SATE Summary Evaluation Report

For Qwest IMA-EDI SATE

Arizona Corporation Commission

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Proprietary Notice

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1.0 Overview

1.1 Background

As an extension to the Arizona 271 testing effort, Qwest commissioned HP to evaluate its IMA-EDI Stand Alone Test Environment (SATE). HP's primary objective is to provide the Arizona Corporation Commission (ACC), Qwest and the CLEC community with an evaluation of SATE that is unbiased, factual and representative of the experience that a CLEC would face in using SATE for Interoperability testing to establish an IMA-EDI interface with Qwest. In addition, HP's objective is to determine whether the SATE provides an adequate means of testing and support to CLECs seeking to compete in the Arizona marketplace.

In accomplishing its objective and developing this report, HP performed the following general steps:

- Met with ACC personnel to understand the regulatory objectives of this engagement
- Solicited feedback of both Qwest and CLEC personnel regarding their experience and opinions of the SATE for EDI development and interoperability testing. This was accomplished utilizing a CLEC Input Questionnaire.
- Reviewed formal comments filed by parties in connection with the SATE.
- Examined Qwest CLEC documentation for adequacy, and used this documentation to establish and test the appropriate EDI interconnection.
- Used Qwest CLEC documentation to develop a suite of transactions to test in the SATE environment.
- Examined Qwest processes for adequacy in assisting CLECs establish interconnection using SATE.
- Conducted SATE functionality testing using the documentation and processes that would be available to CLECs.
- Communicated issues and questions to Qwest, the ACC and CLECs.
- Conducted re-testing of corrective actions implemented by Qwest in response to issues and questions.

1.2 Purpose of the Document

The purpose of the SATE Summary Evaluation Report (SER or the report) is to provide a description of the processes that Hewlett-Packard used in conducting the SATE evaluation, and to communicate the findings and recommendations to the ACC, Qwest, and the CLEC community.

1.3 Scope

The scope of this document is to report the results that HP discovered during the course of this evaluation. These results are from the findings that were uncovered as a result of executing the SATE Evaluation Plan and the four subsequent domain evaluation plans in the areas of SATE Documentation, SATE Process, Transaction Testing and CLEC Input Evaluation Plans. This document is the final report for these areas and supplements the preliminary report that was delivered on December 1, 2001.

1.4 Audience

This document is intended for use by the ACC, Qwest, CLEC members of the TAG and other interested third parties to understand HP's evaluation and its over all assessment of Qwest's SATE.

1.5 Document Structure

The structure of this document is based in part on the Institute of Electrical and Electronics Engineers (IEEE) Standard for Software Test Documentation (IEEE std 829-1983) ©1983.

The following table shows the different sections of this document and the information contained within that section. In addition it will serve as a guide to reading this document.

Section	Title	Description
1.0	Overview	General background information, and general information concerning this report.
2.0	Executive Summary	Contains the Executive Summary.
3.0	Assessment of SATE Adequacy	Contains the overall assessment of the adequacy of SATE in meeting testing needs for CLECs in Arizona.
4.0	CLEC Input Evaluation	Contains the results from the execution of the CLEC Input Evaluation Plan.
5.0	Document Evaluation	Contains the results from the execution of the Document Evaluation Plan.
6.0	Process Evaluation	Contains the results from the execution of the Process Evaluation Plan.
7.0	Transaction Testing Evaluation	Contains the results from the execution of the Transaction Test Plan.
8.0	Issues	Contains a description of the Issues Management process used, and the results of logging issues for this project.
Appendix A	Documentation Evaluations	Reviews of Qwest documentation.
Appendix B	Process Evaluation – Supporting Documents	Supporting document on processes relating to Qwest's IMA EDI SATE access and use by CLECs.
Appendix C	Transaction Testing Evaluation – Supporting Documentation	Contains Transaction Test Results and Data Document Change History.
Appendix D	CLEC Input Evaluation – Supporting Documentation	Contains Co-Provider Questionnaires.
Appendix E	Internal Issues Tracking Log	List of candidate issues to be presented through the formal issues management process.
Appendix F	External Issues Tracking Log	List of issues that have been formally presented to Qwest and the community in compliance with the formal issues management process.
Appendix G	Error List Analysis	Comparison of SATE errors to the IMA-EDI Production error log
Appendix H	Transaction Test Results Reporting Summary	Results from the Transaction Test.

2.0 Executive Summary

Prior to development of the SATE, CLECs in the Arizona local telecommunications market had to rely on Qwest's Interoperability Testing process for production certification and to prepare for new software releases. Interoperability Testing uses production systems. However, it requires that the CLECs use valid account data of live customers for testing purposes, since all transactions are edited

against production and legacy systems. This practice is costly, time consuming, and inconvenient for both CLECs and their customers. HP also observed instances in which customer accounts were inadvertently changed.

The SATE environment was deployed by Qwest in August of 2001, and represents a significant improvement for CLECs that are experienced in Interoperability Testing and wish to use a more automated, less manually dependent environment. The SATE provides CLECs with a "trial and error" type of testing environment and provides test accounts for use during SATE testing, thus avoiding the major shortcoming of Interoperability Testing – the requirement to use valid production account data and requiring multiple manual reviews. These factors make it easier for CLECs to develop their OSS and EDI interface systems for entry into the Arizona market, to program for new releases, and to test new releases of the CLECs' own interface. It is important to note that in developing the SATE, Qwest did consider CLEC testing requirements. However, Qwest obtained little direct input from the CLEC community.

The SATE does not use live production systems for test transactions. Instead, it uses a front-end, IMA EDI that is identical to the corresponding production interfaces, and a "stubbed" environment to simulate the back-end, legacy systems. Qwest's stated reason for using this approach is that the Company has not yet developed the means to ensure that test transactions executed in interoperability will not impact live accounts. Based on HP's IMA EDI Certification Testing experiences and HP's understanding of Qwest's current system architecture, Qwest's concern is reasonable, as HP has experienced adverse impacts to live accounts when utilizing Qwest's Interoperability Testing process.

The impact of the SATE's simulation of back-end systems, is that Qwest has an additional responsibility to ensure the synchronization of SATE test results to make certain that CLECs receive responses to transactions that are indeed the same responses that would be received from production systems. This is particularly important if test transactions produce behavior that is different than production systems, as the nature of the behavior cannot be anticipated and planned for in advance. Management of a test environment of this type requires the involvement of knowledgeable personnel who can evaluate orders submitted and ensure that the CLEC receives a response that mirrors production. It also requires adequate resources and careful planning to ensure scalability. HP examined Qwest's effectiveness in performing this responsibility through an assessment of the organization, processes and resources, and through comparison to Production systems.

In conducting this evaluation, HP reviewed SATE documentation and compared it to production documentation, where appropriate and necessary to evaluate the SATE. In addition, HP executed transactions that conformed to the SATE documentation, but also submitted transactions designed to be non-conforming. In addition, HP executed a suite of transactions in both the SATE and in Production, to test for similarity of responses.

Due to the relative newness of the SATE at the outset of this engagement, HP's evaluation constitutes the most rigorous examination (over 1,000 transactions submitted), involving the most diverse testing of transactions, performed to date. Therefore, it was expected that HP would identify issues that had not been previously identified. It is important to note that Qwest responded promptly and appropriately to most of the issues identified, and that the closed-unresolved issues, while they should be corrected, do not significantly diminish the overall usability of the SATE.

2.1 Findings

HP finds that the SATE is adequate to support Qwest CLEC testing in the State of Arizona, given current levels of CLEC usage. However, HP found noteworthy discrepancies related to business rule consistency between the SATE and production systems. HP was able to use the SATE to execute a

suite of transactions that HP believes is representative of those that are currently used by CLECs in Arizona and will be submitted in the State of Arizona.

During this engagement, HP identified issues associated with documentation, test account data, and the overall SATE testing process. HP believes that these problems were the result of the SATE's newness and small amount of use prior to HP's evaluation. The problems identified are considered by HP to have a minor to moderate impact on the overall usability of the SATE. Qwest has initiated corrective actions for most of the issues identified to date. For example, Qwest is using their Change Management Process (CMP) to allow formal tracking of issues and their resolution. HP only realized minor schedule impacts to its overall transaction evaluation as a result of the problems identified.

HP has developed recommendations aimed at ensuring that the SATE remains adequately robust to provide consistency between the SATE and Production systems, particularly with respect to business processes. This will ensure that Qwest provides an environment that supports certification and new release testing to serve Arizona CLECs' needs on an ongoing basis. The specific issues and recommendations are summarized below.

2.1.1 SATE Documentation

HP found that Qwest's SATE documentation is generally adequate. However, much of the SATE documentation reviewed in this evaluation was newly developed and required support from Qwest SATE personnel to allow HP to properly use the SATE environment. In addition, the SATE documentation contained numerous, relatively minor inaccuracies that HP believes are the result of hasty preparation and poor version control. Qwest made improvements to its documentation during the course of HP's review, which addressed many of the concerns raised by HP.

Qwest's ability to efficiently update documents to address HP's concerns suggests a level of resources that is sufficient to support CLEC testing, and SATE evolution. The recommendations in this report are, in part, aimed at ensuring resource levels allocated to SATE continue to meet the needs of Arizona CLECs.

2.1.2 SATE Processes

Based upon its review, HP believes that the SATE processes are generally adequate to support CLEC testing. However, support of Qwest's EDI Implementation Team is an important factor in ensuring successful use of SATE by CLECs. Therefore, the SATE process should be formalized and refined to provide an ease of understanding by CLECs and to ensure consistent repeatability.

2.1.3 Accuracy and Consistency of Test Responses

Based upon its testing, HP found that the accuracy and consistency of SATE test responses was adequate to support certification. At the time of this report, 100% of SATE Release 7.0 and 8.0 transactions have either passed the initial test or the re-test. The only areas that are not at 100% are with SATE Release 7.0 Regression Testing (3 of 7 re-test transactions successful, currently tracked by issue HPSATEEV2032) and SATE Positive Production Mirror testing (2 of 3 re-test transactions successful). HP believes that the level of errors observed is reasonable given the relative newness of the SATE, and that the errors are manageable given the benefits SATE provides compared to standard Interoperability Testing. HP noted that Qwest's approach of implementing corrective actions in a timely and effective manner allowed HP to complete re-testing. Additionally, it shows the flexibility and adequacy of resources necessary to deal with unexpected problems in the future.

2.1.4 Use of CLEC Input

During initial design of the SATE, Qwest's use of CLEC input was informal. HP believes that Qwest will need to take proactive steps to ensure that the SATE remains adequate to meet the needs of Arizona CLECs and meets future CLEC testing requirements. Qwest has begun a series of SATE

Enhancement Meetings, aimed at obtaining CLEC input. HP has observed that Qwest is making use of CLEC input to improve the SATE. HP believes that this is a step in the right direction that should provide Qwest with the means of ensuring that the SATE remains adequate in the future.

2.1.5 Mirroring the Production Environment

As a result of its testing, HP found the SATE to be an effective tool for IMA EDI map testing, compared to the alternative of standard Interoperability Testing. However, HP found noteworthy discrepancies related to business rules consistency between the SATE and production systems. During testing, the discrepancies were addressed quickly and correctly by Qwest's EDI Implementation Team, which is the same organization that addresses such issues for CLECs using the SATE. In large part, HP's recommendations are aimed at ensuring that the EDI Implementation Team continues to have the resources to perform this function in the future.

2.1.6 Accommodation of New Release Testing

HP evaluated the SATE's adequacy for new release testing by evaluating pre-release testing for IMA 8.01. Qwest's process for SATE new release testing appeared to be an exception to Qwest's normal point release implementation. Point releases normally do not affect the EDI or BPL layer, however, release 8.01 did provide the implementation of new BPL edits. This evaluation is inconclusive because HPwas not able to fully verify that the SATE is adequate for new release testing.

2.1.7 CLEC Acceptance and Meeting CLEC Needs

HP believes that Qwest appears to have developed the SATE by attempting to anticipate CLEC requirements, rather than by formally requesting CLEC input and using that input. Qwest was successful in that it has developed a testing system that adequately meets current requirements. Qwest is now taking steps to obtain CLEC input and to identify CLEC testing requirements. HP believes that the steps Qwest is taking, if continued, are adequate to identify CLECs testing needs.

2.2 Recommendations

Based on its findings, HP recommends that:

1. Qwest submit a plan to ensure that it meets CLEC needs for testing of all products available in Arizona, including new technologies.

2. Qwest implement a quality assurance process and a release management practice specifically for the SATE documentation. As a minimum, this should specifically address the Data Documents and the Production Errors Lists.

3. To ensure continued adequacy of the SATE, HP recommends:

   - That Qwest clearly and specifically identify the roles and responsibilities of each individual and organization involved in the SATE. This definition of roles and responsibilities should include goals and objectives and mission statements for each organization and for all personnel. In addition, the job description for each employee should be clearly defined.
   - That Qwest develop a system of internal controls to ensure accountability for organizations and individuals involved in the SATE process. These controls should use clearly defined goals and objectives and should tie specifically to functional responsibility, such as quality of documentation, accuracy of test account data, mirror image of production, etc. Employees involved in the SATE should be encouraged to accomplish these goals and objectives.
   - That Qwest develop process flow documentation that accurately reflects actual SATE processes and is a reliable guide to CLECs using the SATE.

4. Qwest publish a list of variances between SATE and production business edits to ensure that CLECs are fully aware of any such discrepancies so that a CLEC may effectively develop their business processes in this 'simulated' environment. This list should be concentrated into a single document, and become a permanent part of the SATE documentation library.

5. Qwest formally incorporate the SATE into the CMP process, and future changes and modifications should be subject to that process and that Qwest develop a permanent, formalized method of obtaining CLEC input and identifying current and future SATE requirements in connection with the CMP process. This process should proactively seek CLEC evaluation of the SATE process, suggestions for improvement, and forecasts for testing requirements. HP also recommends that Qwest obtain input from the CLECS to determine the full suite of products that shall be included in the SATE.

6. Qwest develop a formal process by which the SATE will be available for new release testing on an ongoing basis.

7. To ensure that the SATE is adequate for full release testing, HP recommends that IMA SATE release 9.0 be tested. This release is expected to take place February 2002.

8. A SATE performance standard be developed for Arizona that addresses the need for Qwest to demonstrate that the SATE remains an adequate mirror image of production as OSS systems evolve. In reviewing this standard, the ACC may wish to consider the nature and volume of transactions that are executed in production. HP did submit a recommendation for PO-19 to the TAG for consideration on 12/18/2001.

9. Qwest file with the ACC an implementation plan for the above recommendations, which includes specific deliverables, milestones, and dates, no later than December 31, 2001.

3.0 CLEC Input Evaluation

3.1 Overview

HP evaluated the extent to which Qwest solicited CLEC input on the IMA EDI SATE functional specifications and design requirements, and the extent that this input was utilized in Qwest's development of the SATE. Additionally, the CLEC Input Evaluation assessed the manner in which Qwest solicited the input.

To establish the basis for the evaluation, HP solicited information from the CLECs and Qwest through a Questionnaire and interviews with key personnel from CLECs that participated in the SATE initiative. The key areas addressed in the Questionnaires and interviews were:

- SATE related processes
- Supporting documentation for SATE
- Communication related to the development, implementation and utilization of SATE
- As additional input to the evaluation, HP also requested Qwest's documentation and records of its solicitation of CLEC input, and the corresponding input Qwest received.

3.2 Summary

HP developed a SATE CLEC Input Evaluation Plan, which defines the methodology to be utilized in the evaluation, and the steps to be performed in the evaluation process. The plan also lists the criteria used to evaluate the results. HP administered questionnaires and conducted interviews in accordance with the Evaluation Plan. Further explanation of the evaluation and subsequent findings are contained in the remaining sections of this report.

Key steps performed in the evaluation are as follows:

- Determine Evaluation Criteria
- Develop Questionnaires
- Prepare Questionnaire mail-out list
- Mail Questionnaires
- Mail follow-up interview questions
- Schedule interviews
- Conduct interviews with key CLECs
- Schedule completion of Questionnaires
- Review SATE related documentation, enhancements, meeting announcements and meeting minutes
- Review Qwest documentation and records regarding solicitation of CLEC input prior to the SATE Enhancement kick-off meeting on November 6,2001
- Compile all evaluation results
- Analyze and report findings

3.3 Variances

The following are variances from the CLEC Input Evaluation Plan:

- Qwest's records of input received from CLECs in response to its solicitation for input on SATE prior to the SATE Enhancement kick-off meeting on November 6, 2001 were not available to be used for the evaluation. Qwest provided HP with a compilation of documents surrounding its solicitation of input, but did not provide copies of inputs provided by CLECs to Qwest.

3.4 Summary of Results

Based on the Questionnaire responses and information obtained in the interviews, Qwest did not initially solicit and act upon CLEC input related to SATE in a manner that was adequately structured and thorough. However, based on observation during the evaluation process, HP believes that Qwest has made improvements in their CLEC Input Process, and its responsiveness to the input. Ongoing adherence to the recommendations presented in the Evaluation section of this report will ensure Qwest maintains a satisfactory rating in obtaining and utilizing CLEC input on SATE implementation and testing.

3.5 Evaluation

As previously stated, the evaluation was conducted across three key areas: SATE related processes; Supporting documentation for SATE; and Communication related to the development, implementation and utilization of SATE.

The results of the evaluation are listed in the table below. Attributes and related criteria were identified for each key area. The numeric score is the average of all respondents for each item. For the purpose of this evaluation, scores below 3 are considered "Unsatisfactory" (for an explanation of the numeric scoring and mapping of questionnaire questions into the tables below, see CLEC Input Data in appendix D - CLEC Input Evaluation Supporting Documentation)

The quantitative results presented below are based on the data obtained from the questionnaires that were completed and returned by four CLECs and Qwest. Please see Appendix D – CLEC Input Evaluation Supporting Documentation for copies of the completed questionnaires.

3.5.1 Process

Attribute	Description	Examples	Detail	Clarity	Adherence	Average
Scope	3.8	3.8	3.2	3.6	3.8	3.64
Purpose	3.8	3.6	N/A	3.6	3.6	3.65
Roles	3.8	N/A	N/A	3.6	N/A	3.7
Communication Plan	3.4	N/A	3.2	3.2	3.6	3.35
CMP Guidelines	2.8	2.8	2.8	N/A	2.8	2.8
Activities Defined and Documented	3.8	N/A	3	3	3.1	3.225
Schedule Defined and Documented	2.8	N/A	2.8	N/A	2.8	2.8
					Overall Score	3.31

Note: For the Process category, "CMP Guidelines" and "Schedule Defined and Documented" attributes received "Unsatisfactory" scores

3.5.2 Documentation

Attribute	Description	Examples	Detail	Clarity	Adherence	Average
Scope	4	N/A	3.8	3.8	4	3.875
Purpose	4.2	3	3.8	3.8	3.4	3.64
Process	3.3	N/A	3	3	3.2	3.125
Technical Architecture/ Interface Specification	2.8	2.75	2.2	2.9	2.6	2.65
Expected Results	3.2	3.8	2.8	3	2.8	3.12
Organization (structure / format)	3.2	N/A	N/A	3.4	N/A	3.3
Responsibilities	3.1	N/A	N/A	N/A	N/A	3.1
Distribution	N/A	N/A	N/A	N/A	3.7	3.7
Exceptions	3	3.4	3.2	2.8	N/A	3.1
Change Process	3.4	3.6	3.3	3.2	N/A	3.375
					Overall Score	3.31

Note: For the Documentation category, the "Technical Architecture/Interface Specification" attribute received an "Unsatisfactory" score

3.5.3 Communication

Attribute	Ease	Depth	Frequency	Average
Communication Formats (email, internet, conference calls, face to face)	3.2	N/A	N/A	3.2
Frequency of Communications	N/A	N/A	3.5	3.5
Functionality of Communication	N/A	3.5	N/A	3.5

Attribute	Ease	Depth	Frequency	Average
Availability	3.7	N/A	N/A	3.7
Responsiveness	N/A	3.15	N/A	3.15
			Overall Score	3.41

Note: For the Communication category, all attributes received a "Satisfactory" score. A chronological list of conference calls, change management notifications, and other announcements distributed to the CLEC community is included in Appendix D – CLEC Input Evaluation Supporting Documentation – "Qwest SATE Communications."

A separate group of questions addressed " Did Qwest solicit CLEC input during the initial design phase of SATE?" The results are as follows:

- Four responses were received; two stated Qwest solicited input during SATE design, and two stated Qwest did not solicit input during this time frame.
- The responses that indicated Qwest solicited design input, stated that the solicitation was conducted in a very informal/ unstructured manner.

It is noteworthy that the responses received in the interview generally match those received on the Questionnaire. The actual interview responses are contained in Appendix D - CLEC Input Evaluation Supporting Documentation.

After reviewing the SATE related documents provided by Qwest, it was observed that no formal structure existed to obtain input from CLECs during the initial design of SATE.

Based on the overall findings of the CLEC Input Evaluation, HP recommends the following:

- Continue to provide a forum for obtaining CLEC input on SATE Technical Architecture/Interface Specifications (i.e., the SATE Users Group Meetings that were initiated in November of 2001 and have been well received by the CLEC community)
- Ensure the CMP Process meets its designed purpose related to SATE
- Ensure schedules of key SATE activities are well defined and thoroughly documented

3.6 Summary of Activities

The Input Evaluation process began by establishing basic guidelines for administering the questionnaires and conducting the interviews. Additionally, evaluation criteria had to be developed. The questionnaire was then developed, and mailed to the TAG Members and CLEC Community.

HP attempted to contact personnel form the CLECS and Qwest participating in the SATE initiative to address any questions or concerns related to the questionnaire/interview process. Completed questionnaires were received. Questionnaire input was analyzed and a determination was made of what CLECs required follow-up interviews to obtain clarification on interview responses.

Interviews were scheduled and conducted. Interview responses were then analyzed, and the input from the questionnaires and interviews was complied in a manner to allow more in-depth analysis, the results were summarized. Additionally, analysis of Qwest's scheduling of CMP notifications and other communications relative to SATE was performed

Evaluation criteria were applied and CLEC Input Process strengths and areas needing improvement were identified.

Final results were then quantified and packaged for reporting purposes. Overall results were calculated and resulting recommendations were developed

4.0 Document Evaluation

4.1 Overview

The Documentation Evaluation consisted of HP evaluating documentation provided by Qwest and documentation available to CLECs on the Qwest Disclosure web-site. The evaluation provided a review of the documentation based upon a set of criteria that HP has used for other 271 OSS Evaluation Engagements to judge the completeness and adequacy of Qwest supplied documentation for the SATE.

The evaluation was conducted using the following documents initially provided by the Qwest Lead Implementation Project Manager:

- IMA EDI Implementation Guide v. 5.0 - Dated July 25, 2001
- IMA EDI 7.0 Data Document for SATE – Dated June 2001/ Version 1
- IMA EDI Data Request Form – Dated, None/Version, None
- IMA EDI Stand Alone Test Environment (SATE) Overview – Dated July 11,2001/Version 1.011
- IMA EDI Stand Alone Test Environment White Paper – Dated May 25,2001/Version 1.00
- Qwest SATE Regression Usage Plan – Dated August 28, 2001/Version, None
- IMA EDI 7.05 Data Document for SATE – Dated September 25, 2001/Version 5.0
- IMA EDI 8.03 Data Document for SATE Dated September 25,2001/Version 1.03

4.2 Summary

The Document Evaluation consisted of HP performing the following activities:

- Request all documentation identified by Qwest
- Evaluate all documentation received from Qwest
- Raise specific questions pertaining to the documentation and indicate issues on the HP/Qwest SATE Question Log
- Circulate the HP/Qwest SATE Question Log to all parties via electronic mail
- Review and discuss questions and issues contained in the HP/Qwest SATE Question Log via weekly conference calls

The Document Evaluation Process also used the following sub-processes:

- Log Document
- Inspect Document
- Review Document
- Close-Out Document Review
- Evaluate Documents

4.3 Variances

During the document review period, Qwest distributed updated or replacement versions of documents to the CLEC community. As a result, some documents initially received for review were replaced with newer versions. To the extent possible, and within the context of the project schedule, HP evaluated the updated documents and reported its findings in this evaluation based upon the most current versions. If a document was not reviewed because it was replaced by an updated document, the document was logged as being received and closed with a status of 'not reviewed'. The documents received but not reviewed are listed below.

Documents that were not evaluated because they were replaced or discontinued:

- IMA EDI Implementation Guide version 5.0 - Replaced
- IMA EDI SATE Overview – Discontinued per Qwest's July 11 Community Notice
- IMA EDI 7.06 Data Document for SATE – Replaced
- IMA EDI 8.04 Data Document for SATE – Replaced

The following documents that were evaluated were not included in the initial list of documents to be reviewed:

- IMA EDI Implementation Guide version 6.0 – Replaced the old Version 5.0 document
- IMA EDI 7.07 Data Document for SATE – Replaced the old Version 7.06 document
- IMA EDI 8.05 Data Document for SATE – Replaced the old Version 8.04 document
- IMA EDI Implementation Guide version 7.0 – Replaced the old Version 6.0 document
- IMA EDI Implementation Guide version 8.0 – Reviewed only those sections related to process exceptions (see Section 5 for details)

4.4 Summary of Results

HP found that Qwest's SATE documentation was adequate to support use of the environment. However, much of the documentation reviewed in this evaluation was newly developed and required additional support from Qwest SATE personnel to allow HP to properly use the SATE environment. SATE documentation contained numerous minor inaccuracies that HP believes are the result of hasty preparation and poor version control. Therefore, HP recommends that Qwest implement a quality assurance process and a release management practice specifically for the SATE documentation. This documentation management process should be clearly defined so that the ACC can review its function and performance, if warranted in the future. The following table summarizes the individual results:

Document Name	Completeness	Relevance	Brevity	Clarity	Correctness	Consistency	Reference	Comment	Risk	Purpose	Feedback	Approval
IMA EDI Implementation Guide v6.0	Un	S	S	Un	S	S	S			S		
IMA EDI 7.0 Data Document for SATE	Un	S	S	Un	S	S	S	S		S		
IMA EDI Data Request Form	Un	S	S	Un	Un	S				S	U	U
IMA EDI SATE Overview (Not Reviewed)												
IMA Stand Alone Test Environment White Paper	S	S	S	S	S	S	S			S		
Qwest SATE Regression Usage Plan	S	S	S	S	S	S	S			S		
IMA EDI 7.07 Data Document for SATE	Un	S	S	Un	S	S	S	S		S		
IMA EDI 8.05 Data Document for SATE	Un	S	S	Un	S	S	S	S		S		

Table Legend:

S	Satisfactory	A Satisfactory rating is assessed which supports that the documentation meets or exceeds the criteria specified.
U	Unsatisfactory	An Unsatisfactory rating is assessed which defines that the documentation does NOT meet the criteria specified.
Un	Unsatisfactory with note reference	An Unsatisfactory rating is assessed with explanatory notes to assist in further clarification of the unsatisfactory assessment when the documentation does NOT meet the criteria specified.

4.5 Evaluation

4.5.1 IMA EDI Implementation Guide v. 6.0

The IMA EDI Implementation Guide provides documentation designed to explain the steps a CLEC would use to establish connectivity, connect to Qwest's EDI environment, and perform firewall and IA-to-IA implementation and testing. Once a CLEC has completed these steps, it may choose to use the SATE in place of the standard Interoperability Testing environment.

The Guide contained instances of incomplete information or information that was not clearly understood during the evaluation and required Qwest clarification during the actual use of the SATE testing environment.

The evaluation identified some EDI Production-related information in the SATE section of the Guide. While it is expected that some inter-mixing of information will occur for comparison reasons, the degree to which SATE and Production information is mixed caused confusion. Using the document with inconsistent SATE and Production environment information would prove time consuming for the CLEC, resulting in additional interaction with Qwest to clarify the issue or procedure.

In actual use of the document, HP identified:

> **Formal Issue HPSATEEV2002**: This issue regards LSR responses in SATE. Qwest has identified this as a documentation issue, however this issue also affects other domains of the SATE evaluation.
>
> "The statement is made on page 14, the goal of SATE is to supply a test environment that can be used to accomplish the following: "Enable the CLEC to identify where to refine their business processes and modify the technology that supports their EDI interface.
>
> HP noted that there is inconsistent data content in responses from SATE as compared to those of interoperability and Production for like LSRs, and that this situation may negatively impact the CLEC. The CLEC may not be able to develop and test their business processes based on their LSR Interoperability testing while using the IMA EDI SATE.
>
> Qwest has replied as follows: Qwest believes that the incident identified herein is a documentation issue – not an issue that results in SATE responses different from production responses. Qwest will supply updates to the IMA-EDI Implementation Guide documentation

to clarify the language regarding "refine their business process". This update was provided on November 9th, 2001. This release of the documentation was evaluated as part of the Process Evaluation. See Section 5 for details.

Formal Issue HPSATEEV1001: This issue is related to SATE connectivity when following the processes for "Establishing a Dedicated Circuit" and "Firewall and IA to IA Test Phase" as described in the Guide. On page 11, the section entitled, "Establishing a Dedicated Circuit" does not explain that the SATE interconnection does not use the same IP address as the standard Qwest Interoperability environment. HP did not understand by reviewing this section of the documentation that HP was required to submit a SATE IP Worksheet to establish a connection to the SATE.

On page 12 in the section entitled "Firewall and IA -to-IA Test Phase", the IA-to-IA tests are described, but the Entrance Criteria, Process and Exit Criteria for the Firewall Tests are not described.
Qwest notified HP during the weekly SATE Conference Calls that the next version of the IMA-EDI Implementation Guide will address the specific issues raised regarding incomplete information and other information that requires clarification.

Qwest made updates to the IMA-EDI Implementation Guide per its November 9, 2001 release of the guide (Version 7.0). HP reviewed these updates and recommended that Qwest make further clarifications to several process related issues. On November 30, 2001 Qwest released Version 8.0 of the Guide. HP reviewed this version from a process exception perspective only (Qwest indicated it had addressed several process-related issues in the updated guide). HP's findings related to version 8.0 are contained in Section 5 of this report (the Process Evaluation Section)

It is HP's opinion, based on the findings, that this document is supportive in assisting a CLEC when incorporating the use of the SATE into its environment. HP, however, believes that it should be refined and improved by Qwest to meet process standards described as part of HP's Process Evaluation.

4.5.2 IMA EDI 7.0 Data Document for SATE

The IMA EDI 7.0 Data Document has an Overview section that describes how SATE is set up with regard to USOC use, PIC/LPIC assignment, and CLEC CCNA/ACNA assignments. The Overview also details SATE's implementation of various account data elements such as Billing Account Numbers, Non-Exempt tax status and CLEC's operating state. These account data elements are pre-defined in the SATE environment.

HP believes that the document did not contain the level of detail needed in its explanation of the differences between the SATE test bed and the traditional EDI Interoperability and Production environments. It may require CLECs to make additional inquiries to Qwest before being able to implement SATE for testing purposes.

The Test Scenario Section contained multiple errors that were discovered during transaction testing efforts. In future releases of the Data Document, Qwest has agreed to clarify the issues discovered during the qualitative review of this document and the discrepancies found while using the content of the document during the transaction testing. For example, correction of known problems did occur in the new 7.07 Data Document, which has been recently released. Therefore, Hewlett-Packard believes that the Data Document now adequately supports CLEC testing in the overall framework of the SATE.

4.5.3 SATE Data Request Form

The SATE Data Request Form is a one-page electronic form that the CLEC completes when it wishes to add new account information to the SATE for its unique testing requirements. The completed form is returned to Qwest via email. The form does not contain instructions or procedures to assist the CLEC in completing the required fields. It does not state the expected interval required to complete the request for additional account information. Additionally there is no provision for CLEC feedback.

When HP attempted to use the form for its stated purpose, it received a string of e-mail questions and requests for additional information from Qwest. HP believes that this is an inefficient way to proceed.

To help clarify and expedite the Data Request Process in the future, Qwest made changes to both the Data Request Form and the IMA-EDI Implementation Guide per HP's recommendation. These changes were released to the community on November 9, 2001 (IMA-EDI Implementation Guide Version 7.0). HP reviewed these modifications and recommended some minor adjustments. Qwest provided an updated IMA-EDI Implementation Guide (version 8.0) with the appropriate modifications on November 30, 2001. HP evaluated those additional changes. Use of the Data Request form is now adequately explained.

4.5.4 White Paper on the IMA EDI SATE Environment

The SATE White Paper provides a high-level definition of the steps undertaken at Qwest to provide the CLEC community with an alternative to the existing IMA-EDI Interoperability process. The introduction outlines the five key sections of the document pertaining to the SATE project at its inception.

The document provides information regarding advantages to the CLEC of using SATE as an alternative to the standard Interoperability testing environment. HP noted that the document could more fully describe how the stubbed systems associated with the SATE differ from the Production version of EDI.

HP believes this document is well suited for its intended audience and helpful to a CLEC's efforts to understand and implement the SATE.

4.5.5 Qwest SATE Regression Usage Plan

This one page document is well suited for defining a regression usage plan. The document proved easy to use, and HP observed a one-day turnaround by Qwest to approve HP's Regression Usage Plan.

HP believes that this document is adequate and supportive to CLECs efforts to implement the SATE.

4.5.6 IMA EDI Data Document Version 7.07 for SATE

The IMA EDI version 7.07 Data Document has been modified from earlier versions to include a section on how to use the document, new information regarding NC/NCI Code combinations, and expanded information regarding the use of USOCs in SATE accounts. HP noted several defects related to changes in the scenario section that were not updated in Appendix A of the Data Document. The Version 7.07 document incorporates changes to correct problems identified by HP during its review of the 7.6 Data Document.

HP believes that, with assistance from Qwest's EDI Implementation Team, the 7.07 versionwas adequate and supportive to a CLEC's efforts to utilize the SATE.

4.5.7 IMA EDI Data Document Version 8.05 for SATE

The IMA EDI version 8.05 Data Document includes enhancements from earlier versions to provide new information regarding NC/NCI Code combinations, expanded information regarding the use of USOCs, and a new section on how to use the document. The document is more focused toward the CLEC in each of its eight subsections.

In reviewing the Scenario Section, several defects were discovered regarding instances of mismatched information between the Expected Results section and Appendix A of the Scenario Section. The noted Scenario Section defects are in the process of being addressed by Qwest.

Changes to the text section of this document have been incorporated to reflect HP's findings during its review of the earlier document.

HP believes that, with assistance from Qwest's EDI Implementation Team, despite the noted defects in the Scenario Section, the document is adequate and supportive to a CLEC's efforts to implement the SATE into its environment.

4.6 Summary of Activities

Qwest assigned an IMA-EDI SATE Implementation Manager to establish a business relationship between HP and Qwest. This relationship consisted of the exchange of documents, initiation of a Kick-Off call and the establishment of weekly EDI Implementation conference calls. The purpose of the weekly EDI Implementation conference calls was to review open items and issues that were created as a result of using Qwest documentation and the SATE during HP's IMA-EDI 7.0, 8.0 and 8.01 Implementation. These open items and issues were entered in the HP/Qwest SATE Open Question Log, developed to obtain and track answers pertaining to Qwest documentation and procedures provided for establishing the use of the SATE for interface testing.

These scheduled weekly conference calls, the supplied SATE documents supplied by the EDI Implementation Team and the IMA-EDI documents HP acquired from the Qwest disclosure web-site, and the HP/Qwest SATE Open Question Log formed the basis for conducting HP's Documentation Evaluation. HP evaluated the documents provided by Qwest and acquired from the Qwest Disclosure web-site

The documents obtained from Qwest were logged, inspected, review and evaluated based upon the criteria contained in the Documentation Evaluation Plan.

Final results were then compiled and analyzed. Overall evaluation results were determined and recommendations were developed.

5.0 Process Evaluation

5.1 Overview

HP evaluated the processes related to Qwest's IMA-EDI SATE access and use by CLECs. The purpose of the evaluation was to assess the IMA-EDI SATE processes that a CLEC must follow to establish and test its EDI connection, and assess the extent to which these processes facilitate a CLEC's use of SATE for transaction testing.

In order to conduct the evaluation, HP developed evaluation criteria, identified the processes to be evaluated, performed the evaluation, and analyzed the results. The evaluation and subsequent findings are based on established Process Evaluation Criteria[1].

5.2 Summary

HP completed and evaluated the SATE processes listed below, as described in the IMA EDI Implementation Guide. However, it is noteworthy that their completion was based heavily on the interaction of Qwest and CLEC test team members rather than on the process documentation itself.

Processes:

- Implementation and set-up steps required of a CLEC in IMA-EDI SATE. This includes all initialization and connectivity steps in order to get a CLEC started in IMA-EDI SATE.
- Interoperability testing through IMA-EDI SATE with Qwest monitoring the transactions of HP as a CLEC.
- Submission and processing of IMA EDI SATE Data Request Forms.
- Submission of requests through CMP.
- The monthly clean-up process of resetting the test accounts
- Technical support for CLECs.

The documentation used to establish the baseline for the process evaluation is as follows:

- IMA EDI Implementation Guide v. 5.0 – Dated July 25, 2001
- IMA EDI 7.0 Data Document for SATE – Dated June 2001/ Version 1
- IMA EDI Data Request Form – Dated, None/Version, None
- IMA EDI Stand Alone Test Environment (SATE) Overview – Dated July 11,2001/Version 1.011
- IMA EDI Stand Alone Test Environment White Paper – Dated May 25,2001/Version 1.00
- Qwest SATE Regression Usage Plan – Dated August 28, 2001/Version, None
- IMA EDI 7.05 Data Document for SATE – Dated September 25, 2001/Version 5.0
- IMA EDI 8.03 Data Document for SATE Dated September 25,2001/Version 1.03

5.3 Variances

The following are variances from the original Process Evaluation Plan:

- Technical Support for CLECs was not fully evaluated. This is due to the lack of a standard set of tech support guidelines or procedures within the reviewed SATE documentation.
- Process performance was not measured against clearly established process objectives for time, cost or quality. With the exception of transaction testing, there was no evidence of clearly defined process measurements or objectives.
- Submission of requests through CMP was determined to be out of the scope of the evaluation.

5.4 Summary of Results

Based on the Overall Rating and observations listed in the Evaluation section of this report, the Qwest IMA-EDI SATE Process is not documented to a degree of detail and clarity to reasonably support:

- Ease of understanding by CLECs
- Consistent repeatability.

[1] Qwest IMA-EDI SATE Process Evaluation Plan – Section 4

5.5 Evaluation

Following is the Overall Rating of the Qwest IMA-EDI SATE Processes:

Process Owners Identified	FC
Process Dimensions Defined	PC
Process Roles Defined	PC
Process Performance Criteria Established	PC
Process Documentation Complete	PC

FC – Fully Compliant: Meets all of the stated process evaluation criteria
PC – Partially Compliant: Meets some of the stated process evaluation criteria, but not to an adequate level
NC – Not Compliant: Does not meet stated process evaluation criteria

HP made the following Observations during the execution of the Process evaluation Plan:

- Not all functional roles have been identified at the individual activity level. CLEC Only Qwest roles were identified and defined at the functional level, therefore a "Partially Compliant" rating was given for these criteria.
- Accountability for the completion of key SATE implementation and testing activities is not consistently defined (i.e., deliverable descriptions, responsible parties clearly identified and time frames established).
- Process flows are not documented in a thorough and consistent fashion. This problem is magnified by the fact that SATE related activities are interwoven with the activities related to other EDI applications in the EDI Implementation Guide. Additionally, process activities are not always presented chronologically.
- Although activity inputs and outputs are often implied, generally they are not defined clearly enough to ensure understandability by CLECs. Therefore they were evaluated as "Partially Compliant" across all SATE processes.
- Quantifiable process performance objectives are not clearly documented.

Due to the observations that are documented above, HP makes the following recommendations:

- Identify and define key functional roles within the SATE Implementation and Testing process (CLEC roles)
- Document responsible parties, time frames and descriptions for key deliverables
- Document process flows for key activities performed by both Qwest and CLECs. This documentation should illustrate the order in which the activities are performed, identify the roles that perform them, and provide a clear activity description including inputs/outputs.
- Modify the Implementation Guide to clearly identify the activities related to SATE (as opposed to the other test modes described in the Guide), and ensure that the SATE activities are listed chronologically within the guide
- Develop additional performance objectives for key activities within the SATE Implementation and Testing Process.

5.6 Summary of Activities

After the project kickoff, the first step taken was to document the processes to be evaluated and create a Baseline Responsibility Matrix[2]. This was accomplished by documenting the activities and

[2] Qwest IMA-EDI SATE Process Evaluation Plan - Attachment E

related functional roles that are listed in the SATE documentation. It is noteworthy that roles in the documentation were only provided at the company entity level (i.e., Qwest or CLEC).

Next, input from HP IMA-EDI SATE subject matter experts was obtained to capture additional details of the processes, including individual activities, activity flows and the roles that perform each activity. At this point in the evaluation, process flowcharts (maps[3]) were developed. This entire package was reviewed with Qwest subject matter experts to ensure accuracy and completeness.

To divide the overall SATE Implementation and Testing Process into manageable components, the evaluation team split the maps into the following categories (sub-processes): IMA-EDI SATE Initiation and Planning, Connectivity Set-up, Physical Connectivity Testing, Transaction Testing (including Add Data), and Technical Support. Process observations, weekly project calls and additional subject matter expert input was used to complement the SATE process documentation in describing each activity[4], including activity inputs and outputs.

Checklists[5] were then developed to evaluate each sub-process based on the criteria contained in the Process Evaluation Plan (Process Evaluation Criteria)

Processes were evaluated on an activity-by-activity basis. Each sub-process and individual activity was evaluated and ranked as Fully Compliant, Partially Compliant or Not Compliant. Discrepancies were first captured as Process Evaluation Exceptions. They were then referred to Qwest through the project Question Log. All discrepancies remain on the Exception Log, even though some were resolved by Qwest, some were transitioned to formal issues, and others were the basis for recommendations.

Prior to HP completing the evaluation, Qwest released an updated version of the EDI Implementation Guide (Version 8.0). As a last step before compiling the final results, an evaluation of those sections of the updated guide that had changed was conducted. Findings and related preliminary recommendations were updated accordingly. Additionally, HP provided responses to the questions and concerns from Qwest and the community related to the Preliminary Final Report. Final results were then compiled and analyzed. Overall evaluation results were determined and final recommendations developed.

6.0 Transaction Testing Evaluation

6.1 Overview

HP evaluated the ability of Qwest's IMA-EDI SATE to support their IMA-EDI Releases of V7.0, V8.0 and V8.01. The transaction test evaluation has assessed the adequacy of Qwest's IMA-EDI SATE to facilitate CLECs in testing their EDI interfaces and to determine to what degree the following capabilities exist:

- Does Qwest's IMA-EDI SATE provide an environment that allows CLECs to train its service representatives outside of their live production-provisioning environment where mistakes would have a negative impact?
- Do CLECs have the ability to test the IMA-EDI pre-ordering and ordering processes when a CLEC makes changes to their own system?
- Do CLECs have the ability to test the IMA-EDI pre-ordering and ordering processes when Qwest makes changes to its OSS, such as those identified in CMP notifications of updates, or in a new release such as 8.01?

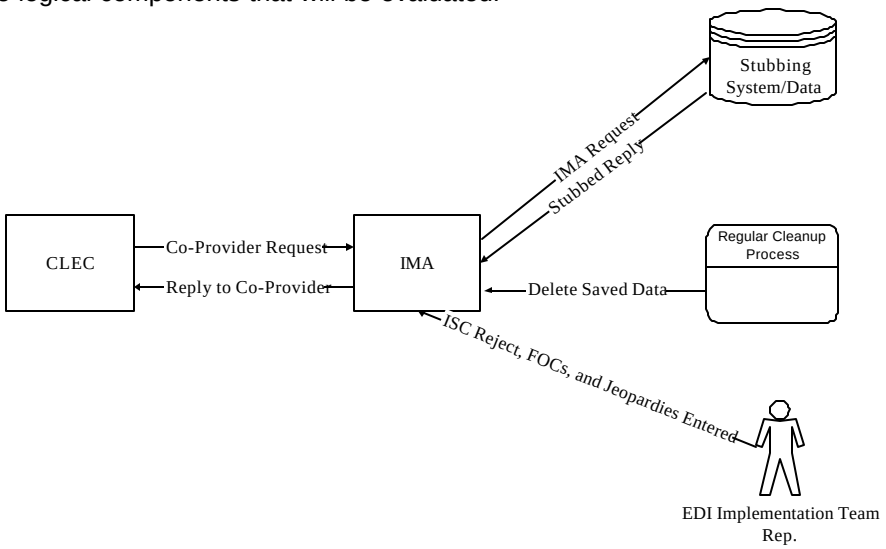
[3] Process Maps – Attachments A1, B1, C1, and D1
[4] Activity Descriptions – Attachments A2, B2, C2, and D2,
[5] Process Checklists – Attachments A3, B3, C3, and D3

HP executed the following activities as the evaluation was performed:

- Preparation for the test
- Development of test success criteria
- Development of the HP technical testing environment
- EDI connectivity testing
- Execution of the transaction test
- Evaluation of transaction test results
- Development of the findings report
- Delivery of the findings
- Transaction test closeout

6.2 Summary

HP's transaction test evaluation tested versions 7.0, 8.0 and 8.01 of the SATE. The following figure [6] describes the logical components that will be evaluated.



The following modules were tested by HP during the transaction test evaluation:

- The IMA Module (including an EDI Translator)
- Stubbing System Module
- Regular Clean-Up Process

Below is a description of each module as it is documented in the Qwest White Paper[7].

IMA Module (including an EDI Translator) - This is an actual version of IMA configured to direct requests to the Stubbing System instead of the back-end systems it normally calls. It runs all the edits

[6] This figure is taken from the Qwest White Paper on the IMA EDI Stand-Alone Test Environment, May 25, 2001, Version 1.00

[7] NOTE: the Qwest White Paper is no longer supported as it has been incorporated into the EDI Implementation Guidelines – for Interconnect Mediated Access (IMA) and Facility Based Directory Listings (FBDL); however this specific architecture information was not carried forward.

to determine whether the detailed fields within a transaction are valid. The only modifications made especially for this version are listed below:

- Certain edits are turned off. These edits in no way affect acceptance of a function performed by a CLEC. These edits are most often used to determine whether an LSR requires Manual Handling before service orders are sent.
- The SATE uses generic CLECs that can be used by different actual CLECs over time. The SATE version of IMA is therefore configured to hold identification information for these generic CLECs.
- Other minor changes determined during detailed design.

Stubbing System Module - IMA will be accessing this system using the same Application Programming Interfaces (APIs) that the Production version of IMA uses when calling back-end systems.

The system, in most cases, returns responses to IMA using data-driven stubs. For example, CLECs send requests to IMA to find the address associated with a given telephone number. In Production, IMA sends a request to the Fetch 'n' Stuff system, which in turn sends a request to PREMIS to gather such information. In the SATE however, the request is sent from IMA to the Stubbing System. There, the request is parsed and the telephone number is looked up in a database. If the number is found, the preset response specified for that number is sent back to IMA. If it is not, a generic "No Match " response is sent to IMA.

This basic stub process is replicated for calls to most of the stubbed back-end systems. In some cases, however, an external system is not called, but instead a database is accessed. For instance, in Production, calls to the Loop Qualification Database (one of the systems that is stubbed) are made via SQL Query. Therefore, for this case, the Stubbing System simply has a database view which matches the view called in production and the underlying tables are populated with SATE specific data.

Regular Cleanup Process - Since CLEC IDs can be passed from one CLEC to another in the SATE, the environment is flushed of all transactional data on a monthly basis. This data includes reserved appointments, telephone numbers, and the LSRs entered by CLECs."

In addition to exercising the Qwest SATE infrastructure elements, HP performed different types of testing to evaluate the behavior of transaction results associated to processing LSRs within SATE under various situations. The situations included the execution of transactions within an IMA EDI release, across IMA EDI releases, for a single trading partner, for multiple trading partners, with expectation of generating positive results and with expectation of generating negative results. All of these situations can be categorized as one of the following test methods:

- SATE Data Document Validation
- Negative Testing
- Production Mirror Testing
- Multiple Trading Partner Testing
- Multiple Release Testing
- New Release Process Test

Furthermore, due to changes made to the SATE environment during the evaluation, there was the need for quality assurance testing and transaction re-testing to ensure the reliability of the SATE environment and its supporting documentation. These test methods have been categorized as:

- Data Document Delta Testing
- Full Regression Testing

Additional SATE processes were examined as part of the transaction test evaluation to ensure the capability of this functionality is usable to the extent documented in the EDI Implementation Guidelines – for Interconnect Mediated Access (IMA) and Facility Based Directory Listings (FBDL).

These processes include:

- Add Account Data to SATE
- Add Products/Activities to SATE

6.2.1 Purpose of Evaluation Methods

The purpose of each of the test methods is explained as follows:

SATE Data Document Validation - This evaluation utilized the scenarios and account data provided in the Qwest Data Documents for both 7.0 and 8.0. All scenarios listed in the v7.04 data document and selected scenarios from the v8.01 data document were executed with the expectation of the SATE returning the expected results as listed in the data document. All variances to the expected results were documented for each affected scenario and provided to Qwest for their follow-up. HP requested Qwest to research and provide clarifications accordingly.

In addition to evaluating the outcomes of executing the scenarios provided by the Qwest SATE for 7.0, 8.0 and 8.01, HP developed test scenarios to verify that consistency in responses exist within SATE; and, between SATE and "live" production. This was accomplished by performing Negative Testing and Production Mirror testing.

Negative Testing - The purpose of the Negative testing was to force a Business Process Layer (BPL) failure so that an error response was returned. The error response returned was compared to the existing Qwest production error list to ensure the error response could be found in the production error list and that the content of the SATE error response is consistent with that of the error message appearing in the production error list. All inconsistencies in error message responses or variances to expected results for affected scenarios were presented to Qwest for follow-up. HP requested Qwest to research any inconsistencies found when comparing the actual SATE response received to the expected response found in the production error list and provide clarifications accordingly.

Production Mirror Testing - The purpose of the Production Mirror testing was to verify that the responses returned in SATE are equal in content and EDI format to the responses returned by the Qwest Production environment. This was accomplished by submitting an LSR to SATE and submitting the same LSR with production account data to the Qwest production environment. The responses were compared to verify that there was consistency in the response content and EDI format. In any case where there was an inconsistency, HP requested Qwest to follow-up and to clarify the unexpected outcome.

Multiple Trading Partner Testing - The purpose of Multiple Trading Partner testing was to evaluate the outcome of more than one trading partner utilizing SATE at the same time and submitting the same test scenarios simultaneously. The intent was to ensure that multiple trading partners could use the account data within the SATE, and to establish that consistent responses could be produced for the same test scenarios executed by different trading partners.

Multiple Release Testing - The purpose of Multiple Release Testing was to evaluate the SATE's capability to support more than one IMA-EDI release concurrently. As SATE was implemented it solely supported IMA Release 7.0. As HP began the SATE evaluation the environment was updated to support IMA Release 8.0. HP requested trading partner relationships be established for HP as a 7.0 trading partner and a different trading partner relationship for HP as an 8.0 trading partner. As Qwest published the 8.0 Data Documents, HP determined that a selected group of scenarios would be executed to support this evaluation. HP did submit both 7.0 and 8.0 test scenarios to the SATE.

The actual outcomes when compared to the expected results were recorded. In any case where there was an inconsistency, HP requested Qwest to follow-up and to clarify the unexpected outcome.

New Release Testing - In an effort to test the implementation process for New Release testing, HP attempted to demonstrate the capability of SATE to provide new release testing 30 days in advance of the IMA-EDI production implementation of the new release. Qwest did supply the Point release of 8.01 within SATE 27 days in advance of the production implementation. By Qwest's definition of a Point release this did not meet the expectations of a new IMA-EDI release implementation. A Point Release does not normally affect the IMA-EDI or Business Process Layer.

Add Account Data to SATE - The purpose of this evaluation was to ensure that both the process and the new account data provided will allow the CLEC to have a capability to add CLEC specific data to SATE per the expectations set in the IMA-EDI Implementation Guidelines.

Add Products / Activities to SATE - The purpose of this evaluation was to ensure that a CLEC could successfully request the addition of a product and associated order activities that are not currently supported by SATE. Additionally, once the product was made available within the SATE the test scenarios provided in the updated Data Document were executed to ensure the expected results of each scenario could be obtained. HP requested the addition of Unbundled Distribution Loop product to SATE. With the distribution of Data Document v7.09 and v8.07 on 11/28/01, Qwest added the UDL and UDLNP products and their associated test scenarios.

6.2.2 Scope of SATE Functionality Evaluated

HP selected the following Products and their associated activities per the Data Documents and the test scenarios provided by SATE for release 7.0 and 8.0. The table below summarizes the Products and the related test scenario ID's that HP included in the execution of each transaction test evaluation method:

Release 7.0	Release 8.0
Pre-Order	Pre-Order
Address Validation	Address Validation
AVQ1 - 21[8]	AVQ1-3, AVQ5, AVQ10, AVQ14, AVQ22,
Customer Service Record	Customer Service Record
CSR1 – 11	CSR1 - 4, CSR7 - 11
Appointment Scheduling	Appointment Scheduling
AAQ1 - 4A, 4B, 5A, 5B	AAQ4A, 4B, 5A, 5B
Service Availability Query	Service Availability Query
SAQ1 – 8	SAQ2, 5, 7
Facility Availability Query	Facility Availability Query
FAQ1 – 18	FAQ1, 4, 5, 8, 14 - 18
Connecting Facility Assignment Query	Connecting Facility Assignment Query
CFA1 – 4	CFA1, 3, 4
Telephone Number Availability	Telephone Number Availability
TNAQ1, 1B, TNAQ2, 2B, TNAQ3, 4	TNAQ1, 1B, TNAQ3, 4
Meet Point Query	Meet Point Query
MPT1 – 6	MPT1-4, MPT6
Raw Loop Data Query	Raw Loop Data Query
RLDQ1 – 19	RLDQ1, 11, 18, 19, 24

[8] Each scenario ID is described further in the SATE Data Documents. The v7.07 and v8.05 Data Documents are appendices to the Transaction Test Reporting Results Summary document described in section 5.6.1 of this document.

Release 7.0	Release 8.0
Order	Order
POTS Resale	POTS Resale
POTS1 – 13	POTS1, 6, 8
Unbundled Loop	Unbundled Loop
UBL1 – 6	UBL2, UBL4
UNE-P POTS	UNE-P POTS
UNEP1 – 14	UNEP3, 4, 7, 9 – 14
Local Number Portability	Local Number Portability
LNP1 – 4	LNP3
Loop with Number Portability	Loop with Number Portability
LSNP1 – 4	LSNP4
Centrex Plus Resale	Centrex Plus Resale
CEX1 – 12	CEX1
Centron Resale	Centron Resale
CEN1 – 4	CEN2
Shared Loop (Line Sharing)	Shared Loop (Line Sharing)
SHL1 – 7	SHL1, 5
UNE-P Centrex	UNE-P Centrex
UCEX1 –12	UCEX9, 12
UNE-P POTS	UNE-P POTS
UNEP1 – 14	UNEP3, 4, 7, 9 – 14
Stand Alone Directory Listings	Stand Alone Directory Listings
DL1 – 9	DL1 – 9

Note: Products and scenarios that are applicable to the 8.01 IMA-EDI sub-release of SATE are incorporated into the 8.0 Data Document.

6.3 Testing Techniques

Qwest supports two types of testing within the SATE: Progression and Regression. HP executed a mix of scenarios utilizing each of these testing techniques. HP used the existing (per AZ 271 Test) production certified products / activities as the basis for Regression Testing. Any other product / activity combinations that are not production certified fell into the Progression Testing process. This guideline for separation of Regression and Progression testing was employed across all the aforementioned Transaction Test methods.

6.3.1 Progression Testing

The Progression Testing Phase affords the CLEC the opportunity to validate their technical development efforts and to quantify LSR processing results[9]. Progression Testing will identify the CLEC's ability to submit correct EDI transactions through the IMA/Facilities Based Directory Listing (FBDL) system. For this test, Qwest will provide the account data in its IMA EDI SATE Data Documents. Order scenario submissions do not leave the SATE testing environment, do not affect the existing production data, nor are they provisioned while in use for the Progression Testing Phase. This type of testing is used for CLECs that have not been certified for product/feature sets in EDI.

6.3.2 Regression Testing

For CLECs wishing to test EDI functionality without supervision or direct support, Qwest permits access to SATE for what is referred to as "regression" testing. Access to SATE for this purpose then

[9] Qwest IMA EDI Implementation Guidelines, Version 7.0, November 9, 2001, Page 22

requires the Initial Discussion, negotiated regression Usage Plan, Requirements Review, Circuit Installation/Configuration, and Firewall and IA-to-IA Testing requirements as described in sections of Qwest's IMA EDI Implementation Guidelines (see Typical Implementation Timeline)10. Regression testing is primarily for those with 'no intent' toward meeting any Qwest entry or exit criteria within an Implementation process.

In order to execute these test methods HP established multiple trading partner relationships within the Qwest SATE to fulfill the standard IMA-EDI requirements. The trading partner Ids and the associated test methods are as follows:

Trading Partner ID	Description	Test Method
HPS	Hewlett-Packard SATE	Release 7.0 SATE Test Bed Validation
HP7	Hewlett-Packard additional Trading Partner	Release 7.0 Multiple Trading Partner Testing
HP8	Hewlett-Packard SATE for 8.0	Release 8.0 Multiple Release Testing
H10	Hewlett-Packard Production Trading Partner	Production Mirror Testing

6.4 Variances

This SATE evaluation was not intended to execute as a true "CLEC Experience". There were parts of the evaluation that provided an assurance that transaction data could be executed to provide expected outcomes; however, there were processes that were expedited due to the necessity for HP to adhere to a static completion date for the delivery of this evaluation. These include the addition of a new product to SATE and the addition of new account data to SATE.

As HP performed the transaction test evaluation there were continual changes made to the test bed scenarios and account data provided in the SATE. Due to these changes, HP needed to ensure that any account data changes or scenario additions continued to provide consistent results within SATE. Because of this HP analyzed the changes to the Data Document as each updated data document was published. The following test methods have been employed by HP to ensure quality data management exists within SATE.

Data Document Delta Testing - The definition of DELTA for the purpose of analysis of the SATE Data Documents: A SATE scenario is to be considered a candidate for delta testing if it is a new scenario or if the account data has been modified as shown on the most recent release of the data document.

As HP performed the aforementioned evaluations there were multiple discrepancies found within the Data Documents for both release 7.0 and 8.0. These discrepancies were noted and presented to Qwest for clarification. The corrective action taken by Qwest caused the generation of additional updates to the Data Documents. It became necessary for HP to ensure that any scenarios that were added or any scenarios where account data was modified were evaluated to ensure the consistency in the actual SATE response and the expected results listed in the Data Document.

Full Regression Testing - The purpose of Full Regression Testing is a quality assurance test based on the multiple changes that HP requested during the aforementioned evaluation methods. HP has executed each scenario supplied in the SATE as documented in the v7.8 and v8.6. The outcome of

[10] Qwest IMA EDI Implementation Guidelines, Version 7.0, November 9, 2001, Page 41

each transaction was balanced to the expected result listed in the respective Data Document. All variances were reported to Qwest.

6.5 Summary of Results

Each evaluation method provides a conclusion as to the original percent of unexpected results in relation to the total number of scenarios executed. Additionally, the percentage of re-tested transactions that have expected results that meet expected outcomes after corrective action was taken by Qwest is provided.

The enclosed table provides a summary of each transaction test evaluation method with the following details:

Environment - The column labeled environment identifies the Evaluation Method utilized to generate the related transaction test information.

The environments are categorized by transaction test families as follows:

- SATE 7.0 - IMA-EDI Release 7.0
- SATE 8.0 - IMA-EDI Release 8.0
- Negative Test
- Production Mirror Test
- Delta Testing
- Full Regression
- Unbundled Distribution Loops

Total Transactions - The total transactions represent the sum of transactions executed within each environment.

Total Unexpected Results - The total unexpected results represent the sum of transactions that produced a "fail" or unfavorable outcome. A transaction will be considered to “Fail” if the transaction produces a response that does not match the expected result in the data document or HP's expected result.

% Error - The percentage of error is calculated as the total unexpected results divided by the total transactions executed.

Total Retest Complete - This represents the total number of transactions that were successfully re-tested. The transactions that are candidates for re-test are represented in the Total Unexpected Results column.

% Retest Successfully - This represents the percentage of re-tests that were successful as compared to the number of total transactions with unexpected results. This percentage is calculated as the total retest complete divided by the total unexpected results.

Environment	Total Transactions	Total Unexpected Results	% in Error	Total Retest Complete	% Retest Successfully
SATE 7.0					
HPS					
Regression	87	31	35.63218391	28	90.32258065
Progression	95	15	15.78947368	14	93.33333333
sub-total	182	46	**25.27472527**	42	**91.30434783**
HP7					
Regression	32	10	31.25	7	70
Progression	12	0	0	0	
sub-total	44	10	22.72727273	7	70
7.0 Total	**226**	**56**	**24.77876106**	**49**	**87.5**
SATE 8.0					
HP8					
Regression	52	17	32.69230769	14	82.35294118
Progression	39	4	10.25641026	4	100
sub-total	91	21	23.07692308	18	85.71428571
8.0 Total	**91**	**21**	**23.07692308**	**18**	**85.71428571**
Negative Test					
7.0 Progression	5	1	20	0	0
7.0 Regression	25	4	16	0	0
sub-total	**30**	**5**	**16.66666667**	**0**	**0**
8.0 Progression	9	3	33.33333333	0	0
8.0 Regression	26	4	15.38461538	2	50
sub-total	35	7	20	2	28.57142857
Negative Test Total	**65**	**12**	**18.46153846**	**2**	**16.66666667**
Production Mirror Test					
Prod Positive	18	2	11.11111111	1	50
SATE Positive	18	2	11.11111111	2	100
subtotal	**36**	**4**	**11.11111111**	**3**	**75**
Prod Negative	14	1	7.142857143	0	0
SATE Negative	14	1	7.142857143	0	0
subtotal	**28**	**2**	**7.142857143**	**0**	**0**
Production Mirror Total	**64**	**6**	**9.375**	**0**	**0**
Delta Testing (changes from Data Document Updates that need Re-test)					
HPS 7.06	31	3	9.677419355	1	33.33333333
HPS 7.07	33	7	21.21212121	2	28.57142857
subtotal	**64**	**10**	**15.625**	**3**	**30**
HP8 8.04	43	2	4.651162791	0	0
HP8 8.05	39	3	7.692307692	0	0
subtotal	**82**	**5**	**6.097560976**	**0**	**0**
Delta Testing Total	**146**	**15**	**10.2739726**	**3**	**20**

Figure 1 Preliminary Summary Report

The transaction test data that was used to generate the above summary information was the data that was collected up through and including 11/21/2001.

Table 1 Final Summary Report

Environment	Total Transactions	Total Unexpected Results	% in Error	Total Retest Complete	% Retest Successfully
SATE 7.0					
HPS					
Regression	93	31	33.33333333	31	100
Progression	95	15	15.78947368	15	100
sub-total	188	46	**24.46808511**	46	**100**
HP7					
Regression	32	10	31.25	10	100
Progression	12	0	0	0	0
sub-total	44	10	22.72727273	10	100
7.0 Total	**232**	**56**	**24.13793103**	**56**	**100**
SATE 8.0					
HP8					
Regression	52	19	36.53846154	19	100
Progression	39	4	10.25641026	4	100
sub-total	91	23	25.27472527	23	100
8.0 Total	**91**	**23**	**25.27472527**	**23**	**100**
Negative Test					
7.0 Progression	5	2	40	2	100
7.0 Regression	25	4	16	4	0
sub-total	**30**	**6**	**20**	**6**	**100**
8.0 Progression	9	3	33.33333333	3	100
8.0 Regression	28	4	14.28571429	4	100
sub-total	**37**	**7**	**18.91891892**	**7**	**100**
Negative Test Total	**67**	**13**	**19.40298507**	**7**	**100**
Production Mirror Test					
Prod Positive	18	2	11.11111111	2	100
SATE Positive	18	3	16.66666667	2	66.66666667
subtotal	**36**	**5**	**13.88888889**	**4**	**80**
Prod Negative	14	1	7.142857143	1	100
SATE Negative	14	1	7.142857143	1	100
subtotal	**28**	**2**	**7.142857143**	**2**	**100**
Production Mirror Total	**64**	**7**	**10.9375**	**6**	**85.71428571**

Environment	Total Transactions	Total Unexpected Results	% in Error	Total Retest Complete	% Retest Successfully
Delta Testing (changes from Data Document Updates that need Re-test)					
HPS 7.06	32	3	9.375	3	100
HPS 7.07	33	7	21.21212121	7	100
subtotal	**65**	**10**	**15.38461538**	**10**	**100**
HP8 8.04	43	2	4.651162791	2	100
HP8 8.05	39	3	7.692307692	3	100
subtotal	**82**	**5**	**6.097560976**	**5**	**100**
Delta Testing Total	**147**	**15**	**10.20408163**	**15**	**100**
Full Regression Testing					
7.0 Regression	103	7	6.796116505	3	42.85714286
7.0 Progression	117	10	8.547008547	10	100
subtotal	**220**	**17**	**7.727272727**	**13**	**76.47058824**
8.0 Regression	100	6	6	6	100
8.0 Progression	127	8	6.299212598	8	100
subtotal	**227**	**14**	**6.167400881**	**14**	**100**
Full Regression Testing Total	**447**	**31**	**6.935123043**	**27**	**87.09677419**
Unbundled Distro Loops					
7.0 Progression Positive	11	2	18.18181818	2	100
7.0 Progression Negative	8	0	0	0	0
subtotal	**19**	**2**	**10.52631579**	**2**	**100**
8.0 Progression Positive	12	2	16.66666667	2	100
8.0 Progression Negative	8	0	0	0	0
subtotal	**20**	**2**	**10**	**2**	**100**
Unbundled Distro Loops Total	**39**	**4**	**10.25641026**	**4**	**100**

The transaction test data that was used to generate the above summary information was the data that was collected up through 12/19/2001.

6.5.1 Summary of Issues

As the summary results present, a number of transactions contributed to a percentage of error that indicates unfavorable results. The errors that appeared overall were of minor to medium impact when considering the overall capability of the SATE. Per the formal Issues Management process that was approved and accepted as the methodology for communicating incidents of failure or requirements for clarifications, all of the issues derived from transaction testing are listed in the HP Internal and External Issues Tracking Logs.

All Transaction Test issues have been logged into the HP Internal Issues Tracking Log as soon as the problem was identified as a candidate issue by appearing on the SATE Open Question Log or as a transaction test failed and HP requested additional research by Qwest.

All Transaction Test issues have been categorized internally by HP as one of the following types of issues:

1. **Transaction testing - Validation of the Data Document** - data document expected results do not match actual transaction testing results.

2. **Transaction testing - Negative Testing** - SATE returned errors not documented in the Errors List (7.0 or 8.01) or HP could not produce the error as it is documented in the Errors List (7.0 or 8.01).

3. **Transaction testing - Production Mirror Testing** - SATE testing results do not match production testing results (positive and/or negative).

4. **Transaction testing - EDI Issue** - The SATE response was not in accordance with standard EDI processing practices.

5. **Transaction testing - Business Rules** - The SATE response was not in accordance with Qwest IMA EDI Disclosure documentation .

Once Qwest responded with a resolution to the Transaction Test issue, HP attempted a re-test of the transaction(s) that were affected by the issue. If the re-test was unsuccessful, the Issue remained open until a successful re-test is achieved. Once a successful re-test was achieved, the issue was updated to a closure status.

The aggregate of Transaction Test issues can be found in Appendix E - the SATE Internal Issues Tracking Log. This log includes all issue candidates that were identified across the overall SATE evaluation.

6.6 Evaluation

6.6.1 Transaction Item Pass/Fail Criteria

A transaction was considered to “Pass” if the expected result was received as the SATE Data document has presented and the response was received within the negotiated time frame noted on the transaction test schedule. Additionally the transaction was considered to have “Passed” only if the transaction flow and the business rules were applied as they are documented in the appropriate release of the Network Disclosure document.

A transaction was considered to “Fail” if the transaction produced a response that did not match the expected result in the data document or HP's expected result. HP expected results were established based on the expectation for positive or negative outcomes. Additionally the transaction was

considered to have "Failed" if the transaction flow and the business rules were not applied as they are documented in the appropriate release of the Network Disclosure document.

6.6.2 Transaction Test Results Ranking

The following Transaction Test Evaluation provides a result rank per the transaction test results as of the data available on 12/19/01. This evaluation utilized the Transaction Test Criteria as documented in the SATE Transaction Evaluation Plan. The result rank was determined based on the percentage of transactions that produced unexpected results inclusive of any re-testing activity. HP has determined that any percentage of error that is greater than 5 % will cause an evaluation result of U = unsatisfactory. This is based on the existence of adequacy measurements for test environments in the telecom industry.

The following definitions apply to the results identifier:

- **Satisfactory** - this criteria has been met as shown by the transaction test results outcome per the requirements of the confirmation. .
- **Unsatisfactory** - this criteria has NOT been met as shown by the transaction test results outcome per the requirements of the confirmation.
- **Inconclusive** - a conclusion cannot be derived with the current transaction test results further testing and evaluation is necessary.
- **Not available** - this test result is not available as the transaction test is in progress at the present time.

6.6.3 Overall Transaction Test Evaluation Findings Summary- FINAL

	Criteria	Results[1]	Summary
1	HP will confirm the SATE test data is valid • Is the Scenario Data supplied as documented in the SATE Data document available to the community as it is intended to be per the specifications provided? • Is the outcome of the execution of the SATE provided scenarios as the expected results are documented.	**S**	This **Satisfactory** result reflects the evaluation of the outcomes received when processing LSR's through the SATE for Release 7.0 and 8.0. Both the Regression and Progression environments were included in this evaluation. When utilizing the SATE account data for the scenarios provided, HP realized a 25% Error rate when the actual results were compared to the expected results. Qwest has provided updates to the account data per the detected errors. As a result of Qwest corrective actions, the current data document and account data have reduced the current error rate to 3%. However, even at this lower level of error, there is an impact to the community when unpredictable results and a lack of consistency to expected results are probable based on these facts. HP recommends that a performance metric be implemented to ensure the performance of SATE achieves expected results within a diagnostic measure. This measure will be important as Qwest makes changes to reduce the error rate noted

[1] S = Satisfactory
U = Unsatisfactory
I = Inconclusive - Re- test Required
N = Not available - Test In Progress

	Criteria	Results[1]	Summary
			above, as changes are made to the SATE application environment must be carefully executed and regression tested to ensure that the quality of expected results is maintained.
2	HP will confirm that the SATE business rules are consistent with the rules published in the Qwest Network Disclosure Document • Does the SATE support the pre-order, order and post order transaction flow as it is documented in the Qwest Network Disclosure documentation? (850, 855 FOC, 865 SOC/ 850, 855 Fatal, New 850 / 850, 855, 860, 865 FOC, 865 SOC etc) • Does the SATE capture BPL and back-office errors that may be caused by LSR data entry mistakes? • Does the SATE employ the business rules edits as provided in the network disclosure documentation? • Does the SATE support the testing of transactions across all of the Qwest geography – regional	**S** **U** **U** **U**	This **Satisfactory** result reflects that this criterion was met successfully for both regression and progression testing. Qwest generated LSR responses per their SATE process of either the negotiated scenario summary worksheets or a SATEDI e-mail. Qwest manually generated FOCs and SOCs as HP requested for each transaction. This **Unsatisfactory** result reflects an evaluation of the outcomes received when processing LSR's through the SATE for Release 7.0 and 8.0. Both the Regression and Progression environments were included in this evaluation. When utilizing a small sampling of the SATE account data from the scenarios provided, HP realized a 20% Error rate when the expected results are compared to the actual results. HP prepared LSR's to induce fatal errors. The fatal error generation was pre-determined by analysis of the published production Error List. Specific error messages were selected and the LSR's were built to cause that error to occur. When these LSR's were executed in SATE there were unexpected results. The unexpected results fall into one of the following categories: • Planned error did not occur • Planned error message content did not match the error list • Error message received is not on the published production Error List As HP evaluated the variances in expected responses to actual responses it became evident

	Criteria	Results[1]	Summary
	testing?		that there may be a difference between the listed error messages in the Production Error Lists and the actual error messages generated by the SATE Business Process Layer edits. This **Unsatisfactory** rating is the result of the establishment of three formal issue documents 2005, 2018 and 2002. Through the investigation of these formal issues it has been documented that the existing production error lists that support IMA-EDI need to be updated to eliminate error messages that are obsolete within the IMA application. Additionally, Qwest has established a timeline for the issuance of error list publication and the corresponding change summaries. The revised production error lists and their change summaries are due to be published with the implementation of release 9.1 sometime in February. HP can not evaluate the success or failure of these processes due to its future implementation. There are additional concerns supporting this unsatisfactory evaluation as it became evident that there are Legacy system edits which cause error responses to be generated. These Legacy system error messages are not incorporated into the Production Error list, nor are they part of any published SATE documentation. HP documented this in formal issue 2005. Qwest responded to this observation by developing a comprehensive description of legacy system errors, which they incorporated into the 8.01 V3 production error lists. This description was prepared per HP's request, in lieu of Qwest providing every possible legacy system error in the production error lists. However, further testing has shown HP that there is inconsistency in the expected legacy system formats and the actual results returned by SATE. For further detail, see the Error List analysis in Appendix. .
3	HP will confirm the SATE is capable of supporting multiple users simultaneously • Does the SATE support more than one CLEC utilizing the same data as the Qwest SATE Data Document	**S**	This **Satisfactory** result is based on the evaluation of the outcome when multiple LSR's are submitted in the same timeframe to SATE utilizing the same account data for like test scenario product and activity combinations. HP developed two trading partner relationships in 7.0 SATE in an effort to proof the capability for multiple CLECs to successfully make use of the same account data simultaneously. The expected results were achieved. It is possible for more than one CLEC to use the same account data concurrently within the same IMA Release of SATE.

	Criteria	Results[1]	Summary
	provides? • Is the SATE Usage Plan for Regression Testing monitored for a CLEC's compliance to the utilization of SATE as was presented on the Usage Plan forecast?	**I**	HP observed no systemic limitation on the number of CLECs that can test at one time. In addition, HP observed no limitation on multiple users accessing the same SATE account data. This **Inconclusive** result is based on the outcome calculated as a comparison of the HP forecast (SATE Usage Plan) to the actual number of transactions submitted to SATE based on the SATE Usage Plan Summary. This report shows a remarkable variance in the number of transactions submitted for each trading partner id, HPS, HP7 and HP8 when compared to the approved Usage Plans for each respectively. This variance was allowed with no inquiries from Qwest. This may be inherent due to the testing that HP has undertaken, as this was not meant to be a pseudo-CLEC test.
4	HP will confirm that the SATE test accounts are reset monthly	**S**	This **Satisfactory** result is based on the outcome of the transaction test that was directed at verifying that the SATE database is cleared each month end. The transactions that HP presented to SATE to supplement an order that was FOC'd in the prior month did reject as expected. The expected results were achieved for two months. HP believes that the month end clearing process has been implemented successfully.
5	HP will confirm the results of a scenario in SATE will match that scenario's results in production • Does the SATE react to transactions with the same results they would receive if submitted to the controlled production environment?	**I**	This **Inconclusive** result reflects the evaluation of the outcomes received when processing LSR's through the SATE for Release 7.0 and comparing their results to the results of the same LSR's in 7.0 Production. HP added account data to SATE utilizing the CSR of a production account as a model account. Once the account data was present in SATE, HP ran a group of Flow-through LSR's in SATE 7.0 and received responses. HP then submitted production LSR's for the same flow-through order activity with the production account data. The production LSR's were run utilizing the AZ H10 trading partner id. The production responses were also received. When the SATE responses were compared to the Production responses for the "like or equal" LSR's there was a variance of 8%. This variance represents the possibility of SATE results not being compatible to the production environment. Additionally, it should be noted that HP could not test back-office legacy system edits to ensure this 8% error rate does not increase due to the generation of errors that were unable to be detected during SATE Progression or Regression testing. In

	Criteria	Results[1]	Summary
			some instances of unexpected responses there were back office errors embedded in the response. HP recommends that Qwest publish a listing of all responses that will vary between SATE and production. In the final evaluation, this error rate dropped to 3.3%. In some instances of unexpected responses there were back office (legacy) errors embedded in the response. The closure of issue 2005 resulted in Qwest providing an explanation of the structure and message content of these legacy system errors. Issue 2005 was closed upon the distribution of the production error list 8.01 v3 as HP verified that the legacy system error explanation was included in that distribution. As HP further analyzed the data provided by the results for the final report it was realized that their continues to be a variance in messages appearing in the production mirror transaction test output. The final summary of Production mirror testing comparison results table shown in Transaction Test Results Reporting Summary showed that 12.5 % of the message content between Production v7.0 and SATE did not match. During the preliminary reporting HP recommended that Qwest publish a listing of all responses that will vary between SATE and Production. This was a result of HP's overall evaluation of SATE where HP identified these variances to production: • Address Validation Resolution • CSR Query Resolution • USOC Availability- no contract validation • SAQ- Service Availability Response • Error Messages – Legacy System Messages, Messages produced but not on Error list, Oracle Error • Telephone Number Reservation Behavior – reservation expiration • Feature Activity behavior inconsistency HP recognizes that Qwest has addressed the majority of these identified variances in multiple locations throughout their SATE and IMA-EDI documentation. A CLEC could assimilate a concise list of Production variances through analysis of this documentation
6	HP will confirm the SATE returns	I	HP has determined that the evaluation of this criterion remains ***Inconclusive***. HP identified that

	Criteria	Results[1]	Summary
	consistent responses • Does the SATE react to test data producing a consistent outcome when the data is presented as a Regression test vs a Progression test ? • Does the SATE react to transactions presented as a Progression test method when a CLEC is already certified in the product? • Do transactions submitted to the SATE receive the same responses as those transactions would in the interoperability environment? • Do transactions submitted to the SATE for Release 7.0 produce consistent responses for like transactions in Release 8.0 of SATE ?		most of the error message variances found relate to the incidence of legacy system errors that are not included on the production error list, and messages that present LSR FORM and SECTION Headers. Additionally, HP found occurrences of error messages being generated in SATE that were not equivalent to what was published on the error lists. HP ran 30 scenarios, of which 11 scenarios successfully matched and 19 scenarios did not match. See the Transaction Test Reporting Summary for further details.
7	HP will confirm that the SATE supports all		

	Criteria	Results[1]	Summary
	transactions described in the SATE supporting documentation		
	• Are the scenarios supported in the SATE inclusive of the products and activities that are required to support the business processes of a CLEC operations center?	**S**	During this examination, the SATE did prove to be capable of supporting the business processes of CLECs in the state of Arizona. However, its effectiveness for this purpose was limited by differences identified between the responses to be expected in SATE and Production. Therefore, HP recommends that Qwest publish a full listing of differences between SATE and Production.
	• Are the scenarios supported in the SATE inclusive of the products and activities that are available to the community per the Qwest Network Disclosure documentation ?	**I**	This **Inconclusive** result is based on the most recently delivered SATE Data Documents. All products are not offered in SATE when compared to the products found available in the IMA EDI Network Disclosure documentation HP recommends that Qwest obtain input from CLECs to determine the full suite of products that shall be included in SATE. However per Qwest's, response to data request HP DEC01-001, the products associated to Arizona CLECs are the following: • Resale POTS, Unbundled Loop, Local Number Portability, Loop with Number Portability, Listings Only, Line Sharing (Shared Loop), and UNE-P POTS In lieu of this response HP has assessed SATE to satisfactorily support the products required by a CLEC doing business in the state of Arizona. HP recommends that Qwest on an ongoing basis should obtain input from CLECs to maintain the full suite of products that should be available in SATE for CLECs in the state Arizona.
	• Do the test accounts in the SATE support the testing of all valid combinations of SATE supported products and order activities?	**S**	This **Satisfactory** result is based on the capability of a CLEC to submit LSR's to SATE for all scenarios that are listed in the current Data Document. HP has tested all scenarios available within the 7.0 version of SATE. All of the scenarios could be sent and responses were provided. There were no occurrences of the SATE becoming unavailable due to a system failure. The expectation of a CLEC's capability to utilize the SATE to test transactions that fall within the available account data and product/activity combinations has been met.

	Criteria	Results[1]	Summary
			product/activity combinations has been met. There is one issue that aligns with the expectation of the utilization of this SATE. This is relative to the SATE availability. It has been noted that the eastern time zone cannot utilize the SATE until 10:00am. It may be advisable for Qwest to consider extended hours of availability to accommodate multiple time zones.
8	HP will confirm the SATE accurately supports all post-order transactions and functional acknowledgements. • Do the SATE responses get created per the expectations set by the documented time frame?	**S**	This evaluation is **Satisfactory** based on the current documented SATE process. The existing SATE response process does not make consideration to the automated process known as "VICKI" which is to be Implemented into SATE in January. The expectations set in the IMA EDI Implementations Guide relative to the generation of responses for both the SATE Regression and Progression environments has been met. Qwest accommodated more transactions per day then required by the commitment established in the IMA EDI Implementation Guide.
	• Do the SATE responses received provide expected outcomes?	**S**	
	• Do the SATE responses received provide comprehensive messages when warranted by the test scenario?	**I**	The preliminary finding of inconclusive was based on the responses that contained back office legacy systems errors. The final evaluation of **Inconclusive** is a result of the conclusion of formal issue 2005. Per Issue 2005 HP recommended that there, be clarification provided to the community regarding the format and content of a Legacy system error. Further HP requested that a sample of a legacy system error be provided along with a description of what situations generate a legacy system error. Qwest provided this explanation and example of legacy system errors in v8.03 of the Production IMA errors list. Even with this explanation of legacy system errors there is no conclusion on the number or situations that cause of legacy system errors.
	• Does the SATE accurately	**S**	The result of **Satisfactory** is the outcome due to the overall test results based upon the available

	Criteria	Results[1]	Summary
	accurately support all pre-order and post-order transactions and functional acknowledgements?		functionality supported in Qwest's Data Documents for both 7.0 and 8.0.
9	HP will confirm that a data request submitted to the SATE can successfully be tested in the SATE	**S**	This result is **Satisfactory** as shown by the summary provided in the Data Request report. This presentation of the HP Request form, Qwest's response and the eventual outcomes of the transactions executed in SATE utilizing the new accounts, provides proof that a CLEC can successfully add data to SATE for their specific circumstance. It should be noted that there was a need for the Request form and documented process to be enhanced to bring clarity to the Data Request process. There was a formal Issue documented to care for this necessary update. This issue – **HPSATEEV2001** – Data Doc was closed Upon closure of this issue HP added an additional data request for the final report as a retest of the data request process. As HP followed the updated process it should be noted that Qwest met the time line to deliver the data, however there was an inconsistency in process step execution when compared to the documented process. HP successfully ran transactions using the new SATE data that further supports the satisfactory evaluation. See Appendices for the data request forms and a recap of chronological steps HP executed to evaluated this process.
10	HP will confirm that a request to add a product/activity/pre-order function request submitted to the CMP can be successfully tested in the SATE.	**S**	This result is **Satisfactory** as Qwest has added Unbundled Distribution Loops and Unbundled Distribution Loops with Number Portability in response to a request from HP. HP was able to validate the expected results were achieved for the test bed scenarios added to accommodate Unbundled Distribution Loops. HP was able to conclude that Unbundled Distribution Loops with Number Portability was also added to SATE with the expected results achieved.
11	HP will confirm that the SATE will support both release 7 and release 8 testing	**S**	HP's updated evaluation for this criteria renders a **Satisfactory** rating. Upon re-test of all scenarios that previously had unexpected results, Qwest has achieved a 100% successful re-test. This re-test has proven that the scenarios executed as

	Criteria	Results[1]	Summary
			documented in Qwest releases 7 & 8 Data Documents will present the expected results as they appear in those respective documents.
12	HP will determine whether the SATE adequately accommodates new release testing.	**I**	HP tested the implementation of the Qwest point release 8.01. This test was **Inconclusive** because it was an exception to the Qwest's normal point release implementations. The point releases normally do not affect the EDI or BPL layer; however, the 8.01 point release did provide the implementation of new BPL edits. The intent of new release testing was to ensure that the new release was available 30 days in advance of the production implementation of the new release. The 8.01 release was available 27 days in advance of the IMA EDI production implementation. The documentation of this point release was also inclusive. The new edits were introduced as IMA GUI Release notes, but there were no specific IMA EDI release notes that detailed the BPL edits with the expected error messages. The 8.01 Error List was not successfully updated with all of the new BPL edit error messages (see Formal Issue 2017). HP was directed to resolve the requirements of the 8.01 SATE implementation by using Appendix E of the Network Disclosure and Release 8.0 Addendum 4 documentation. HP concludes an **Inconclusive** finding due to this 8.01 outcome and its lack of consistency with Qwest's normal process for IMA EDI release changes.

6.6.4 Assumptions

1. This test was attempting to test the syntax and characteristics semantic of real live business orders. Computation of statistical data was not deemed necessary in the scope of this test. The test data was base-lined using the account data provided in the SATE data document.

2. HP did not perform volume capacity testing

3. Production Mirror test included flow through order product / activity combinations only.

4. The error rates found in the transaction test, may cause confusion to the CLECs. The clarification of this error rate may provide detail for those attempting to build an automated OSS and utilizes SATE to qualify their EDI transactions. The CLEC may encounter unforeseen results as this test has shown. This may delay their OSS implementation due to the need to engage resources to evaluate and draw conclusions regarding any inconsistent results. This delay may be unacceptable to CLECs.

6.6.5 Limitations

1. CLEC tariff based USOC and Geography edits are not applied to the CLEC's view of SATE as they would exist in production. The whole Qwest universe of valid USOCs and Services is made available to the tester.

2. Back office system integration is not available so HP cannot conclude that the results in SATE will be the expected results in Production.

3. Special programs that are arranged by CLEC / Account Managers are not implemented in SATE thus they cannot be tested as part of this evaluation.

6.7 Summary of Activities

The purpose of the Transaction test was to validate the information provided in the Qwest Documentation relative to the capabilities and expectations set for its use by the CLEC community and independent vendors for interoperability testing. This includes the competence of SATE to edit business rules as if the LSR's would be scrutinized in the IMA-EDI production environment. Additionally this transaction test specifically validated the level of support for pre-order, order transactions and combinations of product and activities along with the timeliness and consistency of responses. This transaction test evaluated the Qwest IMA EDI 7.0, 8.0 and 8.01 release for all SATE supported transactions.

This transaction evaluation followed the general principles established in the Qwest EDI Implementation Guide (http://www.uswest.com/wholesale/ima/edi/document.html). It did not evaluate any transactions that fall outside of the available data supported within SATE.

HP executed this transaction test in the role of an objective third party and trusted advisor to all parties – Qwest, ACC and the CLEC community. HP did not execute this transaction test as a Pseudo-CLEC.

This transaction test utilized one of HP's existing Pseudo-CLEC certification interconnections in Arizona. This allowed the Regression testing of those products that HP has already been certified in for Release 7.0 for the purposes of the Arizona capacity testing. The HP Test Harness environment did run apart from any other HP 271 OSS Test that was currently in progress. This environment supported an order entry tool and an EDI translation tool that allowed the entry and formatting of LSR's as prescribed by the Qwest pre-order and ordering rules for IMA EDI 7.0. Once the orders were translated into the standard EDI format according to the Qwest 7.0 release specifications, they were sent on to SATE. Responses received from Qwest provided the basis for comparison to the Qwest documents for expected responses. This data was collected using the same technology that is currently used for the Arizona 271 OSS Test.

An Issues Management process was utilized to identify and manage resolution of transaction test issues that may potentially cause a negative evaluation. Details of this process are provided in the SATE Issues Management Process found separately.

A public weekly call was held to review the status of the transaction testing with all parties. All documentation and assistance made available to HP by Qwest for use by HP in the development and/or establishment of the required interfaces to the SATE will be made available to all participants to verify that HP is not being given special treatment.

All transaction test results have been captured in a number of Microsoft Excel worksheets. The transaction test results have been captured on these worksheets and provided to the community each week. These worksheets include Qwest's standard Scenario Summary worksheets as well as HP's standard Transaction Test Scenario Comments Log. A Scenario Summary worksheet exists for each

Transaction Test Evaluation Method as well as a corresponding scenario Comments Log. The Scenario Summary worksheet lists each scenario that was submitted with the date the LSR was sent to Qwest, and the date a corresponding response was received by HP. The Comments Log also lists each scenario with the outcome status. If the outcome was not successful then HP enters a comment on the log that details the transaction processing events and the unexpected results. The Comments Log is reviewed by Qwest, and the appropriate action is taken to bring resolution to the unfavorable result.

The following worksheets exist and will be included as appendices to the Transaction Test Results Reporting Summary document which is described below:

Release 7.0 Transaction Testing Evaluation

HPS - Regression Scenario Summary
HPS - Progression Scenario Summary
HPS - Regression Scenario Comments
HPS - Progression Scenario Comments

Release 8.0 Transaction Testing Evaluation

HP8 - Regression Scenario Summary
HP8 - Progression Scenario Summary
HP8 - Regression Scenario Comments
HP8 - Progression Scenario Comments

Release 7.0 Multiple Trading Partner Testing

HP7 - Regression Scenario Summary
HP7 - Progression Scenario Summary
HP7 - Regression Scenario Comments
HP7 - Progression Scenario Comments

Release 7.0 Negative Testing

HPS - Regression - Progression Scenario Summary
HPS - Regression - Progression Scenario Comments

Release 8.0 Negative Testing

HP8 - Regression - Progression Scenario Summary
HP8 - Regression - Progression Scenario Comments

Production Mirror Testing

H10 - Controlled Prod Positive - Scenario Summary
HPS - SATE Positive - Scenario Summary
H10 - Controlled Prod Negative - Scenario Summary
HPS - SATE Negative - Scenario Summary
H10 - Controlled Prod Positive - Scenario Comments
HPS - SATE Positive - Scenario Comments
H10 - Controlled Prod Negative - Scenario Comments
HPS - SATE Negative - Scenario Comments

7.0 Delta Testing

7.06 Delta Scenario Summary
7.07 Delta Scenario Summary
7.06 Delta Scenario Comments
7.07 Delta Scenario Comments

8.0 Delta Testing

8.04 Delta Scenario Summary
8.05 Delta Scenario Summary
8.04 Delta Scenario Comments
8.05 Delta Scenario Comments

Full Regression Testing

7.0 Progression – Positive
7.0 Regression – Negative
8.0 Progression – Positive
8.0 Regression – Negative

Unbundled Distribution Loops

7.0 Progression – Positive
7.0 Regression – Negative
8.0 Progression – Positive
8.0 Regression – Negative

6.7.1 Transaction Test Results Reporting Summary

The attached Appendix will provide a comprehensive summary of the overall Transaction Test evaluation process and the methods used to derive the evaluation results. This appendix includes the following information:

- Transaction Test Methodology
- Functions to be Tested
- Entrance Criteria
- Inputs
- Transaction Test Architecture
- Qwest's IMA-EDI Architecture
- HP Test Transaction Architecture
- Transaction Test Approach
- Transaction Test Report Generation
- Transaction Test Results
- Transaction Test Validation Criteria
- Additional Supporting Information
- References
- Limitations
- Summary Evaluation

7.0 Issues

7.1 Overview

As part of its SATE Evaluation Plan, HP developed an Issues Management Plan to address the issues encountered during this engagement. The purpose of this plan was to provide the ACC, Qwest, and the CLEC members of the TAG a vehicle for tracking issues identified by HP, and understand the methodology used by HP in identifying and resolving issues. This section briefly describes the methodology used by HP, and the results of executing this plan.

7.2 Methodology

As described in HP's Issue Management Plan, an issue was assumed to be a gap between the actions of the Qwest documented processes and applications and stakeholder expectations. Issue Management was the process used to close that gap by analyzing the problem and determining the

proper corrective action. It consisted of identifying, documenting, tracking, prioritizing, resolving, and communicating to project stakeholders the issues that arose during the overall HP evaluation.

Issues were tracked to the four Evaluation Domains: Documentation, Co-Provider Input, Process and Transaction. Transaction issues were further broken down into the following sub-categories:

- Regression/Progression: Issues related to this sub-test of the overall transaction test.
- Negative: Issues related to negative testing.
- Production Mirroring: Issues related to testing the production mirroring functionality of SATE
- Business Rules: Issues related to unexpected responses due to business rules.
- EDI Map: Issues related to unexpected errors with EDI Mapping.
- Documentation: Issues uncovered during transaction testing that did not match Qwest documentation.

During the course of the evaluation, questions or problems were noted by the HP team, and logged on a Question Log. This log was used as a way of tracking candidate issues, and communicating them to Qwest. Inputs to this log could have come from several sources: reading Qwest documentation; analyzing transaction responses; questions raised during weekly calls with Qwest; questions raised during process interviews with Qwest; or analyzing CLEC and Qwest input on SATE design.

The severity of issues were classified according to the following definitions:

- Low severity issues were those that did not impact the completion of a transaction test scenario, or the completion of any of the specific review or the overall evaluation. Examples of low severity issues could have included:
  - Editorial issues with documentation
  - Completeness of an Individual CLEC (Co-Provider) interview
- Medium severity issues were those that impacted the completion of a transaction test scenario, but did not impact the completion of other transaction test scenarios or any of the specific review or the overall evaluation. Examples of medium severity issues could have included:
  - Ability to complete test scenarios for a certain product type
  - Unable to open or print a document.
  - Unable to schedule interviews for a process evaluation.
  - Process failures based on the expectations set by documentation.
  - Unexpected Transaction errors.
- High severity issues were those that impacted the completion of the transaction test, the completion of a specific review, and the completion of the overall evaluation. Examples of high severity issues could have included:
  - EDI Interface down for a period of time impacting the ability to enter test transactions
  - T1 Lines not working impacting the ability to enter test transactions
  - New revisions to SATE environment requiring development/upgrades to HPC interface.
  - Digital Certificate, IA/IA, Firewall or other security barriers that cause interconnection delays
  - IMA-EDI SATE Stub environment producing inconsistent or no responses as expected per the IMA EDI disclosure documentation
  - IMA-EDI SATE application changes required as noted by Qwest's internal change request generation.

Issues were also tracked according to its status throughout its resolution. The following status categories were used:

- Candidate: A problem or question that has been identified and logged as a potential issue.
- Open: A candidate issue that has been clarified as an issue.

- Under Investigation: An issue that has a defined corrective action plan, and is being worked on by Qwest.
- Resolved: An issue that has been corrected according to Qwest's corrective action plan, and being verified by HP.
- Verified: An issue that has been resolved and the correction verified by HP.
- Impasse: An issue that has reached impasse, and transferred to ACC staff for resolution.
- Closed: An issue that has been resolved and verified by HP, and closed.
- Closed – Unresolved: An issue that has been resolved verified and closed but unresolved. If there were open questions or comments against closing the issue, and HP was not able to come to agreement before the end of the evaluation, HP changed the status of the Issue in the Issues tracking system to Closed – Unresolved.

7.3 Results

The following table summarizes the issues identified and tracked by HP during this engagement. Please see Appendix F for complete details on each issue.

Issue Number	Domain	Severity	Summary Description	Status	Comments
HPSATEEV 1001	Process	Low	There was some confusion over SATE connectivity issues when following the processes for "Establishing A Dedicated Circuit" and "Firewall and IA-to IA Test Phase" as described in Qwest Communications, Inc., EDI Implementation Guidelines dated October 11, 2001.	Closed	12/19/01 – HP - Issue 1001 has remained open because HP was awaiting the clarification of the IT I&D contact in the "Establishing a Dedicated Circuit" section of the IMA EDI Implementation Guidelines. It is HPs understanding that the IT I&D contact assignment occurs when a Service Manager is assigned to the CLEC. However, because HP did not follow the normal CLEC process, HP was not assigned a CLEC Service Manager, and subsequently, the assignment of a contact from the IT I&D Team by the CLEC Service Manager did not occur. HP views the assignment of the IT I&D contact as a part of the process and documentation associated with the Account/Service Manager Process, and thus, considers outside the scope of this evaluation. HP is recommending closure of this low severity

Issue Number	Domain	Severity	Summary Description	Status	Comments
					issue with the following If the IT I&D role is not already defined as a part of the process associated with the Service Manager role, Qwest will perform the activities necessary to clearly define the process for, and the role of, the IT I&D contact. 12/19/01 – HP has closed this issue.
HPSATEEV 1002	Transaction – Documentation	Low	7.0 ProgressionScenario STAVQ-A-A-00101 - AVQ - Address Validation by TN = Multi CALA- returned an unexpected response.	Closed	HP has re-tested the transaction after the fix was implemented and received the expected response. Recommended closure on 11/12/01 and closed on 12/3/01.
HPSATEEV 1003	Transaction – EDI Maps	Low	7.0 Scenario STAVQ-A-A-01801 – AVQ – Address Validation by Address - Exact Match w/ Supplemental information returned a questionable response.	Closed	The associated industry notification was issued on 11/15/01 with the subject line, "IMA EDI Release 8.0 Disclosure Document Addendum #6." HP closed this issue 0n 12/3/01.
HPSATEEV 2001	Process	Medium	The SATE Data Document Overview and the SATE Data Request Form do not sufficiently describe the process a Co-provider will use to request new data be added to SATE.	Closed – Unresolved	12/17/01: In the next version of the IMA EDI Implementation Guide, Qwest will change the last bullet point in the "Adding Additional Data to SATE" section from: If multiple CLECs request similar data, the Data Document will be updated To: Although Qwest replicates all new data to all SATE CLEC accounts as part of loading new data, the data document will only be updated when multiple CLECs request similar data. The next version of the IMA EDI Implementation Guide is scheduled for January 21, 2001 and will be published to the CLEC community using the Release Notice

Issue Number	Domain	Severity	Summary Description	Status	Comments
					process. Response/Recommendation provided by HP 12/18/01 – HP has reviewed the clarification provided by Qwest. HP recommends closure of this issue per the January 21, 2002 update of the IMA EDI Implementation Guide.
HPSATEEV 2002	Transaction – Production Mirror	Medium	HP would have difficulty establishing and finalizing CLEC operational processes using the SATE because the SATE does not return LSR responses that are consistent in content to responses for like LSR's that would process through Qwest's standard Interoperability and /or Production environments.	Closed	12/18/01 - HP has updated this document for the Qwest supplemental response received on 12/17/01. This issue was closed by HP on 12/14/01.
HPSATEEV 2003	Transaction – EDI Map	Medium	7.0 Progression Scenario AAQ4 – Obtain Appoint Availability for order non-specific - returned unexpected response.	Closed	Qwest fixed the system on October 24th, 2001 to address the issue discovered while testing with HP. HP re-tested the transaction after the fix was implemented and received the expected response. 11/12/01 - HP recommended closure of this issue per the positive results of the Re-Test activity on 11/12/01. HP closed this issue 0n 12/3/01.
HPSATEEV 2004	Transaction – EDI Map	Medium	7.0 Progression Scenario SHL3 – Shared Loop Service Disconnect Single Line - returned unexpected EDI format in the 865 Completion response.	Closed	The fix to the REF segment for SENUM in IMA 7.0, as outlined in Qwest's Supplemental Response (11/13/01) was implemented on 11/19/01. The associated industry notification was issued on 11/19/01 with subject: "IMA EDI Release 7.0 Completion Transaction Problem Corrected." 12/3/01 – HP has closed this issue.
HPSATEEV 2005	Transaction – Negative	Medium	Negative testing of the 7.0 and 8.0 Errors List using data from	Closed	12/15/01 - HP has received the updated error list 8.01

Issue Number	Domain	Severity	Summary Description	Status	Comments
	Testing		the scenarios CSR3, AAQ4 and TNAQ1 did not return the expected response.		version 3. Qwest distributed Release Notification to the community on 12/14/01. "SYST.12.14.01.F.02480.IMA_GUI_&_EDI_Doc_V3_Errors_List_for_Rel_8.01"Per HP's review of the new error list, the introductory narrative explains the Legacy System Error responses. HP recommends closure of this issue. 12/19/01 – HP has closed this issue.
HPSATEEV 2006	Transaction – EDI Map	Medium	Regression testing of the 7.0 Data Document using the scenario for CSR4 returned an EDI response that was not in accordance with standard EDI processing practices.	Open	12/18/01 - HP has reviewed Qwest's supplemental response and found that Chapter 2 in the 8.0 Addendum has been updated to reflect "There are situations where a backend system will return a blank in a data field. An example is for address validation query (AVQ) exact match response with supplemental data the N1|DT|SUPPMATCH loop may be returned as "empty" if the building, room, or floor is blank in the Qwest back-end system. This is a valid response." Per this update which explains that there is the possibility of a blank in a data field, HP recommends closure of this issue. 12/19/01 – HP closed this issue.
HPSATEEV 2007	Transaction – EDI Map	Medium	Regression testing of the 7.0 Data Document using the scenario for CSR4 returned a response that was not in accordance with the Qwest IMA Using EDI Disclosure Appendix A, Chapter 3.	Closed	Qwest implemented the fix referenced in the 12/5/01 response on 12/8/01. The fix corrects the EDI map to create a complete BADWTN loop. The first associated industry notification, identifying the problem, was issued on 12/7/01 with the subject

Issue Number	Domain	Severity	Summary Description	Status	Comments
					line, "IMA EDI Release 7.0 Customer Service Record Query Problem." The second associated industry notification, indicating the problem had been resolved, was issued on 12/10/01 with the subject line, "IMA EDI Release 7.0 Customer Service Record Query Problem Corrected." 12/13/01 – HP has closed this issue based upon successful retest.
HPSATEEV 2008	Transaction – EDI Map	Medium	Regression testing of the 7.0 Data Document using the scenario for CSR6 returned an EDI response that was not in accordance with standard EDI processing practices.	Closed	12/03/01: HP submitted query and received the expected response. HP did not receive a supplement regarding the completion of the system work. 12/04/01 - HP closed this issue per the successful re-test.
HPSATEEV 2009	Transaction – EDI Map	Medium	Regression testing of the 7.0 and 8.0 Data Document using the scenario for CSR11 returned a response that was not in accordance with the Qwest IMA Using EDI Disclosure Document Appendix A.	Closed	HP received the release notification on 12/03/01, which indicated that the Release 7.0 environment was updated and available on 11/30/01 and the Release 8.0 environment was updated on 12/03/01. HP submitted a re-test and received the expected results. HP closed this issue on 12/5/01.
HPSATEEV 2010	Transaction – Negative Testing	Medium	Progression testing of the 8.0 Errors List using data from the scenario for POTS3 – POTS Change Single Line did not return a matching response to the Qwest production response.	Closed	12/04/01 – HP notes when re-testing PON R8EB-POTCS-00301 and ensuring that the AN and TN were consistent, HP received the expected error response "Can not add existing USOCs: F- ESX already on the account". HP recommended closure of this issue on 12/4/01, and closed it on 12/5/01..
HPSATEEV 2011	Transaction – Negative Testing	Medium	Progression testing of the 8.0 Errors List using data from the scenario POTS3 – POTS Change Single Line did not return the expected response.	Closed - Unresolved	12/20/01 – HP has closed this issue as 'Closed – Unresolved'. This item was closed based upon Qwest's demonstrated history of

Issue Number	Domain	Severity	Summary Description	Status	Comments
					making updates to their documentation. HP will verify the above suggested update on Friday, December 21, 2001 and will inform the community if the update was not made or does not reflect the above.
HPSATEEV 2012	Transaction – Production Mirror	Medium	7.0 Progression testing of the 7.0 Data Document using data from the scenario POTS3 – POTS Change Single Line did not return a matching response to the Qwest production response.	Closed - Unresolved	12/18/01: HP re-tested to ensure the USOC edits are currently working. HP submitted scenarios to create expected USOC errors. HP submitted re-test transactions and received expected results for one of the transactions. Other transactions did not return expected responses. During HP's re-test of this issue, Qwest acknowledged that there was a problem and further Qwest acknowledged that there should have been an event notification issued to the SATE community. HP concludes that the USOC edit is currently working; however, HP is strongly recommending that there should be a notification issued to the users of SATE upon a SATE problem discovery, upon it's impact analysis and upon it's problem resolution. HP recommends closure of this issue per the implementation of the aforementioned SATE Event Notification provision. 12/19/01 – HP has closed this issue
HPSATEEV 2013	Transaction – Production Mirror	Medium	Production Mirror testing of the 7.0 Errors List using data from the scenario POTS3 – POTS Change Single Line did not return the expected response.	Closed	12/07/01 - HP has reviewed the update to the 8.01 Errors List. The Errors List has been updated to reflect the aforementioned items. HP recommends closure of this issue. 12/13/01 – HP

Issue Number	Domain	Severity	Summary Description	Status	Comments
					has closed this item.
HPSATEEV 2014	Transaction – Documentation	Medium	Delta testing of the 7.0 Data Document using the scenario for POTS5 – Conversion as Specified with Directory Listings Multiple Line did not return the expected response. Delta testing of the 7.0 Data Document using the scenario for POTS9 – Conversion As Specified Multiple Line with no DL did not return the expected response. Regression testing of the 8.0 Data Document using the scenario for UNE-P POTS9 – Conversion as Specified with no DL Multiple Line did not return the expected response.	Closed	12/03/01 - HP has reviewed Qwest's response. The data document has been updated to correctly identify the format of the phone number for /CFNB and /CFN. HP submitted test transaction and received the expected response. 12/04/01 – HP has closed this issue.
HPSATEEV 2015	Transaction – Negative Testing	Medium	Regression testing of the 8.0 Data Document using the scenario for UNE-P POTS9 – Conversion as Specified with Directory Listings Single Line did not return the expected response.	Closed	12/03/01 - HP has reviewed Qwest's response. The data document has been updated to correctly identify the format of the phone number for /CFNB and /CFN. HP submitted test transaction and received the expected response. 12/04/01 – HP has closed this issue.
HPSATEEV 2016	Transaction – Documentation	Medium	Regression testing of the 7.0 Data Document using the scenario for UNE-P did not return the expected response.	Closed	The data document has been updated. HP re-tested by submitting test transaction. HP received the expected response. HP is recommended closure of this issue on 12/4/01. Issue closed on 12/5/01.
HPSATEEV 2017	Transaction – Negative Testing	Medium	Negative testing of the 8.0 Errors List using data from the scenario UBL4 did not return the expected response.	Closed	12/07/01 - HP did receive the updated 8.01 IMA Errors list along with the associated notification. Upon review of the updated error list the class of service error message has been included."WO COS 999 The Class of Service for this account is not valid for UBL". HP recommends Closure of this issue. 12/19/01 – HP closed this issue.

Issue Number	Domain	Severity	Summary Description	Status	Comments
HPSATEEV 2018	Transaction – Negative Testing	Medium	Negative testing of the 7.0 Errors List using data from the scenario TNAQ1 did not return the expected response.	Closed - Unresolved	11/27/01 - A new IMA Errors List was generated for IMA release 8.01. This errors list included the new 8.01 USOC edits. Beginning with 9.0, Qwest will provide a change summary with the list to identify the changes in the IMA Errors List from one version to the next. A Release Notification will be distributed to the CLEC community with the new IMA Errors List and corresponding Change Summary attached. HP recommends this Issue remain open pending the implementation of the 9.1 release and the verification that the Errors List published to support that release will include the change summary and those modifications to eliminate error messages that have become obsolete. 12/20/01 – HP has closed this issue as 'Closed – Unresolved'. This issue has been closed, but will be tracked with Recommendation #4 of the SATE Summary Evaluation Report for Qwest IMA-EDI SATE
HPSATEEV 2019	Transaction – Documentation	Medium	Regression testing of the 7.0 Data Document using the scenario for SAQ4 did not return the expected response.	Closed	12/13/01 – HP notes that the latest Data Documents have been updated to include to indicate "Data for 1FR and a list of PIC/LPICs are returned". HP recommends closure of this issue. 12/19/01 – HP closed this issue.
HPSATEEV 2020	Transaction – Documentation	Medium	Delta testing of the 8.0 Data Document using the scenario for CEN3 did not return the expected response.	Closed	On 12/04/01 HP submitted PON D7PB-CNTXC-00702 as a re-test. HP received the expected response. HP has closed this issue on

Issue Number	Domain	Severity	Summary Description	Status	Comments
					12/5/01.
HPSATEEV 2021	Transaction – EDI Map	Medium	Delta testing of the 8.0 Data Document using the scenario for UCEX1 returned a response that was not in accordance with the Qwest IMA Using EDI Disclosure Document Appendix C and Chapter 45.	Closed	12/04/01 HP reviewed Chapter 45 of The Disclosure Document. It has been updated to correctly list the required forms. HP closed this issue on 12/5/01.
HPSATEEV 2022	Transaction – Negative Testing	Medium	The established process does not return expected descriptive data.	Closed	12/19/01- HP reviewed the IMA Disclosure located at http://www.qwest.com/wholesale/ima/gui/imauser_801.html. The verbiage has been added to page 23. HP recommends closure of this issue.
HPSATEEV 2023	Transaction – Negative Testing	Medium	Progression testing of the 7.0 and 8.0 Errors List using data from the scenario UNE-P POTS Conversion As Specified with Directory Listings - Single Line did not return the expected response.	Closed	12/15/01: HP recommends closure of this issue. This issue will be tracked per Issue 2018 to ensure that the Errors List to be distributed as part of the 9.1 release implementation will accommodate the change summary and the elimination of obsolete error messages. 12/19/01 – HP closed this issue.
HPSATEEV 2024	Transaction – Documentation	Medium	Delta testing of the 8.0 Data Document using the scenario for UNE-P POTS8 Conversion As Specified no DL Single did not return the expected response.	Closed	12/13/01: The latest release of the Data Documents have been updated to include the verbiage “In cases where multiple options for populating SANO and NXX are provided with a single scenario listing, the SANO and NXX must match. For example, in scenario DL1, both the NXX and SANO have 699 or 799 as options. When inserting this data into the EDI transaction, either 699 or 799 should be populated into both fields.” HP recommends closure. 12/19/01 – HP closed this issue.
HPSATEEV 2025	Transaction – Documentation	Medium	Progression testing of the 7.0 Data Document using the scenario for Raw Loop Data	Closed	12/04/01 Per the Data Document Updates to reflect Van Cleve Road as

Issue Number	Domain	Severity	Summary Description	Status	Comments
			Query by Address RLDQ14 did not return the expected response.		a Terminal ID (field connection point) in the expected results. HP closed this issue on 12/5/01.
HPSATEEV 2026	Transaction – Documentation	Medium	Delta testing of the 8.0 Data Document using the scenario for Raw Loop Data Query by Address RLDQ23 did not return the expected response.	Closed	12/04/01HP submitted an RLDQ re-test transaction. HP received the expected response. HP closed this issue on 12/5/01.
HPSATEEV 2027	Transaction – Documentation	Medium	Delta testing of the 8.0 Data Document using the scenario for Raw Loop Data Query by TN RLDQ7 did not return the expected response.	Closed	12/07/01: HP submitted a re-test query. Received the expected response. HP recommended closure of this issue. 12/13/01: HP has closed this issue.
HPSATEEV 2028	Transaction – Documentation	Medium	Delta testing of the 7.0 Data Document using the scenario for Raw Loop Data Query by TN RLDQ2 did not return the expected response.	Closed	12/13/01 – The latest release of the Data Documents no longer list a CALA for the RLDQ scenarios. HP recommends closure of this issue. 12/19/01 – HP closed this issue.
HPSATEEV 2029	Transaction – Documentation	Medium	Delta testing of the v8.04 Data Document using the scenario for CSR5 did not return the expected response.	Closed	12/18/01: HP reviewed the 9.0 document provided. The 9.0 EDI Mapping Example and 9.0 Disclosure documents indicate “and”. HP agrees that the change to the use of "and" will produce the appropriate expected results when the Response = M and MIXTYPE = E and when Response =M and MIXTYPE = T. HP recommends that this issue be closed. 12/19/01 – HP closed this issue.
HPSATEEV 2030	Transaction – Documentation	Medium	Regression Testing of the 8.0 Data Document using the scenario for CSR9 did not return the expected response.	Closed	12/19/01 - HP reviewed the v8.09 Data Document distributed on 12/19/01 and confirmed that this update was completed by Qwest. HP re-tested CSR9 in SATE and received the expected response. Both the v8.09 Data Document and the response contain USOC=9PZLC once. This

Issue Number	Domain	Severity	Summary Description	Status	Comments
					issue is recommended for closure. 12/19/01 – HP closed this issue.
HPSATEEV 2031	Process	Medium	Attempts to access USOCs for the UNE-P products on the Qwest usocfidfind web page using the Qwest distributed URL were unsuccessful.	Closed	12/14/01: HP has not been able to verify the receipt of this release notification, however HP recommends closure of this issue as HP is not testing the Release Notification process as part of the scope of the SATE evaluation. 12/19/01 – HP closed this issue.
HPSATEEV 2032	Transaction – Documentation	Medium	As new releases of the 7.0 and 8.0 Data Documents were distributed by Qwest and reviewed by HP, HP noticed that the specific error responses that had been listed in the Expected Results had been modified to say "Error Response Returned".	Closed - Unresolved	12/19/01: Qwest distributed updated versions of the data documents – v7.11 and v8.09. The expected error response was not updated for TNAQ3. HP retested and did not receive the expected results as depicted in the data document. As this does not match the v7.11 data document expected response, this remains open. HP requests clarification of the expected response for TNAQ3. 12/20/01 – HP has closed this issue as 'Closed – Unresolved'. HP has not been able to verify that the update has been made, however, HP does not feel that the resolution of this issue will significantly impact the findings of the transactional test results.

The following table further summarizes the issues logged by HP. In total, HP logged and tracked 35 formal issues. Of those, 3 have a current status of Closed-Unresolved. All other issues were closed through the Issues Management process. The majority of the issues were document related, but identified through transaction testing, not through the Document Evaluation domain. The most common example of those issues dealt with consistency of the Qwest Data Document. In most cases, SATE did not return the response listed in the Data Document. All of those issues, however, have been closed after Qwest implemented a fix, and verification by HP.

Issue Category	Low Severity	Medium Severity	High Severity	Total Closed - Unresolved	Total Closed	Total
Transaction Test	0	2	0	0	2	2
Transaction – Document	1	25	0	1	25	26
Transaction – EDI Map	0	0	0	0	0	0
Transaction – Negative Testing	0	2	0	1	1	2
Transaction – Production Mirror	0	1	0	0	1	1
Transaction – Business Rules	0	0	0	0	0	0
Process	2	2	0	1	3	4
Documentation	0	0	0	0	0	0
Co-Provider Input	0	0	0	0	0	0

For any 'Closed-Unresolved' issues, HP has explained in the Issue document and the External Issue Tracking Log the reason for the issue being closed as unresolved. For each 'Closed-Unresolved' issue, HP has also identified a Recommendation in Section 2 allowing Qwest to provide a resolution to the issue.

The following table summarizes the issue candidates identified and tracked by HP via the HP Formal Issue Process for the SATE Evaluation during this engagement. Please see Appendix E for complete details on each issue candidate.

Candidate Sequence Number	Domain	Candidate Issue Statement	Candidate Issue Description	Comments
1	Documentation Evaluation	Closed Questions, Section 1, #10	1.2.3 – "users approved to utilize SATE" How is a co-provider approved to use SATE? What document is used to designate approval?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed as HP would not be able to verify the updates to the IMA-EDI Implementation Guide until 1/21/01.
2	Process Evaluation	Closed Questions, Section 1, #15	# 15 When will SATE be 8.0 capable? Will SATE support multiple releases?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #2 of the Final SATE Summary Evaluation Report.
3	Documentation Evaluation	Closed Questions, Section 1, #21	1.2.4 – Responses – "FOC's are sent each business day for the first ten (10) Order Transactions received the prior business day". Why are only the first ten (10) transactions responded to?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed as HP would not be able to verify the updates to the IMA-EDI Implementation Guide until 1/21/01.
4	Documentation Evaluation	Closed Questions, Section 2, #1	Overview – "is for those co-providers approved to utilize SATE for testing." How is a co-provider approved?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed as HP would not be able to verify the updates to the IMA-EDI Implementation Guide until 1/21/01.

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5	Documentation Evaluation	Closed Questions, Section 2, #1	When does a SATE release get retired ? The same date as it does in Production. You must have started test on 7.0 by 10/20 in SATE or Interop. Based on the dates set in the Re-certification letter. A co-provider can add products if they are certified in the Release. When 7.0 goes out of Production the 7.0 goes out of SATE. 7.0 will be available in Regression only for the period of time between the retirement of the release and the Interop testing cutoff for a new release.	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed as HP would not be able to verify the updates to the IMA-EDI Implementation Guide until 1/21/01.
6	Documentation Evaluation	Closed Questions, Section 2, #11	In the Data Document for the SAQ, the state is not provided. It is required if INFOTPYE=S. This effects SAQ 1, 2, 3, 4, 7.	**12/20/01 - 'HP Closed'.** This issue candidate is closed on 12/11/01 as per the SATE Closed Question Log.
7	Process Evaluation	Closed Question Log, Section 4, #9	When will the new VICKI method of response automation be available in SATE?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #5 of the Final SATE Summary Evaluation Report.
8	Process Evaluation	Closed Question Log, Section 4, #10	What is the maximum number of transactions that will be allowed for a co-provider to execute in SATE? There seems to be no specific guidelines regarding the number of transactions acceptable for a Usage Plan forecast. Please provide the information that suggests a maximum guideline for a co-provider's usage of the SATE.	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #5 of the Final SATE Summary Evaluation Report.
9	Process Evaluation	Closed Question Log, Section 4, #12	When new account information was requested for SATE, we received a response containing a list of questions. Is there	**12/20/01 - HP 'Closed'**. This candidate issue is closed to formal issue HPSATEEV2001.

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			documentation available that explains how to fill out the form and what is necessary?	
10	Document Evaluation	Closed Question Log, Section 4, #14	There have been many Release Notices regarding the BPL Layer changes. Are these updates available in SATE? How do they affect SATE regarding release 8.0?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #4 of the Final SATE Summary Evaluation Report.
11	Process Evaluation	Closed Questions, Section 4, #20	How do addendums to IMA EDI get scheduled? The current CMP provides a scheduled addendum to occur 2 weeks after the production turn up a major Release. Any further addendums do not appear on the calendar. If the SATE data document will change due to the implementation of an addendum how far in advance of the addendum implementation will the SATE data document be made available to the co-providers?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #5 of the Final SATE Summary Evaluation Report.
12	Process Evaluation	Closed Questions, Section 4, #22	#22. The Release Notices for 8.01 - both the reminder notice from 10/23/01 and the 8.01 Candidates/Descriptions of 10/17/01 do not mention the 8.0 Addendum 4 and Appendix E as the changes for the 8.01 IMA EDI Release. The Disclosure documentation describes the Addendum 4 as 8.0 with no correlation to 8.01. Where can HP find the notification that ties the Addendum 4 and Appendix E to the 8.01 IMA EDI Release?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #2 of the Final SATE Summary Evaluation Report.
13	Process	Open	Where are the Qwest and	**12/20/01 - HP 'Closed-**

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	Evaluation	Questions, Section 4, #26	Co-Provider functional roles within the SATE process identified and defined (i.e., Qwest Implementation Manager, EDI Tester, Co-Provider Relationship Manager, Test Manager)	**Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13a	Process Evaluation	Open Questions, Section 4, #27	How does a Co-Provider gain an understanding of the specific activities required for implementation and testing in SATE? Related to: Activities clearly defined Responsible parties identified Activity sequence and time frames identified Deliverables described	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13b	Process Evaluation	Open Questions, Section 4, #29	Where is the scheduling of the kickoff call explained, including who schedules the call, scheduling interval, and suggested attendees?	**12/20/01 - HP 'Closed-Unresolved'.** This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13c	Process Evaluation	Open Questions, Section 4, #34	How can a Co-Provider easily distinguish which activities within the EDI Implementation Guide are unique to SATE implementation and testing?	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13d	Process Evaluation	Open Questions, Section 4, #35	Where does a Co-Provider obtain basic instructions for the completion and use of the various forms, worksheets and other support documents related to SATE implementation and testing? (i.e., TPR worksheet, Connectivity Worksheet, Question Log)	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13e	Process Evaluation	Open Questions, Section 4, #39	How can a Co-Provider clearly identify the criteria/steps required for certification to perform SATE testing? This question also applies to certification for releases.	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.

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13f	Process Evaluation	Open Questions, Section 4, #40	Please explain the "Event Notification" Process for SATE specific transactions and processes. In the event where there is a system, EDI or process issue how will the SATE users be notified. A most recent example is that of the FARR where the EDI enveloping errors caused HP to be unable to receive a response for Facility Availability queries.	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
13g	Process Evaluation	Open Questions, Section 4, #41	Please clarify the timing of updates to SATE for the Release Notifications that are posted for impacts to the IMA EDI environment. HP has noticed that the fixes for FAQ 7.0 and 8.0 were not available in SATE as of 11/09/01. The Release notifications were for 11/06/0.	**12/20/01 - HP 'Closed-Unresolved'**. This issue candidate is closed to HP Recommendation #3 of the Final SATE Summary Evaluation Report.
14	Process Evaluation	Open Questions, Section 4, #36	Where are the Data Document administration procedures defined related to the following? Who receives current data doc and when is it distributed Change Management Use of Data Request Form Version updates.	**12/20/01 - HP 'Closed'**. This candidate issue is closed to formal issue HPSATEEV2001

For any 'Closed' or 'Closed-Unresolved' candidate issues, HP has explained above, and in the Internal Issue Tracking Log, the reason for a candidate issue being closed. The reason for the closure may include a closure to an associated Recommendation in Section 2 or an associated issue or event that will allow the candidate issue to be closed.