CO-PROVIDER Maintenance & Repair –X.25 Joint Implementation Agreement

1 Introduction

1.1 Principal Parties

1.1.1 QWEST

QWEST is referred to as the Agent.

1.1.2 CO-PROVIDER

CO-PROVIDER is referred to as the Manager.

1.2 Purpose of Document

This Joint Implementation Agreement (JIA) outlines the information to be exchanged as part of the mechanized Electronic Bonding (EB) interface for Trouble Administration and Maintenance between CO-PROVIDER and QWEST. Both parties agree to work in good faith towards a successful implementation. This document is not a contract, but rather a letter of understanding between the two companies. This document not only outlines the responsibilities of both companies, but also details the attributes that will be supported, the business functions that will be allowed, and issues concerning security, support, and fallback at initial deployment.

This JIA is based on the ANSI T1M1.5 227/228 1995 standards for Trouble Administration for the electronic exchange of information between CO-PROVIDER (Manager) and QWEST (Agent) and T1.262-1998 for Service Test Function.

CO-PROVIDER and QWEST will establish change control procedures to modify this document as necessary.

1.3 Scope of Document

The scope of this JIA is the Maintenance and Repair functions supporting POTS (Plain Old Telephone Service) Resale, Unbundled Network Loop Elements and Unbundled Network Switch Elements for residential and business service in QWEST's 14 state territory.

This document describes the following:
- Responsibilities of both companies
- Attributes that will be supported
- Business functions that will be allowed
- Issues concerning security, support, and fallback for the initial implementation
- Managed Object Conformance Statements tables (MOCS)

1.4 Summary of Changes

This section is a summary of changes referenced in Appendix E, JIA Change Control Log, excluding administrative changes.

1.5 Implementation of Agreement

1.5.1 Documentation

All agreements between CO-PROVIDER and QWEST denoting changes to the JIA must be documented and approved to provide an accurate record of JIA development.

Meeting minutes should be produced for every face-to-face meeting and formal conference call between the groups. The minutes should include the attendees, agenda, points of discussion, decisions, changes, and formal action items with due dates and responsible parties. The minutes should be distributed to the managers and team leaders of the development groups and the account representatives of both groups. Before the meeting begins, a person should be appointed to take the minutes for the group.

1.5.2 Channels of Communication

Principal points of contact for liaison and for distribution and sharing of minutes, issues, inquiries, and responses within the respective teams will be as follows:

CO-PROVIDER	QWEST

When possible, use of electronic mail is the preferred distribution method to enable speedy and widespread distribution among the respective teams. FAX is the preferred alternative when e-mail communications are not available or if there is an urgent need for distribution that e-mail cannot accommodate. Official requests, inquiries, and responses should be followed by written copy via U. S. Mail.

Besides formal meetings, informal discussion involving respective subject matter experts will occur from time to time as deemed appropriate between the respective parties. Subsequently, relevant decisions will be shared with the principal contacts for distribution within the teams as necessary.

1.5.3 Status Reviews

Tracking status of the schedule and major milestones against a jointly agreed upon implementation Gantt chart will be performed outside this JIA document. The respective project managers and principal points of contact will be responsible for updated schedule and timeline status, and meet on a weekly basis for the duration of the testing period or as needed by the teams. Following the testing period, the teams will meet

on an as-needed basis. These meetings will communicate progress, identify roadblocks, and propose resolutions on a going-forward basis.

A joint negotiation and approval process will be used to manage changes to schedules as proposed by either party. One party will give sufficient advance notice to the other party to allow adequate time for analysis and recommendations.

1.6   Change Control

Either party can initiate a request to implement new or changed system requirements for future deployment releases in the JIA. Changes to the JIA will be made in accordance with the agreed upon change control procedures described in the following sections.

Evaluation of the changes to the JIA and actions required to implement the changes are the responsibility of the affected party and are not addressed in this procedure.

1.6.1   Publications and Documents

1.6.1.1 Issue of Document

After all identified organizations have agreed to and signed off on this document, this JIA will be baselined and all further changes to this document will be made in accordance with the agreed upon change control procedures.

1.6.1.2 Reissue of Document

This entire document will be reissued after the approval of five (5) non-administrative changes to the document, or whenever agreed to by both parties. All of the approved changes will be incorporated into the reissued document and will be identified by revision marks (change "bars" in the document margin).

1.6.1.3 Change Control Coordinators

Each party that approves the JIA will have a Change Control Coordinator assigned. These coordinators are:

> CO-PROVIDER Project Manager - OSS
> CO-PROVIDER Asst Project Manager
> CO-PROVIDER Technical Manager
> QWEST Technology Systems Manager
> QWEST Project Analyst
> QWEST Technical Manager

Any Change Control Coordinator can submit a change to this document. QWEST will designate a Change Control Coordinator as the editor of this document and will be responsible for updating and distributing this document.

1.6.1.4 JIA Change Forms and Logs

Appendix D is the JIA Change Control Form for explaining, in depth, a proposed change and the reason for requesting it.

Appendix E is the JIA Change Control Log for logging proposed changes with log numbers.

Appendix F is the JIA Revision Log for tracking JIA document versions and dates of reissue. The log will allow verification of the latest document version and will be maintained by a designated Change Control Coordinator.

A summary of changes can be found in Section 1.4.

1.6.2 New Release Management

After the EB systems have been placed into a formal test procedure between the two parties, any changes to the software should follow a formal change control process. The mechanism for this process will be included in any formal joint test plan or release plan documents. This will consist of all impacts to Electronic Bonding including:

- Gateways
- Applications running on the gateways
- OSS changes that directly affect the interface
- T1M1 standards
- Network changes that directly affect the interface.

The same software release process will be used after initial deployment.

1.6.3 Process Description

Proposed changes to this document must follow the process described below. Each party will utilize their own internal change control processes for documenting and evaluating potential impacts from proposed changes (e.g., systems or process modifications). Approval of proposed changes must be agreed to by both parties. The process for working out disagreements or issues with proposed changes is outside the scope of this document.

1. The originator of the proposed change will fill out a JIA Change Control Form (Appendix D).
2. Each party will have a JIA Change Control Form Reviewer. The originator of the proposed change will have the form reviewed internally to ensure that it is correctly and completely filled out. Any discrepancies will be corrected.
3. After internal review, the originator will forward the JIA Change Control Form to their primary Change Control Coordinator, who will forward it to the designated Change Control Coordinator (editor).
4. The editor will log the proposed change into the JIA Change Control Log (Appendix E), and assign a change control log number and origination date for the proposed change. The editor will then distribute copies of the completed form to all Change Control Coordinators,
5. Each party will have a maximum of 15 business days or a mutually agreed upon interval from the origination date to evaluate and respond to the editor with an approved status, disapproved status, or with comments about the change.
6. The editor will update the status of the change in the JIA Change Control Log and notify all Change Control Coordinators of its status. The editor will also update Section 1.4, Summary of Changes.

2 Business Functions

This section defines agreements, clarifications, or exceptions for business functions, attributes, and processes.

2.1 Definition of Functions

This section defines the business transactions which are agreed will be supported via Electronic Bonding. See Appendix B, Managed Object Conformance Statements for details.

2.1.1 Create Trouble Report (Enter Trouble Report)

POTS Resale: The request to create a trouble report originates from the Manager. The Manager issues a PT-CREATE operation to create the trouble report in the Agent's OSS. The Manager is required to supply mandatory attributes as defined in TRFD 1. Once the create request is received, the Agent is required to respond through the Agent Gateway. If the Agent receives the create request and an error condition exists, the Agent will respond with the appropriate CMIP defined error message. The Agent is required to validate circuit ownership before transmitting the create response. The Agent will perform an address verification during the create process and mismatches will be indicated in the OSS. The trouble report will then be routed to the appropriate group for resolution. The Agent will perform a TSP comparison during the create process and mismatches will be indicated in the OSS. The trouble report will then be routed to the appropriate group for resolution. The Trouble Type attribute will determine if an initial MLT test is run (See Appendix I, Data Definitions and Mappings for details).

UNE: AutoTest is determined by circuit type. If the circuit is not a candidate for AutoTest, this function will not be performed.

2.1.2 Request Trouble Report Status (GET)

POTS Resale: This transaction is used by the Manager to obtain status information from the Agent about a previously entered trouble report. It can also be used to obtain values for certain other attributes in a trouble report. The Manager issues a PT-GET and the Agent will respond with either the attributes that were provided on the list or, if no attributes were provided, the Agent will return the current values of all instantiated attributes.

All the required data to respond to a customer request, PT-GET, comes from local QWEST gateway data stores. Some of the QWEST gateway data values are derived from host screens.

UNE: Same as POTS Resale.

2.1.3 Add Trouble Information (SET)

POTS Resale: A request to add information to an existing trouble report originates from the Manager. The Manager issues a PT-SET only for add/list type attributes. When the Agent receives the request, it updates the information on the trouble report. The LMOS OSS is severely limited on the attributes that it can update. Currently, only the attribute Additional Trouble Info List will be supported.

UNE: Supported according to the UNE MOCS table. See Appendix B, Managed Object Conformance Statements for MOCS table details.

2.1.4 Modify Trouble Information (SET)

POTS Resale: A request to modify information on an existing trouble report originates from the Manager. The Manager issues a PT-SET only for modifiable attributes. When the Agent receives the request, it updates the information on the trouble report. The LMOS OSS is severely limited on the attributes that it can modify. Currently, only the attribute Perceived Trouble Severity will be supported.

Commitment time will not be changed when electronically modifying a trouble report (a subsequent trouble report). If a commitment is missed, the OSS needs a new commitment to create the subsequent report. As a result, a Modify transaction will not be accepted in this case. QWEST handles this manually and negotiates a new commitment with the customer. If a commitment is missed and the Manager has requested a SET Modify, a resource limitation/processing error will be returned.

UNE: Supported according to the UNE MOCS table. See Appendix B, Managed Object Conformance Statements for MOCS table details.

2.1.5 Status Change Event Notification

POTS Resale: A status change notification (Event Notification) originates from the Agent. The Agent issues an Event Notification when the status of a trouble report changes to notify the Manager of the status change. The Agent can also issue a "no status change" Event Notification to send text messages (remarks) to the Manager. See Appendix I, Data Definitions and Mappings for status details.

UNE: Supported. See Appendix B, Managed Object Conformance Statements for MOCS table details.

2.1.6 Close Out

2.1.6.1 POTS Resale Closed Out Event Notification

POTS Resale (LMOS) trouble report closure is a two step process (Cleared and Closed). Cleared information is contained in the first event, and Closed information is contained in the second event.

2.1.6.1.1 POTS Resale Cleared Event

The Agent first sends a normal event containing Cleared state (3), or Cleared Customer Advised (CCA) status (25), the time the trouble ticket was restored (Trouble Report Status Time), and a message (Additional Trouble Status Info). The TR-Change-Denied rules will be applied after the Cleared event notification occurs (CCA).

2.1.6.1.2 POTS Resale Closed Event

The second event is a closed transaction that uses the "cleared awaiting customer verification" data structure, but it is not a verification on closeout transaction. The Agent sends the second transaction to the Manager when the trouble report is closed, and a response is not needed, expected, or waited for to continue processing. The transaction contains Closed state (4), Closed Out status (27), plus other information such as Trouble Found, Maintenance Service Charge, and Outage Duration in separate attributes. Disposition code and text, and Cause code and text (explaining what QWEST found the trouble to be and what caused the trouble) will be found in Close Out Narrative. The Agent sends the closed transaction as soon as the information is posted in its OSS, so there may be a time interval between the Cleared and Closed events. Once the Closed transaction is sent to the Manager, the object is deleted in the Agent's gateway. If the Manager sends any further transactions on this trouble ticket, the Agent will send a "no such object instance" error.

Note: There may be a time interval between the Cleared event and the Closed event. If the Manager requests status during this interval, the Cleared status information is returned. If the Manager attempts to request a PT-SET (e.g., Cancel) during this interval, the TR-Change-Denied rules will be applied.

Details of the closed transaction attributes are:

Attribute	Value	Description
ActivityDuration	ActivityType HH:MM	Zeroes
CloseOutNarr	Text	Disposition code and definition, and cause code and definition.
MaintServiceCharge	Y/N	Y = based on disposition codes 1230, 1240, 1250, 1260
OutageDuration	HH:MM	restoredTime less receivedTime
RestoredTime	GMT	Cleared time
TroubleFound	227 enumerated code value	T1.227 Trouble Found mapped to Disposition Code
TroubleReportState	4	Closed
TroubleReportStatus	27	ClosedOut
TroubleReportStatusTime	GMT	Closed (CLO) Time
AdditionalTroubleStatusInfo	Text	Closed Message "Report is closed in system and no longer electronically bonded"

2.1.6.2 UNE Closeout Process

UNE (WFA) trouble report closure is a three step process. The first event is an Agent-sent Cleared Awaiting Customer Verification Event. The second event is a Manager CloseOut Event Response. The third event is an Agent-sent Closed Event. Closed information is contained in the CloseOut Request event while the second Agent event is a normal Event Notification with closed status.

2.1.6.2.1 UNE Cleared/Cleared Awaiting Customer Verification Event

A Cleared Event Notification from WFA for UNEs is an OSS request to Close a Trouble Ticket. The same attributes are returned as in the POTS ClosedOut Event, but the State and Status are returned with Cleared and ClearedAwaitingCustVerification values (3/26). The ActivityDuration attribute contains all of the NoAccess periods (total) and the data structures for Dispatch and DelayedMaintenance (which will be zero). The CloseOutNarrative is a text message from the OSS (WFA) technician and does not correlate to any mapped definition. The MaintenanceServiceCharge relates mainly to whether or not Dispatch charges

will apply. The OutageDuration is the total elapsed time minus the ActivityDuration total. The TroubleFound code does not correlate to any mapped definition.

Details of the cleared transaction attributes (containing closed information) are:

Attribute	Value	Description
ActivityDuration	ActivityType DD:HH:MM	For No Access, accumulated data. For Delayed Maintenance and Dispatch, zeroes.
CloseOutNarr	Text	Technician-entered close out summary.
MaintServiceCharge	Y/N	Primarily based on dispatch.
OutageDuration	DD:HH:MM	Elapsed Time less activityDuration
RestoredTime	GMT	Technician-entered cleared time (Technician may back date).
TroubleFound	227 enumerated code value	T1.227 Trouble Found
TroubleReportState	3	Cleared
TroubleReportStatus	26	ClearedAwaitingCustomerVerification
TroubleReportStatusTime	GMT	ClearedTime
AdditionalTroubleStatusInfo	Text	Cleared Message "Cleared Awaiting Customer Verification"

2.1.6.2.2 Manager Responses to the UNE Cleared Event

The CloseOut Request from WFA requires a Manager Response. Once the CloseOut Event is confirmed by the Manager's Gateway, a 24 hour timer is started in the QWEST Gateway. If no response is received for the CloseOut Request, then the Trouble Ticket will be closed automatically. A normal CloseOut Response (Set/CloseOut) will Verify, Dispute the Closeout data, or Deny that the trouble has been fixed:

- A Verify response will trigger the QWEST process to automatically close the Trouble Ticket.
- A Dispute response sends an RMA (Request for Manual Assistance message) to the Work Center with the reason (Closeout Narrative or ActivityDuration) and the Trouble Ticket will close in 90 minutes.
- A Deny response will expire the 24 hour timer and put the Trouble Ticket back into open/active status and will generate an RMA.

2.1.6.2.3 UNE Closed Event

A Closed Event Notification will be sent when the Trouble Ticket is Closed in WFA, whether it is due to a Set/Closeout or is Closed manually by the WFA technician. This is a normal Event Notification returning TR State, Status, StatusTime, StatusInfo (4, 27, ClosedTime GMT, Closed message). This is also the Event in the QWEST Gateway that triggers the deletion of the Trouble Ticket object from the QWEST Gateway.

2.1.7 Cancel Trouble Report

POTS Resale: A request to cancel a trouble report originates from the Manager. The Manager issues a PT-SET and the Agent is required to respond. This response is an echo back to the Manager of the information the Manager sent. The Agent will screen the trouble report to determine where the trouble report is in the trouble resolution process. The Agent will either send the trouble report to a closeout process if no work is in progress on the trouble report, or the Agent will complete the work in progress on the trouble report in its current trouble state until it can be closed appropriately. In the latter case, billing charges may apply.

UNE: Same as POTS Resale.

2.1.8   Request MLT Test (Service Test Function)

POTS Resale: A request for an MLT test originates from the Manager. The Manager issues an M-ACTION. Once the test request is received, the Agent is required to respond through the Agent Gateway. If the Agent receives the test request and an error condition exists, the Agent will respond with the appropriate CMIP defined error message. The Agent is required to validate circuit ownership before transmitting the test request. Qwest has implemented LOOP test only.
UNE: Not available.

2.2   Attribute Implementation Definition

The complete listing of all attributes that have been identified as part of initial deployment, and the method for handling the attributes by QWEST are identified in Appendix A, Attribute Definitions. Exceptions are noted in Appendix B, Managed Object Conformance Statements (MOCS).

Although all the attributes listed in Appendix B have been implemented, in some instances there is limited behavior or no behavior in the QWEST OSS due to OSS limitations.

2.3   Initial Implementation Exceptions

This section defines attribute and process exceptions which will not be supported via Electronic Bonding. Exceptions are due to limitations in the current OSS.

2.3.1   Attributes

POTS Resale: The following attributes are not supported or are partially supported upon initial creation of a trouble report via Electronic Bonding:

- activityDuration
- additionalTroubleInfoList
- aLocationAccessHours
- aLocationAccessPerson
- authorizationList
- committmentTimeRequest
- custTroubleTicketNumber
- escalationList
- managedObjectAccessHours
- troubleReportStatusWindow

The only attributes fully supported or partially supported upon modification of a trouble report via Electronic Bonding are:

- additionalTroubleInfoList   (partially supported)
- perceivedTroubleSeverity

See Appendix A, Attribute Definitions and Appendix B, Managed Object Conformance Statements for full details.

UNE: The following attributes are not supported or are partially supported upon initial creation of a trouble report via Electronic Bonding:

- calledNumber

2.3.2   Manual Processes

The processes listed below are manual processes because the attributes relating to these processes are not supported via Electronic Bonding:

2.3.2.1 Authorization

POTS Resale: POTS troubles do not support authorization requests electronically. The attribute authorizationList will not be implemented at initial deployment with the assumption that authorization to dispatch is granted. Access hour restrictions will require manual processing. See Section 2.3.2.3 Scheduled Dispatch for further details.

UNE: Fully supported.

2.3.2.2 Escalation

POTS Resale: POTS troubles do not support escalation requests electronically. Escalation requests must be made manually and are handled manually through the life of the trouble report.

UNE: Fully supported.

2.3.2.3 Scheduled Dispatch

POTS Resale: Upon initial deployment, all dispatches requiring coordination will be handled manually.

UNE: N/A

2.3.2.4 Modifications to Trouble Reports

POTS Resale: Upon initial deployment, modifications to attributes other than perceivedTroubleSeverity and additionalTroubleInfoList will be handled manually.

UNE: Fully supported. See Appendix B, Managed Object Conformance Statements for MOCS table details.

2.4   Critical Attributes for Flow-Through

The following table lists the critical attributes for the business processes. It will be used to determine if the trouble report received achieves current flow-through:

Attribute	Why Critical	Valid Data
additional Trouble Info List	QWEST requests a description of the problem and any additional information further defining the trouble to aid trouble resolution (current process). QWEST needs information explaining environmental or physical conditions, or special circumstances that may affect resolution of the trouble. POTS Resale: In the case of a life threatening situation in Idaho, CO-PROVIDER must send information describing the situation. In the case of a hunt group trouble, CO-PROVIDER must describe the problem. UNE: Fully supported.	Valid text giving a good description of the problem (in addition to the trouble type) and any important additional information that CO-PROVIDER has gathered during their trouble isolation with the end-user of the service. For example, dangerous animal in yard, see neighbor next door, or hearing impaired customer. POTS Resale: For a life threatening situation in Idaho, describe the situation, for example, line down in street, open pit in yard, or medical emergency. For series or multi-line hunting, add text describing the type of trouble and any important additional information. For wrong PIC, list both the current (wrong) PIC and what the correct PIC is. CO-PROVIDER must identify both PICs. Only the first 47 characters are guaranteed to be displayed in LMOS. UNE: 255 characters per transaction.
a Location Access Address	POTS Resale and UNE: QWEST verifies the premises address (current process) to ensure correct dispatches. If CO-PROVIDER does not send this information, incorrect dispatches and charges may result.	POTS Resale and UNE: Valid end-user premises street address.
a Location Access Hours	POTS Resale: Currently, QWEST is not able to process this information in LMOS. However, QWEST	POTS Resale: Standard week mask syntax.

Attribute	Why Critical	Valid Data
	expects CO-PROVIDER to send valid data in case this can be used in the future. UNE: Fully supported. NoAccess rules will apply.	 UNE: Standard week mask syntax.
a Location Access Person	POTS Resale: Currently, QWEST is not able to process this information in LMOS because the manager Contact Person is used instead. However, QWEST expects CO-PROVIDER to send valid data in case this can be used in the future. UNE: Fully supported.	POTS Resale: Valid individual or center name and valid phone number. UNE: Valid individual or center name and valid phone number.
called Number	POTS Resale: QWEST verifies the number being called if this is relevant to the trouble being reported. If CO-PROVIDER does not send valid data, QWEST cannot respond appropriately and it may impact trouble resolution. UNE: N/A	POTS Resale: Valid phone number. UNE: N/A
Managed Object Instance	POTS Resale: QWEST expects the line in trouble to be identified correctly to aid trouble resolution (current process). UNE: QWEST expects the circuit in trouble to be identified correctly to aid trouble resolution (current process).	POTS Resale: TN, for example, 3031234567 or TN plus TER, for example 3031234567TER12345 UNE: See Appendix L, Managed Object Instance Formats for valid unbundled loop and unbundled switch circuit formats.
manager Contact Person	POTS Resale and UNE: QWEST needs contact name and phone number to prevent further service delays when a telephone call must be made to CO-PROVIDER. If CO-PROVIDER does not send valid data, QWEST cannot respond appropriately and it may impact outage duration.	POTS Resale and UNE: Valid individual or center name and valid phone number. Not VRU info.
Perceived Trouble Severity	POTS Resale:	POTS Resale:

Attribute	Why Critical	Valid Data
	QWEST requests information about the trouble severity to select commitment time (current process). If CO-PROVIDER does not send valid data, QWEST defaults the commitment time based on trouble Type. UNE: See Appendix B, Managed Object Conformance Statements for MOCS table details.	Standard values UNE: Standard values
Preferred Priority	POTS Resale: QWEST receives "life threatening" value for Idaho lines and denotes this in the LMOS Narrative to identify to the flow-through process that immediate attention should be given to this trouble ticket. If CO-PROVIDER does not send this value, QWEST cannot respond appropriately. UNE: See Appendix B, Managed Object Conformance Statements for MOCS table details.	POTS Resale: Standard values UNE: Standard values
repeat Report	POTS Resale: QWEST verifies recent service order activity (current process). QWEST receives "recent installation" or "repeat and recent installation" value and denotes this in the LMOS Narrative for the flow-through process. If there has been recent activity and CO-PROVIDER does not send one of these values, QWEST cannot ensure correct dispatches. In the case of a chronic report, CO-PROVIDER sends "chronic" value. QWEST denotes this in the LMOS Narrative for the flow-through process. UNE: N/A	POTS Resale: For recent service order activity, "recent installation" (1) or "both installation and repeat" (3) value. For chronic reports, "chronic" (4) value. UNE: N/A
Trouble Clearance Person	POTS Resale and UNE: QWEST needs clearance name and phone number to identify who within CO-PROVIDER has	POTS Resale and UNE: Valid individual or center name and valid phone number.

Attribute	Why Critical	Valid Data
	requested cancellation of a trouble ticket (current process).	
Trouble Type	POTS Resale and UNE: QWEST uses trouble Type to derive values necessary to determine line in use, routing, and flow-through. If CO-PROVIDER sends a trouble Type that is inappropriate for the type of service, the create transaction will fail.	POTS Resale and UNE: Standard values per the non-applicable (invalid) trouble type lists. See Appendix I, Data Definitions and Mappings for details.
		POTS Resale: For series or multi-line hunting when exact TN or TER in trouble is known, use the specific trouble type for the situation, if it can be identified. If the type of trouble cannot be identified, use 1118 for Hunting Not Working.
		For series or multi-line hunting when exact TN or TER in trouble is not known, always use 1118 for Hunting Not Working.
tsp Priority	POTS Resale: QWEST uses the tsp maintenance value in the LMOS Line Record to identify to the flow-through process that immediate attention should be given to this trouble ticket. CO-PROVIDER must provide the tsp maintenance value, if applicable, so QWEST can verify the Line Record and ensure proper routing and immediate trouble resolution. UNE: Not critical. Mismatches will be logged in WFA/C.	POTS Resale and UNE: Valid tsp maintenance value.

2.5 Error Conditions

POTS Resale and UNE: The following ANSI standard T1.227 error messages will be part of the initial deployment:

- 7.3.1 Trouble Report Already Exists - If a trouble report is already open in the QWEST OSS, the error Trouble Report Already Exists will be returned.

- 7.3.2 Fall Back Reporting - A trouble report will not be created and an error message will be returned indicating the fall back error, using the ECIC approved list*. See Appendix C, Fallback Error Conditions for further details.
- 7.3.4 Trouble Report Must Be Present Attributes Missing - This error message will be returned to the manager by the agent when the manager fails to provide all required attributes identified as mandatory.
- 7.3.6 Trouble Report Change Denied - This error message is sent to the manager when the manager attempts to change a trouble report which is not in an appropriate state to accept the change, for example, when the trouble report is in the cleared state.

*   Changes to fall back reporting must be agreed to by all Managers before implementation by the Agent. QWEST, as the Agent, will determine the changeover date for fall back error updates.

UNE only:
- 7.3.5 Cannot Verify or Deny At This Time – This error will be returned if a SET CloseOut is submitted by the Manager and the trouble report is not in a Cleared Awaiting Customer Verification status.

Some error conditions that have been identified as part of initial deployment for POTS Resale or for UNEs are identified in Appendix C, Fallback Error Conditions. All other error conditions that are defined in the standards can be accepted.

The following CMIP Transaction Errors will be part of the initial deployment for POTS Resale and for UNEs:

- No Such Object Instance - The value of the superior object instance is not recognized (-104).
- Resource Limitation - Processing failure (-103).
- Access Denied - This is an association error due to invalid Account or Network (-101).
- Invalid Parameter/Invalid Value - Invalid or incomplete data required for transaction (-102). This error will be returned for invalid trouble types.
- Missing Attribute - This error is returned due to dependencies (-106).

The following CMIP Transaction Errors will be part of the initial deployment for POTS Resale Service Test Function:

- MistypedTestCategoryInformation – An invalid test type was specified in the request (260).
- NoSuchMort – The phone number sent in on the request can't be found in the service provider's database (263).
- Access Denied - This is an association error due to invalid Account or Network (-101).
- MORTNotAvailable – The MLT test system is not available (261).
- TroubleRepairInProgress – A test request was issued for a phone number that has an open trouble ticket or a pending test request (283).

3 Communication Protocol

3.1 Protocol Profile

Qwest utilizes the OSI reference model consisting of the X.25 transmission protocol for layers one through three, and for layers three through seven the agent application (SMASE) is accessed via the Vertel CMIP/OSI stack (version 1.0).

Co-Provider has and will continue to participate in the Electronic Communication Implementation Committee (ECIC) and will support proposals made by the committee. CMIP over X.25 is supported.

The following list characterizes communication between CO-PROVIDER and the agents.
- Dedicated T1 Circuits between Manager and Agent.
- Interconnection of X.25 networks is supported
- Gateway to Gateway communications are over a seven layer OSI stack.
- Connections using TCP/IP will conform to Internet RFC 1006 "ISO Transport Service on top of the TCP".
- The objects exchanged between gateways are defined in ANSI T1M1.5 T1.227-1995.
- The services supported between gateways are defined in ANSI T1M1.5 T1.228-1995.

Time between the gateways must be maintained within plus or minus two minutes using the National Institute for Standards and Technology (NIST) clock in Boulder, Colorado to support the security policies.

3.2 Access Topology
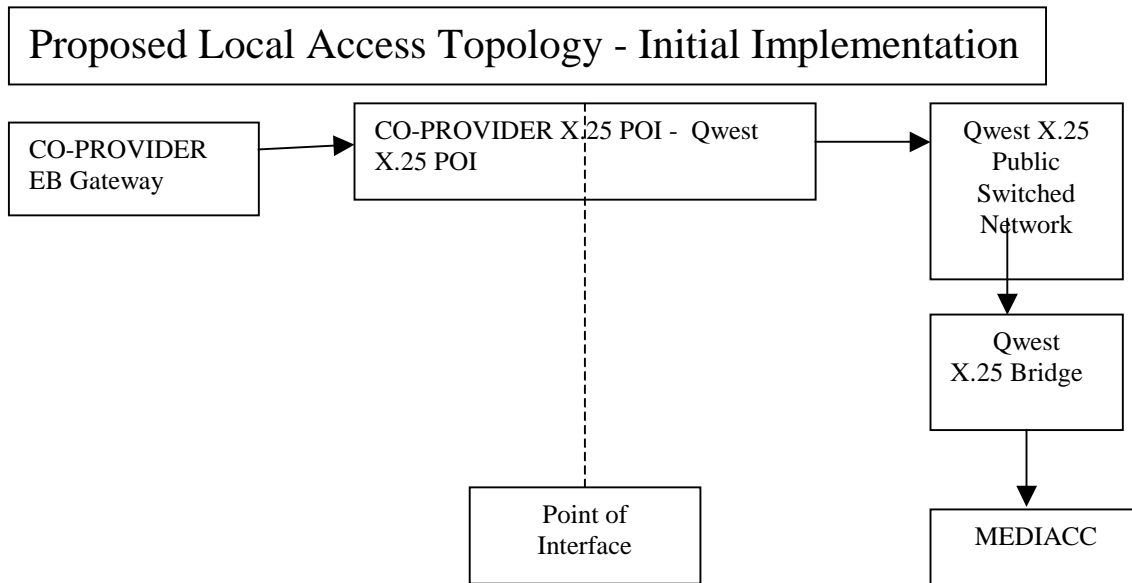
Figure 1 Connections Between CO-PROVIDER Local and Qwest

Logical connectivity is offered as illustrated in Figure 1 Connections between CO-PROVIDER Local and Qwest. Descriptions of the components and configurations are referenced throughout the remaining sections of this document.

3.3 CMIP/OSI Implementation Definition

3.3.1 Access

The Qwest gateway and associated services can only be accessed through an X.25 packet switching network. Such access is established via Qwest's DIGIPAC X.25 packet switch service, which requires a Closed User Group (CUG) for security

CO-PROVIDER connects to Qwest via the X.25 switched network which is managed by DIGIPAC. DIGIPAC resolves all translation, routing, and security issues. Connectivity is achieved through a dedicated line terminating at the CO-PROVIDER POI in the Qwest Data Center in Omaha, NE.

In the case of recovery from a failed status, see Electronic Recovery in Section 6, Recovery Procedures.

3.3.2 Security

Detailed specifications for making the necessary connections with DIGIPAC are provided in the following document:
Qwest DIGIPAC Service Interface Specifications for Public Packet Switching Network, Qwest, Technical Publication 77359.

3.3.3 Connectivity

CO-PROVIDER is responsible for all charges incurred in the transmission of communications packets to the Point of Interface (POI) with the Qwest X.25 Public Switch Network Qwest is responsible for all charges incurred in the transmission of data from that location to the Qwest GATEWAY system. The POI is the specific location where connectivity is obtained to DIGIPAC network.

3.4 Transport Layer

The TP4 transmission class is the only support level that will be supported for X.25. Does not apply to TCP/IP.

3.5 Manager/Agent Entity

Each Manager or Agent that requires a unique destination due to business function, load, version control, or security, shall identify itself by a unique Entity Id. Each Entity Id shall have a unique X.25 network address (NSAP) or IP Address or, if on the same host, shall have unique SAPs (TSAP, SSAP, PSAP)

3.5.1 Manager Entity

Each Manager Entity requires a unique OSI destination to assure the correct routing of all Requests and Event Notifications. If multiple Managers are running on the same Server and use the same Network address (NSAP) or IP address, then the upper layer Selectors/SAPs shall be sufficiently unique to route to the correct Manager. If each Manager runs on its own Server, then the Network address shall be unique. All Account Ids under each Manager shall contain only alpha-numerics, e.g. no special characters such as dashes ("-").

3.5.2 Agent Entity

Each Agent Entity requires a unique OSI destination to assure the correct routing of all Requests and Event Notifications. If multiple Agents are running on the same Server and use the same Network address (NSAP), then the upper layer Selectors/SAPs shall be sufficiently unique to route to the correct Agent. If each Agent runs on its own Server, then the Network address shall be unique.

4 Security

4.1 QWEST/CO-PROVIDER Responsibilities

Each company is responsible for ensuring that only authorized users have access to the host systems and gateways to the other company. Refer to T1.254-1997.

4.2 Association Mechanism

CO-PROVIDER shall use two independent Manager Entities, one for CO-PROVIDER Carrier Access Services and one for CO-PROVIDER Local Resale. Each Manager Entity shall have OSI Selectors/SAPs sufficiently unique to allow for independent Associations for each Manager and independent CMIP Request and Event Notification routing. Each Manager Entity will use a set of 1000 Encrypted Keys which shall be provided by the Agent.

Each CO-PROVIDER Manager Entity shall have the ability to Abort or Release association without disrupting the business processes of the other Manager. The QWEST Agent shall allow each CO-PROVIDER Manager Entity to conduct business processes independently of the other Manager.

Access control encryption will be performed using DES CBC.

All association requests will require the current valid key and be within a 2 minute window.

4.3 Login/Key Assignment Process

QWEST will be the generator of the keys for Trouble Administration. The keys must be odd parity, 8 character ASCII keys. Keys will be sent either on floppy disc via cerified mail or by ftp to/from secure sites.

The peer-to-peer entity authentication process requires the use of an encryption key. The encryption keys shall be unique for each Manager Entity Id.

There will be two sets of keys provided by QWEST with 1000 keys in a set. Both sets of keys that are generated shall be numbered, and thus identified, from 1 to 1000. Keys shall be referenced by their key identifier (sequence number). Subsequent key sets shall be numbered consecutively in increasing order as a continuation of numbering of the previous list. Every key shall have a unique keyIdentifier.

A backup list of 1000 keys shall be kept on hand by both CO-PROVIDER and QWEST for use when the primary list has been exhausted or compromised. After 70 percent (700 keys) of a set has been used, or after one year has transpired, which ever comes first, QWEST shall generate and provide CO-PROVIDER with a new list of 1000 keys.

It is the responsibility of the manager to request the change of the current key on a regular basis. The ECIC Security Requirement suggests that a key will not be used for a period exceeding four days. QWEST standards state that a given key shall not be used for a period to exceed 30 days.

The accessControl notation, as specified by ECIC, supports electronic key changes. The change request is made by the manager to expire the current key and increment by one to the next key. When the current key is changed, the old key shall be considered expired.

5 Performance

5.1 Response Time

The Response Time is measured from the time that the QWEST Gateway receives a transaction request from the CO-PROVIDER Gateway at the QWEST Gateway to the time that the transaction leaves the QWEST Gateway. 95% of Manager requests will be completed within 2 minutes.

Due to the problem of a surging load, QWEST requests that CO-PROVIDER maintain a tuneable timer in the CO-PROVIDER gateway to prevent unnecessary timing out of trouble report transactions. Initially, QWEST requests that this tuneable timer be set no lower than three minutes.

5.2 Reliability

Reliability is the percent of successful accurate messages transmitted. Due to OSS limitations, the QWEST target will only be 98%. Failed transactions include any messages that were unsuccessful or inaccurate due to hardware, software, or communication link failures. Not included are valid T1M1.5 errors, e.g., 7.3.1 TTR Already Exists, 7.3.2 Fallback Reporting, or methods and procedures type errors, e.g., TR Change Denied, Cannot Verify or Deny. Typical "f" values would be incurred for time-outs, and invalid invokeID. Formula for end to end reliability measurement:

$R = 1 - (f/a)$ where

f = the number of failures (i.e. the number of failed transactions)
a = the number of attempts

5.3 Availability

The communications networks will be operational 24 hours per day, seven days a week. The individual QWEST Gateway, QWEST OSS, CO-PROVIDER Gateway, CO-PROVIDER OSS maintenance downtimes will be specified below:

CO-PROVIDER Gateway:
CO-PROVIDER will give QWEST adequate notice, that is, 48 hours notice when downtime is scheduled and how long the downtime will be.

CO-PROVIDER OSS:
CO-PROVIDER will give QWEST adequate notice, that is, 48 hours notice when downtime is scheduled and how long the downtime will be.

QWEST Gateway:
All regions (Central, Eastern, Western):
23:00 Saturday through 05:00 Sunday - Local Time in all Regions

LMOS:
Central Region - AZ, CO, ID, MT, NM, UT, WY (Mountain Time)
00:15 to 01:15 (daily maintenance window)

Eastern Region - IA, NE, MN, ND, SD (Central Time)

00:15 to 01:15 (daily maintenance window)

Western Region - OR, WA (Pacific Time)
00:15 to 01:15 (daily maintenance window)

WFA/C:

Central Region - AZ, CO, ID, MT, NM, UT, WY (Mountain Time)
03:00 to 04:00 Monday through Saturday
22:00 Saturday through 06:00 Sunday

Eastern Region - IA, NE, MN, ND, SD (Central Time)
03:00 to 04:00 Monday through Saturday
22:00 Saturday through 06:00 Sunday

Western Region - OR, WA (Pacific Time)
03:00 to 04:00 Monday through Saturday
22:00 Saturday through 06:00 Sunday

5.4 Throughput

The QWEST EB Agent will accept a maximum of 20 outstanding Manager requests, and the requests are multi-tasked. QWEST is required to respond to these requests within 2 minutes. There is one QWEST Agent process running in the Gateway. All Manager requests are routed through the one Agent. Therefore, the maximum number of open requests must be 12 or less if the 2 minute window is adhered to.

5.5 Performance Reports

The object of Performance Reporting will be to track the Electronic Bonding reconciled data, i.e., Clean Ticket Rate (CTR) and Successful Referral Rate (SRR). CO-PROVIDER and QWEST jointly agree to meet every two weeks in a Production Support meeting to discuss performance and other production issues.

Clean Ticket Rate - The rate of trouble tickets which lost Electronic Bonding due to processing errors and could not recover during the life of that ticket compared to the total tickets worked on during the weekly period.

Successful Referral Rate - The rate of successful referrals compared to attempted referrals including all errors except for fallback errors and resource limitation during scheduled downtime.

6 Recovery Procedures

6.1 Off-Nominal Status

6.1.1 QWEST Process

Off-Nominal Status is an error state in which the software/hardware is capable of recovery on its own. Transaction errors may occur, but no intervention is required. The QWEST EB Single Point of Contact/Service Center will not contact CO-PROVIDER.

6.1.2 CO-PROVIDER Process

Co-Provider will treat this error state on an instance at a time basis. If an activity returns an error response or no response, Co-Provider will attempt to resend the transaction. If the subsequent transaction also returns an error response, Co-Provider will handle the activity manually. If an error response indicates a correctable activity, Co-Provider will provide the correction and resend. If a correction to the error is uncertain, Co-Provider will contact the Qwest EB Single Point of Contact/Service Center for clarification of the error response.

6.2 Degraded Status

6.2.1 QWEST Process

Degraded Status is an error state in which some intervention is required to recover. The most common examples would be the loss of a link to an OSS Region (e.g., Eastern LMOS), an executable is in a suspended state that can only recover by stopping and restarting, or reestablishing the link with a different Manager requires stopping and restarting the Agent. The steps that must be taken will determine if CO-PROVIDER or any other Manager needs to be contacted. Expected time for complete recovery is less than 60 minutes. In the case of OSS link loss, if the outage exceeds 60 minutes, CO-PROVIDER will be contacted by the QWEST EB Single Point of Contact/Service Center but continuation of activities in other regions is expected.

6.2.2 CO-PROVIDER Process

Co-Provider will treat this error state on an instance at a time basis. If an activity returns an error response or no response, Co-Provider will attempt to resend the transaction. If the subsequent transaction also returns an error response, Co-Provider will handle the activity manually. If the rate of the error response exceeds **5%** or persist for more than 60 minutes, Co-Provider will contact the Qwest EB Single Point of Contact/Service Center for clarification of the error response.

6.3 Failed Status

6.3.1 QWEST Process

Failed Status is a condition where it is determined that the link to all Managers and OSS must be broken to prevent data corruption or serious EB TA process failures. These errors would include network failure to the OSS, erratic TCP/IP performance, database server failure, substantial hardware failure, or major Data Center outage. If association is lost for more than 60 minutes, the QWEST EB Single Point of Contact/Service Center will contact CO-PROVIDER with an estimated time to recovery when available.

6.3.2 CO-PROVIDER Process

A Failed Status condition is indicated by the loss of the association with QWEST. CO-PROVIDER personnel will investigate losses of association that occur outside of QWEST maintenance downtimes. If the association cannot be resumed by CO-PROVIDER personnel, the QWEST Single Point of Contact will be contacted.

6.4 Electronic Recovery

6.4.1 QWEST Process

It is to the advantage of both the Managers and Agents to maintain the electronic data flow for the life of an EB ticket. Minor errors (Off-Nominal Status) should be overcome, and data flow should continue as before without the need for any manual intervention or manual communication between the Managers and Agents. Each EB ticket shall remain electronically bonded.

If disassociation occurs, all Work Center RMA (Request for Manual Assistance) screens receive a "Link Down" message for every Manager that disassociates. A QWEST Work Center technician may use manual Methods and Procedures until the association is reestablished.

During Failed Status or if the link to an OSS is lost, the OSS queues the Event Notifications until the QWEST EB Gateway reestablishes the OSS link and processes the OSS messages (this will not be done until association with all Managers is reestablished). If CO-PROVIDER does not request reassociation within 30 minutes of recovery, CO-PROVIDER will be contacted. If CO-PROVIDER aborts, Event Notifications may be lost.

Recovery from a Failed Status may result in the loss of a circuit or an EB server. Recovery from this may require changing the IP address and possibly require a new NSAP.

Failed Status could result in the permanent loss of data flow on existing EB tickets. Once association is reestablished, communication between Managers and Agents may be needed to assess the need for manual intervention to fully recover to a Nominal Status.

6.4.2 Manual to Electronic Recovery

POTS Resale: If a trouble report is created manually, it remains manual for the life of the trouble report until a mechanism to convert the report to an electronic report is available.

UNE: If trouble is detected on QWEST equipment, or if a Manager calls in a trouble report (usually due to a Gateway disruption), a Work Center Technician may manually enter a trouble ticket into the appropriate OSS region.

If a Manager submits a request to open a trouble ticket on QWEST equipment that has had a trouble ticket opened manually, the QWEST Gateway (MEDIACC) will convert the trouble ticket to Electronic Bonded status (manual to electronic conversion).

The response returned on the Create request is a TR_Already_Exists error, but the trouble ticket is built up in the QWEST Gateway and it is expected that the normal Work Center EB processes will be followed from that point on (authorization/closeout requests and responses, text messages, Status Changes, Set Modify, etc.). The Manager can submit a GET Request to obtain the most current data.

6.4.3 Co-Provider Process

When a link is re-established, Co-Provider should utilize a supplemental process. Co-Provider should send a GET status transaction on all bonded trouble reports. Any no such object error response from Qwest would be treated as a closed trouble report and close out details would have to be pursued manually. When a failed link is established, all UNE trouble reports created manually will be resubmitted to Qwest electronically for late bonding. If response is a trouble report already exists, Co-Provider will submit a GET request to obtain the most current data.

6.5 EB Single Point Of Contact

In order to manage technical contact between QWEST and CO-PROVIDER, an EB single point of contact is needed. For QWEST, the EB single point of contact resides in the Salt Lake City Service Center and can be reached at _____. For Co-Provider, the EB single point of contact resides in _____. Please ask the Co-Provider representative for the "duty" supervisor or "on call" supervisor.

7 Testing

7.1 Overview

This JIA authorizes a joint Test Plan Development Team to be formed to work the details of the specific test cases for each test phase and to construct the joint Test Schedule. This JIA requires that a mutually agreed to Test Plan containing Test Cases and Scenarios be documented prior to the commencement of any testing of a specific test phase by the two parties. Additionally, each test phase, such as Stack-to-Stack testing, is to be accompanied with a formal set of Entrance and Exit Criteria. The time frame for the creation of the Test Plan is identified in the JIA Schedule section. Service Test Function testing shall be based on ECIC Trouble Administration Test Cases for ANSI T1.262-1998 Testing Standard Application.

The different types of testing that need to be performed are specified below:

7.2 Stack-to-Stack Testing

Stack to Stack testing is only required if a new server is introduced, if new TCP/IP circuitry is provisioned, or if a new Data Center is introduced for the EB Gateway. If an upgrade to an operating system plus the turn-up of CO-PROVIDER Local occurs concurrently, a Stack-to-Stack test will be required. The Stack level to test is TCP/IP or X.25 packet data at the Network Level. Both sides must conduct Connect and Server requests by the use of Network Utility Software, the use of Manager/Agent Application Software to establish an Association may be requested by either party.

7.3 Conformance Testing

Conformance testing is an internal testing requirement and should be conducted according to the *ECIC Trouble Administration Testing Specification*.

7.4 Interoperability Testing

Interoperability testing consists of:

1. Gateway to Gateway
2. End-to-End
3. Network Validation Testing (NVT)
4. Operational Readiness Testing (ORT)

7.4.1 Gateway-to-Gateway Testing

The Gateway-to-Gateway interoperability testing verifies that the two OSI gateways can communicate the TA application successfully. The test plans that cover the Gateway-to-Gateway testing scenarios will be jointly developed between CO-PROVIDER and QWEST. The use of simulators or test platforms behind the associated interface is permitted.

Gateway-to-Gateway testing is the validation of the basic business functions: Association (including Security), Create, Get, Set (Add-Modify), Set Cancel, Set Closeout, and Event Notifications.

7.4.2 End-to-End Testing

The End-to-End interoperability testing verifies that the TA application information can be successfully exchanged between CO-PROVIDER and QWEST. The End-to-End interoperability testing involves the laboratory versions of the CO-PROVIDER OSS and the QWEST OSS communicating through the CO-PROVIDER Gateway and the QWEST Gateway. The test plans that cover the End-to-End testing scenarios will be jointly developed between CO-PROVIDER and QWEST. End-to-End exit criteria will include the completion of a Load and Soak test. The use of simulators is not permitted. Test platforms that are copies of Production systems may be used.

7.4.3 Network Validation Testing

The Network Validation Testing (NVT) verifies that there is connectivity in the Production Environment between the CO-PROVIDER OSS - QWEST OSS (CO-PROVIDER OSS - CO-PROVIDER Gateway, CO-PROVIDER Gateway - QWEST Gateway, QWEST Gateway - QWEST OSS). Communications can be verified by bringing up the association and performing sanity testing. Participants in Sunny Day testing may include Software Testers and Work Center personnel. Verification of EB functionality can be done by creating a test ticket to verify referral (create), status, and closure to the ticket. NVT exit criteria can be used as a Quality Gate for entrance into Operational Readiness Testing (ORT). The test plans that cover NVT will be jointly developed between CO-PROVIDER and QWEST.

7.4.4 Operational Readiness Testing (ORT)

The Operational Readiness Test (ORT) verifies EB functionality in the Production Environment between CO-PROVIDER and a QWEST Work Center. Sunny Day scenarios will include End-to-End validation of commonplace transactions between CO-PROVIDER personnel and QWEST technicians. For example, these scenarios will utilize the Referral (create), Modify, Event Notification, and Closeout functions. ORT exit criteria can be used as a Quality Gate for entrance into production. The test plans that cover ORT will be jointly developed between CO-PROVIDER and QWEST.

7.5 Phased Deployment/Controlled Introduction (CI)

The Phased Deployment/CI is a controlled production environment to trial the Maintenance and Repair process on real trouble reports. The purpose of the Phased Deployment/CI is to validate the following in a controlled production environment:
- User Requirements
- End-to-End Functionality
- Work Center Methods and Procedures
- Operations Procedures
- Process Validation
- Business Case Metrics
- Data Quality
- Measures of Success
- Production Support Procedures

- System Security Requirements

The criteria for the Phased Deployment/CI will be covered in a jointly developed Phased Deployment/CI plan.

8   Schedule

8.1   *Joint Development Schedule*

Maintenance and Repair gateway functionality will be delivered in accordance with a mutually agreeable schedule that will be defined in this section. This mutually agreeable schedule will be determined within sixty (60) days of the signing of this document by both parties.

If both companies jointly agree, as a test phase is successfully completed according to the exit criteria, the next planned test phase may begin as soon as possible. A minimum of five weeks for Phased Deployment/CI is recommended.

Cut over to production will be scheduled around QWEST minimal change periods. For 2000 the minimal change periods are: May 20 - June 4 and August 26 - September 10
QWEST/CO-PROVIDER Joint Implementation Schedule of Activities:

Task Name	Beginning Date	End Date
Planning		
Build Test Plans and Test Cases	TBD	TBD
• Build Test Plan	TBD	TBD
• Build Test Cases	TBD	TBD
Lab-to-Lab		
Stack-to-Stack Testing	TBD	TBD
Event Routing Testing	TBD	TBD
Gateway-to-Gateway Testing	TBD	TBD
End-to-End Testing including Long Distance Regression Testing	TBD	TBD
• POTS Resale Testing	TBD	TBD
• POTS Resale Business Scenario Testing	TBD	TBD
• POTS Resale Soak Testing	TBD	TBD
• Unbundled Loop Testing	TBD	TBD
• Unbundled Switch Testing – part 1	TBD	TBD
• Unbundled Switch Testing – part 2	TBD	TBD
Production Environment		
NVT/ORT	TBD	TBD
Service Test Function Test Cases	TBD	TBD

* The timeframe for NVT/ORT testing and building a test plan and test cases from the CO-PROVIDER Test Cases document for this testing must be jointly negotiated outside this JIA document.

9   Other

9.1   T1.227 Implementation Levels

9.1.1   Name Binding

QWEST currently has Name Binding in production at the T1.227 - 1992 Standard.

9.1.2   Repeat Report

QWEST will support the 1995 T1M1 Standard for the extensions to the Repeat Report attribute.

10 Appendix A. Attribute Definitions

This section includes the Definition for POTS and UNEs for Initial Deployment for each attribute, which will be used by QWEST for its development and initial deployment. See Qwest MEDIACC Mapping Documents for WFAC and LMOS for details.

10.1 A Location Access Address

Definition for POTS for Initial Deployment: The street address received from the Manager is compared against the QWEST street address contained in the host system. If key components of the two addresses are different, the trouble report is created and the street address mismatch is flagged in the host system. Additionally, QWEST will implement a systematic process to prohibit trouble report creation by Manager if a Manager sends substantial amounts of incorrect information causing incorrect dispatches until the condition is corrected.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.2 A Location Access Hours

Definition for POTS for Initial Deployment: QWEST requires a week mask with current day set to a valid value and hours defaulted to between 0:00 and 23:59. QWEST will disregard any A Location Access Hours provided by the Manager and assume the default values of current day and 0:00-23:59 for hours. The current OSS generated commitment time based on the current service condition (Affecting Service or Out of Service) is returned. Arranging premises access due to access restrictions is a manual process.

Definition for UNEs for Initial Deployment: QWEST OSS limitation of three days, one access interval per day. Time is specified in the customer's (end user's) local time based on the customer's address.

10.3 A Location Access Person

Definition for POTS for Initial Deployment: Not supported due to business process agreements and OSS limitations. The Manager's contact information will be used in the QWEST OSS as primary customer contact per agreement.

Definition for UNEs for Initial Deployment: QWEST supports Name (20 characters) and telephone number (10 digits).

10.4 Activity Duration

Definition for POTS for Initial Deployment: Not supported. This attribute is not applicable for POTS.

Definition for UNEs for Initial Deployment: Fully supported. Summation of No Access intervals. This value is returned when the trouble report is cleared.

10.5 Additional Trouble Information List

Definition for POTS for Initial Deployment: There is an OSS field size limitation of 102 characters for this attribute. QWEST reserves the first 55 characters to populate information derived from attributes sent by the Manager in the host on a Create. QWEST stores 47 characters from the Manager in the host on a Create. The QWEST and Manager information is separated by a delimiter. QWEST uses the aLocationAccessAddress, managedObjectInstance, preferredPriority, repeatReport, troubleType, and tspPriority attributes to derive the information that is stored in its 55 characters. The information sent by the Manager in this attribute should not repeat information derived by QWEST from these Manager supplied attributes but further describe the trouble using QWEST's standard abbreviations, where applicable. (See Appendix I, Data Definitions and Mappings for details.) If the Manager sends the attribute preferredPriority with a value of "life threatening," then the Manager also is required to send further information about the situation in Additional Trouble Information List, for Idaho lines. If an add or modify is performed, the new Manager information will overlay the old Manager information.

Definition for UNEs for Initial Deployment: QWEST supports 255 characters per transaction. Anything greater than 255 characters is truncated without causing the transaction to fail.

10.6 Additional Trouble Status Information

Definition for POTS for Initial Deployment: For all status changes, a text message describing the status change is returned in this attribute. If the status change is due to the initial MLT test, the VER code and VER code definition (a number and the associated text description) are returned. If the Agent sends a text message (remarks) to the Manager, then the text message is returned in this attribute. (See Appendix I, Data Definitions and Mappings for details.)

Definition for UNEs for Initial Deployment: QWEST supports up to 255 characters.

10.7 Agent Contact Person

Definition for POTS for Initial Deployment: The responsible QWEST Work Center name and phone number are returned when the trouble report is created.

Definition for UNEs for Initial Deployment: Same as for POTS Resale.

10.8 Authorization List

Definition for POTS for Initial Deployment: Not supported. This attribute is not applicable for POTS.

Definition for UNEs for Initial Deployment: Fully supported for After Hours Repair, Test, Dispatch, No Access, and Delayed Maintenance for request, approve, and deny. QWEST maps the Manager's Release Authorization to Test Authorization.

10.9 Called Number

Definition for POTS for Initial Deployment: This attribute is stored in a specific host field.

Definition for UNEs for Initial Deployment: Not supported.

10.10 Cancel Requested By Manager

Definition for POTS for Initial Deployment: A specific host message is logged in the host system, so the technician can close/cancel the trouble report as appropriate.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.11 Close Out Narrative

Definition for POTS for Initial Deployment: The disposition code (a number) and its associated text description, and the cause code (a number) and its associated text description entered when the trouble report is closed are returned.

Definition for UNEs for Initial Deployment: The text description entered by a technician when the trouble report is cleared is returned. There is no mapping of this text.

10.12 Close Out Verification

POTS: implemented, but not supported by LMOS host.

Definition for UNE: The Agent has cleared the trouble and requests permission to close the open trouble report.

10.13 Commitment Time

Definition for POTS for Initial Deployment: The OSS generated commitment time based on the current service condition is returned when the trouble report is created. This attribute is not modifiable beyond the create response.

Definition for UNEs for Initial Deployment: The OSS generated Objective Time.

10.14 Commitment Time Request

Definition for POTS for Initial Deployment: Not supported.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.15 Customer Trouble Ticket Number

Definition for POTS for Initial Deployment: Not supported.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.16 Escalation List

Definition for POTS for Initial Deployment: Not supported.

Definition for UNEs for Initial Deployment: Fully supported.

10.17 Maintenance Service Charge

Definition for POTS for Initial Deployment: The disposition code entered when the trouble report is closed is used to set the Maintenance Service Charge, which is then returned. (See Appendix I, Data Definitions and Mappings for details.)

Definition for UNEs for Initial Deployment: The value is set to either Yes or No by the technician when the trouble report is cleared. There is no mapping of this value.

10.18 Managed Object Access Hours

Definition for POTS for Initial Deployment: Not supported. This attribute is not applicable for POTS. QWEST believes this is not an issue because currently a technician monitors a line to see if the line is in use. Work is not performed until the line is not in use.

Definition for UNEs for Initial Deployment: QWEST OSS limitation of three days, one access interval per day.

10.19 Managed Object Instance

Definition for POTS for Initial Deployment: This is the QWEST circuit ID, facility ID or telephone number. This attribute is the key element used by the host system when resolving the trouble report.

Definition for UNEs for Initial Deployment: This is the Network ID:Account ID:Circuit ID or Trouble Report ID.

10.20 Manager Contact Person

Definition for POTS for Initial Deployment: The manager contact name and phone number are stored in specific host fields as primary customer contact.

Definition for UNEs for Initial Deployment: QWEST supports Name (20 characters) and telephone number (18 characters).

10.21 Managed Object Referring to Test

Definition for POTS Resale Initial Deployment: MORT is the Qwest telephone number. This attribute identifies the managed object instance(s) which identifies the resource being or to be tested. This parameter is mandatory in all notifications concerning the test invocation when the parameter is also used in the test initiation request.

10.22 Outage Duration

Definition for POTS for Initial Deployment: Since Activity Duration (no access or delayed maintenance) is not applicable for POTS, Outage Duration is calculated as the amount of time between when the trouble report is cleared (Restored Time) and the trouble report Received Time. This value is returned when the trouble report is closed.

Definition for UNEs for Initial Deployment: Restored Time minus Received Time minus Activity Duration. This value is returned when the trouble report is cleared.

10.23 Perceived Trouble Severity

Definition for POTS for Initial Deployment: This information is stored in the host system. If a modify is performed, the severity can only be raised, not lowered. If it was originally set to Affecting Service, then it can be modified to Out of Service. If it was originally set to Out of Service, then it cannot be modified.

Definition for UNEs for Initial Deployment: Out of Service is set to Yes or No in the OSS.

10.24 Preferred Priority

Definition for POTS for Initial Deployment: The Manager is required to send Preferred Priority to indicate a "life threatening" situation for Idaho lines. This information is stored in the host system.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.25 Received Time

Definition for POTS for Initial Deployment: The QWEST host system generates the value of this attribute, which is returned when the trouble report is created.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.26 Repeat Report

Definition for POTS for Initial Deployment: Repeat Report is used to derive if there is recent service order activity, defined to be activity within the last seven days, based on the values of Recent Installation (1) or Repeat and Recent Installation (3). If there is recent service order activity, this information is stored in the host. Repeat Report is also used to derive if there is a chronic trouble report situation based on the Chronic value (4) and this information is stored in the host. Repeat Report is not used to indicate a repeat report because this information resides in the host system.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.27 Restored Time

Definition for POTS for Initial Deployment: The value of this attribute is entered in the host system when the trouble report is cleared.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.28 Trouble Clearance Person

Definition for POTS for Initial Deployment: The person name and phone number are stored in the trouble report in the host during cancellation of a trouble report.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.29 Trouble Found

Definition for POTS for Initial Deployment: The disposition code entered when the trouble report is closed is mapped to a T1.227 standard Trouble Found code. Trouble Found is returned when the trouble report is closed. (See Appendix I, Data Definitions and Mappings for details.)

Definition for UNEs for Initial Deployment: The WFA/C trouble found code entered when the trouble report is cleared is mapped to a T1.227 standard Trouble Found code. (See Appendix I, Data Definitions and Mappings for details.)

10.30 Trouble Report Format Object Pointer

Definition for POTS for Initial Deployment: This field refers to the Trouble Report Format that applies to the definition for the CREATE transaction. TRFD 1 is the format in use.

Definition for UNEs for Initial Deployment: TRFD 1 and TRFD 2 are the formats in use.

10.31 Trouble Report Identifier

Definition for POTS for Initial Deployment: The QWEST Trouble Report Identifier that is generated by the host system is returned when the trouble report is created.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.32 Trouble Report State

Definition for POTS for Initial Deployment: Values of Open/Active, Deferred, Cleared, and Closed are supported by the host system.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.33 Trouble Report Status

Definition for POTS for Initial Deployment: Host statuses will be mapped to the T1.227 statuses. (See Appendix I, Data Definitions and Mappings for details.)

Definition for UNEs for Initial Deployment: Same as POTS Resale. (See Appendix I, Data Definitions and Mappings for details.)

10.34 Trouble Report Status Time

Definition for POTS for Initial Deployment: The QWEST host system generates the value of this attribute.

Definition for UNEs for Initial Deployment: Same as POTS Resale.

10.35 Trouble Report Status Window

Definition for POTS for Initial Deployment: Not supported.

Definition for UNEs for Initial Deployment: Stored in the OSS.

10.36 Trouble Type

Definition for POTS for Initial Deployment: Host fields have been identified to store this attribute. QWEST has identified specific trouble types that will indicate Line In Use to prohibit the initial test. Additionally, QWEST has identified specific trouble types that are not applicable trouble types for Local Resale (POTS). In this case, QWEST will not create an electronic trouble report for these trouble types and will return an Invalid Attribute Value error. (See Appendix I, Data Definitions and Mappings for details.)

Definition for UNEs for Initial Deployment: Stored in the OSS. QWEST has identified specific trouble types that are not applicable trouble types for UNEs. In this case, QWEST will not create an electronic trouble report for these trouble types and will return an Invalid Attribute Value error.

10.37 TSP Priority

Definition for POTS for Initial Deployment: The TSP Priority received from the Manager is compared against the QWEST TSP Priority contained in the host system. If the two values are different, the TSP value sent by the Manager is stored in the host and this trouble report is flagged for manual screening.

Definition for UNEs for Initial Deployment: Stored in the OSS.

11 Appendix B. Managed Object Conformance Statements (MOCS)

This section includes the MOCS tables which will be used by QWEST for its development and initial deployment.

POTS Resale MOCS Table for Initial Deployment

Attribute	Create		Get		Set Add/Mod		Set/Cancel		Events	
	Man	Agt	Man	Agt	Man	Agt	Man	Agt	Man	Agt
ActivityDuration	P	D	O	NR	P	N/A	P	N/A	N/A	C
AdditionalTroubleInfoList	M*	NR	O	NR	O*	NR	O	NR	N/A	P
AdditionalTroubleStatusInfo	P	M	O	NR	P	N/A	P	N/A	NR	E
AgentContactPerson	P	M*	O	NR	P	N/A	P	N/A	N/A	P
ALocationAccessAddress	M	NR	O	NR	O	NB	P	N/A	N/A	P
ALocationAccessHours	M*	NR	O	NR	O	NB	P	N/A	N/A	P
ALocationAccessPerson	M	NB	O	NR	O	NB	P	N/A	N/A	P
AuthorizationList	M	NB	O	NR	O	NB	P	N/A	N/A	N/A
CalledNumber	O	NR	I	NR	O	NB	P	N/A	N/A	P
CancelRequestedByManager	P	D	O	NR	P	N/A	M	NR	N/A	P
CloseOutNarr	P	D	O	NR	P	N/A	P	N/A	NR	C
CommitmentTime	P	M	O	NR	P	N/A	P	N/A	N/A	N/A
CommitmentTimeRequest	O	NB	I	NR	O	NB	P	N/A	N/A	P
CustTroubleTikNum	M	NB	O	NR	P	N/A	P	N/A	N/A	P
EscalationList	M	NB	O	NR	O	NB	P	N/A	N/A	N/A
MaintServiceCharge	P	D	O	NR	P	N/A	P	N/A	NR	C
ManagedObjectAccessHours	M*	NR	O	NR	O	NB	P	N/A	N/A	P
ManagedObjectInstance	M	M	O	NR	P	P	P	N/A	N/A	P
ManagerContactPerson	M	NR	O	NR	O	NB	P	N/A	N/A	P
OutageDuration	P	D	O	NR	P	N/A	P	N/A	NR	C
PerceivedTroubleSeverity	M*	NR	O	NR	O*	NR	P	N/A	N/A	P
PreferredPriority	O*	NR	O	NR	O	NR	P	N/A	N/A	P
ReceivedTime	P	M	O	NR	P	N/A	P	N/A	N/A	P
RepeatReport	O*	NR	I	NR	O	NB	P	N/A	N/A	P
RestoredTime	P	D	O	NR	P	N/A	P	N/A	NR	C
TroubleClearancePerson	P	D	O	NR	P	N/A	M	NR	N/A	P
TroubleFound	P	D	O	NR	P	N/A	P	N/A	NR	C
TroubleReportFormatObjectPtr	M	NR	O	NR	P	P	P	N/A	N/A	P
TroubleReportID	P	M	O	NR	P	P	P	N/A	N/A	P
TroubleReportState	P	M	O	NR	P	N/A	P	N/A	NR	E
TroubleReportStatus	P	M	O	NR	P	N/A	P	N/A	NR	E
TroubleReportStatusTime	P	M	O	NR	P	N/A	P	N/A	NR	E
TroubleReportStatusWindow	O	NB	I	NR	O	NB	P	N/A	N/A	P
TroubleType	M	NR	O	NR	P	P	P	N/A	N/A	P
TspPriority	O	NR	O	NR	O	NB	P	N/A	N/A	P

Legend for POTS Resale MOCS Table for Initial Deployment

C	Required on ClosedOut event
D	Defaulted on Create, but may be null
E	Required on all status change events
I	Optional, if this attribute was instantiated on the Create
M	Mandatory attribute for this transaction
NB	No behavior, the attribute will be stored in the Gateway only
O	Optional for this transaction
P	Prohibited attribute for this transaction
*	Attribute requires new behavior or agreed-to implementation
NR	Normal response
N/A	Not applicable

UNE MOCS Table for Initial Deployment

Attribute	Create		Get		Set Add/Mod		Set/Cancel		Set/ Closeout		Close Out Request	Events
	Man	Agt	Man	Agt	Man	Agt	Man	Agt	Man	Agt	Agt	Agt
activityDuration	P	D	O	NR	P	N/A	P	N/A	P	N/A	M	N/A
additionalTroubleInfoList	M	NR	O	NR	O	NR	O	NR	O	NR	N/A	N/A
additionalTroubleStatusInfo	P	M	O	NR	P	N/A	P	N/A	P	N/A	E	NR
agentContactPerson	P	M	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
aLocationAccessAddress	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
aLocationAccessHours	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
aLocationAccessPerson	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
authorizationList	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	E
cancelRequestedByManager	P	D	O	NR	P	NR	M	NR	P	N/A	N/A	N/A
closeOutNarr	P	D	O	NR	P	NR	P	N/A	P	N/A	M	NR
closeOutVerification	P	D	O	NR	P	N/A	P	N/A	M	NR	N/A	N/A
commitmentTime	P	M	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
commitmentTimeRequest	O	NR	I	NR	O	NR	P	N/A	P	N/A	N/A	N/A
custTroubleTikNum	M	NR	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
escalationList	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	E
maintServiceCharge	P	D	O	NR	P	N/A	P	N/A	P	N/A	M	N/A
managedObjectAccessHours	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
managedObjectInstance	M	M	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
managerContactPerson	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
outageDuration	P	D	O	NR	P	N/A	P	N/A	P	N/A	M	N/A
perceivedTroubleSeverity	M	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
preferredPriority	O	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A
receivedTime	P	M	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
repeatReport	O	NR	I	NR	O	NR	P	N/A	P	N/A	N/A	N/A
restoredTime	P	D	O	NR	P	N/A	P	N/A	P	N/A	M	N/A
troubleClearancePerson	P	D	O	NR	P	NR	M	NR	M	NR	N/A	N/A
troubleFound	P	D	O	NR	P	N/A	P	N/A	P	N/A	M	N/A
troubleReportFormatObjectPtr	M	NR	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
troubleReportID	P	M	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
troubleReportState	P	M	O	NR	P	N/A	P	N/A	P	N/A	E	E
troubleReportStatus	P	M	O	NR	P	N/A	P	N/A	P	N/A	E	E
troubleReportStatusTime	P	M	O	NR	P	N/A	P	N/A	P	N/A	E	E
troubleReportStatusWindow	O	NR	I	NR	O	NR	P	N/A	P	N/A	N/A	N/A
troubleType	M	NR	O	NR	P	N/A	P	N/A	P	N/A	N/A	N/A
tspPriority	O	NR	O	NR	O	NR	P	N/A	P	N/A	N/A	N/A

Legend for UNE MOCS Table for Initial Deployment

C	Required on ClosedOut event
D	Defaulted on Create, but may be null
E	Required on all status change events, or OSS functions
I	Optional, if this attribute was instantiated on the Create
M	Mandatory attribute for this transaction
NB	No behavior, the attribute will be stored in the Gateway only
O	Optional for this transaction
P	Prohibited attribute for this transaction
*	Attribute requires new behavior or agreed-to implementation
NR	Normal response
N/A	Not applicable

12 Appendix C. Fallback Error Conditions

Fall Back Report Errors: This section lists the fall back errors which will be implemented by QWEST for its initial deployment for POTS Resale and UNEs. There are no Fallback Errors for the Service Test Function.

POTS Resale and UNEs:

Code	Error	Definition
0	Circuit Mismatch	Circuit not found or invalid circuit ID format
1	Create in progress	Create Transaction in Progress (Currently in process of creating a ticket)
2	Circuit Ownership	Invalid MCN or RSID
7	Circuit Disconnected	Circuit is not in a valid working status

UNEs:

Code	Error	Definition
6	New Service Pending	Circuit is designed and/or provisioned, but service is Not In Effect

13 Appendix D. JIA Change Control Form

JIA Change Control Form

Request Info Section

Date Requested	
Originator Organization	
Originator Name	
JIA Version	
JIA Section Number	
JIA Page Number	
Change Description	
Reason for Change	
Proposed Change Implementation Date	

Reviewer Info Section

Internal Review Date	
Reviewer Name	

Log Info Section

Log Number	
Origination Date	

Status Info Section

Response Date	
Responder Name	
Status/Comments	

14 Appendix E. JIA Change Control Log

JIA Change Control Log

Log Number	Origination Date	Originator Organization	JIA Version	Section Number	Page Number	Change Description	Response Date	Responder Name	Status/ Comments

15 Appendix F. JIA Revision Log

All revisions made to this document are listed below in chronological order. The release number of this document does not relate to the release number of the software:

JIA Revision Log

JIA Release Number	JIA Release Date
Version 1.0	10/XX/2000

16 Appendix G. EB TA Process Management

This section lists trouble isolation and trouble resolution processes.

- All trouble isolation processes will be followed by CO-PROVIDER before CO-PROVIDER sends an electronic trouble report to QWEST.

17 Appendix H. References to Other Documents

This document is intended to contain a list of all publications and release dates for all documents referenced in this Joint Implementation Agreement.

References:

T1M1.5/96-216, 5/1/96, Operations, Administration, Maintenance and Provisioning (OAM&P) - Basic extensions to Generic Network Information Model for Interfaces Between Operations Systems Across Jurisdictional Boundaries to Support a Generic Set of Management Services

ANSI T1.227 -1995, American National Standards for Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Extension to Generic Network Model for Interfaces Between Operations Systems Across Jurisdictional Boundaries to Support Fault Management - Trouble Administration

ANSI T1.228 -1995, American National Standards 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 T1.254-1997, Security

ANSI T1.262 –1998, American National Standards for Telecommunications - Operations, Administration, Maintenance, and Provisioning (OAM&P) - Services for Interfaces Between Operations Systems Across Jurisdictional Boundaries to Support Fault Management – Service Test Function

Electronic Communications Implementation Committee (ECIC) Trouble Administration (TA)
Testing Standard Application (ANSI T1.262-1998) Implementation Guidelines, ECIC Document Number: TRA/98-03

ECIC Trouble Administration Test Cases for ANSI T1.262-1998 Testing Standard Application, ECIC Document Number TCIF-ECIC-TRA-099-032

Qwest MEDIACC Mapping Document for WFAC, ver. 5.0, 10/29/1998

Qwest MEDIACC Mapping Document for LMOS, ver 5.0, 10/29/1998

ISO/IEC CMIP/OSI Standards:
     10164, parts 1-18
     10165, parts 1-7
     other supporting ISO/IEC CMIP/OSI Standards

RFC 1006

Network Validation, Negative/Duplicate, End-to-End, Load Testing, Regression Long Distance, System Test, Test Cases – CO-PROVIDER and QWEST – Electronic Bonding Local Resale – Final Draft, dated xxx("CO-PROVIDER Test Cases")

18 Appendix I. Data Definitions and Mappings

Data Definitions and Mappings for both POTS Resale and UNEs

Standard Abbreviations

ABBREVIATIONS	MEANING
AAB	ALL ACCESS BUSY
ACC	ACCESS
ADL	ADDITIONAL
ADV	ADVISED
ALCLS	ALL CALLS
ALIT	ALI (AUTOMATIC LINE TEST)
ALL ONES	GETTING ALL ONES
ALM	ALARM
ALPHS	ALL PHONES
ANA TST	ANALOG TEST LINE
ANI TMOUT	ANI TIMEOUT
APT	APARTMENT
ASAP	AS SOON AS POSSIBLE
ASW	AERIAL SERVICE WIRE
/T	AT TIMES OR INTERMITTANT
ATTN	ATTENTION
B4	BEFORE
BAD BAL	BAD BALANCE
BAD ERL	BAD ERL
BAD FREQ	DOES NOT PASS FREQ RESPONSE
BAD LVLS	LEVELS OUT OF LIMITS
BDR	BELL DOESN'T RING
BDR EXT	BELL DOES NOT RING2
BIPOL ERR	BIPOLAR VIOLATIONS
BO	BUSINESS OFFICE
BR	BELL RINGS
BRAA	BELL RINGS AFTER ANSWERED
BRCA	BELL RINGS CAN'T ANSWER
BRKN	BROKEN
BRWD	BELL RINGS WHILE DIALING
BSW	BURIED SERVICE WIRE
BUS	BUSINESS
BUSY	BUSY
BSY	ALWAYS BUSY/CANNOT BE CALLED BUSY
BSY TRIPS	RINGS THEN GOES BUSY
C/RUN CSU	CANNOT RUN TO CSU
C/RUN OSU	CANNOT RUN TO OSU
CALL RET	CALL RETURN NOT WORKING
CANCEL	CANCEL
CANT MEET	CANNOT MEET
CBC	CAN'T BE CALLED
CBDT	CAN'T BREAK DIAL TONE
CBDT	CAN'T BREAK DIAL TONE
CBH	CAN'T BE HEARD
CBR	CAN'T BE REACHED

ABBREVIATIONS	MEANING
CBS	CANNOT BE SIGNALLED
CC 700	CANNOT CALL 700
CC 800/888	CANNOT CALL 800/888
CC 900	CANNOT CALL 900
CC 911	CANNOT CALL 911
CC DA	CANNOT CALL DA
CC LD	CANNOT CALL LONG DISTANCE
CC LLD	CANNOT CALL INTERLATA TOLL
CC TRACE	CALL TRACE NOT WORKING
CCE	CUSTOMER CHECKED EQUIPMENT
CCF	CAN'T CALL FORWARD
CCO	CAN'T CALL OUT
CD	COMPLETION DATE
CF	CALL FORWARDING
CFBL	CALL FORWARDING BUSY LINE
CFDA	CALL FORWARDING DON'T ANSWER
CFWN	CALL FORWARDING WRONG NUMBER
CH	CAN'T HEAR
CHK	CHECK
CHNG	CHANGE
CID	CALLER ID
CKD	CIRCUIT DEAD/DEAD AT CIRCUIT
CKT DOWN	CIRCUIT DOWN
CKT FAIL	FAILING CIRCUIT
CKT SZD	SEIZURE ON CIRCUIT
CL BLK	CALL BLOCKING NOT WORKING
CL RET BLK	CALLER RETURN BLOCK NOT WORKING
CL XFER	CALL TRANSFER PROBLEM
CLB4	CALL BEFORE
CLD	CALLED
CLICKING	CLICKING
CLIPPING	CLIPPING
CLR	CALLER
CNTX	CENTREX
COMM	COMMITMENT
CONV	CONVERSATION
CPH	CALLING PARTY HOLD
CPIW	CUSTOMER PROVIDED INSIDE WIRE
CPU	CALL PICK UP
CR	CALL REJECT
CRC	CAN'T RELEASE CIRCUIT
CRDA	CANNOT RECEIVE DATA
CRT	CATHODE RAY TUBE
CSDA	CANNOT SEND DATA
CSO	CANNOT SIGNAL
CUT CABLE	CUT CABLE
CUT OFF	CUT OFF
CW	CALL WAITING
CWD	CALL WAITING DELUXE

ABBREVIATIONS	MEANING
CXX	NEW OR ADDING INFORMATION
2DY	TODAY
DAMAGE	DAMAGE
DATA EQUIP	DATA EQUIPMENT
DATA SET	DATA SET
DD	DUE DATE
DEAD PC	CANNOT ACTIVATE PC
DEL	DELAY
DIAL BLK	REPEAT DIAL BLOCK NOT WORKING
DIE	DISCONNECT IN ERROR
DIG TST	DIGITAL TEST LINE
DISC	DISCONNECT
DISP	DISPATCH
DISTANT	DISTANT
DL TMOUT	PARTIAL DIAL TIMEOUT
DMARC	DEMARCATION POINT
DROP OUTS	DROPOUTS
DT	DIAL TONE
DTAD	DIAL TONE AFTER DIALING
DTWT	DIAL TONE WHILE TALKING
ECO	ECHO
EQUIP	EQUIPMENT
ERR	ERRORS
EST	ESTIMATE
ETIR	EVERY TIME IT RAINS
EXT	EXTENSION
FAC ALM	FACILITY ALARM
FADE IN/OUT	FADES IN AND OUT
FADES	FADING
FEAT	FEATURES
FEAT BRK	CUSTOM CALL FEATURES DO NOT WORK
FLS PULSE	FALSE KEY PULSE
FRI	FRIDAY
FRM ERR	FRAME ERRORS
FRM ERR/H	FRAME ERRORS HICAP
FRM SLPS	FRAME SLIPS
FSR	FALSE RINGS
FST BSY	FAST BUSY
GBI	GETS BUSY IN
GCO	GETS CUT OFF
GRBL	GARBLED
GRBL DATA	GARBLED DATA
GRND	GROUND
GRND HUM	GROUND HUM
GWN	GETS WRONG NUMBER
HAE	HARMONIC DISTORTION
HAZARD	HAZARD
HI ROLL	HIGH END ROLLOFF
HI/DRY	HIGH AND DRY

ABBREVIATIONS	MEANING
HICAPDOWN	HICAP DOWN
HID	HIGH DISTORTION
HIL	HIGH LEVELS
HIS	HISTORICAL REPORTS
HITS	MULTIPLE SHORT DURATION HIT
HOL	HOLLOW
HOOL	HEARS OTHERS ON LINE
HOT LVL	HOT LEVELS
HTG	HUNTING
HUM ON LN	HUM ON LINE
HUNG UP	HUNG UP
IMP NSY	IMPULSE NOISE
IN FAIL	HIGH RATE INCOMPLETE INCOMING
IN LPBK	CIRCUIT IN LOOPBACK
IN OK	INCOMING OK
INF	INFORMATION
INFO	INFORMATION
INSP	INSPECT
INV DATA	INVALID DATA
IW	INSIDE WIRE
JITTER	PHASE JITTER
LBO	LIGHT BURNED OUT
LCR	LAST CALL RETURN
LD	LONG DISTANCE
LINE LOSS	LINE LOSS
LOC	LOCATION
LOL	LOW LEVELS
LONG LVL	LONG LEVELS
LOOSE JK	LOOSE JACK
LOUD	LOUD
LOW ROLL	LOW END ROLLOFF
LOW SF	LOW SF
LOW SIG	LOSS EPSCS OR SWITCHED
LTR	LOST TIME REPORT
LXD	LINE CROSSED
MEM	MEMORY
MIS PULSE	MISPLACED START PULSE
MISC	MISCELLANEOUS
MISS COMM	MISSED COMMITMENT
MKBSY	MAKE BUSY
MODEM	MODEM
MON	MONDAY
MONT CKT	MONITOR CIRCUIT
MSC	MAINTENANCE OF SERVICE CHARGE
MUT DIG	MUTILATED DIGIT GROUP
#	NUMBER
#CHG	NUMBER CHANGED
ND EQLZD	NEEDS EQUALIZED
NDT	NO DIAL TONE

ABBREVIATIONS	MEANING
NDT ORDER	NEW SERVICE NOT WORKING
NDT/T	NO DIAL TONE AT TIMES
NI	NETWORK INTERFACE
NO ANI	ANI FAILURE
NO ANSBK	NO ANSWER BACK
NO CONT	NO CONTINUITY
NO CXR	NO CARRIER
NO D CHNL	D CHANNEL DOWN
NO LPBK	NO LOOP BACK
NO NTWK	NETWORK FAILURE
NO POLL	NOT POLLING
NO PULSE	NO KEY PULSE
NO REG	NO REGISTER
NO RESP	NO RESPONSE
NO SF	NO SF
NO SYNC	LOSS OF SYNC
NRNA	NO RING NO ANSWER
NSY	NOISY
NSY EPS	NOISE EPSCS OR SWITCHED SERVICES
NSY/T	INTERMITTENT NOISE
NTR	CANNOT TRANSMIT CANNOT RECEIVE
NWNK	NO WINK START
OD	OUT OF ORDER
OG OK	OUTGOING OK
OHOP	ONLY HAS ONE PHONE
OO FRM	OUT OF FRAME
OO SPEC	OUT OF SPECIFICATION
OOS	OUT OF SERVICE
OPEN	OPEN
OPEN EPSC	OPEN EPSCS OR SWITCHED SERVICES
OPENDMARC	OPEN TO DEMARC
OUT FAIL	OUTGOING FAILURE AFTER WINK
OVERSEAS	CANNOT CALL OVERSEAS
PERM SIG	PERMANENT SIGNAL
PH	PHONE
PHYS	PHYSICAL
PLZ	PLEASE
PRC DEAD	PROCESSOR DEAD
PRN	HIGH SPEED PRINTER
PROT	PROTECTOR
PTY	PARTY
PTYLN	PARTY LINE
QTD	QUOTED
RCF	REMOTE CALL FORWARDING
REQ ASSIST	REQUEST TEST ASSIST
REQ DISP	REQUEST DISPATCH
RES	RESIDENCE
RLS	RELEASE
RLS CKTEC	RELEASE CKT REQUESTED BY EC

ABBREVIATIONS	MEANING
RLS CKTIC	RELEASE CKT REQUESTED BY IC
RLS FACEC	RELEASE FACILITY REQUESTED BY EC
RLS FACIC	RELEASE FACILITY REQUESTED BY IC
RMV	REMOVE
RNA	RING NO ANSWER
RNA CKL	CANNOT RAISE A CIRCUIT LOCATION
RNTRBL	OTHER RING TROUBLE
RO CKT	RECORDING ON CIRCUIT
ROH	RECEIVER OFF HOOK
ROL	RECORDING ON LINE OR INTERCEPT
ROUTINE	REQUEST FOR ROUTINE
RPR	REPAIR
RPT DIAL	REPEAT DIAL NOT WORKING
RPTD	REPORTED
RPTR	REPEATED REPORT
RTF	ROUTINE TEST FAILURE
RVY RPT	RECOVERY REPORT
SAT	SATURDAY
SC8/30	SPEED CALLING 8 OR 30
SFTWR ALM	SOFTWARE GROUP ALARM
SGD ERR	STATION GROUP DESIGNATION DIGIT FAILURE
SIG ERR	SIGNALING NETWORK FAILURE INCOMING
SLIP	SLIP
SLOW RESP	SLOW RESPONSE
SO	ORDER WORK
SOL	STATIC ON LINE
STAT	STATUS
STK SNDR	STUCK SENDER
STRMR	STREAMER
SUN	SUNDAY
SUP	SUPERVISION/IMPROPER SUPERVISION
SUPV	SUPERVISOR
SWITCH	SWITCH OR TRUNK RELATED
SYS	SYSTEM
T1 ERRS	DEGRADATION OF T1.5
TAG LINE	LINES NEED TAGGING
TC	TRANSFER OF CALLS
THURS	THURSDAY
TIC	TROUBLE ISOLATION CHARGE
TKT	TICKET
TN	TELEPHONE NUMBER
TRACE BLK	CALL TRACE BLOCK NOT WORKING
TRAN	TRANSMISSION
TRBL	TROUBLE
TRK BLKD	TRUNK BLOCKED FAR END
TTY	TTY SET
VIDO EQUIP	VIDEO EQUIPMENT
VM	VOICE MESSAGE
VOIC EQUIP	VOICE EQUIPMENT

ABBREVIATIONS	MEANING
3WC	THREE WAY CALLING
W/O	WITHOUT
WATS FSR	OUT WATS RINGING IN
WED	WEDNESDAY
WKG	WORKING
XFER	TRANSFER
XMD	CROSS MODULATION
XTLK	CROSS TALK
XTR DIGIT	EXTRA DIGIT
XTR PULSE	EXTRA PULSE

Data Definitions and Mappings for POTS Resale

Status

TR State	TR Status
1 (openActive)	1 (screening)
1	3 (dispatchedIn)
1	4 (dispatchedOut)
1	6 (bulkDispatchedOut)
1	9 (pendingDispatch)
2 (deferred)	13 (noAccessOther)
2	14 (startNoAccess)
2	16 (startDelayedMtce)
3 (cleared)	20 (temporaryOK)
3	25 (clearedCustAdvised)
4 (closed)	27 (closedOut)

Status Messages

State	Status	Status Message
1	1	Pending Screen
1	3	Dispatched In
1	4	Dispatched Out
1	6	Bulk Dispatched Out, Report one of several routed to a Technician
1	9	Pending Dispatch
2	13	No Access Other, Technician had no access to TELCO equipment in order to restore service
2	14	No Access Subscriber, Outside tech had no access to customer premises
2	16	Hold, Report is on hold pending further action
3	20	Temporary OK, Service is restored but is temporary
3	25	Cleared Customer Advised, Service has been restored and customer advised
4	27	Closed, Report is closed in system and no longer electronically bonded

Trouble Type to Line In Use

If the line is in use (LIU indicator is set to Y), then no initial MLT test is run. If the line is not in use, (LIU indicator is set to N), then the initial MLT test is run.

Trouble Type	TA Code	LIU
NoDialToneGroup	0100	N
NoDialTone	0101	N
SlowDialTone	0102	N
CircuitDead	0103	N
CanNotCallOutGroup	0200	N
CanNotCallOut	0201	N
CanNotBreakDialTone	0203	N
DialToneAfterDialing	0204	N
HighandDry	0205	N
CanNotRaise	0206	N
AllAccessBusy	0207	N
canNotCallOut2	0208	N
CanNotCallLongDistance	0209	N
CanNotCallOverseas	0210	N
SpeedCall	0211	N
cannotCall911	0212	N
cannotCall700	0213	N
cannotCall800/888	0214	N
cannotCall900	0215	N
CannotCallDA	0216	N
CannotCallInterLATAToll	0217	N
CanNotBeCalledGroup	0300	N
CanNotBeCalled	0301	N
CanNotBeCalledBusy	0302	N
DoNotGetCalled	0303	N
CanNotTripRing	0304	N
FalseRings	0305	N
DoNotAnswer	0306	N
ReachRecording	0307	N
CanNotRaiseAStation	0308	N
CanNotRaiseAdrop	0309	N
CanNotRaiseACircuitLocation	0310	N
RingNoAnswer	0311	N
Reorder	0312	N
AlwaysBusy	0313	N
BellDoesNotRing	0314	N
bellDoesNotRing2	0315	N
BellRingsCannotAnswer	0316	N
bellRingsAfterAnswer	0317	N
noRingNoAnswer	0318	N
otherRingTrouble	0319	N
receivesCallsForWrongNumber	0320	N
recordingOnLine	0321	N
ringsThenGoesBusy	0322	N

Trouble Type	TA Code	LIU
canNotBeHeardGroup	0400	N
canNotBeHeard	0401	N
canNotHear	0402	N
fading	0403	N
distant	0404	N
reachedWrongNumberGroup	0500	N
reachedWrongNumber	0501	N
circuitOperationGroup	0600	N
open	0601	N
falseDisconnect	0602	N
grounded	0603	N
canNotBeSignalled	0604	N
canNotSignal	0605	N
permanentSignal	0606	N
improperSupervision	0607	N
supervision	0608	N
canNotMeet	0609	N
canNotReleaseCircuit	0610	N
hungUp	0611	N
noWinkStart	0612	N
noSF	0613	N
lowSF	0614	N
noContinuity	0615	N
openToDEMARC	0617	N
noRingGenerator	0618	N
badERL	0619	N
echo	0620	N
hollow	0621	N
circuitDead	0622	N
circuitDown	0623	N
failingCircuit	0624	N
noSignal	0625	N
seizureOnCircuit	0626	N
lossEPSCSorSwitched	0627	N
monitorCircuit	0628	N
newServiceNotWorking	0629	N
openEPSCSorSwitchedServices	0630	N
otherVoiceDescribeAdditInfo	0631	N
trunkBlockedFarend	0632	N
badBalance	0633	N
highRateIncompleteIncoming	0634	N
outgoingFailureAfterWink	0635	N
cutOffsGroup	0700	N
cutOff	0701	N
noiseProblemGroup	0800	N
intermittentNoise	0801	N
noisy	0802	N
foreignTone	0803	N
clipping	0804	N

Trouble Type	TA Code	LIU
crossTalk	0805	N
staticOnLine	0806	N
groundHum	0807	N
hearsOtherOnLine	0808	N
humOnLine	0809	N
clicking	0810	N
noiseEPSCSorSwitchedServices	0811	N
levelTroublesGroup	0900	N
lowLevels	0901	N
highLevels	0902	N
longLevels	0903	N
hotLevels	0904	N
highEndRollOff	0905	N
lowEndRollOff	0906	N
needsEqualized	0907	N
lineLoss	0908	N
doesNotPassFreqResponse	0909	N
levelsOutOfLimits	0910	N
miscellaneousTroublesGroup	1000	Y
carrierDown	1002	Y
recordingOnCircuit	1010	Y
outwatsRingingIn	1012	Y
remoteAccess	1013	Y
multipleShortDurationHit	1016	Y
networkFailure	1022	Y
memoryServiceProblemGroup	1100	Y
picTrouble	1101	Y
callTransferProblem	1102	Y
callWaitingProblem	1103	Y
customCallFeature	1104	Y
threeWayCalling	1105	Y
callTraceNotWorking	1106	Y
callTraceBlockNotWorking	1107	Y
repeatDialNotWorking	1108	Y
repeatDialBlockNotWorking	1109	Y
callReturnNotWorking	1110	Y
calledReturnBlockNotWorking	1111	Y
callerIdentificationNotWorking	1112	Y
callBlockingNotWorking	1113	Y
voiceMessagingServicesProblem	1114	Y
callForwardingNotWorking	1115	Y
callForwardingBusyLineNotWorking	1116	Y
callForwardingNoAnswerNotWorking	1117	Y
huntingNotWorking	1118	Y
selectiveCallForwardingNotWorking	1119	Y
cannotSetupUniqueRingID	1120	Y
callerIDBlockNotWorkingPerLine	1121	Y
callerIDBlockNotWorkingPerCall	1122	Y
cannotRemoveBlockingOnASingleCall	1123	Y

Trouble Type	TA Code	LIU
dataTroubleGroup	1200	N
canNotReceiveData	1201	N
canNotSendData	1202	N
canNotTransmitCanNotReceive	1203	N
noReceive	1204	N
noResponse	1205	N
delay	1206	N
noCarrier	1212	N
errors	1224	N
garbledData	1225	N
invalidData	1226	N
slowResponse	1228	N
otherDataDescribeAdditInfo	1229	N
wireBrokSetBrokePoleDown	1415	Y
otherCaseGroup	1500	N
callTransferProblem	1501	Y
callWaitingProblem	1502	Y
customCallFeatureDoNotWork	1503	Y
information	1504	N
threeWayCallingProblem	1505	Y
orderWork	1506	N
recovery	1600	Y
recoveryReport	1601	Y

Disposition Code to Trouble Found

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
0110	External Components not listed below	24	Public Service Coin Set
0111	Coin/Coinless Housing	24	Public Service Coin Set
0112	Rotary/TT Dial	24	Public Service Coin Set
0114	Loud button assembly	24	Public Service Coin Set
0115	Handset/Handset cord	24	Public Service Coin Set
0117	Switch-hook/Cradle/Intl Ckt	24	Public Service Coin Set
0119	Instruction Card/Number plate	24	Public Service Coin Set
0150	Enclosure misc. components	24	Public Service Coin Set
0151	Glass	24	Public Service Coin Set
0152	Lights	24	Public Service Coin Set
0154	Shelf	24	Public Service Coin Set
0155	Enclosure	24	Public Service Coin Set
0156	Power	24	Public Service Coin Set
0158	Directory	24	Public Service Coin Set
0159	Signage	24	Public Service Coin Set
0160	Miscellaneous Assemblies	24	Public Service Coin Set
0168	TDD Unit	24	Public Service Coin Set
0170	Clean Equipment	24	Public Service Coin Set
0171	Preventive Maintenance/Routine NTF	24	Public Service Coin Set
02	**Public Segment - Applies To All Troubles Inside The Phone**		
	Set Internal/Shelf/Book		
0210	Set internal components not listed below	24	Public Service Coin Set
0211	Chassis	24	Public Service Coin Set
0212	Coin chute	24	Public Service Coin Set
0213	Escrow/Hopper/Relay Assembly	24	Public Service Coin Set
0216	Full Coin Box	24	Public Service Coin Set
0217	Signal Unit/Totalizer	24	Public Service Coin Set
0219	Validator	24	Public Service Coin Set
0231	Software/Reprogram	24	Public Service Coin Set
0232	Battery/Power/Transformer	24	Public Service Coin Set
0233	PCB (Printed Circuit Board)	24	Public Service Coin Set
0234	Card Reader Assembly	24	Public Service Coin Set
0237	LCD Display	24	Public Service Coin Set
0240	Coin Collection Misc.	24	Public Service Coin Set
0246	Prevent Full Box	24	Public Service Coin Set
0247	Tripped Box, Box not Seated	24	Public Service Coin Set
	Miscellaneous		
0290	Other Miscellaneous	24	Public Service Coin Set
0291	Foreign coin grabber	24	Public Service Coin Set
0292	Tel-Cart battery	24	Public Service Coin Set
0293	Lock or key	24	Public Service Coin Set
0294	Coin on ledge	24	Public Service Coin Set
0295	Box not open, not seated	24	Public Service Coin Set

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
0296	String cutter	24	Public Service Coin Set
0297	Telecart circuitry	24	Public Service Coin Set
0298	Board/Card - Inmate Service	24	Public Service Coin Set
0299	Conduit	24	Public Service Coin Set
03	**Regulated Station Wiring**		
0331	Simple Network terminating Wire- for coin phone and/or wire between terminal and demarc	19	Station Wiring
0341	Network Interface, Registration Jack, NCTE	16	Station Product Terminal
0371	Protection	30	Protective Connecting Arrangement
0381	Drop or BSW bad, replaced or repaired	44	Outside Wire
0382	*Broadband drop replaced or repaired	44	Outside Wire
0383	Buried Service Wire bad, placed temp Drop on Grnd	44	Outside Wire
0385	Temp Drop On Grnd damaged; replaced or repaired	44	Outside Wire
0387	Temp Drop On Grnd, cut over to permanent BSW	44	Outside Wire
04	**Outside Plant**		
	Cable Not Repaired		
0401	Pair Transferred/Cut to clear	5	Facility
0402	Bridge tap removed/Cut dead ahead	5	Facility
0403	Pair transposed	5	Facility
	Copper Cable		
0410	Intermittent/Came clear	1	Came Clear
0411	Fault in sheath, conductor or pair	5	Facility
0421	Splice case, closure	5	Facility
0431	Terminal, Cross Box, GAI	5	Facility
0434	Encap plant; unable to clear; laid temp drop	5	Facility
0441	Rural, Open or Urban wire	5	Facility
0461	Analog pair gain system	46	Outside Plant Equipment
0471	Digital pair gain system	46	Outside Plant Equipment
	Associated Trouble		
0481	All pole, guy, anchor, trench or other miscellaneous trouble	46	Outside Plant Equipment
	Fiber Optic Cable		
0483	Buried or aerial fiber optic cable	47	Outside Plant Fiber Optic
	Broadband		
0492	Hut, replacing broadband cards	46	Outside Plant Equipment
0493	ONU-COAX power associated trouble	46	Outside Plant Equipment
0494	ONU-Fiber	47	Outside Plant Fiber Optic
0495	ONU-Protection	46	Outside Plant Equipment
05	**Central Office**		
	Central Office Equipment		
0510	Other/Came clear	1	Came Clear
0511	Common equipment processor	2	Central Office
0512	Common equipment peripheral	2	Central Office
0513	Line Equipment	2	Central Office
0514	Billing Equipment	2	Central Office

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
0515	Trunk, includes calling party hold	6	Central Office Facility
0516	Trunk, Customer/IEC	6	Central Office Facility
0518	Held by traffic	2	Central Office
0519	SS7 network failure	35	Service Node
	Central Office Translations		
0520	Other	3	Switch Trouble
0521	Software generic error	3	Switch Trouble
0522	Parameter error	3	Switch Trouble
0523	Translations Questionaires (TQs) and ASRs	3	Switch Trouble
0524	Routing	3	Switch Trouble
0525	Marketing Centrex forms	3	Switch Trouble
0526	Other marketing forms	3	Switch Trouble
0527	QWEST translations letters	3	Switch Trouble
0528	Trunking software	3	Switch Trouble
0529	Special Requests	3	Switch Trouble
	Distributing Frames		
0530	Other/Came Clear	1	Came Clear
0531	Cross-Connect missing	50	CO Equipment Frames
0532	Cross-Connect broken	50	CO Equipment Frames
0533	Cross-Connect work error	50	CO Equipment Frames
0534	Intercept work error (EM only)	50	CO Equipment Frames
0535	Protection/reversing device/coils	50	CO Equipment Frames
0536	Improper connection	50	CO Equipment Frames
0537	Cross-Connect document error	50	CO Equipment Frames
0538	Request for Assistance	50	CO Equipment Frames
0539	Customer change request/Not ready	50	CO Equipment Frames
	Line Translations		
0540	Other/Came clear	1	Came Clear
0541	RCMAC work error	3	Switch Trouble
0542	Flowthrough system error	3	Switch Trouble
0543	Inaccurate missing work document: HPS	3	Switch Trouble
0544	Inaccurate missing work document: SBS	3	Switch Trouble
0545	Inaccurate missing work document: BGS	3	Switch Trouble
0546	Inaccurate missing work document: Other MU	3	Switch Trouble
0547	Inaccurate missing work document: LPC/MPAC	3	Switch Trouble
0548	Inaccurate missing work document: CDAC/BDAC/BCSC	3	Switch Trouble
0549	Inaccurate missing work document: Network Tech	3	Switch Trouble
	Power		
0550	Other/Came clear	1	Came Clear
0551	DC Power Equipment	2	Central Office
0552	AC Power Equipment	2	Central Office
0554	Standby Emergency Power	2	Central Office
	Miscellaneous		
0560	Other/Came clear	1	Came Clear
0561	Subscriber line carrier	46	Outside Plant Equipment

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
0562	Line testing equipment	51	CO Concentrator
0563	Concentrator	51	CO Concentrator
0564	Range extender	2	Central Office
0565	Carrier system	46	Outside Plant Equipment
	Special Services Equipment		
0570	Other/Came clear	1	Came Clear
0571	Design	2	Central Office
0573	Carrier channel	2	Central Office
0574	Signaling	35	Service Node
0575	Repeater	2	Central Office
	Radio System		
0580	Other/Came Clear	1	Came Clear
0581	Maritime	2	Central Office
0582	Ship to Shore	2	Central Office
0583	G2 Control	2	Central Office
0584	Enhanced Mobile Telephone Service control	2	Central Office
0585	Enhanced Mobile Telephone Service/B	2	Central Office
0586	Telephone Mobile Radio Service manual	2	Central Office
0587	Telephone Mobile Radio Service aitp, atoc	2	Central Office
0588	Advanced Mobile Phone System	2	Central Office
	Data Base for Driven Services		
0590	Other/Came clear	1	Came Clear
0591	Calling Card Services (ABS-LIDB)	3	Switch Trouble
0592	Automatic Intercept System	3	Switch Trouble
0593	Expanded 911 Service	3	Switch Trouble
0596	800 Data Base	3	Switch Trouble
0597	700 Services	3	Switch Trouble
0598	Expanded 800 Service	3	Switch Trouble
0599	Dial it Services	3	Switch Trouble
06	**Customer Action/Public Services/Customer Use Of Equipment**		
0611	Receiver Off Hook (ROH)	25	Manager Operation Instructions
0612	Calling Party Hold (CPH)	25	Manager Operation Instructions
0613	User Dialing Wrong	25	Manager Operation Instructions
0615	Foreign or Bent Coins/Objects, Pennies	25	Manager Operation Instructions
0616	Canadian	25	Manager Operation Instructions
0617	Remove for Remodeling	25	Manager Operation Instructions
0618	Can't Be Called (On Outgoing Only)	25	Manager Operation Instructions
0619	Line Is In Use	25	Manager Operation Instructions
0690	Service Order Activity	9	Information
	Customer Action/All Classes Of Service/Non-Dispatched		
0620	Service Order	9	Information
0640	Suspended or Disconnected	9	Information
0650	Cancel Report	42	Cancel Excluded
0660	Not Currently in Trouble	9	Information

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
0661	Customer Requests Information	9	Information
07	**Test OK, Verify OK**		
0701	Verified OK with Customer	26	Tested OK, Verified OK
0702	Customer does not answer (DA)	23	Test OK
0703	Central Office Overload	23	Test OK
0704	*Broadband TOK	23	Test OK
0710	Operator report TOK	23	Test OK
0720	PRED report TOK non-dispatched	23	Test OK
0747	Test OK via front end close out	23	Test OK
0751	TOK, verified OK with Customer	26	Tested OK, Verified OK
0752	TOK, Customer does not answer	23	Test OK
08	**Found OK In**		
0810	Test made - No Trouble Found	27	CO Facility Tested, Found OK
	Data Base for Data Base Driven Services		
0880	Other C. O. based services	27	CO Facility Tested, Found OK
0891	Calling Card Services	27	CO Facility Tested, Found OK
0892	Automatic Intercept Services	27	CO Facility Tested, Found OK
0893	Expanded 911 Service	27	CO Facility Tested, Found OK
0897	700 Services	27	CO Facility Tested, Found OK
0898	Expanded 800 Service	27	CO Facility Tested, Found OK
0899	Dial It Service	27	CO Facility Tested, Found OK
09	**Found OK Out**		
0910	Dispatched and Found OK	13	No Trouble Found
0920	*Broadband dispatched and found OK	13	No Trouble Found
0950	Unable to isolate trouble In or Out because of no access to demarc/protector	13	No Trouble Found
0970	Public Services Trouble reported and found OK	13	No Trouble Found
10	**Referred Out**		
1001	QWEST Toll Cable Cut/Damaged	29	Referred Out to Other Department
1002	other outside QWEST	29	Referred Out to Other Department
1005	Move drop, deliver/place drop	29	Referred Out to Other Department
1006	Other non-network within QWEST	29	Referred Out to Other Department
11	**Non-Telco Plant**		
	Non-QWEST, dispatched out		
1150	Wires down, broken poles, etc., that are other than QWEST plant or equipment, and a dispatch was required to make this determination	9	Information
	Non-QWEST, not dispatched		
1151	Wires down, broken polse, etc., that are other than QWEST plant or equipment, and a dispatch was not required to make the determination	9	Information
12	**Trouble Beyond The Network Interface**		
1210	Customer has a maintenance contract and QWEST does not bill	31	CPE Manager Responsibility
1211	*Linebacker Coverage of non-standard inside wire	31	CPE Manager Responsibility
1220	Customer has trouble beyond the NI and QWEST does not bill	31	CPE Manager Responsibility

Disposition Code	Definition	T1.227 Code	Trouble Found Definition
01	**Public Segment - Applies To All Troubles Outside The Phone**		
1230	Customer does not have a maintenance contract, or has only WMR, and we bill Trouble Isolation Charge (TIC).	31	CPE Manager Responsibility
1231	Idaho non-complex customer and/or Iowa customer where QWEST does not bill	31	CPE Manager Responsibility
1240	Customer does not have any maintenance contract and QWEST bills both TIC and Time & Materials	31	CPE Manager Responsibility
1250	Customer does not have a maintenance contract and QWEST bills Trip Charge and Time & Materials	31	CPE Manager Responsibility
1260	Carrier/End-user Trouble where QWEST bills TIC and possibly Time & Materials	31	CPE Manager Responsibility
13	**Miscellaneous Non-Dispatched Reports For Non-QWEST Trouble**		
1310	CPE Trouble	31	CPE Manager Responsibility
1320	Reported by Other	31	CPE Manager Responsibility
1330	Test Assist	9	Information
1340	Carrier Trouble	8	Interexchange Carrier
1350	Carrier Testing	8	Interexchange Carrier
1370	Customer Instructions	25	Manager Operation Instructions

Disposition Code to Maintenance Service Charge

Disposition Code	Definition	MSC
1230	Customer does not have a maintenance contract, or has only WMR, and QWEST bills Trouble Isolation Charge (TIC)	Y
1240	Customer does not have any maintenance contract and QWEST bills both TIC and Time & Materials	Y
1250	Customer does not have a maintenance contract and QWEST bills Trip Charge and Time & Materials	Y
1260	Carrier/End-user Trouble where QWEST bills TIC and possibly Time & Materials	Y

Non-Applicable Trouble Types for Local Resale (POTS)

QWEST will not create an electronic trouble report for these trouble types:

Trouble Type	TA Code	Extra Rules
cutCable	0616	
(miscellaneousTroublesGroup)		
hiCapDown	1001	
biPolarViolations	1003	
frameErrorsHiCap	1004	
outofFrame	1005	
lossOfSync	1006	
frameSlips	1007	
noLoopBack	1008	
canNotLoopbackDEMARC	1009	
linesNeedTagging	1011	
other	1014	
alarm	1015	
frameErrors	1017	
facilityAlarm	1018	
softwareGroupAlarm	1019	
dChannelDown	1020	
degadationOfT1.5	1021	
(dataTroubleGroup)		
impulseNoise	1207	
phaseJitter	1208	
harmonicDistortion	1209	
highDistortion	1210	
noDataLoopback	1211	
notPolling	1213	
dataFramingErrors	1214	
dropOuts	1215	
hits	1216	
noAnswerBack	1217	
streamer	1218	
outOfSpecification	1219	
canNotRunToCSU	1220	
canNotRunToOSU	1221	
deadDataCircuit	1222	
circuitInLoopback	1223	
crossModulation	1227	
gettingAllOnes	1230	
slip	1231	
stationTroubleGroup	1300	
voiceEquipment	1301	
dataEquipment	1302	
videoEquipment	1303	
otherEquipment	1304	
stationWiring	1305	N/A for all states except Colorado, Minnesota,

Trouble Type	TA Code	Extra Rules
		and Oregon.
physicalTroubleGroup	1400	
lightBurnedOut	1401	
dataset	1402	
ttySet	1403	
highSpeedPrinter	1404	
ANIfailure	1405	
ALI	1406	
canNotActivatePC	1407	
modem	1408	
cathodeRayTube	1409	
looseJack	1410	N/A for all states except Colorado, Minnesota, and Oregon.
OffHook	1411	
physicalProblem	1412	
processorDead	1413	
wiringProblem	1414	N/A for all states except Colorado, Minnesota, and Oregon.
NoRegister	1416	
stuckSender	1417	
otherStationTrouble	1418	
(otherCaseGroup)		
releaseCktRequestedByIC	1507	
releaseCktRequestedByEC	1508	
releaseFacilityRequestedByIC	1509	
releaseFacilityRequestedByEC	1510	
requestForRoutine	1511	
release	1512	
requestDispatch	1513	
requestMonitorOfCircuit	1514	
routineTestFailure	1515	
lostTimeReport	1516	
historicalReports	1517	
switchOrTrunkRelated	1518	
requestTestAssist	1519	
analogTestLine	1520	
digitalTestLine	1521	
manualInterventionRequested	1522	
switchedNetworkGroup	1700	
aNITimeout	1701	
extraDigit	1702	
extraPulse	1703	
falseKeyPulse	1704	
misplacedStartPulse	1705	
mutilatedDigitGroup	1706	
noKeyPulse	1707	
partialDialTimeout	1708	

Trouble Type	TA Code	Extra Rules
signalingNetworkFailureIncoming	1709	
stationGroupDesignationDigitFailure	1710	
aNI Problem	1711	
oSPSEqualAccessSignaling	1712	
missingANI	1713	
vacantCodeAnnouncement	1714	
invalidDigit	1715	
highandWet	1716	
payPhoneProblemsGroup	1800	
noCoinReturn	1801	
coinStuck	1802	
cannotDepositCoin	1803	
coinsFallThrough	1804	
coinsDoNotRegister	1805	
payPhoneDamage	1806	

Data Definitions and Mappings for UNEs

Status

TR State	TR Status
1 (openActive)	1 (screening)
1	3 (dispatchedIn)
1	4 (dispatchedOut)
1	11 (referMtceCenter)
1	15 (stopNoAccess)
1	17 (stopDelayedMtce)
2 (deferred)	14 (startNoAccess)
2	16 (startDelayedMtce)
3 (cleared)	26 (clearedAwaitingCustVerification)
4 (closed)	27 (closedOut)

Status Messages

State	Status	Status Message
1	1	Pending Screen
1	3	Handoff to Central Office
1	4	Handoff to Dispatch
1	11	Handoff to Facility
1	15	No Access Canceled or No Access Expired
1	17	Delayed Maintenance Canceled or Delayed Maintenance End
2	14	No Access Start
2	16	Delayed Maintenance Start
3	26	Cleared Awaiting Customer Verification
4	27	Closed

UNE Trouble Found Codes

Trouble Found	T1.227 Code
pending	0
cameClear	1
centralOffice	2
switchTrouble	3
customerProvidedEquipment	4
facility	5
centralOfficeFacility	6
ICfacility	7
interexchangeCarrier	8
information	9
nonplanClassified	10
nonplanClassifiedIC	11
nonplanClassifiedEA	12
noTroubleFound	13
station	14
stationProductData	15
stationProductTerminal	16
stationProductVideo	17
stationProductVoice	18
stationWiring	19
otherStationEquipment	20
foundOKStation	21
servingBureau	22
testOK	23
publicServicesCoinSet	24
customerOperatingInstructions	25
testedOKVerifiedOK	26
coFacilityTestedFoundOK	27
outsideFacilityTestedFoundOK	28
referredOutToOtherDept	29
protectiveConnectiveArrang	30
cpeCustomerResponsibility	31
preService	32
preServiceIC	33
preServiceEA	34
serviceNode	35
data	36
customerReferredToVendor	37
exchangeAccess	38
international	39
otherProvidedAccess	40
existingReport	41
cancelExclude	42

Non-Applicable Trouble Types for UNEs

QWEST will not create an electronic trouble report for these trouble types:

Trouble Type	TA Code
(canNotCallOutGroup)	
canNotCallOut2	0208
(canNotBeCalledGroup)	
bellDoesNotRing2	0315
(circuitOperationGroup)	
improperSupervision	0607
noSF	0613
lowSF	0614
(miscellaneousTroublesGroup)	
hiCapDown	1001
frameErrorsHiCap	1004
linesNeedTagging	1011
outwatsRingingIn	1012
softwareGroupAlarm	1019
(dataTroubleGroup)	
invalidData	1226
(stationTroubleGroup)	
voiceEquipment	1301
dataEquipment	1302
videoEquipment	1303
otherEquipment	1304
(physicalTroubleGroup)	
lightBurnedOut	1401
dataset	1402
ttySet	1403
highSpeedPrinter	1404
canNotActivatePC	1407
modem	1408
cathodeRayTube	1409
looseJack	1410
offHook	1411
physicalProblem	1412
processorDead	1413
noRegister	1416
stuckSender	1417
otherStationTrouble	1418
(otherCaseGroup)	
information	1504
requestDispatch	1513
requestMonitorOfCircuit	1514
routineTestFailure	1515
lostTimeReport	1516
historicalReports	1517
requestTestAssist	1519
analogTestLine	1520

Trouble Type	TA Code
digitalTestLine	1521
manualInterventionRequested	1522
recovery	1600
recoveryReport	1601
payPhoneProblemsGroup	1800
noCoinReturn	1801
coinStuck	1802
cannotDepositCoin	1803
coinsFallThrough	1804
coinsDoNotRegister	1805
payPhoneDamage	1806

19 Appendix J. Open Issues

The issues listed below are separated into two sections. The issues listed in the first section were developed during the CO-PROVIDER/QWEST Electronic Bonding Maintenance and Repair meetings, and further refined in management letters exchanged between CO-PROVIDER (dated xxx) and QWEST (dated xxx), and later meetings. The issue numbers correspond to the order of the issues outlined in the management letters. New issues are listed in the second section.

Issue No.	

20 Appendix K. Glossary/Acronyms

Acronyms either used in this document or useful for discussions about this document are listed below.

Acronym	Definition
ACSE	Association Control Service Element
ANSI	American National Standards Institute
AOM	Application of OSI Management
AVC	Attribute Value Change
BAS	Business Application Services
CCITT	International Telegraph and Telephone Consultative Committee
CLEC	Certified Local Exchange Carrier
CME	Conformant Management Entity
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
CMISE	Common Management Information Service Element
CTR	Customer Trouble Reporting
CUG	Closed User Group
DCS	Data Communications Services
DES CBC	Data Encryption Standard/Cipher Block Chain
DTN	Digital Telephone Number
EB	Electronic Bonding
ECIC	Electronic Communications Implementation Committee
EFD	Event Forwarding Discriminator
FU	Functional Units
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ISP	International Standardized Profiles
LEC	Local Exchange Carrier
LMOS	Loop Maintenance Operations System
MAPDU	Management Application Protocol Data Unit
MEDIACC	Mediated Access
MLT	Mechanized Loop Test
MOCS	Managed Object Conformance Statements
MOI	Managed Object Instance
MORT	Managed Object Referring to Test
NM	Network Management
NSAP	Network Service Access Point
OBF	Ordering and Billing Forum
OID	Object Identifier
OIW	OSI Implementation Workshop
ORT	Operational Readiness Test
OSI	Open Systems Interconnection
OSS	Operations Support Systems
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statements
POI	Point of Interface
POP	Point of Presence
POTS	Plain Old Telephone Service
PSAP	Presentation Service Access Point
RMA	Request for Manual Assistance
ROSE	Remote Operations Service Element
ROER	ROSE Error
RORJ	ROSE Error Reject

Acronym	Definition
SAP	Service Access Point
SMFU	System Management Functional Unit
SSAP	Session Service Access Point
SYAD	Systems Administration
TA	Trouble Administration
TACEN	Trouble Administration Configuration Event Notification
TMN	Telecommunications Management Network
TR	Telecommunications Local Trouble Report
TRFD	Trouble Report Format Definition
TSAP	Transport Service Access Point
TT	Trouble Ticket
TT	Trouble Tracking
TTR	Telecommunications Trouble Report
WFA/C	Work Force Administration/Control

21 Appendix L. Managed Object Instance Formats

Sample POTS Resale and UNE (only unbundled loop and unbundled switch network elements) circuit formats are listed below.

21.1 POTS Resale Formats

21.1.1 Telephone Number Format

3031234567

21.1.2 Telephone Number with Terminal Format

3031234567TER12345

21.2 UNE Formats

21.2.1 Unbundled Loop Circuit Formats

24/LXFU/111111/MS (serial numbered)
24/UBFU/111111/MS
24/HCFU/111111/MS

21.2.2 Unbundled Switch Circuit Formats

29/SNNU/303-555-1111 (telephone numbered)
A02/T1/CLSPCOMADS0/CLSPCOMAHJ3 (carrier)
97/PH55IEKEYY/CLSPCOMAHJ3/77/CLSPCOMADS0 (message trunk)

22 Appendix M. Sign Off/Approval

I have reviewed the QWEST/CO-PROVIDER Joint Implementation Agreement, dated October 16, 2000 and, at this time, agree that we plan to implement an electronic interface based on this document. I understand that any future modifications of the interface will be made according to the Change Control process documented in the Joint Implementation Agreement.

22.1 CO-PROVIDER

	Date	
	Date	
	Date	

22.2 QWEST

	Date	
	Date	

23 Service Test Function

23.1 Implementation

23.1.1   Co-Provider shall implement Service Test Function at a later date. Qwest has implemented Loop Test only.

See Electronic Communications Implementation Committee (ECIC) Trouble Administration (TA) Testing Standard Application (ANSI T1.262-1998) Implementation Guidelines, ECIC Document Number: TRA/98-03 for specifics.

23.2 Error Messages – See Section 4 of ANSI T1.262-1998