability to access the Maintain function. The Qwest representatives who answered the calls did not appear to have the knowledge about the CEMR application, or the technological capability to resolve the problem in a timely manner.</p> <p>Qwest provided coaching to the Help Desk personnel involved in these calls and identified this as material to be included in the training session for all Help Desk personnel.</p> <p>KPMG Consulting conducted additional testing and found that the help desk representatives appeared to be knowledgeable of the system, and were able to provide timeframes for issue resolution.</p> <p>During testing, KPMG Consulting formally identified an instance in which only one of two representatives from the P-CLEC had access to modify the company's trouble tickets.</p> <p>Qwest determined that the CEMR user database indicated that the two P-CLEC users had different Company Identifiers, which prevented the users from accessing one another's trouble tickets. Qwest conducted an audit of CEMR user enrollments to verify the correctness of all</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CLECs enrollments.</p> <p>KPMG Consulting retested this scenario with 10 trouble reports, and found that an additional user was able to modify all 10 (100%) of the trouble tickets submitted.</p> <p>During testing, KPMG Consulting formally documented that all CEMR screens did not consistently and clearly provide an assigned trouble ticket number.</p> <p>Qwest provided clarification to describe that many of the repair functions provided for use by CEMR to the CLECs, such as trouble histories, MLT and Pre-Validation Services, do not directly relate to a single trouble ticket. Trouble ticket is not the basis for tracking system transactions performed independent of the Create function, such as retrieving trouble history or conducting an MLT test.</p>
16-1-4	Qwest systems generate expected responses when attempting to Close/Cancel a trouble report via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Close/Cancel trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected response for Close/Cancel trouble ticket requests.</p> <p>KPMG Consulting observed testers canceling trouble tickets following the steps outlined in the <i>CEMR User Guide</i>. Of 588 transactions submitted, 586 (99%) received expected responses.</p> <p>KPMG Consulting identified inconsistencies between the time that CEMR provided a notification that a trouble ticket was successfully closed/canceled, and the actual closeout time.</p> <p>According to Qwest, the inconsistency was caused by a synchronization issue between the legacy systems and the CEMR application. To prevent future occurrences of this inconsistency, Qwest modified CEMR to instruct the application to wait to update the status of the trouble ticket until it receives notification of successful ticket closure from the legacy system.</p> <p>KPMG Consulting conducted a retest of this issue by attempting to retrieve the status for 10 trouble reports submitted. KPMG Consulting was able to retrieve an accurate</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			status for all 10 (100%) of the trouble reports.
16-1-5	Qwest systems generate expected responses when attempting to Retrieve Status of a trouble report via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Retrieve Status of a trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Retrieve Status of trouble ticket requests.</p> <p>KPMG Consulting observed testers retrieving status of trouble tickets following the steps outlined in the <i>CEMR User Guide</i>. Of 42 transactions submitted, all 42 (100%) received expected responses.</p> <p>In the course of testing, KPMG Consulting identified inconsistencies between the time that CEMR provided a notification that a trouble ticket was successfully closed/canceled, and the actual closeout time.</p> <p>According to Qwest, a synchronization issue between the legacy systems and the CEMR application caused the inconsistency. To prevent future occurrences of this inconsistency, Qwest modified CEMR to instruct the application to wait to update the status of the trouble ticket until it receives notification of successful ticket closure from the legacy system.</p> <p>KPMG Consulting conducted a retest of this issue by attempting to retrieve the status for 10 trouble reports submitted. KPMG Consulting was able to retrieve an accurate status for all 10 (100%) of the trouble reports.</p>
16-1-6	Qwest systems generate expected responses when attempting to Retrieve Trouble History of a trouble report via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Retrieve Trouble History of a trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Retrieve Trouble History of trouble ticket requests.</p> <p>KPMG Consulting observed testers retrieving histories of trouble tickets following the steps outlined in the <i>CEMR User Guide</i>. Of 660 transactions submitted, 658 (99%) received expected responses.</p> <p>KPMG Consulting observed testers requesting trouble histories in the following</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>formats: OSSCHI, OSSLOG, DATH, DETH, and DLETH. The breakdown of the total trouble histories by report type is provided below:</p> <ul style="list-style-type: none"> • OSSCHI: received the expected responses for 29 of 29(100%) requests • OSSLOG: received the expected responses for 178 of 178 (100%) requests • DATH: received the expected responses for 23 of 24(96%) requests • DETH: received the expected responses for 3 of 3 (100%) requests • DLETH: received the expected responses for 423 of 424 (99%) requests. <p>KPMG Consulting identified instances in which the history information returned by the OSS was unrelated to the circuit for which the P-CLEC submitted both DATH and DLETH reports requests.</p> <p>Qwest isolated the problem to the IBM system software used by the OSS application. Qwest added intelligence to the CLEC gateway application to detect when the OSS returns information for the wrong circuit. As modified, when detected, the application automatically re-executes the request to retrieve the correct information.</p> <p>KPMG Consulting retested this issue by attempting to retrieve information from DLETH reports using the Non-Designed Services menu in CEMR, and was successful in 40 out of 40 (100%) attempts.</p>
16-1-7	Qwest systems generate expected responses when attempting to Initiate Mechanized Loop Test (MLT) via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Initiate MLT requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Initiate Mechanized Loop Test (MLT) requests.</p> <p>KPMG Consulting observed testers initiating MLT tests following the steps outlined in the <i>CEMR User Guide</i>. Of 177 transactions submitted, 174 (98%) received expected responses.</p> <p>In the course of testing, KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>formally identified an issue in which the CEMR system did not allow CLECs to perform a MLT test for a telephone number if an open trouble ticket exists for that number.</p> <p>Qwest modified CEMR to allow CLECs to perform MLT tests regardless of the presence of an open ticket on the telephone number affected.</p> <p>KPMG Consulting retested the ability to conduct MLT tests on 10 accounts with open trouble tickets. All 10 (100%) of the MLT tests successfully completed.</p>
16-1-8	Qwest systems generate expected responses when attempting to Receive MLT Test Results via CEMR.	Satisfied	<p>Qwest systems provide expected responses to Receive MLT requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Receive MLT requests.</p> <p>KPMG Consulting observed testers initiating MLT tests following the steps outlined in the <i>CEMR User Guide</i>. Of 177 transactions submitted, 174 (98%) received expected responses.</p> <p>In the course of testing, KPMG Consulting formally identified that the response of the MLT presented inaccurate results. The section that identifies the presence of a ringer on the line failed to present the correct information.</p> <p>In response, Qwest stated that the MLT cannot always accurately determine if ringers are present on a line, and removed this section from the MLT results.</p> <p>KPMG Consulting verified through retesting that the "RINGERS" section was removed, and received the expected response for 10 of 10 (100%) subsequent requests.</p>
16-1-9	The user is able to Create a Resale trouble report using CEMR within 24 hours of service order due date, and receive the expected response.	Satisfied	<p>Qwest systems provide expected responses to Create trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Resale Create trouble ticket requests.</p> <p>KPMG Consulting observed testers creating trouble tickets on Resale accounts following the steps outlined in the <i>CEMR User Guide</i>.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Of 35 transactions submitted, all 35 (100%) received responses with a commitment date and time.
16-1-10	The user is able to Create a UNE-P trouble report using CEMR within 24 hours of service order due date, and receive the expected response.	Satisfied	Qwest systems provide expected responses to Create trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for UNE-P Create trouble ticket requests. KPMG Consulting observed testers creating trouble tickets for UNE-P accounts following the steps outlined in the <i>CEMR User Guide</i> . Of 36 transactions submitted, all 36 (100%) received responses with a commitment date and time.
16-1-11	The user is able to Create a trouble report within 24 hours of an Unbundled Loop (UNE-L) migration using CEMR, and receive the expected response.	Satisfied	Qwest systems provide expected responses to Create trouble ticket requests submitted via CEMR. In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% expected responses for Create trouble ticket requests. KPMG Consulting observed testers creating trouble tickets on UNE-L accounts following the steps outlined in the <i>CEMR User Guide</i> . Of 85 transactions submitted, all 85 (100%) received responses with a commitment date and time.

Table 16-20: Evaluation Criteria and Results – Phase 2

Test Cross-Reference	Evaluation Criteria	Result	Comments
16-2-1	The functionality for creating a trouble ticket within the CEMR system is comparable to the functionality for creating a trouble ticket within the retail trouble reporting system.	Satisfied	KPMG Consulting observed RSAs within the Repair Call Handling Center (RCHC), Account Maintenance Service Center (AMSC), and Customer Repair Service Answering Bureau (CRSAB) creating trouble tickets via Repair Call Expert (RCE) and Control. The processing time, basic functionality, and information required to create a trouble ticket via Control and RCE are comparable to the processing time, basic functionality, and information steps required to create a trouble ticket via CEMR.
16-2-2	The functionality for modifying a trouble ticket within the CEMR system is comparable to	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB modifying trouble tickets via RCE and Control.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	the functionality for modifying a trouble ticket within the retail trouble reporting system.		The processing time, basic functionality, and information required to modify a trouble ticket via Control and RCE are comparable to the processing time, basic functionality, and information required to modify a trouble ticket via CEMR.
16-2-3	The functionality for closing a trouble ticket within the CEMR system is comparable to the functionality for closing a trouble ticket within the retail trouble reporting system.	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB closing trouble tickets via RCE and Control. The processing time, basic functionality, and information required to close a trouble ticket via Control and RCE are comparable to the processing time, basic functionality, and information required to close a trouble ticket via CEMR.
16-2-4	The functionality for retrieving a status of a trouble ticket within the w CEMR system is comparable to the functionality for retrieving the status of a trouble ticket within the retail trouble reporting system.	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB retrieving the status of trouble tickets via RCE and Control. The processing time, basic functionality, and information required to Retrieve status of a trouble ticket via Control and RCE are comparable to the processing time, basic functionality, and information required to Retrieve status of a trouble ticket via CEMR.
16-2-5	The functionality for retrieving a history of a trouble ticket within the CEMR system is comparable to the functionality for retrieving the history of a trouble ticket within the retail trouble reporting system.	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB retrieving the history of trouble tickets via RCE and Control. The processing time, basic functionality, and information required to retrieve trouble history via Control and RCE are comparable to the processing time, basic functionality, and information required to retrieve trouble history via CEMR.
16-2-6	The functionality for initiating a MLT within the CEMR system is comparable to the functionality for initiating a MLT within the retail trouble reporting system.	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB initiating an MLT via RCE and Control. The processing time, basic functionality, and information required to Initiate MLT via Control and RCE are comparable to the processing time, basic functionality, and information required to Initiate MLT via CEMR.
16-2-7	The functionality for receiving the results of a MLT within the CEMR system is comparable to	Satisfied	KPMG Consulting observed RSAs within the RCHC, AMSC, and CRSAB receiving the results of an MLT via RCE and Control.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	the functionality for receiving the results of an MLT within the retail trouble reporting system.		The processing time, basic functionality, and information required to Receive the results of an MLT via Control and RCE are comparable to the processing time, basic functionality, and information required to Receive the results of a MLT via CEMR.

Table 16-21: Evaluation Criteria and Results – Phase 3

Test Cross-Reference	Evaluation Criteria	Result	Comments
16-3-1	CEMR returns expected responses for normal load transaction volumes.	Satisfied	<p>In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% of expected responses.</p> <p>3,047 transactions were submitted over 12 hours as a Normal Day-Diagnostic Test. Of these, 2,581 (85%) resulted in an expected response.</p> <p>Based on the ND MLT, Non-Designed, and Designed transactions' respective deficiencies in performance, KPMG Consulting issued Exceptions 3068, 3073, and 3074.</p> <p>Qwest reported that, during testing, an outage occurred in one of its back-end systems. Qwest modified the application's archive process, and increased the size of the transaction log in an attempt to prevent future occurrences of this outage. Exceptions 3068, 3073, and 3074 remained open pending execution of Normal Day 1 and 2.</p> <p>2,868 transactions were submitted over 12-hours as the Normal Day 1 Test. Of these, 2838 (99%) resulted in an expected response.</p> <p>3,136 transactions were submitted over 12-hours as the Normal Day 2 Test. Of these, 3,092 (99%) resulted in an expected response.</p> <p>Based on the subsequent test accuracy results, KPMG Consulting concluded that the CEMR system performed as designed when processing transactions under normal load conditions.</p> <p>As a result of the performance of the two Normal Test days, KPMG Consulting closed Exceptions 3068, 3073, and 3074. See</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Exceptions 3068, 3073, and 3074 for additional information on these issues. 3,079 Normal Hour transactions were submitted over 12-hours as Re-test Normal Day 2. ⁹⁶ Of these, 3037 (99%) resulted in a successful response.
16-3-2	CEMR returns expected responses for peak load transaction volumes.	Satisfied	In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% of expected responses. 4,066 transactions were submitted over a 12-hour period, comprised of six normal load hours and six peak load hours. Of these, 4,006 (99%) resulted in an expected response.
16-3-3	CEMR returns expected responses for stress load transaction volumes.	Diagnostic ⁹⁷	In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% of expected responses. 4,849 transactions were submitted over 12-hours, comprised of eight normal load hours and four stress load hours. Of these, 4,689 (97%) resulted in an expected response.
16-3-4	The Create/Enter transactions are processed within the guidelines established by the ROC TAG benchmark.	Satisfied	The ROC TAG-established benchmarks for processing Non-Designed (ND) and Designed (DS) Create transactions are 0:02:35 and 0:00:45, respectively. Normal Day - Diagnostic Test Results: <ul style="list-style-type: none"> • ND Create - 1:21:29 • DS Create - N/A.⁹⁸ Based on the ND Create test result deficiency, KPMG Consulting issued Exception 3072. Qwest reported that, during testing, an outage occurred in one of its back-end systems. Qwest modified the application's archive process and increased the size of the transaction log in an attempt to prevent future occurrences of this outage. Exception 3072 remained open pending execution of Normal Day 1 and 2. Normal Day 1 Test Results: <ul style="list-style-type: none"> • ND Create - 0:02:32

⁹⁶ Re-test was due to issues identified in Exception 3100 as part of evaluation criterion 16-3-4.

⁹⁷ The stress day is for diagnostic purposes only with no evaluation of pass or fail. The data is used to examine system degradation at a high volume load; such system performance is not required to meet the benchmarks and standards.

⁹⁸ Results were not produced due to incorrect test data submitted.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • DS Create - 0:00:59. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Create - 0:08:41⁹⁹ • DS Create - 0:09:15. <p>Due to the successful results of the ND transactions timeliness during the Normal Day 2 test, KPMG Consulting closed Exception 3072.</p> <p>Based on the DS Create test result deficiency, KPMG Consulting issued Exception 3100. Qwest adjusted the email message collection timer to collect and issue email messages every 10 seconds instead of every 60 seconds. Exception 3100 remained open pending execution of the Re-test Normal Day 2.</p> <p>Re-test Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Create 0:01:56 • DS Create 0:00:37. <p>Due to the successful results of the DS CREATE timeliness during the Re-test Normal Day 2, KPMG Consulting closed Exception 3100.</p> <p>Based on the Re-test Normal Day 2 results, KPMG Consulting concluded that the CEMR system performed as designed when processing transactions under normal load conditions.</p> <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND Create 0:02:00 • DS Create 0:00:46.¹⁰⁰ <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND Create 0:02:07 • DS Create 0:00:53. <p>See Exceptions 3072 and 3100 for additional information on these issues. Exceptions 3072 and 3100 are closed.</p>

⁹⁹ A permutation test was performed on the test results. The p-value for ND CREATE transaction was 0.2922 and determined not to be statistically significant.

¹⁰⁰ A permutation test was performed on the test results. The p-value for the DS CREATE was 0.7660 and determined not to be statistically significant.

Test Cross-Reference	Evaluation Criteria	Result	Comments
16-3-5	Modify a trouble report transactions are processed within the guidelines established by the ROC TAG benchmark.	Not Satisfied	<p>The ROC TAG-established benchmarks for processing Non-Designed (ND) and Designed (DS) Modify (Edit) transactions are 0:00:24 and 0:00:33, respectively.</p> <p>Normal Day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:29 • DS Edit - 0:00:27. <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:26 • DS Edit - 0:00:29. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:26 • DS Edit - 0:00:32. <p>Re-test Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:24 • DS Edit - 0:00:25. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:27 • DS Edit - 0:00:26. <p>Based on the ND EDIT test result deficiency, KPMG Consulting issued Exception 3107.</p> <p>In response, Qwest conducted three internally administered tests in order to replicate the KPMG Consulting-administered test.</p> <p>KPMG Consulting stated that such a test executed by Qwest was inconsistent with the methodology set forth and agreed upon by the ROC TAG, and that there are no provisions for its consideration.</p> <p>Qwest requested that KPMG Consulting close Exception 3107 as 'closed/unresolved'.</p> <p>See Exception 3107 for additional information on this issue. Exception 3107 is closed/unresolved.</p> <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND Edit - 0:00:27 • DS Edit - 0:00:27.
16-3-6	Close/Cancel transactions are processed within the guidelines established by the	Satisfied	The ROC TAG-established benchmarks for processing Non-Designed (ND) and Designed (DS) Cancel transactions are

Test Cross-Reference	Evaluation Criteria	Result	Comments
	ROC TAG benchmark.		<p>0:03:07 and 0:01:44, respectively.</p> <p>Normal Day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND Cancel - 0:00:27 • DS Cancel - 0:06:27. <p>Based on the DS CANCEL test result deficiency, KPMG Consulting issued Exception 3070.</p> <p>Qwest determined that the archive process filled the application's database transaction log. Qwest modified the application's archive process and increased the size of the transaction log to attempt to prevent the situation from recurring.</p> <p>Exception 3070 remained open pending execution of the Normal Day 1 and 2.</p> <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND Cancel - 0:03:05 • DS Cancel - 0:01:20. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Cancel - 0:10:58¹⁰¹ • DS Cancel - 0:10:02.¹⁰² <p>Based on the Normal Day 2 DS CANCEL successful timeliness test results, KPMG Consulting concluded that the CEMR system performed as designed when processing transactions under normal load conditions.</p> <p>Due to the successful results of the DS Cancel timeliness during the Normal Day 2 Test, KPMG Consulting closed Exception 3070. See Exception 3070 for additional information on this issue.</p> <p>Re-test Normal Day 2 Results:</p> <ul style="list-style-type: none"> • ND Cancel - 0:02:32 • DS Cancel - 0:00:59. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND Cancel - 0:02:18 • DS Cancel - 0:01:12.

¹⁰¹ A permutation test was performed on the test results. The high average was caused by a small number of outliers. The p-value for ND Cancel was .4214 and determined not to be statistically significant.

¹⁰² A permutation test was performed on the test results. The high average was caused by a small number of outliers. The p-value for DS Cancel was .3356 and determined not to be statistically significant.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Stress Day Test Results: <ul style="list-style-type: none"> • ND Cancel - 0:02:41 • DS Cancel - 0:01:08.
16-3-7	Retrieve trouble report status transactions are processed within the guidelines established by the ROC TAG benchmark.	Satisfied	The ROC TAG-established benchmarks for processing Non-Designed (ND) and Designed (DS) Status (Event) transactions are 0:00:22 and 0:00:21, respectively. <p>Normal Day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:18 • DS Event - 0:00:19. <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:19 • DS Event - 0:00:19. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:20 • DS Event - 0:00:20. <p>Re-test Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:18 • DS Event - 0:00:17. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:20 • DS Event - 0:00:18. <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND Event - 0:00:19 • DS Event - 0:00:18.
16-3-8	Retrieve trouble history transactions are processed within the guidelines established by the ROC TAG benchmark.	Satisfied	The ROC TAG established benchmarks for processing Non-Designed (ND) and Designed (DS) History (ND DATH) DSOSSCHI and DSOSSLOG transactions are 0:00:38, 0:00:39, and 0:00:41, respectively. <p>Normal Day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:39 • OSSCHI - 0:00:31 • OSSLOG - 0:00:36. <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:40¹⁰³

¹⁰³ A permutation test was performed on the test results. The p-value for the ND DATH deficiency was 0.79398 and determined not to be statistically significant.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • OSSCHI - 0:00:29 • OSSLOG - 0:00:36. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:38 • OSSCHI - 0:00:32 • OSSLOG - 0:00:45¹⁰⁴. <p>Re-test Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:36 • OSSCHI - 0:00:29 • OSSLOG - 0:00:43.¹⁰⁵ <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:40¹⁰⁶ • OSSCHI - 0:00:28 • OSSLOG - 0:00:50.¹⁰⁷ <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND DATH - 0:00:41¹⁰⁸ • OSSCHI - 0:00:33 • OSSLOG - 0:00:42.¹⁰⁹

¹⁰⁴A permutation test was performed on the test results. The p-value for the DS OSSLOG deficiency was 0.2750 and determined not to be statistically significant.

¹⁰⁵A permutation test was performed on the test results. The p-value for the DS OSSLOG deficiency was 0.1809 and determined not to be statistically significant.

¹⁰⁶A permutation test was performed on the test results. The p-value for the ND DATH deficiency was 0.3518 and determined not to be statistically significant.

¹⁰⁷A permutation test was performed on the test results. The p-value for the DS OSSLOG deficiency was 0.3355 and determined not to be statistically significant.

¹⁰⁸A permutation test was performed on the test results. The p-value for the ND DATH deficiency was 0.5283 and determined not to be statistically significant.

¹⁰⁹A permutation test was performed on the test results. The p-value for the DS OSSLOG deficiency was 0.2119 and determined not to be statistically significant.

Test Cross-Reference	Evaluation Criteria	Result	Comments
16-3-9	Initiate MLT results transactions are processed within the guidelines established by the ROC TAG benchmark.	Satisfied	<p>The ROC TAG established benchmark for processing Non-Designed (ND) MLT transactions is 0:01:51.</p> <p>Normal day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:02:02. <p>Based on the ND MLT test result deficiency, KPMG Consulting issued Exception 3071.</p> <p>Qwest determined that an archive process filled the application's database transaction log. Qwest modified the application's archive process and increased the size of the transaction log to attempt to prevent the situation from recurring.</p> <p>Exception 3071 remained open pending execution of the Normal Day 1 and 2.</p> <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:32. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:35. <p>Based on the successful results of the ND MLT timeliness during the Normal Day 2 test, KPMG Consulting closed Exception 3071. See Exception 3071 for additional information on this issue.</p> <p>Re-test Normal Day 2 Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:33. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:39. <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:38.
16-3-10	Retrieval of MLT results transactions is processed within the guidelines established by the ROC TAG benchmark.	Satisfied	<p>The ROC TAG established benchmark for processing Non-Designed (ND) MLT transactions is 0:01:51.</p> <p>Normal Day - Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:02:02. <p>Based on the ND MLT test result deficiency, KPMG Consulting issued Exception 3071.</p> <p>Qwest determined that an archive process filled the application's database transaction log. Qwest modified the application's archive process and increased the size of the transaction log to attempt to prevent the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>situation from recurring.</p> <p>Exception 3071 remained open pending execution of the Normal Day 1 and 2.</p> <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:32. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:35. <p>Based on the successful results of the ND MLT timeliness during the Normal Day 2 test, KPMG Consulting closed Exception 3071. See Exception 3071 for additional information on this issue.</p> <p>Re-test Normal Day 2 Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:33. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:39. <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND MLT - 0:01:38.
16-3-11	Initiate and Retrieval of Line Record results are processed within the guidelines established by the ROC TAG benchmark.	Satisfied	<p>The ROC TAG established benchmark for processing the initiation and retrieval of the Non-Designed (ND) Line Record transactions is 0:00:41.</p> <p>Normal Day – Diagnostic Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:43. <p>Normal Day 1 Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:40. <p>Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:41. <p>Re-test Normal Day 2 Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:40. <p>Peak Day Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:40. <p>Stress Day Test Results:</p> <ul style="list-style-type: none"> • ND LREC - 0:00:42.

17. Test Results: MEDIACC (EB-TA) M&R Trouble Functional & Performance Evaluation (Test 17)

1.0 Description

The Electronic Bonding Trouble Administration (EB-TA) Functional Test evaluated the functionality of Qwest Communications' (Qwest's) EB-TA Gateway – Mediated Access System (MEDIACC) used for Maintenance and Repair (M & R) trouble administration.

Qwest's MEDIACC system was designed for use in mediating different types of activities, for varying circuit types, by sending transactions to the appropriate back-end systems for processing. MEDIACC also controls associated business processes.

The objective of the test was to validate the existence, and expected behavior, of Qwest's EB-TA Gateway functionality. Test execution was based on designed trouble scenarios, submitted across a Test Competitive Local Exchange Carrier's (Test CLEC's) gateway, as input to the Qwest gateway for processing. The expected behavior, evaluated by examining the system's output, was determined by the Joint Implementation Agreement (JIA) executed between the Test CLEC and Qwest. The JIA was based on industry standards developed for electronic bonding for trouble administration.

2.0 Methodology

This section summarizes the test execution method.

2.1 Business Process Description

EB-TA is Qwest's electronic bonding system for trouble administration. The EB-TA architecture is comprised of an EB-TA Gateway that receives, formats, and routes trouble administration tickets from a CLEC to Qwest's back-end Work Force Administration/Control (WFA/C), or Loop Maintenance Operating System (LMOS) systems. Troubles are routed to the correct system based on circuit type and format. Special circuits (alpha/numeric circuit format) are normally routed to WFA/C, and Plain Old Telephone Service (POTS) circuits (telephone number) are routed to LMOS.

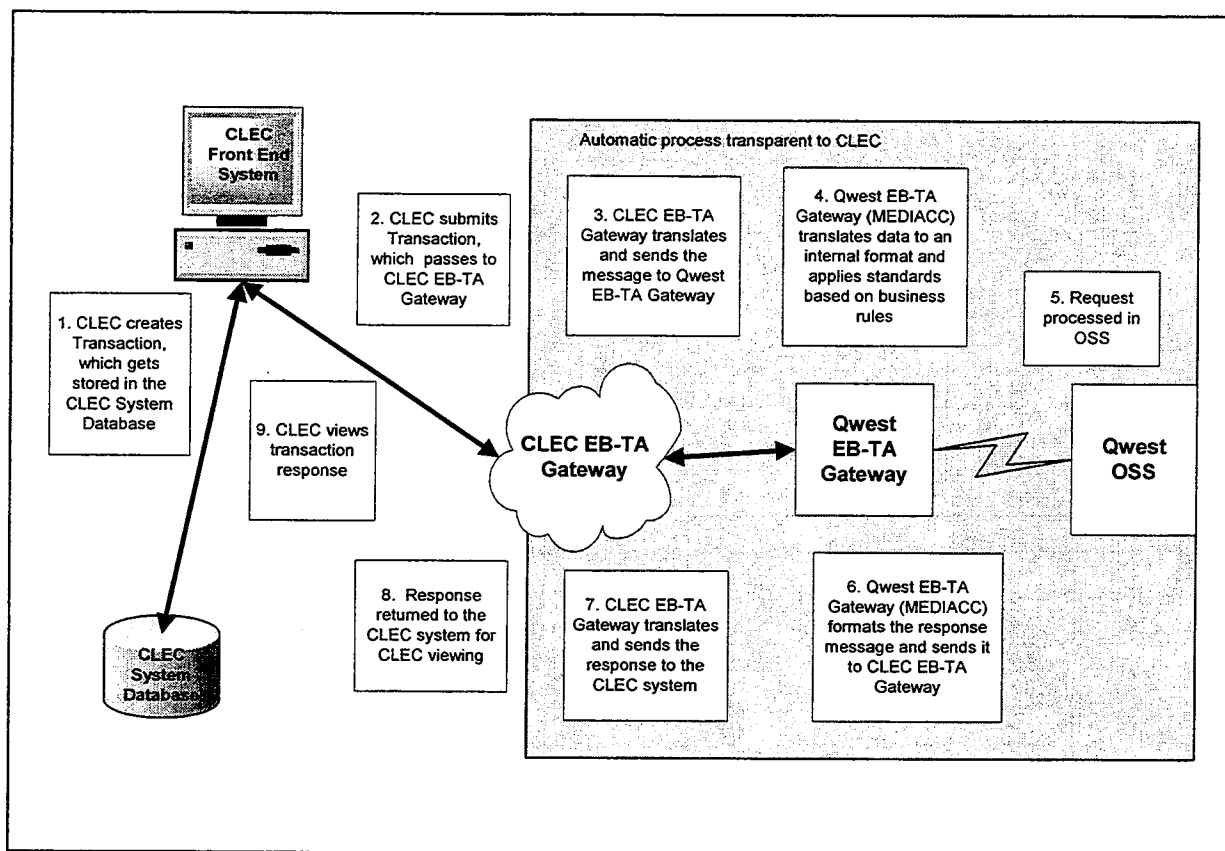
CLECs desiring to use the EB-TA Gateway process for trouble administration must first meet with Qwest to develop a Joint Implementation Agreement (JIA). The JIA specifies the features, functions, and business rules that both parties agree to support. The CLEC's systems are then developed and tested before the CLEC is allowed to send trouble reports to the production system, ensuring that both gateways communicate according to the JIA. Once testing is completed, the CLEC can then send production troubles to Qwest via the EB-TA System.

Transactions are initiated by a CLEC, which enters data into the appropriate fields of its front-end trouble administration tool. Data (both mandatory and optional fields) are submitted to the CLEC Gateway, where they are stored by the CLEC system, converted to the appropriate standard format, and submitted to the EB-TA Gateway to be processed by Qwest.

Qwest receives the CLEC trouble report data, converts the data to Qwest's own format, and processes the request using the Qwest Gateway business rules. As a trouble report moves through the Qwest repair process, the EB-TA Gateway sends automated messages to the CLEC to advise of changes in the status of the trouble report. These Attribute Value Change (AVC) messages are forwarded to the CLEC system for status changes, when authorizations are required, or when the trouble report is cleared.

Figure 17-1 illustrates the processes involved with the transfer of trouble administration transactions from the CLEC's front end tool to the Qwest Gateway and back.

Figure 17-1: EB-TA Business Process



2.2 Scenarios

Table 17-1 outlines the scenarios, and functional elements, used in this test. Each "X" represents a test of a function within a particular scenario.

An "X*" denotes a test that included intentional erroneous transactions designed to test error handling capabilities. Once the EB-TA Gateway's response to the intentional error was observed, the transaction was conducted using the correct data. An "X**" denotes a test that included intentional erroneous transactions for which the data were not corrected, and were resubmitted after receiving the response.

The transactions used in this evaluation were chosen to test the applicable EB-TA Gateway functions across the types of services specified in Table 17-1, and were not intended to demonstrate statistical significance.

Table 17-1: EB-TA Test Scenarios

Line Information						EBTA Function						
Test #	Line	Type of Service	Original State	Features on Line	Trouble Type	Create Trouble Report	Add Trouble Info.	Modify Trouble Report	Cancel Trouble Report	Verify Repair	Request Trouble Report Status	Conduct MLT
1	POTS ¹¹⁰	BUS ¹¹¹	UNE Loop ¹¹²	None	INF ¹¹³	X		X	X		X	
2	DS1 ¹¹⁴	BUS	UNE DS1 ¹¹⁵	None	INF	X		X*	X		X	
3	POTS	BUS	UNE Loop	None	INF	X*		X				
4	POTS	BUS	UNE-P ¹¹⁶	None	INF	X*	X				X	
5	POTS	RES ¹¹⁷	Resale	None	INF	X*			X		X	
6	POTS	BUS	Resale	None	INF	X**						
7	POTS	BUS	UNE-P	Call Waiting	INF	X*	X*		X		X	
8	POTS	BUS	UNE-P	Caller ID	INF	X		X			X	
9	Centrex	BUS	Resale	Centrex 21, call pick up group	INF	X**						
10	Centrex	BUS	Resale	Centrex Plus; service provisioned in existing block	INF	X		X	X			
11	PBX Lines	BUS	Resale	2 PBX Lines (DS0)	INF	X		X	X		X	
12	POTS	BUS	UNE-P	None	INF	X		X	X			
13	POTS	BUS	UNE-P	None	INF	X	X	X*	X		X	
14	POTS	BUS	UNE Loop	None	NDT ¹¹⁸	X*			X	X	X	
15	POTS	BUS	UNE Loop	None	NDT	X*	X*			X*		
16	POTS	BUS	UNE Loop	None	NDT	X				X		
17	POTS	RES	UNE Loop	None	NDT	X				X		
18	POTS	BUS	UNE Loop	None	NDT	X*			X	X	X	
19	POTS	RES	UNE Loop	None	NDT	X				X		
20	POTS	RES	UNE Loop	None	NDT	X*				X		
21	POTS	RES	UNE Loop	None	NDT	X				X		
22	POTS	BUS	UNE Loop	None	NDT	X				X		
23	POTS	BUS	UNE Loop	None	NDT	X				X		

¹¹⁰ POTS denotes Plain Old Telephone Services.

¹¹¹ BUS denotes Business type service.

¹¹² UNE Loop denotes Unbundled Network Element – Loop.

¹¹³ INF denotes Information.

¹¹⁴ DS1 denotes Digital Service Type 1.

¹¹⁵ UNE DS1 denotes Unbundled Network Element – Digital Service Type 1.

¹¹⁶ UNE-P denotes Unbundled Network Element – Port.

¹¹⁷ RES denotes Residential type service.

¹¹⁸ NDT denotes No Dial Tone.

Line Information						EBTA Function						
Test #	Line	Type of Service	Original State	Features on Line	Trouble Type	Create Trouble Report	Add Trouble Info.	Modify Trouble Report	Cancel Trouble Report	Verify Repair	Request Trouble Report Status	Conduct MLT
24	POTS	RES	UNE Loop	None	NDT	X				X		
25	POTS	RES	UNE Loop	None	NDT	X				X		
26	POTS	BUS	UNE Loop	None	NDT	X				X		
27	POTS	BUS	UNE Loop	None	NDT	X				X		
28	POTS	BUS	UNE Loop	None	NDT	X				X		
29	Centrex	BUS	Resale	N/A	N/A							X
30	POTS	RES	UNE-P	N/A	N/A							X
31	POTS	RES	Resale	N/A	N/A							X
32	POTS	RES	UNE-P	N/A	N/A							X
33	POTS	BUS	Resale	N/A	N/A							X
34	POTS	RES	UNE-P	N/A	N/A							X
35	Centrex	BUS	Resale	N/A	N/A							X
36	POTS	RES	UNE-P	N/A	N/A							X
37	Centrex	BUS	Resale	N/A	N/A							X
38	POTS	RES	UNE-P	N/A	N/A							X

2.3 Test Targets and Measures

The test target was the M&R functionality of Qwest's EB-TA Gateway that wholesale customers use for trouble administration. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1, "Results and Analysis."

Table 17-2: Test Target Cross-Reference

Process	Sub-process	Evaluation Measure	Test Cross-Reference
Trouble Reports	Create Trouble Report	Functionality exists as documented	17-1-1, 17-1-8
	Request Trouble Ticket Status	Functionality exists as documented	17-1-2, 17-1-8
	Add Trouble Information	Functionality exists as documented	17-1-3, 17-1-8
	Modify Trouble Report	Functionality exists as documented	17-1-4, 17-1-8
	Cancel Trouble Report	Functionality exists as documented	17-1-5, 17-1-8
	Response to Close-out Request	Functionality exists as documented	17-1-6, 17-1-8
Access to Test Capabilities	Conduct Mechanized Loop Test	Functionality exists as documented	17-1-7, 17-1-8

2.4 Evaluation Methods

The inputs to this test follow the American National Standards Institute (ANSI) T1.227, T1.228 and T1.262 standards for trouble administration. The specific documents are:

- American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Information Model for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.227-2000)
- American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.228-1995)
- American National Standard for Telecommunications – Operations, Administration, Maintenance, and Provisioning (OAM&P) – Extension to Generic Network Model for Interfaces across Jurisdictional Boundaries to Support the Service Test Function (ANSI T1.262-1998).

In accordance with the standards described above, and the JIA document, this test was executed by exercising a defined set of EB-TA trouble management functions against accounts in Qwest's production system. The functional elements targeted by this test included access to test capabilities, trouble report entries, trouble report queries, trouble report status requests, modifications to trouble reports, additions of information to trouble reports, and cancellations/closures of trouble reports. In addition, error conditions were included to assess the EB-TA Gateway's response to incorrect information.

The functional evaluation tested each of the EB-TA functional processes against a single criterion, defined as the presence of functionality.

A total of 38 test instances were used to conduct the evaluation, including 13 instances using test bed accounts, 15 instances using live accounts with actual faults inserted, and 10 Mechanized Loop Tests (MLTs) on working loops.

The following steps outline the test approach:

- 1) KPMG Consulting reviewed the Test CLEC JIA, and national standards, to develop an initial list of possible EB-TA functionalities. Test scenarios were developed to exercise the functionality of the EB-TA Gateway across various wholesale service types (see Table 17-1.1). KPMG Consulting determined final functionalities for testing by including all those available to the Test CLEC according to the JIA system requirements.
- 2) The test was developed by performing a comparison of the Test CLEC trouble administration system's available fields, to the data fields required by the JIA documentation. From this comparison, KPMG Consulting determined that the Test CLEC system was developed to support all of the functions requiring testing. The third-party EB-TA system used in this test was built and maintained entirely by the Test CLEC. KPMG Consulting made observations during testing, but did not control the test environment. Observations consisted of recording the data elements transmitted with each transaction and reviewing responses to ensure that required attributes were provided and anticipated responses received. The transactions tested across the various wholesale services included trouble ticket Creates (new trouble entry), trouble ticket Gets (gateway to gateway status updates), trouble ticket Sets (add new or modify existing data), trouble ticket Cancel requests (request to cancel/close the report), and MLTs.
- 3) A Test Scenario Portfolio was developed for each scenario. These portfolios included:
 - Data entry files for each EB-TA function within a scenario that required data to be entered into the EB-TA Test Interface
 - System steps to be submitted to the EB-TA Test Interface
 - Expected results for each function.
- 4) Data entry files from Step 3) above were input into the EB-TA Test Interface, through the Test CLEC's Front End System.
- 5) Using the Test Scenario Portfolios, test scenarios were executed by:
 - Using the Front End System to access and submit data entry files to the EB-TA Test Interface
 - Using the EB-TA Test Interface to submit transactions directly to the Qwest EB-TA Gateway.
- 6) KPMG Consulting performed observations of, and interviews with, M&R work center personnel who perform trouble-processing activities, in order to identify potential substantive differences between the functionality of the systems used in the Retail center and the EBTA system. Based on the known functionality of EBTA, KPMG Consulting developed a checklist for use in observing Repair Service Attendants (RSAs) as they

performed trouble administration activities employing Qwest Retail systems. The evaluation at the work centers consisted of the following KPMG Consulting activities:

- Noted the presence and behavior of functions identified on the checklist
- Identified any anomalies relative to the functions being observed
- Noted any relevant additional information learned from the RSA interviews (e.g., additional capabilities, performance, etc.)
- Determined and documented similarities and differences in M&R functions that were able to be performed via the Retail trouble management and EBTA systems
- Perform a detailed evaluation of relative functionality and capabilities between EBTA and retail front-end systems for trouble management.

2.5 Analysis Methods

All 38 test instances were recorded via test logs, and each was determined to be either a success, a failure or excluded from the sample by comparing the actual response to the expected response. At the time of testing there was a known system condition causing transactions to time out before completion. Through joint testing between Qwest and the Test CLEC, the problem was isolated and both parties agreed the problem was with the Test CLEC system. Because KPMG Consulting could not accurately assess time-out conditions, those transactions were excluded from measurement. The EB-TA Functional Test included a checklist of evaluation criteria developed by KPMG Consulting during the preparation of test activities. The success rates were recorded and evaluated against the criteria in the checklist. In addition, KPMG Consulting compared information gathered during work center visits to a pre-determined checklist to determine if substantive functional differences existed between Qwest retail and wholesale M&R systems.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results and Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 17-3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
17-1-1	The user is able to enter a trouble report into EB-TA and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to enter 28 trouble reports. Satisfactory responses were received for all 28 (100%).
17-1-2	The user is able to request trouble report status from EB-TA and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to check the status of five trouble tickets. Satisfactory responses were received for all five (100%).
17-1-3	The user is able to add trouble information to an EB-TA trouble report and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to add information to three trouble tickets. Satisfactory responses were received for all three (100%).
17-1-4	The user is able to modify trouble administration information on an EB-TA trouble report and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to modify information on 17 trouble tickets. Satisfactory responses were received for all 17 (100%).
17-1-5	The user is able to cancel a trouble report in EB-TA and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to cancel 12 trouble tickets. Satisfactory responses were received for all 12 (100%).
17-1-6	The user is able to respond to trouble repair completion notifications and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to verify the repair completion on 15 trouble tickets. Satisfactory responses were received for all 15 (100%).
17-1-7	The user is able to conduct a Mechanized Loop Test (MLT) and receive a satisfactory response for at least 95% of transactions.	Satisfied	EB-TA was used to perform a Mechanized Loop Test on 10 instances. Satisfactory responses were received for all 10 (100%).
17-1-8	The functionality of the wholesale trouble reporting system is comparable to the functionality of the retail trouble reporting system.	Satisfied	KPMG Consulting reviewed the JIA of the Test CLEC and determined that the negotiated system functionality was similar to that observed in the retail centers. KPMG Consulting observed RSAs within the Repair Call Handling Centers (RCHC), Account Maintenance Service Center (AMSC), and Customer Repair Service Answering Bureau (CRSAB) submitting trouble tickets via Repair Call Expert (RCE) and Control.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			The functionality of these systems is comparable to EB-TA.

18. Test Results: End-to-End Trouble Report Processing (Test 18)

1.0 Description

The End-to-End Trouble Report Processing Test (Test 18) involved the execution of selected Maintenance and Repair test scenarios with the objective of evaluating Qwest's performance in making repairs under the conditions posed by various wholesale maintenance scenarios. The quality and timeliness of the repair process were assessed, and compared with retail operations in those instances for which the retail data was available.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

2.1.1 CLEC Trouble Reporting Process

Qwest provides Competitive Local Exchange Carriers (CLECs) the ability to report maintenance and repair troubles electronically or manually¹¹⁹. Qwest uses trouble information provided by CLECs to help determine the dispatching of trouble tickets to the appropriate work group for resolution. In the event that Qwest needs additional information to make a dispatch decision, its personnel can perform additional testing and fault isolation activities.

If trouble tickets are entered manually, Qwest screeners and Design Service Center (DSC) testers offer assistance with Resale and Unbundled Network Element-Platform (UNE-P) service fault identification by testing the Qwest network to isolate, or determine, the location of faults. Once the location is identified, Qwest dispatches a technician to make the required repairs.

Before submitting troubles for unbundled network elements (UNEs) to Qwest, CLECs are responsible for isolating the nature and location of faults to ensure that problems are with the portion of the network that Qwest maintains. When making a report, CLECs must provide test diagnostics that include specific evidence that the trouble is in the Qwest network, along with the associated Qwest circuit identification.

If the CLEC elects to not perform the necessary UNE testing and fault isolation, Qwest offers to do such testing on the CLEC's behalf, and bills the CLEC the appropriate charges, as defined by the CLEC's Interconnection Agreement. If the CLEC does not provide test diagnostics, and elects not to have Qwest perform additional testing on its behalf, Qwest will not accept a trouble report.

2.1.2 Non-Designed Trouble Ticket Handling

When a trouble is created for Plain Old Telephone Service (POTS), the Loop Maintenance Operating System (LMOS), used for trouble administration for POTS service, automatically assigns a commitment date and time and trouble ticket number. Fault isolation is completed by testing the circuit and/or by following system prompts, which ask the CLEC structured questions

¹¹⁹ For additional information on the trouble entry process, see Tests 16 and 18.7.

about the conditions experienced by the user. Once the fault location is determined, the trouble is routed "IN" to the central office (CO) through the Work Force Administration/Dispatch In (WFA/DI) system, or "OUT" to an outside technician through the Work Force Administration/Dispatch Out (WFA/DO) system for repair completion.

Once the fault is repaired, the inside or outside technician who made the repairs is responsible for notifying the CLEC of the repair activities, and for closing the ticket. To close the ticket in WFA/DI or WFA/DO, the technician assigns disposition and cause codes. This assignment automatically closes the ticket in LMOS. Alternatively, rather than close the trouble, a technician may call the Central Office Resource Allocation Center (CORAC), or Load Resource Allocation Center (LRAC), to request that the loader complete the closing procedure.

2.1.3 Designed Trouble Ticket Handling

When designed trouble tickets are created, Work Force Administration/Control (WFA/C), the trouble administration system for designed service, automatically assigns an objective date and time for repair of the service, which informs the CLEC of the anticipated time before service will be restored. Through its Test Operating System (TOS), WFA/C attempts to diagnose the cause of a trouble. Once the diagnosis is completed, and the fault is identified, the trouble ticket in WFA/C is dispatched through the WFA/DO system directly to one of the LRACs, or through the WFA/DI system to one of the CORACs. Either the LRAC or the CORAC is responsible for dispatching the trouble ticket to the correct technician to complete the required work.

An inside or outside technician makes the required repairs, based on the trouble reported, then contacts the DSC. The DSC tester retests the trouble to confirm that the repairs were properly executed, and authorizes the technician to close the ticket in WFA/DI or WFA/DO. The DSC tester is responsible for notifying the CLEC of the repair activities completed, and for obtaining acceptance before restoring the ticket in WFA/C. Upon customer acceptance (CLEC repair confirmation), the DSC tester restores the ticket by assigning trouble and analysis codes. The ticket is sent to a "scrubber" for verification of completeness and process adherence before it is closed.

2.2 Scenarios

The table below contains the scenarios used in this test. These scenarios are for CLEC residential and business customers with resale, UNE-P, and UNE services. Instances of each scenario were reported as a trouble by the Pseudo CLEC (P-CLEC), either through the Customer Electronic Maintenance and Repair (CEMR) system or via a telephone call to the appropriate Qwest Wholesale repair or maintenance center.

Table 18-1: Stand Alone Maintenance & Repair¹²⁰

Activity	Res. POTS ¹²¹	Bus. POTS ¹²¹	UNE Loop	Centrex	Private Line	PBX
Short on outside plant facility	X	X	X	X	X	X
Open on outside plant facility	X	X	X	X	X	X
Short on the line within the central office	X	X	X	X	X	X
Open on the line within the central office	X	X	X	X	X	X
Noise on line	X	X	X			
Echo on line	X	X				
Customer w/LNP not receiving incoming calls	X	X				
Customer receiving incoming calls intended for another customer's number.	X					
Call waiting not working	X	X				
Repeat dialing not working	X	X				
Customer cannot call 900 numbers	X					
Calls do not roll-over for customer w/ multi-line hunt group		X		X		
Call forwarding not working	X	X				
Caller ID not working	X	X				
Pick-up group order for large Centrex customer not functioning properly (No dial tone on multiple lines, per MTP)				X		
DS1 loop MUXed to DS3 IOF not functioning			X			
Submit Trouble ticket against new loop	X	X				
Conduct MLT on new CLEC service	X	X				

2.3 Test Targets & Measures

The test targets for this test were the working resale, UNE-P, and UNE circuits with specific faults placed that were reported to, and repaired by, Qwest maintenance organizations under normal conditions. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

¹²⁰ Scenarios marked with an "X" were agreed to by the ROC TAG for execution as part of this evaluation. Those that are not indicated with an "X" were not executed.

¹²¹ Included a combination of Resale and UNE-P services.

Table 18-2: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
M&R End-to-End Trouble Report Processing – Resale	M&R Test Scenarios	Timeliness Accuracy	18-1-1 – 18-1-2, 18-2-1 – 18-2-2, 18-3-1 – 18-3-2, 18-4-1 – 18-4-2, 18-5-1 – 18-5-2, 18-6-1, 18-7-1
M&R End-to-End Trouble Report Processing – UNE/UNE-P	M&R Test Scenarios	Timeliness Accuracy	18-1-1 – 18-1-2, 18-2-1 – 18-2-2, 18-4-1 – 18-4-2, 18-5-1 – 18-5-2, 18-6-2 – 18-6-3

2.4 Evaluation Methods

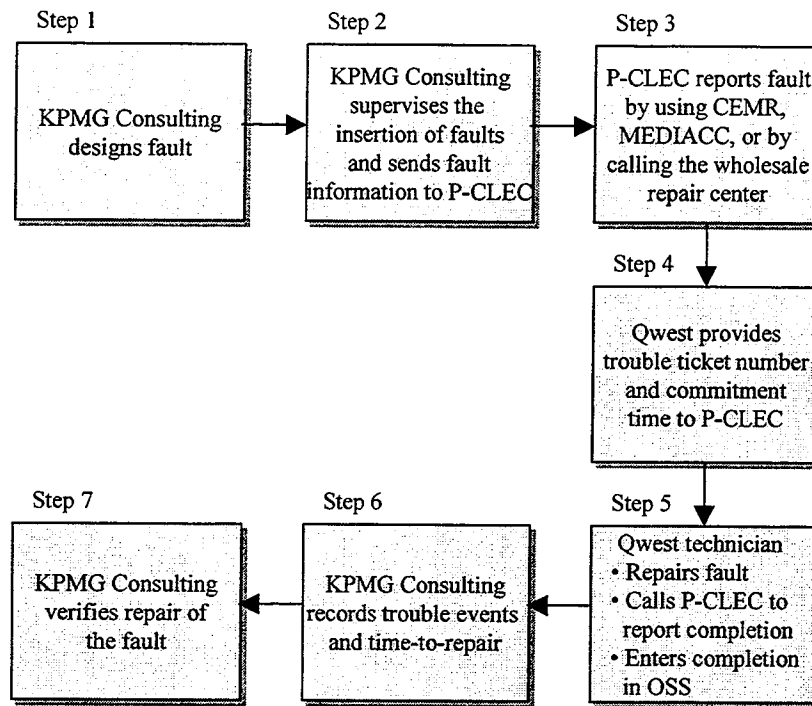
Qwest provisioned a test bed of circuits based on requirements specifications provided by KPMG Consulting that included test design input received from the Regional Oversight Committee (ROC) Technical Advisory Group (TAG). The test bed contained circuit types and features that were representative of those provisioned by Qwest for its wholesale customers. The test bed was designed to let KPMG Consulting introduce all categories of commonly reported faults. The faults placed were spread across the Qwest 13 state region, with approximately 50% of the faults in the CO, and 50% of the faults outside at customer premise locations.

To begin the test, field teams consisting of at least two KPMG Consulting testers and one Qwest Subject Matter Expert (SME) verified the correct working status of each test circuit. Next, physical and virtual faults were inserted by the Qwest representative into the circuits (one fault per circuit) in COs and field locations, under the direction of the KPMG Consulting, according to the M&R test scenarios. Field teams were supported by P-CLEC personnel responsible for generating trouble tickets, either electronically or manually, as specified by KPMG Consulting.

Through the active duration of each trouble, all contacts with Qwest related to the repair activity were documented. Once Qwest closed a given trouble ticket, the P-CLEC printed a Display Long Extended Trouble History (DLETH), which documented each step Qwest took in making the repairs. KPMG Consulting then returned to the trouble location to verify that the repair had been made, and was appropriately documented. Records created throughout the active duration of the troubles, along with the DLETH reports, were used to evaluate the repairs made by Qwest, specifically in the areas of timeliness and accuracy of the repairs, and the documentation of related activity.

The following figure illustrates the methodology used to perform the End-to-End Trouble Reporting Evaluation:

Figure 18-1: End-to-End Trouble Reporting Methodology



In addition to inserting faults in test bed circuits, KPMG Consulting conducted observations at a commercial CLEC’s Repair Call Center as end-users called in actual troubles, which the CLEC reported to Qwest either by phone, or via CEMR. The description of the trouble, as well as the Qwest-provided appointment and closeout times were recorded. Upon repair completion, these trouble tickets were reviewed for timeliness to determine if the fault was successfully identified and repaired in accordance with specified intervals. The accuracy of the closeout codes provided for CLEC-initiated trouble tickets was not assessed, as KPMG Consulting could not validate the exact nature of the fault.

The following table details the faults evaluated:

Table 18-3: Types of Faults Evaluated

Accounts Tested	Dispatch In			Dispatch Out			Total
	Resale POTS	UNE POTS	Specials	Resale POTS	UNE POTS	Specials	
KPMG Consulting CLEC Faults	203	31	6	164	42	4	450
Commercial CLEC Faults*							18
Grand Total							468

*11 UNE POTS and 7 Resale POTS (dispatch decision was not available)

2.5 Analysis Methods

Analysis for the End-to-End Trouble Report Processing test consisted of comparing the checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation, to the results of the test troubles processed through normal Qwest maintenance flows.

Testers maintained a record of all key data elements associated with each trouble processed. This data included information provided to Qwest (customer data, fault description, trouble type, access information, testing and fault isolation performed) to generate the troubles and responses returned from Qwest (trouble ticket number and appointment or objective date and time).

Additionally, results of the closed troubles were physically inspected to verify repairs, and the key data elements (cleared time, work performed, close out codes) taken from the DLETH records, were recorded. Key data items were compared or evaluated according to the evaluation criteria listed in Section 3.1 below to assess the results of Qwest's maintenance performance.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 18-4: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>PID MR-3, All Troubles Cleared within 24 Hours</i>			
18-1-1	Out-of-service trouble reports on wholesale services specified in PID MR-3 that require the dispatch of a technician are cleared within 24 hours.	Satisfied	The PID-defined standard for PID MR-3 is parity with retail performance. Of 213 troubles submitted, 198 (93%) were successfully repaired within the 24-hour interval. KPMG Consulting's statistical analysis (as described in Appendix G of the Qwest OSS Evaluation Master Test Plan [MTP]) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
18-1-2	Out-of-Service trouble reports on wholesale services specified in PID MR-3 that do not require the dispatch of a technician are cleared within the defined interval.	Satisfied	The PID-defined standard for PID MR-3 is parity with retail performance. Of 161 troubles submitted, 151 (94%) were successfully repaired within the 24-hour interval. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP)

Test Cross-Reference	Evaluation Criteria	Result	Comments
			revealed that KPMG Consulting was unable to determine if Qwest's performance was in parity with its retail performance. In accordance with MTP guidelines, this matter was referred to the ROC TAG (see Observation 3078). Upon review, the ROC TAG rendered a decision that found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
<i>PID MR-4, All Troubles Cleared within 48 Hours</i>			
18-2-1	Out-of-Service and service-affecting trouble reports on wholesale services specified in PID MR-4 that require the dispatch of a technician are cleared within 48 hours.	Satisfied	The PID-defined standard for PID MR-4 is parity with retail performance. Of 219 troubles submitted, 215 (98%) were successfully repaired within the 48-hour interval. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
18-2-2	Out-of-Service and service-affecting trouble reports on wholesale services specified in PID MR-4 that do not require the dispatch of a technician are cleared within 48 hours.	Satisfied	The PID-defined standard for PID MR-4 is parity with retail performance. Of 196 troubles submitted, 194 (99%) were successfully repaired within the 48-hour interval. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with retail performance. See Section V for additional details.
<i>PID MR-5, All Troubles Cleared within Four Hours</i>			
18-3-1	Out-of-Service and service-affecting trouble reports on wholesale services specified in PID MR-5 that may or may not require the dispatch of a technician are cleared within 4 hours.	Satisfied	The PID-defined standard for PID MR-5 is parity with retail performance. Of 13 troubles submitted, 11 (85%) were successfully repaired within the 4-hour interval. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) revealed that KPMG Consulting was unable to determine if Qwest's performance was in parity with its retail performance. In accordance with MTP guidelines, this matter was referred to the ROC TAG (see Observation 3079). Upon review, the ROC TAG rendered a decision that found Qwest's performance to be in parity with its retail performance. See Section V for

Test Cross-Reference	Evaluation Criteria	Result	Comments
			additional details.
<i>PID MR-6, Mean Time to Restore</i>			
18-4-1	The mean time to restore wholesale services specified in PID MR-6 that require the dispatch of a technician is equal to or less than retail services.	Satisfied	The PID-defined standard for PID MR-6 is parity with retail performance. For 182 troubles submitted, the mean time to restore was 9.6 hours. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
18-4-2	The mean time to restore wholesale services specified in PID MR-6 that do not require the dispatch of a technician is equal to or less than retail services.	Satisfied	The PID-defined standard for PID MR-6 is parity with retail performance. For 196 troubles submitted, the mean time to restore was 5.2 hours. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
<i>PID MR-9, Repair Appointments Met</i>			
18-5-1	Repair of wholesale services specified in PID MR-9 that require the dispatch of a technician are made by the appointment date and time.	Satisfied	The PID-defined standard for PID MR-9 is parity with retail performance. Of 200 troubles submitted, 178 (89%) were successfully cleared within the Qwest-provided appointment time. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
18-5-2	Repair of wholesale services specified in PID MR-9 that do not require the dispatch of a technician are made by the appointment date and time.	Satisfied	The PID-defined standard for PID MR-9 is parity with retail performance. Of 149 troubles submitted, 146 (98%) were successfully cleared within the Qwest-provided appointment time. KPMG Consulting's statistical analysis (as described in Appendix G of the MTP) found Qwest's performance to be in parity with its retail performance. See Section V for additional details.
<i>Accuracy of Coding</i>			
18-6-1	Close out codes for out-of-service and service affecting wholesale UNE-P, resale, and Centrex 21 troubles indicated	Not Satisfied	In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of close out codes correctly applied. Of 201 troubles submitted, 177 (88%) were

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>in Qwest's systems, and that may or may not require the dispatch of a technician, are consistent with the troubles placed on the line.</p>		<p>correctly coded. As a result of this deficiency, KPMG Consulting issued Exception 3055.</p> <p>Qwest instituted measures to increase the frequency of internal audits and expand the scope of the FCC SAVER audits to improve close out code accuracy levels.</p> <p>KPMG Consulting's subsequent retest results indicated that, of 122 resale close out codes reviewed, 108 (88.5%) were accurately coded.</p> <p>KPMG Consulting determined that the difference between Qwest's performance, and the performance standard used by KPMG Consulting, was statistically significant (p-value of .0032). Therefore, KPMG Consulting determined that Qwest's performance was unsatisfactory. However, Qwest asked that no additional testing be conducted, and requested that Exception 3055 be closed/unresolved. See Exception 3055 for additional information on this issue.</p>
<p>18-6-2</p>	<p>Close out codes for out of service and service affecting wholesale UNE-L troubles indicated in Qwest's systems, and that may or may not require the dispatch of technician, are consistent with the troubles placed on the line.</p>	<p>Satisfied</p>	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of close out codes correctly applied.</p> <p>Of 39 troubles submitted, 39 (100%) were correctly coded.</p>
<p>18-6-3</p>	<p>Close out codes for out of service and service affecting wholesale DS1 and higher bit rate troubles indicated in Qwest's systems are consistent with the troubles placed on the line that may or may not require the dispatch of a technician.</p>	<p>Unable to Determine</p>	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of close out codes correctly applied.</p> <p>Of 10 troubles submitted, 9 (90%) were correctly coded. As a result of this deficiency, KPMG Consulting issued Exception 3053.</p> <p>KPMG Consulting found that the difference between the performance result and the standard (p-value of .4013) is not statistically significant. However, KPMG Consulting determined that the sample size was insufficient to make a definitive conclusion that the criterion was or was not satisfied.</p> <p>KPMG Consulting extended Qwest the opportunity to increase the sample size by conducting additional testing. Qwest chose</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			not to conduct additional testing. Therefore, KPMG Consulting closed Exception 3053 as inconclusive. See Exception 3053 for additional information on this issue.
<i>Repair of Circuits</i>			
18-7-1	Out-of-service and service affecting wholesale UNE-P, resale, and Centrex 21 troubles that may or may not require the dispatch of a technician are successfully repaired.	Not Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of correct repairs.</p> <p>Of 259 troubles submitted, 239 (92%) were successfully repaired.</p> <p>KPMG Consulting found that the difference between the performance result and the standard (p-value of .0372) is statistically significant. As a result of this deficiency, KPMG Consulting issued Exception 3058.</p> <p>Qwest and KPMG Consulting disagreed on both the performance standard used by KPMG Consulting to evaluate Qwest's performance, and over whether or not the troubles cited in this Exception were correctly resolved.</p> <p>Qwest asked that no additional testing be conducted. KPMG Consulting subsequently closed Exception 3058 as closed/unresolved.</p>

18.7. Test Results: M&R Work Center Support Evaluation (Test 18.7)

1.0 Description

The Maintenance & Repair (M&R) Work Center Support Evaluation was a comprehensive operational analysis of the work center processes developed by Qwest to provide support to Competitive Local Exchange Carriers (CLECs) with questions, problems, and issues related to wholesale trouble reporting and repair operations. Work center processes include creating trouble tickets, managing and monitoring open trouble tickets, resolving troubles, closing trouble tickets, and providing trouble ticket status information. In addition to these, basic functionality, performance, and escalation procedures were evaluated.

The objective of this test was to evaluate the effectiveness of Qwest's M&R work center support operations, and its adherence to common work center procedures.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

CLECs operating within Qwest's 14-state operating region are provided M&R support by Qwest, primarily through the Account Maintenance Service Center (AMSC). The AMSC, located in Denver, Colorado, is responsible for recording CLEC trouble tickets and responding to CLEC questions regarding trouble tickets. The AMSC receives trouble calls and processes trouble tickets for designed service type¹²² troubles, and is accessible to CLECs from 6:00 AM to 10:00 PM, seven days a week. Qwest's Repair Call Handling Center (RCHC) in Salt Lake City, Utah supports after-hour CLEC trouble reporting, and the Customer Repair Service Attendant Bureau (CRSAB) in Colorado Springs, Colorado serves as a backup for the AMSC during peaks in business volume. Additionally, a small number of CLEC non-designed service type (POTS) trouble reports are received and processed by Qwest's four RCHCs.

2.1.1 Trouble Report Receipt

Incoming calls are routed automatically through the Voice Response Unit (VRU) and the Pinnacle Automated Call Distribution (ACD) systems. Once a caller selects an option from the main menu, the call is sent to the call queue in which calls are answered, on a first-in-first-out basis. No further prioritization of incoming calls occurs, regardless of their severity and category. Elapsed time of callers placed on hold is tracked by the ACD system (i.e., timing in the AMSC begins at the first ring; continues during the actual time the customer is placed on hold, the time it takes to conference another work group to obtain information, and the time spent talking to the customer; and stops at the conclusion of the conversation with the Repair Service Attendant [RSA]). To improve caller response times, the call centers have the ability to transfer calls between locations in case of unexpected high call volumes and/or service interruptions.

¹²² Qwest designates services other than Plain Old Telephone Service (POTS) as designed services.

When a customer reaches the call center, the RSA in the AMSC, CRSAB, or RCHC enters information necessary to create a trouble ticket, following the prompts in the ticket generating system's Graphical User Interface (GUI). "Control" is the GUI for generation of designed services trouble tickets in Work Force Administration/Control (WFA/C), and "Repair Call Expert" (RCE) is the GUI for generation of non-designed services trouble tickets in the Loop Maintenance Operating System (LMOS).

CLEC trouble reports can also be submitted electronically through the Mediated Access (MEDIACC) or Customer Electronic Maintenance and Repair (CEMR) systems. In such cases, the electronically bonded ticket feeds directly into WFA/C or LMOS, and follows the regular ticket flow.

WFA/C and LMOS automatically assign a committed due time and date for repair to each ticket, based on technician schedules and workload. WFA/C prioritizes tickets due to type of service and severity. LMOS generally prioritizes medical emergency tickets only.

2.1.2 Problem Tracking and Resolution

WFA/C attempts to diagnose the cause of a trouble through automated testing. If the diagnosis is successful, and the trouble is identified, WFA/C dispatches the ticket through the WFA Dispatch Out (WFA/DO) system directly to one of the Load Resource Allocation Centers (LRACs) for repair of troubles diagnosed as located outside of the Central Office (CO), or alternatively, through the WFA Dispatch In (WFA/DI) system to one of the Central Office Resource Allocation Centers (CORACs), for repair of troubles diagnosed as located in the CO. If the diagnosis is unsuccessful, WFA/C sends the ticket to one of the Design Service Centers (DSCs) for further trouble-shooting and testing.

Upon trouble identification within the DSC, the tester dispatches a work request to one of the CORACs or LRACs, depending on the origin of the trouble. If the trouble originates within the CO, the work request is dispatched to the CORAC. If the trouble originates outside of the CO, the work request is dispatched to the LRAC. The CORAC assigns the work request to the geographically appropriate CO technician's (COT) workload for repair. The LRAC assigns the work request to the geographically appropriate field technician's workload. Translation and switch programming troubles are dispatched to a Recent Change Memory Administration Center (RCMAC).

The Shared Secure Module (SSM) and the G4 module in LMOS attempt to diagnose the trouble through automated testing. If the diagnosis is successful, and the trouble is identified, LMOS dispatches a work request directly to one of the CORACs or LRACs for repair. If the diagnosis is unsuccessful, LMOS dispatches the ticket to one of the Screening Centers for further trouble-shooting and testing.

Upon trouble identification within the Screening Center, the screener dispatches a work request to one of the CORACs or LRACs, depending on the origin of the trouble. The CORAC assigns the work request to the geographically appropriate COT's workload for repair. Alternatively, the LRAC assigns the work request to the geographically appropriate field technician's workload. Translation and switch programming troubles are dispatched to a RCMAC.

Trouble tickets are assigned a ticket number, and are maintained in the LMOS or WFA/C systems. Non-designed service trouble tickets are referenced by phone number; designed service trouble ticket numbers are system-generated. The ticket number is given to the CLEC at the time that it reports the trouble to the call center. At any time, CLECs have the ability to contact the call center to receive trouble ticket status information. If the trouble report was submitted electronically, the CLECs can track the status of the ticket by accessing CEMR or MEDIACC. Additionally, trouble tickets are assigned codes for type of trouble report and severity, for internal tracking purposes and escalations/expedites.

In the case of a designed service trouble, the inside or outside technician repairs the trouble and contacts the DSC. The DSC tester retests the trouble, and authorizes the technician to close the work request in WFA/DI or WFA/DO. The DSC tester is responsible for notifying the CLEC of the repair activities, and for obtaining acceptance prior to restoring the ticket in WFA/C. Upon customer acceptance, the DSC tester restores the ticket by assigning trouble and analysis codes. The ticket is sent to a "scrubber" for verification of completeness and process adherence before it is closed.

For non-designed services, the inside or outside technician is responsible for notifying the customer of the repair activities, and for obtaining acceptance prior to restoring the work request. The work request is restored and closed in WFA/DI or WFA/DO by the technician's assignment of disposition and cause codes. This assignment automatically closes the ticket in LMOS. Alternatively, the technician may call the CORAC or LRAC and request that the loader complete the closing procedure.

2.1.3 Expedite/Escalation Procedures

Two types of escalations exist within Qwest M&R work centers: internal and external. Internal escalations are used when a trouble ticket's commitment time is in jeopardy, and, therefore, the ticket must be expedited. External escalations occur when the reporting CLEC calls to expedite a trouble ticket (request an earlier commitment time), or to escalate a disputed trouble ticket.

There are several levels of escalation, ranging from those directed to a center supervisor, to those directed to Qwest's regional Vice President. The levels of escalation and contact details are available to CLECs on Qwest's external Web site.

Escalations for designed services troubles are initiated as follows: When a CLEC contacts the call center, the RSA enters the code "ESC" in Control, which submits the ticket to the DSC through WFA/C. The DSC escalation bridge is responsible for driving the escalation and keeping the CLEC updated of status, progress, and resolution. Escalations are logged in WFA/C and in a separate escalations log.

For non-designed services escalations, when a CLEC contacts the call center, the RSA warm-transfers the call to the center escalations group. The escalations group is responsible for coordinating the repair and keeping the CLEC updated of status, progress, and resolution. Escalations are logged in LMOS and in a separate escalations binder.

2.1.4 Joint Meet and Coordinated Testing Procedures

When a CLEC reports a trouble indicating that service is not of sufficient quality or is down, but no trouble can be identified within the Qwest network, a coordinated effort may be necessary to resolve the trouble.

If the service can be tested remotely, coordinated testing may be sufficient. Typically, the CLEC, a Qwest DSC tester, and a third party vendor remotely test the service, in order to locate and identify the trouble.

Alternatively, if remote test access is not available, the customer may request, or the DSC tester may suggest, a coordinated vendor meet to resolve a dispute. When this occurs, a CLEC technician, a Qwest field technician, and, possibly, a third party technician meet in the field or in the CO to test and troubleshoot.

If the CLEC initially requests a vendor meet, the call center RSA creates a trouble ticket, following the regular trouble ticket generation process described above, and notes the request in the narrative section of RCE or Control. Upon receipt, the screener or DSC tester contacts the CLEC to schedule the vendor meet.

Coordinated Vendor Meet trouble tickets are closed, and the CLEC is notified following the regular trouble ticket closeout and notification procedures described in Section 2.1.2 above.

2.1.5 Manual Handling - Resale and UNE/UNE-P

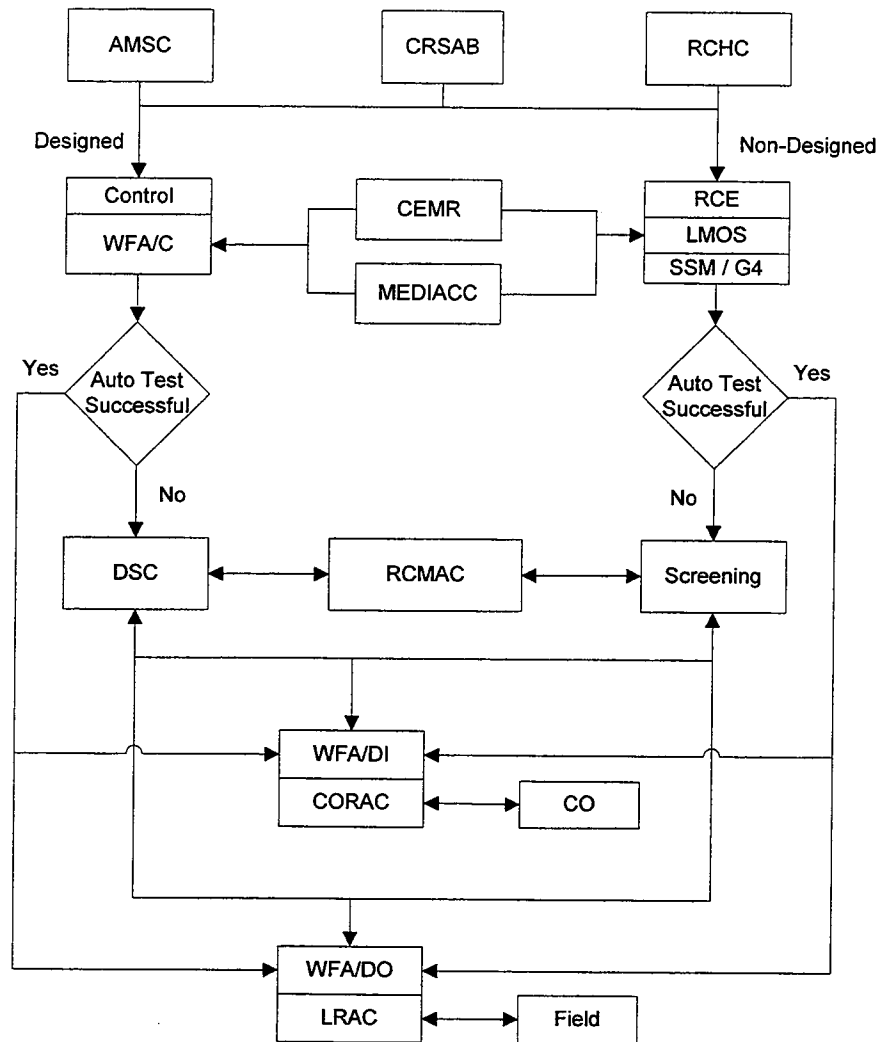
Qwest screeners, and DSC testers, offer assistance with Resale service fault identification by testing the Qwest network and dispatching a technician to the location of the trouble. A CLEC incurs trouble identification charges (TICs) when the cause of a trouble is identified as outside of the Qwest network. Additionally, for a service charge, Qwest screeners, and DSC testers, offer to dispatch and test outside of the Qwest network.

CLECs are responsible for testing Unbundled Network Elements (UNEs) prior to submitting a trouble report to Qwest. CLECs must provide test diagnostics that include specific evidence that the trouble is in the Qwest network, along with the associated Qwest circuit identification number. If the CLEC elects not to perform the necessary UNE testing, Qwest offers to do such testing on the CLEC's behalf. If this testing is requested by the CLEC, Qwest performs the additional testing, and bills the CLEC the appropriate charges, as defined by its Interconnection Agreement.

If the CLEC does not provide test diagnostics, and elects not to have Qwest perform additional testing on its behalf, Qwest will not accept a trouble report. Additional charges may apply when testing determines that the trouble is beyond the Loop Demarcation Point.

Figure 18.7-1 below depicts the CLEC trouble ticket flow for non-designed and designed type services.

Figure 18.7-1: CLEC Trouble Ticket Flow within Qwest's M&R Organization



2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the Qwest M&R work center processes and procedures. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 18.7-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Call Processing	Call Answer	Timeliness ¹²³	18.7-1-1, 18.7-4-4
	Call Logging	Accuracy Completeness Consistency	18.7-1-1
	Prioritization	Existence Effectiveness	18.7-1-1
Problem Tracking and Resolution	Documentation	Clarity Accuracy Completeness	18.7-2-1
	Identify and Resolve	Timeliness ¹²³ Accuracy Completeness Consistency	18.7-2-1, 18.7-4-4
	Track Problem	Existence Accuracy	18.7-2-1
	Log Status and Close	Accuracy Completeness Consistency	18.7-2-1 18.7-2-2
	Notify Customer	Timeliness ¹²³ Completeness	18.7-2-2, 18.7-3-1
Expedite/Escalation Procedures	Documentation	Existence Clarity Accuracy	18.7-3-1
	Call Answer	Accessibility Timeliness ¹²³	18.7-3-1
	Escalation Logging	Accuracy	18.7-3-1
	Identify and Resolve	Timeliness ¹²³	18.7-3-1
	Log Status and Close	Accuracy	18.7-3-1
	Notify Customer	Timeliness ¹²³	18.7-3-1
Work Center Procedures		Accuracy Completeness	18.7-4-1 – 18.7-4-6

¹²³ Timeliness is not intended to imply that KPMG Consulting submitted transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the measure was established to evaluate whether or not controls are in place to suggest that identified processes and sub-processes are processed in a responsive manner.

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Joint Meet Procedures	Process Documentation	Accuracy Completeness	18.7-5-1 – 18.7-5-3
	Notification Procedures	Timeliness ¹²³ Accuracy	18.7-5-2 – 18.7-5-3
Coordinated Testing	Process Documentation	Accuracy Completeness	18.7-5-1 – 18.7-5-3
	Notification Procedures	Timeliness Accuracy	18.7-5-2 – 18.7-5-3
Manual Handling — Resale		Accuracy Timeliness Consistency	18.7-6-1
Manual Handling — UNE/UNE-P		Accuracy Timeliness Consistency	18.7-7-1
Capacity Management	Capacity Management Processes and Procedures	Adequacy and completeness of capacity management process	18.7-8-1 – 18.7-8-4

2.4 Evaluation Methods

KPMG Consulting utilized four methods of data collection for this evaluation:

- CLEC Interviews – KPMG Consulting conducted interviews with various CLECs to gather feedback pertaining to Qwest M&R work center interactions and experiences. KPMG Consulting used the information learned to place appropriate focus on those M&R work center process areas for which CLECs reported negative experiences¹²⁴.
- Qwest Interviews – KPMG Consulting conducted interviews with management and staff who have direct responsibility and knowledge of targeted processes. Centers visited include the AMSC, the CRSAB, all RCHCs (four), all DSCs (five), and one RCMAC, LRAC, CORAC, and Screening Center for each of the three regions (East, Central, and West).
- Observations – KPMG Consulting performed observations of M&R work center personnel performing trouble-processing activities, in order to identify potential substantive differences between the processes practiced in the center, and those defined in Qwest method and procedures documentation.
- Documentation Reviews – KPMG Consulting conducted a review of process flow documentation, including methods and procedures and performance data, related to M&R Qwest work center business operations. KPMG Consulting also reviewed Qwest information that is available to CLECs.

¹²⁴ Process areas subject to reported negative experiences include timeliness of repair, customer repair notification, accuracy of trouble ticket close code application, escalations, and work center personnel skill level.

2.5 Analysis Methods

The analysis for the M&R Work Center Support Evaluation focused on the existence of trouble ticket and work center processes, the adequacy of such processes, and work center personnel adherence to processes.

The M&R Work Center Support Evaluation included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided the framework and guidelines for testing activities. Using data obtained through interviews, observations, and documentation reviews, KPMG Consulting compared the information gathered to the checklist of evaluation criteria to execute the test.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 18.7-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
18.7-1-1	M&R work center call processing procedures are in place, complete, and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's M&R call processing procedures are in place, complete, and adhered to by Qwest personnel.</p> <p>Incoming calls are routed automatically through the Voice Response Unit (VRU) and the Pinnacle Automated Call Distribution (ACD) system. Once a caller selects an option from the main menu, the call is sent into the call queue, from which calls are handled on a first-in, first-out basis. Incoming calls are not prioritized beyond that, regardless of severity or category. The elapsed time of callers placed on hold is tracked by the ACD system (i.e., the timing begins when the caller is placed on hold, and stops at the conclusion of the conversation with the RSA).</p> <p>Qwest has established objectives for call answer timeliness, and monitors calls to ensure that they are handled in a timely manner¹²⁵. In order to meet objectives in periods of unexpected call volumes and</p>

¹²⁵ See evaluation criterion 18.7-4-4 for specific performance metrics related to call answering objectives.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>service interruptions, and to improve response times, call centers have the ability to transfer calls among locations.</p> <p>When a customer reaches the call center, an RSA enters the information necessary to create a trouble ticket, following the prompts in the ticket generating system's GUI: Control for generation of designed services in WFA/C, and RCE for generation of non-designed services in LMOS.</p> <p>WFA/C prioritizes tickets according to type of service and severity. Troubles that potentially affect larger number of people are given priority. LMOS generally prioritizes medical emergency tickets only.</p> <p>WFA/C and LMOS assign a committed due time and date for repair to each ticket, based on technician schedules and workload.</p> <p>CLECs have the ability to provide modifications or additional trouble details at any time. Qwest work center attendants submit such additions as subsequent reports under the same trouble ticket number. Additionally, CLECs may submit subsequent reports through CEMR.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe call processing procedures:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Introduction to RCE</i> • <i>RCE Result /Customize Page</i> • <i>Control Trouble Reports</i> • <i>Create a Trouble Ticket</i> • <i>Commitment Guidelines (1)</i> • <i>Commitment Guidelines (2)</i> • <i>Recommit Process for Past Due Order</i> • <i>Service Priority Matrix</i> • <i>Scheduling Priority</i> • <i>2001 Loading Priority Design Services Products</i> • <i>Multiple Trouble Reports -- Repair Call Handling.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, and Screening Center personnel processing calls. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-2-1	M&R work center problem tracking and resolution procedures are in place, complete, and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's problem tracking and resolution procedures are in place, complete, and adhered to by Qwest personnel.</p> <p>Trouble tickets are assigned a ticket number, and maintained in the LMOS or WFA/C systems. The ticket number is provided to the CLEC at the time it reports a trouble to the call center. At any time, a CLEC has the ability to contact the call center to receive trouble ticket status information. CLECs may also request the trouble history for a specific circuit or loop. In addition, if the trouble report was submitted electronically, a CLEC can track the status of the ticket by accessing CEMR or MEDIACC.</p> <p>Trouble tickets are assigned codes for type of trouble report, and severity for internal tracking purposes and escalations/expedites. Qwest has established objectives for timeliness of repair. Based on these objectives, timers are set in the system (primarily in WFA/C for designed services) to monitor established repair intervals and ensure timely trouble resolution and progress tracking.</p> <p>WFA/C attempts to diagnose the cause of a trouble through automated testing. If the diagnosis is successful, and the trouble is identified, WFA/C dispatches a work request to the LRACs or, alternatively, to the CORAC for repair. If the diagnosis is unsuccessful, WFA/C sends the ticket to the DSC for further trouble-shooting and testing. The SSM and the G4 module in LMOS attempt to diagnose the cause of the trouble through automated testing. If the diagnosis is successful and the trouble is identified, LMOS dispatches a work request directly to the CORAC or LRAC for repair.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>If the diagnosis is unsuccessful, LMOS dispatches the ticket to the Screening Center for further trouble-shooting and testing.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's problem tracking and resolution procedures:</p> <ul style="list-style-type: none"> • <i>Report Categories</i> • <i>Category of Reports</i> • <i>Control Report Types Jobaid [sic]</i> • <i>RCE Trouble Types</i> • <i>Event Code Tracking – All States Network</i> • <i>BGS/CXR/ICS Complex Services: Analysis Code Descriptions</i> • <i>BGS/CXR/ICS Complex Services: Analysis Code / Trouble Code Cross Reference</i> • <i>Cause and Disposition Code Ownership</i> • <i>BGS/CXR/ICS Complex Services Analysis Code Matrix</i> • <i>Local Network Design Services: WFA/C Trouble Codes</i> • <i>Local Network Design Services: Jeopardy Code Job Aid</i> • <i>Disposition and Cause Codes – All States Res, Bus, Pub, Net</i> • <i>Local Network Design Services: Report Categories.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, RCMAC, LRAC, and CORAC personnel tracking and resolving problems. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-2-2	M&R work center trouble ticket closing and customer notification procedures are in place, complete, and adhered	Satisfied	KPMG Consulting found that Qwest's trouble ticket closing and customer notification methods and procedures are in place, complete, and adhered to by Qwest

Test Cross-Reference	Evaluation Criteria	Result	Comments
	to by Qwest personnel.		<p>personnel.</p> <p>For designed service troubles, the inside or outside technician repairs the trouble and contacts the DSC. The DSC tester retests the trouble and authorizes the technician to close the work request in WFA/DI or WFA/DO. The DSC tester is responsible for restoring the ticket in WFA/C by assigning trouble and analysis codes, and for notifying the CLEC. When the ticket has been restored, the ticket is sent to a scrubber for verification of completeness and process adherence before closing the ticket.</p> <p>For non-designed services, the inside or outside technician is responsible for restoring the work request in WFA/DI or WFA/DO respectively by assigning disposition and cause codes, and for notifying the customer. Alternatively, the technician may call the CORAC or LRAC and request that the loader completes the closing procedure.</p> <p>Qwest has established objectives for timeliness of repair, and monitors repair activities to ensure timely resolution. Troubles must be restored within the commitment time provided to the customer. WFA/C and LMOS tickets may not be closed prior to customer acceptance. In cases in which the customer cannot be reached to accept the trouble resolution, trouble tickets are placed on hold until the customer can be reached.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's trouble ticket closing and customer notification procedures:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Wholesale Interconnection Operations</i> • <i>Processing of Front End Close Reports</i> • <i>Clear vs. Close Policy for Repair Tickets, Local Network Communication</i> • <i>Local Network Designed Services Process Bulletins: Trouble Ticket</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Administration</i></p> <ul style="list-style-type: none"> • <i>Repair Procedures – RCMAC</i> • <i>Network Services: Network Services Statuses and Procedures.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, LRAC, and CORAC personnel closing trouble tickets and notifying customers. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-3-1	M&R work center expedite and escalation procedures are in place, complete, and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest’s expedite and escalation procedures are in place, complete, and adhered to by Qwest personnel.</p> <p>Two types of escalations are in place: internal and external. Internal escalations are used when a trouble ticket’s commitment time is in jeopardy, and the ticket requires expedited handling. External escalations are used when a CLEC calls to expedite a trouble ticket (request an earlier commitment time), or to escalate a disputed trouble ticket.</p> <p>Escalations can be routed to several levels within Qwest, ranging from those directed to a center supervisor, to those directed to Qwest’s regional vice president. Levels of escalation and contact details are available on the Qwest external Web site.</p> <p>For designed services, when a CLEC contacts the call center, an RSA enters the code “ESC” in Control, which submits the ticket to the DSC through WFA/C. The DSC escalation bridge is responsible for driving the escalation, and for notification of its status to the CLEC. Escalations are logged in WFA/C, and in a separate escalations log.</p> <p>For non-designed services, when a CLEC contacts the call center, an RSA warm-transfers the call to the center escalations group. The escalations group is responsible</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>for coordinating the repair, and for notifying the CLEC of its status. Escalations are logged in LMOS, and in a separate escalations binder.</p> <p>Timers are set in the systems to track the time elapsed since the last progress was made, or since the last update was provided to the customer.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's expedite and escalation procedures:</p> <ul style="list-style-type: none"> • <i>BGS/CXR/ICS and Designed Services Process Bulletins</i> • <i>Customer Escalations – All States Bus Res</i> • <i>CEMR Ticket Escalation and Referral Process</i> • <i>Corporate Problem Management Process</i> • <i>Local Network Design Services: Dispatch Center Escalations</i> • <i>Avoid Escalations and Des Moines Center – Escalation Process</i> • <i>Des Moines Center Escalation Process</i> • <i>Escalations – Customer Handling</i> • <i>Escalation Bridge – Purpose, Policy, Procedure</i> • <i>CRSAB Job Aid: Escalation Policy</i> • <i>Commitments.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, RCMAC, CORAC, and LRAC personnel expediting and escalating trouble tickets. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-4-1	M&R work center responsibilities and activities for serving CLEC customers are in place, complete, and	Satisfied	KPMG Consulting found that Qwest's work center responsibilities and activities for serving CLEC customers are in place, complete and adhered to by Qwest

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>adhered to by Qwest personnel.</p>		<p>personnel.</p> <p>Specific roles, responsibilities, and activities of work center personnel are defined and documented in various job descriptions, training manuals, and job aids. The documents describe the requirements for trouble identification, trouble ticket creation, standard intervals, and monitoring ticket status. As procedures change, revisions are distributed via e-mail, electronic bulletin boards, and, periodically, in hard copy.</p> <p>Qwest maintains an intranet, which is a repository for all M&Ps, job aids, contact information, and technical reference materials that are related to various M&R work center responsibilities and activities. KPMG Consulting observed work center personnel enter this repository to access M&Ps and job aids.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's responsibilities and activities for serving CLEC customers:</p> <ul style="list-style-type: none"> • <i>Macro Repair Process Flow</i> • <i>Repair Ticket Hit Initiative</i> • <i>Repair Process Flow</i> • <i>Ticket Flow</i> • <i>Trouble Ticket Processing</i> • <i>Repair Service Attendant Job Description</i> • <i>R270 – RCHC RAS Responsibilities</i> • <i>LRAC Buried Service Wire</i> • <i>LRAC Cable Load Specialist Training: Daily Activities</i> • <i>Ticket Ownership</i> • <i>Restore Tickets Correctly</i> • <i>Bridge Parameters</i> • <i>Analyzation [sic] of Chronic Reports</i> • <i>Job Brief and Qualifications: Load Specialist</i> • <i>Jeopardy Document</i> • <i>R591: LRAC MN Team Members and Duties</i> • <i>Flow Control: Initial Testers,</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Ownership Testers, ATR Testers, ACD Testers and Escalation Bridge</i></p> <ul style="list-style-type: none"> <i>Job Brief and Qualifications for Repair Service Attendant, Switch Consultant, COT, Customer Care Technician, Network Technician, Customer Service Specialists (CSS), Data Specialist, Screening Consultant, and Service Assurance Technician.</i> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, RCMAC, CORAC, and LRAC personnel serving CLEC customers. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-4-2	The M&R work center CEMR Help Desk is made available to assist users with the CEMR application.	Satisfied	<p>KPMG Consulting found that CLECs that are experiencing problems entering troubles electronically via CEMR, including data entry problems or user error messages, can call Qwest's Wholesale Help Desk via a toll-free number for assistance. The Wholesale Help Desk is accessible to CLECs 24 hours a day, seven days a week, 365 days a year¹²⁶.</p> <p>Qwest's document, <i>CEMR Ticket Escalation and Referral Process and Corporate Problem Management Process</i>, provides information and training material for CEMR, and is available on the Qwest external Web site (http://www.qwest.com/wholesale/training/cemr/chapter3.html#33).</p>
18.7-4-3	M&R work center staff training procedures are in place and complete.	Satisfied	<p>KPMG Consulting found that Qwest's staff training procedures are in place and complete.</p> <p>Qwest employs an internal training organization, and that each work center utilizes subject matter experts to provide training for new employees, and retraining for existing employees on policy and procedure changes. The training group is also responsible for frequent updates to the training manual that is given to each staff member.</p> <p>New hires undergo structured internal</p>

¹²⁶ See KPMG Consulting's Test 24.7, Wholesale Systems Help Desk Review, for further details regarding the CEMR help desk.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>training and receive a comprehensive training manual, which details formal call and ticket handling procedures and processes, as well as tips, hints, and scripts. In addition, all employees have access to job aids, methods and procedures, and product documents on the Qwest intranet.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest staff training procedures:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Trouble Ticket Handling Procedures</i> • <i>Technical Analysis of DSO Analog: A Modular Approach to Special Services Technical Learning</i> • <i>DSC Training Manual</i> • <i>TI Facilities Testing</i> • <i>Complex network Services HiCap Service Assurance and Provisioning</i> • <i>R412C: Student Guides and Job Aids DSC-WA</i> • <i>LRAC Dispatch Initial Training: NTD – 1450</i> • <i>WFA/C User Manual</i> • <i>WFA/C Feature Summaries.</i> <p>KPMG Consulting observed new Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, RCMAC, LRAC, and CORAC personnel handling calls and trouble tickets, as part of training activities. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-4-4	M&R work center staff performance monitoring procedures are in place and complete.	Satisfied	<p>KPMG Consulting found that Qwest’s staff performance monitoring procedures are in place and complete.</p> <p>Qwest uses defined metrics to measure staff performance in areas such as call response time, quality of service, efficiency, process adherence, and accuracy. Metrics tracked and evaluated include, but are not limited to:</p> <ul style="list-style-type: none"> • <i>AMSC call answering time: 85% within 20 seconds</i> • <i>AMSC average handling time: 5.5 minutes for out-of-service reports</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>AMSC quality: 85-90% level of adherence to observation quality checklist including suitable greeting, correct information stated, friendliness, correct tools utilized, accuracy in application of codes, completion of status updates, etc.</i> • <i>DSC call answering time: 85% within two minutes</i> • <i>DSC percentage of missed commitments: 15%</i> • <i>DSC mean time to repair: two to four hours depending on type of service</i> • <i>DSC quality: 89% level of adherence to observation quality checklist including escalations when appropriate, compliance with methods and procedures, application of appropriate codes, etc.</i> <p>After initial training, employees receive monthly reviews to assess performance. Individual training is provided to correct deficiencies and improve call and ticket-handling skills.</p> <p>To ensure that established procedures and policies are enforced, work center supervisors regularly observe call and ticket-handling activities. In addition, a staff of screeners (“scrubbers”) reviews every trouble report prior to its closeout. Supervisors are required to conduct service observations of each employee a minimum of four times per year.</p> <p>The above procedures are referenced in performance management plans.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest’s staff performance monitoring procedures:</p> <ul style="list-style-type: none"> • <i>Qwest Occupational Employee Performance Compliance Plan</i> • <i>AMSC/CRSAB 2001 Individual Performance Plan</i> • <i>CRSAB QA Form & Guidelines</i> • <i>2000 Individual Performance Plan</i> • <i>Quality Check List – DSI Tester</i> • <i>The Performance Management Plan</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>CCT User's Guide</i></p> <ul style="list-style-type: none"> • <i>US West Continuous Improvement Plan</i> • <i>Quality Check List</i> • <i>Ticket Reviews</i> • <i>Occupational Performance Tracking</i> • <i>Screening Observation Form</i> • <i>Manager's IPP Guidelines for Screening Consultants</i> • <i>Screening Observations</i> • <i>Screening Consultants 2001 Individual Performance Plan</i> • <i>Separate Dimensions and Overall Performance Ratings</i> • <i>Washington LRAC Employee Observation Form</i> • <i>Occupational Performance Management</i> • <i>Performance Management Plan</i> • <i>LRAC – BSW Occupational Performance Appraisal</i> • <i>2001 Performance Management Plan</i> • <i>Qwest Occupational Employee Performance Compliance Plan</i> • <i>Customer Operations 2001 IPP Action Plan Document.</i>
18.7-4-5	M&R work center staffing procedures are in place and complete.	Satisfied	<p>KPMG Consulting found that Qwest's staffing procedures are in place and complete.</p> <p>Qwest's Human Resource department handles staffing for work centers, once a resource need has been established¹²⁷.</p> <p>The majority of new hires are recruited internally within Qwest; however, external candidates are considered for lower level positions, and when internal candidates with the appropriate skill sets are not available.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's work center job responsibilities utilized for staffing:</p>

¹²⁷ See Test Cross-Reference 18.7-8-2 for further details regarding staffing and scheduling.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>Local Network Operations / CRSAB-AMSC: Organizational Chart</i> • <i>Repair and Screening Center Organizational Charts</i> • <i>Job Brief and Qualifications</i> • <i>Experience/Skill Codes</i> • <i>Des Moines Network Complex Services</i> • <i>Organization Field and LRAC Support</i> • <i>Organizational Chart</i> • <i>Staff Support</i> • <i>St. Paul Center Organization – Repair Call Handling & Screening</i> • <i>MN Repair</i> • <i>CO/NROC Direct Report Contact List.</i>
18.7-4-6	M&R work center processes for maintaining security and integrity of data access tools are in place, complete, and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest’s processes for maintaining security and integrity of data access tools are in place, complete, and adhered to by Qwest personnel.</p> <p>Before a trouble ticket is processed, RSAs are required to verify a caller’s identity by requesting the circuit ID or other unique data, as well as to verify the CLEC’s name and the reported service address. During visits to the work centers, KPMG Consulting observed RSAs answering CLEC calls in a manner that is consistent with this process.</p> <p>Additionally, Qwest employs both restricted physical access and system login access at its work centers. During visits to the work centers, KPMG Consulting observed physical and system access restrictions in operation.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest’s work center security and data integrity procedures:</p> <ul style="list-style-type: none"> • <i>Corporate Compliance: Information Security</i> • <i>Qwest Code of Conduct</i> • <i>Corporate Compliance: Corporate Policies.</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, RCMAC, LRAC, and CORAC personnel conforming to established security procedures while entering work centers and trouble processing systems. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-5-1	<p>M&R work center coordinated vendor meet and coordinated testing procedures are in place, complete, and adhered to by Qwest personnel.</p>	Satisfied	<p>KPMG Consulting found that Qwest's coordinated vendor meet and coordinated testing procedures are in place, complete, and adhered to by Qwest personnel.</p> <p>When a CLEC has reported that service is not of sufficient quality or is down, but no trouble can be identified within the Qwest network, a coordinated vendor meet may be scheduled to resolve the trouble. If the service can be tested remotely, coordinated testing may be sufficient. Typically, the customer, a Qwest DSC tester, and a third party vendor test the service, in order to locate and identify the cause of a trouble.</p> <p>Alternatively, a customer technician, a Qwest field technician, and, possibly, a third party technician meet in the field or in the CO to test and troubleshoot.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's coordinated testing and coordinated vendor meet procedures¹²⁸:</p> <ul style="list-style-type: none"> • <i>Local Network Designed Services Process Bulletins: Joint Meet Designed Services Repair Commitments IBA</i> • <i>Joint Meets – All States Network</i> • <i>Joint Meets – Non Design</i> • <i>Cooperative Test Job Aid</i> • <i>Qwest Communications Arizona Designed Services Cooperative Repair Initiative.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and</p>

¹²⁸ See KPMG Consulting's Test 24.3, Account Establishment and Management Review; Test 24.8, Interconnect Service Center (ISC) Support Review; and Test 23, Change Management Test; for further details regarding the communication and maintenance of CLEC coordinated vendor meet request and scheduling procedures.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, LRAC, and CORAC personnel handling coordinated testing and scheduling coordinated vendor meets. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-5-2	M&R work center coordinated vendor meet request and scheduling procedures are in place, complete, communicated to CLECs, and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's coordinated vendor meet requesting and scheduling procedures are in place, complete, communicated to CLECs, and adhered to by Qwest personnel.</p> <p>When a customer requests a vendor meet for a new trouble, the RSA creates a trouble ticket following the regular trouble ticket generation process described in evaluation criterion 18.7-1-1, and notes the details of the request in the narrative section of the trouble report. Upon receipt, the screener or DSC tester contacts the customer to schedule the meet.</p> <p>During testing activities for a trouble already reported, the customer may request, or the DSC tester may suggest, a coordinated vendor meet to resolve a dispute.</p> <p>Qwest typically requires a 48-hour advanced notice in order to arrange for an appropriately skilled technician to participate in the meet.</p> <p>Coordinated vendor meet procedures are communicated to CLECs by their dedicated Qwest Account Manager (Business Centers), aided by Qwest M&R process documentation that is pertinent to the efficient interaction between CLECs and Qwest. Changes to processes are communicated through the Qwest Change Management Process (CMP).</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's coordinated vendor meet request and scheduling procedures¹²⁸:</p> <ul style="list-style-type: none"> • <i>Local Network Designed Services Process Bulletins: Joint Meet</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Designed Services Repair Commitments IBA</i></p> <ul style="list-style-type: none"> • <i>Joint Meets – All States Network</i> • <i>Joint Meets – Non Design</i> • <i>Cooperative Test Job Aid</i> • <i>Qwest Communications Arizona Designed Services Cooperative Repair Initiative.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, CRSAB, RCHC, DSC, Screening Center, LRAC, and CORAC personnel administer requests, schedule, and communicate the schedule to CLECs for coordinated vendor meets. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p> <p>KPMG Consulting reviewed resolved coordinated vendor meet trouble tickets¹²⁹ and verified that the vendor meet was scheduled in a timely manner (i.e., within 48 hours of the request), the commitment time was met, sufficient details were entered into the status log, and that the proper codes were applied during close-out. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-5-3	M&R work center coordinated vendor meet trouble ticket closeout and notification procedures are in place, complete and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's coordinated vendor meet ticket closeout and notification procedures are in place, complete, and adhered to by Qwest personnel.</p> <p>Coordinated vendor meet trouble tickets are closed, and the customer is notified, following the regular trouble ticket closeout and notification procedures described in evaluation criterion 18.7-2-2.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's coordinated vendor meet trouble ticket</p>

¹²⁹ The sample examined consisted of 15 coordinated vendor meet tickets for the months of June, July, and August 2001.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>closeout and notification procedures:</p> <ul style="list-style-type: none"> • <i>Local Network Designed Services Process Bulletins: Joint Meet Designed Services Repair Commitments IBA</i> • <i>Joint Meets – All States Network</i> • <i>Joint Meets – Non Design</i> • <i>Cooperative Test Job Aid</i> • <i>Qwest Communications Arizona Designed Services Cooperative Repair Initiative.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, DSC, and LRAC personnel closing coordinated vendor meet tickets and notifying customers. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p> <p>KPMG Consulting also reviewed a sample of resolved coordinated vendor meet trouble tickets¹³⁰ to verify that Qwest processed and closed the tickets by applying the established ticket closeout codes.</p>
18.7-6-1	M&R work center manual handling procedures for resale are in place, complete and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's manual handling procedures for resale are in place, complete, and adhered to by Qwest personnel.</p> <p>When a trouble is reported, Qwest screeners and DSC testers offer assistance with resale service fault identification by testing the Qwest network, and dispatching a technician to the location of the trouble. Should the cause of the trouble be identified as outside of the Qwest network, trouble identification charges apply. Additionally, Qwest screeners and DSC testers offer to dispatch and test outside of the Qwest network for a service charge.</p> <p>Commitment times and dates are set</p>

¹³⁰ The sample examined consisted of 15 coordinated vendor meet tickets for the months of June, July, and August 2001. The review included verification that the meet was scheduled within 48 hours of the request, that the commitment time was met, that sufficient details were entered into the status log, and that the proper codes were applied during close-out.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>following the regular process described in evaluation criteria 18.7-1-1, 18.7-2-1, and 18.7-2-2. Qwest has established objectives for trouble resolution, and monitors these established repair intervals to ensure timely trouble resolution and progress tracking¹³¹.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's manual handling procedures for resale:</p> <ul style="list-style-type: none"> • <i>Resellers – All States Network</i> • <i>Resale – Alternate Provider Job Aid</i> • <i>Interconnect Introduction</i> • <i>Unbundled Loop Repair Ticket Administration</i> • <i>Two-Wire Unbundled Loop LRAC Process – All States Network</i> • <i>Unbundled Loop – Wholesale</i> • <i>Resellers Repair Procedures</i> • <i>Wholesale Interconnections Operations: Unbundled Loop – CCT Job Aid</i> • <i>Wholesale Interconnections Operations: Unbundled Loop – COT Job Aid.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, DSC, Screening Center, and LRAC personnel assisting with resale service fault identification. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-7-1	M&R work center manual handling procedures for UNE-L and UNE-P are in place, complete and adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's manual handling procedures for UNE-L and UNE-P are in place, complete, and adhered to by Qwest personnel.</p> <p>CLECs are responsible for testing UNE-Ls prior to submitting a trouble report to Qwest. CLECs are to provide test diagnostics, including specific evidence that the trouble is in the Qwest network, along</p>

¹³¹ See evaluation criterion 18.7-4-4 for specific performance metrics related to repair objectives.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>with the associated Qwest circuit identification number. If the CLEC elects not to perform the necessary UNE-L testing, Qwest offers to conduct such testing for the applicable charge defined in the CLEC's Interconnection Agreement.</p> <p>If the CLEC does not provide test diagnostics, and elects not to have Qwest perform additional testing on its behalf, Qwest does not accept a trouble report. Additional charges may apply when the testing determines that the trouble is beyond the loop demarcation point.</p> <p>Commitment times and dates are set following the regular process described in evaluation criteria 18.7-1-1, 18.7-2-1, and 18.7-2-2. Qwest has established objectives for trouble resolution, and monitors these established repair intervals to ensure timely trouble resolution and progress tracking¹³².</p> <p>Qwest is responsible for conducting Mechanized Loop Tests (MLTs) for UNE-P troubles, as CLECs do not have access to UNE-P loops.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's manual handling procedures for UNE-L and UNE-P:</p> <ul style="list-style-type: none"> • <i>Interconnect Introduction</i> • <i>Unbundled Loop Repair Ticket Administration</i> • <i>Two-Wire Unbundled Loop LRAC Process – All States Network</i> • <i>Unbundled Loop – Wholesale</i> • <i>Unbundled Network Elements UNEP & UNEC – All States Network</i> • <i>Wholesale Interconnections Operations: Unbundled Loop – CCT Job Aid</i> • <i>Wholesale Interconnections Operations: Unbundled Loop – COT Job Aid</i> • <i>Unbundled Loop Repair Ticket Administration</i>

¹³² See evaluation criterion 18.7-4-4 for specific performance metrics related to repair objectives.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>Unbundled Loop Appointments Dispatch Out</i> • <i>Additional Testing Process Update.</i> <p>General information pertaining to the Qwest M&R process, Qwest responsibilities, and CLEC responsibilities is available at the following Web site: http://www.uswest.com/wholesale/clecs/maintenance.html.</p> <p>KPMG Consulting observed Qwest AMSC, Screening Center, DSC, and LRAC personnel assisting with UNE-L and UNE-P fault identification. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.7-8-1	M&R work center contingency action procedures are in place and complete.	Satisfied	<p>KPMG Consulting found that Qwest's work center contingency action procedures for continuing business functions in the event of extended office outages are in place and complete.</p> <p>If a major system outage occurs with LMOS or WFA/C, Qwest's work center personnel may follow a paper ticket procedure: recording trouble ticket details that are normally entered into the system, on sheets of paper, which are faxed to the appropriate center for repair or testing. The paper tickets are entered into the system when the outage ends.</p> <p>Alternatively, Qwest-trained personnel in another work center may log into the system's pending work list for the affected geographic area, and process the tickets according to the standard procedures. As an added measure, centers most vital to operations have backup generators.</p> <p>If a work center must be evacuated, its ACD is routed to another appropriately staffed work center with equivalent functional capabilities.</p> <p>Procedures for continuing operation during environmental disasters, and major and minor systems failures, are outlined in each center's Business Continuity Plan.</p> <p>KPMG Consulting formally identified that one of Qwest's work center directors was unaware of existing business continuity action plans, and did not provide a documented procedure. As a result, center</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>management completed business continuity procedure training and provided the existing Business Continuity Plan. KPMG Consulting verified satisfactory knowledge of this plan through an additional interview with the appropriate individual.</p> <p>Additionally, KPMG Consulting formally identified that the Business Continuity Plan in one of Qwest's work centers lacked clear guidelines for short-term and long-term center outages. The work center revised the document and provided a new version. KPMG Consulting verified that this deficiency had been corrected by reviewing the revised document.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe Qwest's contingency action procedures:</p> <ul style="list-style-type: none"> • <i>Complex Svc-Design Repair Integration Draft: AMSC</i> • <i>Complex Svc-Design Repair Integration: CRSAB Center</i> • <i>Paper Trouble Ticket Procedures (Design) for the Repair Call Centers – Wholesale</i> • <i>Qwest Local Network Centralized Operations – RCHC Business Continuity Plan</i> • <i>Qwest Corporate Disaster Recovery Plan</i> • <i>Design Services Business Continuity Plan</i> • <i>Qwest Network Services Local Network Screening Business Continuity Plan</i> • <i>Qwest Programming and Number Administration Recent Change Memory Administration Center Business Continuity Plan</i> • <i>Qwest Business Continuity Plan Network Services for Load Resource Allocation Centers for Mass Markets and Designed Services (LRAC)</i> • <i>Qwest Corporate Disaster Recover Plan.</i>
18.7-8-2	M&R work center resource capacity management	Satisfied	KPMG Consulting found that Qwest's work center resource capacity management

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>procedures are in place and complete.</p>		<p>procedures are in place and complete.</p> <p>In all work centers, call volumes, number of trouble tickets generated, and other measures are tracked by the ACD Pinnacle Looking Glass reporting system, the CATS system, and operation support systems, such as WFA and LMOS. The WFA/RAS group in Phoenix, Arizona gathers volume data and produces forecasts for Qwest Screening Centers, RCMACs, and call centers (AMSC, CRSAB, and RCHCs). Load Resource Managers (LRMs) produce forecasts for the LRAC and CORACs. DSCs forecast internally. Each center utilizes the forecasts available to evaluate and adjust resource utilization.</p> <p>KPMG Consulting reviewed performance metric documentation generated from the various systems, in addition to forecasts and schedules submitted by M&R work centers, and found that the information necessary to evaluate and adjust resources is captured accurately.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe work center resource capacity management procedures:</p> <ul style="list-style-type: none"> • <i>Qwest Instructions and Guidelines</i> • <i>AMSC – Forecast to Actual Call Comparison for 2001</i> • <i>Global Business Markets – Colorado Springs</i> • <i>Headcount for AMSC, CRSAB and RCHC</i> • <i>2001 Dispatch Volume Forecast</i> • <i>Headcount for DSC Des Moines</i> • <i>Minneapolis Design Service Repair Center</i> • <i>DSO & Unbundled Loop Repair 2001 Occupational Staffing Forecast (Mon-Fri 7AM-Midnight)</i> • <i>BGS/CRX/ICS Service Delivery and Service Assurance Process Bulletin: LRAC Scheduling.</i> <p>From initial interviews and data requests, KPMG Consulting determined that the Salt Lake City LRACs and CORAC did not</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>forecast ticket volume with subsequent adjustments to loader and technician utilization, and a documented procedure did not exist. As a result, KPMG Consulting issued Exception 3060.</p> <p>In response, Qwest provided KPMG Consulting with existing forecast data, and created and provided a capacity management process document that demonstrated how such support data is utilized to prepare schedules and determine headcount. KPMG Consulting subsequently determined that Qwest's processes for evaluating and adjusting resource utilization were operationally complete, and subsequently closed the Exception. See Exception 3060 for additional information on this issue. Exception 3060 is closed.</p>
18.7-8-3	M&R work center office space capacity management procedures are in place and complete.	Satisfied	<p>KPMG Consulting found that Qwest's office space capacity management procedures are in place and complete.</p> <p>Office space utilization is evaluated and adjusted according to changes in the human resource capacity described in evaluation criterion 18.7-8-2.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe office space capacity management procedures:</p> <ul style="list-style-type: none"> • <i>Request for Work Space – Real Estate / Internal Communications Data Sheet</i> • <i>Qwest Instructions and Guidelines.</i>
18.7-8-4	M&R work center procedures for incorporating capacity management plans into Qwest's business plan are in place and complete.	Satisfied	<p>KPMG Consulting found that procedures for incorporating capacity management plans into Qwest's business plan are in place and complete.</p> <p>If additional center resources or office space become necessary, the center director presents justification data to senior management for consideration. If approved, additional resources or space are included in the business plan, and appropriate funding is allocated.</p> <p>Personnel decisions are based on forecasts and business trends, as are decisions involving the addition or deletion of physical facilities.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>procedures for incorporating capacity management plans into Qwest's business plan:</p> <ul style="list-style-type: none"> • <i>Qwest Instructions and Guidelines</i> • <i>Possible Impact of 2001 System Initiatives on Local Network Headcount.</i>

18.8. Test Results: End-to-End M&R Process Evaluation (Test 18.8)

1.0 Description

This test evaluated the functional equivalence of Qwest's Maintenance and Repair (M&R) processing for wholesale and retail trouble reports. The end-to-end M&R process includes all activities from the moment a trouble repair call is received by the repair receipt bureau¹³³, or a trouble ticket is captured in Qwest's systems, until the same trouble is closed, and the customer has been notified of the ticket's resolution.

This test also reviewed wholesale and retail process flows and related methods and procedures employed by the various Qwest work centers involved in the end-to-end M&R process. These activities were performed to assess whether or not substantive differences exist between the Qwest retail and wholesale M&R processes, and to identify any potential differences between the processes that are practiced in the related work centers.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest wholesale customers¹³⁴, operating within Qwest's 14-state operating region, are provided with M&R support primarily through Qwest's Account Maintenance Service Center (AMSC). The AMSC, located in Denver, Colorado, is responsible for 1) recording wholesale non-designed and designed¹³⁵ trouble tickets, with the exception of a small portion of non-designed tickets handled by the Repair Call Handling Centers (RCHCs); and 2) responding to customer questions regarding trouble tickets. The AMSC is accessible from 6:00 AM to 10:00 PM, seven days a week. The RCHC, in Salt Lake City, Utah supports after-hour trouble reporting.

Qwest retail customers¹³⁶ are provided M&R support primarily through the RCHCs in Salt Lake City, Phoenix, Arizona, St. Paul, Minnesota, and Des Moines, Iowa. M&R concerns for large business customers with more than 21 lines are supported by the Customer Repair Service Answering Bureau (CRSAB) in Colorado Springs, Colorado.

For wholesale and retail customers, a Repair Service Attendant (RSA) in the AMSC, CRSAB, or RCHCs enters the designed service type trouble report into Control, which is the graphical user interface (GUI) to the Work Force Administration/Control (WFA/C) system. WFA/C attempts to diagnose the cause of a trouble through automated testing. If the diagnosis is successful, and the trouble is identified, WFA/C dispatches a work request through the WFA Dispatch Out (WFA/DO) system directly to one of the Load Resource Allocation Centers (LRACs), or

¹³³ Repair receipt bureau is a general term meant to describe any center receiving a trouble report. This could include *electronic* receipt by the Design Service Center, as well as a trouble *call* receipt in the Repair Call Handling Centers, Account Maintenance Service Center, or Customer Repair Service Answering Bureau.

¹³⁴ Qwest wholesale customers are Competitive Local Exchange Carriers (CLECs) and Resale customers that provide or resell services to their own end-customers.

¹³⁵ Qwest designates services other than Plain Old Telephone Service (POTS) as designed services.

¹³⁶ Qwest retail customers include residential, and small and large business customers.

alternatively, through the WFA Dispatch In (WFA/DI) system to one of the Central Office Resource Allocation Centers (CORACs) for repair. If the diagnosis is unsuccessful, WFA/C sends the ticket to the geographically designated Design Service Center (DSC) for further trouble-shooting and testing.

Upon trouble identification within the DSC, the tester either resolves the trouble or dispatches a work request to one of the CORACs or LRACs depending on the origin of the trouble, as follows. If the trouble originates within the Central Office (CO), a work request is sent to the CORAC for dispatch inside the CO. If the trouble originates outside of the CO, the work request is routed to the LRAC for dispatch in the field. The CORAC, in turn, assigns the work request to the geographically appropriate CO technician's (COT's) workload for repair inside the CO. The LRAC assigns the work request to the geographically appropriate field technician's workload. Translation and switch programming troubles are dispatched to one of the Recent Change Memory Administration Centers (RCMACs), or to other appropriate center(s) (e.g., for complex translations).

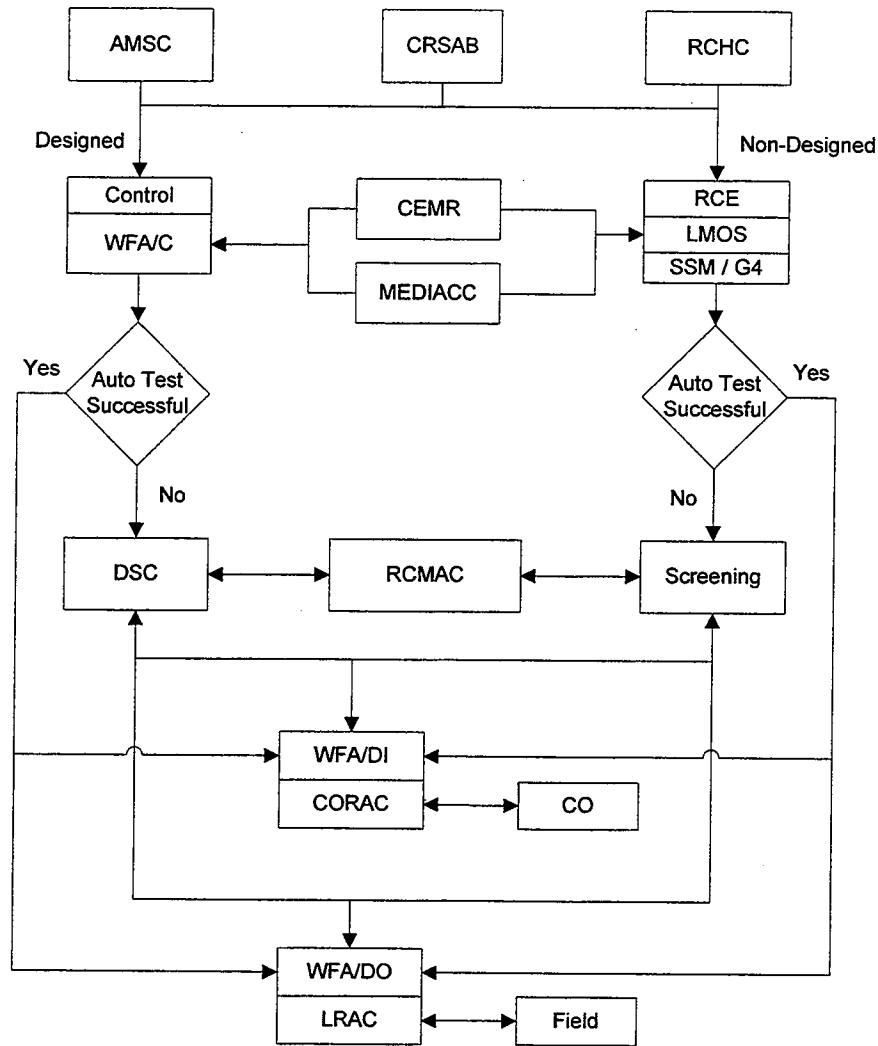
The RSA enters the non-designed trouble report into Repair Call Expert (RCE), the GUI to the Loop Maintenance Operating System (LMOS). The Shared Screening Module (SSM) and the G4 module in LMOS attempt to diagnose the cause of a trouble through automated testing. If the diagnosis is successful, and the trouble is identified, LMOS routes a work request directly to one of the CORACs or LRACs for dispatch to repair the diagnosed trouble. If the diagnosis is unsuccessful, LMOS dispatches the ticket to one of the Screening Centers for further trouble-shooting and testing.

Upon trouble identification within the Screening Center, a screener routes a work request for dispatch to one of the CORACs or LRACs, depending on the origin of the trouble. The CORAC assigns the work request to the geographically appropriate COT's workload for repair. Alternatively, the LRAC assigns the work request to the geographically appropriate field technician's workload. Translation and switch programming troubles are dispatched to one of the RCMACs, or to other appropriate center(s) (e.g., for complex translations).

Additionally, wholesale trouble reports can be submitted electronically through either the Electronic Bonding Trouble Administration (EB-TA) Gateway – Mediated Access (MEDIACC) or Customer Electronic Maintenance and Repair (CEMR) systems. In such cases, the trouble ticket is routed directly into WFA/C or LMOS, and follows the regular ticket flow.

Figure 18.8-1 below depicts the Qwest trouble ticket flow for non-designed and designed type services.

Figure 18.8-1: Qwest Trouble Ticket Flow



2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was Qwest’s end-to-end M&R processes and procedures. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, “Test Cross-Reference,” indicates where the particular measures are addressed in section 3.1, “Results & Analysis.”

Table 18.8-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
End-to-End M&R Process: Resale and UNE/UNE-P	Process flow	Parity Qualitative	18.8-1-1 – 18.8-1-10
Document Management	Document management processes	Parity Qualitative	18.8-2-1 – 18.8-2-2
Capacity Management	Capacity management processes and procedures	Parity Qualitative	18.8-3-1 – 18.8-3-4

2.4 Evaluation Methods

KPMG Consulting utilized four methods of data collection for this evaluation:

- CLEC Interviews – KPMG Consulting conducted interviews with various CLECs to gather feedback pertaining to Qwest M&R work center interactions and experiences. KPMG Consulting used the information learned to place appropriate focus on those M&R work center process areas for which CLECs reported negative experiences¹³⁷.
- Qwest Interviews – KPMG Consulting conducted interviews with management and staff who have direct responsibility for, and knowledge of, targeted processes in the following centers: AMSC in Denver; CRSAB in Colorado Springs; RCHCs in Salt Lake City, Des Moines, Phoenix, and St. Paul; Screening Centers in Salt Lake City, Boise, Idaho, and St. Paul; DSCs in Midvale, Utah, Des Moines, Seattle, Washington, and Minneapolis; LRACs and CORACs in Salt Lake City, Phoenix, Seattle, and Minneapolis; and RCMACs in Boise, Portland, and St. Paul.
- Qwest Observations – KPMG Consulting performed observations of Qwest personnel performing end-to-end trouble processing activities, in order to: 1) identify potential substantive differences between the processes practiced in the center, and those defined in Qwest method and procedures documentation; and 2) to identify potential differences between retail and wholesale M&R processes. Observations were conducted in conjunction with the interviews at each of the Qwest centers outlined above.
- Documentation Reviews – KPMG Consulting conducted a review of process flow documentation, including M&Ps and performance data, related to end-to-end M&R business operations.

2.5 Analysis Methods

The analysis for the End-to-End M&R Process Evaluation focused on the parity between retail and wholesale.

¹³⁷ Process areas subject to reported negative experiences include customer repair notification, accuracy of trouble ticket close code application, escalations, and work center personnel skill level.

The End-to-End M&R Process Evaluation included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided the framework and guidelines for testing activities. Using data obtained through interviews, observations, and documentation reviews, KPMG Consulting compared the information gathered to the checklist of evaluation criteria to determine a 'satisfied' or 'not satisfied' result for each.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 18.8-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
18.8-1-1	M&R trouble handling procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's M&R trouble handling procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>KPMG Consulting formally identified that Qwest limited the number of reportable troubles allowed per call to the after-hour call receipt center. As a result, Qwest modified its existing procedures to allow for unlimited trouble reporting after hours. KPMG Consulting verified the application of the revised procedures through documentation reviews and an additional interview with Qwest personnel¹³⁸.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe trouble handling procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Macro Repair Process Flow</i> • <i>Repair Ticket Hit Initiative</i> • <i>Repair Process Flow</i> • <i>Repair Ticket Flow</i> • <i>Ticket Flow</i> • <i>Trouble Ticket Processing.</i>

¹³⁸ The Pseudo-CLEC blind tested the new procedures by calling in multiple troubles after hours.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting also reviewed internal Qwest process flows for processing retail and wholesale trouble reports, and found that once a trouble ticket is submitted into Qwest's M&R operational support systems, the M&R trouble resolution process is the same for retail and wholesale services.</p> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel administer troubles. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-2	M&R procedures for logging incoming trouble calls are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's procedures for logging incoming calls are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>When a CLEC representative or retail end customer calls¹³⁹ in a trouble to the applicable work center, a Qwest RSA enters the information necessary to create a trouble ticket, following the prompts in the ticket generating system's GUI. Control is used for generation of designed service trouble tickets in WFA/C, and RCE is used for generation of non-designed service trouble tickets in LMOS.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe procedures for logging incoming calls that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Introduction to RCE</i> • <i>RCE Result Customize Page</i> • <i>Control Trouble Reports</i> • <i>Create a Trouble Ticket</i> • <i>Multiple Trouble Reports – Repair Call Handling</i> • <i>RCHC Course 6000.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel logging incoming calls. These activities were accurately and consistently practiced, as defined in the documents referenced</p>

¹³⁹ KPMG Consulting's Test 16, CEMR Functional and Performance Evaluation, tested CEMR trouble ticket entry.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			above.
18.8-1-3	M&R trouble diagnosis and appointment scheduling procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's trouble diagnosis and appointment scheduling procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>For both wholesale and retail designed services trouble tickets, WFA/C attempts to diagnose the cause of a trouble through automated testing. If the diagnosis is successful, and the trouble is identified, WFA/C dispatches a work request to the LRACs or, alternatively, to the CORAC for repair. If the diagnosis is unsuccessful, WFA/C sends the ticket to the DSC for further trouble-shooting and testing.</p> <p>For both wholesale and retail non-designed services trouble tickets, the SSM and the G4 modules in LMOS attempt to diagnose the cause of the trouble through automated testing. If the diagnosis is successful and the trouble is identified, LMOS dispatches a work request directly to the CORAC or LRAC for repair. If the diagnosis is unsuccessful, LMOS dispatches the ticket to the Screening Center for further trouble-shooting and testing.</p> <p>For both wholesale and retail designed and non-designed services trouble tickets, WFA/C and LMOS assign a committed due time and date for repair, based on technician schedules and workload.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe trouble diagnosis and appointment scheduling procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Report Categories</i> • <i>Category of Reports</i> • <i>Control Report Types Job Aid</i> • <i>RCE Trouble Types</i> • <i>Commitment Guidelines</i> • <i>Recommit Process for Past Due Orders</i> • <i>Service Priority Matrix</i> • <i>Scheduling Priority</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>2001 Loading Priority Design Services Products.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel diagnose troubles and schedule appointments. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-4	M&R trouble ticket modification and cancellation procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's modification and cancellation procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>CLEC representatives and Qwest retail representatives have the ability to provide modifications or additional trouble details at any time by contacting the call center. Qwest call receipt attendants submit additions as subsequent reports under the original trouble ticket number. Qwest work center representatives are capable of modifying trouble ticket details directly in WFA/C and LMOS. Additionally, CLECs may submit subsequent reports through CEMR or EB-TA. All modifications are logged in the system status log.</p> <p>CLEC representatives and Qwest retail representatives have the ability to cancel trouble tickets at any time by contacting the call center. Qwest call receipt attendants perform such cancellations as front-end closeouts. Additionally, CLECs may cancel trouble tickets through CEMR or EB-TA. All closeout activities are logged in the system status log.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe trouble ticket modification and cancellation procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Introduction to RCE</i> • <i>Control Trouble Reports</i> • <i>Create a Trouble Ticket</i> • <i>Processing of Front End Close Reports.</i> <p>KPMG Consulting observed Qwest retail</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			and wholesale work center personnel modify and cancel trouble tickets. These activities were accurately and consistently practiced, as defined in the documents referenced above.
18.8-1-5	M&R status update procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's status update procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>Wholesale and retail trouble tickets are assigned a ticket number, and maintained in the LMOS or WFA/C systems. The ticket number is provided to the CLEC representative or retail customer at the time that the individual reports a trouble to the call center. At any time, a CLEC or retail customer has the ability to contact the call center to receive trouble ticket status information. Furthermore, CLECs and retail customers may request the trouble history for a specific circuit or loop. If the trouble report was submitted electronically, a CLEC can track the status of the ticket by accessing CEMR or EB-TA.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe status update procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Control Trouble Reports</i> • <i>Report Categories</i> • <i>Category of Reports</i> • <i>Control Report Types Jobaid [sic]</i> • <i>RCE Trouble Types</i> • <i>Event Code Tracking – All States Network</i> • <i>Local Network Design Services: Report Categories.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel provide trouble ticket status. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-6	M&R customer escalation procedures are repeatable and	Satisfied	KPMG Consulting found that Qwest's escalation procedures are consistent,

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>consistent between wholesale and retail operations.</p>		<p>repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>Two types of escalations are in place: internal and external. Internal escalations are used when a trouble ticket's commitment time is in jeopardy, and the ticket requires expedited handling. External escalations are used when a CLEC representative or retail customer calls to expedite a trouble ticket (request an earlier commitment time), or to escalate a disputed trouble ticket.</p> <p>For designed services, when a CLEC representative or retail customer contacts the call center, an RSA enters the code "ESC" in Control, which submits the ticket to the DSC through WFA/C. The DSC escalation bridge is responsible for driving the escalation, and for notification of its status to the CLEC or retail customer. Escalations are logged in WFA/C, and in a separate escalations log.</p> <p>For non-designed services, when a CLEC representative or retail customer contacts the call center, an RSA warm-transfers the call to the center escalations group. The escalations group is responsible for coordinating the repair, and for notifying the CLEC or retail customer of its status. Escalations are logged in LMOS, and in a separate escalations binder.</p> <p>Timers are set in the systems to track the time elapsed since the last progress was made, or since the last update was provided to the customer.</p> <p>Wholesale customers may escalate electronically submitted trouble tickets electronically; however, this is not mandatory.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe escalation procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>BGS/CXR/ICS and Designed Services Process Bulletins</i> • <i>Adjust to Satisfy Guidelines</i> • <i>Customer Escalations – All States Bus</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Res</i></p> <ul style="list-style-type: none"> • <i>CEMR Ticket Escalation and Referral Process</i> • <i>Corporate Problem Management Process</i> • <i>Local Network Design Services: Dispatch Center Escalations</i> • <i>Avoid Escalations</i> • <i>Des Moines Center – Escalation Process</i> • <i>Escalations – Customer Handling</i> • <i>Escalation Bridge – Purpose, Policy, Procedure</i> • <i>CRSAB Job Aid: Escalation Policy</i> • <i>Commitments.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel facilitate escalations. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-7	M&R customer dispute resolution procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest’s customer dispute resolution procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>When a CLEC representative or retail end customer reports that service is not of sufficient quality or is down, but no trouble can be identified within the Qwest network, more in-depth testing and trouble-shooting may be necessary.</p> <p>For retail non-designed and designed troubles, end customers are encouraged to conduct testing of their own equipment to verify that the trouble is not located on the “customer side” of the network interface. If the trouble cannot be located, the end customer is notified of potential trouble isolation charges that apply, and the ticket is dispatched to an outside technician for repair. As a last resort, Qwest’s screener or DSC tester may also suggest a coordinated vendor meet with the retail customer’s equipment vendor to jointly locate, test, and resolve the trouble.</p> <p>For wholesale non-designed and designed troubles, CLECs are encouraged to ensure</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>that their end customer's equipment is not at fault. Additionally, if the service can be tested remotely, coordinated testing by the Qwest screener or DSC tester and the CLEC representative may be sufficient to locate the trouble. If the trouble remains, the DSC tester or screener may suggest a joint meet. In such a case, a CLEC technician, a Qwest field technician, and, possibly, a third party technician meet in the field or in the CO to test, troubleshoot, and repair the trouble.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe customer dispute resolution procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>BGS/CXR/ICS and Designed Services Process Bulletins</i> • <i>Adjust to Satisfy Guidelines</i> • <i>Corporate Problem Management Process</i> • <i>Avoid Escalations</i> • <i>Commitments</i> • <i>Local Network Designed Services Process Bulletins: Joint Meet</i> • <i>Designed Services Repair Commitments IBA</i> • <i>Joint Meets – All States Network</i> • <i>Cooperative Test Job Aid</i> • <i>Qwest Communications Arizona Designed Services Cooperative Repair Initiative.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel resolve customer disputes. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-8	M&R procedures for collection and review of performance data are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's procedures for collection and review of M&R performance data are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>Performance data related to the handling of both CLEC and retail end customer troubles is collected by the ACD Pinnacle Looking</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Glass system, the Customer Access Tracking System (CATS) and operation support systems, such as LMOS and WFA. Discrete staff groups consolidate the actual results and the expected results into reports, which are distributed to center management for review and benchmarking.</p> <p>Metrics tracked and evaluated include, but are not limited to:</p> <ul style="list-style-type: none"> • AMSC call answering time: 85% within 20 seconds • CRSAB call answering time: 80% within 20 seconds • RCHC call answering time: 80% within 20 seconds¹⁴⁰ • AMSC average handling time: 5.5 minutes for out-of-service reports • CRSAB average handling time: 5.5 minutes for out-of-service reports • RCHC average handling time: 220 seconds (this is lower due to the majority of fewer complex non-designed troubles received in this type of call center) • AMSC quality: 85-90% level of adherence to observation quality checklist including suitable greeting, correct information stated, friendliness, correct tools utilized, accuracy in application of codes, completion of status updates, etc. • CRSAB quality: 85-90% level of adherence to observation quality checklist including suitable greeting, correct information stated, friendliness, correct tools utilized, accuracy in application of codes, completion of status updates, etc. • RCHC quality: 78% level of adherence to observation quality checklist including suitable greeting, correct information stated, friendliness, correct tools utilized, accuracy in application of codes,

¹⁴⁰ Ninety percent of calls from Minnesota customers must be answered within 10 seconds. This is a state-specific requirement for Minnesota only.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>completion of status updates, etc.</p> <ul style="list-style-type: none"> • DSC call answering time: 85% within two minutes • DSC percentage of missed commitments: 15% • DSC mean time to repair: two to four hours depending on type of service • DSC quality: 89% level of adherence to observation quality checklist including escalations when appropriate, compliance with methods and procedures, application of appropriate codes, etc. <p>KPMG Consulting reviewed this data for all of Qwest's work centers visited and found that the collection and review procedures for M&R performance data are designed to produce equivalent levels of service for both CLECs and retail end customers.</p>
18.8-1-9	M&R trouble ticket coding procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's trouble ticket coding procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>For both wholesale and retail designed service troubles, the DSC tester is responsible for restoring the ticket in WFA/C by assigning trouble and analysis codes.</p> <p>For both wholesale and retail non-designed services, the inside or outside technician is responsible for assigning disposition and cause codes.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe trouble ticket coding procedures that are designed to produce equivalent levels of service for both CLEC and retail end customers:</p> <ul style="list-style-type: none"> • <i>BGS/CXR/ICS Complex Services Analysis Code Matrix</i> • <i>Cause and Disposition Code Ownership</i> • <i>RCHC Course 6000</i> • <i>Disposition and Cause Codes – All States Res, Bus, Pub, Net</i> • <i>Local Network Design Services</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Jeopardy Code Job Aid</i></p> <ul style="list-style-type: none"> • <i>Event Code Tracking – All States Network</i> • <i>BGS/CXR/ICS Complex Services: Analysis Code Descriptions</i> • <i>BGS/CXR/ICS Complex Services: Analysis Code / Trouble Code Cross Reference</i> • <i>Local Network Design Services: Wfa/C Trouble Codes [sic]</i> • <i>Local Network Design Services: Report Categories.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel code trouble tickets. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-1-10	M&R trouble ticket closing procedures are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest’s trouble ticket closing procedures are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>For both wholesale and retail designed service troubles, the inside or outside technician repairs the trouble and contacts the DSC. The DSC tester retests the trouble and authorizes the technician to close the work request in WFA/DI or WFA/DO. The DSC tester is responsible for restoring the ticket in WFA/C, and for notifying the CLEC or retail end customer. When the ticket has been restored, it is sent to a scrubber for verification of completeness and process adherence before closing the ticket.</p> <p>For both wholesale and retail non-designed services, the inside or outside technician is responsible for restoring the work request in WFA/DI or WFA/DO respectively, and for notifying the CLEC or retail end customer. Alternatively, the technician may call the CORAC or LRAC and request that the loader complete the closing procedure.</p> <p>Troubles must be restored within the commitment time provided to the CLEC representative or retail end customer. The WFA/C and LMOS tickets may not be closed prior to customer acceptance, unless</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>the customer does not respond to repeated Qwest contact attempts.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe trouble ticket closing procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>RCHC Course 6000</i> • <i>Processing of Front End Close Reports</i> • <i>Clear vs. Close Policy for Repair Tickets</i> • <i>Local Network Designed Services Process Bulletins: Trouble Ticket Administration</i> • <i>Designed Services DS 980001-C Unbundled Loop Methods and Procedures, CCT-MT Job Aid</i> • <i>Wholesale Interconnection Operations</i> • <i>Repair Procedures – RCMAC</i> • <i>Network Services: Network Services Statuses and Procedures.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel closing trouble tickets. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-2-1	M&R procedures for developing, updating, and distributing documentation related to trouble reporting and handling are repeatable and consistent between wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that Qwest's procedures for developing, updating, and distributing documentation related to trouble reporting and handling are consistent, repeatable, and non-discriminatory between wholesale and retail operations.</p> <p>Qwest has separate process groups within its organization who are responsible for updating and improving processes: one group is responsible for updating and improving processes relating to both wholesale and retail designed services, others are responsible for processes in specific centers.</p> <p>When a process has been developed or altered, these groups distribute new process documentation to each center, through e-</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>mail distribution lists. Center management is responsible for ensuring that each affected employee receives both a copy of the document, and relevant training.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe procedures for developing, updating, and distributing documentation related to trouble reporting and handling that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Complex Services Repair Process Certification / Compliance Check List</i> • <i>Maintenance & Repair: External Documentation Available for use by CLECs</i> • <i>Document Management Process AMSC Response</i> • <i>Majordomo Distribution List Procedures – Network</i> • <i>Mineral Majordomo Mailing List Administration</i> • <i>Document Management Process CRSAB Response</i> • <i>DSC Des Moines Initial Training Package for Testers</i> • <i>Document Management Process LRAC Seattle Response</i> • <i>Document Management Process DSC Seattle Response.</i>
18.8-2-2	M&R procedures relating to trouble reporting and handling activities are comparatively accessible to Qwest personnel providing wholesale and retail operations.	Satisfied	<p>KPMG Consulting found that procedures for accessing M&Ps relating to trouble reporting and handling activities are consistent, repeatable, and non-discriminatory between Qwest personnel providing wholesale and retail operations.</p> <p>Qwest maintains an Intranet site, Info Buddy, which is a repository for all M&Ps, job aids, contact information and technical reference materials related to the wholesale and retail M&R trouble handling process.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe procedures for accessing M&Ps relating to trouble reporting and handling activities that are designed to produce equivalent levels of</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Maintenance & Repair: External Documentation Available for use by CLECs</i> • <i>Network Services: Screeners/Repair Service Attendants</i> • <i>Welcome to Info Buddy Training</i> • <i>Canyon6/USWEST/US</i> • <i>Screening Reference Guide, Table of Contents.</i> <p>KPMG Consulting observed Qwest retail and wholesale work center personnel access M&Ps. These activities were accurately and consistently practiced, as defined in the documents referenced above.</p>
18.8-3-1	M&R contingency action procedures for business functions in the event of extended office outages are repeatable and consistent between wholesale and retail work centers.	Satisfied	<p>KPMG Consulting found that contingency action procedures for business functions in the event of extended office outages are consistent, repeatable and non-discriminatory between wholesale and retail customers.</p> <p>If a major system outage occurs with LMOS or WFA/C, Qwest's wholesale and retail work center personnel may follow a paper ticket procedure: recording trouble ticket details that are normally entered into the system, on sheets of paper, which are faxed to the appropriate center for repair or testing. The paper tickets are entered into the system when the outage ends.</p> <p>Alternatively, Qwest-trained wholesale and retail personnel in another work center may log into the system's pending work list for the affected geographic area, and process the tickets according to the standard procedures. As an added measure, centers most vital to operations have backup generators.</p> <p>If a work center must be evacuated, its ACD is routed to another appropriately staffed work center with equivalent functional capabilities.</p> <p>Procedures for continuing operation during environmental disasters, and major and minor systems failures, are outlined in each center's Business Continuity Plan.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting reviewed the following Qwest documents, which describe contingency action procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Complex Svc-Design Repair Integration Draft: AMSC</i> • <i>Complex Svc-Design Repair Integration: CRSAB Center</i> • <i>Qwest Local Network Centralized Operations – RCHC Business Continuity Plan</i> • <i>Design Services Business Continuity Plan</i> • <i>Qwest Network Services Local Network Screening Business Continuity Plan</i> • <i>Qwest Programming and Number Administration Recent Change Memory Administration Center Business Continuity Plan</i> • <i>Paper Trouble Ticket Procedures (Design) for the Repair Call Centers – Wholesale</i> • <i>Qwest Corporate Disaster Recovery Plan</i> • <i>Qwest Business Continuity Plan Network Services for Load Resource Allocation Centers for Mass Markets and Designed Services (LRAC).</i>
18.8-3-2	M&R resource utilization evaluation and adjustment procedures are repeatable and consistent between wholesale and retail work centers.	Satisfied	<p>KPMG Consulting found that Qwest’s resource utilization evaluation and adjustment procedures are consistent, repeatable, and non-discriminatory between wholesale and retail work centers.</p> <p>In all work centers, call volume, trouble tickets generated, and other measures are tracked for both retail and wholesale troubles by the ACD Pinnacle Looking Glass reporting system, the CATS system, and operation support systems, such as WFA and LMOS. The WFA/RAS group in Phoenix gathers volume data and produces forecasts for screening centers, RCMACs, and call centers (AMSC, CRSAB, and RCHCs). LRMs produce forecasts for the LRAC and CORACs. The DSCs handle</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>their forecasting needs internally.</p> <p>Each center utilizes the forecasts available to evaluate and adjust wholesale and retail resource utilization.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe resource utilization evaluation and adjustment procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Qwest Instructions and Guidelines</i> • <i>AMSC – Forecast to Actual Call Comparison for 2001</i> • <i>Global Business Markets – Colorado Springs</i> • <i>Headcount for AMSC, CRSAB and RCHC</i> • <i>2001 Dispatch Volume Forecast</i> • <i>Headcount for DSC Des Moines</i> • <i>Minneapolis Design Service Repair Center</i> • <i>DSO & Unbundled Loop Repair 2001 Occupational Staffing Forecast (Mon-Fri 7AM-Midnight)</i> • <i>BGS/CRX/ICS Service Delivery and Service Assurance Process Bulletin: LRAC Scheduling</i>
18.8-3-3	M&R office space utilization evaluation and adjustment procedures are repeatable and consistent between wholesale and retail work centers.	Satisfied	<p>KPMG Consulting found that Qwest’s office space utilization evaluation and adjustment procedures are consistent, repeatable, and non-discriminatory between wholesale and retail work centers.</p> <p>In all work centers, call volume, trouble tickets generated, and other measures are tracked for both wholesale and retail troubles by the ACD Pinnacle Looking Glass reporting system, the CATS system, and operation support systems, such as WFA and LMOS. The WFA/RAS group in Phoenix, gathers volume data and produces forecasts for screening centers, RCMACs and call centers (AMSC, CRSAB, and RCHCs). LRMs produce forecasts for the LRAC and CORACs. The DSCs handle their forecasting needs internally.</p> <p>Each center utilizes the forecasts available</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>to evaluate and adjust office space.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe office space utilization evaluation and adjustment procedures that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Request for Work Space – Real Estate / Internal Communications Data Sheet</i> • <i>Qwest Instructions and Guidelines</i> • <i>AMSC – Forecast to Actual Call Comparison for 2001</i> • <i>Global Business Markets – Colorado Springs</i> • <i>Headcount for AMSC, CRSAB and RCHC</i> • <i>2001 Dispatch Volume Forecast</i> • <i>Headcount for DSC Des Moines</i> • <i>Minneapolis Design Service Repair Center</i> • <i>DSO & Unbundled Loop Repair 2001 Occupational Staffing Forecast (Mon-Fri 7AM-Midnight)</i> • <i>BGS/CRX/ICS Service Delivery and Service Assurance Process Bulletin: LRAC Scheduling.</i>
18.8-3-4	M&R procedures for incorporating capacity management plans into the business plan are repeatable and consistent between wholesale and retail work centers.	Satisfied	<p>KPMG Consulting found that Qwest’s procedures for incorporating capacity management plans into the business plan are consistent, repeatable, and non-discriminatory between wholesale and retail work centers.</p> <p>The volume of calls received, trouble tickets generated, and other measures for both wholesale and retail troubles are tracked by the ACD Pinnacle Looking Glass reporting system, the CATS system, and operational support systems such as WFA and LMOS. The WFA/RAS, LRM, and internal work center groups utilize the reporting information generated from the various systems to submit forecasts. If additional wholesale or retail resources or office space is necessary, the center director presents justification data to senior management for consideration. If approved, additional resources or space are included in the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>business plan, and appropriate funding is allocated. Personnel decisions are based on forecasts and business trends, as are decisions involving the addition or deletion of physical facilities.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe procedures for incorporating capacity management plans into the business plan that are designed to produce equivalent levels of service for both CLECs and retail end customers:</p> <ul style="list-style-type: none"> • <i>Qwest Instructions and Guidelines</i> • <i>Possible Impact of 2001 System Initiatives on Local Network Headcount.</i>

19. Test Results: Billing Functional Usage Evaluation (Test 19)

1.0 Description

The Functional Usage Evaluation was an analysis of Qwest's daily message processing to ensure that usage record types, including access records (when appropriate), rated records, un-rated records and credit records, appear accurately on the Daily Usage Feed (DUF), according to the defined schedule.

The objectives of this test were to evaluate the following:

- Accuracy and completeness of all usage record types on the DUF, including access records that should appear, not receiving records that should not appear, and not receiving empty set files
- Timeliness of the DUF and access records delivery.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Daily Usage Feed (DUF) files contain records that provide details of calls that originate from, and are recorded by, Qwest's switches, as well as records for alternately billed calls¹⁴¹ that originate from other Incumbent Local Exchange Carriers (ILECs). Qwest processes these message records regionally,¹⁴² through multiple systems, and identifies the CLECs to which the usage belongs. Records are translated into Exchange Message Interface (EMI) format, and are delivered to CLECs, on a daily basis, via one of the five available delivery options, as selected by the CLEC.

The actual processing of usage occurs as follows:

- The end user places a call
- The call is recorded by a switch, located in the Qwest central office, that serves the originating number
- The usage detail is sent to the Qwest message processing system via the switch collection process. Switch collection occurs on either a time-sensitive (no less than daily), or volume sensitive (storage capacity of the switch) basis
- On a daily basis, the Qwest Message Processing System formats, sorts, and, if necessary, rates the usage. Records are formatted into EMI format for external DUF delivery, and into

¹⁴¹Alternately billed calls are calls that are billed to a telephone number other than the originating number, such as collect, third number billed, and calling/credit card calls.

¹⁴²Qwest operates three distinct message processing and CRIS billing regions. The Western Region is comprised of Oregon, Washington, and northern Idaho; the Central Region is comprised of New Mexico, southern Idaho, Montana, Wyoming, Colorado, and Utah; the Eastern Region is comprised of North Dakota, Minnesota, Nebraska, Iowa, and South Dakota.

Qwest internal proprietary formats for billing. Any errors are placed into recirculation to await correction

- CLEC ownership of the usage is determined by guide files that are established and updated through service order activity
- DUF datasets are generated each day, with actual delivery occurring according to the CLEC's preferred schedule
- The DUF dataset is sent to the CLEC via the media option of its choosing (such as magnetic tape or compact disc (CD)), or via electronic transmission.

The corresponding usage records are sent to Qwest's Customer Records Information System (CRIS) billing system for inclusion in wholesale billing of the CLEC.

2.2 Scenarios

The scenarios used in this evaluation are a subset of the approved scenarios found in Appendix D of the *Qwest OSS Evaluation Master Test Plan (MTP)*. They included Resale and UNE-P products and services offered to business and residential customers in thirteen states (Washington, Oregon, Idaho, Montana, Wyoming, Colorado, North Dakota, South Dakota, New Mexico, Minnesota, Nebraska, Idaho, and Utah). Various switch technologies (5ESS, DMS100, AXRSS, TOPS), product and service types, and ordering activities were represented in the test lines used for this test. Transactions that included conversions of account ownership, also known as migrations, from one Local Exchange Carrier (LEC) to another, disconnects, migrations back to Qwest, and feature and/or class of service changes were executed during the test calling period. Two types of services were tested: Plain Old Telephone Service (POTS) and Centrex. Tables 19-1 and 19-2 describe scenarios that were used for this evaluation.

Table 19-1: DUF Resale Ordering Scenarios

Basic Scenario	Res. POTS	Bus. POTS	Centrex
Migration from Qwest "as is"	X	X	X
Migration from Qwest "as specified"	X	X	X
CLEC to CLEC migration	X	X	
New customer	X	X	
Feature changes to existing customer	X	X	
Telephone number change	X	X	
Directory change	X	X	
Suspend/restore service	X	X	
Disconnect (full and partial)	X	X	
PIC/LPIC changes	X	X	

Table 19-2 DUF UNE-P Ordering Scenarios

Basic Scenario	Res. POTS	Bus. POTS
Migration from Qwest "as specified"	X	X
Migrate from CLEC to CLEC	X	X
New customer	X	X
Feature changes to existing customer	X	X
Telephone number change	X	X
Directory change	X	X
Full and partial migration with DL changes	X	X
Convert from Resale products to UNE-P products	X	X
Suspend/restore service	X	X
Disconnect (full and partial)	X	X
Change PIC/LPIC	X	X

Once the scenarios were defined, orders were scheduled by KPMG Consulting and executed. Service orders that included a specific due date were submitted by Hewlett-Packard Consulting (HPC), acting as the pseudo-CLEC. Test calls were placed before, during, and after migrations to ensure accurate routing of DUF records.

KPMG Consulting also developed test cases emulating a variety of telephone calls typically made by business and residential customers. The test cases included local, intra-Local Access and Transport Area (LATA) toll, and inter-LATA long distance calls, both direct dialed and operator handled. Table 19-3 describes the various call types that were employed in this evaluation.

Table 19-3: DUF Call Type Scenarios

Call Type
Local telephone call
Long distance telephone call
Toll telephone call
Collect local telephone call (operator serviced)
Collect toll telephone call (operator serviced)
Collect long distance telephone call (operator serviced)
Collect long distance telephone call (operator completed)
Collect local telephone call (operator completed)
Collect toll telephone call (operator completed)
Third party local telephone call (operator serviced)
Third party toll telephone call (operator serviced)
Third party long distance telephone call (operator serviced)
Third party local telephone call (operator completed)
Third party long distance telephone call (operator completed)
Third party toll telephone call (operator completed)
Operator interruption of local telephone call
Operator verification of busy local telephone number
Operator refund for local telephone call
Operator refund for toll telephone call
Operator assisted toll telephone call without service charges
Operator assisted local telephone call without service charges
Operator assisted long distance telephone call without service charges
Operator completed toll telephone call with charges
Operator completed local telephone call with charges
Directory assistance for local telephone number
Directory assistance for long distance telephone number
Directory assistance with local telephone call completion
Alternative carrier long distance telephone call
International telephone call
Customer service telephone call
Toll free 800 telephone call
Information provider 976 telephone call
Phonesmart repeat dial telephone call
Phonesmart dial back telephone call
Three way telephone call
Third party FLOATER local telephone call (operator serviced)
Third party FLOATER toll telephone call (operator serviced)
Collect FLOATER telephone call (operator serviced)
UNE-P local outgoing call (inter-switch)

Call Type
UNE-P local outgoing call (intra-switch)
UNE-P outgoing toll call (inter-switch)
UNE-P incoming toll call (inter-switch)
Incoming long distance telephone call

Test scripts were created by combining test scenarios with test cases in a variety of permutations. In this manner, the test scripts applied real-world call types against representative customer accounts. Finally, testers executed the test scripts in the field.

2.3 Test Targets & Measures

The Billing Functional Usage Evaluation targeted the completeness of the DUF, the accuracy of the data contained in the DUF records, and the age of the calls within the DUF, which indicates the timeliness in which the DUF was delivered to CLECs. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1, "Results and Analysis."

Table 19-4: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Format and Content of DUF	Track Usage	Validation of DUF record data using EMI guidelines	19-1-1 – 19-1-2
Receipt of Expected DUF	Track Usage	Comparison of DUF records to call events Validation of DUF record packs	19-1-3 – 19-1-5
Delivery of DUF	Track Receipt	Timeliness of delivery	19-1-6

2.4 Evaluation Methods

Execution of the Billing Functional Usage Evaluation required Qwest to establish a test bed of accounts, against which test calls were placed. The test calls consisted of commonly placed incoming and outgoing call types that were generated over multiple switch types. Table 19-5 identifies locations from which test calls were placed.

Table 19-5: Test Calling Locations

Central Office	Address	Switch Type	Region
Denver, Colorado	725 South Pennsylvania Street, Denver, Colorado 80209	Nortel DMS100	Central
Lewisville, Idaho	3576 East 500 North, Lewisville, Idaho 83431	Ericsson AXRSS	Central
Des Moines, Iowa	2103 East University Avenue, Des Moines, Iowa 50350	Lucent 5ESS	Eastern
Burnsville, Minnesota	2120 Williams Drive, Burnsville, Minnesota 55337	Nortel DMS100	Eastern
Sidney, Montana	424 S Central Avenue, Sidney, Montana 59270	Ericsson AXRSS	Central
Omaha, Nebraska	118 S 19th Street, Omaha, Nebraska 68102	Lucent 5ESS	Eastern
Albuquerque, New Mexico	1840 Southern Blvd SE, Albuquerque, New Mexico 87124	Nortel DMS100	Central
Dickinson, North Dakota	146 2nd Avenue West, Dickinson, North Dakota 58601	Nortel DMS100	Eastern
Corvallis, Oregon	410 Jackson Street, Corvallis, Oregon 97330	Lucent 5ESS	Western
Rapid City, South Dakota	612 Mt Rushmore Road, Rapid City, South Dakota 57709	Lucent 5ESS	Eastern
Kearns, Utah	4780 South 4015 West, Kearns, Utah 84118	Nortel DMS100	Central
Seattle, Washington	1122 3rd Avenue, Seattle, Washington 98101	Nortel DMS100	Western
Cheyenne, Wyoming	1919 Capitol Avenue, Cheyenne, Wyoming 82001	Lucent 5ESS	Central

KPMG Consulting recorded details of all calls placed for later comparison to DUF records.

2.5 Analysis Methods

The Billing Functional Usage Evaluation included a checklist of evaluation criteria developed by the KPMG Consulting during the initial phase of the Qwest OSS Evaluation.

Tester call logs were examined to determine whether or not a specific call should appear on the DUF. Calls not expected to appear on the DUF were evaluated to ensure that no DUF record was received. For test calls that should have appeared on the DUF, KPMG Consulting examined the DUF data to locate a valid record that met the specifications of the call as it was recorded in the test call log.

The DUFs received were examined to ensure that the pack trailer had an accurate count of DUF records transmitted in each file pack. DUF records were individually verified to ensure that they were received by the appropriate CLEC and to ensure that the records adhered to EMI guidelines.

DUF timeliness, as defined in Performance Indicator Definition (PID) BI-1A, was measured by calculating the sum of the number of business days between the creation of each message and the date the usage information was made available (transmission date) to the CLEC, and dividing it by the total number of records. The average timeliness was compared to the PID BI-1A data for the corresponding month found in the *Qwest 271 OSS Test Service Performance Results Reports*.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the tables below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 19-6: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
19-1-1	DUF records adhere to EMI guidelines.	Satisfied	<p>DUF records produced by Qwest are formatted in accordance with EMI guidelines.</p> <p>During initial testing, KPMG Consulting received EMI type 110101 records for both long distance directory assistance calls for which EMI type 110132 records were expected, and for information provider service calls for which EMI type 110116 records were expected. Expected record type receipt was based on documented EMI guidelines. As a result, KPMG Consulting issued Exceptions 3017 and 3018.</p> <p>Qwest subsequently revised its documentation to clarify the types of EMI records that it produces for different call types. KPMG Consulting reviewed the updated documentation and found that this information had been appropriately clarified, while conforming to EMI guidelines. As a result, Exceptions 3017 and 3018 are closed. See Exceptions 3017 and 3018 for additional information on this issue.</p> <p>Following system changes by Qwest, KPMG Consulting conducted additional testing, and found that EMI type 100131 records for local calls were received with an incorrect value of zero in the rate class field. As a result, KPMG Consulting issued Exception 3097. KPMG Consulting also received EMI type 110125 records for toll-free calls with an incorrect value of zero in the indicator 4 field. As a result, KPMG Consulting issued Exception 3098.</p> <p>KPMG Consulting also noted that Qwest created two different, yet acceptable, EMI record types for toll-free calls, specifically EMI record types 110105, and the more</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>commonly used 110125. KPMG Consulting formally identified this apparent discrepancy. Qwest clarified that 110105 records are generated for 800 access calls in the Central Region only, and that other toll-free call types result in 110125 records in all regions.</p> <p>During further testing, KPMG Consulting found that the rate class field was populated in accordance with EMI guidelines for EMI type 100131 records. As a result, Exception 3097 was closed. See Exception 3097 for additional information on this issue.</p> <p>KPMG Consulting also found, in its further testing, that indicator 4 was populated in accordance with EMI guidelines for EMI type 110125 records. As a result, Exception 3098 was closed. See Exception 3098 for additional information on this issue.</p>
19-1-2	DUF record fields are accurately populated.	Satisfied	<p>DUF records produced by Qwest contain field values in accordance with both EMI guidelines and expected results.</p> <p>During initial testing, KPMG Consulting found instances in which characteristics of DUF records were in conflict with the state of the line; specifically that EMI indicator 4 was not accurately populated. As a result, KPMG Consulting issued Exception 3037.</p> <p>Following system changes by Qwest, KPMG Consulting conducted retesting, and found a recurrence of the original issue, along with two additional issues: DUF records were inappropriately received for retail lines, and DUF records were received with EMI indicator 4 inconsistently populated. As a result, KPMG Consulting amended Exception 3037. KPMG Consulting also found instances on EMI type 100131 local call records for which the method of recording and rate class were populated with valid, but conflicting values. As a result, KPMG Consulting issued Exception 3099.</p> <p>KPMG Consulting conducted additional retesting, and found no conflicting values in the method of recording and rate class fields in EMI type 100131 local records. As a result, Exception 3099 was closed. See Exception 3099 for additional information</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>on this issue.</p> <p>Following further system changes by Qwest, KPMG Consulting conducted additional retesting, and found instances of two of the three issues earlier reported in Exception 3037. As a result, KPMG Consulting again amended Exception 3037.</p> <p>KPMG Consulting conducted further testing, subsequent to additional system changes by Qwest. KPMG Consulting found no instances of the issues associated with Exception 3037. As a result, Exception 3037 was closed. See Exception 3037 for additional information on this issue.</p>
19-1-3	Expected DUF records are received by the correct owner.	Satisfied	<p>In the absence of an established PID, KPMG Consulting assigned a benchmark of 95% correct receipt.</p> <p>During initial testing, KPMG Consulting found that 69% of the expected DUF records were received. As a result, KPMG Consulting issued Exception 3036. KPMG Consulting also received no DUF records for toll-free calls, and as a result, issued Exception 3025. KPMG Consulting further found instances in which DUF records for the same call were sent to different CLECs. As a result, KPMG Consulting issued Exception 3015.</p> <p>Following system changes by Qwest, KPMG Consulting conducted retesting, and found that 70% of DUF records expected were received. KPMG Consulting amended Exception 3036.</p> <p>As part of this retest, KPMG Consulting received expected DUF records for toll-free calls. As a result, Exception 3025 was closed. See Exception 3025 for additional information on this issue. KPMG Consulting also observed no instances of records sent to different CLECs for the same call. As a result, Exception 3015 was closed. See Exception 3015 for additional information on this issue.</p> <p>KPMG Consulting conducted additional retesting, following further system changes by Qwest, and found that 88.74% of DUF records expected were received. As a result, KPMG Consulting again amended</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Exception 3036.</p> <p>Qwest provided a detailed Exception response, which attempted to explain each missing record. KPMG Consulting's analysis of Qwest's response yielded revised results of 92.7%. Qwest's response also indicated that the remaining system problems were contained in its Central Region CRIS system. When disaggregated, 95.2% of DUF records expected were received for the Western Region and 96.5% of DUF records expected were received for the Eastern Region.</p> <p>KPMG Consulting conducted additional retesting following Central Region system changes by Qwest. KPMG Consulting found that 95.7% of DUF records expected in the Central Region were received. This yielded an aggregate result of 96%. As a result, Exception 3036 was closed. See Exception 3036 for additional information on this issue.</p> <p>See Tables 19-7 and 19-8 for additional information.</p>
19-1-4	Unexpected DUF records were not received.	Satisfied	<p>Unexpected DUF records are not received. During initial testing, KPMG Consulting received duplicate DUF records. As a result of this discrepancy, KPMG Consulting issued Exception 3016.</p> <p>KPMG Consulting also received unbillable EMI type 110101 terminating access records designated as attempted calls with no duration. KPMG Consulting formally identified this issue. Qwest clarified that, as all access call attempts are passed to Qwest billing systems, and as it is Qwest's policy to provide data to the CLEC with the same level of precision and accuracy it provides itself, a CLEC should expect this type of DUF record.</p> <p>Following system changes by Qwest, KPMG Consulting conducted retesting, and found no evidence of duplicate DUF records. As a result, Exception 3016 was closed. See Exception 3016 for additional information on this issue.</p> <p>During this retest, KPMG Consulting received unexpected EMI type 110101 access records for local and toll calls. As a</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>result, KPMG Consulting issued Exception 3096.</p> <p>Following further Qwest system modifications, KPMG Consulting conducted additional retesting, during which no unexpected EMI type 110101 access records for local calls were received. Additionally, Qwest provided information that explained that EMI type 110101 records are created for Qwest-transported intraLATA toll calls to facilitate access billing by the CLEC. As a result, Exception 3096 was closed. See Exception 3096 for additional information on this issue.</p> <p>KPMG Consulting conducted additional retesting, following further system changes by Qwest. KPMG Consulting found instances in which both EMI type 100101 and EMI type 100131 records were received for the same operator-handled local call. As a result, KPMG Consulting issued Exception 3113.</p> <p>Qwest provided a detailed Exception response, which indicated that the system problems were associated with its Eastern Region CRIS system.</p> <p>KPMG Consulting conducted additional retesting following Eastern Region system changes by Qwest. KPMG Consulting found no instances in which multiple records were received for the same operator-handled local call. As a result, Exception 3113 was closed. See Exception 3113 for additional information on this issue.</p>
19-1-5	DUF record packs are complete.	Satisfied	DUF Trailer records contain an accurate count of the number of records found within

Test Cross-Reference	Evaluation Criteria	Result	Comments
			the pack.
19-1-6	DUFs are delivered to the CLEC in a timely manner as defined in PID BI-1A.	Satisfied	The PID-defined standard for PID BI-1A is parity with retail performance. KPMG Consulting received DUF records within an average of 4.85 business days ¹⁴³ . KPMG Consulting compared this to the latest BI-1A results available at the time of this report. The Qwest regional retail aggregate result for this period is 6.88 days ¹⁴⁴ . See Table 19-9 for additional information.

3.2 Test Call Log and DUF Record Matching Analysis

Table 19-7: Tester Log Entry Breakdown

Category	Count
Total Number of Test Scripts not expected to produce a DUF record	2,083
Total Number of Test Scripts expected to produce a DUF record	3,278
Total Number of Test Scripts	5,361

Table 19-8: DUF Matching Analysis

Category	Count	Percentage of Total
Total Number of Test Scripts expected to produce DUF record(s) that resulted in matching DUF record(s)	3,143	96.00%
Total Number of Test Scripts expected to produce DUF record(s) that did not result in matching DUF record(s)	135	4.00%
Total Number of Test Scripts expected to produce DUF record(s)	3,278	100.00%

¹⁴³ Records were generated in January and March 2002.

¹⁴⁴ The reporting period for retail performance is February 2002.

3.3 DUF Receipt Timeliness

Table 19-9: DUF Timeliness Analysis

Record Receipt	Count	Percentage	Cumulative Percentage
DUF records received within 1 business day	15	0.40	0.40
DUF records received within 2 business days	793	19.33	19.73
DUF records received within 3 business days	669	16.32	36.05
DUF records received within 4 business days	618	15.07	51.12
DUF records received within 5 business days	634	15.46	66.58
DUF records received within 6 business days	553	13.49	80.07
DUF records received within 7 business days	385	9.39	89.46
DUF records received within >7 business days	432	10.54	100.00
Total DUF records received	4,099	100.00	

19.6. Test Results: Daily Usage Feed Returns, Production and Distribution Process Evaluation (Test 19.6)

1.0 Description

The Daily Usage Feed Returns, Production and Distribution Evaluation was an operational analysis of the processes and related documentation used by Qwest to create and transmit the Daily Usage Feed (DUF) files, accept DUF returns, and investigate potential errors. The objective of this test was to determine the accuracy, completeness, and timeliness of these processes. The inputs to this test included interviews with Qwest Subject Matter Experts (SMEs), and reviews of both proprietary documentation detailing Qwest's internal methods and procedures, and publicly available documentation.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

DUF files contain records that provide details of calls that originate from, and are recorded by, Qwest's switches, as well as records for alternately billed calls¹⁴⁵ that originate from other Incumbent Local Exchange Carriers (ILECs). Qwest processes these message records through a variety of systems, and identifies the Competitive Local Exchange Carriers (CLECs) to which the usage belongs. Records are translated into Exchange Message Interface (EMI) format, and are delivered to CLECs, on a daily basis, via one of the five available delivery options, as selected by the CLEC.

The actual processing of usage occurs as follows:

- The end user places a call.
- The call is recorded by the switch, located in the Qwest central office, that serves the originating number.
- The usage detail is sent to the Qwest message processing system via the switch collection process. Switch collection occurs on either a time-sensitive- (no less than daily), or volume sensitive- (storage capacity of the switch) basis.
- On a daily basis, the Qwest Message Processing System formats, sorts, and (if necessary) rates the usage. Records are formatted into EMI format for external DUF delivery, and into Qwest internal proprietary formats for billing. Any errors are placed into recirculation to await correction.
- The ownership of the usage is determined by guide files established and updated through service order activity.

¹⁴⁵ Alternately billed calls are calls that are billed to a telephone number other than the originating number, such as collect, third number billed, and calling/credit card calls.

- The DUF datasets are generated each day, with actual delivery occurring via the CLEC's preferred schedule.
- The DUF dataset is sent to the CLEC via the media option chosen, or via electronic transmission.
- The corresponding usage records are sent to Qwest's Customer Records Information System (CRIS) billing system for inclusion in wholesale billing of the CLEC.

Within 90 days of the message date, CLECs may return DUF records to Qwest that the CLEC believes are in error, by utilizing the Co-Carrier Usage Return (CCUR) process. Mechanized returns must be formatted in accordance with the EMI guidelines. Upon receipt of the record(s), Qwest initiates an investigation, and informs the CLEC of the disposition of its investigation within two weeks following the bill date on which the usage in question appeared.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets of this evaluation were the accuracy, completeness, and timeliness of the processes used by Qwest to produce and distribute the DUF, and to process DUF returns. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1, "Results and Analysis."

Table 19.6-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Produce DUF	Production and Distribution of DUF	Completeness and timeliness ¹⁴⁶	19.6-1-1 – 19.6-1-3, 19.6-1-7
	Balancing and Reconciliation of DUF	Completeness of balancing and reconciliation procedures	19.6-1-4
	Route Daily Usage	Controllability of usage	19.6-1-5 – 19.6-1-6
Transmit DUF	Data Transmission and/or Cartridge Tape Delivery to CLEC	Completeness, consistency and timeliness ¹⁴⁶ of the process	19.6-1-7 – 19.6-1-10
Maintain and re-transmit usage history	Create Daily Usage Backup	Reliability of repeatable process	19.6-1-11
	Retrieve and Re-transmit Daily Usage Backup Data	Availability and timeliness ¹⁴⁶ of prior period usage data to CLEC	19.6-1-11 – 19.6-1-14
Process DUF Returns	Receive Returned Usage	Completeness and accuracy of documentation and processes for creating, submitting, and receiving returned usage Accuracy, completeness and timeliness ¹⁴⁶ of corrections Accuracy, completeness and timeliness ¹⁴⁶ of status reports	19.6-1-16 – 19.6-1-19
Capacity Management	Capacity Management Process	Adequacy, completeness of, and adherence to the capacity management process	19.6-1-15

2.4 Evaluation Methods

Interviews were conducted with Qwest SMEs to assess Qwest’s ability to produce and distribute DUFs, and to process DUF returns. Subject areas within Qwest were selected based upon the process areas, and the evaluation measures defined in the Master Test Plan (MTP). Pertinent documentation, methods and procedures, and production reports were requested, and received, by KPMG Consulting.

KPMG Consulting conducted interviews with CLECs regarding the DUF retransmission process, and DUF production and distribution processes. Information obtained during these interviews was used to substantiate the testing experience of KPMG Consulting in the DUF production process area, and to provide commercial input regarding the DUF retransmission process.

¹⁴⁶ Timeliness is not intended to imply that KPMG Consulting submitted transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the measure was established to evaluate whether or not controls are in place to suggest that activities around the specified process and sub-processes occur in a timely manner.

Additionally, KPMG Consulting polled the CLEC community, and determined that there are no commercial users of the DUF returns process.

2.5 Analysis Methods

KPMG Consulting completed interview summaries, which were validated by Qwest for factual accuracy. The information contained in these interview summaries, along with the requested documentation received from Qwest, was reviewed and evaluated against relevant evaluation criteria to determine a ‘satisfied’ or ‘not satisfied’ result.

During the course of our work, KPMG Consulting found that, where noted in Section 3.1, “Results & Analysis,” certain of Qwest’s control processes are embedded in automated systems, rather than in manual processes. In these cases, for select evaluation criteria, it was not practical for KPMG Consulting to directly evaluate the relevant processes, or observe Qwest’s adherence to them, using traditional operational analysis techniques. Accordingly, KPMG Consulting examined the outputs of such automated systems during execution of transaction testing in order to assign a ‘satisfied’ or ‘not satisfied’ result to the relevant criteria.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 19.6-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
19.6-1-1	DUF production and distribution procedures are clearly defined.	Satisfied	As described in Qwest’s wholesale billing and DUF documentation, methods and procedures for the production and distribution of DUF are defined and documented.
19.6-1-2	The scope of Qwest’s Corporate Information Systems and Wholesale Help Desk is adequate to address customer needs.	Satisfied	As depicted in Qwest’s documented organizational structure, and supported by KPMG Consulting interviews with Qwest SMEs, Qwest’s Corporate Information Systems organization, and its Wholesale Help Desk, participate in the production and distribution process of the DUF, and in the resolution of customer problems. The breadth of topical coverage is adequate to address wholesale customer needs. Qwest’s Corporate Information Systems organization is structured with dedicated teams to support the following: <ul style="list-style-type: none"> • Message Preprocessor (PP42)

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Usage Guiding and Returns • Usage Processing • Usage Billing • System Tests. <p>Qwest’s Wholesale Help Desk handles customer inquiries related to DUF production and distribution, such as:</p> <ul style="list-style-type: none"> • Resend requests • Questions about the returns process • Format issues • Content issues • Missing DUF. <p>To facilitate handling of the above inquiries, the Wholesale Help Desk gathers pertinent CLEC information and initiates a ticket. The ticket is referred to Production Services for resolution. The Wholesale Help Desk maintains the status of each ticket and notifies the CLEC of resolution, and notifies the CLEC when the following activities are completed:</p> <ul style="list-style-type: none"> • Change of output media • Discontinuance of DUF • Disposition of recirculating usage • Content issues.
19.6-1-3	CLECs are provided with sufficient contacts for DUF production and distribution issues.	Satisfied	<p>KPMG Consulting’s interviews with Qwest SMEs found that a toll-free number for Qwest’s Wholesale Help Desk is readily available in a variety of Qwest documentation, and on its wholesale Web site. In addition, Qwest provides off-hours support to CLECs by assigning rotating pager schedules to Help Desk professionals who are equipped with full remote access to Qwest’s Wholesale Help Desk systems.</p> <p>Internal reference material within the <i>Wholesale Systems Help Desk – Reference Guide</i> is readily available for use by Wholesale Help Desk personnel to ensure that CLEC requests are handled, and, if necessary, directed to specific areas within Qwest for handling. This information consists of specific phone contacts, as well as identified URLs where specific information can be accessed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			A documented escalation path is in place for wholesale customers who wish to escalate an issue from the Wholesale Help Desk to a higher level within Qwest.
19.6-1-4	DUF balancing and reconciliation procedures are clearly defined.	Satisfied	<p>Balancing and reconciliation functionality is defined and implemented within, and between, process steps of Qwest's Message Processing System, primarily through the use of UNITECH software. As found during interviews with Qwest SMEs, the software examines control totals (record counts and pack counts, for example) from the output of a prior step in the message processing job stream, and compares them to corresponding control totals that serve as inputs to the next processing step. If a discrepancy occurs (i.e., 'records written' does not equal 'records read'), a non-zero condition code is set, and the processing terminates abnormally.</p> <p>KPMG Consulting examined production reports, and found that production support personnel are automatically notified by email and pager when an abnormal termination occurs and corrective action is taken.</p> <p>DUF datasets themselves have an integral balancing component in which DUF pack trailer records must contain an accurate record count of records within the pack.</p> <p>Finally, each file header contains the next invoice number in a series unique to each CLEC. This allows the CLEC a final reconciliation opportunity to determine if any DUF datasets are missing.</p>
19.6-1-5	DUF routing and guiding is controlled by defined and documented processes.	Satisfied	<p>Usage routing and guiding processes are defined and documented.</p> <p>Based upon Qwest's wholesale billing and DUF documentation, the guiding process occurs in the message processing stream after formatting and rating. Usage recorded on Qwest switches is fed into the guiding process from the rating process. Usage may also be received for guiding from the Centralized Message Distribution Process (CMDS).</p> <p>The guiding process matches each usage record to its correct billing account, and usage records are forwarded, via the DUF,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>to the CLEC to whom the usage belongs.</p> <p>KPMG Consulting’s interviews with Qwest SMEs on DUF routing and guiding procedures revealed that Qwest’s activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in Billing Functional Usage Evaluation (Test 19), to determine the effectiveness of Qwest’s usage routing and guiding processes.</p> <p>The outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3015 – Multiple DUF records belonging to different CLECs were received for the same call • 3016 – Duplicate DUF records were received • 3036 – 69% of the DUF records were received for calls expected to generate a DUF record. <p>The incorrect outputs suggested that Qwest’s automated processes for usage routing and guiding were inadequate.</p> <p>In response to these Exceptions, Qwest implemented related system changes.</p> <p>KPMG Consulting retested these components and found that the discrepancies described in Exceptions 3015 and 3016 were not present in retest results. As such, Exceptions 3015 and 3016 are closed. See Exceptions 3105 and 3016 for additional information on these issues.</p> <p>During retesting, 95% of the DUF records were received for calls expected to generate a DUF record; therefore, Exception 3036 is closed. See Exception 3036 for additional information on this issue.</p> <p>Please see KPMG Consulting’s Billing</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Functional Usage Evaluation (Test 19) for additional information on the outputs of Qwest's automated processes.
19.6-1-6	DUF routing and guiding contains functionality to adequately address pending and completed service order activity.	Satisfied	<p>KPMG Consulting interviews with Qwest SMEs provided information regarding Qwest's usage ownership rules. A subsequent KPMG Consulting review of Qwest's wholesale billing and DUF documentation failed to corroborate these rules, as described in the interviews. Specifically, KPMG Consulting identified discrepancies in the area of usage ownership following a change in account ownership. As a result, KPMG Consulting issued Exception 3004.</p> <p>In response to these issues, Qwest updated its wholesale billing and DUF documentation. KPMG Consulting re-examined the revised documentation, and found that the discrepancies had been corrected. Exception 3004 is closed. See Exception 3004 for additional information on this issue.</p> <p>Qwest's process for usage ownership is summarized as follows:</p> <ul style="list-style-type: none"> • For new accounts, usage is guided to the new account effective on the service order completion (SOC) date. • For accounts changing ownership and /or class of service, the usage guiding transitions one day after the SOC date. <p>Additionally, Qwest's processes reguide usage prior to the date of bill cycle processing, if service order activity occurs after daily message processing, and prior to the billing cycle date.</p> <p>KPMG Consulting's interviews with Qwest SMEs on DUF routing and guiding procedures revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques. Therefore, KPMG Consulting examined the outputs of these systems, as collected through transaction-</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>based testing in Billing Functional Usage Evaluation (Test 19), to determine the result of Qwest's usage guiding and routing processes when service order activity is involved.</p> <p>The outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3002 – Conflict between the timing of orders posting in CRIS billing and usage ownership business rules • 3037 – Characteristics of the DUF records appear to be in conflict with the state of the line. <p>The manifestation of the issues raised in Exception 3002 was that DUF records were not received by the CLEC as expected. Exception 3037 provided three specific scenarios for which the DUF records were not received by the CLEC, as expected. Because of the relationship of the issues in both, Exception 3002 was closed and combined with Exception 3037.</p> <p>The incorrect output suggested that Qwest's automated usage routing and guiding processes did not adequately address pending or completed service order activity. In response to these Exceptions, Qwest implemented related system changes.</p> <p>KPMG Consulting retested these components and found that inconsistencies no longer remain between the characteristics of the DUF records and the status of the account. Exception 3037 is closed. See Exception 3037 for additional information on this issue.</p> <p>Please see KPMG Consulting's Billing Functional Usage Evaluation (Test 19) for additional information on the outputs of Qwest's automated processes.</p>
19.6-1-7	DUF is prepared and delivered according to a defined production schedule.	Satisfied	<p>Qwest's wholesale billing and DUF documentation demonstrates that DUF production and delivery schedules are defined. DUFs are produced daily (Monday through Friday, excluding Qwest holidays). If no usage is recorded on a particular day, the CLEC does not receive a file, or any notice that no usage was recorded. Each</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>processing region at Qwest offers CLECs the option of receiving DUF on a daily, weekly, or monthly basis. The Western region also offers the option of receiving DUF on a specified date.</p> <p>KPMG Consulting's interviews with Qwest SMEs on DUF production and distribution procedures revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in Billing Functional Usage Evaluation (Test 19), to determine the result of Qwest's daily usage production and distribution processes.</p> <p>The outputs of these systems proved to be correct (timely), which suggests that Qwest's DUF is prepared and delivered according to a defined production schedule</p> <p>Please see KPMG Consulting's Billing Functional Usage Evaluation (Test 19) for additional information on the outputs of Qwest's automated processes.</p>
19.6-1-8	DUF data delivery options are documented.	Satisfied	<p>Information regarding various usage delivery options is available to CLECs in Qwest's wholesale billing and DUF documentation.</p> <p>Qwest currently offers a choice of five different delivery media:</p> <ul style="list-style-type: none"> • Connect:Direct®/Network Data Mover (NDM) (dedicated circuit or dial-in) • FTP (direct only) • Web Access • Tape (being phased out) • 18-Track Cartridge (being phased out). <p>Qwest also provides a procedure through its Account Management organization that allows a CLEC to change its DUF delivery</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			medium after initial account establishment.
19.6-1-9	DUF interface specifications are documented.	Satisfied	<p>Information and specifications for establishing an interface for DUF transmissions are available to CLECs in Qwest's wholesale billing and DUF documentation.</p> <p>Interface specifications/requirements are detailed in the New Customer Questionnaire section of the wholesale billing and DUF documentation. Based on KPMG Consulting interviews with Qwest SMEs, support is also provided by the company's Account Management team, and, when necessary, its Implementation and Development group.</p>
19.6-1-10	Changes to DUF interface specifications are subject to change management techniques.	Satisfied	<p>The Change Management Process (CMP) is supported by a dedicated organization within Qwest. According to interviews with Qwest SMEs, in mid-2001, Qwest migrated all change management functions into the service delivery organization from the information technology organization.</p> <p>Qwest uses a 73-day change management timeline, documented in the <i>Release Documentation Distribution Schedule</i>, Attachment D, for OSS functionality introductions and changes (including DUF delivery and returns functionality). Thus, initial CLEC notification occurs 73 days prior to the planned implementation of any change event. The timeline includes clearly delineated milestones and deliverables.</p> <p>KPMG Consulting reviewed the following change management notifications, specifically related to DUF processing, which demonstrate Qwest's application of the change management process:</p> <ul style="list-style-type: none"> • SRN062601-2 – changes to DUF headers and trailers for compliance with Ordering and Billing Forum (OBF) guidelines • SRN042001-4 – the elimination of 9-track reel and 18-track cartridges as a delivery medium • 5439770 – correct population of Exchange Message Interface (EMI) indicator 4 on DUF records.
19.6-1-11	Process(es) exist to archive	Satisfied	DUF archival and retrieval is adequately

Test Cross-Reference	Evaluation Criteria	Result	Comments
	and retrieve prior period DUFs for re-transmission upon request.		handled through DUF retention policies. Qwest's wholesale billing and DUF documentation reflects that usage data is stored for a period of 180 days.
19.6-1-12	Policies regarding availability of historical DUFs are documented.	Satisfied	Qwest's documented policy stipulates the retention of usage data for 180 days. Qwest's wholesale billing and DUF documentation states, accordingly, that after the 180-day period, retransmission/redistribution is not possible, and a request for retransmission will be denied.
19.6-1-13	Procedures for CLEC retransmission requests are documented.	Satisfied	<p>According to Qwest's wholesale billing and DUF documentation, CLECs are instructed to contact the Wholesale Help Desk to initiate a retransmission request. CLECs should provide the following information:</p> <ul style="list-style-type: none"> • Date of original transmission • Media Type • Dataset name (if Connect:Direct/NDM) • Volume serial number (if tape) • RSID/ZCID • Contact name and number. <p>Requests are normally processed within 10 business days.</p> <p>KPMG Consulting reviewed a CLEC retransmission request, which indicated that the documented process was followed and the retransmission was processed the next business day.</p>
19.6-1-14	CLECs can readily check the status of retransmission requests.	Satisfied	<p>Qwest's procedures for CLEC tracking of retransmission requests are defined in its wholesale billing and DUF documentation. Retransmission requests are initiated by CLECs through Qwest's Wholesale Help Desk. Interviews with Qwest SMEs indicated that these requests take the form of a trouble ticket, which is assigned a unique number, and, thus, provides a tracking vehicle.</p> <p>The requesting CLEC is provided the ticket number, and may obtain an updated status at any time by contacting the Wholesale Help Desk.</p> <p>KPMG Consulting received and reviewed CLEC information regarding four trouble tickets concerning retransmission requests.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			This information included evidence of regular communication with Qwest regarding the status of the retransmission requests.
19.6-1-15	Capacity management practices and/or processes related to DUF production and distribution are adequate to manage resource utilization.	Satisfied	<p>Interviews with Qwest personnel revealed that staff capacity management processes and procedures are defined, and are implemented on an ongoing basis within each of the organizations involved in DUF production and distribution.</p> <p>Although no formal documentation exists that delineates specific capacity management procedures, evidence of the existence of such processes was corroborated by various statistical reports, including:</p> <ul style="list-style-type: none"> • Call volumes handled by the Wholesale Help Desk • Number and type of production abends (including the x37 type abends, which indicate potential disk space issues) • Overall batch execution results indicating both personnel and system resource utilization. <p>Qwest's relevant management groups review data from these reports monthly. Interviews with Qwest SMEs indicated that the outcome of these reviews drives decision making for the allocation of existing resources, and the acquisition of potential new resources.</p> <p>KPMG Consulting reviewed three months of proprietary reports from Qwest that illustrated the monitoring of mainframe processing capacity, and the reallocation and upgrading of resources to address mainframe processing capacity issues.</p> <p>KPMG Consulting also reviewed proprietary direct access storage device (DASD) utilization data that indicated both a capacity issue for a particular application, and the resulting request for additional DASD. KPMG Consulting then reviewed a later version of the utilization data, which demonstrated that the additional DASD had been installed and was being utilized in association with the particular application.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
19.6-1-16	DUF returns procedures are defined.	Satisfied	<p>Methods and procedures for CLECs' return of DUF are defined and documented via the Qwest Co-Carrier Usage Return (CCUR) process. These guidelines stipulate:</p> <ul style="list-style-type: none"> • Required record layouts for file transmission headers/trailers and pack headers and trailers within the actual dataset • Dataset naming conventions • Guidance for use of NDM or the Internet to receive Qwest responses to returned files • Edits that Qwest expects the returned files to pass.
19.6-1-17	DUF is corrected and returned according to a defined schedule.	Unable to Determine	<p>The schedule, as defined in the CCUR documentation, employed by Qwest for correction and redelivery of DUF, and/or billing adjustments, to the affected CLEC is determined, as follows:</p> <ul style="list-style-type: none"> • The CCUR system will attempt to reguide the returned records for up to three business days • Usage records found to be correct are returned to the CLEC on the next DUF transmission, and are designated as "correct as written" by the appropriate return code value • Usage records sent to the wrong CLEC result in a billing adjustment to the CLEC returning the usage. Qwest must apply any adjustments to the returning CLEC within two weeks following the bill date on which the usage appeared • Usage records that cannot be corrected (e.g., error at the switch recording) result in a billing adjustment to the CLEC returning the usage. Qwest must apply any adjustments to the returning CLEC within two weeks following the bill date on which the usage appeared. <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. However, since this process is performed only when events require such action to be taken, and KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			observed none of those such events, KPMG Consulting was unable to observe and to determine whether the process is sufficiently robust, or whether Qwest adheres to the process.
19.6-1-18	CLECs are provided with sufficient contacts for DUF returns issues.	Satisfied	<p>A toll-free number for Qwest's Wholesale Help Desk is readily available in a variety of Qwest documentation, and on its wholesale Web site.</p> <p>Internal reference material is readily available for use by Wholesale Help Desk personnel to ensure that CLEC requests are handled, and, if necessary, directed to specific areas within Qwest for handling. This information consists of specific phone contacts as well as URLs that identify where specific information can be accessed.</p> <p>A documented escalation path is in place for wholesale customers who wish to escalate an issue from the Wholesale Help Desk to a higher level within Qwest.</p>
19.6-1-19	CLECs can readily obtain status on DUF return requests.	Unable to Determine	<p>CCUR generates a confirmation report indicating the receipt of returned usage. This report is provided on the actual DUF transmission along with usage data, and provides details such as the date, time, from number, to number, billed number, city and state, duration of call, returning CLEC ID, and whether the item is accepted, rejected, or dropped by CCUR. For each usage item that has been rejected by Qwest, the reason for the reject is provided.</p> <p>CLEC disputes resulting from CCUR processing are acknowledged by Qwest within three days of receipt.</p> <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. However, since this process is performed only when events require such action to be taken, and KPMG Consulting observed none of those such events, KPMG Consulting was unable to observe and to determine whether the process is sufficiently robust, or whether Qwest adheres to the process.</p>

20. Test Results: Carrier Bill Functional Evaluation (Test 20)

1.0 Description

The Carrier Bill Functional Evaluation was an analysis of Qwest's ability to accurately bill usage, Monthly Recurring Charges (MRC), fractional charges, and Non-Recurring Charges (NRC) on the appropriate bill type. This test also evaluated the timeliness of bill delivery to the Pseudo-Competitive Local Exchange Carrier (P-CLEC).

This evaluation examined charges for Resale, Unbundled Network Element (UNE) and Unbundled Network Element-Platform (UNE-P) products billed on Customer Record Information System (CRIS) paper- and electronically-formatted bills. CRIS bills were evaluated for accuracy of charges related to service order activity, and for timeliness of delivery to the P-CLEC. Charges examined include fractional, recurring, non-recurring, and usage. The correct application of discounts to the appropriate P-CLEC rates was also evaluated. Bills produced via the Billing and Receivable Tracking System (BARTS)¹⁴⁷ and the Integrated Access Billing System (IABS)¹⁴⁸ were also examined. In addition, a subset of retail end user bills was validated to verify that Qwest's systems ceased billing retail end users for migrated services on the service migration date.

2.0 Method

This section summarizes the test methodology.

2.1 Business Process Description

Qwest prepares several types of CLEC bills that are distributed monthly, as defined by the bill cycle of the Billing Account Number (BAN). Each bill type covers a specific set of products and services. Qwest's billing system, comprised of three regional Customer Record Information Systems – Western, Central, and Eastern – produces bills for Resale, UNE, and UNE-P. The regional systems are maintained and operated separately. The IABS billing system produces bills for Resale (Frame Relay Resale Service) and unbundled products (DS1 Message Trunk Port and Unbundled Dedicated Interoffice Transport). The BART System is an accounting billing system used to bill for products, materials, and services that are not billable via CRIS or IABS.

Qwest's bills are structured in a hierarchical manner. Summary accounts exist for each product type, per state, per CLEC. The summary bill provides a CLEC with one bill, and one payment document, for multiple accounts (sub-accounts) within the same state. Within each summary account, Billing Account Numbers (BANs) are established, and sub-accounts for end user lines or circuits are identified under each BAN.

2.2 Scenarios

¹⁴⁷ BART bills for Dark Fiber reservations were included in this evaluation.

¹⁴⁸ IABS bills for Unbundled Dedicated Interoffice Transport were included in this evaluation for the Central and Eastern Region using third party tester participation.

KPMG Consulting selected a subset of Resale, UNE, and UNE-P product and service offerings for evaluations based on the requirements documented in the *Qwest OSS Evaluation Project Master Test Plan*, Appendix D: Scenarios. Tables 20-1, 20-2 and 20-3 represent the product and service offerings from which the subset of test cases was selected.

Test scenarios used for bill validation purposes included the following activities:

- Test cases for:
 - Migration/conversion of customers
 - Disconnects (full and partial), and new service (add/delete)
 - Changes to services (modify)
 - Changes to service delivery method (e.g., Resale to UNE-P).
- Migration situations represented included:
 - Qwest to CLEC
 - CLEC to Qwest
 - CLEC to CLEC.

Table 20-1: UNE

Basic Scenario	2-wire Analog Loop	ADSL Qualified Loop	2-wire Non-loaded Loop	ISDN Capable Loop	DS1 Capable Loop	Stand-Alone LNP	UDIT	EEL	Dark Fiber	Line Sharing
Migrate lines from Qwest without LNP	X	X	X	X						
Migrate from CLEC to CLEC	X									
Purchase lines for a new customer	X	X	X	X	X			X		
Add new lines to existing customer		X	X	X				X		
Add new interoffice DS1/DS3 facilities					X		X		X	
Convert from Resale to UNE loop without LNP	X	X								
Convert from UNE-P to UNE loop without LNP	X		X	X						
Moves (outside)	X		X							
Disconnect (full)	X		X	X						
Convert from line sharing arrangement to UNE-loop		X	X							

Table 20-2: Resale

Basic Scenario	Res. POTS	Bus. POTS	Centrex	Private Line	PBX
Migration from Qwest "as is"	X	X		X	X
Migration from Qwest "as specified"	X	X	X		
CLEC to CLEC migration	X	X			
New customer	X	X	X		
Add lines (L)/trunks (T)/circuits (C)		X L	X L		X T

Basic Scenario	Res. POTS	Bus. POTS	Centrex	Private Line	PBX
Feature changes to existing customer	X	X	X		
Telephone number change	X				
Directory change	X				
Moves	X	X	X		
Suspend/restore service	X	X			
Disconnect (full and partial)	X	X			
PIC/LPIC changes	X	X			X

Table 20-3: UNE-P

Basic Scenario	Res. POTS	Bus. POTS
Migration from Qwest "as specified"	X	X
Migrate from CLEC to CLEC	X	
New customer	X	X
Add lines (L)/trunks (T)/ circuits (C)	X (L)	X (L)
Feature changes to existing customer	X	X
Telephone number change	X	X
Directory change	X	X
Full and partial migration with DL changes	X	X
Convert from Resale products to UNE-P products	X	X
Establish new user with vanity TN		X
Suspend/restore service	X	X
Disconnect (full and partial)		X
Change PIC/LPIC	X	X
Migrate service to a line splitting arrangement	X	

2.3 Test Targets & Measures

The test targets were the completeness, accuracy, and timeliness of bills produced by Qwest billing systems. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 20-4: Test Target Cross Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Maintain Bill Balance	Carry Balance Forward	Accuracy of bill balance	20-1-3, 20-2-7 – 20-2-12
Verify Billing Accounts	Verify Billing Accounts	Completeness and accuracy of data	20-1-1 – 20-1-3, 20-3-1 – 20-3-3
Bills and Delivery	Verify Recurring Charges	Completeness and accuracy of data	20-2-1 – 20-2-3, 20-3-3
	Verify Non-recurring Charges	Completeness and accuracy of data	20-2-4 – 20-2-6, 20-3-3
	Verify Fractional Charges	Completeness and accuracy of data	20-2-1 – 20-2-3 20-2-13 – 20-2-15, 20-3-3
	Verify Usage Charges	Completeness and accuracy of data	20-2-16 – 20-2-20, 20-3-2
	Verify Discounts	Completeness and accuracy of data	20-2-1 – 20-2-6 20-2-13 – 20-2-15, 20-3-3
	Verify Adjustments (Debits and Credits) ¹⁴⁹	Completeness and accuracy of data	20-2-1 – 20-2-3 20-2-13 – 20-2-15, 20-3-3
	Verify Late Charges ¹⁵⁰	Completeness and accuracy of data	Not applicable
	Receive Bill Copy	Timeliness of media delivery	20-3-4

2.4 Evaluation Methods

KPMG Consulting reviewed Qwest's documentation to gather information related to bill structure, content, Resale bill elements, UNE bill elements and UNE-P bill elements for each of the relevant bill types. In addition, KPMG Consulting conducted meetings with Qwest Subject Matter Experts (SMEs) to review bill format layouts, and to determine the applicable rate elements for various services.

KPMG Consulting selected a subset of Resale, UNE, and UNE-P product and service offerings for evaluation, based on the requirements documented in the MTP. The products and services selected were representative of variations in the CRIS billing system relevant to the types of charges to be evaluated, and reported on in Table 20.5. Using a subset of test cases from the

¹⁴⁹ Debits and Credits refer to the Other Charges and Credits assessed on the Test CLEC bills as a result of service order activity.

¹⁵⁰ Due to constraints of the test, this was not evaluated. Billing adjustments for the Test CLEC bills were adjusted via a payment package sent to Qwest on a monthly basis.

MTP, Appendix D, KPMG Consulting constructed a detailed test plan and bill validation procedures.

Expected results from test order activity were developed based on data from Local Service Requests (LSRs), Provisioning Completion Notices, Customer Service Records (CSRs), tariff information, and Daily Usage File (DUF) records. The verification of billed amounts considered prices charged based on Qwest Tariffs, Qwest P-CLEC Interconnection Agreements, and Statements of Generally Available Terms (SGATs), as appropriate. Expected results for usage charges were developed using data from DUF records, created as a result of test calls made during the course of the Billing Usage Functional Evaluation (Test 19). Expected results were defined for each test case based on the policies, business rules, and rate structure specified in Qwest documentation and procedures.

2.5 Analysis Methods

Expected results were compared to bills produced by Qwest to verify that charges were appropriately and accurately billed.

Validation procedures included an examination of recurring and non-recurring charges, pro-rata calculations, service establishment and disconnection dates. Bills with service order activity specific to full and partial migration test case activity were also reviewed to verify that billing on the retail end user bill ceased as of the date of migration. KPMG Consulting also examined bills that contained usage charges for billable messages to verify the accuracy of the usage billing components, rates, and quantities. Bill validation was conducted over multiple bill periods from May 2001 to January 2002. Charges were examined for Resale, UNE, and UNE-P billing.

Bill formats were reviewed to verify that required sections such as the header section, other charges and credits section, summary, and sub-account detail sections appeared on the appropriate bill. Within these sections, billing data such as balances brought forward, new charges, total amount due, due date for new charges, previous balance, payment coupon, and the detail of subscriber accounts and associated amounts were validated. The CRIS Resale, UNE, and UNE-P bill format types were examined for consistency with Qwest's bill format specifications, at the Master Account and Sub-account Levels.

KPMG Consulting, acting in the role of the P-CLEC for this evaluation, called the ISC Billing Help Desk for clarification regarding products and services that appeared on P-CLEC bills. Calls made to the ISC Billing Help Desk included questions regarding P-CLEC USOC rates, discounts applied to rates appearing on the P-CLEC bills, pro-rata calculations, and credits. Disputes involving incorrect rates, charges, and other discrepancies were not referred to the ISC Billing Help Desk. These disputes were raised through the Observation and Exception process.

Timeliness of carrier bill delivery, as defined by Qwest's Service Performance Indicator version 3, BI-2, was measured during this evaluation. According to the metric, the timeliness with which Qwest delivers industry standard electronically transmitted bills to CLECs is measured by the percent of bills delivered within 10 calendar days. KPMG Consulting's evaluation of timeliness of electronic carrier bill delivery via the EDI-811 delivery process was based on the time-stamps

recorded by Hewlett Packard Consulting (HPC) during the receipt of the files containing the carrier bills.

A subset of the electronic carrier bills was validated for content accuracy. This was accomplished by reviewing EDI-811 files received and translated by HPC, and then transmitted, in text file format, to KPMG Consulting. The evaluation consisted of reviewing randomly selected accounts, and comparing the charges reflected on the electronic bill with the charges reflected on the corresponding paper bill.

Billing accuracy, as defined by Qwest's Service Performance Indicator version 3 BI-3A, was measured during this evaluation. According to that performance measure, billing accuracy is measured by the percent of billed revenue adjusted due to errors. KPMG Consulting calculated the billing accuracy using the formula:

$$\sum (\text{Revenue billed without error}) / (\text{Total billed revenue in reporting period}) \times 100$$

Billing completeness, as defined by Qwest's Service Performance Indicator version 3 BI-4, was measured during this evaluation. According to that performance measure, billing completeness is measured by the percent of non-recurring and recurring charges associated with completed service orders which appear on the correct bill, defined as the next available bill. KPMG Consulting calculated the billing completeness using the formula:

$$\sum (\text{Count of service orders with non-recurring and recurring charges associated with completed service orders on the bills, billed on the correct bill}) / (\text{Total count of service orders with non-recurring and recurring charges associated with completed service orders on the bill}) \times 100.$$

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 20-5: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
20-1-1	Major bill sections appear on paper-formatted bills per Qwest documentation.	Satisfied	In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of major bill sections present on bills. Of 47 Summary Accounts examined, 47 (100%) of the summary accounts contained:

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Common Heading • Account Summary • Summary of Accounts.
20-1-2	Appropriate sub-accounts appear under the correct summary account on paper-formatted bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the appropriate sub-accounts appear under the correct summary account.</p> <p>Of 47 Summary Accounts examined, which were comprised of 420 sub-accounts (132 Resale, 141 UNE, and 147 UNE-P), 100% of the sub-accounts were summarized and appeared correctly.</p>
20-1-3	Appropriate data appears in each of the major bill sections on paper-formatted bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the appropriate data appears in each of the major bill sections.</p> <p>Of 47 Summary Accounts examined, 47 (100%) Summary Accounts contained the appropriate data in the major bill sections.</p>
20-2-1	Recurring rates on Resale bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Recurring rates on Resale bills are consistent with applicable tariffs and/or contract rates.</p> <p>KPMG consulting identified 33 incorrect recurring charges on bills received during the evaluation period. As a result of these deficiencies, KPMG Consulting issued Exceptions 3008 and 3069.</p> <p>Qwest's corrective actions to address the issues identified in Exceptions 3008 and 3069 were:</p> <ul style="list-style-type: none"> • Implementation of Cost Docket No. UT-96-0369 reflecting a 14.74% discount rate • Correction of Oregon Rate table to reflect the correct resale discount rates • Implementation of a fix to the Interconnect Mediated Access System (IMA) Graphical User Interface (GUI) to provide accurate zone information • Correction of Retail tariff rate table to reflect the correct discount rate for the state of New Mexico. <p>Four retests were conducted in the months of August, September, October, November, and</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			December 2001. KPMG Consulting retested the 33 instances and found all to be correctly billed. At the end of the evaluation period, 1,335 (100%) of the recurring charges examined were correctly billed. See Exceptions 3008 and 3069 for additional information on these issues. Exceptions 3008 and 3069 are closed.
20-2-2	Recurring rates on UNE bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Recurring rates on UNE bills are consistent with applicable tariffs and/or contract rates.</p> <p>Of 394 recurring charges examined, 394 (100%) were correct.</p>
20-2-3	Recurring rates on UNE-P bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Recurring rates on UNE-P bills are consistent with applicable tariffs and/or contract rates.</p> <p>KPMG Consulting identified 81 incorrect recurring charges on bills received during the evaluation period. As a result of these deficiencies, KPMG Consulting issued Exception 3034.</p> <p>To address the issues described in Exception 3034, Qwest made corrections to the CRIS rate tables for White Page Directory Listings, including rate updates for non-published and non-listed services.</p> <p>KPMG Consulting executed retest activities, as follows:</p> <ul style="list-style-type: none"> • For the Central Region CRIS table corrections completed by Qwest in September 2001; the retest activities were completed by KPMG Consulting in October 2001 • For the Eastern Region CRIS table corrections completed by Qwest in October 2001; the retest activities were completed by KPMG Consulting in November 2001 • For the Western Region CRIS table corrections completed by Qwest in November 2001; the retest activities were completed by KPMG Consulting in November 2001. <p>KPMG Consulting retested the 81 instances</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			and found all to be correctly billed. At the end of the evaluation period, 625 (100%) of the recurring charges examined were correctly billed. See Exception 3034 for additional information on these issues. Exception 3034 is closed.
20-2-4	Non-recurring rates on Resale bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Non-recurring rates on Resale bills are consistent with applicable tariffs and/or contract rates.</p> <p>KPMG Consulting identified seven incorrect non-recurring charges on bills received during the evaluation period. As a result of these deficiencies, KPMG Consulting issued Exceptions 3008 and 3069.</p> <p>Qwest corrective actions related to the issues described in Exceptions 3008 and 3069 were:</p> <ul style="list-style-type: none"> • Implementation of Cost Docket No. UT-96-0369 reflecting a 14.74% discount rate • Correction of Oregon Rate table to reflect applicable resale discount rates • Implementation of a fix to the Interconnect Mediated Access System (IMA) Graphical User Interface (GUI) to provide accurate zone information • Correction of Rate table to reflect the applicable discount rate for the state of New Mexico. <p>Retest activities were conducted in August, September, October, November, and December 2001. KPMG Consulting retested the seven instances and found all to be correctly billed. At the end of the evaluation period, 203 (100%) of the non-recurring charges examined were correctly billed. See Exceptions 3008 and 3069 for additional information on these issues. Exceptions 3008 and 3069 are closed.</p>
20-2-5	Non-recurring rates on UNE bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Non-recurring rates on UNE bills are consistent with applicable tariffs and/or contract rates.</p> <p>KPMG Consulting identified seven incorrect non-recurring charges on bills received during the evaluation period. As a result of</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>these deficiencies, KPMG Consulting issued Exceptions 3079 and 3088.</p> <p>Qwest corrective actions related to the issues described in Exceptions 3079 and 3088 were:</p> <ul style="list-style-type: none"> • Issued a Multi-Channel Communicator containing a new dark fiber reservation form, and updated the internal unbundled dark fiber documentation related to the new dark fiber form and process • Corrected the Central Region CRIS rate table for Montana in September 2001. <p>Retest activities were conducted in October and November 2001 and January 2002. KPMG Consulting retested the seven instances and found all to be correctly billed. At the end of the evaluation period, 172 (100%) of the non-recurring charges examined were correctly billed. See Exceptions 3008 and 3069 for additional information on these issues. Exceptions 3008 and 3069 are closed.</p>
20-2-6	Non-recurring rates on UNE-P bills are consistent with applicable tariffs and/or contract rates.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Non-recurring rates on UNE-P bills are consistent with applicable tariffs and/or contract rates.</p> <p>KPMG Consulting identified 29 incorrect non-recurring charges on bills received during the evaluation period. As a result of these deficiencies, KPMG Consulting issued Exception 3034.</p> <p>Qwest corrective actions related to the issues described in Exception 3034 were:</p> <ul style="list-style-type: none"> • Qwest's correction of CRIS rate tables in the Central Region for White Page Directory Listings, including rate updates for non-published and non-listed services, in September 2001 was retested by KPMG Consulting in October 2001 • Eastern Region CRIS table corrections completed by Qwest in October 2001 were retested by KPMG Consulting in November 2001 • Western Region CRIS table corrections completed by Qwest in November

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>2001 were retested by KPMG Consulting in November 2001.</p> <p>KPMG Consulting retested the 29 instances and found all to be correctly billed. At the end of the evaluation period, 192 (100%) of the recurring charges examined were correctly billed. See Exception 3034 for additional information on these issues. Exception 3034 is closed.</p>
20-2-7	Totals reflect accurate sums on Resale bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Resale bills' totals reflect accurate sums.</p> <p>Of 132 Resale sub-account bills examined, 132 (100%) contained accurate sums of the charges/credits.</p>
20-2-8	Totals reflect accurate sums on UNE bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the UNE bills' totals reflect accurate sums.</p> <p>Of 141 UNE sub-account bills examined, 141 (100%) contained accurate sums of the charges/credits.</p>
20-2-9	Totals reflect accurate sums on UNE-P bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the UNE-P bills' totals reflect accurate sums.</p> <p>Of 147 UNE-P sub-account bills examined, 147 (100%) contained accurate sums of the charges/credits.</p>
20-2-10	Cross-totals are correct on Resale bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Resale bills' cross-totals are correct.</p> <p>Of 132 Resale sub-accounts examined, 132 (100%) of the sub account monthly service charges were carried over to the summary balance section of the correct Billing Account Number Summary Bill.</p>
20-2-11	Cross-totals are correct UNE bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the UNE bills' cross-totals are correct.</p> <p>Of 141 UNE sub-accounts examined, 141 (100%) of the sub account monthly service charges were carried over to the summary balance section of the correct Billing</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Account Number Summary Bill.
20-2-12	Cross-totals are correct on UNE-P bills.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the UNE-P bills' cross-totals are correct.</p> <p>Of 147 UNE-P sub-accounts examined, 147 (100%) of the sub account monthly service charges were carried over to the summary balance section of the correct Billing Account Number Summary Bill.</p>
20-2-13	Calculations on Resale bills correspond with tariff and/or published definitions.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of calculations on Resale bills are consistent with applicable tariffs and/or contract rates.</p> <p>During the evaluation period, KPMG Consulting identified instances in which the business rule governing the calculation of fractional charges was applied differently in the Western and Central Regions for months that have thirty-one days.</p> <p>Qwest modified CLEC documentation that defines the Regional rules used to calculate fractional charges. This documentation is available on the following Web site: http://www.qwest.com/wholesale/clecs/cris.html#billformats.</p> <p>Of 1,226 pro-rated charges examined, 1,226 (100%) were correct.</p>
20-2-14	Calculations on UNE bills correspond with tariff and/or published definitions.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of calculations on UNE bills are consistent with applicable tariffs and/or contract rates.</p> <p>During the evaluation period, KPMG Consulting identified instances in which the business rule governing the calculation of fractional charges is applied differently in the Western and Central Regions for months that have thirty-one days.</p> <p>Qwest modified CLEC documentation that defines the Regional rules used to calculate fractional charges. This documentation is available on the following Web site: http://www.qwest.com/wholesale/clecs/cris.html#billformats.</p> <p>Of 376 pro-rated charges examined, 376 (100%) were correct.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
20-2-15	Calculations on UNE-P bills correspond with tariff and/or published definitions.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of calculations on UNE-P bills are consistent with applicable tariffs and/or contract rates.</p> <p>During the evaluation period, KPMG Consulting identified instances in which the business rule governing the calculation of fractional charges is applied differently in the Western and Central Regions for months that have thirty-one days.</p> <p>Qwest modified CLEC documentation that defines the Regional rules used to calculate fractional charges. This documentation is available on the following Web site: http://www.qwest.com/wholesale/clecs/cris.html#billformats.</p> <p>Of 583 pro-rated charges examined, 583 (100%) were correct.</p>
20-2-16	Unbundled Minutes of Use (MOUs) usage charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Unbundled Minutes of Use (MOUs) usage charges are billed in accordance with Qwest business rules, tariffs, and/or contractual terms.</p> <p>During initial testing, KPMG Consulting found that Qwest did not bill local originating minutes for Washington, Wyoming, Montana, New Mexico, Utah, and Minnesota, and applied incorrect rates for local originating minutes in Colorado, Nebraska, and Oregon. As a result, KPMG Consulting issued Exception 3051.</p> <p>KPMG Consulting reviewed 94 unbundled MOU charges, and found discrepancies in the quantities in 65 instances. Of these, 45 (47.9%) resulted in incorrect charges. As a result, KPMG Consulting issued Exception 3080.</p> <p>Following system changes, and rate table corrections by Qwest, KPMG Consulting conducted additional testing, and found incorrect rates applied for minutes of use in Nebraska, Montana, Iowa, and Minnesota. KPMG Consulting amended Exception 3051.</p> <p>Additionally, KPMG Consulting reviewed 34 unbundled MOU charges, and found discrepancies in the quantities in 18</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>instances, of which 16 (47.1%) resulted in incorrect charges. KPMG Consulting subsequently amended Exception 3080.</p> <p>KPMG Consulting conducted additional retesting following additional system changes and rate table corrections by Qwest.</p> <p>KPMG found all unbundled minutes of use rates to be correct. As a result, Exception 3051 is closed. See Exception 3051 for additional information on this issue.</p> <p>KPMG Consulting reviewed 28 unbundled MOU charges and found discrepancies in the quantities in 19, all of which (67.9%) resulted in incorrect charges. As a result, KPMG Consulting again amended Exception 3080.</p> <p>Qwest provided a detailed Exception response, which explained that the Central Region accounts were able to be reconciled to the DUF received.</p> <p>Based on this information, KPMG Consulting revised the discrepancies to 13 instances (46.4%) that resulted in incorrect charges.</p> <p>Following further system changes by Qwest, KPMG Consulting conducted additional testing, and found that 100% of 24 unbundled MOU charges reviewed were correctly billed. Exception 3080 is closed. See Exception 3080 for additional information on this issue.</p>
20-2-17	Unbundled transport usage charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Unbundled transport usage charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.</p> <p>During initial testing, KPMG Consulting found that Qwest did not bill shared transport minutes for Nebraska, Wyoming, South Dakota, Montana, New Mexico, Utah, Iowa, Minnesota, and North Dakota, and billed incorrect rates for shared transport minutes in Colorado and Oregon. As a result, KPMG Consulting issued Exception 3051.</p> <p>Following system changes and rate table corrections by Qwest, KPMG Consulting conducted additional testing, and found that</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Qwest did not bill shared transport minutes in Colorado, Nebraska, Washington, and South Dakota and applied incorrect rates for Montana. KPMG Consulting amended Exception 3051.</p> <p>KPMG Consulting conducted additional retesting following further system changes and rate table updates by Qwest. KPMG Consulting reviewed 34 shared transport charges, and found three cases (8.8%) in Iowa, which resulted in incorrect charges. As a result, KPMG Consulting amended Exception 3051.</p> <p>KPMG Consulting conducted additional retesting following Eastern Region system changes by Qwest, and found that the Iowa issue was corrected.</p> <p>As a result, Exception 3051 is closed. See Exception 3051 for additional information on this issue.</p>
20-2-18	Unbundled Operator Surcharges and special usage-related charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of the Unbundled Operator Surcharges and special usage-related charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.</p> <p>During initial testing, KPMG Consulting found that Qwest improperly discounted certain types of operator-handled (including directory assistance) and special usage (class feature) calls in Colorado, Nebraska, Idaho, Washington, Wyoming, Oregon, South Dakota, Montana, New Mexico, Utah, Iowa, and Minnesota. As a result, KPMG Consulting issued Exception 3049.</p> <p>KPMG Consulting also reviewed 1,150 operator and special usage charges, and found that 151 charges (13.1%) were missing from July 2001 invoices. As a result, KPMG Consulting issued Exception 3047.</p> <p>Qwest provided a detailed response to Exception 3047 in which it explained that the majority of the missing calls appeared on August 2001 invoices, and detailed several necessary system fixes.</p> <p>Following system changes and rate table updates by Qwest, KPMG Consulting conducted additional testing, and found that Qwest improperly discounted calls for</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Colorado, Washington, South Dakota, Utah, and Minnesota. KPMG Consulting amended Exception 3049.</p> <p>KPMG Consulting also reviewed 692 operator and special usage charges, and found that 61 charges (8.8%) were missing from the November 2001 invoices. As a result, KPMG Consulting amended Exception 3047.</p> <p>KPMG Consulting conducted additional retesting, following further system changes and rate table corrections by Qwest. KPMG Consulting found that Qwest improperly discounted calls for Oregon, Washington, South Dakota, and Idaho. Additionally, calls in Idaho, New Mexico, Utah, and Colorado were under-billing, with charges of \$0.01 per call reflected on the bill. Based on this result, KPMG Consulting again amended Exception 3049.</p> <p>KPMG Consulting subsequently reviewed 755 operator and special usage charges, and found that 48 charges (6.4%) were missing from January 2002 invoices. KPMG Consulting again amended Exception 3047, based on this result.</p> <p>Following further Qwest system changes and rate table corrections, KPMG Consulting conducted additional testing and found that all operator and special usage charges were correctly billed.</p> <p>Exception 3049 is closed. See Exception 3049 for additional information on this issue.</p> <p>KPMG Consulting reviewed 960 operator and special usage charges and found that all expected charges were reflected on February 2002 invoices. Exception 3047 is closed. See Exception 3047 for additional information on this issue.</p>
20-2-19	Resale usage is billed in accordance with Qwest business rules, tariffs and/or contractual terms.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of Resale usage is billed in accordance with Qwest business rules, tariffs and/or contractual terms.</p> <p>During initial testing, KPMG Consulting reviewed 26 local measured MOU charges, and found 13 (50%) to be incorrect. As a result, KPMG Consulting issued Exception</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>3081.</p> <p>Following system changes by Qwest, KPMG Consulting conducted additional testing and reviewed two local measured accounts MOU charges and found both to be incorrect. KPMG Consulting amended Exception 3081.</p> <p>KPMG Consulting conducted additional retesting, following further system changes by Qwest. KPMG Consulting again reviewed two local measured minutes of use charges and found a minor discrepancy in the minutes of use for direct-dialed local calls on measured service lines. This resulted in 96.4% accurate billing of these calls. Exception 3081 is closed. See Exception 3081 for additional information on this issue.</p> <p>Additionally, KPMG Consulting reviewed nine direct-dialed toll charges, and found 100% to be billed correctly.</p>
20-2-20	Resale Operator Surcharges and special usage-related charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.	Satisfied	<p>In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of Resale Operator Surcharges and special usage-related charges are billed in accordance with Qwest business rules, tariffs and/or contractual terms.</p> <p>During initial testing, KPMG Consulting found that Qwest improperly discounted various types of operator-handled (including directory assistance) and special usage (class feature) calls in Washington, Wyoming, Minnesota, Nebraska, Montana, Utah, New Mexico, Iowa, North Dakota, South Dakota, and Oregon. As a result, KPMG Consulting issued Exception 3048.</p> <p>KPMG Consulting also reviewed 814 operator and special usage charges, and found that 41 charges (5%) were missing from July 2001 invoices. As a result, KPMG Consulting issued Exception 3050.</p> <p>Qwest provided a detailed response to Exception 3050 in which it explained that the majority of the missing calls appeared on August 2001 invoices, and detailed several necessary system fixes.</p> <p>Following system changes and rate table corrections by Qwest, KPMG Consulting conducted additional testing, and found that Qwest improperly discounted calls for Colorado, Washington, South Dakota, Utah,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>and Minnesota. KPMG Consulting amended Exception 3048.</p> <p>KPMG Consulting also reviewed 432 operator and special usage charges, and found that 13 charges (3%) were missing from the November 2001 invoice for a single account. As a result, KPMG Consulting amended Exception 3050.</p> <p>KPMG Consulting conducted additional retesting, following further system changes and rate table corrections by Qwest. KPMG Consulting found that Qwest again improperly discounted calls for Washington. KPMG Consulting further amended Exception 3048.</p> <p>KPMG Consulting reviewed 606 operator and special usage charges, and found that 51 charges (8.4%) were missing from the January 2002 invoice for a single account. KPMG Consulting again amended Exception 3050 based on this result.</p> <p>Following further Qwest system changes and rate table corrections, KPMG Consulting conducted additional testing, and found that all operator and special usage charges were correctly billed.</p> <p>Exception 3048 is closed. See Exception 3048 for additional information on this issue.</p> <p>KPMG Consulting reviewed 716 operator and special usage charges, and found all expected charges reflected on February and March 2002 invoices. Exception 3050 is closed. See Exception 3050 for additional information on this issue.</p>
20-3-1	Wholesale bill completeness as defined by PID BI-4A, is in parity with retail bill accuracy.	Satisfied	<p>The PID-defined standard for PID BI-4A is parity with Qwest retail bills.</p> <p>During the evaluation period of May 2001, KPMG Consulting examined 69 service order transactions. Of these, 38 (55.1%) appeared on the correct bill. KPMG Consulting issued Exception 3003 to address the fact that 31 service order transactions did not appear on the correct bill.</p> <p>Qwest corrective actions related to Exception 3003 were:</p> <ul style="list-style-type: none"> • Implemented system enhancements to prevent common typing errors

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Implemented enhancements to reduce error volume (examples can be found in Exception 3002) • Reviewed the basic service order checklist with center employees in May 2001, and conducted employee re-training as required • Implemented daily service order quality reviews. <p>During the subsequent evaluation period of June 2001 to January 2002, KPMG Consulting examined 351 service order transactions. Of these, 350 (99.7%) appeared on the correct bill. See Exception 3003 for additional information on this issue. Exception 3003 is closed.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
20-3-2	P-CLEC bills reflect timely call event activity.	Satisfied	In the absence of a PID-defined standard, KPMG Consulting assigned a benchmark of 95% of all call event activity is reflected within two billing cycles. KPMG Consulting's analysis of Resale and UNE-P bills revealed that 97.4% of call event activity was reflected within two billing cycles.
20-3-3	Wholesale bill accuracy as defined by PID BI-3A, is in parity with retail bill accuracy.	Satisfied	The PID-defined standard for PID BI-3A Billing Accuracy ¹⁵¹ is parity with Qwest retail bills. Of 420 bills reviewed over the period May 2001 through January 2002, 95.2% of total revenue was billed without error, compared to Qwest's retail performance of 99%. As a result of identified deficiencies, KPMG Consulting issued Exceptions 3008, 3034, 3069, 3079, and 3088. Following completion of all retest activity, KPMG Consulting determined that 100% of revenue was billed without error. KPMG Consulting's retest activities were conducted in parallel with those described in Test Cross-References 20-2-1 through 20-2-6, and 20-2-13 through 20-2-21 of this table. At the completion of retest activity, 100% of total revenue was billed without error. See Exceptions 3008, 3034, 3069, 3079, and 3088 for additional information. Exceptions 3008, 3034, 3079, and 3088 are closed.
20-3-4	Wholesale bills are delivered within 10 calendar days, as defined by PID BI-2.	Satisfied	The PID-defined standard for PID BI-2 Bill Delivery Timeliness ¹⁵² is parity by design. For the period May 2001 through December 2001, 47 BANs were received electronically. Of these, 47 (100%) were received within 10 calendar days.

¹⁵¹ BI-3A - UNEs and Resale – Evaluates the accuracy with which Qwest bills CLECs by measuring the billed revenue minus amounts adjusted from bills due to errors.

¹⁵² BI-2 Measures the percentage of industry standard electronically transmitted bills that are delivered within ten calendar days, based on the number of days between the bill date and bill delivery.

20.7 Test Results: Bill Production and Distribution Process Evaluation (Test 20.7)

1.0 Description

The Bill Production and Distribution Process Evaluation was an operational analysis of the processes employed by Qwest to produce and distribute timely and accurate wholesale bills. The objective of the Bill Production and Distribution Evaluation was to determine whether the processes and procedures employed by Qwest to produce and distribute wholesale bills are sufficient to ensure that charges for products and services are accurately billed and delivered in a timely manner.

2.0 Method

This section summarizes the test methodology.

2.1 Business Process Description

Wholesale bills are produced by two primary billing systems, the Integrated Access Billing System (IABS) and the Customer Record Information System (CRIS). The IABS billing system is used to bill interconnect products, collocation, DS1 message trunk ports, unbundled dedicated interoffice transport, and Frame Relay Service. The CRIS billing system principally produces bills for UNE Loops, UNE-P products, Resale products, and usage charges.

Bill production and distribution begins with the collection of customer data, including service order activity and usage data. Charges are calculated, payments and adjustments are applied, and bills are formatted according to a customer-selected format(s). Bills are then mailed or transmitted to the customer.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were the processes and procedures employed by Qwest to support the issuance of accurate, complete, and timely invoices. Processes that enable a CLEC to request and obtain copies of prior period bills were also the subjects of evaluation.

Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 20.7-1: Test Target Cross Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Balance Cycle	Define Balancing and Reconciliation Procedures	Completeness and effectiveness of bill balancing and reconciliation procedures	20.7-1-1 – 20.7-1-7, 20.7-2-1 – 20.7-2-4, 20.7-3-3 – 20.7-3-4
	Produce Control Reports	Completeness and accuracy in generation of control elements	20.7-1-3 – 20.7-1-7, 20.7-2-1 – 20.7-2-4
	Release Cycle	Compliance to balancing and reconciliation procedures	20.7-1-1 – 20.7-1-7
Deliver Bill	Delivery of Bill Media	Timeliness ¹⁵³ and controls of media delivery	20.7-1-8, 20.7-1-11 – 20.7-1-12, 20.7-2-5, 20.7-3-1 – 20.7-3-2
Maintain Bill History	Maintain Billing Information	Timeliness ¹⁵³ and controllability of billing information	20.7-1-9 – 20.7-1-10
	Access Billing Information	Accessibility and availability of billing information	20.7-1-9 – 20.7-1-10
Request Resend	Request Resend	Timeliness ¹⁵³ and accuracy of delivery	20.7-1-10

2.4 Evaluation Methods

Information about the processes used in the production, distribution, and resending of bills was obtained through a series of interviews with Qwest Subject Matter Experts (SMEs), as well as through inspections of relevant Qwest internal and external documentation. Processes, operational methods and procedures, organizational charts, and supporting documentation were evaluated to determine whether Qwest's procedures were sufficient to support the production and distribution of accurate, complete and timely invoices and resends of prior period bills.

2.5 Analysis Methods

The analysis for the Bill Production and Distribution Process Evaluation focused on the accuracy with which rates and charges are applied, the completeness with which inputs to the bill are processed, and the timeliness with which inputs to the bill are processed and delivered to customers.

The Billing Production and Distribution Process Evaluation included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided the framework and guidelines for the Billing Production and

¹⁵³ Timeliness is not intended to imply that KPMG Consulting submitted transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the measure was established to evaluate whether or not controls are in place to suggest that bills are delivered to the customer within a specified timeframe, and billing information is stored and maintained for a specified period of time.

Distribution Process Evaluation. Using data obtained through interviews with Qwest personnel, as well as reviews of Qwest documentation, KPMG Consulting compared the information gathered to a pre-determined framework of evaluation criteria to execute the test.

During the course of our work, KPMG Consulting found that, where noted in Section 3.1, "Results & Analysis," certain of Qwest's control processes are embedded in automated systems, rather than in manual processes. In these cases, for select evaluation criteria, it was not practical for KPMG Consulting to directly evaluate the relevant processes, or observe Qwest's adherence to them, using traditional operational analysis techniques. In these cases, KPMG Consulting examined the outputs of such automated systems during execution of transaction testing in order to assign a 'satisfied' or 'not satisfied' result to the relevant criteria.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 20.7-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
20.7-1-1	Scope of the bill cycle balancing services addresses balancing requirements.	Satisfied	Interviews with Qwest SMEs in the organizations that support wholesale billing indicated that the collective scope of these organizations cover bill cycle balancing requirements, including: <ul style="list-style-type: none"> • Detecting errors • Ensuring that usage is accounted for and correctly applied • Ensuring that service order charges are accurately applied • Ensuring that payments and adjustments are applied. Supporting documentation confirming that balancing requirements are addressed includes, but is not limited to, Bill Validation and Payment Processing procedures available on the Info Buddy system ¹⁵⁴ , and the IABS Systems Operation Guide.
20.7-1-2	Cycle balancing responsibilities are defined.	Satisfied	Responsibilities for cycle balancing are defined and assigned within Qwest as

¹⁵⁴ The Info Buddy system is a Qwest internal Web site on which methods and procedures reside, are maintained, and can be referenced by Qwest employees.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>follows:</p> <ul style="list-style-type: none"> • The Billing Applications Operations organization and the IABS Core Team are responsible for monitoring the status and progress of production billing systems, including their inputs and their outputs. Tracking reports are used to monitor the status of bill production inputs and outputs. These reports include, but are not limited to: <ul style="list-style-type: none"> - Service Order Tracking Report - Database Services Usage Errors Report - Daily Billed Report. • ISC/Billing and Collection Centers are responsible for resolving errors resulting from out-of-balance conditions caused by service order errors. <p>IABS Systems Operations Guide and Qwest's Info Buddy Web site define the responsibilities and activities associated with cycle balancing.</p>
20.7-1-3	Cycle balancing procedures exist to identify and resolve out-of-balance conditions.	Satisfied	<p>Procedures for cycle balancing are defined in Qwest documents, such as the IABS Systems Operations Guide. Others are embedded in the CRIS and IABS billing systems. Cycle balancing procedures within IABS and CRIS include, but are not limited to:</p> <ul style="list-style-type: none"> • "Hold Codes" identify potential out-of-balance conditions in IABS that require intervention and resolution by an SDC, or by the Information Technology group. Further, if a "Hold Code" is triggered, a "stop" status will be placed on the account and the bill will be "held" • Threshold limits are established to aid in identifying conditions requiring management intervention • ABEND¹⁵⁵ codes, in CRIS, identify potential out-of-balance issues. If an out-of-balance event occurs, the Billing

¹⁵⁵ When a system error occurs in the CRIS billing system (i.e., an embedded threshold is surpassed or a data file does not pass embedded system edits), a system flag or ABEND (Abnormal Ending) code is triggered to alert those monitoring the systems and applications that a potential issue needs to be resolved.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Applications Operations group is notified and works to resolve the issue.</p> <p>KPMG Consulting’s review of supporting documentation, which included sample data, such as a Tally Control report, the IABS Reports Analysis Guide, a StopX37 ABENDS Report, and a list of ABEND codes, confirmed the existence of cycle balancing controls.</p> <p>KPMG Consulting’s interviews with Qwest IABS Billing Process, IABS Software Development, and CRIS Billing Applications Operations personnel revealed that Qwest’s activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Functional Bill Evaluation (Test 20), to determine the effectiveness of Qwest’s cycle balancing procedures to identify and resolve out-of-balance conditions.</p> <p>The outputs of these systems suggest that Qwest’s cycle balancing processes to identify and to resolve out-of-balance conditions are adequate.</p> <p>Please see KPMG Consulting’s Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest’s automated processes.</p>
20.7-1-4	Process includes reasonability checks to identify errors not susceptible to pre-determined balancing procedures.	Unable to Determine	<p>Qwest’s Billing SDCs are responsible for validating bills to identify errors not susceptible to pre-determined balancing procedures. The process used for bill validation is documented in Info Buddy, Qwest’s internal reference system, and are summarized below:</p> <ul style="list-style-type: none"> • On a monthly basis, SDCs validate bills for service order activity that occurred during the month to verify that Summary Accounts and Sub Accounts contain proper billing information

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • All new Sub Accounts are validated for accuracy • Corrections or adjustments are made to the accounts, as warranted. <p>Confirmation of the existence and assignment of this responsibility is evidenced in Qwest's SDC job description, process flow documentation, and in methods and procedures documentation that resides in Qwest's Info Buddy system.</p> <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. However, since this process is performed only when events require such action to be taken, and KPMG Consulting observed none of those such events, KPMG Consulting was unable to observe and determine whether the process is sufficiently robust, or whether Qwest adheres to the process.</p> <p>Therefore, KPMG Consulting examined the outputs of the billing systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest's processes to identify errors not susceptible to pre-determined balancing procedures.</p> <p>Initial testing found that the outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3008 – Qwest applied incorrect discount rates to wholesale bills for Oregon and Washington • 3034 – Qwest applied incorrect rates for the USOC NLT on wholesale bills for Oregon • 3048 – Qwest incorrectly applied discounts on Resale bills for a variety of call types • 3049 – Qwest incorrectly applied discounts on UNE-P bills for a variety of call types • 3051 – Qwest failed to correctly apply rates on UNE-P bills for local originating minutes of use and shared transport minutes of use, and, in some cases, did not bill one or both of these

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>rate elements</p> <ul style="list-style-type: none"> • 3069 – Documented rates for USOCs 1FB and 1FR are inconsistent with rates billed by Qwest. <p>These incorrect outputs suggested that Qwest’s processes to catch errors not susceptible to predetermined balancing procedures were inadequate.</p> <p>In response to these Exceptions, Qwest implemented related system changes. KPMG Consulting retested select components for which issues were identified. KPMG Consulting found that the issues described in Exceptions 3008, 3034, 3048, 3049, 3051, and 3069 are resolved, and closed these Exceptions. See Exceptions 3008, 3034, 3048, 3049, 3051, and 3069 for additional information on these issues.</p> <p>During retesting, KPMG Consulting experienced additional instances in which incorrect bills were received, and subsequently issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3080 – Qwest did not accurately bill local originating minutes of use on certain UNE-P accounts • 3081 – The local call count, total minutes of usage, and resulting charges on Resale bills created by Qwest were inaccurate • 3088 – Non-recurring installation charges were not billed at the rates listed on the Statements of Generally Agreed Upon Terms & Conditions (SGATs) for the states of Wyoming, Utah, and Montana. <p>Following additional retesting activities, KPMG Consulting found that the issues described in Exceptions 3080, 3081, and 3088 are resolved, and closed these Exceptions. See Exceptions 3080, 3081, and 3088 for additional information on these issues.</p> <p>KPMG Consulting’s repeated receipt of erroneous bills suggests that, while Qwest’s manual process to catch errors may be adequate, Qwest may not adhere to its defined process.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>During final retesting of bill accuracy, KPMG Consulting did receive correct bills. However, KPMG Consulting is not able to conclusively determine whether these bills are correct because of the bill creation process, or because of adherence to Qwest's defined post-production quality assurance processes. Therefore, KPMG Consulting must assign an Unable to Determine result for Qwest's adherence to its post-production quality assurance process.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-1-5	Process includes procedures to ensure that payments and adjustments are applied.	Unable to Determine	<p>Procedures exist to ensure that payments and adjustments are applied.</p> <p>Payments of IABS bills made by wholesale customers to Qwest are processed by the Centralized Mail Remittance (CMR) group, and include these process steps:</p> <ul style="list-style-type: none"> • IABS is updated daily to reflect payments that have been posted to accounts • Payments that cannot be properly identified are forwarded to the ISC/Billing and Collection Center for investigation by the SDCs. <p>Qwest's Regional Payment Services group enters CRIS bill payments into the Remittance Payments System (RPS).</p> <ul style="list-style-type: none"> • RPS feeds the CASH system, which processes and passes the payments and adjustments information to the CRIS billing system for application to the appropriate account • The Finance organization checks CRIS payments to ensure that payment and adjustment information in RPS is in balance with that recorded in the CASH system. <p>Payment and adjustment processing procedures are described in the Central, Eastern, and Western CRIS billing system Architectural Blueprints/Flowcharts, and in Qwest's Service Objectives documentation.</p> <p>KPMG Consulting's interviews with Qwest CRIS Billing Applications Operations</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>personnel, and documentation reviews revealed that Qwest’s activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques. KPMG Consulting is, therefore, unable to determine whether Qwest’s automated processes satisfy this evaluation criterion.</p> <p>Further, no KPMG Consulting transactions test was designed to make payments or generate claims for which adjustments would have been generated. As a result, KPMG Consulting was not able to evaluate transaction test outputs to determine the effectiveness of Qwest’s payment and adjustment application processes.</p>
20.7-1-6	Process includes procedures to ensure that service order activity is properly captured.	Satisfied	<p>Quality controls are in place to capture service orders that cannot be applied due to error conditions. These orders are “held,” or delayed, and are referred to the ISC/Billing and Collection Center for investigation.</p> <p>Orders on hold are tracked on reports such as the Service Order Tracking Report and the Service Orders Past Due Report. The IABS Reports Analysis Guide confirms that service orders that are on hold or delayed are tracked.</p> <p>The Interconnect Bill Validation (IBV) – CRIS – Wholesale documentation confirms that service orders that do not pass pre-set edits are also tracked in the SO1000 Exception Report. These edits are designed to capture discrepancies. For example, the discrepancy between the Field Identifiers (FIDs) found on the Local Service Requests (LSRs), i.e., Reseller ID (RSID) and Pre-Designated Interexchange Carrier (PIC), and the same FIDs on service orders resident in Qwest’s systems, are noted on this report. The order correction process is documented in Qwest’s Wholesale Info Buddy documentation.</p> <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of this process. However, since this process is</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>performed only when events require such action to be taken, and KPMG Consulting observed none of those such events, KPMG Consulting was unable to observe and determine whether the process is sufficiently robust, or whether Qwest adheres to the process.</p> <p>Therefore, KPMG Consulting examined the outputs of Qwest billing systems, using transaction-based testing in the Carrier Functional Bill Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that service order activity is properly captured.</p> <p>The outputs of these billing systems suggest that Qwest's processes to ensure that service order activity is properly captured are adequate.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's billing systems.</p>
20.7-1-7	Process includes procedures to ensure customer usage is properly captured and guided.	Satisfied	<p>The Message Processing Services (MPS) group is responsible for ensuring that all usage is correctly collected, processed, and submitted to the CRIS billing system. Automatic Message Accounting (AMA) usage records gathered from central offices are collected and transformed into Exchange Message Interface (EMI) usage standard records by the PP42 application. The PP42 application feeds the Toll application, which, in turn, rates and routes the usage to the appropriate billing account, and then feeds the CRIS billing system on the appointed bill processing day. Controls are embedded in the programs to ensure that all usage message data is accounted for as it is passed from the PP42 application to the Toll application to the CRIS billing system.</p> <p>All erred usage records are routed to the Regional Error Correction System (RECS) for disposition.</p> <p>Error codes embedded in RECS alert data specialists in the MPS group to erred usage records. In the event of such an alert, a data specialist investigates and resolves the error. The IABS Usage Subsystem receives usage records from the CRIS usage interface.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Valid usage records are posted to one of the Usage Summary databases. Invalid records are posted to the Erred Usage database. A further sequence of usage correction steps is followed to resolve errors and to allow usage to be reprocessed.</p> <p>Evidence of the existence of these processes is found in the IABS Reports Analysis Guide (e.g., the Database Services Usage Errors Report and the Database Services Unidentified Usage Errors). The IABS System Operations Guide describes the "Post Usage" step in the IABS Usage Subsystem.</p> <p>KPMG Consulting's interviews with Qwest Message Processing Services personnel, and documentation reviews revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that customer usage is properly captured and guided.</p> <p>Initial testing found that the outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3047 – Qwest failed to bill all expected calls of a variety of types • 3050 – Qwest failed to bill all expected operator verify, operator assisted, and directory assistance calls • 3080 – Qwest did not accurately bill local originating minutes of use on certain UNE-P accounts • 3081 – The local call count, total minutes of usage, and resulting charges on Resale bills created by Qwest were inaccurate. <p>The incorrect outputs suggested that Qwest's automated processes to ensure that customer</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>usage is properly captured and guided were inadequate.</p> <p>In response to these Exceptions, Qwest implemented related system changes. KPMG Consulting retested select components for which issues were identified. KPMG Consulting found that the issues described in Exceptions 3047, 3050, 3080, and 3081 are resolved, and closed these Exceptions. See Exceptions 3047, 3050, 3080, and 3081 for additional information on these issues.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-1-8	Process includes procedures to ensure that customer profile changes are applied.	Satisfied	<p>The ISC/Billing and Collections Center is responsible for account maintenance functions (e.g., maintenance of the accuracy of the Customer Profile Database records). Changes to billing addresses and bill media are processed and verified by SDCs.</p> <p>Requests for bill media changes are processed by the SDC, and are implemented by the Bill Mate organization, which is responsible for the production and distribution of the electronic bill media (CD ROMs, diskettes and EDI 811 format bills).</p> <p>Qwest's documentation, including a summary of SDC roles and responsibilities, and process flows, confirms the existence of these procedures. The Media IABS – Wholesale section of the Info Buddy online reference system provides further verification of information provided during interviews with Qwest personnel.</p> <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. KPMG Consulting examined completed copies of New Customer Questionnaires for a specific CLEC. The New Customer Questionnaire is completed not only when a customer first establishes service with Qwest, but also when a customer must make a profile change (i.e., update an address or the bill media selections).</p> <p>In its review, KPMG Consulting examined historical documentation associated with a</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			request for a change of CLEC name and address associated with a specific alternate company name abbreviation (ACNA), operating company number (OCN), and reseller ID (RSID). In addition, KPMG Consulting reviewed documentation for a change of CRIS bill receipt method from Network Data Mover (NDM) via a dial-up connection to NDM via a dedicated circuit. Changes reflected in these historical documents suggest that the process to ensure that customer profile changes are applied is followed.
20.7-1-9	Process includes procedures to ensure that bill retention requirements are operationally satisfied.	Unable to Determine	<p>Bill details are retained for a period of six years. Summary bill information is retained for 15 years.</p> <p>Data is stored in an application known as the Optical Storage Computer Output Microfiche (COM) Application Retrieval (OSCAR) system. Backup files are stored off-site on servers located in four locations.</p> <p>Methods and procedures and performance objectives are documented in the Application Support Plan for OSCAR and the OSCAR Service Level Agreement.</p> <p>KPMG Consulting's interviews with Qwest Information Technology personnel, and documentation reviews revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>As the duration of this evaluation did not meet or exceed the bill retention timeframe requirements specified by Qwest, KPMG Consulting was not able to evaluate Qwest's compliance with the documented retention process. KPMG Consulting, thus, was unable to determine whether Qwest's automated processes satisfy this evaluation criterion.</p>
20.7-1-10	Process includes procedures to retrieve and transmit historical billing information.	Satisfied	As documented in the OSCAR Archive/ Reprint process flowchart, requests for historical bills are entered in OSCAR and are routed to an Information Management

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Systems (IMS) queue. They are then batched for nightly processing. Bill files are sent to the appropriate bill media production centers for printing/creation and mailing/transmission.</p> <p>Resends of IABS paper bills are sent to customers within 10 calendar days. Resends of alternate IABS bill media are sent to customers within four business days. However, resends of IABS Network Data Mover (NDM), Magnetic Tape and Diskette formatted bills can only be recreated for the current bill cycle; prior period bills are available only in paper format.</p> <p>Resends of CRIS paper bills are sent within 10 calendar days. Resends of EDI bills are transmitted within two business days. Diskettes and CD ROM bills are sent within seven calendar days.</p> <p>KPMG Consulting's interviews with Qwest Information Technology personnel, and documentation reviews revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>During the course of this evaluation, KPMG Consulting requested resends of a UNE-P invoice and a Resale invoice, in CRIS paper format, for each of Qwest's three regional CRIS billing systems. Each of these invoices was received within the intervals specified in Qwest documentation.¹⁵⁶</p> <p>The outputs of these systems suggest that Qwest is prepared to retrieve and transmit historical billing information, according to a defined schedule.</p>
20.7-1-11	Bill delivery responsibilities and activities are defined.	Satisfied	Qwest's Customer Statement Products (CSP) and Bill Mate organizations have responsibility for wholesale bill delivery

¹⁵⁶ One UNE-P and one Resale bill per regional CRIS billing system were requested for resend in the paper format (for a total of six CRIS paper bills). IABS invoices were not requested for resend because the only product billed in IABS tested as part of the Test 20: Carrier Functional Bill Evaluation was Unbundled Dedicated Interoffice Trunks (UDITs). UDITs were ordered by WorldCom on behalf of the KPMG Consulting Pseudo-CLEC.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			activities as follows: <ul style="list-style-type: none"> • The CSP organization is responsible for the printing, enclosing, inserting, and mailing of paper CRIS invoices. This is accomplished by two print centers in Omaha, Nebraska and Albuquerque, New Mexico. Each print center's personnel are tasked by function (i.e., control file, operations, monitoring volumes, warehousing). • The Bill Mate organization, located in Bellevue, Washington, is responsible for the production and distribution of the electronic bill media (CD ROMs, diskettes, and EDI 811 format bills). The personnel are tasked by media type (EDI, CD ROM & Diskette), as well as by function (extract and customer interface).
20.7-1-12	Process includes procedures to ensure creation of customer bills on appropriate medium.	Satisfied	The ISC/Billing and Collection Center is responsible for processing bill media change requests, and for following up to ensure that changes are implemented as requested. The Bill Mate organization is responsible for implementing electronic bill media change requests. The Qwest wholesale Web site documents specific bill formats and delivery methods that are offered to CLECs for IABS and CRIS bills. IABS bills are offered in the following formats, and by the following delivery methods: <ul style="list-style-type: none"> • Paper • On-line Billing Service (OBS)/Terminal Access Interexchange Inquiry (TAXI) (Paper Image) via dial-up modem • Paper Image or Bill Data Tape (BDT) (Billing Output Specifications (BOS) Guidelines) on floppy diskette • Abbreviated Paper Bill • NDM in BDT format • Magnetic Tape (Reel to Reel) in BDT format. CRIS bills are offered in the following formats, and by the following delivery methods:

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Paper • Electronic Data Interchange (EDI) via NDM • EDI via Value Added Network (VAN) • EDI via File Transfer Protocol (FTP) - (dedicated circuit) • Diskette • CD ROM (ASCII files). <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. KPMG Consulting examined completed copies of New Customer Questionnaires for a specific CLEC as evidence of Qwest's adherence to this process. The New Customer Questionnaire is completed not only when a customer first establishes service with Qwest, but also when a customer must make a profile change (i.e., update an address or the bill media selections).</p> <p>KPMG Consulting reviewed historical documentation associated with a request for a change of CRIS bill receipt method from Network Data Mover (NDM) via a dial-up connection to NDM via a dedicated circuit. Changes reflected in these historical documents suggest that the process to ensure that customer bills are created on the appropriate medium is followed.</p>
20.7-2-1	Rate table maintenance responsibilities and activities are defined.	Satisfied	<p>As described to KPMG Consulting during interviews with Qwest SMEs, multiple process steps exist to ensure that IABS rate table information is accurate.</p> <ul style="list-style-type: none"> • Contract rates are loaded into the customer's contract rate table • Amendments (adds/changes) to the customer's contract are sent to the Wholesale Markets group for tracking, and then on to the IT group for program updating • The IT group then places these updated rates into work tables, and validates the work table before putting the rates into production. <p>As described to KPMG Consulting during interviews with Qwest SMEs, responsibilities</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>for CRIS table updates are decentralized, by region.</p> <ul style="list-style-type: none"> • The Tables Group in Salt Lake City, Utah is responsible for rate table changes/updates for the Central CRIS billing system • For the Western CRIS billing system, the Streamline Group is responsible for the implementation of rate table changes • The Development Group implements rate table changes in the Eastern CRIS billing system • Verification that rate table updates/changes have been implemented properly is done one day following their implementation. Table updates are made daily in all regions.
20.7-2-2	Process includes procedures to ensure that recurring and non-recurring rates are accurately applied.	Satisfied	<p>At the individual Billing Account Number (BAN) level, the IABS Rate/Tax/Bill (R/T/B) subsystem rates the products appearing on those accounts, applies tax rates to those accounts, and produces a bill.</p> <p>The billing process calculates current charges (recurring, non-recurring, and usage) for the BAN. If a Hold Bill condition arises, processing continues; however, the bill is not printed, and it is marked as a Hold Bill.</p> <p>Several reports noted in the IABS Reports Analysis Guide (e.g., Rating Special Access Exceptions Report and the Rating Switched Access Exceptions Report) are used to identify errors encountered during the rating of recurring and non-recurring charges. In addition, other reports provide information on held or delayed bills.</p> <p>As evidenced in the Eastern, Western, and Central CRIS Billing System Blueprints/Flowcharts, USOC Rating tables provide input into the calculation of recurring and non-recurring charges associated with service order activity and established products and services. Controls are in place to ensure that account details are in balance¹⁵⁷. Out-of-balance conditions are captured in ABEND</p>

¹⁵⁷ In balance indicates that data that is passed from one application to another in the CRIS billing system is accounted for. If not, an ABEND code is triggered for investigation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>reports, and are resolved by the Billing Applications Operations group.</p> <p>In addition, Billing SDCs conduct a validation of CLEC invoices. They also work to resolve held bills. These functions help to ensure that the recurring and non-recurring rates are accurately applied on wholesale invoices.</p> <p>KPMG Consulting’s interviews with Qwest CRIS Billing Applications Operations personnel, and documentation reviews revealed that select Qwest’s activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest’s processes to ensure that recurring and non-recurring rates are accurately applied.</p> <p>Initial testing found that the outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3008 – Qwest applied incorrect discount rates to wholesale bills for Oregon and Washington • 3034 – Qwest applied incorrect rates for the USOC NLT on wholesale bills for Oregon • 3069 – Documented rates for USOCs 1FB and 1FR are inconsistent with rates billed by Qwest • 3088 – Non-recurring installation charges were not billed at the rates listed on the Statements of Generally Agreed Upon Terms & Conditions (SGATs) for the states of Wyoming, Utah and Montana. <p>These incorrect outputs suggested that Qwest’s automated processes to ensure that recurring and non-recurring rates are accurately applied were inadequate.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>In response to these Exceptions, Qwest implemented related system changes. KPMG Consulting subsequently retested these components and found that the issues described are resolved. Exceptions 3008, 3034, 3069, and 3088 are closed. See Exceptions 3008, 3034, 3069, and 3088 for additional information on these issues.</p> <p>Please see KPMG Consulting’s Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest’s automated processes.</p> <p>The rating issues encountered during the execution of Test 20 led KPMG Consulting to conclude that Qwest’s process to ensure accuracy of rates may be inadequate. KPMG Consulting formally identified this issue.</p> <p>As part of its retesting efforts, KPMG Consulting requested and reviewed documentation related to Qwest’s processes for ensuring complete, timely, and accurate rate updates. This documentation included:</p> <ul style="list-style-type: none"> • <i>Rate Change Root Cause Analysis Report</i> • <i>Monthly Rate Implementation Compliance Report</i> • <i>End-to-End Contract Process for Local Competitive Services Billed in CRIS Change Process.</i> <p>As a result of this review, KPMG Consulting found that Qwest implemented and adhered to its process to address inconsistencies between contract, tariff rates, and discounts.</p>
20.7-2-3	Process includes internal change management procedures to prioritize, implement, and test system changes.	Satisfied	<p>System changes are identified and prioritized by Qwest using several tools, including:</p> <ul style="list-style-type: none"> • Hold Codes in the IABS billing system, and ABEND codes in the CRIS billing system • A system for creating Performance Management Records (PMRs) and Development Change Requests (DCRs) to document, track and prioritize system changes/issues • PMRs and DCRs are assigned to the appropriate Development Team for resolution. The PMRs are also assigned severity codes to help the

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Development Teams prioritize their workload</p> <ul style="list-style-type: none"> For changes to its IABS billing system, Qwest follows Comprehensive Delivery Function (CDF) documentation, which outlines the steps necessary to complete a software change or implementation. <p>Confirmation of the existence of this process was evidenced by a sample PMR for the CRIS billing system, a sample Business Objects PMR Daily Tracking Report for the IABS billing system, the StopX37 ABENDS Report, a list of ABEND codes, and documentation for the Comprehensive Delivery Function (CDF) provided to KPMG Consulting by Qwest.</p> <p>From interviews with Qwest IABS Software Development, IABS Information Technology, and CRIS Billing Applications Operations personnel, and from documentation reviews, KPMG Consulting was able to verify the existence of the process. KPMG Consulting examined Update Request forms for a change to the CRIS billing systems. Evidence of the implementation of the system changes, in the form of invoices, was examined. From its review, KPMG Consulting found that these documents provided evidence of Qwest's adherence to the process.</p>
20.7-2-4	Process includes procedures to ensure that usage is accurately rated and applied.	Satisfied	<p>As evidenced in the Eastern, Western and Central CRIS Architectural Blueprints/ Flowcharts, the Post and Rate (PAR) application is responsible for the rating and posting of usage to the appropriate billing account.</p> <p>The IABS Usage Subsystem receives usage records from the CRIS usage interface. The IABS System Operations Guide describes the "Post Usage" step in the IABS Usage Subsystem, in which usage records are validated and formatted. Valid usage records are then posted to one of the Usage Summary databases. Invalid records are posted to the Erred Usage database, where they are investigated, resolved, and returned to the billing stream for processing.</p> <p>The IABS Report Analysis Guide contains</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>several reports (i.e., Daily Usage Charge Transaction Report, and the Corrected Usage Audit Trail Report) that track usage charges and usage correction audit trails.</p> <p>KPMG Consulting's interviews with Wholesale Markets personnel, and documentation reviews revealed that select Qwest activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that usage is accurately rated and applied.</p> <p>Initial testing found that the outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exceptions:</p> <ul style="list-style-type: none"> • 3048 – Qwest incorrectly applied discounts on Resale bills for a variety of call types • 3049 – Qwest incorrectly applied discounts on UNE-P bills for a variety of call types • 3051 – Qwest failed to correctly apply rates on UNE-P bills for local originating minutes of use and shared transport minutes of use, and, in some cases, did not bill one or both of these rate elements. • 3080 – Qwest did not accurately bill local originating minutes of use on certain UNE-P accounts • 3081 – The local call count, total minutes of usage and resulting charges on Resale bills created by Qwest were inaccurate. <p>The incorrect outputs suggested that Qwest's automated processes to ensure that usage is accurately rated and applied were inadequate.</p> <p>In response to these Exceptions, Qwest</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>implemented related systems changes. KPMG Consulting retested select components identified in these Exceptions, and found that the issues described are resolved. Exceptions 3048, 3049, 3051, 3080, and 3081 are closed. See Exceptions 3048, 3049, 3051, 3080, and 3081 for additional information on these issues.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-2-5	Process provides for quality check of printed bills.	Satisfied	<p>The CSP organization holds responsibility for the creation and mailing of paper wholesale invoices. Quality control tools, such as optical carriers and manual log sheets, exist at each of the 15 stages of the CSP organization's bill printing and enclosing process. Two bills are pulled from each tray to check items such as corner marks and quality tags. Quality checks are done for such details as proper alignment, bill folding, and print quality.</p> <p>Copies of the CSP's manual Quality Checks and Bill Print & Mail Quality Issues Log, obtained by KPMG Consulting, provided evidence of the existence of quality control procedures.</p> <p>In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. However, since this process is performed as dictated by bill cycle production runs, and KPMG Consulting observed none of these production runs, KPMG Consulting was unable to observe and to determine whether the process is sufficiently robust, or whether Qwest adheres to the process.</p> <p>Therefore, KPMG Consulting examined the wholesale and retail invoices received in the course of transaction-based testing in the Carrier Functional Bill Evaluation (Test 20), to determine the effectiveness of Qwest's processes to provide for quality checks of printed bills.</p> <p>The print quality of the wholesale and retail paper invoices received suggests that Qwest's processes to provide for quality</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>checks of printed bills are adequate.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-3-1	Bill delivery process performance measures are defined and measured	Satisfied	<p>Qwest's internal Service Level Agreements (SLAs) define the standards for the timeliness of IABS bill delivery.</p> <ul style="list-style-type: none"> • Qwest's goal is to distribute 98% of IABS invoices (paper, magnetic tape, Network Data Mover, and floppy disk) by the sixth calendar day after the bill date. Performance against this goal is measured and reported. • Qwest's CRIS Due Out Date determines the CRIS bill delivery schedule for the CSP organization. The timeframe for delivery of printed bills to the post office is no later than the fourth working day following bill date. The goal for the delivery of electronic invoices to the customer is within 10 calendar days from bill date. Performance against this goal is measured and reported. <p>Supporting documentation reviewed by KPMG Consulting includes organizational charts for the Bill Mate and CSP groups, a copy of the Average Bill Processing Time Report, and the CSP Service Agreement. SLAs are documented in the Qwest Information Technologies IABS Service Level Agreement. Other supporting documentation obtained by KPMG Consulting included a report of bill timeliness metrics that compare performance to standards, and a copy of a Bill Pull/Extraction and production timeframe calendar.</p>
20.7-3-2	Process includes procedures to ensure that bills are shipped or transmitted according to the established schedule.	Satisfied	<p>The CSP and Bill Mate organizations hold responsibility for the creation and transmission/ mailing of invoices in the format(s) specified by the CLECs.</p> <p>To ensure compliance with SLAs, the print center in Omaha, Nebraska runs DB2 queries every morning to verify that bills have completed processing and are ready to be printed. These data, comparing performance to benchmarks, are compiled and reported</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>monthly.</p> <p>Multiple IABS reports are monitored, which track bill delivery performance. Three such reports, described in the IABS Reports Analysis Guide (RAG), are the Hold and Delayed Bill Control Report; Daily Billed Report; and the Delayed Bill History Report. These reports respectively track the Billing Account Numbers that are billed on a given day; the bills that are in a hold or delayed status; and the revenue impacts associated with any delayed bills.</p> <p>Performance tacking reports, which include the Average Time to Get Bills Out the Door Report and the Top Twenty Shift Report, allow for monitoring CRIS bill delivery performance. These track the average number of bills processed per hour, and the number of pieces completed by shift by print center, respectively.</p> <p>KPMG Consulting's interviews with CSP and BillMate personnel, and documentation reviews revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that bills are shipped or transmitted according to an established schedule.</p> <p>The outputs of these systems proved to be correct (timely), which suggests that Qwest is prepared to ship or transmit bills according to an established schedule.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-3-3	Process includes procedures to ensure customer usage is billed according to an established schedule.	Satisfied	Flowcharts provided by the Billing Applications Operations group document Qwest's procedures to ensure that usage is billed according to schedule. The PP42

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>application runs throughout the day, collecting Automatic Message Accounting (AMA) usage records from switches, while erred usage messages are investigated by the MPS group. Valid usage messages are processed in parallel in the CRIS billing system, according to invoice date.</p> <p>Erred usage messages are corrected and re-introduced into the CRIS billing system three days prior to the next cycle's bill date.</p> <p>The IABS Reports Analysis Guide contains reports that track the quantity of erred usage, the age of the usage, and delayed usage from the month prior to the current month. The Processed Usage Lag File Control Report also tracks unprocessed usage, and is used to warn of potential unprocessed AMA records older than three days.</p> <p>KPMG Consulting's interviews with Wholesale Markets and CRIS Billing Applications Operations personnel, and documentation reviews revealed that Qwest's activities associated with this criterion are embedded in automated systems, rather than in manual processes. Thus, it is impractical for KPMG Consulting to determine whether or not the process is sufficiently robust, or whether or not Qwest adheres to the process, using traditional operational analysis techniques.</p> <p>Therefore, KPMG Consulting examined the outputs of these systems, using transaction-based testing in the Carrier Bill Functional Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that customer usage is billed according to an established schedule.</p> <p>Initial testing found that the outputs of these systems proved to be incorrect, and KPMG Consulting issued the following Exception:</p> <ul style="list-style-type: none"> • 3051 – Qwest failed to correctly apply rates on UNE-P bills for local originating minutes of use and shared transport minutes of use, and, in some cases, did not bill one or both of these rate elements • 3080 – Qwest did not accurately bill local originating minutes of use for certain UNE-P accounts

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> 3081 – The local call count, total minutes of usage, and resulting charges on Resale bills created by Qwest were inaccurate. <p>The incorrect outputs suggested that Qwest's automated processes to ensure that usage is accurately applied were inadequate.</p> <p>In response to this Exception, Qwest implemented related systems changes. KPMG Consulting retested select components identified in these Exceptions and found that the issues described are resolved. Exception 3051, 3080, and 3081 are closed. See Exception 3051, 3080, and 3081 for additional information on these issues.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>
20.7-3-4	Process includes procedures to ensure that service order activity is billed on the next available bill.	Satisfied	<p>Qwest's SDCs are responsible for the validation of service order activity on existing accounts. SDCs correct erred service orders and resubmit the service orders. This order correction process is documented in Qwest's Summary Billing Validation Resale – Wholesale Info Buddy documentation.</p> <p>A Service Order Quality Team is in place, and a number of system enhancements were implemented over the last 18 months to reduce the number of orders that error during the CRIS posting process. Order entry personnel are subject to daily order quality reviews, with individual feedback and re-training, as warranted, to ensure accurate and timely order processing.</p> <p>These enhancements were cited in Qwest's responses to Exceptions 3002 and 3003.</p> <ul style="list-style-type: none"> In interviews with Qwest personnel, and through documentation reviews, KPMG Consulting was able to verify the existence of the process. However, since this process is performed only when events require such action to be taken, and KPMG Consulting observed none of those such events, KPMG Consulting was unable to observe and determine whether the process is

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>sufficiently robust, and whether Qwest adheres to the process.</p> <p>Therefore, KPMG Consulting examined the outputs of Qwest's billing systems, using transaction-based testing in the Carrier Functional Bill Evaluation (Test 20), to determine the effectiveness of Qwest's processes to ensure that service order activity is billed on the next available bill.</p> <p>The outputs of these billing systems proved to be correct, which suggests that Qwest's processes to ensure that service order activity is billed on the next available bill are adequate.</p> <p>Please see KPMG Consulting's Carrier Bill Functional Evaluation (Test 20) for additional information on the outputs of Qwest's automated processes.</p>

22. Test Results: CLEC Network Provisioning – Network Design Request, Collocation, and Interconnection Trunks Review (Test 22)

1.0 Description

The CLEC Network Provisioning – Network Design Request, Collocation, and Interconnection Trunks Review evaluated Qwest's Network Design Request (NDR) process, collocation, and interconnection trunks procedures for establishing and maintaining a Competitive Local Exchange Carrier's (CLEC) ability to access Unbundled Network Elements (UNE) and/or UNE-Platform (UNE-P) components.

The NDR process allows a CLEC to lease unbundled switch elements from Qwest, in order to offer telephone service to its own end user. Collocation permits a CLEC to obtain dedicated space on Qwest's premises, and to place equipment in said premises to interconnect with the Qwest network. Interconnection is a service between Qwest and the CLEC that permits the mutual exchange of local traffic. This test did not examine interconnection for other purposes, such as an interexchange carrier's network-to-network level interconnection.

The objective of this test was to review and evaluate the processes, procedures, supporting systems, and tools that Qwest utilizes to implement a NDR, collocation, and/or interconnection trunks.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest provides NDR, collocation, and interconnection trunks services to CLECs, to support the provisioning of UNEs and the exchange of traffic. Qwest provides these services throughout its fourteen state region, which includes Arizona, Colorado, Idaho, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

2.1.1 Network Design Requests

The NDR process allows a facilities-based CLEC to purchase unbundled switching elements from Qwest, in order to offer telephone service to its own end users. A Qwest Sales Manager and a Service Manager serve as initial points of contact for the CLEC in this process. While both agents assist the CLEC in establishing an account with Qwest, the Service Manager is responsible for supporting the CLEC throughout the implementation of NDR activities. A Service Support Manager and a Service Support team assist the Service Manager in providing support to the CLEC during initiation of the NDR process.

The NDR process starts with the gathering of information regarding a CLEC's desired product offerings. The CLEC must complete the necessary documents or forms that provide Qwest with required information.

Following CLEC account establishment, Qwest performs internal tasks to design, plan, and determine routing instructions in the Qwest switch/network. The Service Manager and a Project Manager host internal meetings to discuss technical requirements of the order, as well as the estimated time and cost of the implementation. Depending on the type of service ordered, technical requirements may include activities such as establishing the required number of Line Class Codes (LCC) for the NDR.

When the Project Manager receives notice of the completion of the product implementation and deployment, notification is relayed to the Service Manager. The Service Manager then advises the CLEC that the product is ready for service.

2.1.2 Collocation

Collocation permits a facilities-based CLEC to obtain dedicated space in Qwest premises to place equipment for interconnection with the Qwest network. A CLEC submits an application to request either a virtual or a physical collocation arrangement. In a virtual collocation, a CLEC does not have access to its telecommunications equipment in Qwest's Central Office (CO). Physical collocation permits a CLEC to install, maintain, and administer its own telecommunications equipment in a Qwest CO.

Qwest employs an end-to-end implementation process for collocation. A Qwest Sales Manager and Service Manager serve as the first points of contact between Qwest and the CLEC in this process. While both agents assist the CLEC in establishing an account with Qwest, the Service Manager is responsible for supporting the CLEC throughout the implementation of a collocation product order. A Service Support Manager and a Service Support team assist the Service Manager in providing support to the CLEC during the initiation of the collocation process.

The Collocation process starts with the gathering of information about a CLEC's desired product offering. The CLEC completes the necessary documents or forms that provide required information about the customer. A CLEC initiates the process by submitting a collocation application to the Service Manager, or directly to the Order Validation Group, using an email address available on the Wholesale Web site.

The Order Validation Group reviews the CLEC's application for accuracy and completeness. Following Qwest's acceptance of the application, a feasibility study is conducted, and the results are provided to the CLEC. If Qwest determines that the application is feasible, a quote is generated and sent to the CLEC.

The CLEC accepts the quote by submitting payment equal to fifty percent of the quoted non-recurring cost. When payment is received, Qwest's engineering and construction departments complete their requisite building tasks.

Upon completion, the State Interconnection Manager (SICM) conducts a joint "walk-through" of the collocation, with the CLEC, to evaluate the collocation delivery. Concurrent with the CLEC's approval of the "walk-through," the CLEC submits payment for the remaining fifty percent of the cost, and is then given access to the collocation.

A Collocation Project Manager oversees the delivery of a collocation project, with support from the SICM. The Collocation Project Manager and other team members use the Collocation

Online Milestone and Event Tracking (COMET) database to track the progress of a discrete project. COMET tracks major milestones, and generates regular status reports for project performance monitoring. Qwest teams or individuals that use and/or have access to COMET include personnel from the Collocation Project Management Center, the Work Management Center, Planning and Engineering, SICM, and Account Management.

A CLEC that applies for virtual collocation is provided space on a “per shelf” basis. Contiguous bays are permissible, if such space is available. Under this arrangement, a CLEC places its own telecommunications equipment in a Qwest CO building for the purpose of interconnecting with the Qwest network.

Qwest performs a feasibility study to determine if room is available within the CO building. The CLEC is responsible for the procurement of its own telecommunications equipment, which Qwest installs, repairs, and maintains, under the guidance of the CLEC. The CLEC, however, does not have physical access to its telecommunications equipment in the Qwest CO building. Accordingly, when establishing virtual collocation, the CLEC is responsible for providing training related to its own equipment, for up to three Qwest employees.

A CLEC that applies for a physical collocation installation is allocated an area in a Qwest CO, where it installs, maintains, and administers its own telecommunications equipment. Unlike a virtual collocation arrangement, the CLEC has direct, physical access to its own equipment. A physical arrangement enables the CLEC to access UNEs, ancillary services, and interconnection.

Variations of physical collocation include those described below:

- “Caged physical” is a form of physical collocation by which a CLEC leases caged floor space for the placement of its own equipment within Qwest’s wire center.
- “Cageless physical” is a form of physical collocation by which a CLEC leases non-caged floor space for the placement of its own equipment within Qwest’s wire center. The CLEC acquires space in exclusive single bay increments, which may be contiguous, when available.
- “Shared caged physical” is a form of physical collocation that allows for the sharing of a caged space arranged through either a joint application or sublease. The decision to share a caged physical space is at the sole discretion of the space’s original occupant. The original CLEC can negotiate the sharing of its own space with another CLEC, if it so chooses. The original occupant is identified as the original collocator, while the secondary occupant is referred to as the secondary collocator.
- “Adjacent” is a form of physical collocation available to a CLEC, when all existing space within the Qwest CO building is exhausted. Adjacent collocation is not an off-site property leasing arrangement; rather, the space exists on Qwest property that is contiguous to the Qwest CO building. At that location, space is made available in the form of existing controlled environmental huts and vaults, CLEC-constructed facilities, or the like.
- “Interconnection distribution frame” is a form of collocation that offers cross-connection points to multiple CLECs. In this case, a CLEC that wants to combine UNEs and ancillary services, and does not have equipment placed in the Qwest CO, uses a shared frame as an alternative form of collocation.

CLECs that wish to cancel, decommission, or change the responsibility of a collocation project must complete the corresponding collocation application form that is available on the Qwest wholesale Web site. Cancellation, Decommission, and Change of Responsibility are collocation support products. Documents describing the terms and conditions of each support product are available on the Qwest wholesale Web site.

Cancellation applies to all collocation sites that are under construction, and to those for which the CLEC has not received notification of completion from Qwest. A CLEC can either request a cancellation, or a cancellation can be simply the result of expiration. A collocation results in an expiration when the CLEC fails to accept the quote, and pay the initial fifty percent, within a thirty-day quote acceptance interval. Cancellation is available for caged collocation, cageless collocation, virtual collocation, and Interconnection Distribution Frame (ICDF) collocation.

Decommission applies to the removal of equipment from a specific collocation site. The site is deactivated upon completion of a Decommission Request, and upon total payment of any outstanding CLEC financial obligations (at that particular location, and that are more than 30 days past due) to Qwest. Decommissioning is available for caged collocation, cageless collocation, virtual collocation, and ICDF collocation.

Change of Responsibility applies to the transfer of leased collocation space, and its payment obligations, from one CLEC to another CLEC. Change of Responsibility does not address the transfer of sites with active end users. Nor does it address requirements surrounding the merger of corporations. Change of Responsibility offers two options: Cancellation Avoidance Request (CAR) and Decommission Avoidance Request (DAR). A CAR permits a CLEC to cease work on a collocation site in progress, as well as transfer the responsibility of the collocation site to a CLEC. The new CLEC assumes the legal and financial responsibilities of the collocation site. A DAR permits a CLEC to vacate and transfer responsibility for a completed collocation site to a Commission-approved CLEC. This CLEC must be in good financial standing¹⁵⁸ with Qwest.

2.1.3 Interconnection Trunks

Interconnection trunks is a service that permits the mutual exchange of local traffic between Qwest and a CLEC. The reciprocal exchange is a condition that applies only to traffic; it does not apply, in a similar way, to UNEs. Virtual or physical collocation, entrance facilities, or mid-span meet arrangements are technical prerequisites for interconnection trunks.

A Qwest Sales Manager and Service Manager serve as the first points of contact for the CLEC in this process. While both agents assist the CLEC in establishing an account with Qwest, the Service Manager is responsible for supporting a CLEC throughout the implementation of an interconnection trunk product order. A Service Support Manager and a Service Support Team assist the Service Manager in providing support to the CLEC during the initiation of the interconnection trunk process.

¹⁵⁸ "Good financial standing" is defined by Qwest as a CLEC without any accounts that are 30 days past due.

The interconnection trunk process starts with the gathering of information about a CLEC's desired product offering. The CLEC completes the necessary documents or forms that provide required information about the customer and its interconnection requirements.

Qwest provisions interconnection trunks as a Local Interconnection Service known as LIS Trunking. A Service Activation Meeting (SAM) marks the beginning of the ordering process for LIS Trunking, during which the CLEC meets with Qwest's LIS team. The outcome of this meeting, attended by the CLEC, the Qwest Service Manager, and other Qwest network subject matter experts (SMEs), determines the technical, time, and cost requirements for the interconnection trunks service implementation. The end result of the SAM is a preliminary project sheet for LIS Trunking orders.

Qwest's Service Delivery Center (SDC) oversees the execution of the design, planning, and internal administrative tasks for establishing interconnection trunks. The SDC confirms a final project sheet, which consists of order details and due dates.

Internal network design teams design, perform translations, and build trunk circuits. Finally, Qwest tests the trunks, before turning them over to the CLEC.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was Qwest's NDR, collocation, and interconnection trunks planning processes. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 22-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Network Design Requests	Network Design Planning Process	Adequacy and completeness of the process Adherence to the planning process	22-1-1 – 22-1-2, 22-1-10
	Network Design Request Testing Process	Adequacy and completeness of the process. Adherence to the testing process	22-1-1 – 22-1-3, 22-1-5, 22-1-10
	Procedures for Handling CLEC Network Design Confidential Information	Adequacy and completeness of the process Adherence to the established process	22-1-4 – 22-1-7, 22-1-10
	NDR Provisioning and Notification Process	Adequacy and completeness of the process Adherence to the communications and notification process	22-1-6, 22-1-9 – 22-1-10
Collocation	Collocation Planning Process	Adequacy and completeness of the process Adherence to the planning process	22-2-1 – 22-2-4, 22-2-14
	Collocation Project Management Procedures	Adequacy and completeness of the process. Adherence to the project optimization, schedule, cost, and authorization procedure and process	22-2-4 – 22-2-7, 22-2-11, 22-2-14
	Procedures for Handling CLEC Collocation Confidential Information	Adequacy and completeness of the process. Adherence to the established process	22-2-5 – 22-2-8; 22-2-9, 22-2-14
	Collocation Project Activities Technical Support	Adequacy and completeness of the process Adherence to the established procedures and process	22-2-4, 22-2-10, 22-2-14
	Collocation Test	Adequacy and completeness of the process Adherence to the established test structures and action steps	22-2-10, 22-2-11 – 22-2-14

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	Collocation Provisioning and Notification Process	Adequacy and completeness of the process Adherence to the communications and notification process	22-2-13, 22-2-14
Interconnection Trunks	Trunk Forecasting Procedures	Adequacy and completeness of the process. Adherence to the trunk forecasting process	22-3-1 – 22-3-3, 22-3-9, 22-3-10, 22-3-11
	Procedures for Handling CLEC Trunk Forecast Confidential Information	Adequacy and completeness of the process Adherence to the established process	22-3-6, 22-3-8, 22-3-10, 22-3-11
	Integration of Trunk Forecasts in Facility Planning Process	Existence of standard planning process Adherence to the established planning procedures and process	22-3-8 – 22-3-11
	Interconnection Trunk Provisioning and Notification Process	Adequacy and completeness of the process Adherence to the communications and notification process	22-3-7 – 22-3-9, 22-3-11
	Process for Managing and Addressing Trunk Order Due Date Issues	Adequacy and completeness of the process Existence of escalation process Adherence to the communications and notification process	22-3-5, 22-3-8, 22-3-11

2.4 Evaluation Methods

The evaluation methods used for this test included gathering information through interviews with, and through reviews of documentation provided by, Qwest personnel who support the NDR, collocation, and interconnection trunks processes in the Qwest fourteen-state service territory. In addition, discussions were held with members of the CLEC community to acquire knowledge about their experiences with these processes.

2.5 Analysis Methods

Information gathered through data requests and interviews with both Qwest and CLEC personnel was evaluated against criteria defined by KPMG Consulting during the planning phase of the test. One component of this evaluation examined Qwest personnel, processes, and systems used to process collocation, network design request and interconnection trunk orders. Another

component evaluated data gathered to determine if essential elements of Qwest’s processes and systems are present, and whether or not defined process steps are followed.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 22-2: Evaluation Criteria and Results - NDR

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-1-1	Qwest and CLEC responsibilities are defined and available for NDR implementations.	Satisfied	Responsibilities for implementing NDRs are defined in the following Qwest documents: <ul style="list-style-type: none"> • Wholesale Interconnection Operations Tab 24: Unbundled Switch • Wholesale Interconnection Operations Tab 25: Custom Routing • Custom Routing: Generic Information. These documents provide detailed information about the NDR provisioning process, and describe the roles of various personnel involved in the process of implementing an NDR. The Qwest Wholesale Web site for Products and Services provides the most current detailed information about the provisioning process, and describes the various roles involved when implementing a NDR. It also lists the specific responsibilities of the CLEC, the Sales Manager, and the Service Manager. The Web site can be easily accessed by both CLEC and Qwest personnel.

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-1-2	NDR projects are implemented through structured, documented methodologies.	Satisfied	<p>Qwest NDR projects are implemented through structured, documented methodologies as described in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Wholesale Interconnection Operations Tab 24: Unbundled Switch</i> • <i>Wholesale Interconnection Operations Tab 25: Custom Routing</i> • <i>Custom Routing: Generic Information.</i> <p>The Qwest Wholesale Web site for Products and Services provides current structured and documented methodologies for NDRs. A CLEC interacts primarily with the Service Manager and Network Project Manager for the duration of the NDR project. This collective group identifies detailed requirements of the implementation, including all of the design, planning, and administration to be performed within Qwest's Network Organization to establish the CLEC's presence in the Qwest network. The Network Project Manager works with the CLEC throughout the NDR implementation. KPMG Consulting met with Qwest personnel, who explained the tasks that are required for provisioning a NDR request from application receipt to CLEC acceptance. KPMG Consulting then reviewed the relevant NDR forms and found that processes, as described in the methodology are in place.</p>
22-1-3	NDR decisions are documented and communicated to Qwest and CLEC participants.	Satisfied	<p>NDR decisions follow a standardized process that ensures the participation of Qwest and the CLEC. NDR decisions are outlined in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Wholesale Interconnection Operations Tab 24: Unbundled Switch</i> • <i>Wholesale Interconnection Operations Tab 25: Custom Routing</i> • <i>Custom Routing: Generic Information.</i> <p>The Qwest Wholesale Web site for Products and Services also provides the most current detailed information for NDR</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>products and services.</p> <p>Communication with the CLEC is held before and during the life cycle of a NDR implementation. Qwest's Sales Manager and Service Manager serve as the first points of contact for the CLEC in this process. While both agents assist the CLEC in the establishment of an account with Qwest, the Service Manager is responsible for supporting the CLEC throughout the implementation of an Interconnection Trunks product order. A Service Support Management team, headed by a Service Support Manager, assists the Service Manager in providing support to the CLEC during the initiation of the NDR process, which is detailed in the following internal Qwest documents:</p> <ul style="list-style-type: none"> • <i>CLEC Market Launch: Generic Information</i> • <i>Service Management Functions-Wholesale: Generic Information</i> • <i>Service Support Team Functions (Market Launch): Generic Information.</i>
22-1-4	The NDR process includes procedures for addressing errors and exceptions.	Satisfied	<p>Procedures for addressing NDR errors and exceptions are defined in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Wholesale Interconnection Operations Tab 24: Unbundled Switch</i> • <i>Wholesale Interconnection Operations Tab 25: Custom Routing.</i> <p>Qwest's internal document, <i>Maintenance Escalations: Generic Information</i>, also describes processes regarding the correction of errors and exceptions.</p> <p>When a CLEC raises an error or exception, it is initially communicated to the Service Manager. The Service Manager schedules meeting(s), as appropriate, between the interested parties until the error is addressed. Any error or exception that cannot be addressed by the Service Manager will be escalated to Qwest Management.</p> <p>KPMG Consulting met with Qwest personnel, who explained the process for</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			addressing errors and exceptions. KPMG Consulting then reviewed the relevant procedures and found that processes, as described in Qwest documentation, are in place.
22-1-5	NDR methodologies specify a series of meetings and project milestones.	Satisfied	<p>The Qwest Wholesale Web site specifies the series of meetings and project milestones that a CLEC must complete in order to begin the implementation of and process NDR projects.</p> <p>Upon receipt of a NDR order, the Service Manager schedules an initial meeting to gather technical requirements. Once requirements are gathered and processed internally, the Qwest Account Manager contacts the CLEC, and provides appropriate technical specifications.</p> <p>The CLEC then chooses whether or not to proceed with the order. If the order proceeds, the Project Manager holds internal meetings, as required, for its implementation. Once cooperative testing is conducted and CLEC acceptance occurs, the order is considered complete.</p> <p>Qwest personnel reference, in the course of completing a NDR, <i>The ABC Carrier CR request.xls</i> and <i>The Brand Manager Tool</i>, which specify the meetings and project milestones for NDR projects. Each document outlines the tasks, meetings, and project milestones necessary for the completion of an NDR request.</p>
22-1-6	A tracking system is used to monitor and/or collect information from the beginning to the completion of Network Design projects.	Satisfied	<p>Qwest uses Microsoft's (MS) Project program as a tracking tool to communicate and monitor the progress of NDRs. The Network Project Manager works closely with the Qwest Service Manager to receive documentation and track a project through its completion. In addition to the MS Project resource, the Network Project Manager has access to other tracking systems, such as Trunk Integrated Record Keeping System (TIRKS) and Work Force Administration (WFA).</p> <p>During initial testing, KPMG Consulting found that a Qwest documented process for the tracking of a NDR project implementation did not exist. Such a process is necessary for ensuring that roles</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>and responsibilities are fulfilled during a NDR. Consequently, KPMG Consulting issued Exception 3031.</p> <p>Qwest subsequently developed a tracking tool to be used by the Network Project Manager when a custom routing (CR) request is executed. The <i>ABC Carrier CR request.xls</i> is the template of a tracking tool that enables Network Project Managers to track customized routing orders from the beginning to the end of the implementation life cycle. Qwest also updated its methods and procedures for custom routing service.</p> <p>During retesting, KPMG Consulting found that the documents adequately define the manner in which NDR projects are tracked and managed. KPMG Consulting also reviewed the procedures for managing custom routing projects. KPMG Consulting is satisfied that Qwest and CLEC responsibilities are properly defined.</p> <p>See Exception 3031 for additional information on this issue. Exception 3031 is closed.</p>
22-1-7	The NDR implementation process includes dispute resolution and escalation processes that are defined, documented, and available to both CLEC and Qwest personnel.	Satisfied	<p>The Qwest Service Manager is responsible for resolving issues that arise during a NDR project implementation. Qwest's internal document, <i>Escalations/Delayed Order Escalation & Expedites: Generic Information</i> details the responsibilities of the Qwest Service Manager for wholesale escalations.</p> <p>If further escalation proves necessary, the matter is escalated through the Qwest NDR management structure. Each CLEC is given a unique escalation chart, which is a document that describes the escalation process within Qwest's management structure. The escalation chart is contained in the Qwest document, <i>All Customers Escalation Tier Contact Information</i>.</p> <p>Escalation procedures are described in the Expedites and Escalations Overview section located on the Qwest Web site. Qwest and the CLEC can also formally arrange to exchange escalation contacts, numbers, and procedures through an Interconnection Agreement that is established prior to the NDR implementation process.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-1-8	Procedures are in place for defining the scope, estimating, documenting, and managing the design and costs of NDR implementations.	Satisfied	<p>Qwest assigns a Service Manager and a Network Project Manager to coordinate NDR activities with a CLEC. After obtaining the necessary information from the CLEC, the Network Project Manager evaluates the CLEC's requirements, a process that includes preparing cost estimates. The affected departments within the Network Organization determine their own cost estimates for the project. These estimates are provided to the Service Manager and Network Project Manager for final review, and are then submitted to the CLEC.</p> <p>Recurring and nonrecurring rate elements do not apply to all NDR product types. Costs are often specifically defined in an individual CLEC's Interconnection Agreement. Additional pricing information can also be found at the Qwest Web site, with links to the Statement of Generally Available Terms and Conditions (SGAT) and the Tariffs.</p>
22-1-9	Standards of delivery are established for NDR implementations.	Satisfied	<p>Standards of delivery are established for NDR implementations. Before the delivery of a NDR, Qwest performs various test calls on the product. These test calls are referenced in the custom routing and call branding implementation templates that are used by the Network Project Manager and Branding Implementation Manager. The Qwest wholesale Web site also describes testing procedures, which take place as a final step in NDR delivery.</p> <p>Network Equipment Building Systems (NEBS) is a set of industry-defined standards for areas such as allowable equipment, workmanship, and general central office installation standards. These NEBS standards are referenced on the Qwest wholesale Web site.</p> <p>Technical publications that describe proper safety and engineering requirements are also available on the Web site.</p> <p>During initial testing, KPMG Consulting identified issues with Qwest's document, <i>Wholesale Interconnection Operations, Tab 25: Custom Routing</i> for testing the customized routing element in the delivery</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>of a NDR. Specifically, no tasks, procedures, or processes that indicated that testing activities occurred during the initial delivery of a customized routing request to a CLEC were present. KPMG Consulting issued Exception 3027.</p> <p>Qwest subsequently created and published a Product Catalogue (PCAT) on its wholesale Web site. The PCAT references Operator Services and Directory Assistance (OS/DA), and contains all reference material concerning the customized routing of this product. Qwest also provided internal process documentation describing testing procedures for customized routing provisioning, and updated the custom routing project folder to include a line item specific to the completed testing of customized routing.</p> <p>During retesting, KPMG Consulting found that the document adequately describes Qwest's testing activities for Customized Routing, prior to delivery to the CLEC.</p> <p>KPMG Consulting is satisfied that the changes made by Qwest to the custom routing Web site provide sufficient assurances that Qwest's procedures ensure that custom routing deliveries are tested prior to CLEC acceptance.</p> <p>Also during initial testing, KPMG Consulting found that no Qwest documented process that establishes a joint testing process for the delivery of OS/DA for a CLEC existed. KPMG Consulting issued Exception 3026.</p> <p>Qwest subsequently created and published a Product Catalogue (PCAT) on its wholesale Web site. The PCAT references OS/DA, and contains all reference material concerning each of these products.</p> <p>Qwest also created a template to be used by the Branding Implementation Manager to ensure that each of the ten call branding testing steps outlined on the Qwest PCAT Web page is carried out in accordance with each CLEC's branding request.</p> <p>During retesting, KPMG Consulting determined that the newly created template for the Branding Implementation Manager</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>adequately describes Qwest's testing activities for directory assistance and operator services prior to delivery to the CLEC. KPMG Consulting is satisfied that the changes made by Qwest to the OS/DA Web pages provide sufficient assurances that Qwest's procedures ensure that directory assistance and operator services are jointly tested, prior to delivery to a CLEC.</p> <p>See Exceptions 3026 and 3027 for additional information on these issues. Exceptions 3026 and 3027 are closed.</p>
22-1-10	Defined processes for NDR implementations are adhered to.	Unable to Determine	<p>KPMG Consulting's interviews with Qwest NDR personnel, and documentation reviews revealed that Qwest did not process any commercial NDR orders during the execution of this test. Thus, KPMG Consulting cannot determine whether or not Qwest adheres to the process, using traditional operational analysis techniques. KPMG Consulting is, thereby, unable to determine whether Qwest's processes satisfy this evaluation criterion.</p>

Table 22-3: Evaluation Criteria and Results - Collocation

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-2-1	Qwest and CLEC responsibilities for collocation implementations are defined and available.	Satisfied	<p>Qwest and CLEC collocation responsibilities are defined in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Qwest Collocation Resource Guide</i> • <i>Wholesale Interconnection Operations</i> • <i>Network Complex Services Collocation Process Description.</i> <p>The Qwest Wholesale Web site for Products and Services provides current information about the collocation process. It also provides detailed information about collocation products and services. The Web site can be easily accessed by both the CLEC and the Qwest personnel.</p> <p>Each CLEC is assigned a Qwest Service Manager to supervise its account. Qwest also employs a Collocation Project Manager to help in the execution of CLEC collocation projects.</p> <p>The Collocation Project Management Center (CPMC) is responsible for managing collocation project implementation activity, which includes monitoring a project's timeline and milestones.</p>
22-2-2	Collocation projects are implemented through structured, documented methodologies.	Satisfied	<p>Collocation projects are implemented through structured, documented methodologies, as described in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Collocation Resource Guide</i> • <i>Wholesale Interconnection Operations</i> • <i>Network Complex Services Collocation Process Description.</i> <p>The Qwest Wholesale Web site for Products and Services also provides current, detailed information for collocation products and services.</p> <p>Each CLEC is assigned a Qwest Service Manager to supervise its account. Qwest also employs a Collocation Project Manager to help in the execution of CLEC collocation projects.</p> <p>All collocation projects are tracked in a</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>central collocation database, known as COMET, that includes milestones and installation intervals. Internal Qwest teams involved in the collocation process use COMET to track and manage collocation projects. Status reports are generated regularly for project performance monitoring.</p> <p>KPMG Consulting interviews with Qwest SMEs revealed that COMET is used as a source of information throughout the collocation process. KPMG Consulting confirmed this activity by examining a typical collocation project through documentation extracted from the COMET database.</p>
22-2-3	Qwest and CLEC responsibilities for collocation implementations are defined and available.	Satisfied	<p>Qwest and CLEC collocation responsibilities are defined in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>Qwest Collocation Resource Guide</i> • <i>Wholesale Interconnection Operations</i> • <i>Network Complex Services Collocation Process Description.</i> <p>The Qwest Wholesale Web site for Products and Services provides current information about the collocation process. It also provides detailed information about collocation products and services. The Web site can be easily accessed by both the CLEC and the Qwest personnel.</p> <p>Each CLEC is assigned a Qwest Service Manager to supervise its account. Qwest also employs a Collocation Project Manager to help in the execution of CLEC collocation projects.</p> <p>The Collocation Project Management Center (CPMC) is responsible for managing collocation project implementation activity, which includes monitoring a project's timeline and milestones.</p>
22-2-4	Collocation decisions are documented, and are communicated to Qwest and CLEC participants.	Satisfied	Collocation projects are documented and managed using an Oracle-based system, COMET, which is Qwest's source for the records and historical information related to collocation projects. The COMET database acts as a central repository for information pertaining to each collocation application.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The database provides a real-time view of the status of a discrete collocation installation.</p> <p>Throughout the collocation process, Qwest notifies CLECs of events or issues relating to a collocation project through verbal, electronic, or written communications.</p> <p>KPMG Consulting interviews with Qwest SMEs revealed that the Qwest Project Manager directs the delivery of the collocation project, while the State Interconnect Manager (SICM) provides support. Representative activities that occur during the project include communicating with the CLEC and answering questions.</p> <p>During initial testing, KPMG Consulting formally identified discrepancies between two of the documents used by Qwest in managing Collocation Out of Space conditions in Central Offices.</p> <p>Qwest subsequently provided a current, updated Collocation Out of Space process.</p> <p>During retesting, KPMG found that the identified discrepancies in the two documents were updated and standardized.</p>
22-2-5	Collocation methodologies specify a series of intervals and project milestones.	Satisfied	<p>Qwest documents detail collocation methodologies, including collocation intervals and milestones, as follows:</p> <ul style="list-style-type: none"> • <i>Qwest Collocation Resource Guide</i> • <i>Wholesale Interconnection Operations</i> • <i>Network Complex Services Collocation Process Description</i> • <i>CSPEC Collocation Milestones</i> lists the necessary task completions for the Common Systems Planning and Engineering Center (CSPEC) • <i>Collocation Engineering Timeline</i> provides a similar timeline for Interoffice facilities. <p>Internal Qwest teams involved in the collocation process use a common system, called COMET, to manage collocation projects. Major milestones are tracked, and status reports are generated regularly for project performance monitoring.</p> <p><i>A Service Interval Guide (SGC)</i>, available</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>on the Qwest Web site, describes the mandatory intervals for collocation implementation completion.</p> <p>An Interconnection Agreement that is executed between a CLEC and Qwest may also set forth the terms, conditions, and milestones for collocation implementation. The established SGAT sets forth similar terms, conditions, and milestones. A CLEC has the choice of either negotiating its own Interconnection Agreement, or using the established SGAT.</p>
22-2-6	A tracking system is used to monitor and/or collect information from the beginning to the completion of collocation projects.	Satisfied	<p>Internal Qwest teams involved in the collocation process use a common tracking system, called COMET, to manage collocation projects. Major milestones are tracked, and status reports are regularly generated for project performance monitoring.</p> <p>The following Qwest teams use and/or have access to COMET: Collocation Project Management, Work Management Center, Planning and Engineering, State Interconnection Manager, and Account Management.</p> <p>KPMG Consulting interviews with Qwest SMEs revealed that COMET is used as a source of information throughout the collocation process. KPMG Consulting confirmed this activity by examining a typical collocation project through documentation extracted from the COMET database.</p>
22-2-7	Procedures are defined for ensuring that CLECs have the same access to their collocation facilities as Qwest has to its own facilities.	Satisfied	<p>A CLEC has access to its physical collocation space 24 hours a day, seven days a week. Access policies and procedures that are followed by the Qwest SICM and the CLEC are outlined in the following documents:</p> <ul style="list-style-type: none"> • <i>Qwest SICM Collocation Guidelines and Performance Requirements</i> • <i>SICM Job Aid For CLEC Occupancy of Physical Space</i> • <i>SICM Roles.</i>
22-2-8	The collocation implementation process includes dispute resolution and escalation processes that are	Satisfied	Qwest's internal document, <i>Escalations/Delayed Order Escalation & Expedites: Generic Information</i> , describes the resolution and escalation processes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	defined, documented, and available to both CLEC and Qwest personnel.		<p>A CLEC is assigned a Qwest Service Manager to supervise its account. Qwest also employs a Collocation Project Manager to assist with the execution of CLEC collocation projects. The CPMC is responsible for managing the collocation project implementation, which includes monitoring the timeline and milestones. If a dispute or missed milestone occurs, the CPMC utilizes the escalation process, as defined in Qwest's document, <i>CPMC Escalation Procedures</i>.</p> <p>If the matter requires redress outside the CPMC, the CLEC may also contact its assigned Qwest Service Manager to escalate the process up the management chain, as it sees fit. If further escalation proves necessary, the matter is escalated through the Qwest management structure.</p> <p>Each CLEC is given a unique escalation chart that provides contact information for appropriate Qwest personnel. The escalation chart is contained in the Qwest document, <i>All Customers Escalation Tier Contact Information</i>.</p>
22-2-9	Standards and procedures are defined for ensuring that trained personnel are assigned to a collocation project or customer.	Satisfied	<p>Each CLEC is assigned a trained Qwest Service Manager and Collocation Project Manager. Each Qwest Service Manager and Collocation Project Manager undergo training specific to their job responsibilities.</p> <p>Qwest uses a "nesting" technique to informally train collocation personnel. "Nesting" refers to a process by which new collocation personnel sits or "nests" beside experienced personnel for on-the-job training. Qwest also provides job aides to train Service Managers and Project Managers in their various roles.</p> <p>Qwest and CLECs select vendor equipment from an approved equipment list, to ensure that trained personnel are assigned. The approved equipment list is incorporated into Qwest's Web site. Technical publications that describe proper safety and engineering requirements are also available on the Web site.</p> <p>For virtual collocation projects, a CLEC is responsible for providing training, related to its own equipment, to Qwest personnel.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-2-10	Procedures are defined for ensuring that project staffs are available to collaborate on, and are empowered to resolve, collocation project issues.	Satisfied	<p>Qwest employs defined procedures for ensuring that Qwest project staffs are available to collaborate on, and are empowered to resolve, collocation project issues.</p> <p>The Service Manager, Service Support Manager, and Collocation Project Manager all provide support to the CLEC throughout the collocation project implementation. The Service Manager acts as an advocate for the CLEC, proactively pursuing the resolution of collocation issues, should they arise. The Service Manager interacts with all of Qwest's support groups and requests those teams' expertise to ensure collocation delivery.</p> <p>The Service Manager also participates in customer meetings on either a scheduled or <i>ad hoc</i> basis. These meetings are held with the CLEC to discuss service performance and initiatives, as well as any new processes.</p> <p>The following Qwest documents define the procedures that are used by the Service Manager and the Service Support Manager when collocation project issues arise:</p> <ul style="list-style-type: none"> • <i>Service Management Functions-Wholesale: Generic Information</i> • <i>Service Support Team Functions: Generic Information.</i> • <i>Customer Meetings-Wholesale: Generic Information</i> • <i>Performance Reporting: Generic Information.</i>
22-2-11	Formal procedures are in place to quantify and track scope changes during collocation implementations, and communicate such to both Qwest and CLEC personnel.	Satisfied	<p>Deviations from the planned schedule for discrete collocation projects are monitored and tracked. Any schedule change is monitored via the COMET database. If, through this monitoring, Qwest personnel identify that an impending delivery date will be missed, the Project Manager contacts the CLEC to provide a revised delivery date.</p> <p>The Project Manager also informs the Service Manager of the potential impact of any implementation changes. As described in Qwest's <i>Major/Minor Material Changes</i> document, the CPMC sends notification of any material changes to the CLEC, with</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			copies to the Wholesale Project Manager and the SICM.
22-2-12	Testing techniques and standards of delivery are adopted for collocation implementations.	Satisfied	<p>Qwest testing techniques and standards of delivery for collocation implementations are in place and are adopted.</p> <p>Network Equipment Building Systems (NEBS) is a set of Qwest-adopted standards for areas such as allowable equipment, workmanship, and general central office installation practices. These NEBS standards are referenced internally in the <i>Qwest Collocation Resource Guide</i> document. They are also referenced in the Technical Publications section of the collocation portion of Qwest's Web site, at which they are available for downloading.</p> <p>Before the turnover of a physical collocation, Qwest's SICM invites the CLEC to perform a "walk-through" of the collocation site. However, the CLEC may choose to not conduct the "walk-through," and instead accept the collocation verbally via phone. In this case, the CLEC would then fax the signed collocation acceptance form to Qwest. During the acceptance procedure, the SICM provides the CLEC with the <i>Qwest Network Interconnection Guidelines</i> document, either before or during collocation acceptance. The guidelines are an operational supplement to the SGAT and Interconnection Agreement.</p> <p>When the collocation is acceptable to the CLEC, the CLEC performs a sign-off on the collocation acceptance form, indicating such.</p>
22-2-13	Procedures are in place for defining the scope, estimating, documenting, and managing the design and costs of collocation implementations.	Satisfied	<p>Procedures for handling the estimation, documentation, and management of costs for collocation projects can be found on the Qwest Web site, in the Collocation Product Catalogue.</p> <p>Prices for all collocation types are defined as recurring and nonrecurring rate elements. Recurring costs are continuous expenses, while nonrecurring rate elements are one-time expenses for the CLEC. Costs are specifically defined in a CLEC's Interconnection Agreement. Additional pricing information can also be found at the same Qwest Web site, with links to the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			SGAT and the Tariffs. The scope and procedures for collocation processes are described in the collocation section of the Qwest Wholesale Products and Services Web site.
22-2-14	Defined processes for collocation implementations are adhered to.	Satisfied	KPMG Consulting conducted on-site observations at the CMPC and CO in Denver, Colorado; the CO in Seattle, Washington; and the CO in Omaha, Nebraska. KPMG Consulting reviewed the collocation project folders and conducted on-site CO visits to ensure process adherence. KPMG Consulting reviewed project folders for orders that required/contained an escalation, error, exception, and decommission. At the CMPC, KPMG Consulting viewed COMET, and conducted searches on various criteria such as State and Due Date. KPMG Consulting also conducted a walk-through at several COs to view collocation access and security procedures, as well as to observe the various types of collocation arrangements. These observations validated that Qwest adheres to defined processes for collocation implementations.

Table 22-4: Evaluation Criteria and Results – Interconnection Trunks

Test Cross-Reference	Evaluation Criteria	Result	Comments
22-3-1	Qwest and CLEC Interconnection trunk responsibilities are defined and available.	Satisfied	Qwest and CLEC interconnection trunk responsibilities are defined and available. Qwest assigns a Service Manager to coordinate interconnection trunk activities with a CLEC. A Service Support Management team assists the Service Manager in providing support to the CLEC during the initiation of the interconnection trunks process. The process starts with the gathering of information related to a CLEC's desired product offering. The CLEC completes the necessary documents or forms that are used to establish required information about a customer. The following internal Qwest documents detail this process: <ul style="list-style-type: none"> • <i>CLEC Market Launch: Generic</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Information</i></p> <ul style="list-style-type: none"> • <i>Service Management Functions-Wholesale: Generic Information</i> • <i>Service Support Team Functions (Market Launch): Generic Information.</i> <p>Qwest also employs a LIS Project Manager to assist with the execution of a CLEC's interconnection trunk projects.</p> <p>Qwest and CLEC interconnection trunks responsibilities are posted on the Qwest Wholesale Web site.</p> <p>Personnel from Qwest's SDC are responsible for design, planning, and internal administrative tasks for an interconnection trunk implementation. The SDC finalizes the project sheet, and Internal Network design teams design, perform translation work for, and build the necessary trunk circuits. Finally, Qwest tests the trunks, before turning them over to the CLEC.</p>
22-3-2	Interconnection trunk projects are implemented and adhered to through structured, documented methodologies.	Satisfied	<p>Implementations of interconnection trunk projects follow a documented methodology. The Qwest Wholesale Web site for Products and Services provides current, detailed interconnection trunk products and services information.</p> <p>The publicly accessible Web site provides details regarding business procedures, forms, and products and services for CLECs. Listed there are all interconnection products and services.</p> <p>Qwest assigns a Service Manager to coordinate interconnection trunk activities with a CLEC. Qwest also employs a LIS Project Manager to assist with the execution of CLEC interconnection trunk projects.</p> <p>The conducting of a SAM marks the beginning of the ordering process for LIS Trunking. Outcomes of the meeting, which is attended by the CLEC, Qwest's Service Manager, the LIS Project Manager, and other Qwest Network SMEs, determine the technical, time, and cost requirements for the interconnection trunk implementation. When agreements are reached, methods for billing are also established. The end result</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>of the SAM is the establishment of a preliminary project sheet.</p> <p>The following Qwest documents are used during the SAM process:</p> <ul style="list-style-type: none"> • <i>Account Setup Checklist</i> • <i>CLEC Checklist for Doing Business.</i> <p>Qwest's SDC ensures the execution of the necessary design, planning, and internal administrative tasks for the establishment of interconnection trunks. The SDC finalizes the Project Sheet, and Internal Network design teams design, perform translation work for, and build the necessary trunk circuits. Finally, Qwest tests the trunks before turning them over to the CLEC.</p>
22-3-3	Interconnection methodologies specify intervals and project milestones.	Satisfied	<p>Service intervals and project milestones are described and made publicly accessible via the Qwest Web site.</p> <p>A SAM is held between the CLEC and Qwest's Interconnect Trunks team. At the meeting, the Service Manager and all necessary Network organization personnel initiate the interconnection trunks planning and implementation process. All preliminary due dates are discussed. The SDC reviews the project sheet and assigns due dates.</p> <p>This project sheet, which identifies the ongoing status of the interconnection trunk project, is maintained until the completion of the project.</p>
22-3-4	Status reports are managed from the beginning to the completion of interconnection projects.	Satisfied	<p>Qwest assigns a Service Manager to coordinate and manage status reports for interconnection trunk activities with a CLEC. Qwest also employs a LIS Project Manager to assist with status reporting during the execution of CLEC interconnection trunks projects.</p> <p>Activities at a SAM initiate the ordering process for LIS Trunking, and establish the requirements for project status reporting. The CLEC meets with the Qwest LIS team. The outcomes of this meeting, attended by the CLEC, the Service Manager, and other Qwest Network SMEs, determine the technical, time, and cost requirements for the interconnection trunks implementation. When agreements are reached, methods for</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>billing are also established. The end result of the SAM is the establishment of a preliminary project sheet.</p> <p>This project sheet, which identifies the ongoing status of the interconnection trunk project, is maintained until the completion of the project.</p>
22-3-5	Interconnection trunk decisions are documented and communicated to Qwest and CLEC participants.	Satisfied	<p>Interconnection trunk decisions are documented and communicated to all parties. Essential elements of the interconnection trunks process are in place, and are described on the Qwest Wholesale Web site. Necessary product information and requirements are also available on Qwest's Wholesale Products and Services Web site.</p> <p>A SAM is held between the CLEC and Qwest's Interconnect Trunks team to ensure that decisions associated with the implementation are documented and communicated from the initiation of the process. At the meeting, the Service Manager and all necessary Network organization personnel initiate the interconnection trunks planning and implementation process. All preliminary due dates are discussed. Personnel from the SDC review the project sheet, and assign due dates.</p> <p>This project sheet, which identifies the ongoing status of the interconnection trunk project, is maintained until the completion of the project.</p> <p>Qwest's Change Management Process (CMP) is also used to notify a CLEC of any changes to process or product. CLECs may openly discuss these changes in the CMP forum. A CLEC may also attend the monthly Product & Process CMP meeting. Information about CMP is available on the Qwest Web site.</p>
22-3-6	The interconnection trunk implementation process includes dispute resolution and escalation processes that are defined and documented.	Satisfied	<p>A Qwest Service Manager is responsible for resolving all disputes and escalation issues that arise during an interconnection trunk implementation. If further escalation is required, the matter is escalated through the Qwest management structure. Each CLEC is given a unique escalation chart that provides contact information for appropriate</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Qwest personnel. The escalation chart is contained in the Qwest document, <i>All Customers Escalation Tier Contact Information</i>.</p> <p>Qwest's internal document, <i>Escalations/ Delayed Order Escalation & Expedites: Generic Information</i>, also describes issue resolution and escalation processes.</p> <p>Qwest's Design Services group employs internal escalation processes that are invoked if a dispute or missed milestone occurs. The following documents outline these processes:</p> <ul style="list-style-type: none"> • <i>Local Network Designed Services Process Bulletins</i> • <i>Customer Service Escalation Request Forms</i>.
22-3-7	Process(es) exist to track scope changes during interconnection trunk implementations, and are communicated to both Qwest and CLEC personnel.	Satisfied	<p>Communication with a CLEC is held before, and during, the life cycle of an interconnection trunk implementation.</p> <p>Qwest assigns a Service Manager to coordinate interconnection trunk activities with a CLEC. Qwest also employs a Project Manager to assist with the execution of CLEC interconnection trunks projects. The Project Manager tracks any scope changes that may occur during implementation. The Service Manager works as an advocate for the CLEC's interconnection trunk project, communicating any changes that may occur to the CLEC.</p>
22-3-8	The interconnect trunk process includes defined forecast intervals and execution timelines.	Satisfied	<p>Forecasting for interconnection trunks occurs on a quarterly basis. Qwest schedules a quarterly meeting with a CLEC to conduct forecasting operations. Qwest utilizes the CLEC forecast to ensure availability of switch and transport capacity. Process guidelines and intervals are defined in the internal Qwest document, <i>Interconnection Trunks Forecast Process</i>.</p> <p>The process consists of cross-functional input from SMEs across the Qwest organization, and involves the Wholesale Channel Manager, the Service Manager, CLECs, Joint Planners, and members of Qwest's Wholesale Finance, Trunk Forecasting, and Switch and Interoffice Planning organizations. The SGAT and the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Qwest Web site outline forecasting requirements, and also contain the necessary forecasting tools and forms that are used by the CLEC in this process.
22-3-9	Generally accepted industry testing delivery processes are adopted for interconnection trunk implementations.	Satisfied	<p>Presently, no national standards for interconnection network elements are established. As a proxy, Qwest developed its own standards for certain network elements. Qwest Technical Publications are available on the Web site, to serve as a supplemental source of information for parties seeking interconnection.</p> <p>NEBS is a set of documentation that defines telecommunication industry standards for areas such as allowable equipment, workmanship, and general central office installation practices. These NEBS standards are referenced in the Technical Publications listed on the collocation portion of the Qwest Web site, from which they are available for downloading.</p>
22-3-10	CLEC forecast needs for interconnection trunks are collected and processed on a timely basis.	Satisfied	<p>Qwest collects and processes forecast needs on a timely basis. Qwest schedules a joint meeting with a CLEC on a quarterly basis to collect forecasting information about interconnection trunks orders. Qwest utilizes the CLEC forecast to ensure availability of switch and transport capacity.</p> <p>Process guidelines are defined in Qwest internal documentation, such as the <i>Interconnection Trunks Forecast Process</i>. The process consists of input from SMEs across the Qwest organization, and involves the Wholesale Channel Manager, the Service Manager, CLECs, Joint Planners, and members of Qwest's Wholesale Finance, Trunk Forecasting, and Switch and Interoffice Planning organizations. The SGAT and the Qwest Web site outline necessary requirements, and also contain the necessary forecasting tools and forms that are used by a CLEC in this process.</p> <p>Qwest assigns a Project Manager to oversee and ensure the accurate processing of quarterly forecast orders. A CLEC must submit forecast information in an Excel® spreadsheet, which is available on the Qwest Wholesale Web site. A quarterly forecasting schedule is also available on the Qwest Web site. Qwest's Service Manager</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			is available to address any questions that arise.
22-3-11	Defined processes for interconnection trunks implementations are adhered to.	Satisfied	<p>KPMG Consulting conducted on-site observations at, or of, Qwest's Network Operations – Complex Translations Center in Denver, Colorado, the Network Operations – Design Services in Des Moines, Iowa, Network Engineering in Denver, the Forecasting Group in Denver, and Network Engineering – LIS Project Management in Denver.</p> <p>KPMG Consulting observed Complex Translations Center and Design Services Center personnel accessing both retail and wholesale orders according to critical date.</p> <p>KPMG Consulting also interviewed and observed a LIS Project Manager, a Senior Network Planning Engineer [Joint Planner] and a Senior Process Analyst from the Forecasting Group.</p> <p>KPMG Consulting reviewed LIS forecasting information supplied by the Joint Planner via email to CLECs, such as Focus ExService Reports, Switch Reports, and 512 CCS Reports. KPMG Consulting reviewed a preliminary forecast spreadsheet that was generated based on previous forecasts, and subsequently sent to CLECs to aid in planning. Additional items reviewed include a quarterly meeting agenda and a checklist of items discussed that serves as meeting minutes. Finalized forecasts were securely stored in a locked file cabinet.</p> <p>KPMG Consulting reviewed the Net Calendar tool used to plan quarterly meetings, emails sent to CLECs that contain information related to scheduled forecast meetings, emails received from CLECs containing preliminary LIS forecasts, and emails generated by the FORCAST Web site when a CLEC submits its forecast online. KPMG Consulting reviewed an example of an email sent to a CLEC containing the final LIS forecast as adjusted by Qwest's finance department.</p> <p>KPMG Consulting reviewed Qwest's project plan template and project schedule/spreadsheets that are used to manage LIS projects. Other items reviewed</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>include the Custom Solutions and Implementations Web site, where lessons learned are stored and shared. The Custom Solutions and Implementations Web site also houses the project database.</p> <p>These observations validated that Qwest adheres to defined processes for interconnection trunk implementations.</p>

23. Test Results: Change Management Test (Test 23)

1.0 Description

The Change Management Test evaluated Qwest's change management process used by Competitive Local Exchange Carriers (CLECs) engaged in the Qwest-CLEC business relationship. The objectives of the test were to determine the adequacy and completeness of procedures for developing, publicizing, evaluating, and implementing changes to Qwest's Wholesale Operational Support System (OSS) interfaces and business processes. The test also focused on the tracking mechanisms of proposed changes and adherence to established change management intervals.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The Qwest change management process provides Qwest and CLECs with the means and framework for interested parties to initiate, evaluate, and prioritize desired changes to OSS interfaces, products, or processes. Qwest also uses the change management process to communicate changes that affect one or more CLECs. The process supports the pre-order, order, provisioning, maintenance and repair, and billing capabilities, as well as associated documentation and production support.

The Qwest change management process was established in September 1999, and is undergoing significant changes. In July 2001, Qwest initiated a series of meetings with interested CLECs to address, through discussion and negotiation, a number of CLEC concerns with the then operational process, the Co-provider Industry Change Management Process (CICMP). Qwest and participating CLECs held bi-weekly collaborative work sessions to negotiate the scope and components of the change management process. Qwest has implemented incremental changes resulting from these work sessions, and replaced CICMP with a revised Change Management Process (CMP). Qwest and participating CLECs continue to negotiate in the CMP Redesign work sessions, and have not completed documenting all of the essential components of CMP. The draft CMP document, *Master Redlined CLEC-Qwest CMP Redesign Framework*, is open to ongoing discussions in CMP Redesign and has not been finalized.¹⁵⁹

Qwest and CLEC representatives manage the CMP, and each has distinct roles and responsibilities. The Qwest change management staff includes the Director of Change Management, CMP Managers, and Change Request Project Managers, all of whom are responsible for coordinating activities within CMP.

Qwest and CLECs meet monthly to review and discuss proposed changes and associated issues. Qwest may, as part of CMP, propose additional *ad hoc* meetings to discuss specific topics or

¹⁵⁹ The current version of the *Master Redlined CLEC-Qwest CMP Redesign Framework* is accessible on the CMP Redesign Web site, located at <http://www.qwest.com/wholesale/cmp/redesign.html>.

issues. Qwest must notify CLECs of its desire to have an *ad hoc* meeting at least five business days in advance.

Qwest has proposed an Exception Process to expedite a Qwest or CLEC request. This Exception Process remains subject to the outcome of ongoing Qwest-CLEC negotiations. In addition, either Qwest or a CLEC may utilize an escalation and dispute resolution process to address issues in disagreement.

The CMP is comprised of two components: Systems CMP, and Product/Process CMP. Each is described in more detail below.

2.1.1 Systems CMP

The Systems CMP distinguishes among four types of changes:

- Regulatory changes
- Industry guideline changes
- Qwest-originated changes
- CLEC-originated changes.

Regulatory changes are those required to bring systems into compliance with legal and regulatory requirements, or state and federal court rulings. Industry guideline changes are those required to bring the OSS used between Qwest and CLECs into compliance with new industry standards. Either Qwest or a CLEC may initiate a regulatory or industry guideline change with substantiating material. Qwest-originated changes are those that Qwest desires to implement on its own accord. CLEC-originated changes are those initiated by CLECs that do not fall into another change category.

The above four change types became effective in late 2001. However, until March 2002, Qwest and CLECs remained at impasse over the definition of regulatory change. Based on a decision made by the Colorado Public Utilities Commission on March 13, 2002, Qwest accepted the requirement that regulatory changes should exclude changes related to the Performance Indicator Definitions (PIDs) and Performance Assurance Plans (PAPs).

The Systems CMP requires that either Qwest or a CLEC submit a Change Request (CR) for a desired change that will affect the OSS functionality. An electronic copy of the CR Form, along with instructions, is available on the CMP Web site. Either Qwest or a CLEC can complete the CR Form, and submit it to a designated Qwest Change Management email account. A CR tracking number is assigned to every request that is submitted through the CMP.

Qwest and CLECs hold monthly Systems CMP meetings to discuss CRs and exchange information about the status of open CRs. At the meeting, Qwest may either decline a CR, on the basis that it is out of scope, or attempt to reach consensus about requirements and expectations. If Qwest declines a CLEC-initiated CR, the CMP stipulates that Qwest will contact the CLEC that submitted the CR in writing, and provide the rationale for the decision. In addition, Qwest will also present the underlying reasons for the rejection at the following monthly meeting. A CLEC may utilize the escalation and dispute resolution process if it does not accept Qwest's response to a CR.

The prioritization process is used to select CRs for implementation when demand exceeds capacity for an upcoming OSS interface or test environment release. Prioritization allows CMP participants to provide input as to the relative importance that CLECs and Qwest assign to each CR. The prioritization process consists of a CR ranking exercise, and a possible follow-up vote of CR packaging options. Prior to CR ranking, Qwest informs CLECs of the total capacity of a release, as well as the estimated person hours required to complete each CR. Qwest and CLECs jointly rank the priority of Qwest- and CLEC-initiated CRs for that particular software release.

Regulatory and industry guideline changes are not subject to the prioritization process. The Special Change Request Process (SCRCP) is another exception to the prioritization process whereby either Qwest or a CLEC may choose to financially sponsor the implementation of a CR.

After Qwest and CLECs have conducted CR ranking, Qwest informs CLECs of the recommended packaging options, and conducts a follow-up vote at a later monthly CMP meeting. The outcome of the CR packaging vote determines the changes to be included in the upcoming software release.

The CMP includes software release intervals for the introduction of, and changes to, OSS interfaces. In July 2001, Qwest proposed to improve the existing notification process for changes to OSS interfaces to meet the release documentation intervals proposed in the Ordering and Billing Forum (OBF). During CMP Redesign work sessions, Qwest and CLECs reached consensus on the intervals related to both Electronic Data Interchange (EDI) and the Graphic User Interface (GUI) interfaces. These intervals include the distribution of release documentation, a walk-through of technical specifications with CLECs, CLEC comments on draft technical specifications, Qwest's response, and a timeline for CLEC testing.

For changes to an existing EDI interface, Qwest provides CLECs with draft technical specifications at least 73 calendar days in advance of scheduled implementation, and final technical specifications at least 45 calendar days in advance. For changes to an existing GUI interface, Qwest provides CLECs with draft release notes at least 28 calendar days in advance, and final release notes and a user guide at least 21 calendar days before the scheduled deployment.

Qwest implements changes to an existing OSS interface through scheduled major and point releases. Major releases are the primary vehicle for implementing regulatory, industry guideline, Qwest-originated, and CLEC-originated CRs. Point releases do not require CLECs to make changes to their OSS, and are used primarily to implement changes already disclosed, but not delivered, in a major release.

The CMP does not have a specific category for production support changes. The Qwest IT Wholesale System Help Desk (WSHD) is responsible for event notification, and resolution of severe defects in the testing and production versions of an OSS interface. However, CMP defines the notification and resolution intervals that WSHD follows in addressing known system defects. Qwest implements software patches to resolve WSHD trouble tickets that are deemed critical. Qwest either instructs CLECs to issue CRs through Systems CMP, or fixes the trouble tickets at an unspecified future date for less severe issues.

2.1.2 Product/Process CMP

CLEC-initiated Changes

A CLEC can request changes to Qwest wholesale products or processes, such as changes to the manual processing of orders and other transactions, by submitting a completed CR Form to Qwest. The CR submission form and initiation process are identical for CLEC-initiated Systems and Product/Process CRs.

Qwest and CLECs hold monthly Product/Process CMP meetings to discuss CRs, and exchange information about the status of open CRs. At the meeting, Qwest may either deny a CLEC-initiated CR, or propose options for CLEC comments. If Qwest declines a CLEC-initiated CR, it also presents the underlying reasons. Qwest will implement a CR after Qwest and CLECs have agreed to the requirements and expectations at the meeting. A CLEC may utilize the escalation and dispute resolution process if it does not accept Qwest's response.

Qwest-initiated Changes

At the conclusion of the Change Management Test, the portion of Product/Process CMP that governs Qwest-initiated changes was still undergoing Qwest-CLEC negotiations in CMP Redesign. On April 1, 2002, Qwest implemented an interim process that governs Qwest-originated Product/Process changes, subject to further modifications.

The interim process separates Qwest-initiated changes into five categories (Levels 0 to 4), with each higher level representing increasing impact to CLEC business operations. Before Qwest implements a change, it determines the appropriate category of change based on a set of criteria that Qwest and CLECs jointly developed in CMP Redesign. Qwest and CLECs conceptually agreed that a CLEC may utilize a special process to postpone a Qwest-initiated Product/Process change. At the time of this report, the process for implementing regulatory changes that involve manual processes had not been finalized.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the Qwest CMP. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 23-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Change Management	Change Management Implementation	Completeness and consistency of change request process	23-1 – 23-6
	Prioritization and Escalation Process	Completeness and consistency of prioritization and escalation guidelines and process	23-3 – 23-4, 23-6, 23-8
	Developing Change Proposals	Completeness and consistency of change development process	23-2, 23-4
	Evaluating Change Proposals	Completeness and consistency of change evaluation process	23-3, 23-8
	Severity Levels	Completeness and reasonableness of levels and process	23-8
	Notification Schedules	Reasonableness of notification schedules and completeness of process	23-5, 23-7, 23-9
	Implementing Change	Completeness and consistency of change implementation process	23-5, 23-8 – 23-9
	Intervals	Reasonableness of change interval	23-5, 23-7, 23-9
	Documentation	Timeliness of documentation and notification updates	23-5 – 23-6, 23-9
	Tracking Change Proposals	Adequacy and completeness of change management tracking process	23-7

2.4 Evaluation Methods

The sources of data for this test included reviews of Qwest notifications, Qwest documentation, the Qwest Wholesale Web site¹⁶⁰, and the CR database. In addition, KPMG Consulting attended the monthly CMP meetings and CMP Redesign work sessions as an observer.

KPMG Consulting conducted a series of interviews with managers of the Qwest change management team and five CLECs that volunteered to share their experiences and feedback about the Qwest change management process. KPMG Consulting also interviewed Hewlett-Packard Consulting (HPC) representatives who were knowledgeable about the Qwest CMP.

2.5 Analysis Methods

The Change Management Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. To conduct the analysis for this evaluation, KPMG Consulting used data obtained via interviews with Qwest personnel, as well as reviews of Qwest documentation and analysis of data, to compare

¹⁶⁰ The Qwest Wholesale Web site is located at <http://www.qwest.com/wholesale/>.

information gathered to a pre-determined framework of evaluation criteria. This analysis focused on the existence and adequacy of, as well as adherence to, defined processes to determine a 'satisfied' or 'not satisfied' result for each discrete evaluation criterion.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 23-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
23-1	The change management process responsibilities and activities are defined.	Satisfied	<p>Qwest's change management process responsibilities and activities are defined.</p> <p>The <i>Master Redlined CLEC-Qwest CMP Redesign Framework</i>, dated April 8, 2002 (hereafter "draft CMP document"), defines and describes the roles, responsibilities, and activities of the Qwest change management staff, other relevant Qwest employees, and CLEC representatives who participate in CMP.</p> <p>Qwest internal methods and procedures (M&Ps) documentation contains information about the roles and responsibilities of the change management staff and relevant Qwest IT, product, and process groups.</p> <p>The draft CMP document specifies that CLECs designate representatives as their respective points-of-contact (POCs). The POCs are responsible for submitting CRs, attending relevant CMP meetings, participating in the prioritization process, commenting on Qwest process documents, and providing feedback about proposed changes and CMP issues in accordance with specified processes and intervals.</p> <p>The draft CMP document is accessible on the Qwest CMP Web site, at which a Web-based POC update form and current POC information may be found.</p>
23-2	The change management process is in place and documented.	Unable to Determine	Because Qwest-CLEC negotiations are ongoing as part of CMP Redesign, Qwest's change management process is not fully

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>implemented or documented.</p> <p>In KPMG Consulting’s professional opinion, the draft CMP document does not include all of the essential components that constitute a well-formed and complete change management process. While Qwest and CLECs have made significant progress in CMP Redesign, the parties have not completed discussions about key elements of CMP, and have not documented all of the essential activities within CMP. The CMP Redesign Process is scheduled to continue through June 2002.</p> <p>Qwest and CLECs disagree regarding the scope and effective date of the incremental changes resulting from CMP Redesign work sessions to-date. The draft CMP document remains subject to ongoing modifications and is not finalized.</p> <p>During testing, KPMG Consulting issued Exception 3094, which identified that Qwest did not adhere to the change management process for notifying CLECs about a proposed process change. In addition, Qwest implemented the desired change without responding to CLEC concerns.</p> <p>In response to Exception 3094, Qwest indicated that Qwest and CLECs were at impasse over the process that governs Qwest-initiated Product/Process changes.</p> <p>On April 1, 2002, Qwest implemented an interim process, subject to further development, negotiation, and modification in CMP Redesign.</p> <p>KPMG Consulting closed Exception 3094 as closed/unresolved. See Exception 3094 for additional information on this issue.</p> <p>Due to the test schedule for the Qwest OSS Evaluation, KPMG Consulting was not able to evaluate the final Product/Process CMP with respect to Qwest-initiated changes.</p>
23-3	The change management process has a framework to evaluate, categorize, and prioritize proposed changes.	Unable to Determine	Qwest and CLECs reached conceptual agreement about the framework to categorize and prioritize changes, but did not complete discussions and documentation of the processes for

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>evaluating, categorizing, and prioritizing changes. KPMG Consulting was, therefore, unable to observe the prioritization process of Systems CRs for a major release, or the categorization of Qwest-initiated Product/Process changes.</p> <p>During testing, KPMG Consulting formally identified that Qwest did not consistently exclude CLEC-impacting changes from point release versions of Interconnect Mediated Access (IMA). Qwest subsequently developed internal process documentation to identify changes that have an impact on the OSS or CLEC business operations. The documentation requires Qwest personnel to follow CMP for CLEC-impacting changes. The draft CMP document specifies that Qwest submit CLEC-impacting system changes to CMP, and provide CLECs with release documentation for both major and point software releases.</p> <p>Also during initial testing, KPMG Consulting found that Qwest did not adhere to the interim change management process for the implementation of a Product/Process change. KPMG Consulting issued Exception 3094.</p> <p>In response to Exception 3094, Qwest indicated that Qwest and CLECs disagree about the process that should govern Qwest-initiated Product/Process changes.</p> <p>On April 1, 2002, Qwest implemented an interim process for Qwest-initiated Product/Process changes, subject to further modifications in CMP Redesign. Qwest and CLECs did not complete discussions and documentation of all of the essential components of Product/Process CMP.</p> <p>KPMG Consulting closed Exception 3094 as closed/unresolved. See Exception 3094 for additional information on this issue.</p> <p>KPMG Consulting was not able to evaluate Product/Process CMP due to the ROC OSS test schedule.</p> <p>During testing, KPMG Consulting determined that Qwest's internal OSS interface change management</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>documentation was inconsistent, and lacked process flows and process descriptions. As a result of these deficiencies, KPMG Consulting issued Exception 3102.</p> <p>Qwest subsequently revised its internal process documents. KPMG Consulting reviewed the revised documents and verified inclusion of information about the initiation, scheduling, analysis, design, software development, and closure of changes. Exception 3102 is closed. See Exception 3102 for additional information on this issue.</p> <p>KPMG Consulting also found that the Systems CMP lacked both guidelines for prioritizing CLEC-initiated system CRs, and criteria for developing the scope of an OSS Interface Release Package. KPMG Consulting issued Exception 3111.</p> <p>Qwest subsequently developed internal M&Ps that contain information about elements that constitute level of effort (LOE) and capacity information, as well as the process Qwest staff follows in determining release packaging options. The draft CMP document states that Qwest provides CLECs with LOE and release capacity information, in terms of person hours, during the prioritization process.</p> <p>KPMG Consulting reviewed relevant process documentation, and verified information reflecting Qwest-CLEC discussions in the CMP Redesign work sessions to-date. However, KPMG Consulting was not able to observe the prioritization process for a major software release, and closed Exception 3111 as inconclusive. See Exception 3111 for additional information on this issue.</p> <p>Further KPMG Consulting testing revealed that Qwest did not have a comprehensive, and fully documented, production support process. KPMG Consulting issued Exception 3112.</p> <p>Qwest subsequently revised its process documentation to eliminate inconsistencies.</p> <p>KPMG Consulting reviewed the revised</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>documents, noting that Qwest clarified that it would notify CLECs of defects in backend systems that affect OSS functionality. KPMG Consulting reviewed one example in which Qwest distributed the notification of a backend system defect. Exception 3112 is closed. See Exception 3112 for additional information on this issue.</p> <p>KPMG Consulting also determined that Qwest did not have clearly defined criteria for determining whether a proposed change was out of the scope of CMP. KPMG Consulting issued Exception 3118.</p> <p>In response, Qwest indicated that, although Qwest and CLECs had not developed a comprehensive list of issues that define the CMP scope, Qwest had previously denied relatively few CLEC-initiated CRs. Qwest also stated that, going forward, it would assign a tracking number to every CLEC-initiated change, would respond in writing to the initiating CLEC with the reasons for which a proposed CR is considered out of scope, and would discuss a CR considered to be out of CMP scope with CLECs at the monthly CMP meeting.</p> <p>KPMG Consulting reviewed revised process documentation and verified the inclusion of the above procedures. KPMG Consulting found that the new process and accompanying documentation sufficiently addressed the identified issues. Exception 3118 is closed. See Exception 3118 for additional information on this issue.</p> <p>At the conclusion of the Qwest OSS Evaluation, KPMG Consulting observed that Qwest and CLECs continued discussion about relevant issues in CMP Redesign, including:</p> <ul style="list-style-type: none"> • Criteria for determining a method of implementing Regulatory changes that concern manual processes • The process for postponing a Qwest-initiated Product/Process change • The process for implementing changes for both OSS interfaces and products or processes

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Special Change Request Process • Exception Process • Completion and finalization of the draft CMP document. <p>Based on the closure status of Exceptions 3094 and 3111, KPMG Consulting was unable to fully assess Qwest's framework to evaluate, categorize, and prioritize proposed Systems and Product/Process changes.</p>
23-4	The change management process includes procedures for allowing input from all interested parties.	Satisfied	<p>Qwest's change management process allows for input from interested parties.</p> <p>Qwest and CLECs attend monthly CMP meetings to discuss proposed changes and exchange information about change status. Qwest also conducts additional meetings to discuss specific topics or issues. CLECs may provide input through email directly to Qwest, or share comments at CMP meetings.</p> <p>From July 11, 2001 through April 16, 2002, Qwest and CLECs held bi-weekly, collaborative CMP Redesign work sessions to address CLEC concerns with the Qwest change management process. Qwest and CLECs have conceptually agreed that:</p> <ul style="list-style-type: none"> • Qwest will discuss all Qwest-initiated CLEC-impacting Systems and Product/Process changes in CMP and • Either Qwest or a CLEC may utilize the escalation and dispute resolution process to address issues by completing a Web-based form. <p>During testing, HPC formally identified that Qwest did not distribute adequate advance notification of product-related meetings held to allow CLECs to provide input.</p> <p>Qwest subsequently implemented improvements to existing notification processes, and addressed remaining issues in CMP Redesign.</p> <p>Also during initial testing, HPC formally identified that Qwest had not defined the parameters for the CR clarification meeting.</p> <p>Qwest subsequently responded that the CR</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			clarification meeting is confined to Qwest and the CLEC that originated the CR.
23-5	The change management process defines intervals for considering and notifying customers about proposed changes.	Satisfied	<p>Qwest's change management process defines intervals for considering and notifying customers about proposed changes.</p> <p>The draft CMP document specifies the timelines for the initiation, evaluation, prioritization, and documentation of Systems CRs, as well as the initiation, evaluation, and notification of CLEC-initiated Product/Process CRs. For example, for changes to an existing EDI interface, Qwest provides CLECs with draft technical specifications at least 73 calendar days in advance of scheduled implementation, and final technical specifications at least 45 calendar days in advance. For changes to an existing GUI interface, Qwest provides CLECs with draft release notes at least 28 calendar days in advance of the release. Final release notes and a User Guide are issued at least 21 calendar days before the scheduled deployment.</p> <p>Qwest implemented an interim Product/Process process on April 1, 2002. The interim process separates Qwest-initiated Product/Process changes into five categories (Levels 0 to 4), each with defined notification and implementation intervals.</p>
23-6	Documentation regarding proposed changes is distributed to wholesale customers.	Satisfied	<p>Qwest distributes documentation regarding proposed changes to CLECs. Such documentation includes:</p> <ul style="list-style-type: none"> • Information about open CRs • Qwest response to escalated CRs • Software release notes • Process document releases and updates. <p>The Interactive CR Status Reports contain information about existing Systems and Product/Process CRs. The reports are available on the CMP Web site, and included in the monthly CMP distribution package.</p> <p>Information about ongoing escalations is</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>available on the CMP Web site. The Ongoing Escalations and Disputes Web site contains relevant correspondence and documentation.</p> <p>Qwest utilizes both emails and the Wholesale Web site to distribute documentation for releases and updates.</p> <p>KPMG Consulting monitored the distribution of CLEC notifications during the testing period, and attended change management meetings to observe the information that Qwest communicated to CLECs. In addition, KPMG Consulting confirmed that HPC received relevant Qwest notifications.</p> <p>During testing, KPMG Consulting formally identified that Qwest had not consistently informed CLECs of CLEC-impacting changes in the point release versions of IMA.</p> <p>Qwest subsequently developed internal process documentation to identify changes that have an impact on OSS or CLEC business operations. The documentation requires Qwest personnel to follow CMP for changes that affect OSS interfaces or CLEC business operations. The draft CMP document specifies that Qwest submit CLEC-impacting systems changes as CRs, and provide CLECs with software release documentation. The document release dates are included in the Web-based OSS Release Calendar.</p> <p>KPMG Consulting also formally identified that Qwest did not adhere to the Systems CMP for notifying CLECs, and distributing information about changes that resulted from bill rate validation.</p> <p>Qwest subsequently developed a new notification process that informs CLECs in advance of the implementation of proposed corrective changes and provides CLECs with detailed information about bill validation results.</p> <p>KPMG Consulting also found that Qwest lacked uniform standards and processes for document management. KPMG Consulting issued Exception 3093.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Qwest subsequently developed internal processes to ensure that the documents that it distributes to CLECs contain essential document management information, such as author, version control, business unit, page numbers, and change log.</p> <p>KPMG Consulting's retesting confirmed that Qwest personnel followed the documented processes. Exception 3093 is closed. See Exception 3093 for additional information on this issue.</p> <p>During testing, HPC formally identified that the <i>CEMR User Guide</i> did not reflect documentation updates described in a Qwest notification.</p> <p>In response to the identified discrepancies between notification and document update, Qwest suggested that HPC might have mistakenly downloaded an earlier version of the <i>CEMR User Guide</i> due to Web browser configuration, and stated that future notifications would include a reminder of Web site reloading, whenever it was deemed appropriate.</p> <p>In addition, HPC formally identified that Qwest lacked a public level of version control for CEMR GUI. HPC experienced difficulty in coordinating the CEMR application with relevant documentation. Qwest subsequently implemented version control on the <i>CEMR User Guide</i> and <i>Release Notes</i> to reflect the version requirements of software development.</p>
23-7	Procedures and systems are in place to track information such as descriptions of proposed changes, key notification dates, and change status.	Unable to Determine	<p>Systems CMP</p> <p>Procedures and systems are in place to track information such as descriptions of CRs, release dates, and CR status prior to change implementation.</p> <p>However, KPMG Consulting was not able to validate the procedures and systems for tracking release documentation requirements.</p> <p>Qwest utilizes a Microsoft Access database to track Qwest- and CLEC-initiated Systems CRs. The interactive status report generated from this database is available on the CMP Web site, and is included in the monthly CMP distribution package.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The draft CMP document specifies that Qwest provide CLECs with a list of changes scheduled for implementation in an upcoming software release. Qwest provides CLECs with release documentation requirements in accordance with the intervals in the draft CMP document. If Qwest determines that it will not be able to implement a CR as scheduled, Qwest will discuss options at the next monthly CMP meeting. KPMG Consulting was not able to verify Qwest's compliance with the complete notification processes.</p> <p>During testing, KPMG Consulting identified that Qwest lacked proper tools to track notifications, and to ensure that information was distributed to CLECs in accordance with the intervals specified in the draft CMP document. KPMG Consulting issued Exception 3110.</p> <p>Qwest subsequently provided KPMG Consulting with documents describing Qwest's internal procedures that individual software release teams use to comply with CMP requirements. However, Qwest confirmed that change management staff did not have a centralized mechanism to track and ensure that documentation release intervals for all upcoming software releases were followed. Although the documentation provided sufficient evidence that tracking procedures exist, the information was not sufficient for KPMG Consulting to determine that Qwest adheres to the documented process.</p> <p>KPMG Consulting closed Exception 3110 as inconclusive. See Exception 3110 for additional information on this issue.</p> <p>Product/Process CMP</p> <p>Procedures and systems are in place to track information about CLEC-initiated CRs. However, KPMG Consulting was not able to verify that procedures and systems are in place for categorizing Qwest-initiated changes to product, process, and associated documentation.</p> <p>Qwest utilizes a Microsoft Access database to track CLEC-initiated Product/Process</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CRs. The interactive status report generated from this database is available on the CMP Web site, and included in the monthly CMP distribution package.</p> <p>Qwest utilizes a Web-based Customer Notification Letter Archive (CNLA), available at the following Web site: http://www.qwest.com/wholesale/notices/cnla/, for CLECs to search and retrieve past notification. Qwest internal documentation indicates that relevant documentation teams track respective notification and release documentation intervals.</p> <p>However, since the set of criteria for categorizing Qwest-initiated changes remains subject to modifications in CMP Redesign, KPMG Consulting is not able to verify that procedures and systems are in place to follow Qwest-initiated Product/Process change categories, and the associated intervals.</p>
23-8	Criteria are defined for the prioritization system and for severity coding.	Unable to Determine	<p>Criteria are defined for the prioritization of Systems CRs and for severity coding of trouble tickets. The categorization and associated intervals for Qwest-initiated Product/Process changes remain subject to Qwest-CLEC negotiation in CMP Redesign.</p> <p>Systems Changes</p> <p>The Systems CMP requires both Qwest and CLECs to participate in the prioritization process. A prioritization vote is necessary when the available capacity of an OSS interface or test environment release is unable to accommodate all outstanding CRs. Qwest and CLECs jointly rank the priority of Qwest- and CLEC-originated CRs for that particular software release by using a quantitative evaluation method.</p> <p>Regulatory and industry guideline changes are not subject to the prioritization process. Another exception to the prioritization process takes the form of a Special Change Request Process, utilized by either Qwest or CLECs, to financially sponsor a CR and bypass the prioritization process.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The prioritization process for IMA 10.0 was the first time that Qwest had submitted Qwest-originated CRs to CMP. Due to delays in the deployment schedule, Qwest conducted the prioritization process vote for IMA 10.0 twice, first in August 2001, and again in October 2001.</p> <p>The second IMA 10.0 prioritization process included five Qwest-originated PID/PAP-related CRs. Qwest classified these CRs as regulatory changes and bypassed the CR ranking vote. CLECs subsequently disputed this classification, objected to the preferential treatment of these Qwest-initiated CRs, and requested that Qwest reallocate resources to implement other prioritized CRs. Qwest proceeded to schedule the implementation of four of these CRs in IMA 10.0 over CLEC objections.</p> <p>The prioritization for IMA 10.0 was also the first time that the process included the concept of CR packaging options. After the initial prioritization vote had taken place, Qwest IT personnel performed detailed analysis of some of the prioritized CRs, and recommended that certain CRs be implemented together so that Qwest IT would realize cost-savings from identified system and functional dependencies.</p> <p>Qwest subsequently informed CLECs of the recommended CR packaging options, and conducted another vote to decide which CR packaging options should be included in the upcoming software release.</p> <p>KPMG Consulting recognizes that the prioritization for IMA 10.0, and IMA 11.0, took place when Qwest and CLECs were at impasse over the definition of regulatory change. Qwest conducted CR ranking for IMA 11.0 in February 2002, and included two PID/PAP-related CRs as regulatory changes over CLEC objections. The Colorado Public Utilities Commission decided on March 13, 2002 that regulatory changes should exclude PID/PAP-related changes.</p> <p>Due to the test schedule, KPMG Consulting was not able to observe the</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>prioritization of a major software release in accordance with the documented process.</p> <p>During testing, KPMG Consulting identified that Qwest Systems CMP lacked guidelines for prioritizing CLEC-initiated system CRs, and criteria for developing the scope of an OSS Interface Release Package. KPMG Consulting issued Exception 3111.</p> <p>Qwest subsequently updated the draft CMP document to state that Qwest provides CLECs with LOE and release capacity information, in terms of person hours, during the prioritization process. In addition, Qwest developed internal M&Ps for the prioritization process.</p> <p>KPMG Consulting reviewed relevant process documentation, and verified information reflecting Qwest-CLEC discussions in the CMP Redesign work sessions to-date. KPMG Consulting observed that Qwest and CLECs had not finalized discussions about the prioritization process before prioritization for IMA Release 10.0 occurred.</p> <p>KPMG Consulting was not able to evaluate adherence to the process during this test, and closed Exception 3111 as inconclusive. See Exception 3111 for additional information on this issue.</p> <p>Product/Process Changes</p> <p>The draft CMP document describes the initiation, evaluation, and notification of CLEC-initiated Product/Process CRs. Qwest-initiated Product/Process changes, and the process for implementing regulatory changes involving manual processes, remain subject to ongoing Qwest-CLEC negotiation in CMP Redesign.</p> <p>During testing, KPMG Consulting observed that Qwest implemented a desired process change over CLEC objections. KPMG Consulting issued Exception 3094.</p> <p>In response to Exception 3094, Qwest indicated that Qwest and CLECs disagreed about the process governing Qwest-</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>initiated Product/Process changes.</p> <p>On April 1, 2002, Qwest implemented an interim process, subject to further modifications in CMP Redesign. The interim process separates Qwest-initiated Product/Process changes into five categories. The interim process defines the notification and implementation intervals for each category based on perceived impact to CLEC business operations.</p> <p>KPMG Consulting was not able to evaluate the interim process due to the test schedule, and closed Exception 3094 unresolved. See Exception 3094 for additional information on this issue.</p> <p>Production Support</p> <p>The draft CMP document defines four severity levels, and the related notification and resolution intervals for production support issues. Qwest implements patch releases for Severity 1 or 2 tickets, but advises CLECs to issue CRs via CMP to resolve Severity 3 or 4 issues. The draft CMP document specifies that WSHD staff communicate to CLECs about the severity assignment of a trouble ticket.</p> <p>KPMG Consulting monitored System Event Notifications during the testing period, and confirmed that the notifications contained severity information.</p> <p>During testing, HPC formally identified that Qwest did not publish the defects and implementation dates identified during the Interoperability or Certification testing portion of the EDI implementation process, and that Qwest assigned severity rankings to the issues without input from CLECs.</p> <p>In response, Qwest extended production support functions to include the 30-day testing window prior to the EDI implementation process.</p> <p>Exception Process</p> <p>Both Systems and Product/Process portions of CMP employ differing process flows to accommodate changes that either Qwest or a CLEC requests be implemented on an expedited basis.</p> <p>The Exception Process remains subject to</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			ongoing Qwest-CLEC negotiation in CMP Redesign.
23-9	Qwest complies with notification intervals and documentation release requirements.	Unable to Determine	<p>Due to continuous changes to both Systems and Product/Process CMP, KPMG Consulting was not able to verify Qwest's adherence to notification intervals and documentation release requirements.</p> <p>Systems CMP</p> <p>The draft CMP document defines software release documentation intervals for the introduction of, as well as changes to, OSS interfaces. For example, for changes to an existing EDI interface, Qwest provides CLECs with draft technical specifications at least 73 calendar days in advance of scheduled implementation, and final technical specifications at least 45 calendar days in advance. For changes to an existing GUI interface, Qwest provides CLECs with draft release notes at least 28 calendar days in advance, and final release notes and user guide at least 21 calendar days before the scheduled deployment.</p> <p>Qwest utilizes both email and the Wholesale Web site to distribute notifications and documentation release requirements. KPMG Consulting monitored CLEC Notifications during the testing period. Due to test schedule. KPMG Consulting was not able to observe Qwest's adherence to the current process of the documentation release requirements for a major software release.</p> <p>During testing, KPMG Consulting formally identified that System Event Notifications were improperly formatted for distribution to CLECs. As a result, CLECs were unable to obtain information from these notifications.</p> <p>Qwest subsequently implemented a new process at WSHD to ensure that all notifications include attachments in the Microsoft Word format.</p> <p>In addition, KPMG Consulting formally identified that System Event Notifications contained discrepancies related to:</p> <ol style="list-style-type: none"> 1) Notification date inaccuracies 2) Inaccurate time-stamps

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>3) Lateness in distribution.</p> <p>Qwest subsequently conducted internal training to ensure that Qwest staff follows the notification intervals set forth in the draft CMP document.</p> <p>Due to the test schedule, KPMG Consulting was not able to evaluate Qwest's adherence to the steps that Qwest took to address the above issues, and the subsequent outputs.</p> <p>Further testing activities determined that Qwest did not distribute the mailout notifications in a timely manner, and did not follow the 48-hour interval for planned outages. KPMG Consulting issued Exception 3110.</p> <p>As a result, Qwest implemented a login system to ensure that the Notifications Department promptly logs and distributes notifications. KPMG Consulting's retesting confirmed that the changes were implemented.</p> <p>KPMG Consulting considers the issue specifically relevant to this evaluation criterion resolved, and closed Exception 3110 as inconclusive due to issues identified in 23-7. See Exception 3110 for additional information on this issue.</p> <p>During testing, HPC formally identified an issue that Qwest provided CLECs with inadequate advance notice regarding changes to its IP addresses for Street Address Guide (SAG) and Feature Availability Matrix (FAM) files.</p> <p>Qwest subsequently updated process documentation to specify that Qwest would notify CLECs of changes in connectivity requirements at least five days in advance.</p> <p>In addition, HPC formally identified that Qwest did not address the inaccurate and incomplete information in IMA disclosure documents in a timely manner.</p> <p>Qwest implemented changes to the subsequent release documentation.</p> <p>In addition, HPC formally identified in Exception 2003 that Qwest did not follow its established release notification schedule when implementing IMA releases, and did</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>not provide complete and accurate information in its release notifications to prepare CLECs for certification and implementation of new releases.</p> <p>Qwest subsequently indicated that it would follow the intervals specified in the draft CMP document. Exception 2003 is closed. See Exception 2003 for additional information on this issue.</p> <p>Product/Process CMP</p> <p>On April 1, 2002, Qwest implemented an interim process that governs Qwest-initiated Product/Process changes, including updates to Product Catalogs (PCATs) and Technical Publications. Qwest and CLECs have not completed discussions and documentation of this portion of the Product/Process CMP.</p> <p>KPMG Consulting was not able to validate compliance with product and process notification intervals.</p>

24.3 Test Results: Account Establishment and Management Review (Test 24.3)

1.0 Description

The Account Establishment and Management Review was an evaluation of Qwest's methods and procedures, processes, and practices for establishing and managing Competitive Local Exchange Carriers' (CLEC) account relationships. The objectives of this test were to review and evaluate the adequacy and completeness of, and compliance with, procedures for developing, publicizing, conducting, and monitoring account management activities. The scope of the test included a review of both the CLEC start-up phase of establishing an account and interconnecting with Qwest as a new customer, as well as the ongoing maintenance and relationship management activities that take place after a CLEC has been set up to conduct business with Qwest.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest Account Teams offer assistance to CLECs that conduct business with Qwest, and serve as the primary point of contact for a wide range of issues including, but not limited to:

- Interconnection start-up activities
- Customer questionnaires
- Contract compliance
- Project coordination
- Recurring performance issues with a Qwest employee or group
- Product information
- Central Office conversion escalations
- Communications with other Qwest Business Units and Subject Matter Experts (SMEs) on the CLEC's behalf.

Beginning in April 2001, the Qwest Account Manager role was separated into two distinct Account Team functions: Sales and Service. The roles of the Qwest Sales Team, and the Qwest Service Team, are publicized on the Qwest Wholesale Markets Web site¹⁶¹. Account Team members are assigned to a CLEC based on the CLEC's account scale and scope, service mix, specific interests, and geographical areas in which it intends to operate.

The Qwest Sales Team consists of a Sales Director and one or more Sales Executives. The Sales Director oversees the Sales Executives. The Sales Team:

- Initiates and completes the sales cycle with CLECs:
 - Provides sales information

¹⁶¹ The Qwest Wholesale Markets Web site is located at <http://www.qwest.com/wholesale/clecs/accountmanagers.html>.

- Responds to pricing inquiries
- Generates sales proposals
- Provides support for sales order escalations
- Provides support related to product contracts
- Establishes and amends Interconnection Agreements (IA).

The Qwest Service Team includes three team positions: Service Director, Senior Service Manager, and Service Manager. The Service Team:

- Serves as the escalation point of contact for issues regarding pre-ordering, ordering, provisioning, and maintenance and repair
- Facilitates resolution of billing issues, in conjunction with the designated Qwest Billing Representative
- Handles escalations
- Provides information on major outages
- Answers questions related to the CLEC's signed IA
- When necessary, interacts with other Qwest departments, on behalf of the CLEC, to resolve issues such as delayed orders and canceled orders.

CLECs may contact their Service Managers for assistance at any time, regardless of whether or not they have previously contacted the Interconnect Service Center (ISC) and/or Wholesale Systems Help Desk (WSHD). Qwest provides CLEC industry mailings and notifications regarding changes to the Account Management process through its Change Management Process. These emails are referred to as 'mailouts,' and are an integral part of the communication between Qwest and CLECs for changes occurring to Qwest OSS interfaces, wholesale products, and business processes.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was Qwest's methods and procedures, processes, and practices for establishing and maintaining the CLEC account relationship. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 24.3-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Establishing an Account Relationship	Staffing	Appropriate roles and responsibilities	24.3-1 – 24.3-3, 24.3-8
		Capacity, coverage, and account allocation	24.3-1 – 24.3-2
Maintaining an Account Relationship	Customer Contact	Adequacy and completeness of procedures for responding to customer requests	24.3-1 – 24.3-2, 24.3-4 – 24.3-5, 24.3-9
	Escalation	Adequacy and completeness of escalation procedures	24.3-4 – 24.3-5, 24.3-8
	Routine and Urgent Customer Notifications	Adequacy and completeness of communication and notification procedures	24.3-3 – 24.3-4, 24.3-6 – 24.3-7, 24.3-9, 24.3-11
	Customer Documentation	Adequacy and completeness of procedures for developing, distributing, and maintaining customer documentation	24.3-10 – 24.3-11

2.4 Evaluation Methods

Information relevant to the Qwest processes and procedures for account establishment and management was obtained from six sources:

- KPMG Consulting conducted a series of on-site interviews with Qwest personnel and Subject Matter Experts (SMEs), all of whom were directly involved in establishing new CLEC accounts and providing support and maintenance to CLECs. The objective of these interviews was to collect information regarding activities and sub-processes related to the Account Team support process.
- KPMG Consulting examined and reviewed Qwest's InfoBuddy system during an on-site demonstration.
- KPMG Consulting reviewed documentation that is publicly available on the Qwest Wholesale Markets Web site, and notifications about account establishment. Examples include the Account Team Description Web site and mailout notifications related to the Service Management and Sales functions.
- KPMG Consulting conducted an on-site interview with Hewlett-Packard Consulting (HPC) to gain information regarding its experience as the Pseudo-CLEC (P-CLEC) with this process. In addition, KPMG Consulting monitored both the P-CLEC relationship with the Qwest Service Manager and account management activities that took place throughout the course of the test.
- KPMG Consulting gathered and reviewed Qwest internal documentation regarding methods and procedures, organizational charts, process flows, and job aids for the Account Management processes.

- KPMG Consulting conducted interviews with CLEC representatives who volunteered to participate in the Qwest OSS Evaluation. KPMG Consulting used the information gathered to understand the CLECs’ reported issues during their experiences with the Account Management (i.e., Service Management and Sales Executive) process, and to potentially identify areas requiring a more in-depth review.

2.5 Analysis Methods

The Account Establishment and Management Review included a checklist of evaluation measures developed by KPMG Consulting during the preparation of test activities for the Qwest OSS Evaluation. KPMG Consulting used data obtained via interviews with Qwest personnel, reviews of Qwest documentation, analysis of Qwest data, and assessment of HPC’s P-CLEC experience to compare the information gathered against a pre-determined framework of evaluation criteria to conduct the analysis for the test. This analysis focused on the existence of, adequacy of, and adherence to, defined processes to determine a ‘satisfied,’ ‘not satisfied,’ or ‘unable to determine’ conclusion for each criterion.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 24.3-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.3-1	Account establishment and management responsibilities and activities are defined.	Satisfied	<p>Account establishment and management responsibilities and activities are defined in Qwest’s internal InfoBuddy documentation, and on the Qwest Wholesale Web site for CLECs.</p> <p>The InfoBuddy documents provide links to other internal InfoBuddy documents, where appropriate, for further information and details.</p> <p>The Qwest Wholesale Web site outlines the Qwest Account Team responsibilities. See http://www.qwest.com/wholesale/clecs/accountmanagers.html.</p> <p>During testing activities, KPMG Consulting, in its review of internal documentation, identified repeated instances in which Qwest did not provide methods and procedural documents that contained well-structured, complete, and consistent information to support the Service Management function.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting issued Exception 3014. Over a subsequent six-month period, Qwest provided details on updates that it made to internal documentation, relative to the specific issues raised in Exception 3014. KPMG Consulting verified that the documentation enhancements were sufficient. For example, Qwest updated documentation to provide suggested priority levels for performing specific service management and support functions. Additionally, Qwest updated its internal Service Management documentation to include interval guidelines for different means of communication between CLECs and their Service Managers. See Exception 3014 for additional information on this issue. Exception 3014 is closed.</p>
24.3-2	Account management staff is organized to provide account coverage.	Satisfied	<p>The Account Team staff is organized to provide account coverage for CLECs. Each CLEC or Reseller is assigned to a Qwest Account Team, which consists of a Sales Team and a Service Team.</p> <p>The Service Team serves as the escalation source of support for ordering, provisioning, and maintenance and repair issues. It also handles escalations for billing issues.</p> <p>Sales Executives and Service Managers are assigned to CLECs based on several factors, such as scale and scope of the account, types of services offered by the CLEC, specific interests, and location and service area coverage. Qwest may assign multiple account team members to CLECs that represent large accounts, and that service a relatively large geographic region in the 14-State Qwest area.</p> <p>Qwest also has procedures in place in the event that a Qwest Sales Executive or Service Manager is reassigned, in which case an account needs to be transitioned to one or more new Account Team members. In such cases, Service Managers and Sales Executives transition all current open issues to the new Qwest representative(s), along with pertinent background information, commitments, and timelines. KPMG Consulting observed the Qwest Account Management team execute these activities</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>for the P-CLEC when a transition of staff took place during this evaluation.</p> <p>The Service Manager has a designated alternate Service Manager who can be made available to the CLEC when the primary Service Manager is not available. The primary Service Manager is responsible for keeping the alternate Service Manager informed of customer issues. KPMG Consulting observed this process being carried out by the Service Management team for the P-CLEC.</p>
24.3-3	Instructions for contacting account managers are defined and published.	Satisfied	<p>Instructions for contacting the Qwest Account Team are provided on the Qwest Web site in the "How Sales Executives and Service Managers Are Assigned" section at http://www.qwest.com/wholesale/clecs/accountmanagers.html.</p> <p>The Qwest Wholesale Customer Contact Web site also provides contact information in the "Sales Executives and Service Managers" section at http://www.qwest.com/wholesale/clecs/escalations.html.</p> <p>In addition, CLECs are directed to refer to Qwest's Customer Contact Information Tool to identify the Qwest Sales Executive and Service Manager assigned to each company.</p> <p>The internal InfoBuddy document <i>Service Management Expectations – Wholesale</i> provides Service Managers with responsibility timeframes as guidelines for various methods of communication (i.e., pagers, phone calls/voice mail, and emails/letters). Effective April 5, 2002, Qwest published the timeframes by which CLECs can expect to receive a response and a status update, which vary by the type of communication method used.</p>
24.3-4	Procedures for receiving, managing, and resolving customer inquiries are defined and adhered to.	Satisfied	<p>Procedures for receiving, managing, and resolving customer inquiries are defined and documented in internal Qwest InfoBuddy documentation.</p> <p>Service Managers are expected to document and track issues as they progress, potentially assign issues to an accountable Qwest SME, and manage issues through to closure.</p> <p>Qwest utilizes an Issues Database to track issues, such as repetitive concerns, or issues</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>that have been escalated to an Executive Director or above. KPMG Consulting confirmed the applied use of this database in conjunction with issues raised by the P-CLEC. Furthermore, KPMG Consulting monitored regular communications and meetings held between the P-CLEC and Qwest.</p> <p>KPMG Consulting presented deficiencies found in Qwest's documentation to support the Service Management function in Exception 3014. KPMG Consulting found that the roles and responsibilities for handling ongoing customer account issues were not clearly defined in internal documentation.</p> <p>Qwest subsequently provided details on updates made to internal documentation relative to the specific issues raised in Exception 3014.</p> <p>KPMG Consulting verified that the documentation enhancements were sufficient to address issues relevant to procedures for receiving, managing, and resolving customer inquiries. See Exception 3014 for additional information on this issue. Exception 3014 is closed.</p> <p>In addition, KPMG Consulting initially found that Qwest's procedures for logging CLEC correspondence in order to track and resolve CLEC issues were insufficient, and formally identified this issue. Qwest also lacked tools and procedures to track adherence to the response time interval guidelines provided in the internal InfoBuddy document <i>Service Management Expectations – Wholesale</i>.</p> <p>As a result, Qwest updated internal documentation and the Qwest Wholesale Web site to address these issues.</p> <p>KPMG Consulting verified that the changes to documentation and proposed Web site enhancements adequately documented the procedures for receiving, managing, and resolving CLEC inquiries. KPMG Consulting verified that the Account Team Web site includes guidelines for timely feedback.</p> <p>HPC, operating as the P-CLEC, discussed a</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>lack of timely responses from the Qwest Service Management Team in its Exception 2064. The Exception addressed the issue of how clarification or correction of requested documentation was either not provided or was provided with a delayed response.</p> <p>HPC verified that Qwest took corrective actions by revising its Service Management processes. HPC did not observe any additional instances of non-responsiveness or slow response to escalations. Exception 2064 is closed.</p>
24.3-5	Procedures for escalating critical, time-sensitive, and unresolved customer issues are defined and adhered to.	Satisfied	<p>Qwest employs defined procedures for escalating critical, time-sensitive, and unresolved customer issues. The escalation procedures are available on the Qwest Web site at http://www.qwest.com/wholesale/clecs/exescover.html.</p> <p>The internal InfoBuddy documents, <i>Escalations/Delayed Order Escalations & Expedites</i> and <i>Maintenance Escalations – Wholesale</i>, provide Service Managers with escalation procedures and internal escalation contact information.</p> <p>Qwest’s escalation lists and procedures are provided to the CLEC by its assigned Service Manager. It is the Service Manager’s responsibility to both keep the escalation list updated, and to distribute it to CLECs, as needed.</p> <p>KPMG Consulting observed the Service Manager following the escalation process and procedures during regular weekly meeting between the P-CLEC and Qwest. Qwest distributed the escalation list to CLECs by means of a Change Management Process ‘mailout’ notification.</p> <p>HPC’s Exception 2064 identified issues regarding a lack of timely responses from the Qwest Service Management Team, and the way in which time-sensitive issues were escalated. In response to the Exception, Qwest implemented several changes including:</p> <ul style="list-style-type: none"> • Implementation of a new reporting structure that facilitates and improves issue response, initial assessment of the issue, issue resolution, and any necessary escalation required

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • New procedures for Service Managers to negotiate commitment dates with their customers • Customized escalation lists that provide Service Management team contact information. <p>Based on Qwest's response, and subsequent process enhancements, the issues raised in Exception 2064 were resolved. Exception 2064 is closed.</p>
24.3-6	Procedures for making routine, regular communications to customers are defined and adhered to.	Satisfied	<p>Qwest employs defined procedures for making routine, regular communications to customers. The procedures are defined in internal Qwest InfoBuddy documentation.</p> <p>Sales Director responsibilities include the administration and email distribution of Industry Mailouts to CLECs. Mailouts can contain information on product changes, releases of new products, or switch conversions.</p> <p>Service Managers provide CLECs with Web site references and information on the Change Management Process (CMP). It is also the Service Manager's responsibility to provide CLECs with reminders about monthly CMP meetings. CMP is the forum used by Qwest and CLECs to introduce, change, or retire a Qwest OSS interface, product, or process. For more information on CMP, refer to Test 23, Change Management Test.</p> <p>KPMG Consulting observed discussions between the P-CLEC and Qwest regarding CMP during the Service Manager weekly meetings. KPMG Consulting also received all CMP communications and P-CLEC mailouts informing customers about changes in roles and responsibilities, updates to the Wholesale Web site, and notices about upcoming CMP meetings.</p>
24.3-7	Procedures for making emergency notifications and communications to customers are defined.	Satisfied	<p>Qwest employs defined procedures for making emergency notifications and communications to customers, as described in internal Qwest InfoBuddy documentation.</p> <p>During extreme business-impacting situations, Service Managers are responsible for calling CLECs to inform them of any changes in process or outages of service.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The Network Outage Notification Database (NOND) includes complete customer contact information for use in the notification of network outages. For more information on network outages, refer to Test 24.9, Network Surveillance and Outage Support Review.</p> <p>In cases of system outages and network outages, CLECs are directed to contact the IT Wholesale Systems Help Desk. Refer to Test 24.7, Wholesale Systems Help Desk Review for details regarding System Event notifications and associated intervals.</p>
24.3-8	Account Managers interact with other Qwest units on the CLECs' behalf.	Satisfied	<p>Service Managers are responsible for interacting with Qwest's internal business units on behalf of CLECs, as defined in internal Qwest InfoBuddy documentation. Service Managers have access to the internal InfoBuddy documentation, <i>Service Support Team Functions (Market Launches) – Wholesale</i> and <i>Service Management Functions – Wholesale</i>, as well as the Escalation Tier Contact Information to aid them in contacting the appropriate SMEs to resolve a CLEC's question or inquiry.</p> <p>KPMG Consulting verified the use of the Escalation Tier Contact Information and Service Manager interactions with Qwest internal business units on behalf of the P-CLEC. Furthermore, KPMG Consulting monitored regular communications and meetings held between the P-CLEC and Qwest in which updates on the interactions with other Qwest units were provided by the Service Manager.</p> <p>HPC's Exception 2064 discussed a lack of timely responses from the Qwest Service Management Team, and how clarification or correction of requested documentation was either not provided, or was provided with a delayed response from SMEs.</p> <p>HPC verified process improvements made by Qwest and monitored situations in which the Account Team interacted on behalf of the client with other Qwest business units. Exception 2064 is closed.</p>
24.3-9	Customer calls are returned per documented/stated intervals.	Unable to Determine	KPMG Consulting was unable to determine if customer calls were returned per the documented intervals.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The internal InfoBuddy document, <i>Service Management Expectations – Wholesale</i>, states intervals for Service Managers to return pages, phone calls/voice mail messages, and emails/letters both when the Service Manager is in or out of the office. Service Managers and Sales Executives are directed to respond to pages within a specified period of time depending on whether the Service Manager is in or out of the office. Similar communication guidelines are set for Account Team voice mail messages. The Account Team communication standards also stipulate that they are to acknowledge receipt of written correspondence, including email, within one business day.</p> <p>KPMG Consulting observed deficiencies in the Service Management procedures for logging CLEC correspondence, and for tracking and resolving CLEC issues, and formally raised this as an issue. KPMG Consulting also observed that Service Management personnel lacked the tools and procedures to track adherence to the response time interval guidelines provided in the internal InfoBuddy document, <i>Service Management Expectations – Wholesale</i>.</p> <p>Qwest provided a description of and sample from the Service Management Issues database used to track the status of issues for CLEC customers. In addition, Qwest updated its process for Account Team members to regularly obtain feedback from CLECs about their ability to respond and provide updates to the status of issues on a timely basis.</p> <p>KPMG Consulting confirmed the applied use of the database in conjunction with issues raised by the P-CLEC, and reviewed updates made to InfoBuddy documentation.</p> <p>On April 5, 2002, Qwest published expected interval guidelines for Account Team communication on its Wholesale Web site: http://www.qwest.com/wholesale/clecs/accountmanagers.html.</p> <p>However, due to the test schedule for the OSS Evaluation, and Qwest’s recent establishment of several communication response time guidelines, KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>was not able to observe Qwest's adherence to the documented process for Service Management response time intervals. KPMG was also not able to monitor any P-CLEC feedback to the Account Team based on the recently publicized communication intervals.</p> <p>HPC's Exception 2064 discussed a lack of timely responses from the Qwest Service Management Team, and detailed how clarification or correction of requested documentation was either not provided, or was provided with a delayed response. These issues were resolved, and Exception 2064 is closed.</p>
24.3-10	Responsibilities and procedures for developing, updating, and correcting CLEC documentation are defined.	Satisfied	<p>Qwest employs defined responsibilities and procedures for developing, updating, and correcting CLEC documentation relevant to the Account Management function.</p> <p>Document Specialists hold the responsibility of making changes to external Service Management and Sales Executive documents and process descriptions.</p> <p>The internal Qwest document, <i>Wholesale Products & Services "On The Web" Product Catalog (PCAT) Description and Instructions</i>, provides instructions for writing and maintaining documents for the Product Catalog on the Qwest Web site.</p> <p>The internal InfoBuddy Process Toolkit document, <i>Updating Existing InfoBuddy Methods or Procedures 4.3.7</i>, describes the processes and procedures for updating and publishing all internal InfoBuddy documents, including those pertaining to Sales Executives' and Service Managers' activities.</p> <p>It is the responsibility of the author of a document to update InfoBuddy.</p> <p>Qwest's documentation management standards for all CLEC-facing documents are defined in the document, <i>Qwest Change Management Process: Documentation Management Process v.1</i>. The standards apply to business processes, technical specifications, release schedules, notification intervals, training opportunities, and meeting events.</p> <p>KPMG Consulting confirmed that these</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			documentation standards were adhered to as part of Test 23, Change Management Process Review.
24.3-11	Production and distribution procedure allows latest document version to be made available to interested parties as soon as they are complete.	Satisfied	<p>Qwest's distribution procedures allow the latest version of Account Management documents to be distributed as soon as they are complete.</p> <p>Standards include the use of a change log to reflect any documentation changes that have been applied since the previous version of the document. Senior management follows production and distribution procedures and assigns specific individuals to update documentation, and to ensure that the latest document version is made available to interested parties.</p> <p>The internal InfoBuddy Process Toolkit document, <i>Updating Existing InfoBuddy Methods or Procedures 4.3.7</i>, describes the processes and procedures for updating and publishing all internal InfoBuddy documents.</p> <p>KPMG Consulting observed that Qwest had not updated the Wholesale Web site to reflect the restructuring changes made to the Qwest Account Management Team, and formally raised this issue.</p> <p>In response, Qwest explained that the process time to update Web sites can vary quite significantly based upon the size and scope of the business change. Qwest further explained that, consequently, the process time can range from several days to months, dependent upon the impact of these factors. Qwest stated that it had developed an internal change management process, which is intended to ensure that information necessary for CLECs to conduct business with Qwest is posted to the Web site in a timely manner.</p> <p>KPMG Consulting closed this issue after the Web site had been updated, and continued to monitor the Web site during the course of this test.</p>

24.4. Test Results: CLEC Forecasting Review (Test 24.4)

1.0 Description

The CLEC Forecasting Review was an evaluation of Qwest's methods and procedures, processes, and practices for requesting and managing CLEC facility and service forecasts for wholesale services. The objective of this test was to determine the existence of, adequacy of, and Qwest's compliance with, procedures for requesting, receiving, refining, and utilizing forecasts from CLECs. The utilization portion of this test included an assessment of Qwest's capacity management process for scaling the growth of its systems and staff, based on projected demand. Interviews, documentation assessments, and data collection and review activities were completed to evaluate Qwest's CLEC forecasting process.

2.0 Method

This section summarizes the test methodology.

2.1 Business Process Description

Qwest's CLEC forecasting process is used to collect information from CLECs for estimating future service needs in several areas that include Local Interconnection Service (LIS) trunks, unbundled products, and collocation. Forecasts are used by Qwest to properly size and locate network resources, budget, provide inputs for network planning, and correctly allocate its capital resources, according to anticipated demand.

CLECs submit LIS, collocation, and unbundled network product forecasts on a quarterly basis, for each state in which they wish to do business. Qwest notifies CLECs of the forecast cycle, and posts the forecasting schedule on the Qwest Wholesale Web site. Templates, forms, and instructions are provided in advance to assist in the forecasting process.

Once a CLEC's forecast has been received by Qwest, it is verified for completeness, and is then aggregated with all other CLEC forecasts for a discrete state. The aggregation of data is performed by the Qwest Interconnect Demand Analyst for LIS forecasts, and by the Wholesale Finance Team for collocation and unbundled network product forecasts. All CLEC-identifying information is removed from the aggregated forecast data, which is used by the Wholesale Finance Team to ensure that there is sufficient capital available to accommodate the forecasted demand. The information is also utilized by the Network Planning group for the purpose of scheduling the network building process, as several months are often required to obtain the necessary equipment from vendors.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was Qwest's methods and procedures, processes, and practices for requesting and managing CLEC facility and service forecasts for wholesale services. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-

Reference,” indicates where the particular measures are addressed in section 3.1, "Results & Analysis.”

Table 24.4-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Forecast Procedures	Request Process	Existence Completeness	24.4-1 – 24.4-3, 24.4-5
	Receipt and Refinement	Existence Completeness	24.4-1, 24.4-3 – 24.4-4 24.4-6, 24.4-8 – 24.4-9
Forecast Utilization	Process Documentation	Existence Completeness	24.4-2 – 24.4-3, 24.4-7
	Compliance	Timeliness ¹⁶² Accuracy	24.4-2, 24.4-8, 24.4-10

2.4 Evaluation Methods

Information relevant to the Qwest processes and procedures for CLEC forecasting was obtained from four major sources:

- KPMG Consulting conducted a series of on-site interviews with Qwest personnel and Subject Matter Experts (SMEs) who are directly involved in LIS, collocation, and unbundled network product forecasting. The objective of these interviews was to collect information regarding the end-to-end forecasting process.
- KPMG Consulting gathered and reviewed publicly available documentation about the process. Examples include general process descriptions and requirements for users, as well as artifacts used during the process, such as instructions and CLEC template forecasting forms.
- KPMG Consulting reviewed documentation, such as Qwest’s internal methods and procedures, operational practices, process flows, job aides, organizational charts, and capacity planning reports.
- KPMG Consulting conducted interviews with CLEC representatives who completed the LIS and/or collocation forecasting process with Qwest for at least one forecasting cycle, and who volunteered to participate in the Qwest OSS Evaluation. KPMG Consulting used the information learned to place appropriate focus on those forecasting process areas for which CLECs reported negative experiences.

2.5 Analysis Methods

¹⁶²Timeliness is not intended to imply that KPMG Consulting submitted test transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the measure was established to evaluate whether or not controls are in place to suggest that timelines for requesting forecasts from CLECs, for publicizing forecasting submission schedules, and for processing those forecasts are in place.

The CLEC Forecasting Review included a checklist of evaluation measures developed by KPMG Consulting during the preparation of test activities for the Qwest OSS Evaluation. These evaluation measures provided a framework of norms, standards, and guidelines for the CLEC Forecasting Review. Using information obtained through interviews with Qwest personnel and reviews of Qwest documentation, KPMG Consulting compared the information gathered against a pre-determined framework of evaluation criteria to carry out the analysis for the test. One component of the analysis was to determine if the forecasting process includes procedures for addressing errors and exceptions. Another was to review the input information to evaluate if Qwest and CLEC forecasting process responsibilities and activities are well defined.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 24.4-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.4-1	Forecast process responsibilities and activities are defined and documented.	Satisfied	<p>Qwest's forecast process responsibilities and activities are defined and documented. Processes for LIS, collocation, and unbundled network products are documented within Qwest in process flow charts maintained by Qwest's Group Product Manager, and externally on the Qwest Wholesale forecasting Web site (www.qwest.com/wholesale/guides/forecasting.html). Qwest's Project Management group is responsible for interacting with CLECs relative to forecasting.</p> <p>The Project Management (formerly Channel Management) group is responsible for facilitating the end-to-end forecasting process. This team sets the forecasting schedule, and assembles the necessary forms, instructions, and information for CLECs.</p> <p>Service Managers, who provide service support to CLECs and bring critical issues and opportunities to light on their behalf, may participate in the quarterly forecasting meetings held with Project Managers. Although Service Managers previously held responsibility for distributing forecasting templates to their assigned CLECs, KPMG</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Consulting confirmed in an interview with the Director of the Wholesale Project Management Team that, as of September 13, 2001, they are no longer directly responsible for leading the forecasting process.</p> <p>A CLEC's responsibilities for submitting forecasts are defined in the CLEC's interconnection agreement. They are also defined with specific data submission activities in the Qwest Project Plan for Forecasting, at the Qwest forecasting Web site, and in sections of the Statement of Generally Available Terms (SGAT) for each state. A link to the SGATs may be found at either of the following Web site links: www.qwest.com/wholesale/clecs/negotiations.html, or http://www.qwest.com/about/policy/sgats/.</p>
24.4-2	Scope and objectives of the forecasting process are defined and documented.	Satisfied	<p>The scope of the forecasting process is described in the Qwest Project Plan for Forecasting. Forecasting is done for LIS interconnection trunks, collocation, and unbundled network products. A list of products for which forecasts are to be submitted, and a schedule showing the frequency of forecast submission, is also posted on the Web site.</p> <p>The objective of Qwest's CLEC Forecasting process is published on Qwest's forecasting Web site, www.qwest.com/wholesale/guides/forecasting.html. Forecasts are used by Qwest to adequately plan network resources to meet future demand. Qwest collects forecasting information from wholesale customers, in order to provide for the requested facilities, including planning engineering, ordering, installation, and make-ready activities. Qwest utilizes CLEC forecasts to ensure availability of switch and transport capacity.</p>
24.4-3	Discrete activities that comprise the forecasting process and associated outputs are defined and documented.	Satisfied	<p>At least one month before the forecast's due date, Qwest's CLEC Forecasting Project Manager sends a letter to his/her assigned CLECs to notify them of the need to submit a forecast. The forecast due date and Qwest's contact information for questions are provided in the body of the letter.</p> <p>KPMG Consulting observed Qwest implementing the discrete activities</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>involved in the forecasting process. KPMG Consulting received samples of notification letters from Qwest, and from the CLEC distribution list (mailouts@qwest.com), which is the main form of communicating with CLECs for forecasting purposes. Intervals for distributing this notification were adhered to. The letters were received from the distribution list at least one month prior to the forecasting deadline, and sample letters provided to KPMG Consulting were dated at least one month prior to the deadline.</p> <p>Qwest's Project Manager provides technical support to CLECs, such as assistance with interpreting templates, answering general inquiries about the forecasting process, and performing a final validation of CLEC raw data prior to its aggregation with that of other CLECs. Forecast notification letters received by the CLECs also direct them to contact their Forecasting Project Manager for any questions about the forecasting process. KPMG Consulting collected information about the processing of CLEC data prior to aggregation, confirmed that this activity took place with CLECs, and reviewed redacted, individual CLEC forecast information prior to its aggregation for specific Qwest service regions.</p> <p>Joint planning sessions are held with each CLEC to review the CLEC's forecasts, and to address any questions or issues. These meetings are required for LIS forecasting, and may be requested by the CLEC for collocation and unbundled network product forecasts.</p> <p>During KPMG Consulting interviews, CLECs described their experiences with the joint planning sessions. These descriptions of the process matched the description and documentation provided by Qwest. Process flow diagrams exist for each of the LIS, collocation, and unbundled network product forecasting processes. These charts depict and describe the groups involved in the forecasting process for each product, the tasks performed by each group, the flow of data among the groups, and the order in which all of the tasks in the forecasting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>process are carried out. Copies of the Project Management Team's documented methods and procedures were provided to KPMG Consulting. Network Joint Planners employ a checklist that outlines responsibilities and tasks for LIS forecasting Joint Planning meetings. KPMG Consulting reviewed a copy of this checklist</p> <p>External timelines, such as schedules and due dates for LIS, collocation, and unbundled network product forecasts, are publicly documented and published on Qwest's forecasting Web site (www.qwest.com/wholesale/guides/forecasting.html). KPMG Consulting received and reviewed copies of internal methods and procedures documentation used by Qwest for processing and managing three types of CLEC forecasts.</p>
24.4-4	The forecasting process includes procedures for addressing errors and exceptions.	Satisfied	<p>A process exists for a CLEC to address errors found in its forecast after submission to Qwest. In such an instance, the CLEC completes the "Unforecasted Demand Form," which is provided on the Qwest Web site (www.qwest.com/wholesale/downloads/2001/011018/Unforecasted_Demand_Notification_Form.xls), and sends it to the Qwest Project Manager.</p> <p>Initial interviews conducted with Qwest personnel, and reviews of the Qwest Web site indicated that this "Unforecasted Demand Form" was available for LIS Interconnection Trunk forecasts only, but no such process was in place for making changes to collocation and unbundled network product forecasts. As a result, KPMG Consulting issued Exception 3041.</p> <p>Qwest subsequently revised its forecasting Web site to make the Unforecasted Demand Form available for all forecasted products. The form can be submitted at any time between forecast cycles if a CLEC wishes to make changes to its forecasts for the preceding forecast cycle. If errors are found on the Qwest forecasting templates or Web site, the Qwest forecasting Project Manager should be contacted. Project Managers are responsible for ensuring that corrections to the Web site are made, and for integrating the changes into the current or following</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>cycle.</p> <p>See Exception 3041 for additional information on this issue. Exception 3041 is closed.</p>
24.4-5	Forms and templates are provided to facilitate data collection from CLECs.	Satisfied	<p>Forecasting forms and instructions for LIS, collocation, and unbundled network products are available for download on the Qwest forecasting Web site (www.qwest.com/wholesale/guides/forecasting.html). An Unforecasted Demand Form for making changes to forecasts between forecasting cycles is also available on the Qwest forecasting Web site.</p> <p>During initial testing, KPMG Consulting found that this form was used to make changes to only LIS and wireless forecasts. As a result, KPMG Consulting issued Exception 3041.</p> <p>In subsequent retesting, KPMG Consulting found that Qwest later expanded its use to include collocation and unbundled network product forecasts as well.</p> <p>KPMG Consulting confirmed the availability of forms and templates for CLECs use in facilitating the data collection process.</p> <p>See Exception 3041 for additional information on this issue. Exception 3041 is closed.</p>
24.4-6	Data provided by each CLEC is confirmed and verified.	Satisfied	<p>CLEC data is confirmed and verified at each stage of the forecasting process. A CLEC's forecast is reviewed with the CLEC during Joint Planning meetings, and any changes that Qwest personnel propose to the CLEC's forecast are reviewed directly with the CLEC.</p> <p>Once the forecast is submitted, it is checked again for completeness and accuracy. This check is done first by the Network Joint Planning group, and then by the forecast Project Manager for LIS forecasts, and the Project Manager for collocation and unbundled network product forecasts. KPMG Consulting received and reviewed sample CLEC forecasting data.</p> <p>Other internal groups such as the Finance, Switch, and Interoffice Facilities Planning Teams also verify the accuracy of the data</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.4-7	Procedures are in place to use forecasted data for capacity management purposes.	Satisfied	<p>before processing and utilizing it.</p> <p>Qwest's Interoffice Facility, Outside Plant Planning, and Switch Planning groups all use CLEC forecasted data for capacity planning purposes.</p> <p>The Interoffice Facility and Switch Planning groups' documentation describes procedures that are used to integrate CLEC forecast data into the planning process. Outside Plant Planning utilizes a planning tool called Capacity Analysis and Planning Tool (CAPT) to assist in planning. Forecast data used by Outside Plant Planning is regularly loaded into CAPT by the Strategic Forecasting group. The Finance team also uses the forecasting data in budgeting for capital expenditures.</p> <p>KPMG Consulting examined outputs of the CAPT system, along with equipment orders used to plan for projected changes in CLEC-forecasted demand.</p>
24.4-8	The process includes requirements for periodic forecast revisions.	Satisfied	<p>CLECs are required to update their forecasts quarterly. The schedule for submitting updated forecasts is posted on the Qwest forecasting Web site (www.qwest.com/wholesale/guides/forecasting.html).</p> <p>In addition, KPMG Consulting interviews with Qwest personnel revealed that beginning in 2001, Qwest instituted a series of semi-annual process improvement meetings for each forecasted product, to review the forecasting process and guidelines, and to discuss errors, updates, or efficiency enhancements that may be applied to the overall forecasting process. These meetings include representatives from all groups involved in the forecasting process for each product. KPMG Consulting reviewed associated meeting agendas and meeting minutes.</p>
24.4-9	Procedures are in place to ensure that confidentiality regarding proprietary CLEC information is ensured.	Satisfied	<p>The confidentiality of CLEC information is maintained and protected in several ways. All Qwest employees are required to sign a code of conduct that describes procedures for handling confidential CLEC information. KPMG Consulting received and reviewed a copy of this code of conduct.</p> <p>All information is shared internally on a</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>“need-to-know” basis only, with CLEC-identifying information removed whenever possible. Electronic copies of forecast information are stored on secure Qwest servers. Hard copies of CLEC files are stored under lock and key.</p> <p>The confidentiality of CLEC forecasts is also described on Qwest’s forecasting Web site (www.qwest.com/wholesale/guides/forecasting.html). SGATs for each state include confidentiality issues and the use of proprietary CLEC information.</p>
24.4-10	Forecasted data is utilized by Qwest.	Satisfied	<p>Qwest’s Wholesale Finance Team receives historical data, utilization factors, firm orders, and order-to-forecast ratios for LIS trunks, for each CLEC, from the Joint Planning Team. These data, regarding actual LIS trunk usage for individual CLECs, are used as part of the forecast modeling process. In addition, Qwest utilizes historical data and aggregate market trends for supplementing CLECs forecasts, and preparing the forecasts for collocation and unbundled network products.</p> <p>As illustrated in Qwest’s internal process flow charts for LIS, collocation, and unbundled network product forecasting, CLEC forecast data is used for capital planning and budgeting by the Wholesale Finance Team. It is also used for facilities planning by the Interoffice Facilities, Switch Planning, and Outside Plant Planning groups.</p> <p>The CAPT system is used by network planning personnel to provide recommendations on additional network requirements, based on forecast information. KPMG Consulting received and reviewed documentation related to the CAPT system, including screen shots of CAPT forecasts, as applied by Qwest planning personnel. KPMG Consulting also received samples of equipment purchase authorizations and orders from Qwest used to accommodate CLEC-forecasted changes in estimated demand.</p>

24.5 Test Results: CLEC Training Review (Test 24.5)

1.0 Description

This test evaluated Qwest's training practices and documentation for Competitive Local Exchange Carrier (CLEC) representatives engaged in establishing and maintaining the Qwest-CLEC business relationship. The objectives of the test were to determine the existence and functionality of procedures for developing, announcing, conducting, and monitoring the Qwest CLEC training program.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Qwest's CLEC training program offers courses in the various systems, products, and services available from Qwest to CLECs. Training opportunities are publicized through the Qwest Wholesale Markets Training Web site, which includes dates, times, and locations of courses¹⁶³. In addition, CLECs may request standard training sessions to be held at CLEC locations or at remote Qwest facilities. Qwest's Registration Coordinator is the contact point for arranging these private sessions. The primary functions of the Qwest CLEC training program include: developing the courses and curriculum, publicizing training information, conducting classes, monitoring instructors, and evaluating training effectiveness.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were the processes and procedures used to support Qwest's CLEC training program. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 24.5-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Training Program Development	Develop Curriculum	Completeness of training curriculum and forums	24.5-1 – 24.5-5, 24.5-7
		Adequacy of procedures to respond to information about training quality and utilization	24.5-1 – 24.5-7, 24.5-9

¹⁶³ The Qwest Wholesale Markets Training Web site is located at <http://www.qwest.com/wholesale/training/>.

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
		Adequacy of procedures to accept CLEC input regarding training curriculum	24.5-1, 24.5-6 – 24.5-7
	Publicize Training Opportunities	Availability of information about training opportunities	24.5-1, 24.5-3 – 24.5-4
Training Program Quality Assurance	Attendance/Utilization Tracking	Adequacy of process to track utilization and attendance of various training tools and forums	24.5-1, 24.5-4, 24.5-8
	Session Effectiveness Tracking	Adequacy of process to survey training recipients on effectiveness of training	24.5-1, 24.5-3, 24.5-5 – 24.5-7, 24.5-9
	Instructor Oversight	Adequacy of procedures to monitor instructor performance	24.5-1, 24.5-3, 24.5-7, 24.5-10
Process Management	Performance Measurement Process	Controllability, efficiency, and reliability of process	24.5-1, 24.5-4, 24.5-7 – 24.5-9
	Process Improvement	Completeness of process improvement practices	24.5-1, 24.5-3, 24.5-5, 24.5-7, 24.5-8, 24.5-10

2.4 Evaluation Methods

The sources of data for this test included interviews with Qwest management responsible for CLEC training; reviews of the Qwest Training & Development Operational Guidelines, the Qwest Wholesale Markets Training Web site, and the CLEC Student Database; an interview with a CLEC that volunteered to share its experiences from the trainees' perspective; and KPMG Consulting's and Hewlett-Packard Consulting (HPC)'s attendance of Qwest training courses.

The data collection performed for this test relied on interviews, and reviews of documentation and the CLEC Student Database, supplied by Qwest, at KPMG Consulting's request. KPMG Consulting held a series of interviews with the managers of the Wholesale Markets Training & Development Team, conducted direct observation of CLEC training courses, collected training process data, and gathered relevant Qwest documentation. In addition, KPMG Consulting interviewed KPMG Consulting and HPC representatives who attended Qwest training courses to survey them on their experiences, and gather information about areas such as course registration from the trainees' perspectives.

2.5 Analysis Methods

The CLEC Training Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. KPMG Consulting used data obtained through interviews with Qwest personnel, as well as reviews of Qwest documentation and analysis of data, to compare the information gathered to a pre-determined framework of

evaluation criteria to conduct the analysis for the test. This analysis focused on the existence and adequacy of defined processes to determine a ‘satisfied’ or ‘not satisfied’ result.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 24.5-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.5-1	Training process responsibilities are defined and documented.	Satisfied	<p>Qwest’s training process responsibilities are defined and documented.</p> <p>Qwest’s organization chart for CLEC training depicts management, and key personnel, of the Wholesale Markets Training and Development Team. The <i>Wholesale Markets Training & Development Operational Guidelines</i> (“Operational Guidelines”) details the roles and responsibilities of the training staff, as they apply throughout the course development and training delivery processes.</p> <p>Qwest representatives are assigned to track course effectiveness and instructor performance. CLEC responsibilities for enrolling in training programs and providing feedback to course developers and instructors are defined in the Operational Guidelines and on the Qwest Wholesale Markets Training Web site.</p>
24.5-2	Scope and objectives of the training process are defined and documented.	Satisfied	<p>The scope and objectives of Qwest’s training process are defined and documented.</p> <p>The Operational Guidelines states that the scope of the CLEC training process includes wholesale markets systems, products, and processes. As described, the overall objectives are to enable CLECs to improve employee performance, increase team efficiencies, and ensure end-user satisfaction. Qwest has a documented course design and development process that includes both course and lesson objectives. Individual course descriptions, objectives,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>and pre-requisites are included in the on-line Qwest Wholesale Course Catalog.</p> <p>KPMG Consulting representatives who attended CLEC training programs also confirmed that the classes had defined and documented objectives that were communicated to course attendees.</p>
24.5-3	Essential elements of the training process are in place and documented.	Satisfied	<p>Essential elements of Qwest's training process are in place and documented.</p> <p>The training process includes essential elements such as course description, curriculum, and registration information. These elements are documented in the Operational Guidelines, and are accessible to CLECs on the Wholesale Markets Training Web site at http://www.qwest.com/wholesale/training/.</p> <p>Qwest communicates the availability of training programs to CLECs by notifications distributed through the Change Management Process and the Mailout Notification System. Qwest employs both print and online feedback mechanisms on course material and instructor performance. Qwest accommodates CLEC requests for private training sessions, and considers the specific needs of individual CLECs, based on the nature of their businesses (i.e., reseller or facility-based).</p>
24.5-4	Process includes procedures for publishing information about training opportunities.	Satisfied	<p>Qwest's training process includes procedures for publishing information about training opportunities.</p> <p>Training schedules are published on the Course Schedule and Registration Web site (http://www.qwest.com/wholesale/training/course_sched_reg.html). Qwest informs CLECs of available training opportunities by distributing notifications through the Change Management Process and the Mailout Notification System. KPMG Consulting monitored these training notifications during the testing period.</p> <p>CLECs are responsible for monitoring Qwest's customer Web site, and reviewing training offerings to determine the courses deemed valuable to their personnel.</p>
24.5-5	The training process includes procedures for addressing updated information and	Satisfied	Qwest's training process includes procedures for addressing updated information and errors.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	errors.		<p>information and errors.</p> <p>Qwest training staff corrects minor errors (e.g., typographical errors) in training course material on an <i>ad hoc</i> basis. Trainees may use an evaluation form that is provided at the end of each training session, or a Web-based feedback form, to address errors and provide feedback.</p> <p>The Operational Guidelines provide a performance and needs analysis to identify deficiencies of course content or limitations in the delivery of instruction. Course developers are responsible for revising the course material, and obtaining approval from subject matter experts (SMEs) before its release. Qwest documentation and interviews indicate that the Training & Development staff communicates with relevant SMEs, and receives updates on changes to Qwest wholesale systems, products, and processes, so that their knowledge is current.</p> <p>During testing, HPC formally identified the following documentation update issues:</p> <ul style="list-style-type: none"> • The IMA Listing Class contained discrepancies in the training material. In response to this identified issue, Qwest updated the relevant training material. • Exception 2069 – Using the instructions provided in Qwest documents, HPC could not successfully complete a Facilities Availability Request for Integrated Switched Digital Network Primary Rate Interface (ISDN PRI). Qwest subsequently updated the IMA training material to include reference to the Product Catalog (PCAT) Web site. See Exception 2069 for additional information on this issue. Exception 2069 is closed.
24.5-6	Process includes procedures to survey students on effectiveness of training.	Satisfied	<p>Qwest's process includes procedures to survey students on the effectiveness of its training.</p> <p>At the conclusion of training courses, each student is provided an opportunity to complete a course evaluation form to critique topics such as course content,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>instructor, classroom environment, and media. KPMG Consulting representatives who attended Qwest training courses received and completed such evaluation forms.</p> <p>In addition, students may utilize a Web-based feedback form to comment on the training programs, following completion of a course.</p>
24.5-7	<p>Process includes procedures for incorporating feedback about training content and instructor performance into the training program.</p>	Satisfied	<p>Qwest’s training process includes procedures for incorporating feedback about training content and instructor performance into the training program.</p> <p>Qwest’s training staff reviews feedback from CLEC trainees, and determines if additional course development work is required, or if instruction delivery skills need improvement. The End of Course Evaluation Form covers course content, course material, time allocation, and other aspects of instructor performance. In addition, Qwest Training Delivery Managers take a proactive role in monitoring instructor performance by observing instructor-led classes. The observation form used for this monitoring activity contains a quality checklist that includes categories such as preparation, class administration, course delivery, and instructor effectiveness. Finally, Qwest wholesale training representatives pilot proposed new courses with a limited number of prospective course attendees to assess the format and content of new training classes prior to their full-scale introduction to the CLEC community.</p> <p>During testing, HPC formally identified an issue related to the perceived quality of the CLEC training program in that the original IMA training course lacked hands-on training experiences. In response, Qwest introduced hands-on training to better meet CLECs’ needs.</p> <p>KPMG Consulting reviewed examples of Qwest’s incorporating CLEC feedback regarding training content and instructor performance into the training program. KPMG Consulting found that Qwest accurately applied the procedures described above.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.5-8	Process includes procedures to track CLEC training utilization and attendance.	Satisfied	<p>Qwest's training process includes procedures to track CLEC training utilization and attendance.</p> <p>Qwest's Registration Coordinator tracks instructor-led courses in the CLEC Student Database, and compiles a Plan-to-Actual Course Fill Percentage Table that reflects class utilization. The student database captures the number of registrations, the number of class attendees, CLEC company name, and individual participants. The usage of Web-based training is reported on specifically documented Web sites.</p> <p>During initial testing, KPMG Consulting found inconsistencies and inaccuracies regarding the CLEC Student Database. KPMG Consulting formally identified an issue in that Qwest did not adhere to the methods and procedures for tracking attendance and utilization, as documented in the process guidelines for Wholesale Markets training.</p> <p>Qwest subsequently revised the Operational Guidelines, corrected data errors that KPMG Consulting had identified in the student database, and instituted a wait-list procedure for courses filled to capacity.</p> <p>KPMG Consulting's retesting confirmed that the changes had been implemented.</p>
24.5-9	Training offerings are scalable in response to additional demand (e.g., increased class size, number of instructors).	Satisfied	<p>Qwest's training offerings are scalable in response to additional demand.</p> <p>A limitation on class size is established for each training course. Once the number of registrations exceeds this pre-determined threshold, Qwest schedules additional training sessions in the following quarter to accommodate increased demand.</p> <p>During initial testing, KPMG Consulting found that Qwest did not have a process for managing over-subscribed classes, and formally identified this issue.</p> <p>Qwest subsequently implemented the wait list process, as documented on the class registration Web site. If the wait list for a course reaches a minimum of five students, Qwest schedules an additional class during the following quarter in the designated wait-list city. In addition, Qwest also schedules training courses to coincide with major</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			system releases in anticipation of additional demand.
24.5-10	Training process performance metrics are defined and measured.	Satisfied	<p>Training process performance metrics are defined and measured.</p> <p>Both the End of Course Evaluation and manager observation of instructor-led classes utilize specific performance criteria to measure training performance, course material, instructor knowledge, and effectiveness. Qwest uses the feedback from both management and the trainees as part of the Wholesale Markets Training & Development staff performance review process.</p>

24.6. Test Results: Operational Support Systems (OSS) Interface Development Review (Test 24.6)

1.0 Description

The OSS Interface Development Review evaluated Qwest's OSS interface development procedures. Specifically, the test evaluated Qwest's documentation, specifications, and support provided to Competitive Local Exchange Carriers (CLECs) in developing, providing, and maintaining OSS interfaces for pre-ordering, ordering, maintenance and repair, and billing. This test also included an assessment of Qwest's capacity management and growth planning processes.

The objectives of this test were to determine the adequacy, consistency, and completeness of Qwest's specifications, documentation and technical assistance provided to the CLECs for developing, testing, and operating OSS interfaces for pre-ordering, ordering, maintenance and repair, and billing.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

CLECs may access Qwest's OSS for pre-order, order, maintenance and repair, billing, and other services using a variety of interfaces. The process that CLECs must follow in order to interconnect with Qwest differs by type of interface, as each has different development and testing requirements.

2.1.1 Pre-Order/Order Interfaces

For pre-order and order transactions, CLECs may interconnect through either an Electronic Data Interchange (EDI) interface or a Web-based Graphical User Interface (GUI). CLECs intending to electronically interface with Qwest work directly with their assigned Qwest Service Managers, and other Qwest teams, in setting up the electronic interface(s). The CLEC's choice of interface, either EDI or GUI, determines whether or not CLECs must perform interface development coding.

CLECs that utilize the EDI interface must develop their interface in accordance with Qwest's technical specifications. In addition, the CLECs are required to test connectivity to Qwest systems, as well as the ability to successfully send and receive pre-order and order transactions, before using the production environment. EDI implementation includes:

- Development or installation of a data transport mechanism;
- Development of the necessary 'translation maps;' and
- Integration of the translation environment with the CLEC's existing systems.

If a CLEC chooses to use the Web GUI to connect to Qwest, and conduct pre-order and order transactions, Qwest provides the CLEC with documentation that describes the procedures for

obtaining digital certificates and passwords. Since the Web GUI interface is available to CLECs with a working, secure Internet connection:

- The development process for this type of interface does not include support for establishing interface connectivity or the use of a stand-alone test environment; and
- CLECs do not perform system development work in order to be certified or to use the GUI interface.

2.1.1.1 New Entrant Process for EDI

A CLEC that intends to connect to Qwest via EDI for the first time for pre-order and order transactions first contacts Qwest to express its interest in developing EDI capabilities. Qwest then sets up an introductory meeting with the CLEC to discuss the stages of the EDI implementation process, as well as the requirements and options for implementation. Each CLEC works through this process with a dedicated EDI implementation team.

The Qwest EDI implementation process consists of the following stages:

- Initial Communications (includes Kick-Off conference call);
- Preparation of an Implementation or Migration Project Plan (proposed/negotiated);
- Requirements Review (by the CLEC);
- Firewall and Interactive Agent-to-Interactive Agent (IA) Testing (and Connectivity);
- Progression Testing - Interoperability Environment (Interop) and/or Stand-Alone Test Environment (SATE);
- Controlled Production; and
- Production (“Turn-Up”).

A CLEC follows the implementation process to be certified for IMA EDI. The steps are generally sequential, although the timing of certain steps may overlap. Once the CLEC has passed the Controlled Production phase of EDI implementation, the CLEC is considered ‘certified,’ and is prepared to send pre-order and order transactions to the production environment. A required certification process exists for each product that the CLEC plans to offer.

2.1.1.2 New Entrant Process for GUI

New entrants that wish to use the Web GUI must choose from two options: dial-up (i.e., directly to Qwest), or E-Business (i.e., secure connection to Qwest IMA GUI interface across the Internet). Dial-up requires a SecurID, corporate ID, user name, and password. E-Business requires a digital certificate, corporate ID, user name, and password.

The first step in the process is for the CLEC to contact its Service Manager and identify which connection method it wishes to use. The Service Manager then sends the CLEC User Questionnaire, which includes necessary profile information. Subsequently, Qwest provides a SecurID, corporate ID, user name, and password for dial-up connection, or a digital certificate for

E-Business. A detailed description of setting up the IMA GUI is described in the *IMA Connection Guide* document.

2.1.1.3 New Release Migration Process

Every major IMA Release applies to the IMA GUI and EDI interfaces. The IMA GUI interface does not require any CLEC migration, as CLECs are automatically cut over to the newest version of IMA GUI. CLECs are notified of changes applied to IMA GUI through the Qwest Wholesale Change Management Process (CMP). Only one version of IMA GUI is available at any given time.

In contrast, Qwest provides up to three versions of IMA EDI in the production environment. Qwest issues at least two, but no more than four, major CLEC-impacting releases per year. Qwest's IMA EDI architecture allows it to support multiple versions of EDI in the production environment. Since IMA EDI involves directly connecting to Qwest IMA systems to send order and pre-order transactions, the EDI migration process requires a CLEC to modify its interface to handle changes in functionality.

The IMA EDI interface allows for the submittal of a greater volume of transactions, at a faster rate than the IMA GUI. When Qwest releases a new version of the EDI interface, the CLEC may choose to migrate to the new version of IMA EDI. The CLEC must follow these steps when migrating to a new version of IMA EDI:

- Contact the Qwest-assigned EDI Implementation Project Manager;
- Attend an initial migration meeting call to discuss re-certification, migration strategy, and data conversion;
- Develop a migration project plan and mutually agree with Qwest to assist in the scheduling of appropriate resources. This plan acknowledges 'blackout dates,' during which resources and systems may be unavailable to the re-certification/migration project;
- Complete a scenario summary with test scenarios to comply with all new release testing requirements; and
- Perform the Progression Testing Phase per the minimum testing requirements for those transactions that are to be migrated to the new release.

Qwest works with the CLEC to determine exactly which products and transactions will require re-certification when migrating to a new release. Point releases, in contrast to major releases, do not require re-certification.

2.1.1.4 Qwest's Interface Development Methodology

The Qwest Interface Development Methodology includes the use of two types of Change Requests (CRs): internal and external. An internal CR process is used by Qwest to initiate its internal development work. Qwest's interface development process is initiated by the submission of internal CRs by Qwest personnel for production bugs, internal process changes, suspected or actual problems identified during software development, or software document changes. The CR contains a narrative description of the problem or proposed change, information to identify the source of the request, and information to aid in evaluating the request.

The external CMP CR process is subject to the processes, procedures, and policies governed by the Wholesale Change Management Process. A CMP interface development-related CR may be initiated by Qwest or by a CLEC, and is prioritized via the Qwest Wholesale Management Process framework. An interface development CMP CR may also be created based on industry guideline changes (e.g., Local Service Ordering Guide [LSOG] updates) or regulatory changes.

The following stages represent the software development life cycle that Qwest uses for creating and deploying a new release of IMA EDI and IMA GUI:

- Define Candidates;
- Package and Initiate a Release;
- Consolidate Release Candidates;
- Detailed Design;
- Code and Unit Test;
- Integration and System Testing;
- CLEC Testing Environment (applicable to EDI only); and
- Production Deployment.

Each of these stages is described in further detail below.

1) Define Candidates

The first step in the development process is to define the candidates that could be included in the upcoming release. Candidates represent all items (e.g., new functionality) that are considered for inclusion in a software package release.

Various teams from Qwest meet to discuss and define the candidates, and to determine the impact of each candidate on Qwest's existing systems and documentation. At the end of this phase, the requirements and impacts for each candidate are identified and assessed.

2) Package and Initiate a Release

This stage in the development process describes the tasks required by all IMA teams to package fully defined candidates into a software release, and to initiate the plan for that release. The main steps in this stage include:

- Conducting inventory of potential candidates;
- Applying release criteria and determining resource availability;
- Making a packaging recommendation, and approving/modifying the recommendation;
- Establishing the Release Team leads;
- Planning the initial phases of the release; and
- Packaging late candidates.

This phase is complete when Qwest's Program Change Control Board (PCCB) approves the release package.

3) Consolidate Release Candidates

Once a release package is created, the IMA teams work together to consolidate the various work products that are included in the release package. Various dependencies and synergies among candidates are taken into consideration. The following key tasks are conducted during this stage:

- Consolidation and reconciliation of release requirements;
- Creating database schemas and designs; and
- Planning the data and interface needs for the release.

The completion of these tasks prepares the release for the Detailed Design activities described below.

4) Detailed Design

The purpose of this stage in the development process is to verify that all steps are completed, thus ensuring that candidate CRs will be implemented in the upcoming release. At the end of this stage, the design for the addition of candidates is finalized, and the working specifications for the system coders are prepared.

5) Code and Unit Test

The individual application development teams (i.e., EDI, Web GUI) are responsible for writing the software code based on the requirements developed in the preceding stages. Once the code is written, developers conduct unit tests on one another's code. After the code passes the unit tests, it is ready for integration testing. During this phase, EDI translator maps are created, and a system integration test plan is prepared, as described below.

6) Integration and System Testing

Once coding is finished, and unit testing is complete, the complete IMA system is prepared for integration and system testing. Integration testing verifies that the separately developed components of the software perform as expected when integrated into the existing OSS systems. System testing is performed to test the performance of transactions within the software.

If any problems are found during integration or system testing, the tester creates an internal CR describing the issue, which is subsequently routed to the appropriate developer for resolution. Once corrective action is taken, the software is then retested to ensure that the issue has been satisfactorily resolved. These CRs are used for internal Qwest development and testing.

Once the integration and systems tests have taken place, the software is ready for initial deployment into the CLEC testing environment.

7) CLEC Testing Environment (CTE)

Qwest currently maintains two test environments, Interop and SATE, in which CLECs test EDI transactions before entering the production environment. Both Interop and SATE are offered to

CLECs approximately 30 calendar days prior to production deployment of a new version of IMA. An exception to this schedule occurs if the release is deemed to be in “red testing status.” This status indicates that severe problems that could jeopardize the release date were uncovered during system testing.

The CTE allows CLECs to test their EDI interfaces through transaction testing. Qwest works directly with CLECs during testing to ensure that the interfaces are functioning properly, and that the expected transaction responses are received. The test environment allows CLECs and Qwest to rectify any problems before migrating into production.

CLEC implementation of the GUI interface does not include a testing environment phase of development. Since CLECs do not have to develop an interface for GUI, a testing environment is not a necessary component of the software development life cycle.

8) Production Deployment

After the software has been deployed in CTE for 30 days, Qwest deploys the final EDI software version into the production environment. Qwest deploys both the EDI and GUI software during the weekend preceding the Monday of the official release date. In order to verify that the software is functioning properly, the interfaces are loaded into the production environment and tested by the System Test Team.

If problems are encountered, a CR is created and routed to the development team for resolution. Depending upon the severity of any CRs, the IMA Leadership team makes a “Go/No Go” decision for the release. If the release needs to be delayed, both the CLEC and Qwest parties are notified immediately through appropriate channels.

2.1.1.5 Documentation

Qwest publishes multiple documents that support its interface development processes and procedures. These documents are made available to CLECs publicly through the Qwest Wholesale Web site at <http://www.qwest.com/wholesale/ima/edi/index.html>, or by one of the Qwest teams (e.g., EDI Implementation Team).

2.1.1.5.1 EDI Implementation Guide

The *EDI Implementation Guidelines for Interconnect Mediated Access (IMA)* describes the end-to-end EDI implementation process for a CLEC. The *EDI Implementation Guidelines for Interconnect Mediated Access (IMA)* outlines each step of the process in detail, from initial communication to production deployment. The *EDI Implementation Guidelines for Interconnect Mediated Access (IMA)* also provides references to other documents that support the interface development process.

2.1.1.5.2 Disclosure Document

The *Disclosure Document* contains Qwest’s specific business rules and procedures for submitting pre-order and order transactions. Each chapter in the *Disclosure Document* describes the requirements for a particular product, and is updated when a major software release takes place. Currently, Qwest releases the initial draft version to CLECs approximately five weeks before deploying the new release into production. Qwest releases an addendum to the *Disclosure*

Document two weeks after the initial publication date. Beginning with IMA 10.0, scheduled for release on June 17, 2002, Qwest plans to begin issuing an initial draft 73 days before the release implementation date.

2.1.1.5.3 *Test Environment Supporting Documentation*

Qwest provides CLECs with multiple documents to support SATE. For each major IMA EDI release supported, Qwest maintains a *SATE Data Document*, a *SATE Data Request Form*, and a *Virtual Interconnect Center Knowledge Initiator (VICKI) Path Document*. The *SATE Data Document* includes the data necessary to populate pre-orders and orders in SATE, as well as the expected results from those transactions.

The *SATE Data Request Form* is used to request new test deck data for products currently supported in SATE and/or to request the addition of a VICKI path. The *VICKI Path Document* outlines a series of "paths" that allow a CLEC to receive specific, expected responses in an automated fashion.

The *EDI Implementation Guide and Disclosure Document* provide information relative to both the Interop and Stand Alone Test Environment. Since Interop is integrated with the Production Environment, there is no additional support documentation provided.

2.1.1.5.4 *IMA EDI Corrective Procedures and Error Codes*

The *IMA EDI Corrective Procedures and Error Codes* documentation is intended to aid CLECs in understanding and successfully managing the process of confirming and correcting wholesale requests submitted from their organization to Qwest. The document provides descriptions of error codes to facilitate CLECs attempting to troubleshoot problematic transactions.

2.1.1.5.5 *Other EDI Supporting Documentation*

In addition to the documentation outlined above, Qwest maintains other supporting documentation on the Qwest Wholesale Markets Web site. Such documentation includes release notes that provide version specific *ad hoc* information about the IMA EDI interface, a Frequently Asked Questions document, and an Access Issues document that outlines how to connect to IMA when the gateway is not functioning.

2.1.1.5.6 *IMA Connection Guide*

The *IMA Connection Guide* presents the user with a comprehensive step-by-step process for connecting to the IMA GUI, using either Dial-Up or E-Business, and also includes digital certificate registration instructions. The document also includes browser configuration, desktop requirements, security considerations and passwords, and instructs the CLEC as to how to manage its profile within the GUI.

2.1.1.5.7 *IMA User's Guide*

The *IMA User's Guide* is a reference to help CLECs to prepare, submit, and monitor the status of Local Service Requests (LSRs) through the IMA GUI. The guide covers pre-order, order, and post-order functions prior to provisioning, as well as common error messages that a CLEC may encounter when using the IMA GUI.

2.1.1.5.8 GUI I-Charts

The *GUI I-Charts* provide field level details for pre-order and order transactions and the post-order responses. The I-Charts outline the reference numbers, field names, action types, negotiated business rules, field lengths, field characteristics, and valid values associated with each IMA GUI transaction.

2.1.1.5.9 Other GUI Supporting Documentation

Qwest maintains several other documents to support the IMA GUI environment. The additional documentation includes:

- *CLEC System Administration Guide* – details the typical tasks that a CLEC system administrator will need to perform;
- *IMA Documentation Change Log* – highlights changes to IMA GUI documentation;
- Release notes – outlines upcoming changes to IMA GUI; and
- Frequently Asked Questions.

2.1.1.6 Capacity Management Processes

Qwest ensures that there is sufficient capacity to handle CLEC transactions for both the EDI and the Web-GUI interfaces by monitoring the utilization of the wholesale systems. Qwest uses forecasting and planning methods to ensure that the IMA systems do not encounter capacity management issues. Qwest also maintains disaster recovery plans for its systems.

2.1.2 Maintenance and Repair Interfaces

Qwest offers CLECs two maintenance and repair interfaces, Mediated Access System for Electronic Bonding Trouble Administration (MEDIACC EB-TA), and Customer Electronic Maintenance and Repair (CEMR), for performing trouble administration. MEDIACC EB-TA and CEMR allow the CLEC to electronically submit trouble tickets for designed and non-designed services circuits to Qwest's back-end systems, Work Force Administration/Control (WFA/C) or Loop Maintenance Operating System (LMOS). Troubles are routed to the correct system based on circuit type and format.

CLECs that wish to conduct business using Qwest's MEDIACC EB-TA interface are required to have an initial kick-off meeting with Qwest to develop a *Joint Interconnection Agreement (JIA)*. The JIA is a document that defines the development, testing, and support conducted jointly between Qwest and the CLEC. Specifications to design a MEDIACC EB-TA interface are referenced in the JIA. Negotiations on the terms of agreement, deliverables, and concerns are addressed during weekly meetings between the two parties.

Connectivity to Qwest's testing environment must be established by the CLEC using the X.25 transmission protocol. The requirement to use the X.25 transmission protocol is documented in the JIA, and is communicated to the CLEC at the initial kick-off meeting.

Qwest provides CLECs a *System Test Plan for Electronic Bonded Trouble Administration* document that clearly defines the steps and different phases required to develop a fully functional

MEDIACC EB-TA interface. This document outlines the different stages required to test a CLEC's MEDIACC EB-TA interface with Qwest's systems. Quality measures, such as pre-defined entrance and exit criteria, are defined for a CLEC to test in Qwest's testing environment, and to progress through each of the different stages of implementation.

Prior to commencing any interface testing, Qwest has a review process with the CLEC to determine the test scenario inputs and expected outputs that will be used for testing. Qwest offers a document called *End-to-End Functional Test Scenarios*, which includes baseline test scenarios for a variety of transactions. A CLEC works with Qwest to remove, modify, and/or add specific test scenarios to this document. The resulting set of test scenarios are used for testing.

During the testing process, Qwest and the CLEC hold a conference call with the Qwest Test Engineer, whose job is to provide support for the processing of the test scenarios. Results of the test scenarios, and defects encountered during testing, are documented. Weekly test calls are conducted between Qwest and the CLEC to review the progression of testing, to identify and address issues, and to communicate new system and/or documentation changes.

Upon completion of the development and testing of all required test scenarios, Qwest and the CLEC conduct an Operational Readiness Test, during which a limited subset of System Test Procedure test cases are submitted and processed through Qwest's MEDIACC EB-TA production environment.

Qwest offers the CEMR interface to CLECs as another option for submitting their maintenance and repair trouble reports. CEMR is an amalgamation of the functionality of two older retired systems called Customer Terminal Access System (CTAS) and Interconnect Mediated Access Graphical User Interface (IMA GUI). The CEMR interface is accessed through a secure Internet connection using a Netscape Communicator Web browser. The end user is required to obtain a digital certificate from Qwest in order to gain access to CEMR through a secure, private connection. The process for establishing connectivity, and using the complete functionality of CEMR, is documented in the *CEMR User Guide*. This documentation is publicly available on the Qwest Wholesale Web site. No interface development is required on the part of the CLEC.

2.1.3 Billing Interfaces

CLECs specify which options they wish to use for the receipt of their billing information via a New Customer Questionnaire that is available either on the Qwest Wholesale Markets Web site or through the CLEC's Qwest Service Manager. CLECs receive both Customer Records and Information System (CRIS) summary bills and Daily Usage Files (DUFs) from Qwest. CRIS summary bills are offered in the following formats:

- Paper (Official Qwest Bill of Record - Automatically Provided);
- EDI via Network Data Mover (NDM) (dedicated circuit);
- EDI via Value Added Network (VAN);
- EDI via File Transfer Protocol (FTP) - (dedicated circuit);
- Web Access;

- Diskette; and
- CD ROM (ASCII files) - Must have over \$10,000 of revenue on a single Summary Billing Number to qualify.

Each option may require certain procedural steps to prepare CLECs to receive CRIS summary bills. Qwest works directly with each CLEC to facilitate access to the electronic delivery options. Additionally, customer guides and set-up checklists are publicly available on the Wholesale Markets Web site. However, CLECs are not required to formally develop interfaces for any of the aforementioned electronic delivery options.

For EDI delivery formats, CLECs are required to have an EDI translator to read the output files. Records are based on a standard 811 transaction set defined by the Telecommunication Industry Forum (TCIF). Qwest provides documentation describing the standard EDI response specifications on its Wholesale Markets Web site to support CLECs choosing to receive billing information in the EDI format.

DUFs can be received through the following media:

- Network Data Mover (NDM) (Dedicated Circuit or Dial-In);
- File Transfer Protocol (FTP) - (Direct Only); and
- Web Access.

The DUF is sent in the Ordering and Billing Forum (OBF) Exchange Message Interface (EMI) format. EMI is a standard message exchange guideline for the telecommunications industry. Qwest's Wholesale Markets Web site provides links to EMI documentation. As with CRIS summary bills, CLECs are not required to develop an interface to accept DUFs.

Qwest provides information on the various types of billing formats available in the *CLEC/Reseller Guide to OSS Interfaces*, which is located on the Qwest Wholesale Markets Web site at <http://www.qwest.com/wholesale/systems/generalinfo.html>. Additional information regarding the electronic delivery of billing information can be found at <http://www.qwest.com/wholesale/clecs/electronicaccess.html>.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were Qwest's documentation, specifications, and support provided to CLECs in developing, providing, and maintaining OSS interfaces for pre-ordering, ordering, maintenance and repair, and billing. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1, "Results & Analysis."

Table 24.6-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Developing Interfaces	Interface Development Methodology	Adequacy and completeness of interface development methodology	24.6-1-1 – 24.6-1-2, 24.6-2-1 – 24.6-2-2
	Provision of Interface Specifications and Related Documentation	Adequacy and completeness of interface documentation distribution procedures	24.6-1-3 – 24.6-1-6, 24.6-2-3 – 24.6-2-6
Enabling and Testing Interfaces	Interface Enabling and Testing Methodology	Adequacy and completeness of carrier-to-carrier interface enabling and testing procedures	24.6-1-7, 24.6-1-13, 24.6-2-7, 24.6-2-13
	Availability of Test Environments and Technical Support to CLECs	Availability and adequacy of functioning test environments, testing protocols, production cut over protocols and technical support for all supported interfaces	24.6-1-8 – 24.6-1-10, 24.6-1-14, 24.6-2-8 – 24.6-2-10, 24.6-2-14
	Interface Enabling and Testing Support	Adequacy and completeness of interface enabling and testing procedural documentation	24.6-1-11, 24.6-2-11
Maintaining Interfaces	Release Management	Adequacy and completeness of interface enhancement and software release management and regression testing protocols	24.6-1-12, 24.6-1-15 – 24.6-1-20, 24.6-2-12, 24.6-1-15 – 24.6-1-20
	Capacity Management	Adequacy and completeness of capacity and growth planning processes	24.6-1-21 – 24.6-1-24, 24.6-2-21 – 24.6-2-24

2.4 Evaluation Methods

KPMG Consulting performed the following data gathering and collection activities for the OSS Interface Development Review:

- Reviewed Qwest's documentation on the Interface Development processes for the various interfaces. The documentation included both publicly available information on the Qwest Wholesale Markets Web site and internal documentation proprietary to Qwest;
- Conducted interviews with Qwest personnel involved with the various aspects of interface development for the appropriate interfaces; and
- Conducted interviews with, and reviewed documentation from, a CLEC, the Pseudo-CLEC (P-CLEC), and a CLEC service provider to understand their respective commercial experiences regarding interconnection with Qwest OSS interfaces.

To test process adherence, KPMG Consulting relied primarily on the implementation results of the P-CLEC, Hewlett-Packard Consulting (HPC). HPC performed full implementations for IMA

EDI 5.0, 6.0, and 8.0. For EDI testing, HPC utilized only Qwest's Interoperability environment. HPC did not perform process or transaction testing in Qwest's SATE for the Qwest OSS Evaluation.

2.5 Analysis Methods

The OSS Interface Development Review included a checklist of evaluation criteria developed by KPMG Consulting during the preparation of test activities for the Qwest OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the OSS Interface Development Review.

The data collected was analyzed employing the evaluation criteria referenced above, and included in the "Evaluation Criteria and Results" table below.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the tables below. A separate evaluation analysis table exists for the pre-order/order and maintenance and repair functional areas. Within each table, multiple interfaces may be evaluated. For example, the pre-order/order table includes evaluation and comments for both the EDI and GUI interfaces used by CLECs to perform the pre-order and order functions.

CLECs wishing to receive electronic CRIS/CABS or DUF billing information can do so via EDI, ASCII for CRIS/CABS, or EMI for DUF. Data can be retrieved via FTP, Internet, or NDM transport mechanisms. Connection methods include Direct:Connect[®] (dedicated circuit), Dial-Up or WEB GUI. Once a CLEC has chosen the data format, transport mechanism, and connection type, they have completed the interface process. There is no software interface development required for the CLEC. Test 19.6, DUF Return Production and Distribution Process Evaluation, and Test 20.7, Bill Production and Distribution Process Evaluation discuss billing processes.

Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

3.1.1 Pre-Order/Order Interfaces

Table 24.6-2.1: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Methodology</i>			
24.6-1-1	Qwest has a documented software/interface development methodology that addresses requirements and specifications definition, design, development, testing, and implementation.	Satisfied	<p>Qwest has an internal, proprietary documented interface development methodology, known as the Comprehensive Delivery Process (CDP), that addresses requirements and specifications, definition, design, development, testing, and implementation for both EDI and GUI.</p> <p>Process documentation was provided by Qwest for each of the phases of the IMA EDI development process:</p> <ul style="list-style-type: none"> • Define Candidates; • Package and Initiate a Release; • Consolidate Release Candidates; • Detailed Design; • Code and Unit Test Process; • Integration and System Testing; • CLEC Testing Environment; and • Production Deployment. <p>Each of these documents defined the inputs, activities, and tasks performed, and the outputs of each phase. KPMG Consulting received samples of these outputs for both IMA EDI and GUI.</p> <p>Qwest utilizes a streamlined version of the CDP approach, called Rapid Application Development (RAD), for SATE.</p>
24.6-1-2	Interface development methodology defines how quality is to be assured.	Satisfied	<p>Qwest internal interface development methodology defines how quality is to be assured.</p> <p>Qwest conducts internal code tests, unit tests, integration tests, and system tests on IMA EDI software code prior to deployment. The developers perform code tests and unit tests, while integration tests and system tests are performed by dedicated integration test and system test teams. Test plans describing testing methodology, test cases, and other testing considerations, are created by the System Test and Integration Test Teams for use in their respective tests.</p> <p>System Testing, Integration Testing, and</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>User Acceptance Testing are also performed on the SATE.</p> <p>Issues uncovered during internal testing are logged as Change Requests (CRs) by the testing personnel, and are tracked in the Distributed Defect Tracking System (DDTS). These CRs are used only by internal Qwest development and testing teams for tracking purposes.</p> <p>CRs are assigned one of four severity levels. Severity Level 1 is the most severe, while Severity Level 4 is the least severe. The Qwest-defined process is to not release any software for which Severity Level 1 and Severity Level 2 CRs exist.</p> <p>KPMG Consulting received and reviewed samples of CRs, sample test plans, test plan templates, and a screenshot of Qwest's test case repository.</p> <p>Qwest conducts code review/unit testing, integration testing, system testing, and user acceptance testing on the IMA GUI software code. Once the code has been written, it undergoes a code review. The code review is performed by one or more GUI developers, who collectively review and run test cases on the code to ensure its functionality.</p> <p>KPMG Consulting received and reviewed samples of code review comments, a screenshot of Qwest's test case repository, and test plans for IMA GUI.</p>
<i>Interface Specifications</i>			
24.6-1-3	Responsibilities and procedures for developing and updating interface specification document(s) are defined.	Satisfied	<p>Qwest responsibilities and procedures for developing and updating interface specification document(s) are defined.</p> <p>The <i>IMA Disclosure Document</i> and <i>EDI Implementation Guidelines for Interconnect Mediated Access (IMA)</i> are used by CLECs to develop their IMA EDI Interfaces. CLECs conducting testing of their interfaces in SATE also use the <i>SATE Data Document</i>. These documents are available on the Qwest Markets Wholesale Web site at www.qwest.com/wholesale/ima/edi/document.html.</p> <p>The EDI Specifications group, the Qwest Business group, and the Qwest</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Documentation group are responsible for updating these specification documents.</p> <p>Updates to existing interface specifications, and new release documentation are issued via the Change Management Process. New release documentation is developed in accordance with internal project planning requirements.</p>
24.6-1-4	Interface specifications that define applicable business rules, data formats/definitions, and transmission protocols are made available to customers.	Satisfied	<p>Qwest Interface specifications that define applicable business rules, data formats/definitions, and transmission protocols are made available to customers.</p> <p>The <i>EDI Implementation Guidelines for IMA, IMA Disclosure Document, SATE Data Document, SATE Data Request form</i>, and other EDI-related documentation are all available on the Qwest Wholesale Markets Web site at www.qwest.com/wholesale/ima/edi/document.html.</p> <p>The P-CLEC identified areas of deficiency in Qwest's interface documentation, and subsequently issued Exceptions 2005, 2008, 2009, and 2014. These Exceptions outlined problems in the definition, applicability, and accuracy of business rules and other interface specifications including:</p> <ul style="list-style-type: none"> • Insufficient information to create and submit accurate LSRs for DID In Only Trunks; • Error in the IMA EDI 6.0 Disclosure Document regarding the Request Type (REQTYPE) data element for shared loops; • Inconsistency in IMA EDI 6.0 Disclosure Document and the Business Rules for ordering UNE-P POTS services; and • Inconsistency in the documented service availability of "Seasonal Suspend" service for specific geographic regions. <p>Qwest revised its disclosure documentation, and issued Qwest Communicators to the CLEC community through the Qwest CMP. Exceptions 2005, 2008, 2009, and 2014 are closed.</p> <p>Documentation for IMA GUI is publicly available on the Qwest Wholesale Markets</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.6-1-5	On-call customer support for interface specifications is provided.	Satisfied	<p>Web site.</p> <p>The CLEC's EDI Implementation team provides on-call support for IMA EDI interface specifications during the EDI implementation and migration.</p> <p>The P-CLEC used this support for addressing issues during its EDI implementation and certification.</p> <p>KPMG Consulting reviewed Meeting Summaries, Question Logs, and Documentation Logs provided by the P-CLEC.</p> <p>CLECs access the Wholesale Systems Help Desk (WHS) for interface related issues while operating in the Production Environment. The WHSD provides IMA GUI support.</p>
24.6-1-6	Procedures for updating interface specifications are integrated with formal change management procedures involving customers.	Satisfied	<p>Procedures for updating interface specifications are integrated with formal change management procedures involving customers.</p> <p>Qwest and the CLECs are required to use Qwest's CMP to request changes to any of Qwest's systems or specification documents. The CMP is described in the <i>EDI Implementation Guidelines for IMA</i> and on the CMP Web site.</p> <p>CLECs are notified of changes to systems or of updated interface specification documentation via a Qwest Communicator electronic newsletter. These newsletters are also referred to as Release Notices. Communicators/Release Notices for IMA EDI System changes are archived at http://www.qwest.com/wholesale/ima/edi/release.html.</p> <p>Release notices for all systems, including IMA GUI, are archived in the general Release Notice archive at http://www.qwest.com/wholesale/cmp/release.html.</p>
<i>Carrier-to-Carrier Testing</i>			
24.6-1-7	Qwest has a documented methodology for conducting carrier-to-carrier testing with customers seeking to interconnect.	Satisfied	<p>Qwest has a documented methodology for conducting carrier-to-carrier testing with customers seeking to interconnect.</p> <p>The process is documented externally in the <i>EDI Implementation Guidelines for IMA</i>, and internally in Qwest's internal process</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>documentation for Interop/SATE and Controlled Production testing. Entrance and exit criteria for each phase of testing are defined and documented in both the internal and external documentation.</p> <p>KPMG Consulting observed testing activities, and reviewed documented test results provided by P-CLEC for Interop testing. Commercial testing activities and documented results were also reviewed for SATE.</p> <p>CLECs using the IMA GUI do not have to develop an interface. As such, carrier-to-carrier testing is not required for IMA GUI.</p>
24.6-1-8	A functional test environment is made available to customers for all supported interfaces.	Not Satisfied	<p>A functional test environment is not made available to customers for all supported interfaces.</p> <p>Prior to August 2001, Qwest supported only its Interop test environment for CLECs testing an EDI interface. KPMG Consulting identified Interop deficiencies in Exception 3029:</p> <ul style="list-style-type: none"> • Interop requires CLECs to use valid production data in their test cases; • Responses to the test cases are generated manually as opposed to generating production system-like responses; and • Interop has no flow-through capability as does the Production Environment. <p>Qwest responded that it was devoting its testing resources to developing SATE, and that no further enhancements would be made to Interop. Qwest revised the <i>EDI Implementation Guidelines for IMA</i>, so that it now provides more detailed information on the pros and cons of using Interop vs. SATE, or a combination of both, environments. Exception 3029 is closed.</p> <p>In August 2001, Qwest introduced SATE as a result of a CR submitted through Qwest's Change Management Process (CMP) by a CLEC. SATE is separate from Qwest's production systems.</p> <p>KPMG Consulting reviewed SATE documentation and identified that SATE transaction responses are manually generated, and that the environment does</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>not support flow-through transactions. As a result, KPMG Consulting issued Exception 3077.</p> <p>In its response, Qwest requested that KPMG Consulting close Exception 3077 without waiting for SATE enhancements to be implemented, and subsequent retest verification activities to be completed. Exception 3077 is closed/unresolved.</p> <p>KPMG Consulting formally identified that Qwest did not supply CLECs with sample EDI transactions for the various types of test cases available.</p> <p>Qwest released the <i>Populated X12 Mapping Examples – IMA EDI 9.0 Release</i> document through the CMP Release Notification process.</p> <p>KPMG Consulting verified that CLECs were supplied with sample EDI transactions, and the issue was resolved.</p> <p>KPMG Consulting identified problems related to adding functionality to SATE in Exception 3095. The issues raised included the process for adding new IMA products for testing as well as adding existing products not currently supported in SATE.</p> <p>In its response, dated 4/5/2002, Qwest requested that KPMG Consulting close Exception 3095 without waiting for SATE enhancements to be implemented, and subsequent retest verification activities to be completed. Exception 3095 is closed/unresolved.</p> <p>The P-CLEC's testing for the Qwest OSS Evaluation was limited to Interop. During its Interop testing experience, the P-CLEC identified limitations with the Interoperability Testing environment. Exception 2010 identified that the responses on multiple orders with the same scenario parameters received Firm Order Confirmation (FOC) on some orders, while other orders were rejected.</p> <p>Qwest corrected the issue, and committed to training Help Desk personnel to ensure that transactions are handled and processed accurately. Exception 2010 is closed.</p> <p>In Exceptions 2030 and 2031, HPC</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>identified that the processing of an order for multiple Qwest products resulted in the P-CLEC receiving a Firm Order Confirmation (FOC) and then an ISC-generated reject (FATAL).</p> <p>Updates to the IMA EDI Disclosure Documentation Releases 7.0 and 8.0 were made, and a notification was issued. Exceptions 2030 and 2031 are closed.</p> <p>Qwest does not require carrier-to-carrier testing for IMA GUI.</p>
24.6-1-9	Carrier-to-carrier test environments are available and segregated from Qwest production and development environments.	Satisfied	<p>Carrier-to-carrier test environments are made available and are segregated from Qwest production and development environments.</p> <p>Until August 2001, Qwest offered only its Interoperability testing environment to CLECs developing an interface for IMA EDI. The Interoperability test environment is dependent upon the production back-end systems, and, as a result, CLECs must use actual production data for testing. Because of this and other deficiencies in the Interoperability environment, KPMG Consulting issued Exception 3029.</p> <p>In August 2001, Qwest introduced SATE as a result of a CMP CR submitted by a CLEC. SATE is separate from Qwest's production systems. Qwest now allows CLECs to use either Interop, SATE, or a combination of both environments for testing. The <i>EDI Implementation Guidelines for IMA</i> document was updated to describe the process for testing in both environments, and includes a table listing the capabilities of each of the test environments.</p> <p>KPMG Consulting reviewed the revised documentation, and determined that the availability of SATE, or a combination of Interop and SATE, sufficiently addressed the issues raised in the Exception. Exception 3029 is closed.</p> <p>No development work is required on the CLEC side to use IMA GUI, and, therefore, a carrier-to-carrier testing environment is not required for IMA GUI.</p>
24.6-1-10	On-call customer support for interface testing is provided.	Satisfied	The Qwest EDI Implementation team assigned to each CLEC provides on-call customer support for interface progression

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>testing (i.e., for new release implementation or migration). The CLEC is also provided with the email addresses and telephone numbers of its Implementation team members should the CLEC need to contact Qwest for support.</p> <p>Limited support for regression testing is provided exclusively via email. Qwest does not provide on-call customer support for regression testing. Regression testing is designed for CLECs to test their EDI interfaces without the supervision and direct support from Qwest.</p> <p>Responsibilities for support are documented for CLECs in the <i>EDI Implementation Guidelines for IMA</i>.</p> <p>The P-CLEC received support from its IMA EDI Implementation team, as documented in its Question Logs, Documentation Logs, and Implementation Meeting Minutes. KPMG Consulting also observed the P-CLEC's weekly implementation calls with Qwest.</p> <p>There is no carrier-to-carrier testing required for IMA GUI, and therefore, on-call support for interface testing is not required.</p>
24.6-1-11	Carriers are provided with documented specifications for active test environments.	Satisfied	<p>CLECs are provided with documented specifications for active test environments in the form of the <i>EDI Implementation Guidelines for IMA</i> and <i>Disclosure Document</i>. These documents are available on the Qwest Wholesale Markets Web site at www.qwest.com/wholesale/ima/edi/document.html. CLECs that plan to conduct testing in SATE can use the <i>SATE Data Document</i>, which is available at the same URL.</p> <p>The P-CLEC was provided with the <i>EDI Implementation Guidelines for IMA</i> and the URL for the <i>Disclosure Document</i> at its Implementation Kick-off meeting with Qwest.</p> <p>No development work is required to use IMA GUI, and therefore, a carrier-to-carrier testing environment, with its associated specifications, is not required.</p>
24.6-1-12	Active test environments are subject to version control, and	Satisfied	Active test environments are subject to version control. Carriers are notified before

Test Cross-Reference	Evaluation Criteria	Result	Comments
	carriers are notified before changes are made to active test environments.		<p>changes are made to active test environments.</p> <p>SATE can support up to three versions of IMA EDI at any given time. Qwest policy is to have the newest version of IMA EDI available in SATE one month prior to its release into production. The various versions of IMA EDI available in SATE correspond to those in the IMA EDI production environment. The IMA EDI release/retirement schedule is described in the <i>EDI Implementation Guidelines for IMA</i>, and a 12-month release calendar is available on the CMP Web site, at http://www.qwest.com/wholesale/cmp/releasenote.html.</p> <p>Qwest has a documented process in place for ensuring that the version of IMA EDI that is loaded in SATE matches the version of IMA EDI that is, or will be, loaded in the production environment.</p> <p>KPMG Consulting reviewed the process in the <i>SATE and IMA Synchronization</i> document.</p> <p>Interop supports all the releases of IMA EDI that are available in the production environment.</p> <p>CLECs are notified by email of any changes to the test environments through a Qwest Communicator newsletter. Communicators are sent out for the introduction of a new version of IMA EDI, including "dot" releases.</p> <p>No development work is required on the CLEC side to use IMA GUI, and therefore, a carrier-to-carrier testing environment, including version control management policies, is not required for IMA GUI.</p>
24.6-1-13	Procedures are defined to log software "bugs," errors, and omissions in specifications and other issues discovered during carrier-to-carrier testing.	Satisfied	<p>Procedures are defined to log software "bugs," errors, and omissions in specifications and other issues discovered during carrier-to-carrier testing.</p> <p>CLECs encountering problems with software or specifications during the carrier-to-carrier testing phase document those concerns in their Question Logs, and discuss them with the EDI Implementation team during the weekly Implementation calls.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>During all phases of IMA EDI testing, if problems with the software or specifications are encountered that require Qwest to make changes to their systems and documentation, the EDI Implementation team will create an internal CR in their internal tracking system, DDTS. If the problem is restricted to a specific CLEC, the CR is not shared with the rest of the CLEC community. If the problem affects more than one CLEC, Qwest issues a general notification to the entire CLEC community informing it of the problem and the expected resolution date.</p> <p>Internal CRs created by Qwest as a result of CLEC testing and/or Qwest testing are tracked and assigned to Qwest personnel for resolution through DDTS.</p> <p>HPC, in its role as P-CLEC, raised issues with Qwest's internal severity coding process, the publication of identified defects and implementation dates, and the process for assigning severity codes to change requests identified during EDI Certification testing. Qwest proposed to resolve these issues through the CMP Redesign process with the CLEC community.</p> <p>There is no carrier-to-carrier testing required for IMA GUI, and therefore trouble tracking processes for that phase are not required for IMA GUI.</p>
<i>Production Interface Support</i>			
24.6-1-14	On-call technical support is provided for production versions of interfaces.	Satisfied	<p>The Qwest EDI Implementation team provides on-call technical support to CLECs for production versions of interfaces.</p> <p>EDI Implementation team support is provided for the first 30 days of production after the CLEC's implementation, following CLEC certification for a new product and new release. After the 30-day interval, Qwest provides technical support via the WSHD.</p> <p>The WSHD creates a Trouble Ticket for each problem a CLEC calls to report. Problems that cannot be solved are referred on to successively higher tiers of production support until resolution can take place.</p> <p>The production support role is documented in the Support section of the <i>EDI</i></p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p><i>Implementation Guidelines for IMA.</i></p> <p>KPMG Consulting confirmed with the P-CLEC that the assigned EDI Implementation team provided 30 days of post-implementation support.</p> <p>The WSHD provides primary support for IMA GUI. Problems that cannot be solved by the WSHD are referred on to successively higher tiers of help desk support until resolution. The <i>IMA User Guide</i> and IMA GUI Frequently Asked Questions Web page at http://www.quest.com/wholesale/ima/gui/faq.html directs CLECs to call the WSHD for any IMA GUI production interface issue.</p> <p>KPMG Consulting observed WSHD work center operations as part of Test 24.7, Wholesale Systems Help Desk process review, and confirmed that technical support is provided to CLECs for both IMA GUI and IMA EDI. KPMG Consulting also reviewed the Help Desk trouble log maintained by the P-CLEC.</p>
24.6-1-15	Procedures are defined to track software "bugs," errors, and omissions in specifications and other issues discovered during production use of interfaces.	Satisfied	<p>Procedures are defined to track software "bugs," errors, and omissions in specifications and other issues discovered during production use of interfaces.</p> <p>CLECs encountering issues in IMA EDI or IMA GUI production are required to first contact the WSHD. The WSHD creates a trouble ticket for each problem, which are tracked using the Problem Change Request Management (PCRM) system. During Qwest's internal investigation of the problem, if it is found that changes need to be made to software to resolve the problem, an internal CR is created and is tracked in Qwest's DDTS. If Qwest applies any changes to software or documentation that impact CLECs, it notifies CLECs through the CMP process.</p> <p>KPMG Consulting reviewed methods and procedure documentation that defined how Qwest used the PCRM system to track bugs, errors, and omissions detected during production. KPMG Consulting gathered and reviewed PCRM data as an output of the tracking process.</p>
24.6-1-16	Business rules and software	Satisfied	Business rules and software change logs

Test Cross-Reference	Evaluation Criteria	Result	Comments
	change logs exist, are updated, and are shared with customers.		<p>exist, are updated, and are shared with customers.</p> <p>CLECs are notified of changes to the EDI documentation via electronic newsletters called Communicators. Communicators are emailed directly to all CLECs on the Communicator distribution list, and are also archived on the Qwest wholesale Web site at http://www.qwest.com/wholesale/ima/edi/release.html, and also on the CMP Web site at http://www.qwest.com/wholesale/cmp/releasenote.html. These change management procedures are defined in the <i>Master Redlined CLEC-Qwest CMP Redesign Framework</i> document.</p> <p>KPMG Consulting and the P-CLEC received notifications regarding updated business rules and software changes.</p> <p>Change logs are included in addenda to the <i>Disclosure Document</i> for the latest release. These changes are both posted on the Qwest Wholesale Markets Web site at http://www.qwest.com/disclosures/netdisclosure409.html, and issued via a Communicator to the CLEC community.</p> <p>CLECs are notified of changes to the IMA GUI documentation through the same process used for IMA EDI. IMA GUI documentation also uses a Change Log in addition to the Communicator process. The Change Log is publicly available on the Qwest external Web site at http://www.qwest.com/wholesale/ima/gui/document.html.</p> <p>KPMG Consulting confirmed that Qwest shares updates to business rules with CLECs.</p>
<i>Release Management</i>			
24.6-1-17	Internal software acceptance testing is defined and documented.	Satisfied	<p>Qwest has an internal software acceptance testing procedure that is defined and documented.</p> <p>Prior to deploying a new release into the production environment, Qwest conducts code and unit tests, System tests, Integration tests, and User Acceptance Tests (UAT) on the IMA EDI and IMA GUI software code.</p> <p>SATE also undergoes internal testing prior to release. SATE code is developed in</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>parallel with IMA EDI production code.</p> <p>Qwest has internal process documentation on all the phases of testing. Internal software acceptance testing is defined in the internal <i>User Acceptance Test Process</i>, <i>User Acceptance Test Execution Procedure</i> and <i>Comprehensive Delivery Process</i> documents.</p> <p>KPMG Consulting received and reviewed sample test plans, test plan templates, and test results as outputs of this phase of the software acceptance testing. KPMG Consulting also substantiated that Qwest plans and manages the UAT for SATE by reviewing internal support documentation.</p>
24.6-1-18	Methods and procedures are defined for ensuring that changes found during all phases of testing are incorporated into instances of software code.	Satisfied	<p>Methods and procedures are defined for ensuring that changes found during all phases of testing are incorporated into instances of software code.</p> <p>Qwest's internal process document, the <i>EDI Developers Handbook</i>, defines the methods and procedures that Qwest's internal testing teams are to follow for all phases of testing. Any issues encountered during Qwest's internal testing phases are tracked as internal CRs in DDTS. A severity level is associated with the internal CR. This process of creating CRs in DDTS is defined in the <i>ClearDDTS™ User's Guide</i>.</p> <p>Development and testing teams are required to address Severity 1 and 2 CRs before they can proceed to the next stage of the IMA EDI or IMA GUI development cycle. Testing teams hold regular meetings during the testing phases to review internal CRs and other issues.</p> <p>KPMG Consulting received and reviewed the <i>EDI Developers Handbook</i> and the <i>ClearDDTS™ User's Guide</i>. KPMG Consulting conducted on-site interviews with Qwest testing teams, developers, and managers who described their activities to be consistent with documented processes. KPMG Consulting also reviewed historical examples of internal CRs as evidence of Qwest's adherence to defined processes.</p>
24.6-1-19	Processes direct that new releases undergo testing prior to migration to a test environment.	Satisfied	Qwest employs processes that require new releases of IMA EDI to undergo testing prior to migration to a test environment.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Interop uses production code and the associated test process. As such, the code in Interop undergoes Code and Unit testing, Integration Testing, System Testing, and UAT prior to deployment into the Interoperability environment. The <i>Comprehensive Delivery Process</i> outlines the testing of new releases through various phases, as previously defined.</p> <p>KPMG Consulting received and reviewed the project plans, deployment plan, and code review results for IMA EDI and Interop.</p> <p>Prior to migration to the SATE test environment, code undergoes unit testing, system testing, integration testing, and user acceptance testing.</p> <p>KPMG Consulting received and reviewed copies of the test plans and results for SATE release 7.0 and SATE release 9.0.</p> <p>No development work is required on the CLEC side to use IMA GUI, and therefore, a carrier-to-carrier testing environment is not required for IMA GUI.</p>
24.6-1-20	Defects and required changes are identified and tracked during pre-production testing.	Satisfied	<p>Defects are identified and tracked during pre-production testing for IMA EDI and IMA GUI.</p> <p>Qwest's internal testing methods are defined in the <i>EDI Developers Handbook</i>. The document defines the methodology for each testing phase. Testers define test cases, execute those test cases, and compare actual results to expected results for each test case. Discrepancies between actual and expected results indicate potential defects.</p> <p>Defects are logged as internal CRs in the DDTS CR tracking system. Once logged in DDTS, CRs are assigned to the associated development group. This group is then responsible for resolving the CR. During the various testing phases, IMA teams conduct regular meetings to review any CRs or other issues uncovered during pre-production testing.</p> <p>KPMG Consulting reviewed sample CRs extracted from DDTS and confirmed adherence to procedures outlined in the <i>EDI Developers Handbook</i>.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Capacity Management</i>			
24.6-1-21	Measures are defined and tools exist to monitor system resource utilization levels.	Satisfied	<p>Qwest defines measures and has tools to monitor system utilization levels.</p> <p>The Qwest Automated Test and Measurement (ATM) team has tools in place to capture the utilization of IMA systems. The tools and measures for IMA GUI are the same as those for IMA EDI.</p> <p>KPMG Consulting received and reviewed reports, charts, and graphs that show utilization levels for IMA systems.</p> <p>The <i>Scalability Process Document</i> details the process for managing capacity of the IMA system. The document is prepared by the Load, Capacity, and Performance Team. The <i>Scalability Checklist</i> is used to see if system utilization is nearing capacity thresholds. The checklist includes monitoring processes and procedures.</p>
24.6-1-22	There are defined conditions that trigger the addition of resources.	Satisfied	<p>There are defined conditions that trigger the addition of resources for IMA EDI and IMA GUI.</p> <p>Qwest uses eight measurements and time benchmarks for tracking and reporting. IMA Response Time Measurement (IRTM) will trigger alarms to the ATM if the benchmarks are exceeded. HP Glance is used to monitor the utilization of the CPU for the HP servers. Also, if production volumes are nearing the six-month forecasted threshold, an internal severity 2 CR is issued.</p> <p>KPMG Consulting reviewed the <i>Scalability Process Document</i> for IMA GUI and IMA EDI, as well as CLEC utilization levels current at the time of the review.</p>
24.6-1-23	Procedures are in place to adjust for changes in demand of services once the need for these changes is detected.	Satisfied	<p>Qwest procedures are in place for IMA EDI and IMA GUI to adjust for changes in demand of services once the need for these changes is detected.</p> <p>Qwest's document, <i>Scalability Process Document</i>, describes the process that Qwest uses to plan a six-month system capacity forecast based on CLEC and Qwest demand forecasts. Qwest also uses reporting tools as inputs to make necessary long-term adjustments to systems capacity.</p> <p>If it is found that additional capacity is</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>required, an internal CR is opened to address the capacity issue. The Qwest <i>Downstream Systems Impact Diagram</i> document defines how system capacity is added in the event that a need is identified.</p> <p>KPMG Consulting interviewed Qwest staff directly involved with the capacity planning process. KPMG Consulting received and reviewed various reports on system utilization and capacity to validate that the processes for detecting and adjusting to changes in demand are being followed.</p>
24.6-1-24	Contingencies are defined to mitigate the impact of unexpected changes in business and transaction volumes on OSS interfaces.	Satisfied	<p>Contingencies are defined to mitigate the impact of unexpected changes in business and transaction volume on OSS interfaces.</p> <p>The Qwest capacity planning process for IMA EDI and IMA GUI allows for unexpected changes in transaction volumes to spike to 80 percent of the current six month forecast. Sustained volumes of 80 percent of the current six-month forecast are a factor in the addition of capacity.</p> <p>The <i>Scalability Process Document</i> details the process for managing capacity of the IMA system.</p> <p>KPMG Consulting received and reviewed internal trend data that indicates that system capacity has remained within defined tolerances.</p> <p>The infrastructure group has a disaster recovery plan for the IMA systems. The <i>IMA GUI/EDI Disaster Recovery Plan</i> described the processes necessary for the recovery of the IMA EDI and IMA GUI applications. Capacity planning personnel periodically conduct walk-throughs of the disaster recovery processes and procedures.</p> <p>KPMG Consulting conducted interviews with Qwest personnel and reviewed documentation provided by Qwest to confirm existence of IMA GUI and IMA EDI Disaster Recovery Plans.</p>

3.1.2 Maintenance and Repair Interfaces

Table 24.6-2.2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Methodology</i>			
24.6-2-1	Qwest has a documented software/interface development methodology that addresses requirements and specifications definition, design, development, testing, and implementation.	Satisfied	<p>Qwest has a documented software/interface development methodology that addresses requirements and specifications definition, design, development, testing, and implementation.</p> <p>Qwest follows an internal and proprietary process called the Comprehensive Delivery Process (CDP) for developing its interface specifications for the MEDIACC EB-TA and CEMR interfaces. Qwest roles and responsibilities are defined for each of the CDP phases including Code and Unit Test, Integration Test, System Test, and UAT processes.</p> <p>The <i>Master Test Plan</i>¹⁶⁴ outlines detailed specifications and testing procedures for development of the MEDIACC EB-TA and CEMR interfaces. The <i>Master Test Plan</i> includes entrance criteria, tasks to be performed, and exit criteria.</p> <p>KPMG Consulting examined sample results of the entrance and exit criteria for the Unit Test, Integration Test, and System Test performed by Qwest on MEDIACC EB-TA and CEMR.</p>
24.6-2-2	Interface development methodology defines how quality is to be assured.	Satisfied	<p>Interface development methodology defines how quality is to be assured.</p> <p>Qwest incorporates quality assurance processes as part of the interface development methodology for MEDIACC EB-TA and CEMR. Qwest follows a documented procedure, found in the <i>Master Test Plan</i>, which structures the test strategy and approach. Qwest developers and testers are subject to entrance and exit criteria during internal testing.</p> <p>Qwest Testers are able to test their designs in an internal testing environment separate from production. Any issues encountered during internal QA testing are documented</p>

¹⁶⁴ The document referenced is a Qwest internal development document, and is not to be confused with the *OSS Evaluation Project Master Test Plan*.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>in the DDTS tracking system and resolved by the Qwest developers.</p> <p>KPMG Consulting reviewed process documentation and several internal CRs from DDTS for the MEDIACC EB-TA and CEMR interfaces.</p>
<i>Interface Specifications</i>			
24.6-2-3	Responsibilities and procedures for developing and updating interface specification document(s) are defined.	Satisfied	<p>Qwest has defined responsibilities and procedures for developing and updating interface specification documents.</p> <p>An internal management group, the Business Area Partners (BAP), has responsibility for determining the specifications required for MEDIACC EB-TA. The BAP consists of managers from various disciplines within Qwest.</p> <p>Interface specifications conform to the American National Standards Institute (ANSI) guidelines of ANSI T1.227-1995, T1.228-1995, and T1.262-1998, as well as other industry standard guidelines. CLECs and Qwest exchange requests over an X.25 protocol-based network as defined by the International Organization for Standardization (ISO).</p> <p>Qwest has a Documentation group responsible for all edits made to specifications documents for both MEDIACC EB-TA and CEMR. Design and system test specifications are created and tested to minimize errors. Documentation changes for the progression of the draft specifications are tracked in the DDTS.</p>
24.6-2-4	Interface specifications that define applicable business rules, data formats/definitions and transmission protocols are made available to customers.	Satisfied	<p>Interface specifications that define applicable business rules, data formats/definitions and transmission protocols are made available to customers.</p> <p>Qwest uses interface specifications based on industry standards outlined by the Alliance of Telecommunications Industry Solution (ATIS)/Telecommunications Industry Forum (TICF) to develop MEDIACC EB-TA. These industry standards are ANSI T1.227-1995, T1.228-1995, and T1.262-1998.</p> <p>Qwest documents and references other specifications required for CLECs to develop their EBTA in the JIA, including, X.25 transmission protocol. The JIA refers</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>to business rules as defined in the Qwest/MEDIACC EBTA documents for WFA/C and LMOS. The JIA is negotiated and finalized prior to the CLEC beginning implementation.</p> <p>Interface specification documents are not required for a CLEC using CEMR since it is a Web-based GUI. Qwest has a <i>CEMR User Guide</i> that describes the connectivity, PC requirements, and security rights to access CEMR. The <i>CEMR User Guide</i> also documents CEMR's functionality and describes how end users can navigate through the CEMR interface. The <i>CEMR User Guide</i> is publicly available on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/training/ce mrguide.html.</p> <p>KPMG Consulting reviewed applicable interface specification documentation for the MEDIACC EB-TA and CEMR interfaces.</p> <p>Qwest distributes documentation through the CLEC's assigned Account Team. Subsequent changes to the interface specifications are made available through the Wholesale CMP.</p>
24.6-2-5	On-call customer support for interface specifications is provided.	Satisfied	<p>On-call customer support for interface specifications is provided.</p> <p>Qwest contact information, with roles and responsibilities for support, is provided to CLECs during the MEDIACC EB-TA implementation kick-off meeting. Qwest provides customer support through its weekly MEDIACC EB-TA calls for interface related issues during testing. Offline discussions involving Qwest subject matter experts can occur on an informal, as needed basis. The on-call customer support process is documented in the <i>Qwest Electronic Bonding Trouble Administration (EBTA) Implementation Process</i>, which is also publicly available from the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/m ediacc-ebta.html.</p> <p>The P-CLEC was involved in the negotiations and regularly scheduled meetings with Qwest to review JIA. During</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>the development of the MEDIACC EB-TA interface, the P-CLEC was required to use a documented question log for any issues raised.</p> <p>The P-CLEC formally raised an issue regarding the lack of adequate support to address open questions in the questions log.</p> <p>To resolve this issue, Qwest implemented a new communications process between Qwest and CLECs developing MEDIACC EB-TA. This process is documented in the <i>Qwest Electronic Bonding Trouble Administration (EBTA) Implementation Process</i>, and is also publicly available on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/mediacc-ebta.html.</p> <p>Although CLECs do not develop an interface for CEMR, the WSHD provides technical support for CEMR interface specifications.</p> <p>KPMG Consulting observed the P-CLEC's use of the WSHD for CEMR related trouble issues. KPMG Consulting also conducted an on-site interview with P-CLEC representatives regarding WSHD support provided by Qwest for the CEMR system.</p>
24.6-2-6	Procedures for updating interface specifications are integrated with formal change management procedures involving customers.	Satisfied	<p>Procedures for updating interface specifications are integrated with formal change management procedures involving customers.</p> <p>Qwest updates interface specifications for MEDIACC EB-TA through issuance of an internal CR with an internal tracking system called DDTS that documents all system changes, documentation changes, and test results. DDTS is described in the <i>CLEARDDTS™ User's Guide</i>.</p> <p>CLEC-impacting system changes and documentation changes are discussed at the CMP meetings. Information on the CMP meetings and processes is found on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/cmp.whatiscmp.html. Qwest also maintains an archive of past release notifications that are posted publicly on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/cmp/archive.html. CLECs are</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>able to suggest changes to the MEDIACC EB-TA interface specifications by submitting a formal request through the CMP. The Qwest CMP is outlined in the <i>Master Redlined CLEC-Qwest CMP Redesign Framework</i> document. This interface was not updated during the scope of this test.</p> <p>Updates made to the <i>CEMR User Guide</i> are the responsibility of the Documentation group. The Qwest Business group is responsible for sending notification to the CLEC community announcing any changes to systems and documentation. CLECs are able to initiate any changes to the <i>CEMR User Guide</i> documentation by submitting a formal request through the CMP.</p> <p>CLEC-impacting changes to the CEMR interface specifications are governed by the policies of the Qwest Wholesale CMP.</p> <p>KPMG Consulting and the P-CLEC received CMP notifications for updates to the <i>CEMR User Guide</i> and confirmed adherence to the above process.</p>
<i>Carrier-to-Carrier Testing</i>			
24.6-2-7	Qwest has a documented methodology for conducting carrier-to-carrier testing with customers seeking to interconnect.	Satisfied	<p>Qwest has a methodology for conducting the carrier-to-carrier testing with customers seeking to interconnect with MEDIACC EB-TA.</p> <p>The methodology for conducting carrier-to-carrier testing is provided in the <i>Qwest Electronic Bonding Trouble Administration (EBTA) Implementation Process</i>, which is publicly available on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/mediacc-ebta.html.</p> <p>Qwest and CLECs also use the JIA and <i>System Test Plan for Electronic Bonded Trouble Administration</i> documents that describe the development, testing, and deployment process in detail, including conducting carrier-to-carrier testing. Qwest defines specific entrance and exit criteria for the different stages of testing. CLECs are evaluated with a pass or fail result for each sequential phase.</p> <p>KPMG Consulting observed testing and reviewed associated documentation based on the commercial activity of a CLEC.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			CLECs are not required to develop an interface to CEMR. Therefore, CEMR does not require a carrier-to-carrier testing methodology.
24.6-2-8	A functional test environment is made available to customers for all supported interfaces.	Satisfied	<p>Qwest offers a functional test environment to all CLECs that wish to develop a MEDIACC EB-TA interface.</p> <p>The functional test environment offered by Qwest supports the process that is documented in the JIA and <i>System Test Plan for Electronic Bonded Trouble Administration</i> for a CLEC to develop a MEDIACC EB-TA interface. Qwest provides standard test scenarios for use in the functional test environment. These are reviewed and modified based on the CLEC's specific needs. CLECs can submit test scenarios for designed and non-designed circuits. The responses generated during testing are similar to those that are received in the production environment.</p> <p>KPMG Consulting observed commercial activity of a CLEC using the MEDIACC EB-TA test environment and confirmed that it functioned.</p> <p>CLECs are not required to develop an interface to CEMR. Therefore, CEMR does not require a functional test environment.</p>
24.6-2-9	Carrier-to-carrier test environments are available and segregated from Qwest production and development environments.	Not Satisfied	<p>Qwest's carrier-to-carrier testing environment used by CLECs to develop their MEDIACC EB-TA interface is not segregated from the MEDIACC EB-TA production environment.</p> <p>The carrier-to-carrier test environment offered by Qwest is comprised of the MEDIACC, WFA, and LMOS systems. Test scenarios submitted for MEDIACC EB-TA testing are first processed by the MEDIACC portion of the test environment. Depending on the circuit type, either designed or non-designed services, scenarios are then processed by the WFA or LMOS system.</p> <p>The MEDIACC portion of the test environment is run on a separate server to which the CLEC must establish a secure connection to conduct carrier-to-carrier testing. In addition, Qwest utilizes a separate server for WFA to process</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>designed service test scenarios during the End-to-End testing phase with CLECs. The End-to-End testing phase is described in the <i>System Test Plan for Electronic bonded Trouble Administration</i> document.</p> <p>Non-designed service test scenarios, however, are processed by the LMOS production mainframe. Qwest uses a system flag to prevent test scenarios from being dispatched during the non-designed service testing phase. Non-designed circuits submitted through the LMOS production system are monitored by a Qwest assigned Tester so that test orders are not dispatched, thus potentially impacting Qwest operations and customers.</p> <p>KPMG Consulting raised this issue in Exception 3109, which describes the limitations and potential impacts of testing non-designed services in the LMOS production mainframe during the End-to-End testing phase. KPMG Consulting also identified that Qwest's documentation for the architecture of the EBTA test environment was inadequate.</p> <p>KPMG Consulting investigated the commercial experience of commercial CLECs to assess the impact of the production component on their testing efforts. KPMG Consulting found that, due to the necessary manual intervention of the Qwest Tester, two non-designed services test trouble reports submitted by a CLEC passed through to the Qwest Production Screeners.</p> <p>In its response, Qwest advised that, as no immediate changes were planned for its M&R test environment, KPMG Consulting should close Exception 3109 as closed/unresolved.</p> <p>CLECs are not required to develop an interface to CEMR; therefore, CEMR does not require a carrier-to-carrier testing environment.</p>
24.6-2-10	On-call customer support for interface testing is provided.	Satisfied	<p>On-call customer support for interface testing is provided.</p> <p>Qwest offers on-call customer support for testing of the MEDIACC EB-TA interface. In addition to regularly scheduled weekly</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>meetings between the CLEC and Qwest, offline discussions involving Qwest subject matter experts can occur on an informal, as needed basis. This process is publicly documented in the <i>Qwest Electronic Bonding Trouble Administration (EBTA) Implementation Process</i> available on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/mediacc-ebta.html.</p> <p>KPMG Consulting observed a CLEC's commercial test activity for MEDIACC EB-TA. During the course of testing, the CLEC utilized project plans, question logs, and meetings to address interface testing issues. The CLEC was provided with Qwest points of contact to address issues on an ad-hoc basis.</p> <p>CLECs are not required to develop an interface to CEMR; therefore, CEMR does not require support for interface testing.</p>
24.6-2-11	Carriers are provided with documented specifications for active test environments.	Satisfied	<p>Carriers are provided with documented specifications for active test environments.</p> <p>The JIA contains a listing of all the relevant documents that reference specifications based on industry standards to connect and develop a MEDIACC-EBTA interface. CLECs are responsible for obtaining these industry standards, which are made available from ATIS/TCIF.</p> <p>KPMG Consulting reviewed the JIA for both the P-CLEC and a commercial CLEC that uses the M&R test environment. KPMG Consulting confirmed that the documentation provided to the commercial CLEC was consistent with that provided to KPMG Consulting.</p> <p>Qwest provides CLECs with the <i>System Test Plan for Electronic Bonded Trouble Administration</i> document that provides detailed processes and procedures for MEDIACC EB-TA testing.</p> <p>CLECs are not required to develop an interface to CEMR. Therefore, carriers do not require documented specifications for active test environments for CEMR.</p>
24.6-2-12	Active test environments are managed to version control. Carriers are notified before	Satisfied	Active test environments are managed to version control. Carriers are notified before changes are made to active test

Test Cross-Reference	Evaluation Criteria	Result	Comments
	<p>changes are made to active test environments.</p>		<p>environments.</p> <p>Qwest has only one version of MEDIACC EB-TA functioning in the production environment, and consequently, only one version of the MEDIACC EB-TA exists in the testing environment. Any system changes and updates to the MEDIACC EB-TA production or testing environment are tracked in an internal system called DDTS.</p> <p>The CLEC community is notified of the changes made to MEDIACC EB-TA production and test environments via CMP notifications. If a CLEC is involved in the development and implementation of MEDIACC EB-TA, changes are also discussed during the weekly MEDIACC EB-TA test calls scheduled between Qwest and the CLEC.</p> <p>CLECs are not required to develop an interface to CEMR; therefore, CEMR does not require a carrier-to-carrier testing environment.</p>
<p>24.6-2-13</p>	<p>Procedures are defined to log software "bugs," errors, and omissions in specifications and other issues discovered during carrier-to-carrier testing.</p>	<p>Satisfied</p>	<p>Procedures are defined to log software "bugs," errors, and omissions in specifications and other issues discovered during carrier-to-carrier testing.</p> <p>Qwest works directly with CLECs during MEDIACC EB-TA testing. The collaborative testing with Qwest and CLECs is documented in the JIA and <i>System Test Plan for Electronic Bonded Trouble Administration</i>.</p> <p>Qwest has internal procedures defined and documented for handling MEDIACC EB-TA software issues encountered during carrier-to-carrier testing in the <i>Master Test Plan</i>. Problems detected during MEDIACC EB-TA testing that require a fix from Qwest are tracked as internal CRs in an internal tracking system called DDTS. DDTS is documented in the <i>CLEARDDTS™ Users Guide</i>.</p> <p>KPMG Consulting reviewed this document along with sample CRs extracted from DDTS for MEDIACC EB-TA.</p> <p>CLECs are not required to develop an interface to CEMR; therefore, CEMR does not require a carrier-to-carrier testing environment.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Production Interface Support</i>			
24.6-2-14	On-call technical support is provided for production versions of interfaces.	Satisfied	<p>Qwest provides on-call technical support to CLECs for production versions of MEDIACC EB-TA.</p> <p>The first point of contact for M&R interface issues is the Qwest WSHD. Contact information for the WSHD is publicly available on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/generalinfo.html.</p> <p>Production issues that cannot be resolved at the Qwest WSHD are escalated to a M&R subject matter expert who serves as a secondary or Tier 2 level of support. The escalation of interface support issues is documented in the <i>Ticket Escalation and Referral Process</i> and the <i>Unplanned Notification Process</i>.</p> <p>KPMG Consulting reviewed WSHD logs documenting occasional MEDIACC EB-TA production support.</p> <p>The CEMR interface has an on-line help feature and provides contact information for the Qwest WSHD.</p>
24.6-2-15	Procedures are defined to track software “bugs,” errors, and omissions in specifications and other issues discovered during production use of interfaces.	Satisfied	<p>Qwest has procedures defined to track software “bugs,” errors, and omissions in specifications, as well as other issues discovered during production use of MEDIACC EB-TA and CEMR.</p> <p>If CLECs encounter an issue with the MEDIACC EB-TA or CEMR interfaces, they are required to contact the Qwest WSHD. A trouble ticket is created in the PCRM at the Qwest WSHD containing information such as responsibility, escalation, and status. Use of PCRM is documented in the <i>Information Technologies (IT) Wholesale Systems Help Desk Standard Operating Procedures (SOP)</i>.</p> <p>If the WSHD is unable to resolve the issue, the trouble ticket will be escalated to another level of Production Support. If the issue reported to the WSHD requires a fix from Qwest, an internal CR is created in the DDTS to address and track resolution of the issue. The CLEARDDTS™ User Guide</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			describes the use and application of DDTS. KPMG Consulting reviewed PCRM logs, and sample CRs extracted from DDTS for MEDIACC EB-TA and CEMR to confirm adherence to defined processes and procedures.
24.6-2-16	Business rules and software change tracking tools exist, are updated, and are shared with customers.	Satisfied	<p>Business rules and software change tracking tools exist, are updated, and are shared with customers.</p> <p>Qwest uses an internal proprietary tracking tool that captures any changes applied to business rules and software. Any changes to the MEDIACC EB-TA and CEMR interfaces that are CLEC-impacting are shared with the CLECs through CMP meetings and notifications. Qwest has an archive of CLEC notifications posted on the Qwest Wholesale Markets Web site at http://www.qwest.com/wholesale/systems/ce_mrandrce.html. In addition, CLECs conducting MEDIACC EB-TA testing receive information about business rules and software changes at the weekly test calls.</p> <p>KPMG Consulting and the P-CLEC received Qwest CMP notifications for changes to business rules and software changes to the MEDIACC EB-TA and CEMR systems.</p>
Release Management			
24.6-2-17	Internal software acceptance testing is defined and documented.	Satisfied	<p>Qwest has an internal software acceptance test process for both MEDIACC EB-TA and CEMR that is defined and documented in the <i>Master Test Plan</i>.</p> <p>The Client Acceptance Test plan, an internal Qwest document, defines all of the internal test activities performed prior to production release. Any issues encountered during Client Acceptance Testing are tracked with an internal CR in DDTS. Qwest also performs Unit, Integration, and System Testing with test results documented in the same system. Entrance and exit criteria must be met before testing can proceed to the subsequent phases and before each interface can be migrated to the production environment.</p> <p>KPMG Consulting received and reviewed the documentation. KPMG Consulting also reviewed sample results of Unit, Integration,</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			and System tests performed by Qwest for releases of MEDIACC EB-TA and CEMR.
24.6-2-18	Methods and procedures are defined for ensuring that changes found during all phases of testing are incorporated into instances of software code.	Satisfied	<p>Qwest has methods and procedures for ensuring that changes found during all phases of testing are incorporated into MEDIACC EB-TA and CEMR interface software.</p> <p>Changes found during the internal testing require that an internal CR be created in DDTS. Test results are tracked and documented in DDTS through the various phases of testing. These internal methods and procedures are defined and documented in the <i>Master Test Plan</i>. The methods and procedures used for internal testing of CEMR are the same as those used for MEDIACC EB-TA.</p> <p>CLECs that encounter any issues during their testing of MEDIACC EB-TA will document these issues in an Issue Log. Qwest then reviews the Issue Log and consults internal M&R SMEs. If the issues require modification to the MEDIACC EB-TA interface, Qwest creates an internal CR in DDTS. If this change impacts more than one CLEC, the CMP process is used to manage the change.</p> <p>KPMG Consulting received and reviewed sample results of internal CRs from DDTS, and observed changes to MEDIACC EB-TA and CEMR applied through the CMP.</p>
24.6-2-19	Processes direct that new releases undergo testing prior to migration to a test environment.	Satisfied	<p>Qwest has internal processes in place that direct that a new release undergo testing prior to migration into the MEDIACC EB-TA test environment.</p> <p>These processes are defined and documented in the <i>Master Test Plan</i> for major and minor releases. Entrance and exit criteria are applied to the following stages of development: Unit Testing, Integration Testing, Installation/Transition Testing, System Testing, Documentation Testing, and Regression Testing.</p> <p>KPMG Consulting received and reviewed sample results of Unit, Integration, and System tests performed by Qwest on MEDIACC EB-TA.</p> <p>CLECs are not required to develop an interface to CEMR; therefore, CEMR does</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			not require migration to a carrier-to-carrier testing environment.
24.6-2-20	Defects and required changes are identified and tracked during pre-production testing.	Satisfied	<p>Defects and required changes for Qwest internal MEDIACC EB-TA and CEMR testing are identified and tracked during pre-production testing.</p> <p>Qwest follows a phased approach with several levels of testing. When defects are encountered, they are tracked and monitored using an internal CR in DDTs. This process is described in the <i>Master Test Plan</i>.</p> <p>Defects encountered during CLEC testing of MEDIACC EB-TA are documented via an Issues Log. Qwest then reviews the Issue Log and consults internal M&R SMEs. If the issues require modification to the MEDIACC EB-TA interface, Qwest creates an internal CR in DDTs. If changes impact more than one CLEC, the CMP process is used to manage the change. The results of testing are captured in the <i>End-to-End Functional Test Scenarios</i> document.</p> <p>KPMG Consulting received and reviewed copies of the completed Issues Log from the P-CLEC. It also monitored commercial activity for a CLEC testing the MEDIACC EB-TA interface. In addition, KPMG Consulting reviewed internal CRs from the DDTs for MEDIACC EB-TA and CEMR.</p>
<i>Capacity Management</i>			
24.6-2-21	Measures are defined and tools exist to monitor system resource utilization levels.	Satisfied	<p>Qwest has defined measures and tools to monitor system resource utilization levels for the MEDIACC EB-TA and CEMR production environments.</p> <p>The Qwest Capacity Planning System uses the System Activity Reporter (SAR) data that is collected on a daily basis. This data is stored in an Oracle repository, and archived into the Statistical Analysis Software (SAS). Qwest uses various types of tools to monitor utilization levels including:</p> <ul style="list-style-type: none"> • Alarming Application Programming Interface (API); • Monitoring Tools; • Logging Tools; • Commercial Off The Shelf Tools

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>(COTS);</p> <ul style="list-style-type: none"> • Configuration Tools; and • Alarm Attribute Tools. <p>The <i>Service Layer Description</i> document describes the functions to monitor disk space utilization and system performance for the M&R interfaces. The document defines use of each of the tools above.</p> <p>KPMG Consulting observed commercial activity for a CLEC using the MEDIACC EB-TA interface, and the P-CLEC's use of CEMR interface and experienced no capacity issues.</p>
24.6-2-22	There are defined conditions that trigger the addition of resources.	Satisfied	<p>Qwest has defined conditions that trigger the addition of resources for MEDIACC EB-TA and CEMR.</p> <p>Hard disk utilization of the file systems used for these interfaces has defined thresholds to activate a file compression process or to archive data. Conditions to trigger additional resources are built into the alarming tools used for monitoring capacity utilization.</p> <p>Processes and procedures are defined to monitor and add resources to prevent failures in the Maintenance and Repair systems and infrastructure. The Application Implementation Production (AIP) group performs these daily monitoring activities, which are defined and documented in the <i>Current Requirements and Functions, Monitoring [Multiple Methods]</i>.</p> <p>Based on an interview with the Qwest System Administrator for MEDIACC EB-TA and CEMR, once the hard disk utilization threshold is reached, the AIP group is automatically notified via an internal page. The AIP personnel are trained and follow procedures to address the issues. The AIP will respond by compressing older log files or by migrating them to an archive.</p>
24.6-2-23	Procedures are in place to adjust for changes in demand of services once the need for these changes is detected.	Satisfied	<p>Qwest has procedures in place to adjust for changes in demand of services once the need for these changes is detected.</p> <p>The AIP support teams monitor network throughput, production capacity issues, and daily operations for MEDIACC EB-TA and</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>CEMR interfaces. The AIP notifies another planning group, the Capacity Planning System (CPS) organization about the need for additional capacity. The CPS organization collects data and trending information to determine the business need to re-host, upgrade, or replace the infrastructure associated with MEDIACC EB-TA and CEMR. This is documented in the <i>Current Requirements and Functions, Monitoring [Multiple Methods]</i> document.</p>
24.6-2-24	<p>Contingencies are defined to mitigate the impact of unexpected changes in business and transaction volume on OSS interfaces.</p>	Satisfied	<p>Contingencies are defined to mitigate the impact of unexpected changes in business and transaction volume on OSS interfaces.</p> <p>Based on a Qwest interview with the System Administrator, a hard disk utilization metric is set at 85% of total disk space for the CEMR and MEDIACC EB-TA file system structures that tend to experience growth. Once the alarming threshold has been reached, Qwest creates a paging notification, which alerts Qwest personnel on a 7 x 24 hour basis that disk usage is too high.</p> <p>The JIA describes recovery procedures for Qwest and CLECs in the event that transaction errors occur. The four types of errors that can occur are:</p> <ul style="list-style-type: none"> • Off nominal status; • Degraded status; • Failed status; and • Electronic recovery (i.e., refers to MEDIACC Disaster Recovery Plan). <p>Processes and procedures are the same for the CEMR interface as for MEDIACC EB-TA.</p>

24.7 Test Results: Wholesale System Help Desk Review (Test 24.7)

1.0 Description

The Wholesale System Help Desk (WSHD) Review was a review of the processes, procedures, and other operational elements associated with Qwest's Information Technology Wholesale Systems Help Desk (also referred to as IT WSHD). The objectives of this test were as follows:

- Determine completeness and consistency of WSHD processes
- Determine whether Qwest's WSHD processes and procedures are correctly documented, maintained, and published
- Determine whether WSHD procedures are followed by Qwest personnel
- Determine whether WSHD escalation procedures are correctly maintained, documented, and published
- Determine the existence and functionality of procedures for measuring and tracking, projecting, and maintaining WSHD performance
- Determine the existence of reasonable security measures to ensure integrity of WSHD and Competitive Local Exchange Carrier (CLEC) data, and the ability to restrict access to parties with specific access permissions
- Determine whether WSHD procedures are subject to periodic review and amendment to assure currency and consistency with product and service deployments and changes in interface capabilities.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The WSHD supports CLECs that have questions and issues regarding connectivity, digital certificates, password resets, outputs, and system outages. The WSHD does not directly support functional (i.e., "how to") questions concerning systems or applications. It also does not manage trouble-shooting for pre-ordering and ordering inquiries. The WSHD serves the CLEC community as a first point of contact for reporting troubles, and obtaining technical support for the following systems and production support areas:

- Connectivity: Electronic Commerce (ECOM), T1 servers, Dial-up (SecurID) and Personal Computer configurations
- Password and Personal Identification Number (PIN) resets for: Interconnect Mediated Access (IMA), TELIS, Regional Subscription System (RSS), Digital Certificates, Directory Listing Inquiry System (DLIS), and SecurID
- Digital Certificate download (ECOM) and systems: IMA; Collocation Service Request System (CSRS); Fiber Loop Inventory (FLI); Held, Escalated & Expedited Tool (HEET); Customer Electronic Maintenance and Repair (CEMR); Raw Loop Data (RLD); Redacted

Product Database (RPD); Sold Central Office Provisioning (SCOP); and Service Delivery Gateway (SDG)/Directory Listing Inquiry System (DLIS)

- Electronic Data Interchange (EDI)
- User maintenance for Regional Subscription Service (RSS) and TELIS
- Loss and Completion Reports
- Daily Usage Files (DUF)
- Universal Service Order Codes (USOC)/Field Identifier Finder (UFF)
- Web Based Training
- Local Service Management System (LSMS)
- Advanced Intelligent Network (AIN)
- Line Identification Database (LIDB)/Line Validation Administration System (LVAS)
- System Event Notifications.

2.1.1 Call Intake and Routing Procedures

During the WSHD's normal hours of operation,¹⁶⁵ incoming calls to the WSHD are routed through an Automatic Call Distributor (ACD). Once the call has been answered, the CLEC may choose one of three options by touching the appropriate keypad number:

- 1) To speak to a Qwest representative for problems submitting Local Service Requests (LSRs) using IMA or EDI, or to check on the status of existing LSRs. This option routes the caller to the Interconnect Service Center (ISC);
- 2) To hear a recorded listing of current Qwest wholesale systems outages; or
- 3) To speak to a WSHD representative for any other system support issue.

Upon selection of the third option, the caller is transferred to a Help Desk Professional (HDP) for assistance. Outside the normal business hours, incoming calls are transferred to voicemail. After the caller leaves a voicemail, the HDP is paged by the system. The HDP reviews the trouble, and determines its severity. Based on the severity, the HDP returns the call immediately, or the next business day.

2.1.2 Call Resolution and Support Procedures

Qwest's WSHD serves as the Tier 1, or first level of technical support for connectivity and interface system problems. The HDP creates a trouble ticket, and associates the tracking number generated by the Problem Change Request Management (PCRM) system with the ticket. These activities occur whether or not the HDP resolves the initial call, or escalates the problem to Tier 2 or Tier 3 support.

¹⁶⁵ Hours of operation are Monday through Friday, 6:00 AM to 8:00 PM (Mountain Time), and Saturday, 7:00 AM to 3:00 PM (Mountain Time).

During the initial call, the HDP attempts to resolve the problem using any or all of the following trouble-shooting techniques:

- The HDP enters the application for which the CLEC is reporting trouble, signs on to the system as a user, and attempts to pinpoint the root cause of the problem
- To verify the user's connection, the HDP may ask the CLEC to send a ping response or transaction so that the HDP can trace-route to IP addresses
- The HDP checks for operating system problems, and asks the CLEC to reboot, if necessary
- The HDP resets the user's password.

During the initial review of the trouble, and based on discussion with the CLEC, the Tier 1 representative determines the trouble's severity level. The severity represents the degree of impact or importance that the problem, or service request, has on an individual, a group of individuals, or the company's business. Severity levels are used to assist the Help Desk in categorizing the problems/service requests so that they may be resolved in an appropriate time period. Severity levels do not change during the life of the ticket unless it is recognized that the HDP made a mistake in originally assessing and categorizing the problem. Table 24.7-1 below describes the various severity levels and representative conditions for which each is assigned.

Table 24.7-1: Severity Levels

Severity Level and Impact	Indicators	Examples
1 – Critical	<ul style="list-style-type: none"> • High visibility • Large number of orders or customers affected • Affects online commitment • Production or cycle stopped - priority batch commitment missed • Major impact on revenue • Major component not available for use • Many or major files lost • Major loss of functionality • Problem cannot be bypassed • No viable or productive work around available. 	<ul style="list-style-type: none"> • Major network backbone interruption without redundancy • Environmental problems causing multiple system failures • Large number of service or other work order commitments missed.
2 – Serious	<ul style="list-style-type: none"> • Moderate visibility • Moderate to large number of order or customers affected • Potentially affects online commitment • Serious slow response times • Serious loss of functionality • Potentially affects production - potential miss of priority batch commitments • Moderate impact on revenue • Limited use of product or component • Component continues to fail - intermittently down for short periods, but repetitive • Few or small files lost • Problems may have a possible bypass but the bypass must be acceptable for the customer • Major access down but a partial backup exists. 	<ul style="list-style-type: none"> • Frequent intermittent logoffs • Service or other work order commitments delayed or missed.
3 – Moderate	<ul style="list-style-type: none"> • Low to medium visibility • Low order or customer impact • Low impact on revenue • Limited use of product or component • Single client device affected • Minimal loss of functionality • Problem may be bypassed or redundancy in place – bypass must be acceptable to the customer • Automated workaround in place and known – workaround must be acceptable to the customer. 	<ul style="list-style-type: none"> • One error on LSR for IMA • One error on FOC for EDI.
4 – Minimal	<ul style="list-style-type: none"> • Low or no visibility • No direct impact on customer 	<ul style="list-style-type: none"> • Misleading, unclear system messages

Severity Level and Impact	Indicators	Examples
	<ul style="list-style-type: none"> • Few functions impaired • Problem can be bypassed - bypass must be acceptable to the customer • System resource low - no impact yet • Preventative maintenance request. 	<ul style="list-style-type: none"> • causing confusion for users • Device or software regularly has to be reset, but continues to work.

In most cases for which the WHSD is unable to close a trouble ticket after initial problem troubleshooting, Tier 1 level support refers information directly to Tier 2 or Tier 3¹⁶⁶. The HDP provides the caller with the trouble ticket number, informs him or her of the trouble status and assigned severity level, and escalates the trouble to Tier 2 or Tier 3 escalation support.

Qwest provides two types of status notifications for IT trouble tickets: Ticket Notifications, used when a reported problem impacts only one CLEC; and Event Notifications, used when a system event or trouble situation, such as a system-wide outage, impacts multiple CLECs. Qwest sends both types of notifications to CLECs and Qwest personnel according to the response intervals listed in Table 24.7-2 below. As depicted, stated intervals depend upon the severity level of the trouble ticket.

Table 24.7-2: WSHD Response Intervals

Severity Level of Ticket	Response Interval for Status Changes	Response Interval for No Status Change ¹⁶⁷ Notification	Response Interval upon Resolution ¹⁶⁸
Severity Level 1	Within 1 hour	1 hour	Within 1 hour
Severity Level 2	Within 1 hour	1 hour	Within 1 hour
Severity Level 3	Within 4 hours	48 hours	Within 4 hours
Severity Level 4	Within 8 hours	48 hours	Within 8 hours

Upon receipt of an escalation to Tier 2 or Tier 3, Qwest SMEs are responsible for resolving the CLEC-reported problem through to closure. Tiers 2 and 3 are comprised of members of technical groups, and Subject Matter Experts (SMEs). For Tier 2 support, specific individuals are identified to handle the escalated trouble. Tier 3 support personnel may be any system experts who may report problems, or help solve them. The original Tier 1 HDP makes any CLEC contacts that are required during problem resolution.

¹⁶⁶ HDP uses an internal reference guide, which lists contact information, to route the trouble to the appropriate Tier 2 or Tier 3 support personnel.

¹⁶⁷ "Response Interval for No Status Change" is defined as the interval for notification that is sent to the CLEC on a recurring basis, from the previous notification of no change in status, until problem resolution.

¹⁶⁸ "Response Interval upon Resolution" is defined as the interval for notification that is sent to the CLEC from the time of problem resolution.

Upon resolution of the trouble, Tier 2 and Tier 3 escalation support personnel contact the original Tier 1 HDP, who, in turn: contacts the customer who originated the trouble ticket; confirms the trouble resolution; and seeks agreement to close the trouble ticket. If the customer indicates that the issue is not resolved, then the original Tier 1 HDP escalates the trouble back to Tier 2 or Tier 3 support.

2.1.3 CLEC-Requested Escalation Procedures

At any time after a trouble ticket has been opened, the originating caller may request to initiate the escalation process. The escalation process requires that the Tier 1 HDP upgrade the ticket to an escalation status, and contact the appropriate escalation group or person immediately. The HDP contacts the CLEC who originated the trouble ticket to provide status or resolution as it becomes available. The escalation process provides contact information for WSHD management if the caller desires to escalate further.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were Qwest's methods and procedures, processes, and practices for establishing and maintaining the WSHD relationship between Qwest and CLECs. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1, "Results & Analysis."

Table 24.7-3: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Process Wholesale Systems Help Desk Call	Resolution of User Question, Problem or Issue	Completeness and consistency of process	24.7-1 – 24.7-2, 24.7-6
Close Help Desk Call	Closure Posting	Completeness and consistency of process	24.7-1, 24.7-7
Status Tracking and Reporting	Status Tracking and Reporting	Completeness and consistency of reporting process	24.7-1, 24.7-3, 24.7-5, 24.7-8
Problem Escalation	User and Qwest Initiated Escalation	Completeness and consistency of process	24.7-1, 24.7-4, 24.7-8
Capacity Management	Capacity Planning Process	Completeness and consistency of and adherence to process	24.7-1, 24.7-12
Security and Integrity	Data Access Controls	Security of process	24.7-1, 24.7-9
Process Management	General Management Practices	Completeness and consistency of operating management practices	24.7-1, 24.7-4 – 24.7-9, 24.7-11 – 24.7-13
	Performance Measurement Process	Controllability, efficiency and reliability of process	24.7-11
	Process Improvement	Completeness of process improvement practices	24.7-10, 24.7-13
Capacity Management	Capacity Management Processes and Procedures	Adequacy and completeness of and adherence to capacity management process	24.7-1, 24.7-12

2.4 Evaluation Methods

Data collection activities for this evaluation include interviews, observations, and reviews of documentation supplied by Qwest at the request of KPMG Consulting. The six sources of data and information for this test included the following:

- Interviews with Qwest WHSD management and Tiers 2 and 3 production support. Personnel included managers with direct responsibility for, and knowledge of, WHSD processes and procedures
- Walkthroughs and direct observations of the WHSD work operations in Thornton, Colorado
- Reviews of documentation publicly available on the Qwest Wholesale Web site (<http://www.qwest.com/wholesale/>)
- Reviews of internal Qwest WHSD documentation (e.g. methods and procedures for Help Desk operations)
- Interviews with personnel responsible for accessing and utilizing the WHSD at Hewlett-Packard Consulting (HPC), which held the role of pseudo-CLEC (P-CLEC) during this evaluation

- Interviews with CLECs operating in the Qwest service area that volunteered to participate in this portion of the OSS test.

2.5 Analysis Methods

The Wholesale System Help Desk Review included a checklist of evaluation criteria developed by KPMG Consulting during the preparation of test activities for the Qwest Operations Support Systems (OSS) Evaluation. Using data acquired through interviews with Qwest personnel, detailed reviews of Qwest documentation, direct observations of Qwest's operations, HPC's P-CLEC experience, and interviews with CLECs that utilize the WSHD, KPMG Consulting compared the information gathered to the checklist of evaluation criteria, in order to determine a 'satisfied' or 'not satisfied' result.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 24.7-4: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.7-1	Help Desk responsibilities and activities are defined and documented.	Satisfied	<p>The WSHD responsibilities and activities are defined in the documents <i>Information Technologies (IT) Wholesale Systems Help Desk Standard Operating Procedures (SOP)</i>, and <i>IT Wholesale Systems Help Desk Reference Guide</i>.</p> <p><i>The IT WSHD SOP</i> defines the roles and responsibilities of the Help Desk Production Manager, the Infrastructure Support Manager, and Help Desk Professionals. This document defines the expectations of the WSHD, telephone procedures, and the performance review process.</p> <p><i>The IT WSHD Reference Guide</i> defines the activities of WSHD personnel to support the CLEC community for Qwest interface system inquiries.</p> <p>During initial examination of Qwest's documentation for the WSHD, KPMG Consulting identified that Qwest had not implemented a comprehensive, and fully documented, production support process to address changes that correct failures in the production version(s) of OSS interfaces. As a result, KPMG Consulting issued</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Exception 3112.</p> <p>Qwest updated documentation, and created documentation and processes for unplanned system outage notification.</p> <p>KPMG Consulting retesting confirmed that Qwest updated documentation creates a comprehensive process for production support to address failures in the production version(s) of OSS interfaces, and closed Exception 3112.</p>
24.7-2	Customer can initiate the trouble ticket process.	Satisfied	<p>A CLEC can initiate a claim or query with the WSHD by calling Qwest's WSHD toll-free support number. The Qwest Wholesale Website provides contact information for the WSHD and its hours of operation.</p> <p>KPMG Consulting interviewed HPC, reviewed its tracking database of calls to the WSHD, and found that the P-CLEC was able to initiate the trouble ticket process, and that Qwest representatives adhered to established guidelines for processing the trouble issues.</p> <p>KPMG Consulting's on-site visits at the WSHD facilities also verified that: customers can initiate the trouble ticket process; Qwest records the information about the trouble incident and the customer; and, Qwest communicates the ticket number to CLECs at the time that the CLEC reports the trouble.</p>
24.7-3	Customer has access to status of a trouble ticket.	Satisfied	<p>CLECs have access to the status of the trouble ticket by contacting the WSHD. If the CLEC's issue, reported on the initial call, was not successfully resolved, the CLEC is given a trouble ticket number to reference for requesting trouble status. KPMG Consulting's on-site visits verified that customers receive trouble ticket numbers and periodic status updates.</p> <p>KPMG Consulting also reviewed the P-CLEC's tracking database of calls to the WSHD, and confirmed with P-CLEC representatives that they have access to the status of trouble ticket.</p>
24.7-4	Customer escalation procedures are defined and documented.	Satisfied	<p>The document, <i>WSHD Escalation Process</i>, found on the Qwest Wholesale Web site, defines the activities employed to escalate a trouble ticket with the WSHD.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>A Qwest documented process that customers can follow for escalating technical issues is available to CLECs. The <i>Process Specification for Qwest & CLEC Escalation of Technical Issues</i>, located on the Qwest Wholesale Web site, defines how the CLEC community escalates technical issues.</p> <p>The <i>Contact List for Qwest & CLEC Escalation of Technical Issues</i>, located on the Qwest Wholesale Web site defines Qwest contact information for technical escalations. Furthermore, internal Qwest documentation, such as the <i>Qwest IT WSHD Reference Guide</i>, provides Help Desk Professionals with contact information and procedures for all major OSS interfaces and wholesale applications.</p> <p>KPMG Consulting's on-site observations at the WSHD validated that procedures for escalation are utilized, and that escalation issues are tracked from the WSHD to level Tier 2 or Tier 3 support.</p>
24.7-5	Process includes procedures for call logging and acknowledgement.	Satisfied	<p>The WSHD employs defined procedures for incoming call logging and acknowledgement, as defined in the <i>IT WSHD Standard Operating Procedures</i> document and the <i>IT WSHD Reference Guide</i>.</p> <p>The HDP receives an incoming call from the ACD, and solicits information from the CLEC regarding the type of problem or issue. The information received during the call is entered into a Quick Ticket (QT) and Problem Management Record (PMR) for reference and tracking.</p> <p>The HDP communicates the ticket number to the CLEC at the time the CLEC reports the trouble. The Qwest representative acknowledges that the problem can be reproduced by asking the CLEC about the circumstances that led to the trouble, checking if the CLEC has called the Help Desk before about the same issue, and by repeating the steps or set of activities that led to the problem for the CLEC.</p> <p>Additionally, the HDP should repeat and paraphrase the problem directly to the caller in order to confirm understanding.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>If the HDP is able to address the trouble ticket and provide a solution, the HDP contacts the CLEC to confirm satisfaction with the problem resolution.</p> <p>KPMG Consulting gathered evidence of the existence and use of these procedures during our observations of the WSHD, and was further able to confirm same with the reviews of supporting documentation.</p>
24.7-6	Process includes procedures for resolving trouble tickets.	Satisfied	<p>The procedures for resolving trouble tickets are documented in Qwest's <i>IT WSHD Reference Guide</i>. This document describes common errors, detailed information, and escalation procedures for each interface that the WSHD supports. The <i>IT WSHD Reference Guide</i> also includes a standardized process for identification, documentation, and resolution of problems.</p> <p>During on-site visits to WSHD facilities, KPMG Consulting observed the resolution of trouble tickets according to defined procedures.</p> <p>Comparison of the P-CLECs tracking data with the WSHD database confirmed that procedures for resolution of trouble tickets were executed.</p>
24.7-7	Process includes procedures for closing a trouble ticket.	Satisfied	<p>Qwest's process for closing a trouble ticket is documented in the <i>IT WSHD Standard Operating Procedure</i>. This document defines the closing script and instructions for closing the call and trouble ticket. The <i>IT WSHD Reference Guide</i> defines the procedures for confirming the trouble resolution with the CLEC. In addition, the <i>Unplanned Notification Process</i> describes how IT Trouble Tickets may be closed using one of the following disposition codes:</p> <ul style="list-style-type: none"> • No Trouble Found –used when Qwest investigation indicates that no trouble exists with Qwest systems • Trouble to be Resolved in Patch – used when the IT Trouble Ticket will be resolved by a patch. Qwest provides a date for implementation of the patch. This is typically applied to Severity 1 and Severity 2 troubles, although Severity 3 and Severity 4 troubles may be resolved by a patch

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • CLEC Should Submit CMP CR (Change Management Process - Change Request) – used when Qwest’s investigation indicates that the system is working pursuant to Technical Specifications (unless the Technical Specifications are incorrect), and that the IT Trouble Ticket indicates the need for a systems change that should be submitted by the CLEC as a CMP CR • Date TBD – used when IT Trouble Ticket cannot be resolved by implementation of a patch, or is not scheduled for a patch. This disposition applies to Severity 3 and Severity 4 troubles. <p>KPMG Consulting’s on-site visits to WSHD facilities verified that Qwest HDPs close trouble tickets according to documented procedures.</p>
24.7-8	Process includes procedures for status tracking, management reporting, and management intervention.	Satisfied	<p>The WSHD employs procedures for status tracking, management reporting, and management intervention. The <i>IT WSHD Standard Operating Procedures</i> describes management reports, generated from the PCRM System, which contain trouble ticket status and history.</p> <p>Qwest Help Desk Managers utilize call management reports from the ACD and PCRM systems to: determine trends; identify HDP training needs; and, address specific types of customer problems. For example, the Help Desk Managers run a report that provides information on the average duration that a Severity 1 ticket is open in PCRM, as well as the frequency of these types of calls.</p> <p>In cases in which the Help Desk receives a large number of Severity 1 calls, the Help Desk Manager uses the management reports to focus troubleshooting efforts, and to communicate issues directly with Tier 2 and Tier 3 production support.</p> <p>Qwest utilizes the following management reports:</p> <ul style="list-style-type: none"> • First Call Resolution • Number of Tickets Opened (by

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>previous day, week, and month)</p> <ul style="list-style-type: none"> • Number of Tickets Closed (by previous day, week, and month) • Number of Tickets by Severity • Number of Tickets Open by Days (Aging Report). <p>In addition to reviewing Trouble Ticket trends, WSHD Managers intervene and assist with coaching individual HDPs based on their individual call statistics. Managers consider total time logged into the ACD queue, average talk time, average amount of time a HDP spends on work associated with a call after hanging up with the customer, and number of calls answered. By looking at individual ACD reports, Managers are able to identify instances when HDPs are over-utilized, and are handling an excessive number of Trouble Tickets. Managers also review Trouble Ticket activity patterns such as rapid decline in the number of calls answered, longer idle time, less talk time, and an increase in the number of escalated calls.</p> <p>The <i>WHSD Standard Operating Procedures</i> include a defined set of procedures available for HDPs to conference up to six parties on a given Help Desk call. This option is only available if the HDP has no other calls in the queue, and has need for additional support from another HDP or SME. The Help Desk representative is instructed to announce the caller to the other Qwest parties, and follow a call script to confirm conferencing with the CLEC.</p> <p>Qwest's <i>Unplanned Notification Process</i> document, available at the Qwest Wholesale Web site, provides process steps and management intervention activities taken for sending Event Notifications to CLECs for initial communication, updates, closures, and targeted exceptions regarding unplanned system interruptions. The procedures address interruptions affecting all CLECs as well as targeted exceptions affecting one or more, but not all, CLECs. In addition, the documentation defines discrete steps, times, activities, and process flows for the management and escalation of</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			unplanned system outages.
24.7-9	Process includes procedures for maintaining security and integrity of data.	Satisfied	<p>Qwest's WSHD employs procedures for maintaining security and integrity of data. WSHD personnel must comply with the <i>Code of Conduct</i> document. By signing the document, an employee acknowledges the rules and attests to conformance.</p> <p>The WSHD applications are password protected. Qwest employees and CLECs must use a personal login name and password to access the OSS applications.</p> <p>During onsite visits, KPMG Consulting observed HDP reset passwords for callers, and comply with the stated procedures for security and integrity of data.</p>
24.7-10	Process includes procedures for obtaining CLEC feedback.	Satisfied	<p>WSHD processes included procedures for obtaining CLEC feedback. The <i>IT WSHD SOP</i> states that the purpose of the WSHD is to establish and maintain a long-term relationship with the CLEC through open communications and continuous feedback.</p> <p>The channels available to the CLECs to provide feedback include:</p> <ul style="list-style-type: none"> • WSHD managers • Account Manager • Change Management Process (CMP) meetings. <p>KPMG Consulting directly observed an instance in which Qwest WSHD management solicited feedback from CLECs about the WSHD through the CMP meeting. Qwest distributed meeting minutes from the CMP meeting with the CLECs, and responded to questions raised about the need to clarify the WSHD escalation process. Based on a CMP meeting action item from the CLECs, to "Determine a Response Interval for the IT Wholesale Systems Help Desk", Qwest also initiated the Ticket and Response Times associated with different Severity Levels, as depicted in Table 24.7-2.</p>
24.7-11	Process performance measures are defined, measured, and reviewed.	Satisfied	<p>WSHD performance measures are defined, measured, and reviewed. The <i>IT WSHD SOP</i> defines performance management for HDPs performance reviews. The areas measured by the WSHD management include:</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • Availability • On time service • Quality. <p>WSHD management uses the Performance Matrix Form (PMF) to review each HDP on a weekly basis. The PMF is used to rate the performance of HDPs based on information captured from PCRM reports and call distribution statistics. For example, one evaluation measure is set and reviewed for the percentage of calls that a HDP resolves prior to ending the initial call with the customer. Another is set for the time it takes for the HDP to answer the phone once the call passes through the switch and is sitting in the Help Desk queue.</p> <p>In addition, the Help Desk Manager completes a scorecard to review three trouble tickets created by each HDP. The scorecard evaluates HDPs' performance for their ability to investigate an issue, follow call scripts, classify the issue, verify that the problem can be reproduced, identify attempted solutions with the customer, test solutions, and confirm that the customer is satisfied with the resolution or provide ticket number and information for issues that are escalated.</p> <p>Based on the weekly reviews to evaluate ticket handling, HDP mangers provide correction and coaching, as necessary.</p> <p>During the course of testing, KPMG Consulting raised an issue regarding the consistency of performance measurement tools and reports. Qwest did not provide evidence of management interventions that occur in accordance with WSHD performance measures. KPMG Consulting subsequently issued Exception 3075.</p> <p>Upon further review of Qwest Help Desk performance data and responses, KPMG Consulting found that the issues raised in the Exception were resolved. Exception 3075 is closed. See Exception 3075 for additional information on this issue.</p> <p>To confirm that Qwest carries out the documented performance measurement process, KPMG Consulting reviewed HDP scorecards and PMFs for a five-month</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>period. Qwest provided documentation and historical data showing that Help Desk performance is linked to individual incentives. Further, Qwest provided detailed clarifications and descriptions of all inconsistencies raised.</p>
24.7-12	Process includes procedures for capacity planning.	Satisfied	<p>The WSHD employs documented procedures for capacity planning for staffing, which are defined in the <i>IT WSHD SOP</i>.</p> <p>The WSHD Manager reviews ACD reports to determine and plan for the number of staff necessary to effectively answer the volume of incoming calls. The ACD reports provide the WSHD manager with the following information:</p> <ul style="list-style-type: none"> • Amount of time customers spend holding in queue • Average talk time for each call • Total number of incoming calls. <p>The ACD reports serve as one of the tools used by the WSHD Manager to determine call trends (e.g., peak and idle time), and anticipate staffing requirements.</p> <p>Qwest utilizes forecasting as a capacity-planning tool. Information is gathered from CLECs estimates of future demand for products and services. Information about Qwest's forecasting process is available at the Wholesale Web site and was reviewed in Test 24.4, CLEC Forecasting Process Review.</p> <p>The Help Desk Operations Manager receives information used to project business demands to assist in determining staffing requirements. The WSHD utilizes a call monitoring system for Managers and Team Leads. The application allows management to monitor, concurrently and retroactively, HDP activity statistics, including call duration, number of calls received per day, average answer speed, average hold time, and number of transfers. Based on call volume and duration information, WSHD Managers use this information to determine short-term needs for additional staffing.</p> <p>The Qwest Production Support process also</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>includes the use of SWAT Notification Team (SNT) calls, which can occur at any time, 24 hours per day, 7 days per week. Qwest assigns additional Tier 2 and Tier 3 SMEs to work on these teams and address higher severity issues, depending on the nature of each issue.</p> <p>Qwest also determines HDP training needs and plans for any anticipated adjustments needed for major system releases.</p>
24.7-13	Process improvement responsibilities are assigned and applied.	Satisfied	<p>The WSHD Managers, including the Team Lead and the Manager of Technical Support are assigned to manage and carry out process improvement responsibilities.</p> <p>WSHD management employs assigned process improvement responsibilities, as defined in the <i>IT WSHD SOP</i> document. The WSHD utilizes knowledge sharing, training, and a “Production Readiness Team” to facilitate process improvement.</p> <p>Qwest’s Production Readiness process includes the following procedures:</p> <ul style="list-style-type: none"> • Identify funding requirements for support • Identify staffing requirements for support • Identify support hours and model • Conduct HDP training • Escalate issues and provide notification. <p>During 2001, Qwest expanded the role of the Interconnect Mediated Access (IMA) Help Desk to include responsibility for an expanded set of interface systems and connectivity issues. These systems are described in Section 2.1 of this report. Concurrent with this organizational change, Qwest updated associated processes and procedures and changed the name of the help desk from IMA to the WSHD. Qwest clarified that any assistance with processing LSRs using IMA should be directed to the Interconnect Service Center (ISC).</p> <p>Qwest also implemented the Help Desk Voice Response Unit (VRU) system to: offer users a single telephone number to access the Interconnect Service Center (ISC); receive information regarding</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>systems availability issues; and, to speak directly to a representative from the WHSD.</p> <p>Qwest made other process improvements as a direct result of a Help Desk issues call that was held with CLECs through the Change Management Process. Qwest updated the escalation process by providing information about the steps for CLECs to follow for escalating a trouble ticket.</p> <p>Qwest implemented a new System Outage notification process whereby intervals were established for when a CLEC could expect to receive status after reporting a trouble ticket to the IT Wholesale Systems Help Desk. These intervals were originally established for single outages, and were based on the severity level of the ticket. Qwest has since defined the intervals to apply to both single Trouble Tickets and System Events.</p>

24.8. Test Results: Interconnect Service Center Support Review (Test 24.8)

1.0 Description

The Interconnect Service Center (ISC) Support Review (Test 24.8) was an operational analysis of the service center processes developed by Qwest to support Competitive Local Exchange Carriers (CLECs) for questions, escalations, and issues related to the pre-ordering and ordering of its wholesale services. Procedures for measuring ISC support services performance were also reviewed.

Overall execution responsibilities for Test 24.8 were divided between Hewlett Packard Consulting (HPC) and KPMG Consulting. KPMG Consulting was responsible for evaluating ISC support processes and procedures. HPC was responsible for testing the accuracy and completeness of ISC responses, the timeliness of ISC call answering, and the availability of user interfaces.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

This section provides a description of business processes at the Qwest work centers that provide support to CLECs.

2.1.1 Interconnect Service Center Support Functions and Organization

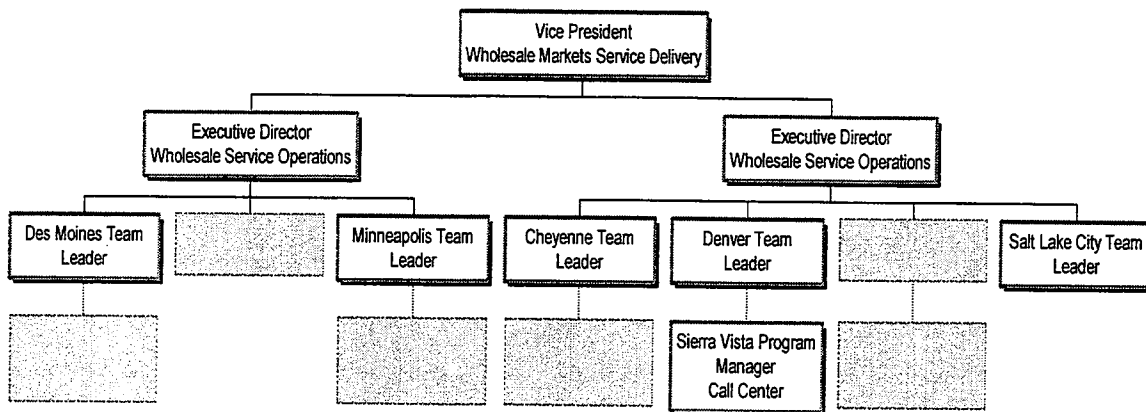
The ISCs are the primary Qwest work centers for providing CLEC pre-ordering and ordering support. Table 24.8-1 describes the six ISC locations that provide support and their respective support responsibilities.

Table 24.8-1: Interconnect Service Center Support Organization¹⁶⁹

ISC Location	Responsibilities
Cheyenne, Wyoming	<ul style="list-style-type: none"> • Delayed Local Service Requests (LSRs) and related escalations • Jeopardy notices
Denver, Colorado	<ul style="list-style-type: none"> • Customer Service Inquiry and Education (CSIE) Desk handling Tier 1 and 2 customer service inquiries • Process improvement • Training initiatives
Des Moines, Iowa	<ul style="list-style-type: none"> • Access Service Request (ASR) expedites and inquiries • ASR delayed orders
Minneapolis, Minnesota	<ul style="list-style-type: none"> • CSIE handling Tier 1 and 2 customer service inquiries
Salt Lake City, Utah	<ul style="list-style-type: none"> • ASR delayed orders • ASR expedites and inquiries
Sierra Vista, Arizona (managed by Aegis, Inc.)	<ul style="list-style-type: none"> • Tier 0 Call Center for customer service inquiries

Each ISC is managed by a Team Leader (equivalent to the “Program Manager” at the outsourced facility), who reports to one of two Executive Directors of the Wholesale Customer Service Operations Team. A Load and Resource Manager (LRM), Coaches, and Service Delivery Coordinators (SDCs) provide additional support to the Team Leaders. Figure 24.8-1 depicts the Qwest ISC support management structure.

Figure 24.8-1: Interconnect Service Center Support Management Structure¹⁷⁰



Executive Directors oversee multiple ISCs and monitor their overall performance. Team Leaders have oversight responsibilities for the day-to-day operations at individual ISCs. Each Team Leader is accountable for ensuring that his or her center’s staff adheres to procedures and meets

¹⁶⁹ ISC roles related to Qwest’s escalation process are described in detail in Section 2.1.2.

¹⁷⁰ Unpopulated, shaded boxes represent ISC roles that are not directly related to the scope of this evaluation.

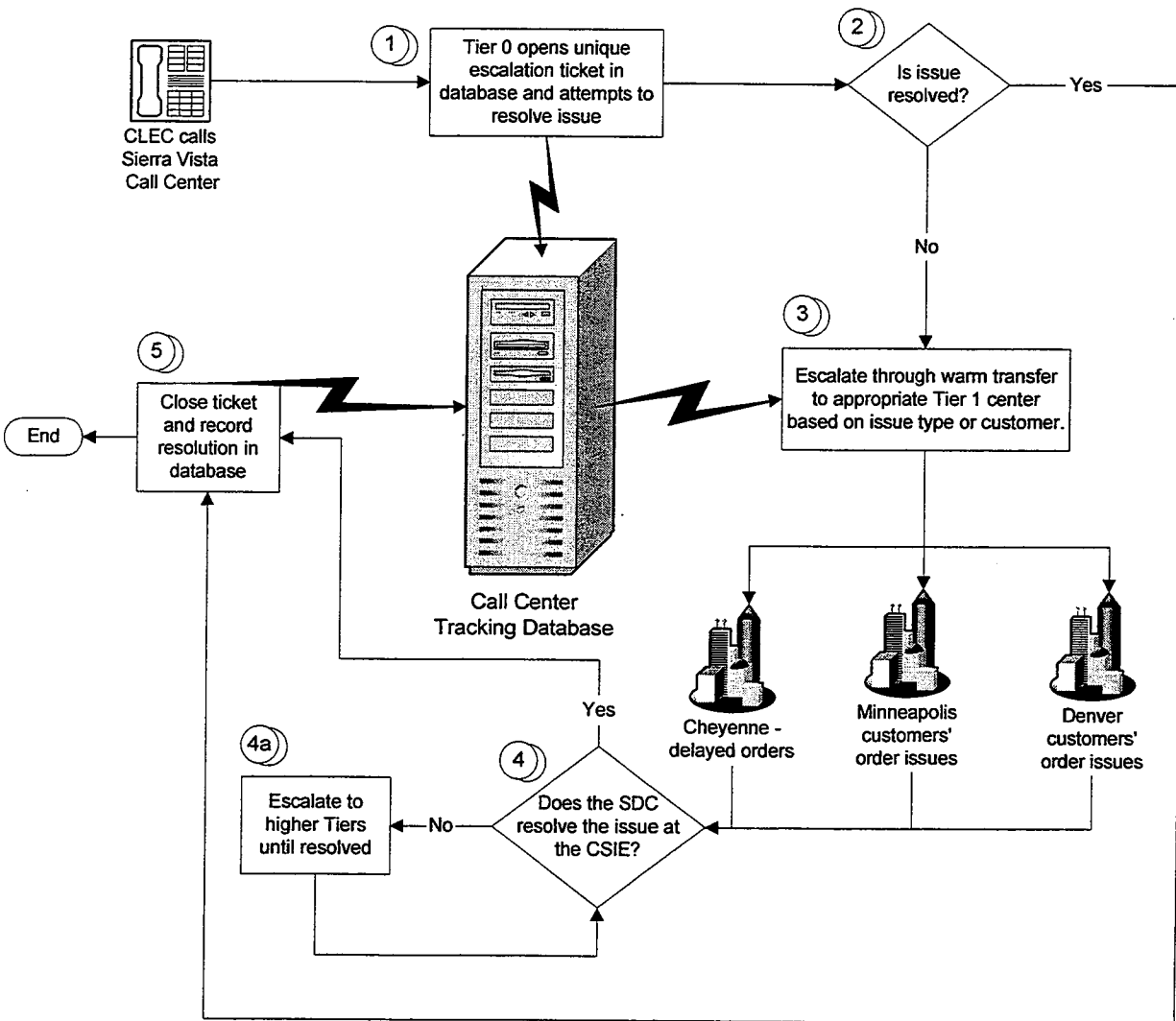
service requirements. The Team Leader is also responsible for gathering necessary reports for process and performance management purposes. The LRM monitors call volumes, staffing levels, and other capacity management issues.

2.1.2 Escalation and Call Handling Procedures

2.1.2.1 LSR Support Process

The escalation and inquiry process is used to respond to CLEC problems or questions that may occur throughout the LSR ordering process. Four ISC locations are directly involved with the escalation and inquiry process: Sierra Vista, Arizona; Denver, Colorado; Minneapolis, Minnesota; and Cheyenne, Wyoming. Figure 24.8-2 illustrates the escalation and inquiry process.

Figure 24.8-2: Escalation and Inquiry Process



The Sierra Vista, Arizona Center serves as Tier 0 of the escalation and inquiry process and is staffed with representatives who are trained to handle questions regarding order status, rejection notices, delayed orders, and other order process questions.

CLECs contact the Sierra Vista, Arizona center by calling into an Automatic Call Distribution (ACD) system that prompts the caller to select one of the following menu options:

- 1 - for Resale POTS, UNE POTS, or POTS administrative line
- 2 - for LNP
- 3 - for Unbundled Loop or Unbundled Loop with LNP
- 4 - for Public Access Lines
- 5 - for Centrex or Complex Resale.

After selecting a menu item, the caller is automatically routed to a Tier 0 call center representative who is trained to handle the selected option. If no call center representative is available to accept the call, the customer is placed into a queue, and is routed to the next available call center representative.

The call center representative answering the call opens a new ticket in the Call Center Tracking Database, which is automatically assigned a unique ticket number for tracking purposes. The call center representative gathers basic LSR information from the CLEC, including the purchase order number (PON) or LSR number, and attempts to resolve the caller's issue, accessing various internal ordering systems, such as IMA and CRM, if necessary. Call center representatives are required to log call details into the notes section of the Call Center Tracking Database. If the call center representative addresses the inquiry to the CLECs satisfaction during the initial call, the ticket is closed. Issues requiring additional attention are "warm-transferred" to a Tier 1 SDC at the appropriate CSIE desk. During the warm-transfer, the call center representative has four responsibilities:

- Alert the Tier 1 SDC of the caller's information and issue
- Send the ticket to the Tier 1 escalation queue
- Introduce the caller to the Tier 1 SDC
- Drop off the call after transferring responsibility to the Tier 1 SDC.

If a Tier 1 SDC is not immediately available, the ticket is placed in a queue at the appropriate Tier 1 ISC and then retrieved and addressed by an SDC at that center. Issues can be escalated by either the CLEC or the SDC to the next tier (up to a possible six), as necessary, until the issue is resolved. Once an order is resolved, the ticket is closed in the database.

Each ticket is assigned a resolution interval by the call center representative, according to the severity of the issue. For example, a two-hour interval is assigned for loss of service, 24 hours for an address validation, and 48 hours for a listings change. The SDC handling an escalated issue is responsible for updating the CLEC on any changes in the issue's status. The SDC who handles an escalated issue is responsible for recording actions taken in the Call Center Tracking

Database and notifying the CLEC of status changes. Table 24.8-2 provides the ISC responsibilities and hours of operation specific to the escalation and inquiry process.

Table 24.8-2: Escalation and Inquiry Responsibilities

ISC Location or Individual Handling Issue	Tier	Responsibility	Hours
Sierra Vista, Arizona	Tier 0	<ul style="list-style-type: none"> Incoming calls from CLECs (assign issue a ticket number) Referral of issues to other ISCs, when necessary 	Monday - Friday, 6:00AM - 8:00PM; Saturday, 7:00AM - 5:30PM
Cheyenne, Wyoming	Tier 1	<ul style="list-style-type: none"> Delayed orders 	Monday - Friday, 7:00AM - 8:00PM; Saturday, 7:00AM - 3:30PM
Denver, Colorado	Tiers 1 & 2	<ul style="list-style-type: none"> General order inquiries 	Monday - Friday, 6:00AM - 8:00PM; Saturday, 7:00AM - 6:00PM
Minneapolis, Minnesota	Tiers 1 & 2	<ul style="list-style-type: none"> General order inquiries Centrex issues 	Monday - Friday, 7:00AM - 9:00PM; Saturday, 6:00AM - 5:00PM
Service Manager ¹⁷¹	Tier 3	<ul style="list-style-type: none"> Involved when previous tiers fail to resolve the escalated issue to CLEC's satisfaction 	Available as needed
Senior Service Manager ¹⁷¹	Tier 4	<ul style="list-style-type: none"> Involved when the Service Manager's efforts at issue resolution are unsuccessful 	Available as needed
Executive Director ¹⁷¹	Tier 5	<ul style="list-style-type: none"> Involved when the Senior Service Manager's efforts at issue resolution are unsuccessful 	Available as needed
Vice President ¹⁷¹	Tier 6	<ul style="list-style-type: none"> Provides direction and/or assistance to other tiers 	Available as needed

2.1.2.2 ASR Support Process

For ASR orders, the Des Moines, Iowa and Salt Lake City, Utah ISCs manage expedites, escalations, and delayed orders. Notes recording interactions with the CLEC for expedites and escalations are logged into and tracked in Lotus Notes. Notes are also added to the order in EXACT. Critical information related to delayed orders, such as due date, reason for escalation, and external notes, is automatically downloaded from Lotus Notes into the Held Escalated Expedited Tool (HEET), an external customer-facing tool that enables the CLEC to check the status of a delayed order.

¹⁷¹ The locations for Tiers 3-6 vary depending upon the CLEC initiating the escalation or inquiry.

Other CLEC inquiries related to ASR orders are tracked in EXACT. CLECs are directed to the appropriate contact using the customized Escalation Tier Contact List provided to each CLEC by its assigned Qwest Service Manager. Order inquiries can be escalated to a senior member of the ISC staff or the CLEC's assigned service manager depending upon the issue in question.

2.1.3 Process Improvement and Capacity Management

The Tier 0 Call Center in Sierra Vista, Arizona employs a Quality Assurance (QA) Team whose responsibilities include monitoring Tier 0 call handling and adherence to Qwest policies and procedures. Coaches at CSIE locations perform quality reviews including ticket review and call monitoring. At ASR processing centers, supervisors serve in this role. The QA team compiles reports and checklists that detail call center representative and SDC performance. Team Leaders and Coaches use the QA information during their quarterly performance reviews with SDCs and call center representatives. This information is also used as a basis for issuing Multi-Channel Communicators (MCCs), which are internal memos distributed to SDCs and call center representatives to notify them of process changes, or as a reminder of a particular process.

A team of Service Delivery Process Specialists monitors the overall consistency and efficiency of CLEC support processes and procedures across the ISCs. The team meets monthly to review outstanding issues and to initiate process improvements. In this role, the team identifies a process improvement, makes the necessary system or process adjustment, revises process documentation, and issues notification of the change to Qwest staff.

Qwest uses a number of tools to manage capacity. The LRM at each ISC monitors order/call volumes, tracks workload actuals and trends, and compiles performance reports. This data assists with load and resource management on a short and long term basis. The LRMs working at LSR processing centers hold meetings via conference call twice per day to discuss capacity management issues, and to make any necessary adjustments.

During periods of high order/call volume, Qwest has procedures in place to use overtime (voluntary and mandatory) or cross-trained SDCs, and/or shift work between ISC locations in order to accommodate variances in demand.

2.2 Scenarios

Scenarios were not applicable to the KPMG Consulting portion of this test. HPC's portion of the test included transaction-based instances to generate responses for analysis and evaluation.

2.3 Test Targets & Measures

The test targets were the processes and procedures employed by Qwest to support CLECs throughout the order submission process. Processes, sub-processes, and evaluation measures are summarized in the following table.

Table 24.8-3: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Respond to ISC Call	Answer Call	Completeness and consistency of process	24.8-1, 24.8-3, 24.8-5
	Answer Call	Timeliness of answer	HPC Reporting
	Interface with User	Availability of user interface	HPC Reporting
	Response to Call	Completeness and accuracy of response	HPC Reporting
	Log Call	Completeness of logged information Log is kept in appropriate media for appropriate interval	24.8-1, 24.8-3, 24.8-9
Process ISC Call	Access to Systems to Observe User Problems	Ability to access user records and transactions	24.8-1, 24.8-3, 24.8-6
	Resolve User Question, Problem, or Issue	Completeness and consistency of process	24.8-1, 24.8-6 – 12.8-7
Close ISC Call	Log Closure Information	Completeness, consistency, and timeliness of process	24.8-8
Monitor Status	Track Status	Accuracy and completeness of status tracking capability Availability of jeopardy notification	24.8-1, 24.8-3, 24.8-4, 24.8-6, 24.8-9
	Report Status	Completeness and consistency of reporting process Accessibility of status report	24.8-1, 24.8-9
Request Escalation	Manage Escalations	Consistency and completeness of procedure	24.8-1, 24.8-4 – 24.8-5
Manage the ISC Process	Provide Management Oversight	Completeness and consistency of operating management practices	24.8-9 – 24.8-10, 24.8-12
Capacity Management	Work Force Capacity Management Processes and Procedures	Adequacy, completeness and adherence to work force capacity management procedures	24.8-11

2.4 Evaluation Methods

KPMG Consulting utilized four methods of data collection for this evaluation:

- Documentation – Supporting documentation describing processes, operational methods and procedures, and organization charts was also collected for evaluation and analysis.
- CLEC Interviews – KPMG Consulting conducted interviews with CLEC representatives to gather information related to Qwest ISC support processes.
- Qwest Interviews and Observations – KPMG Consulting conducted interviews with Qwest personnel and performed on-site observations of work operations to obtain data used in the evaluation of Qwest's ISC support processes. Interviews took place with Qwest's Directors,

Team Leaders, Coaches, Service Delivery Coordinators (SDCs), and other SMEs, who are collectively responsible for managing ISC support processes; tracking and reporting order status; and managing capacity.

- P-CLEC Findings – KPMG Consulting also collected and analyzed findings from Hewlett-Packard Consulting (HPC), which held the role of pseudo-CLEC (P-CLEC) during execution of Test 12, Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks.

2.5 Analysis Methods

The Interconnect Service Center Support Review (Test 24.8) was conducted using a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. Using data acquired through interviews with Qwest personnel and CLEC representatives, detailed reviews of Qwest documentation, direct observations of Qwest's operations, and data from HPC's P-CLEC experience, KPMG Consulting determined whether Qwest processes and procedures satisfied these evaluation criteria.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 24.8-4: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.8-1	Interconnect Service Center support processes, including policy, procedures, roles, and objectives, are documented and followed.	Satisfied	Qwest's ISC support processes, including policy, procedures, roles and objectives, are documented and made available through training courses and within InfoBuddy, Qwest's internal reference tool. KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.
24.8-2	The scope and objectives of the Interconnect Service	Satisfied	Qwest's ISC support scope, objectives, responsibilities, and activities are defined,

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Center support are documented and communicated to CLECs.		documented, and communicated to CLECs in the <i>Doing Business with Qwest Guide</i> . Further documentation is available on the Qwest Wholesale Web site at http://www.qwest.com/wholesale .
24.8-3	Interconnect Service Center support processes include call intake procedures for logging and acknowledgement of issues.	Satisfied	<p>Qwest's ISC support processes include call intake procedures for logging and acknowledgement of issues.</p> <p>Incoming calls regarding LSRs are logged in the Call Center Tracking Database, at which time they are automatically assigned a unique tracking number.</p> <p>Calls are tracked by time and date of call, caller identification information, ticket number, issue, and ticket status. Any changes in status are logged into the notes section of the database.</p> <p>Information related to ASR escalations and expedites is recorded in the notes section of EXACT. Information regarding delayed ASR orders is logged into Lotus Notes. Call intake procedures are documented in the CSIE and SDC training guides, as well as in InfoBuddy.</p> <p>During ISC observations, KPMG Consulting observed Qwest SDCs and call center representatives adhering to the documented call intake procedures.</p>
24.8-4	Interconnect Service Center support processes include procedures for problem categorization, prioritization, and escalation.	Satisfied	<p>Qwest's ISC support processes include procedures for problem categorization, prioritization, and escalation.</p> <p>As calls regarding LSRs are received at the Call Center, they are assigned a unique ticket number, a severity code, and are categorized into one of five groups: resale, number portability, unbundled loop, public access lines, or complex resale and Centrex.</p> <p>The severity code determines the ticket resolution interval assigned to the issue. For example, a two-hour interval is assigned for a loss of service, 24 hours for an address validation, and 48 hours is assigned for a listings change. Appropriate ticket resolution intervals for each situation are available to Qwest personnel through InfoBuddy and are communicated during their initial training. Publicly documented Qwest ticket resolution intervals can be found at http://www.qwest.com/</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>wholesale/clecs/ ordering.html. Any change in an issue's status is recorded in the notes section of the Call Center Tracking Database.</p> <p>Calls related to ASRs are tracked by ASR order number and are categorized based on the issue type. The SDC at the ASR ISC takes responsibility for resolving the issue.</p> <p>Documentation regarding Qwest's escalation process is available on the Qwest Wholesale Web site at http://www.qwest.com/wholesale/clecs/exesclover.htm.</p> <p>During on-site observations, KPMG Consulting observed Qwest SDCs and call center representatives following the documented procedures for prioritizing and escalating CLEC issues.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC inquiries and escalations to the ISC Help Desk.¹⁷²</p> <p>Qwest issued job aids to reinforce processes in place for addressing CLEC inquiries. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p> <p>KPMG Consulting conducted further investigation into the processes and procedures related to Qwest's handling of CLEC inquiries. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined that the procedures in place to address CLEC inquiries and escalations were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently</p>

¹⁷² See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.
24.8-5	Interconnect Service Center support processes include procedures for help desk referral/transfer.	Satisfied	<p>Qwest's ISC support processes include procedures for help desk referral/transfer. SDCs and call center representatives are provided with contact lists for each ISC location and have the capability to either transfer or conference customers, as necessary.</p> <p>If the call representative or SDC handling an LSR is unable to assist the CLEC with an issue, the caller is "warm-transferred" to the appropriate ISC. The ownership of the issue is also transferred to the new SDC. The newly responsible SDC pulls the CLEC ticket from the database and confirms information recorded in the previous Tier with the CLEC such as callback number and issue. The warm-transfer procedure is described in the <i>Wholesale Markets Warm Transfer Procedural Guide</i>.</p> <p>If an SDC handling an ASR is unable to assist the CLEC with an issue, the caller is "warm-transferred" to an on-site supervisor for additional attention. The individual receiving the transfer then takes ownership of the issue and records any changes in the issue's status in EXACT.</p> <p>The referral process can be retrieved through InfoBuddy. The process is also communicated to call center representatives and SDCs during their initial training.</p> <p>During on-site observations, KPMG Consulting identified instances in which Qwest's warm-transfer procedure was unsuccessful. As a result, KPMG Consulting issued Exception 3039.</p> <p>Qwest reinforced the warm transfer procedure that is used when referring CLEC customers to the CSIE for further assistance and provided supporting documentation. Qwest reiterated the process to its call center representatives in the form of a MCC.</p> <p>During follow-up site visits, KPMG Consulting performed additional observations to confirm that Qwest</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>representatives follow its documented process for warm transfers. See Exception 3039 for additional information on this issue. Exception 3039 is closed.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC inquiries and escalations to the ISC Help Desk.¹⁷³</p> <p>Qwest issued job aids to reinforce processes in place for addressing help desk transfers. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p> <p>KPMG Consulting conducted further investigation into the processes and procedures related to Qwest's handling of CLEC referral and transfers. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined that the procedures in place to address help desk referral and transfers were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
24.8-6	Interconnect Service Center support processes include procedures for addressing CLEC problems or issues.	Satisfied	<p>Qwest's ISC support processes include procedures for addressing CLEC problems and issues.</p> <p>CLEC issues that are called into an ISC Help Desk, handling either LSRs or ASRs, are assigned to a call center representative or SDC based on product type. The call center representative or SDC attempts to resolve the issue according to the</p>

¹⁷³ See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>procedures documented in InfoBuddy and the <i>CSIE Training Guide</i>. Subject Matter Experts, coaches, and InfoBuddy are other resources available to assist in the resolution of the CLECs issue. The percentage of issues resolved at the ISC Help Desk handling LSRs is tracked in the <i>Adjusted Service Level Application Long-Term Monthly Report</i>.</p> <p>Inquiries related to the status of jeopardy notices for LSRs are handled at the Call Center in Sierra Vista. CLECs are also able to retrieve information pertaining to issues in jeopardy status through IMA. IMA assigns the issue a unique jeopardy code depending on the reason the order is in jeopardy status (e.g., improper due date, equipment problem, natural disaster).</p> <p>Inquiries related to the status of jeopardy notices for ASRs are handled at the ASR processing center assigned to the CLEC making the inquiry. CLECs are also able to retrieve information pertaining to issues in jeopardy status through the HEET tool.</p> <p>Any issues that cannot be resolved by the representative at the call center can be escalated for resolution. The ISC escalation process is documented on the Qwest Wholesale Website at http://www.qwest.com/wholesale/clecs/exescover.html. During site visits, KPMG Consulting observed SDCs and call center representatives assisting CLECs with problems according to Qwest's documented procedures.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC inquiries and escalations to the ISC Help Desk.¹⁷⁴</p> <p>Qwest issued job aids to reinforce processes in place for addressing CLEC problems or issues. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p>

¹⁷⁴ See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting conducted further investigation into the processes and procedures related to Qwest's handling of CLEC issues. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined that the procedures in place to address CLEC problems or issues were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
24.8-7	Interconnect Service Center support processes include procedures for providing CLECs with accurate and timely responses.	Satisfied	<p>The ISC support processes include procedures for providing CLECs with accurate and timely responses. Tier 0 call representatives handling LSRs receive product and customer service training and are organized into five functional groups:</p> <ul style="list-style-type: none"> • Resale • Unbundled loop • Number portability • Public access lines • Complex resale and Centrex. <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, Hewlett-Packard Consulting (HPC) identified issues related to the accuracy of responses.¹⁷⁵</p> <p>As a result, KPMG Consulting conducted further investigation into the processes and procedures Qwest employs to ensure accuracy of responses to CLEC inquiries. KPMG Consulting conducted interviews, requested data, and performed observations to confirm that the processes in place were followed.</p>

¹⁷⁵ See HPC Exceptions 2065, 2073, and 2078. Exceptions 2065, 2073, and 2078 are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting conducted additional observations of the Sierra Vista Call Center Quality Assurance (QA) Team that is responsible for ensuring that Qwest Methods and Procedures are followed, and that the information provided to CLECs is accurate (e.g., call handling, service order data entry, and escalation procedures).</p> <p>KPMG Consulting observed these quality measures in practice and noted QA team members providing immediate feedback to representatives.</p> <p>To help ensure timely responses, the ISC has a speed of answer objective, against which center performance is measured. Additionally, to help ensure timely responses, Coaches and Team Leaders monitor the ACD throughout the day to manage the workload and track system data such as average hold time, number of calls in the queue, and the number of representatives available to answer calls.</p> <p>During on-site visits, KPMG Consulting observed ISC management monitoring the ACD.</p> <p>SDCs handling ASR inquiries receive specialized training and are organized into functional groups based upon product. In addition, a sampling of escalated issues is pulled for quality checks by supervisors to ensure that documented procedures are followed.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC inquiries and escalations to the ISC Help Desk.¹⁷⁶</p> <p>Qwest issued job aids to reinforce processes in place for addressing CLEC inquiries. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p> <p>KPMG Consulting conducted further investigation into the processes and</p>

¹⁷⁶ See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>procedures related to Qwest's handling of CLEC inquiries. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined that the procedures in place for providing CLECs with accurate and timely responses were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
24.8-8	Interconnect Service Center support processes include procedures for closure of escalated issues.	Satisfied	<p>Qwest's ISC support processes include procedures for closure of escalated issues. These procedures for LSRs are documented in the <i>CSIE Training Guide</i>.</p> <p>A call center issue regarding an LSR is recorded and tracked using its unique ticket number. Once the issue is resolved, SDCs are required to notify the customer. The ticket is then closed in the database. Issue closure statistics such as open vs. closed issues and pending tickets are tracked in the <i>4 o'clock Report</i>. Any notes regarding closure and issue resolution are noted in the Call Center Tracking database.</p> <p>Escalated ASR issues are recorded and tracked using the ASR order number. Upon the closure of an issue, the resolution is noted in EXACT. For delayed orders, resolution notes are logged into Lotus Notes.</p> <p>During site visits, KPMG Consulting observed escalation closures and confirmed that the documented closure procedures were followed.</p> <p>During the execution of Test 12, Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks, HPC identified issues related to P-CLEC</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>inquiries and escalations to the ISC Help Desk.¹⁷⁷</p> <p>Qwest issued job aids to reinforce processes in place for addressing escalation closure. In addition, Qwest provided the Call Handling Action Plan as evidence of efforts to track and address issues such as those cited by HPC.</p> <p>KPMG Consulting conducted further investigation into the processes and procedures related to Qwest's handling of CLEC escalations. KPMG Consulting conducted additional interviews, requested data, and performed further observations.</p> <p>As a result, KPMG Consulting determined that the procedures in place to address CLEC inquiries and escalations were followed.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
24.8-9	Interconnect Service Center support processes include procedures for tracking the status of escalated issues and management reporting.	Satisfied	<p>Qwest's ISC support processes include procedures for status tracking and management reporting of escalated issues.</p> <p>As issues regarding LSRs are reported to the Call Center. The Call Center Tracking Database assigns each a unique ticket number for tracking purposes. This ticket number is provided to the CLEC for tracking the issue throughout the escalation process. The CLEC-assigned unique PON number can also be used for tracking purposes. Any changes in the status of an issue are logged and tracked within the Call Center Tracking Database. In addition, the SDC handling an escalated issue is responsible for updating the CLEC on the</p>

¹⁷⁷ See HPC Exception 2075. Exception 2075 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>issue's status. Procedures for recording the status of an issue are documented in the <i>CSIE Training Guide</i>.</p> <p>The <i>Sierra Vista Adjusted Service Level Application Long Term Monthly Report</i> and the <i>Load and Resource Monthly Report</i> serve as the primary tools for management reporting. These reports include tracking statistics, such as the number of issues escalated and total number of orders generated by the ISC.</p> <p>Details pertaining to ASR escalations, including changes in an issue's status, are tracked in EXACT. Procedures for recording notes are documented in InfoBuddy.</p> <p>During ISC observations, KPMG Consulting observed Qwest personnel following the documented procedures for status tracking and management reporting.</p>
24.8-10	Interconnection Service Center support performance measures and process improvement practices are defined, tracked, reported, reviewed, and applied.	Satisfied	<p>Qwest's ISC support performance measures and process improvement practices are defined, tracked, reported, reviewed, and applied.</p> <p>ISC management uses a number of tools to measure and track performance, including the ACD and various measurement reports. These reports, which include the <i>Long Term Level Application Report</i>, <i>Agent Reconciliation Report</i>, and the <i>Sierra Vista Call Center Monthly Report</i>, are used by ISC management to monitor both individual representatives and aggregate, center-wide performance. The reports include information on such topics as percentage of tickets closed in a timely manner, numbers of calls in queue, and average hold time.</p> <p>Additionally, the Qwest QA Team directly monitors a sample of live call center representative phone calls and provides feedback and/or additional training as needed. During observations, KPMG Consulting observed the QA team providing feedback to call center representatives. KPMG Consulting also observed call monitoring taking place at the Tier 1 centers as a part of CSIE quality assurance.</p> <p>As part of its process improvement practices, Qwest employs a team of Service</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Delivery Process Specialists who are responsible for overseeing the overall consistency and efficiency of the support processes and procedures across Qwest ISCs.</p> <p>Additionally, Qwest representatives and SDCs can recommend process improvements by using the Process and Improvement Tracking Tool (Web-based system) or by contacting their Team Leaders or Coaches.</p> <p>Also, CLECs provide comments and/or requested improvements regarding ISC processes through their assigned Service Managers or through the Change Management Process (CMP). CLECs can initiate change requests by using the following Web site as a guide: http://www.qwest.com/wholesale/cmp/index.html.</p> <p>KPMG Consulting formally identified issues with Qwest's training of personnel on related processes and procedures. KPMG Consulting conducted additional evaluation and monitoring activities including interviews, observations and documentation reviews. KPMG Consulting subsequently determined that Qwest's training, continuous improvement measures, and new quality initiatives adequately address the identified issues.</p>
24.8-11	Interconnect Service Center support processes include procedures for capacity planning.	Satisfied	<p>Qwest's ISC support processes include procedures for capacity planning.</p> <p>LRMs are responsible for managing call volumes, staffing levels, inquiry trends, and capacity utilization. LRMs regularly use statistics, derived from such tools as actual vs. projected volumes and ACD logs.</p> <p>For short-term capacity management, the ISCs are organized as "virtual centers" to help balance temporary increases in volume with back-up centers for each product.</p> <p>Additionally, Qwest uses forecasting as a capacity planning tool. Information on Qwest's forecasting procedures can be found on the Qwest Wholesale Website at http://www.qwest.com/wholesale/guides/forecasting.html.</p> <p>During ISC observations, KPMG Consulting observed the use of LRM</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>reports for capacity planning purposes. KPMG Consulting also observed LRMs during a force-loading call that determined whether back-up center assistance was required.</p>
24.8-12	<p>Interconnect Service Center processes include procedures for maintaining security and data integrity.</p>	Satisfied	<p>Qwest's ISC processes include procedures for maintaining security and data integrity.</p> <p>To restrict access, Qwest's order management systems are password protected and use firewalls. Systems are made available only to those individuals who must view the material to perform their assigned responsibilities.</p> <p>To gain building access, Qwest ISC locations require center staff to use pass cards. Visitors to ISC locations must be signed in and escorted by a Qwest employee.</p> <p>Callers to the ISCs are required to provide the issue's unique tracking number (PON, ticket number, etc.) in order to gain further information regarding the status of an issue.</p> <p>KPMG Consulting observed Tier 0 call center representatives requesting unique tracking numbers prior to providing status information to callers.</p>

24.8. Test Results: Interconnect Service Center (ISC) Support Review (Test 24.8)

1.0 Description

The Interconnect Service Center (ISC) Support Review analyzed the assistance and support that the Qwest ISC provides to CLECs. The ISC Support Review focused on the ISC's role in resolving CLECs' OSS questions, order escalations, technical problems, and general issues for pre-ordering, ordering, and provisioning of wholesale services. The evaluation data encompassed the basic operations of the ISC, including its escalation processes, and was generated from the P-CLEC's operational activities.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The Qwest ISC provides pre-order, order, and provisioning service support in the processing of Local Service Requests (LSRs) and Access Service Requests (ASRs).¹ The ISCs responsible for processing LSRs are organized by product, and are directly involved in order processing, inquiries, and escalations for the LSR ordering process and supported products. The ISCs supporting ASR orders are also organized by product, and are responsible for managing delayed orders, order escalations, and expedited orders. Qwest ISCs exist in multiple locations, and are structured by product, assigned role, and area of responsibility. Table 24.8-1.1, below, lists the Qwest ISCs, hours of operation, contact numbers, and primary areas of responsibility.

Table 24.8-1.1: Qwest Customer Service Centers²

Center	Hours of Operation	Help Desk Number	Area of Responsibility
Interconnect Service Center (ISC) Sierra Vista Call Center	Monday-Friday 6:00am-8:00pm MST Saturday 7:00am-5:30pm MST	888-796-9087 or 888-796-9102, Option 1	Order processing, Order status, Firm Order Confirmation (FOC), and Service Order Confirmation (SOC)
Wholesale System Help Desk (WSHD)	Monday-Friday 6:00am-8:00pm MST Saturday 7:00am-3:00pm MST	(888) 796-9102, Option 3	Single point of contact for system related questions regarding connectivity issues, outputs and system outages.

¹ The P-CLEC's activities in this test did not involve the submission of ASR orders to Qwest. Therefore, the P-CLEC's ISC Help Desk interaction did not include ASR processing support.

² The information in this table is publicly available on the Qwest wholesale website at <http://www.qwest.com/wholesale/clecs/escalations.html#top> (last update March 4, 2002). Additional information specific to the Qwest ISC and WSHD was issued via a Qwest Wholesale Customer Notification - Subject: Differences Between the Wholesale Systems Help Desk and the Interconnect Service Center, file named SYST.03.08.02.F02626_Diff_Btwn_WSHD_ISC.doc, dated March 8, 2002. The hours of operation for the ISC and WSHD included in this table are taken from the Qwest Wholesale Customer Notification.



Center	Hours of Operation	Help Desk Number	Area of Responsibility
Access Service Requests Des Moines, Iowa	Monday-Friday 7:00am-7:00pm CST	1) (888) 537-0002 2) (800) 261-9838 3) (800) 244-1271	1) LIS 2) Feature Group 3) Analog/Digital, HiCap Services
Access Service Requests Salt Lake City, Utah	Monday-Friday 7:00am-7:00pm MST	1) (888) 537-0002 2) (800) 261-9838 3) (800) 244-1271	1) LIS 2) Feature Group 3) Analog/Digital, HiCap Services
Access Service Requests Minneapolis, Minnesota	Monday-Friday 7:00am-7:00pm CST	(800) 285-8383	Frame Relay
Billing and Collections Salt Lake City, Utah	Monday-Friday 7:00am-5:30pm MST	(800) 559-0634	Billing and collection questions.
Billing and Collections Des Moines, Iowa	Monday-Friday 7:00am-5:30pm CST	(800) 452-9716	Billing and collection questions.
CSR Hotline for Local Service Requests	Monday-Friday 7:00am-7:00pm CST	(800) 497-7539	Requests for Customer Service Records (CSRs).
Maintenance and Repair Account Maintenance Support Center (AMSC)	Available 24/7	(800) 223-7881	Design UNE and complex wholesale products and services.
Maintenance and Repair Repair Call Handling Center (RCHC)	Available 24/7	(888) 405-0083	Non-designed POTS and non-complex wholesale products and services.
Qwest CLEC Coordination Center (QCCC) Omaha, Nebraska	Monday-Friday 7:00am-9:00pm CST	(866) 549-3846	Handles all coordinated Unbundled Loop product installations and warranty service throughout Qwest's 14-state territory

2.1.1 ISC Help Desk Support

The ISC Sierra Vista Call Center Service Delivery Coordinators (SDCs) assist CLECs with questions for IMA GUI, IMA EDI, and manual pre-order, order, and post-order processing. The SDCs also assist with product and service-related issues for Resale, UNE-P/UNE-C, Line Sharing/Shared Loop, and Unbundled Loop products. The Sierra Vista Call Center SDCs serve as Tier 0 support in the escalation and inquiry process, and are the CLEC's first point of contact to troubleshoot issues and assist with general information regarding order processing.

CLECs initiate contact with the ISC via one of two telephone contact numbers: (888) 796-9087 or (888) 796-9102, option 1. When dialing (888) 796-9087, the caller is connected directly to the ISC. When dialing (888) 796-9102, the caller is connected to the Qwest Wholesale Help Desk automated Voice Response Unit (VRU), where option 1, for LSR/IMA EDI assistance, routes the call to the ISC Help Desk.



Once the caller has reached the ISC, an automated VRU prompts the caller to select from one of five menu options based upon the type of issue for which the caller requires assistance. The menu options during the center's hours of operation are:

- 1) Resale POTS, UNE-P POTS or POTS Administrative Lines,
- 2) Number Portability,
- 3) Number Portability with Unbundled Loop or Unbundled Loop alone,
- 4) Public Access Line, and
- 5) Centrex or Complex Resale.

After the caller selects an option, the call routes to the appropriate SDC in the Sierra Vista Call Center, where a Work Queue ticket is created to record the issue. The ISC Work Queue ticket has a seven-digit identification number that begins with a one (e.g., 1789362), and is used to track any issues that cannot be resolved at the time the initial call is placed. Specifically, the Call Center is responsible for answering order-processing questions involving:

- Address validations;
- Appointment scheduling;
- Customer Service Record (CSR) corrections;
- Carrier Facility Assignment (CFA) validations;
- Directory Listing (DL) assistance;
- Firm Order Confirmation (FOC) and Service Order Completion (SOC) inquiries and resends;
- Inquiries for order status verification, cancellations, due date changes, out of service conditions, Service Order (SO) error corrections and rejected LSRs;
- Loop Qualifications;
- Loss date and status of an end user conversion;
- LSR and related SO preparation;
- Network Channel Code/Network Channel Interface (NC/NCI) Codes;
- Telephone number (TN) reservations; and,
- Universal Service Order Codes (USOCs).

If the SDC cannot assist a caller, the SDC refers the caller, via a "warm transfer," to a Tier 1 representative in the Customer Service Inquiry and Education (CSIE) Center. A warm transfer occurs when the Sierra Vista Service Center SDC, Tier 0, initiates contact with a Tier 1 representative at the CSIE Center who can speak directly with the caller.

CLECs can open multiple tickets during a single call to the ISC. When a CLEC presents multiple issues, the first inquiry is warm transferred to the CSIE. Up to five additional inquiries are manually sent through the work queue, each with a unique Work Queue Ticket number. Qwest assigns each ticket a response interval according to the severity of the issue. Once Qwest assigns the response interval, it advises the CLEC of the time at which the CLEC can expect a callback from the SDC. The SDC provides status updates to the CLEC every two hours until the issue is resolved.

Upon request, a CLEC can escalate its issue to Tier 2 by asking to speak with a manager. If the CLEC requests this escalation, the Qwest representative will provide the CLEC with the "duty pager" number to contact the manager on duty. CLECs can request escalation to Tier 2 from either an SDC or CSIE representative.



If a CLEC calls the ISC outside its hours of operation, the VRU informs the caller that the ISC is currently closed and informs the caller of the ISC's business hours. The VRU then prompts the caller to select from one of three menu options based upon the type of issue for which the caller requires assistance. The menu options for after-hours calls are as follows:

- If you are experiencing a system outage or connectivity issue, (option 1, and sub-option 1), the call is automatically routed to the ISC at (888) 796-9102. The VRU prompts the CLEC to leave a message consisting of the full name of the caller, company name, callback number and a brief description of the problem. An on-call Help Desk representative will call the CLEC back within 30 minutes.
- If you have an out of service condition for POTS Resale products, (option 1, and sub-option 2), the call is automatically routed to the RCHC at (888) 405-0083, which is open 24 hours a day, 7 days a week.
- If you have an out of service condition for all other products including Complex Resale, the call is automatically routed to the AMSC at (800) 223-7881, which is open 24 hours a day, 7 days a week.

2.1.2 Service Manager Escalations

Qwest Service Managers, Tier 3 support, are part of the Qwest Account Team. Qwest assigns Service Managers to CLECs based on headquartered location, area of intended operation, scale and scope of account, and types of services offered. The Qwest Service Managers have knowledge of Qwest service delivery processes and assist CLECs when normal processes fail to resolve an issue. The Qwest Service Managers address CLEC questions regarding orders, signed Interconnection Agreements, major outages, maintenance and repair escalations, including root cause analysis, and project coordination.

When a CLEC has an issue or question that requires escalation beyond the ISC or CSIE centers, a CLEC contacts its Qwest Service Manager. The Qwest Service Manager evaluates the issue and works with the appropriate Qwest departments responsible for the actual ordering and delivery of products. Through those contacts, the Qwest Service Manager attempts to provide a resolution to the issue that is mutually acceptable to both the CLEC and Qwest based upon the individual situation. Qwest summarizes the processes used to handle expedite and escalation requests for all Wholesale Products and Services on its wholesale website.³

Beyond the Tier 3 level, Qwest makes available a Tier 4 Senior Service Manager, Tier 5 Executive Director, and Tier 6 Vice President to the CLEC for escalations. The Qwest wholesale website provides a description of the roles and responsibilities of its Account Team and Service Managers.⁴

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the ISC Help Desk's assistance with processing and resolving CLEC issues, and included the Qwest Service Management escalation process and procedures. Table 24.8-1.2: Test Target Cross-References, below, summarizes the processes, sub-processes, and evaluation

³ Qwest Expedites & Escalations Overview - V3.0, <http://www.qwest.com/wholesale/clecs/exesclover.html>

⁴ Account Team/Sales Executives & Service Managers - V3.0 <http://www.qwest.com/wholesale/clecs/accountmanagers.html>



measures. The last column "Test Cross-Reference," indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table 24.8 -1.2: Test Target Cross-References

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Respond to ISC Call	Answer Call	Timeliness of Answer	24.8-1-1
	Interface with User	Availability of User Interface	24.8-1-2
	Response to Call	Completeness and Accuracy of Response	24.8-1-3

2.4 Evaluation Methods

The practical experiences of the P-CLEC generated the data for the ISC Support Review. The P-CLEC initiated calls to the ISC for various reasons. The P-CLEC placed calls in relation to:

- Late or missing FOCs or SOCs;
- Reject and error notices (ISC generated - valid or invalid);
- CSR corrections;
- Open ticket status inquiries that resulted from the P-CLEC's failure to receive a call back within a specified timeframe;
- Special Billing Number (SBN) clarifications;
- Central Office Address information; and,
- General documentation issues.

The following table, Table 24.8-1.3, identifies the number of contacts the P-CLEC made to the ISC. The table also identifies the P-CLEC issues that required multiple contacts.

Table 24.8-1.3: P-CLEC Contacts to the ISC Help Desk

Number of Contacts Required for Resolution	Number of Issues
Resolved in Single Contact with ISC	550
Resolved in Two Contacts with ISC	291
Resolved in Greater than Two Contacts with ISC	142
Total number of Issues Requiring ISC Assistance	983

In situations where it determined that the ISC was unsuccessful in resolving an issue, the P-CLEC escalated the issue to its Qwest Service Manager. Typically, escalations occurred when the P-CLEC experienced multiple instances of the same issue, such as USOC Table errors or missing LSR Completion Notices, or when the P-CLEC required critical information to resolve time-sensitive issues. Additionally, the P-CLEC escalated issues to Qwest Service Management when it was specifically instructed to do so by ISC representatives. The P-CLEC further escalated issues beyond the Service Manager when necessary for timely resolution.



2.5 Analysis Methods

HP logged and tracked the P-CLEC's interactions with the ISC and its Qwest Service Management team. The P-CLEC recorded the essential elements of each contact with the ISC and Qwest Service Manager. This data consisted of information the P-CLEC provided to Qwest, including a description of the issue and any PONs associated to the P-CLEC's experience. The recorded data also included the date on which the issue was first presented to the ISC or Qwest Service Manager, the dates on which the P-CLEC received responses to its queries, the names of appropriate contacts, the resolution of the issue, and other information relevant to each issue for which the P-CLEC sought assistance.

The P-CLEC used the information provided by ISC representatives in its daily activities. Based on the success of these activities, the P-CLEC determined if the information provided was complete and accurate. When the P-CLEC contacted the ISC Help Desk for assistance locating information within Qwest documentation, the P-CLEC verified the information it was seeking was in the location the ISC representative identified.

HP determined if essential elements of Qwest processes were present, and whether Qwest followed its published processes for ISC activities. Data items were analyzed according to the evaluation criteria listed in Section 3.1, below, to assess Qwest's ISC support.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

Table 24.8-1.4, below, Evaluation Criteria and Results, below, presents the results of this test. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II. Summaries of HP Observations and Exceptions referenced in the comments are located in Appendix HP-A.

Table 24.8 -1.4: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.8-1-1	The P-CLEC's calls to the ISC Help Desk were answered in a timely manner.	Not Applicable	A VRU automatically answers calls to the ISC Help Desk contact numbers, and directs the caller to select options from a menu list. The duration of a caller's wait prior to speaking to an ISC representative is contingent upon the caller's selection of options from the menu. In the P-CLEC's experiences, the ISC Help Desk's VRU promptly answered P-CLEC calls and presented P-CLEC callers with the menu of options to direct the call. The P-CLEC did not endure any extended waiting periods following its selection of the appropriate menu option before it was able



April 19, 2002

24.8-A-6

Published by Hewlett-Packard – CONFIDENTIAL

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Test Cross-Reference	Evaluation Criteria	Result	Comments
24.8-1-2	The P-CLEC was able to reach the ISC Help Desk when it required assistance with transaction processing or interpretation of information.	Satisfied	<p>to speak to an ISC representative.</p> <p>Overall, the P-CLEC reached the ISC Help Desk when it required assistance, and, in most cases, the P-CLEC received responses to Help Desk contacts within the timeframes identified by ISC personnel.</p> <p>The P-CLEC did encounter instances, however, in which ISC representatives were unable to provide timely responses to issues reported by the P-CLEC. HP documented these issues in the following Incident Reports.</p> <p>Observations: 2016, 2053.</p> <p>Exceptions: 2045, 2073.</p>
24.8-1-3	ISC Help Desk responses to P-CLEC questions provided complete and accurate information necessary to resolve P-CLEC transaction processing issues.	Satisfied	<p>During the course of the test, the P-CLEC made numerous calls to the ISC Help Desk to resolve pre-order, order and post-order processing issues. Generally, the Help Desk responded, and provided the P-CLEC with sufficient information to resolve the issues. However, in some cases, the Help Desk was unable to answer the P-CLEC's questions.</p> <p>HP documented the issues the P-CLEC encountered with the ISC in the following Incident Reports.</p> <p>Observations: 2042, 2044, 2049, 2060, 2061, 2072, 2074, 2080, 2083.</p> <p>Exceptions: 2004, 2006, 2028, 2048, 2051, 2055, 2060, 2065, 2069, 2070, 2073, 2075, 2076, 2077, 2078, 2079, 2080, 2082, 2084, 2085, 2086.</p> <p>When it was necessary to do so, the P-CLEC escalated issues to its Service Manager for resolution. These issues were worked through with the P-CLEC's Service Manager following the processes that had been established for those interactions.</p> <p>In general, the P-CLEC received timely resolution on issues presented to its Service Manager. However, for some issues, the P-CLEC's Service Manager was unable to provide timely assistance to the P-CLEC with its attempts to obtain information or resolve order-processing issues. HP documented these deficiencies in Exception 2064.</p>



24.9. Test Results: Network Surveillance and Outage Support Evaluation (Test 24.9)

1.0 Description

The Maintenance & Repair (M&R) Network Surveillance and Outage Support Evaluation was a review of the processes, procedures, and other operational elements associated with the network surveillance responsibilities maintained by Qwest for wholesale and retail operations. The evaluation included a review of Qwest's network outage notification processes and procedures as they relate to wholesale operations.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

Shared Responsibility

Responsibilities for the activities that are necessary to ensure the integrity, reliability, availability, and overall quality of service within the Qwest network are jointly maintained by two Network Reliability Operations Centers (NROCs)¹⁷⁸, five Design Services Centers (DSCs)¹⁷⁹ and 11 Load Resource Allocation Centers (LRACs)¹⁸⁰. Each individual center focuses its efforts on the following activities:

- Coordinated network monitoring
- Proactive and reactive M&R
- Internal communications across Qwest organizations, as well as external communications to impacted customers and third-party organizations (i.e., the Federal Communications Commission (FCC), Federal Aviation Administration (FAA), Emergency 911 Services, and others).

The NROCs, DSCs, and LRACs collectively monitor abnormal events that affect the service capability of the Qwest network. The same systems used to monitor Qwest retail facilities are used to monitor facilities leased by CLECs. Discrete responsibilities maintained by the centers are varied, based upon the types of network elements monitored by each. The network elements for which the NROCs have surveillance and outage notification responsibilities are as follows:

- Interoffice Facilities (IOF) – A high capacity digital transmission path dedicated to the transport of local, toll, and/or access traffic between central offices (COs). IOF can be dedicated to Qwest, a Competitive Local Exchange Carrier (CLEC), or a combination of both. A CLEC can lease IOF in DS1 through DS3 or OCN transport levels.

¹⁷⁸ The NROCs are located in Littleton, Colorado and Plymouth, Minnesota.

¹⁷⁹ The DSCs are located in Seattle, Washington; Salt Lake City, Utah; Des Moines, Iowa; and Minneapolis, Minnesota (both the Denver and Minneapolis DSCs are in this location).

¹⁸⁰ Information regarding the roles and responsibilities of each of the LRACs described in this evaluation was obtained during interviews conducted at each of the eleven LRACs for KPMG Consulting's M&R End-to-End Process Evaluation (Test 18.7).

- Advanced Intelligent Networks (AIN) – A network architecture that includes three basic call processing elements: i) Intelligent Service Control Points (ISCPs); ii) Service Switching Points (SSPs); iii) Signal Transfer Points (STPs); and iv) Intelligent Signaling Peripherals. An ISCP is a database containing customer specific information that executes service application logic in response to queries sent to it by an SSP that is equipped with AIN functionality. SSPs are digital telephone switches that may query an ISCP for customer-specific instructions for call processing (routing, blocking, etc.). STPs are packet switches that shuttle messages between an SSP and an ISCP, or between SSPs. All three communicate via out-of-band signaling using the Signaling System 7 (SS7) protocol, detailed below.
- Signal System 7 (SS7) – A system used by network elements to exchange signaling information useful in setting up and tearing down calls over an out-of-band channel, called an SS7 link. The SS7 protocol consists of four sub protocols: i) Message Transfer Part (MTP); ii) Signaling Section Control Part (SCCP); iii) Integrated Services Digital User Part (ISUP); and iv) Transaction Capabilities Application Part (TCAP). MTP provides functions for basic routing of signaling messages between signaling points. SCCP provides routing and management functions other than call setup between signaling points. ISUP messaging allows an SSP to communicate with another SSP through an STP. Examples of information exchange include trunk reservation, trunk setup, and call teardown requests. SSPs may need additional information on how to route or treat a specific call request. This data may be found in an ISCP. TCAP messaging allows an SSP to communicate non-circuit related information with an ISCP (or an ISCP with another ISCP) through an STP. Examples of information exchange include Local Number Portability- (LNP-) related data queries, and responses regarding Location Routing Numbers and Line Information Database addresses.

The network elements for which the DSCs have surveillance and outage notification responsibilities are:

- All elements of the circuit between, and including, the designated demarcation points. Additionally, the centers assist in the diagnosis and repair of troubles from the origination of the circuit, through the termination of the circuit, usually at the Network Interface Unit (NIU). However, the customer may request that trouble diagnosis go beyond the NIU, into the inside wiring (IW). If this occurs, billing may be involved.
- Self Healing Alternate Route Protection (SHARP)¹⁸¹ and Self Healing Network Services (SHNS)¹⁸².

The network element for which the LRACs have surveillance and outage notification responsibilities is potential cable failures.

The allocation of responsibilities across the NROCs and DSCs is outlined below.

¹⁸¹ SHARP is a premier service offering from Qwest. Details of the SHARP service offering may be found at http://www.qwest.com/pcat/large_business/product/1,1354,147_4_3,00.html.

¹⁸² SHNS is a second premier service offering from Qwest. Details of the SHNS service offering may be found at http://www.qwest.com/pcat/large_business/product/1,1354,148_4_3,00.html.

NROC: M&R Surveillance Responsibilities

Together, Qwest's two NROCs, located in Littleton, Colorado and Plymouth, Minnesota, provide surveillance and outage notification support services throughout the Qwest network. Responsibilities for monitoring network events are distributed to each center, primarily by geography, across Qwest's fourteen state operating region. The Littleton NROC is responsible for surveillance activities across the states of Arizona, Idaho, New Mexico, Colorado, Wyoming, Utah, and Montana. The Plymouth NROC is responsible for identical surveillance in Washington, South Dakota, North Dakota, Minnesota, Oregon, Iowa, and Nebraska. However, situations exist that require one center to take surveillance responsibility for the entire region. Each center has the capability to perform this function at a moments notice. For example, in the Plymouth center, the Network Monitoring and Analysis (NMA), Network Access Reliability Group (NARG) and Trunking (a specialized group within Switch Surveillance) focus groups are operational from 7:00am – 6:00pm, Monday through Friday. After 6:00pm, the functions and calls normally handled by these groups are then "collapsed" to the Littleton center.

Secondary to this geographical distribution of responsibilities within each of the NROCs, surveillance activities occur according to defined focus groups. For this distribution of activities, each NROC maintains distinct roles, relative to the types of facilities being monitored. Many of these focus groups exist as mirroring organizations within both of the NROCs (and, as such, fulfill their responsibilities according to the regional separation described above). However, some groups are localized at one center (specifically, the Littleton NROC) and, for their defined roles, are responsible for the entire fourteen state region. The chart below provides a listing of the existing focus groups within the NROCs, and indicates those groups that are located only in Littleton, Colorado, for which responsibilities cover the entire fourteen state region.

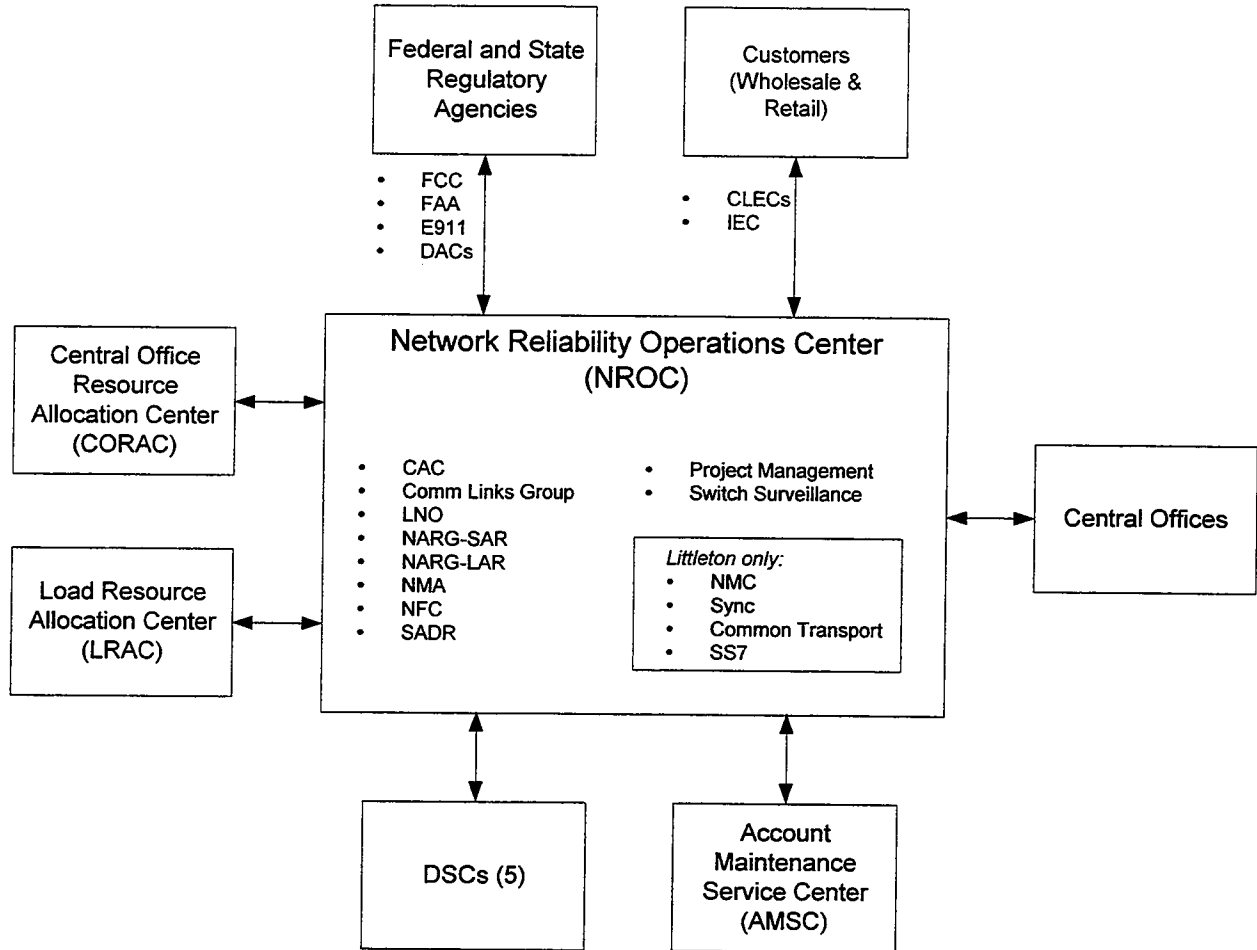
Table 24.9-1: NROC Focus Group Coverage

Focus Group	Location	
	Littleton, CO	Plymouth, MN
Network Management Center (NMC)	X	
Switch Surveillance	X	X
Network Facilities Center (NFC)	X	X
Communications Links Group	X	X
Synchronization Group	X	
Common Transport	X	
Signaling System 7 (SS7)	X	
Switch Access Reliability Group (SARG)	X	X
Line Access Reliability Group (LARG)	X	X
NROC Project Management	X	X
NMA Database	X	X
Circuit Administration Center	X	

In their capacities to provide comprehensive network surveillance and outage notification support services, both NROCs provide “reactive” monitoring capabilities to both retail and wholesale customers for all facilities-based network outages or abnormal events. The response to disaster situations is managed via operational redundancy. If one center loses complete operational capabilities, contingency plans exist for those activities to be resumed momentarily by the other center. The redundancy is also applicable to day-to-day operations. For example, if the Littleton center is consumed with handling an event, the Plymouth center can immediately assume the surveillance responsibility for the region. Additionally, via the NMC, both centers provide notification of abnormal events to retail and wholesale customers, as well as to other internal (Qwest) and external organizations. These internal organizations include the DSCs, COs, executive leadership, regulatory, public relations, and marketing departments. External recipients of abnormal event notifications include wholesale and retail customers, the Federal Communications Commission (FCC), the Federal Aviation Administration (FAA), state regulatory bodies, and other regulatory committees and agencies.

In order to provide surveillance support within the network, and notification services to Qwest retail and wholesale customers, both NROCs must interact with a network of peripheral centers throughout the Qwest organization. The following chart illustrates the NROC’s major communication flows. As indicated by the bi-directional arrows, responsibility for initiating communication is maintained by both the NROC and the peripheral centers/organizations with which it interacts.

Figure 24.9-1: NROC Interaction



DSC: Demand and Chronic M&R Surveillance Responsibilities

Collectively, the five DSCs, located throughout the Qwest operating region, are organized within Qwest's Network Complex Services (NCS) organization, and regionally monitor and isolate troubles that fall within Qwest local or transport facilities. If a circuit is failing or experiencing sub-optimal performance, the responsible DSC is committed to providing assistance to both wholesale and retail customers, up to and including the end user, until the circuit is repaired. Within its regional boundaries, each center is responsible for all elements of the circuit(s) between, and including, designated demarcation points.

In fulfilling its assigned network surveillance and outage notification responsibilities, each DSC is organized around three functional roles. The processes performed within each of these roles are uniform across each of the centers, and the purpose and deliverables of each are fundamentally the same. The three roles are as follows:

- *Demand Surveillance* – In this role, each of the DSCs is responsible for monitoring all circuits at the DS1 level and above, with particular attention devoted to the SHARP and

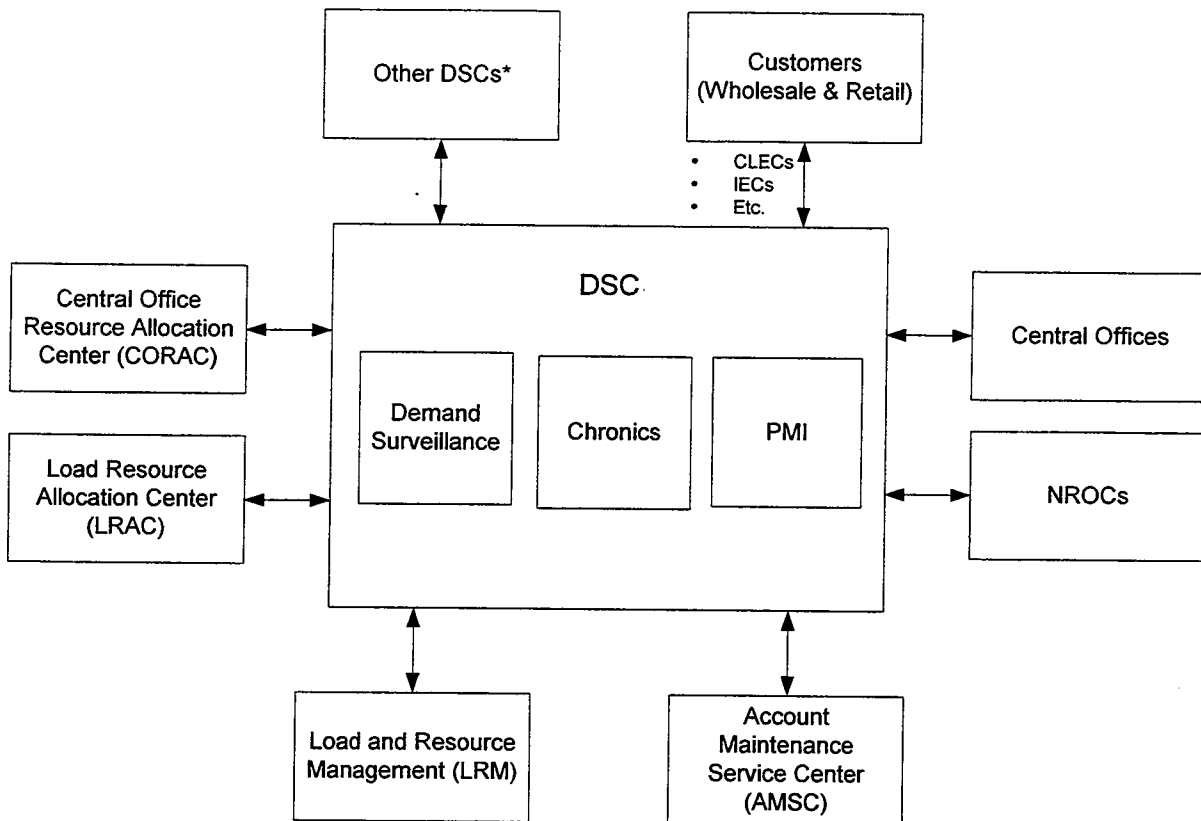
SHNS service offerings. When a DSC receives an alarm for a circuit of one of these types, the DSC tests the circuit condition, notifies the affected customer (either wholesale or retail) of the event, and monitors the circuit through to trouble resolution and closure.

- *Chronics* – In this role, each of the DSCs is responsible for monitoring all circuits, DS0 and above, for which troubles have been reported three times within the previous 30-day period. Awareness of such recurring troubles is procured from multiple sources including i) a “3 in 30” (days) report; ii) referrals initiated by Qwest Account Managers, other DSCs or internal organizations; or iii) customer call-ins. When a DSC receives a chronic alarm for a circuit of this type, the DSCs tests the circuit condition, notifies the affected customer (either wholesale or retail) of the event, and monitors the circuit through to trouble resolution and closure.
- *Performance Monitoring Integrator (PMI)*¹⁸³ – Each center fulfills a role by which all circuits are monitored and repaired for service degradation. Fulfillment of this role is facilitated by way of the PMI application, which retrieves circuit message data each day, and identifies those circuits that indicate a Performance Quality Index (PQI) of less than 98.00 (for certain centers this index has been set at 98.50). Circuits for which a PQI below 98.00 is indicated are posted onto a PQI list that is monitored by the responsible Customer Care Technicians (CCTs). As circuits are posted each day on the PQI list, it is the responsibility of CCTs to identify those circuits warranting further investigation. Thereafter, it is the responsibility of the CCTs to issue a trouble ticket as necessary, contact the customer via telephone (to provide notification of the service degradation), and monitor the trouble through to resolution and closure.

To fulfill each of these three roles, DSCs interact with a network of peripheral centers throughout the Qwest organization. The following chart illustrates the DSCs’ major (bi-directional) communications flows.

¹⁸³ The PMI application is not consistently used by the Salt Lake City DSC, as it has been found by the center to be ineffective for issues related to cable troubles, and, for many circuits, it is not able to monitor network traffic. For certain circuits identified through Chronic or Demand surveillance activities, Carrier Access Codes are posted manually on the PQI Watch list in PMI, to observe and collect data on circuits for which previous investigation has warranted further attention.

Figure 24.9-2: DSC Interactions



*There are five DSCs located in Salt Lake City, Utah; Des Moines, Iowa; Seattle, Washington; and two in Minneapolis, Minnesota

2.1.1 Network Surveillance Systems

The NROCs and DSCs monitor and analyze the Qwest network through the use of the surveillance, analysis, and warning systems detailed below. All systems are online 24 hours per day, 365 days per year. Reliability of the network surveillance functions maintained by each of the NROCs and DSCs is ensured by redundancy. In the event that either NROC goes off-line, the other NROC has the ability to immediately assume any or all responsibilities maintained by the center that has incurred a loss or failure of its operational capacities. Similarly, all DSCs have the ability to assume the responsibilities of any DSC that has lost operational capacities.

- *Network Monitoring and Analysis (NMA) [NROCs and DSCs]* – NMA is the primary system used by Qwest to monitor its network elements. The system is used to provision and turn up network service elements, according to engineering equipment orders in the NMA system. These network elements include transport equipment, such as T1 carrier systems and fiber rings, power alarms, and pair gain systems. NMA also provisions X.25 protocol communication links between other NMA systems and network elements. NMA also monitors alarms that indicate trouble on existing communication links and various network elements, and maintains trunking database integrity between trunk inventory systems, which include the NMA database and the CO switch.

- *Network Operations Analyzer and Assistance* (NOAA) [NROCs] – NOAA is utilized to compile information, from the network, regarding potential network blockages.
- *Work and Force Administration Control* (WFA/C) [NROCs and DSCs] – WFA/C provides the control module for the WFA system. Based upon a system of “handle codes,” the WFA/C system directs network outage reports to either WFA/DI or WFA/DO.
- *Work and Force Administration/Dispatch Out* (WFA/DO) [NROCs and DSCs] – WFA/DO receives reports from WFA/C for which a dispatch out is required. A dispatch out is a trouble for which the origin is believed to be outside of the CO.
- *Work and Force Administration/Dispatch In* (WFA/DI) [NROCs and DSCs] – WFA/DI receives reports from WFA/C for which a dispatch in is required. A dispatch in is a trouble for which the origin is believed to be within the CO.
- *Network Trunking Management Operation System* (NTMOS) [NROCs] – NTMOS monitors traffic flowing across the network, and identifies blockages and overflows, where they exist.
- *Network Operations Assistant* (NOA) [NROCs] – NOA is used to manage automatic traffic reroutes that are necessary to reduce network blockages.
- *Engineering Monitoring and Analysis System* (EMAS) [NROCs] – EMAS is used to collect data on all network elements that are used in the Network Access Reliability Group – Switch Access Reliability (NARG-SAR).
- *Network Performance Manager* (NPM) [NROCs] – NPM monitors the network for blockage conditions and traffic distributions.
- *Trunk Integrated Record Keeping System* (TIRKS) [NROCs and DSCs] – TIRKS is a database that provides inventory information of the network’s existing trunking equipment. During an outage or other service degradation situation, TIRKS has the ability to locate the type of equipment that is needed for service restoration. TIRKS does not have an actual interface to field operating systems.
- *Maintenance Operations Console* (MOC) [NROCs] – MOC is an intelligent service peripheral Graphical User Interface (GUI)-based system that provides element management for the AIN/SS7 network.
- *Network Access Reliability Group – Line Access Reliability* (NARG-LAR) [NROCs] – NARG-LAR monitors and maintains the SWITCH¹⁸⁴ system to ensure access to network line side customers.
- *Network Access Reliability Group – Switch Access Reliability* (NARG-SAR) [NROCs] – NARG-SAR monitors and maintains a data collection operating system to ensure the availability of switch equipment for customer access to the network. Additionally, this group monitors the network traffic load. NARG-SAR and Qwest’s engineering staff work together, as necessary, to add or rebalance existing network resources, in order to provide dial tone and complete calls.

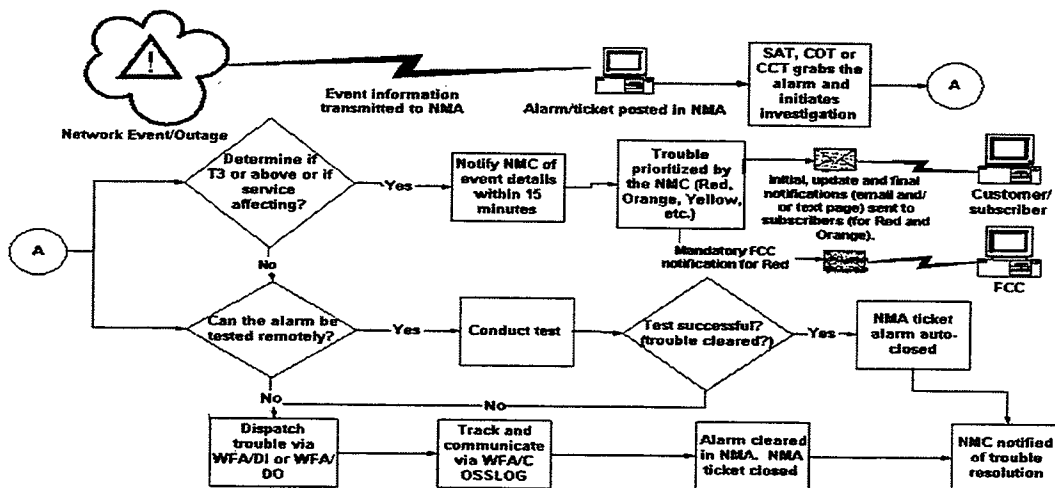
¹⁸⁴ The SWITCH system allows a user to access circuit information, provided within the CO switch, that identifies features or other call capabilities present on that line.

- *Data Collection Operations System (DCOS™)* [NROCs] – DCOS allows for monitoring capabilities of the network’s trunk groups, and provides technicians within the Circuit Administration Center (CAC) raw data in five- and 30-minute intervals to analyze and identify existing traffic trends and conditions.
- *Performance Monitoring Integrator (PMI)* [DSCs] – As noted above, the PMI application is used to retrieve circuit message data, and identify those circuits experiencing service degradation.
- *TK/Wins!* [NROCs] – This application is used to provide the means to input and access all data that is stored in the trunking database. Data includes network element descriptions, network node and trunk growth, as well as trunk group engineering parameters.
- *X/PTR* [NROCs] – This system catalogs all of the different reports used for message trunk servicing and forecasting. Reports generated by X/PTR assist in the validation of data on trunk groups.

2.1.2 Abnormal Event Process Flows¹⁸⁵

Figure 24.9-3 illustrates the life cycle of an abnormal event within the NROC, from the time it occurs, through to its resolution.

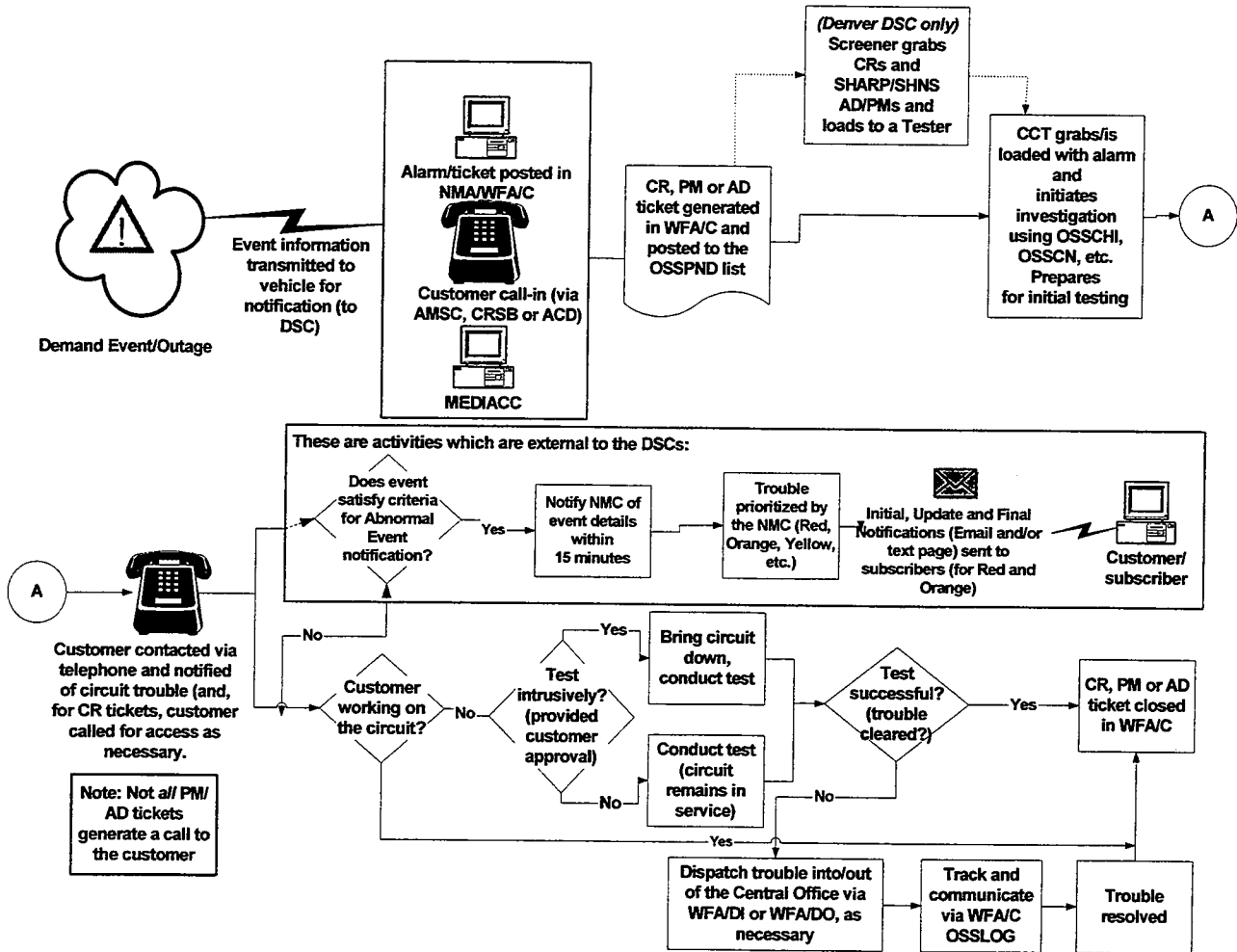
Figure 24.9-3: Event Notification, Tracking, and Resolution Process



¹⁸⁵ Each of the process flow diagrams provided illustrates a generic overview of the fundamental processes that are followed by Qwest’s NROCs and DSCs. These processes can vary slightly to satisfy the operational needs of each center. Also, any outage that is coded “Red” requires a mandatory report to the FCC.

Figure 24.9-4 illustrates the life cycle of an abnormal event within the DSC Demand Surveillance Group, from the time it occurs, through to its resolution.

Figure 24.9-4: Proactive Event Notification, Tracking, and Resolution Process¹⁸⁶



¹⁸⁶ This flow represents SHRP/SHNS services and the alarms on customer-owned T3 and above services.

Figures 24.9-5 and 24.9-6 depict the life cycle of a chronic circuit within the DSC Chronicles Group, from the time it is recognized, through to its resolution.

Figure 24.9-5: Chronic Event Notification, Tracking, and Resolution Process

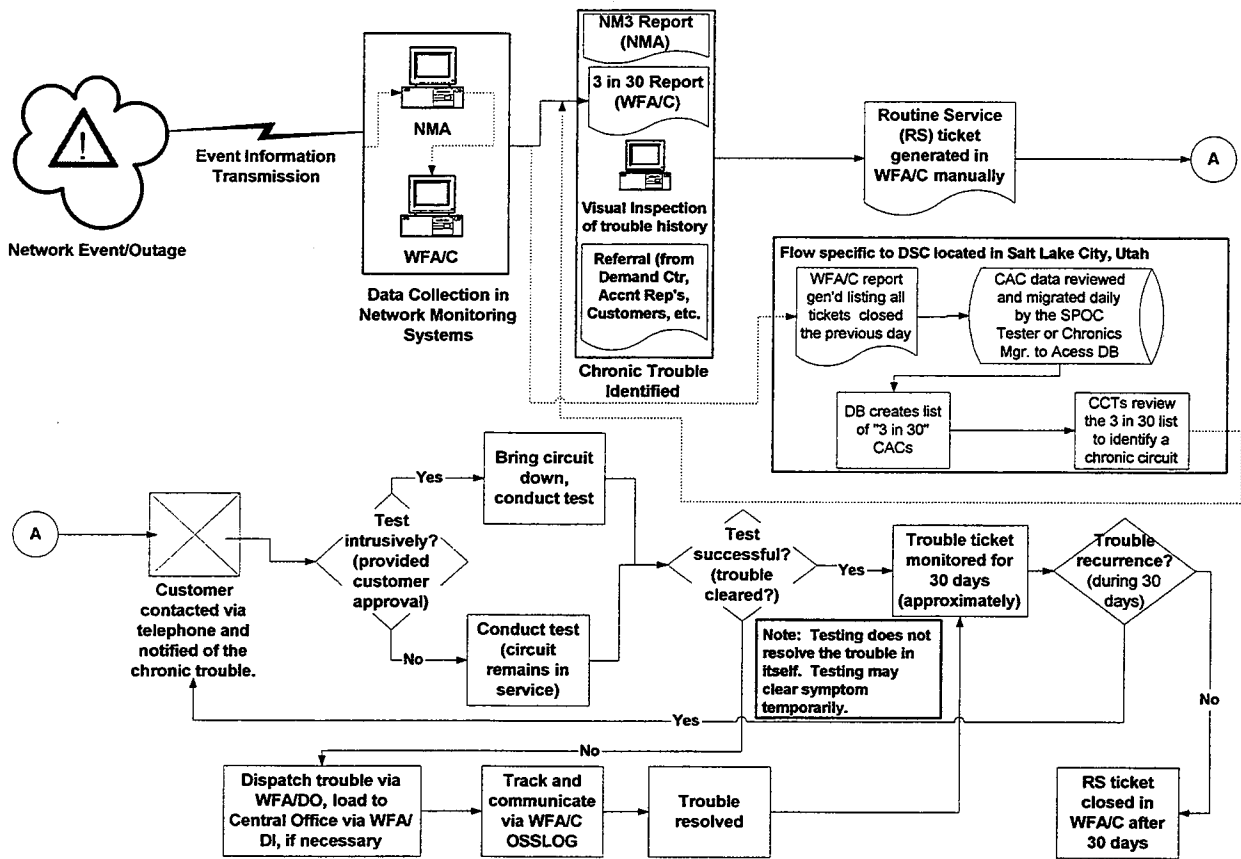
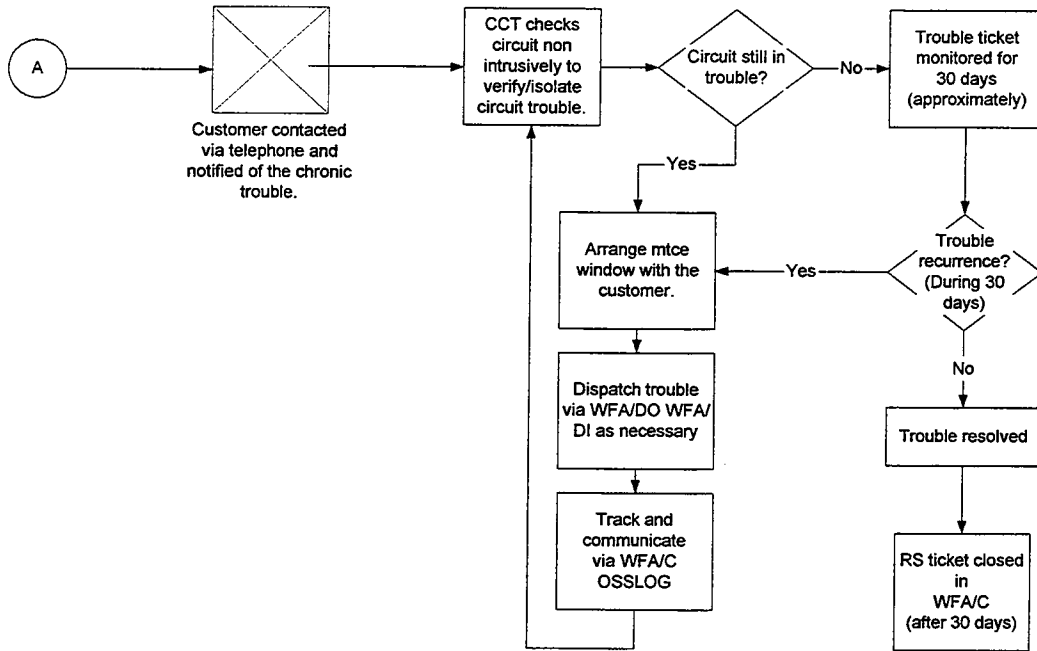


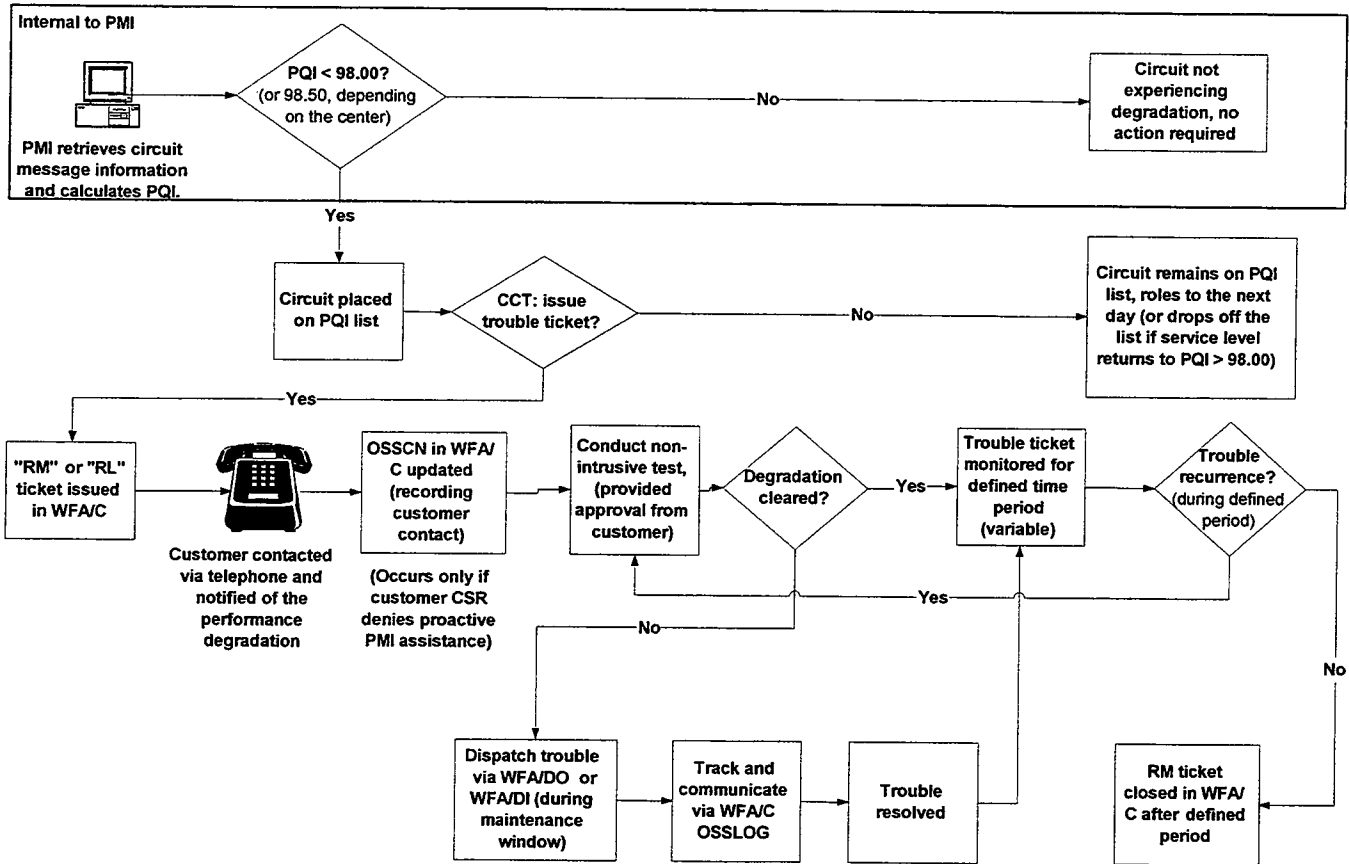
Figure 24.9-6: Alternate Chronics Flow: Salt Lake City DSC¹⁸⁷



¹⁸⁷ This flow represents an alternative process, specific to the Salt Lake City, Utah DSC, for tracking and resolving chronic troubles. All other DSCs follow the process flow shown in Figure 24.9-5.

Figure 24.9-7 illustrates the life cycle of the PMI performance monitoring process.

Figure 24.9-7: PMI Proactive Performance Monitoring Process



2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were Qwest’s network surveillance and outage notification processes, which include the following sub-processes:

- IOF Surveillance
- AIN Interconnect Surveillance
- SS7 Network Surveillance

- Process Documentation
- Notification Procedures.

Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, “Test Cross-Reference,” indicates where the particular measures are addressed in section 3.1, “Results & Analysis.”

Table 24.9-2: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Network Surveillance	Inter Office Facility (IOF) Surveillance	Existence Completeness	24.9-1 – 24.9-3
	Advanced Intelligent Network (AIN) Interconnect Surveillance	Existence Completeness	24.9-4 – 24.9-6
	Signaling System Seven (SS7) Interconnect Surveillance	Existence Completeness	24.9-7 – 24.9-9
Outage Notification	Process Documentation	Accuracy Completeness	24.9-11
	Notification Procedures	Timeliness Accuracy Completeness	24.9-12
	Notification Observations	Accuracy Completeness	24.9-12
	Blockage Notification Procedures	Existence Completeness	24.9-10

2.4 Evaluation Methods

KPMG Consulting utilized four methods of data collection for this evaluation:

- Qwest Interviews – KPMG Consulting conducted interviews with NROC and DSC personnel with direct responsibility for, and knowledge of, the processes and procedures targeted for evaluation.
- CLEC Interviews – KPMG Consulting interviewed CLECs that provide service in the Qwest operating area. KPMG Consulting used the information learned to understand CLEC-reported issues such as not receiving outage notification; and not receiving updates to outages already in progress.
- Observations – KPMG Consulting performed direct observations of Qwest NROC and DSC personnel performing the duties associated with surveillance of the Qwest network. This was done to validate each center’s conformance to, and actual use of, the defined methods and procedures for network surveillance and outage notification services.

- Documentation Reviews – KPMG Consulting conducted reviews of process flow and methods and procedures documentation related to network surveillance and outage notification.

2.5 Analysis Methods

Analysis for the Network Surveillance and Outage Support Evaluation focused on the existence of processes related to surveillance of the Qwest network, and notification of associated network outages, the completeness of such processes, and Qwest Network Surveillance personnel adherence to processes.

The Network Surveillance and Outage Support Evaluation included a pre-determined checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided a framework and guidelines for testing activities. Using data obtained through interviews, observations, and documentation reviews, KPMG Consulting compared the information gathered to the checklist of evaluation criteria, in order to execute the test.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table 24.9-3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
<i>Network Surveillance</i>			
24.9-1	A process for IOF surveillance (including trunking) is in place.	Satisfied	<p>KPMG Consulting found that Qwest's process for IOF surveillance, including trunking, is in place.</p> <p>IOF leased by CLECs, including transport facilities, are monitored through the use of NMA.</p> <p>KPMG Consulting found that trunking equipment and facilities (carrying both Qwest and CLEC traffic) are monitored through the use of NPM, TK/Wins! and X/PTR.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe the IOF surveillance process:</p> <ul style="list-style-type: none"> • <i>Event Management for NROC Network Facility Center and Network Management Center Interface Agreement</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>Qwest NROC Business Continuity Plan for the Littleton and Plymouth Network Facility Center Groups</i> • <i>NFC Work Flow Chart</i> • <i>TGSR Job Aid</i> • <i>X/PTR Job Aid.</i>
24.9-2	The process for IOF surveillance (including trunking) is complete.	Satisfied	<p>KPMG Consulting found that the process for IOF surveillance, including trunking, is complete.</p> <p>Information regarding events affecting IOF is logged, categorized, and tracked via the OSSCHI (circuit history) and OSSCN (circuit notes) screens in WFA/C. These screens serve as interfaces within WFA/C for recording initial, update, restoration and resolution status/information for any circuit upon which maintenance and repair activities are being performed. OSSCHI and OSSCN logs are individually maintained for each circuit for the duration of the circuit's existence. Therefore, both the most current, as well as historical notes/information for a discrete circuit may be viewed, as necessary.</p> <p>Information regarding events affecting trunking equipment and facilities are logged, categorized, and tracked via the TGSR database, NPM, TK/Wins!, and X/PTR.</p> <p>KPMG Consulting reviewed the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>NFC Work Flow Chart</i> • <i>Verifying Open Tickets in WFA for TG's in Exception</i> • <i>Create Tracking Record</i> • <i>Update Tracing Record</i> • <i>WFA-C Trouble Codes</i> • <i>Ticket Administration Process</i> • <i>TGSR Job Aid.</i> <p>KPMG Consulting found that these documents define the activities and procedures for logging, categorizing, and tracking events affecting trunking equipment and facilities.</p>
24.9-3	The process for IOF surveillance (including trunking) is adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that the process for IOF surveillance (including trunking) is adhered to by Qwest personnel.</p> <p>KPMG Consulting observed network</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>technicians using NMA, WFA/DI/DO, and TIRKS as the primary systems to monitor and analyze the performance of leased and Qwest IOF. These activities were performed in accordance with the practices defined in the documents listed above in Test Cross-Reference 24.9-1, as well as in the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>Basic Navigation Steps to NMA</i> • <i>Determine Higher/Lower Correlated Events</i> • <i>Determine Severity of Event</i> • <i>Navigation</i> • <i>Verifying Open Tickets in WFA for TG's in Exception.</i> <p>KPMG Consulting verified the use of NPM, TK/Wins! and X/PTR by reviewing live notifications provided in real time to the P-CLEC.</p> <p>The existence of the process used during an abnormal trunking condition (i.e., blockage or overflow) was verified. However, since this process is performed only when events require such action to be taken, and none of these events took place during our work, KPMG Consulting asked Qwest to demonstrate the actions that would be undertaken during an actual network event or outage. Technicians and managers in the NROC demonstrated the actions to be taken in order to perform event diagnosis, as well as to originate an ANCR. Depending on the "level" of the ANCR, it was explained that the occurrence of an "Orange" or "Red" entry on the ANCR screen would cause notification of the event to be sent to those CLECs that have subscribed to the notification service. ANCRs coded at levels of severity below "Orange" are not delivered to the CLECs.</p> <p>However, should an event originally coded below "Orange" be determined to be of greater severity, the ANCR is "updated," and notification is sent to subscribing CLECs. Also, ANCR's originally coded "Orange" or greater, and later determined not to be of such severity, may be downgraded to a non-reported event. This lowering of event status is also sent to subscribing CLECs, as a positive report</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>on the status change.</p> <p>KPMG Consulting found these demonstrated actions to be satisfactory.</p> <p>Notifications were provided to the P-CLEC in accordance with practices defined in the following Qwest documents:</p> <ul style="list-style-type: none"> • <i>NetPerfMon (EMAS) Job Aid</i> • <i>Telcordia TNDIS/TK Requirements-TK/WINS!</i> • <i>X/PTR Job Aid</i> • <i>TGSR Job Aid.</i> <p>KPMG Consulting observed NROC personnel logging and tracking categorized information regarding IOF events. These activities were performed in accordance with practices defined in the documents referenced above.</p>
24.9-4	A process for Advanced Intelligent Network (AIN) interconnection surveillance is in place.	Satisfied	<p>KPMG Consulting found that Qwest's process for CLEC AIN interconnection surveillance is in place and is documented.</p> <p>AIN interconnectivity is monitored through the use of NMA, WFA/C, MOC, and AcceSS7.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe the process for AIN interconnection surveillance:</p> <ul style="list-style-type: none"> • <i>MOC FARM AIN/SPACE ISCP/IISCP/ISP Job Functions</i> • <i>AIN/SPACE Outage Notification Procedure</i> • <i>Event Management for Signaling System 7 (SS7) and Network Management Center Process Interface Agreement</i> • <i>Maintenance & Surveillance</i> • <i>SS7 Flow Chart</i> • <i>Qwest NROC Business Continuity Plan for the Littleton SS7 Group.</i>
24.9-5	The process for AIN interconnection surveillance is complete.	Satisfied	<p>KPMG Consulting found that Qwest's process for AIN interconnection surveillance is complete.</p> <p>Information regarding events affecting AIN interconnections is logged, categorized, and tracked via the OSSCHI (circuit history) and OSSCN (circuit notes) screens in WFA/C, WFA/DI, and WFA/DO. These screens serve as interfaces within WFA for recording initial, update, restoration, and resolution</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>status/information for any interconnection upon which maintenance and repair activities are being performed. OSSCHI and OSSCN logs are individually maintained for each circuit for the duration of the circuit's existence. Therefore, both the most current, as well as historical notes/information for a discrete circuit may be viewed, as necessary.</p> <p>KPMG Consulting reviewed the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>Verifying Open Tickets in WFA for TG's in Exception</i> • <i>Create Tracking Record</i> • <i>Update Tracing Record</i> • <i>WFA-C Trouble Codes</i> • <i>Ticket Administration Process.</i> <p>KPMG Consulting found that these documents define the activities and procedures for logging, categorizing, and tracking events affecting AIN interconnections.</p>
24.9-6	The process for AIN interconnection surveillance is adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting found that Qwest's process for AIN interconnection surveillance is adhered to by Qwest personnel.</p> <p>KPMG Consulting observed NROC network technicians using NMA and WFA/C/DI/DO as the primary systems to monitor and analyze the performance of CLEC and Qwest AIN interconnections. These activities were performed in accordance with the practices defined in the documents listed above in Test Cross-Reference 24.9-5, as well as in the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>Basic Navigation Steps to NMA</i> • <i>Determine Higher/Lower Correlated Events</i> • <i>Determine Severity of Event</i> • <i>Navigation</i> • <i>Verifying Open Tickets in WFA for TG's in Exception.</i> <p>KPMG Consulting observed NROC personnel logging and tracking categorized information regarding AIN interconnection events. These activities were performed as defined in the documentation listed above.</p>
24.9-7	A process for SS7 interconnection	Satisfied	KPMG Consulting found that a process for SS7 interconnection surveillance is in place.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	surveillance is in place.		<p>CLEC SS7 interconnectivity is monitored through the use of NMA, WFA/C, MOC, and AcceSS7.</p> <p>KPMG Consulting reviewed the following Qwest documents, which describe the SS7 interconnection surveillance process:</p> <ul style="list-style-type: none"> • <i>Event Management for Signaling System 7 (SS7) and Network Management Center Process Interface Agreement</i> • <i>Maintenance & Surveillance</i> • <i>SS7 Flow Chart</i> • <i>Qwest NROC Business Continuity Plan for the Littleton SS7 Group.</i>
24.9-8	The process for SS7 interconnection surveillance is complete.	Satisfied	<p>KPMG Consulting found that the process for SS7 interconnection surveillance is complete.</p> <p>Information regarding events affecting SS7 interconnections is logged, categorized, and tracked via the OSSCHI (circuit history) and OSSCN (circuit notes) screens in WFA/C, WFA/DI, and WFA/DO. These screens serve as interfaces within WFA for recording initial, update, restoration, and resolution status/information for any interconnection upon which maintenance and repair activities are being performed. OSSCHI and OSSCN logs are individually maintained for each circuit for the duration of the circuit's existence. Therefore, both current and historical notes/information for a discrete circuit may be viewed, as necessary.</p> <p>KPMG Consulting reviewed the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>Verifying Open Tickets in WFA for TG's in Exception</i> • <i>Create Tracking Record</i> • <i>Update Tracing Record</i> • <i>WFA-C Trouble Codes</i> • <i>Ticket Administration Process.</i> <p>KPMG Consulting found that this documentation defines the activities and procedures for logging, categorizing, and tracking events affecting SS7 interconnections.</p>
24.9-9	The process for SS7 interconnection surveillance is adhered to by Qwest personnel.	Satisfied	<p>KPMG Consulting observed NROC network technicians using NMA and WFA/C/DI/DO as the primary systems to monitor and analyze the performance of CLEC and Qwest SS7</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>interconnections. These activities were performed in accordance with the practices defined in the documents listed in Test Cross-Reference 24.9-7-above, as well as in the following:</p> <ul style="list-style-type: none"> • <i>Basic Navigation Steps to NMA</i> • <i>Determine Higher/Lower Correlated Events</i> • <i>Determine Severity of Event</i> • <i>Navigation</i> • <i>Verifying Open Tickets in WFA for TGs in Exception.</i> <p>KPMG Consulting observed NROC personnel logging and tracking categorized information regarding SS7 interconnection events. These activities were performed in accordance with practices defined in the documents listed in Test Cross-Reference 24.9-8 above.</p>
<i>Network Event Notification</i>			
24.9-10	A process for network event notification (including blockage events) is in place.	Satisfied	<p>KPMG Consulting found that a process for network event notification, including blockage events, is in place.</p> <p><i>NROCs:</i></p> <p>Within the NROCs, event notification procedures are managed for the entire Qwest region by the NMC located in Littleton, Colorado. Facilitated by the Abnormal Network Condition Resolution (ANCR) system, notification of events satisfying a set of minimal impact criteria is provided to subscribing customers in the form of email. Subscribing customers (“subscribers”) include only those customers who have indicated to their Account Manager a desire to receive event notifications.</p> <p>During testing, KPMG Consulting found that Qwest failed to consistently provide notification of abnormal network events or outages to its customers that have requested notification. KPMG Consulting formally identified this issue of the inconsistent notifications. Qwest responded by installing a modification in the software associated with the ANCR distribution list server. KPMG Consulting then performed a retest, and found that notifications were sent to the P-CLEC according to the defined process.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>The event notification process for trunking equipment and facilities is primarily managed through use of the TGSR database.</p> <p><i>DSCs:</i></p> <p>Within the DSCs, event notification procedures exist according to the three primary roles fulfilled by each center, as described in Section 2.1. Across all three roles, notification to customers is provided via a telephone call.</p>
24.9-11	Network event notification process documentation is accurate and complete.	Satisfied	<p>KPMG Consulting found that network event notification process documentation is accurate and complete.</p> <p>KPMG Consulting reviewed the following Qwest documentation:</p> <ul style="list-style-type: none"> • <i>Abnormal Condition Reporting Event Correlation & Notification, Issue 7</i> • <i>Major Outage/Co-Provider Notification Process</i> • <i>Abnormal Network Condition Resolution Color Codes</i> • <i>ANCR Job Aid</i> • <i>ANCR Overview</i> • <i>Event Correlation Overview</i> • <i>New Customer Questionnaire v17, Section 2.10</i> • <i>FAA Overview</i> • <i>Network Management Method & Procedures for FCC Reportable Events</i> • <i>911 Outage/Trouble Ticket Notifications Escalation Guidelines</i> • <i>Update ACR/LSACR with Root Cause Analysis Database</i> • <i>MCO Guide</i> • <i>Chronics Circuit Bullet Number: PB99131-1</i> • <i>Escalations for Service Assurance Bulletin Number: PB01134-1</i> • <i>Qwest Des Moines Designed Services Maintenance Center Proactive Escalations Guidelines</i> • <i>Chronic Team Responsibilities</i> • <i>Designed Services CCT Roles and Responsibility</i> • <i>Designed Services Center Chronic Team</i>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> • <i>Chronic Process</i> • <i>3CN Process</i> • <i>Checklist</i> • <i>Qwest Chronic Initiative: Salt Lake City.</i> <p>KPMG Consulting found that this documentation defines the NROC and DSC activities, policies, and procedures for notifying customers of major service affecting events. Additionally, KPMG Consulting reviewed Qwest's <i>TGSR Job Aid</i>, and found that the activities, policies, and procedures for notifying CLECs of trunking events and conditions are defined therein.</p> <p>During initial testing, KPMG Consulting determined that M&Ps for the surveillance of events and outages related to Qwest's Hi Cap demand services did not exist for the Denver, Colorado DSC. KPMG Consulting formally announced the identification of this deficiency.</p> <p>During retesting, KPMG Consulting determined that the issue was satisfactorily resolved as a result of Qwest's development of appropriate M&Ps.</p>
24.9-12	Network event notification procedures are conducted in a timely, accurate, and complete manner.	Satisfied	<p>KPMG Consulting found that network event notification procedures are conducted in a timely, accurate, and complete manner.</p> <p>KPMG Consulting observed personnel responding to various network events and providing notification via telephone. These activities were performed in accordance with practices defined in the documents listed in Test Cross-Reference 24.9-11, above.</p> <p>KPMG Consulting verified the use of the ANCR and TGSR processes by reviewing live notifications provided to the P-CLEC, and found that notification was provided in a timely manner, as events occurred.</p> <p>During initial testing, KPMG Consulting found that the NROC failed to consistently prioritize abnormal network condition reports, and formally announced the identification of this deficiency. Based on additional occurrences of the same issue, KPMG Consulting issued Exception 3065. During re-testing, KPMG Consulting determined that the coding of ANCRs was satisfactory, and subsequently closed Exception 3065. See Exception 3065 for additional information on this issue.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>KPMG Consulting also discovered that the NROC failed to consistently provide updates to abnormal network condition reports. KPMG Consulting formally announced the identification of this deficiency.</p> <p>KPMG Consulting received documentation from Qwest demonstrating that a process had been developed for changing the code of ANCRs, and that Qwest is required to communicate ANCR code changes to affected customers via email. Additionally, KPMG Consulting received and reviewed Qwest's <i>Major Outage/CLEC Notification Process</i>. A retest was performed on 11 ANCRs sent by Qwest to the P-CLEC. The interval for the reports was 10/8/01 through 10/21/01. KPMG Consulting determined that the updating of the ANCRs after issuance was satisfactory.</p> <p>Additionally, KPMG Consulting found that the NROC failed to consistently provide notification of network events to customers that had subscribed to the notification service. KPMG Consulting formally announced the identification of this deficiency.</p> <p>During retesting, KPMG Consulting found that Qwest had resolved this issue through the development of a solution for ANCR notification software. KPMG Consulting's retest included 10 ANCRs that were sent to the P-CLEC by Qwest, with satisfactory results.</p>

24.10. Test Results: ISC/Billing and Collection Center Evaluation (Test 24.10)

1.0 Description

The Interconnect Service Center (ISC)/Billing and Collection Center Support Evaluation was an operational analysis of the processes and documentation developed and employed by Qwest to support resellers and Competitive Local Exchange Carriers (CLECs) with usage and/or billing related claims, inquiries, problems and issues. The objectives of the ISC/Billing and Collection Center Support Evaluation were as follows:

- Determine completeness of the Billing Center processes, documentation and responses
- Determine whether the escalation procedure is documented, maintained, published, and followed
- Determine the completeness and functionality of procedures for measuring and tracking the Billing Center performance
- Determine the existence and functionality of procedures for projecting resource needs
- Determine the existence of reasonable security measures to ensure integrity of the Reseller and CLEC data and the ability to restrict access to parties with specific access permissions
- Determine the level of management oversight to ensure adequacy of performance results.

2.0 Method

This section summarizes the test execution method.

2.1 Business Process Description

The ISC/Billing and Collection Center (Billing Support Center) supports resellers and CLECs with billing-related questions and issues. Two centers comprise Qwest's Billing Support Center. One center is located in Des Moines, Iowa, and the other center is located in Salt Lake City, Utah. Each center is staffed with Service Delivery Coordinators (SDCs) who provide assistance to CLECs and resellers with billing and usage related inquiries, claims, and requests for resends of prior period bills. CLECs and resellers contact the Bill Support Centers through a toll-free number or an SDC direct telephone number, or via alternative methods such as email, US mail, and facsimile.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test targets were the processes and procedures employed by Qwest to support CLEC and reseller billing and usage related inquiries, claims, and requests. The evaluation measures used to assess these processes are as follows:

- **Completeness:** the completeness of Qwest's processes and procedures that exist to resolve billing inquiries, requests, and claims.

- **Consistency:** the existence of Qwest’s documented methods, procedures, and training to ensure consistency in the handling of issues.
- **Accessibility:** the accessibility of Qwest personnel, information, and user interfaces to assist with billing inquires, requests, and claims.
- **Existence:** the existence of Qwest’s management oversight to ensure that service delivery measures are met through the use of consistent operating practices, and that workforce capacity planning and security precautions are in place to address CLEC and reseller concerns.

Processes, sub-processes, and evaluation measures are summarized in the following table. The last column, “Test Cross-Reference,” indicates where the particular measures are addressed in section 3.1, “Results & Analysis.”

Table 24.10-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Respond to Billing Support Center Call	Interface with User	Availability of user interface	24.10-1-1 – 24.10-1-2, 24.10-2-2 – 24.10-2-3
	Log Call	Existence of call logs to track call statistics such as call volume, average handling time, speed of answer	24.10-1-2, 24.10-2-3
Process Billing Support Center Call	Accessibility of Information	Ability to access Reseller and CLEC records and transactions	24.10-1-1 – 24.10-1-2, 24.10-2-3
	Resolve User Question, Problem, or Issue	Completeness and consistency of process	24.10-1-1 – 24.10-1-3, 24.10-2-1
Claims	Resolve Claim	Completeness and consistency of process	24.10-1-1, 24.10-1-3 – 24.10-1-4
Monitor Status	Track Status	Existence of status tracking capability	24.10-1-2, 24.10-2-3, 24.10-3-1
	Report Status	Consistency and accessibility of status reporting	24.10-1-1, 24.10-2-3
Manage the Billing Support Center Process	Provide Management Oversight	Consistency of operating management practices	24.10-2-4, 24.10-3-1 – 24.10-3-4
	Provide Security Measures to Ensure Integrity of the Reseller and CLEC Data	Existence of security measures to restrict access to Reseller and CLEC data	24.10-3-2
Capacity Management	Work Force Planning	Existence of work force staffing model	24.10-2-4

2.4 Evaluation Methods

KPMG Consulting conducted process interviews with Qwest personnel, and performed on-site inspections of work operations to obtain data used for evaluating the Billing Support Center. Interviews took place with Qwest's Director, Team Leaders, Coaches, and SDCs responsible for managing the Billing Support Center processes, monitoring, tracking, and reporting status, and resolving claims, problems and issues. Processes, operational methods and procedures, organization charts, and supporting documentation were collected for evaluation and analysis.

Commercial CLEC feedback was solicited on the issues that they encountered in their dealings with the ISC through a CLEC problem feedback survey generated as part of Test 24.8: Interconnect Service Center (ISC) Support Review.

As directed in the *Master Test Plan* (MTP), for the purposes of this evaluation, KPMG Consulting acted in the role of pseudo-CLEC. Calls to the Billing Support Center were generated as part of the Test 20: Carrier Bill Functional Evaluation. Three calls to the Billing Support Centers were made to request clarification on issues found on invoices examined as part of Test 20. The information/clarification obtained from these Billing Support Center calls was incorporated into the Observations and Exceptions associated with Test 20. Issues that, as part of a commercial experience, would have been documented and submitted to Qwest in the form of claims and disputes, instead served as the bases for Observations and Exceptions generated as part of Test 20. Please see section 3.2 of the Test 20 Test Report for further information.

2.5 Analysis Methods

The ISC/Billing and Collection Center Support Evaluation included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Qwest OSS Evaluation. These evaluation criteria provided the framework and guidelines for the ISC/Billing and Collection Center Support Evaluation. Using data obtained, as described above, KPMG Consulting compared and evaluated the information gathered to determine whether discrete evaluation criteria were satisfied.

3.0 Results Summary

This section identifies the discrete evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and Exceptions are provided in Section II.

Table 24.10-2: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
24.10-1-1	Scope of responsibilities of the Billing Support Center is adequate to address customer inquiries.	Satisfied	<p>The scope of responsibilities of the Billing Support Center is adequate to support customer inquiries. Topical coverage includes:</p> <ul style="list-style-type: none"> • Resends of bills • Credits and adjustments • Transmission of bill media • Escalation procedures • Billing dispute management • Late payments • General inquiries. <p>Evidence of the scope of responsibilities of the Billing Support Center is documented in Qwest's Wholesale Billing Operations Organizational Overview (organization chart) and Billing SDC Roles and Responsibilities.</p>
24.10-1-2	Process includes procedures to acknowledge and track CLEC requests.	Satisfied	<p>Procedures are in place that provide SDCs with instructions for handling customer requests, including:</p> <ul style="list-style-type: none"> • Procedures to acknowledge requests within 10 days of receipt • Redundant tracking vehicles to ensure that customer requests are monitored. Tracking vehicles include: <ul style="list-style-type: none"> • The "Notes" section of both the Customer Records Information System (CRIS) and Integrated Access Billing System (IABS) billing user interfaces are used to keep track of customer requests • Folders, maintained by SDCs, containing requests that are organized by individual customers • A tracking spreadsheet that lists the status of all customer requests • A Dispute Maintenance Conversation (DISM) database, used to track disputes. <p>Evidence of the existence and use of these procedures was gathered during observations made by KPMG Consulting</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>personnel, and during our reviews of supporting documentation. Evidence of adherence to this process included observations and reviews of historical documentation, such as Qwest's Dispute-Wholesale Procedures, and the SDC Dispute Tracking Spreadsheet.</p>
24.10-1-3	<p>Process includes procedures for resolving inquiries and claims in a timely¹⁸⁸ manner.</p>	Satisfied	<p>Qwest processes exist for resolving inquiries and claims in a timely manner. Qwest's target for resolution of a claim is 30 days; complex claims may take more than 30 days.</p> <p>For a claim that is not resolved within 30 days, a CLEC is provided with the status of the claim, and a new commitment date for its disposition. (See Evaluation Criterion 24.10-2-1 for an evaluation of escalation procedures.)</p> <p>Procedures addressing the resolution of claims are documented in Qwest's Disputes-Wholesale Procedures. Evidence of the age of pending claims is documented in the Wholesale Division Status Report.</p>
24.10-1-4	<p>Process includes procedures for closure of claims.</p>	Satisfied	<p>As part of the claim closure process, Qwest representatives execute the following steps:</p> <ul style="list-style-type: none"> • Actions that were taken to investigate, update, or close a claim are recorded in the "Notes" section of the CRIS and IABS user interfaces • Upon closure, reviews of individual cases may be obtained by a Coach, Team Leader, or the Director • SDCs send a resolution letter to the inquiring CLEC • The inquiring customer is notified by telephone, email, US mail, or facsimile to ensure that he/she is aware of the claim's final resolution. <p>Documentation of this process is contained in Qwest's Disputes-</p>

¹⁸⁸ Timeliness is not intended to imply that KPMG Consulting submitted transactions for the purpose of obtaining performance metrics results for this evaluation measure. Rather, for this operational evaluation, the criterion was established to evaluate whether or not controls are in place to see that inquiries and claims are resolved in a timely manner.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>Wholesale Procedures. Supporting documentation, reviewed by KPMG Consulting, includes historical claims, written dispute investigation procedures, a report of open and closed disputes summarized in the Performance Improvement Tracking Tool (PITT) database in both the IABS and CRIS billing systems, and a sample claim resolution letter.</p> <p>Onsite visits to verify and observe process steps were conducted to evaluate the claim closure procedure. Hard copies of historical claims were reviewed against documented processes for both IABS and CRIS. In these instances, KPMG Consulting found the processes to be thorough and followed.</p>
24.10-2-1	Escalation procedures are defined.	Satisfied	<p>A wholesale customer can escalate issues by following the escalation process that is published at the following Web sites: http://www.qwest.com/wholesale/clecs/cris.html or http://www.qwest.com/wholesale/clecs/iabs.html.</p>
24.10-2-2	Customers can readily initiate a claim or query.	Satisfied	<p>A CLEC initiates a query by calling a SDC direct telephone number or the toll-free number shown on its bill, or via U.S. mail, overnight mail, email, or fax. Claims must be submitted in writing, and must contain the following information: customer name, contact name, telephone number, address, bill dates on which disputed items appear, Bill Account Number, reason(s) for dispute of item(s), and Service Order number and completion date, if applicable.</p> <p>Evidence of adherence to this process included observation of a SDC answering a CLEC's telephone inquiry to the Billing Support Center located in Des Moines, Iowa.</p>
24.10-2-3	Customers can obtain information on the status of a claim or inquiry.	Satisfied	<p>Multiple methods exist for a CLEC to obtain information from Qwest on claim status.</p> <p>A CLEC may either email or call the Billing Support Center to request claim status. Claims are filed by Billing Account Number (BAN). Qwest SDCs access the claim status via the "Notes"</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>section of the CRIS or the IABS user interface, or via a claim tracking spreadsheet.</p> <p>Procedures that describe claim tracking are documented in Qwest's Disputes-Wholesale Procedures. Evidence of the existence and use of status tracking is documented in a historical example of the spreadsheet used by SDCs as a tracking vehicle for claims, which was provided to KPMG Consulting. Further evidence of adherence to this process included observation of a SDC calling a CLEC to provide status on its dispute.</p>
24.10-2-4	Business transaction volumes and resource utilization are tracked for use in the capacity planning process.	Satisfied	<p>KPMG Consulting initially found that no formal process existed to address work force capacity management. Instead, ISC personnel relied on informal, <i>ad hoc</i>, meetings between the Des Moines and Salt Lake City Billing Centers to address fluctuations in work volume.</p> <p>Furthermore, no formal process existed that encompassed tracking current and historical work volume, commitment intervals, production work time requirements, and market growth factors for the purpose of developing forecasts of future work volume. As a result of these deficiencies, KPMG Consulting issued Exception 3056.</p> <p>Qwest subsequently provided examples of inputs, reports, and tracking tools utilized in the formal work force capacity management process detailed in The Wholesale Service Delivery – Billing Employee Performance and Workforce Capacity Management Process and Procedure. Examples of process inputs and tools used to track business transaction volumes and resource utilization include the Monthly/Quarterly Production Reports, the Monthly Division Status Report, and the Monthly Billing Transaction Cost Report.</p> <p>KPMG Consulting's analysis of the formal process documentation, and the associated inputs and reports provided to us by Qwest, allowed KPMG Consulting to conclude that Qwest has in place a formal process to address work force</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>capacity management in the Billing Support Center.</p> <p>See Exception 3056 for additional information on this issue. Exception 3056 is closed.</p>
24.10-3-1	Process includes procedures for management reporting.	Satisfied	<p>Qwest management uses multiple reports to monitor workflow. In addition to reports used by SDCs to manage and resolve customer issues, management reports are used to measure performance, and to identify trends. These reports include:</p> <ul style="list-style-type: none"> • <i>Division Wholesale Status Report – Product-specific Carrier Billing and Collection Reports</i> • <i>Wholesale Service Delivery Results Reports – Trending Reports</i> • <i>New Customer Center Assignment Report</i> • <i>Resale Account Assignment Tracking Summary</i> • <i>Resale Team Summary Production Report.</i>
24.10-3-2	Process includes procedures for maintaining security and integrity of customer data.	Satisfied	<p>Qwest employs procedures for maintaining security to ensure integrity of customer data. These procedures and measures include:</p> <ul style="list-style-type: none"> • Employees are required to follow a Code of Conduct that outlines Qwest's policies for protecting customer data • Employees at the Qwest Billing Support Center utilize keycards for access to these facilities • Internal systems are password-protected for the security of customer data. An authorized user is required to log off at the end of each day, and must lock his or her workstation when leaving it unattended • Electronic files are stored in mainframe files, which can only be accessed by an authorized user. Paper files are stored at individual workstations in file cabinets, which are locked after regular work hours.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<ul style="list-style-type: none"> Evidence of adherence to these security procedures included KPMG Consulting observations of Qwest Billing Support Center personnel using security badges to enter the facilities, and entering passwords to access systems applications.
24.10-3-3	Performance measures are defined, measured, and reviewed.	Satisfied	<p>Qwest defines performance objectives for resolving customer disputes and answering customer questions. The performance of Billing Support Center personnel is measured and reviewed against those objectives. Qwest also evaluates Billing Support Center staff annually, based on individual performance, using appraisal forms.</p> <p>Quarterly performance reviews are also conducted with SDCs. SDC performance against objectives is evaluated for categories that include:</p> <ul style="list-style-type: none"> Number of disputes processed Number of service orders issued Number of Summary Bills evaluated. <p>Evidence of the existence of, and measurement against, performance measures is found in Qwest's documentation. Applicable sections include a description of the performance evaluation procedure and measures, and a description of the procedure for the evaluation of staff and managers. KPMG Consulting reviewed Qwest's Resale Account Tracking Assignment spreadsheet and its Production Report. Evidence found in these documents demonstrates that the performance measurement process is followed.</p>
24.10-3-4	Training of representatives is defined, documented, and followed.	Unable to Determine	<p>Qwest's training curriculum for representatives exists and is documented. A list of available courses is posted on the Qwest Wholesale Markets Training and Development Web site. Suggested training paths and corresponding curricula are arranged by job title. Training paths outline critical skills and education that an employee needs for a particular job title or position. The Web</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>site also contains a course catalog that lists Qwest's entire training curriculum. A specific path is defined and can be reviewed for each level of the organization (i.e., SDC training path and Coach training path).</p> <p>Qwest established an Organizational Assessment Training Committee to identify specific training needs, and to identify resources that are required to provide that training.</p> <p>KPMG Consulting examined information on this topic in Qwest's documentation on staff training, Qwest's SDC training manual, and a screen print that lists available training paths.</p> <p>KPMG Consulting was able to verify the existence of Qwest's process. However, since this process is performed only when events require such action to be taken, and KPMG Consulting observed none of those such events, KPMG Consulting was unable to observe and determine whether or not Qwest adheres to the process.</p>