ATTACHMENT A

Hewlett Packard Company

Audit of Southwestern Bell Telephone of Texas PM 13 Flow-through and Maintenance and Repair Metrics Data

Conducted for the Public Utilities Commission of Texas

Letter of Correction and Final Report

Hewlett-Packard Company

Audit of Southwestern Bell Telephone of Texas PM 13 Flow-through and Maintenance and Repair Metrics Data

Conducted for the

Public Utilities Commission of Texas

Final Report

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Executive Summary

At the direction of the Public Utilities Commission of Texas (PUCT), HP undertook an audit of Southwestern Bell Telephone Company (SWBT) to determine the validity and accuracy of data SWBT uses in the calculation of Key Performance Indicators. HP's audit was intended to inform the PUCT and interested parties of the reasonableness and fairness with which SWBT reports performance for specific Competitive Local Exchange Carrier (CLEC) transactions.

The Final Report of HP's Findings and Activities (Final Report) provides a detailed description of the processes that HP carried out to evaluate the various objectives within each test plan of the audit. For each objective, the Final Report provides details of the SWBT processes HP evaluated, the activities HP carried out in its evaluation, and the findings that resulted from HP's work.

This Executive Summary document provides an abbreviated synopsis of HP's activities and findings as they relate to each objective of the following PUCT Audit Test Plans:

- HP's Independent Verification of PM13 and PM13.1 Flow-Through data collection for inclusion in metrics calculations;
- PM13 Test Plan One: Accuracy of Current SWBT Reporting;
- PM13 Test Plan Two: Accuracy of SWBT Restatement of PM13 Flow-Through;
- LMOS Test Plan One: Accuracy of Current LMOS Update Processes;
- LMOS Test Plan Two: Accuracy of the Embedded LMOS Database;
- LMOS Test Plan Three: Accuracy of Current LMOS-Related Performance Measures; and,
- LMOS Test Plan Four: Magnitude of Past LMOS-Related PM Errors

The following sections summarize HP's activities and findings as they relate to each of the test plans.

Overview of Findings

To ensure that SWBT's metrics calculations for PM13 included all appropriate orders, HP conducted an Independent Verification of PM13 metrics data, using sources outside traditional measurement systems. HP found that SWBT generally complied with PM13 and PM13.1 business rules in calculating and reporting results to the PUCT. However, HP's Independent Verification process found that, of the EDI orders SWBT received during the period of review, approximately 10 percent were improperly omitted from SWBT's PM13 calculations and 9 percent were omitted from the PM13.1 calculations. These omissions occurred due to errors in data handling processes and systems not documented in SWBT's performance measurement business rules, and not generally known to the parties prior to HP's audit work.

In addition to these data inconsistencies, HP found SWBT had significant difficulty providing HP with accurate responses to information requests, and many information request responses required HP to perform significant follow-up to determine the true nature of SWBT's data. HP believes the problems identified during this audit can be attributed to:

- Inadequate internal controls over CLEC service quality data; and,
- Inadequate quality testing surrounding metrics-impacting system changes.

Overall, HP found that SWBT was reporting PM13 flow-through performance in accordance with published business rules and that SWBT accurately calculated its restatements of past PM13 results. However, these should be considered in light of HP's Independent Verification findings. HP did observe that the formula SWBT is currently required to use to calculate PM13 performance requires SWBT to provide CLECs with better service than it provides its own retail customers to avoid paying

penalties.

With minor exceptions, SWBT's LMOS database is accurate, and SWBT reports LMOS-related performance measures accurately. Due to the way SWBT manages the LMOS database, there can be a lag of up to two weeks before a CLEC can submit electronic trouble reports on recently migrated accounts. SWBT has work-around processes in place that allow CLECs to submit manual trouble reports for these accounts.

Overview of Audit Process

HP used a four-level approach to this project. The first level involved the use of HP's independent measurement capability, which examined data collection practices that occur outside of SWBT's standard measurement systems. HP's approach is based upon a full and complete understanding of wholesale order processing and system architecture. HP used Independent Verification in this engagement to verify SWBT's current system performance, highlight potential problem areas, and conduct root-cause analyses with independent quantitative data. The objective of Independent Verification is a definitive finding as to whether all data that should factor into metrics calculations is factored into metrics calculations.

The second level of HP's project approach involved the use of conventional audit practices to examine the overall process by which SWBT compiles and reports the subject metrics. HP looked at system architecture, source code, data collection points, and computation mechanisms, and examined the service quality business rules for clarity and applicability to HP's understanding of the systems, collection points, and computation mechanisms. HP also examined SWBT carrier-to-carrier service quality measurement procedures, published and internal documents, and internal controls to gain an understanding of the overall measurement and reporting framework for the metrics under review.

At the third level, HP conducted selected, focused, on-site interviews and observations of SWBT and CLEC operations and personnel. The objectives of these observations were to validate the findings from the level one and two results, and to provide the parties with an independent assessment of the impact of findings on SWBT, CLECs, and consumers.

The final level of HP's approach to the project involved its approach to working with SWBT, the CLECs, and the regulatory bodies involved in the project. HP made a significant effort to provide the parties with an open process that allowed input from all parties.

Independent Verification of PM13 and PM13.1 Flow-Through

HP's audit included an Independent Verification test of SWBT's data collection and reporting of PM13 and PM13.1 EDI results. To complete this test plan, HP evaluated the following objective:

- SWBT accurately captures the correct subset of LSRs via EDI for inclusion in the calculation of PM13 and PM13.1 flow-through rates.

The following section provides a summary of HP's activities and findings with respect to the above-named objective.

Findings Summary

Objective

The objective of the Independent Verification of PM13 and PM13.1 Flow-Through was to determine whether SWBT accurately captures the correct subset of LSRs via EDI for inclusion in the calculation of PM13 and PM13.1 flow-through rates.

Findings

HP's Independent Verification process found that, of the EDI orders SWBT received during the period of review, approximately 10 percent were improperly omitted from SWBT's PM13 calculations and 9 percent were omitted from the PM13.1

calculations. These omissions occurred due to errors in data handling processes and systems not documented in SWBT's performance measurement business rules, and not generally known to the parties prior to HP's audit work.

In addition to these data inconsistencies, HP found SWBT had significant difficulty providing HP with accurate responses to information requests, and many information request responses required HP to perform significant follow-up to determine the true nature of SWBT's data. HP believes the problems identified during this audit can be attributed to:

- Inadequate internal controls over CLEC service quality data; and,
- Inadequate quality testing surrounding metrics-impacting system changes.

PM13 Test Plan One—Accuracy of Current SWBT Reporting

The first part of HP's audit of SWBT PM13 reporting was to determine whether SWBT is currently reporting PM13 "correctly (in accordance with the approved business rules) and is providing an appropriate parity comparison between the order processing flow-through that SWBT achieves for CLECs and the flow-through it provides to its own retail operations." To complete this test plan, HP evaluated the following six objectives:

- PM13 captures all CLEC order types (e.g., restoration of service, PIC change, etc.) for which the equivalent retail order type flows through EASE for SWBT retail service;
- PM13 captures all CLEC order types that are MOG-eligible;
- PM13 results that are reported for SWBT retail include only those order types that are designed to flow through EASE;
- Reporting CLEC data for PM13 in numbers of back-end service orders, rather than LSRs, is not distorting the results;
- Flow-through failures in the form of erroneous and improper rejects are being captured in the PM13 data; and,
- No other errors or departures from the business rules are apparent in SWBT's current collection, calculation, and reporting of PM13 data.

The following sections provide summaries of HP's activities and findings with respect to the above-named objectives.

Findings Summary

Objective 1

The first objective of PM13 Test Plan One was to determine whether "PM13 captures all CLEC order types (e.g., restoration of service, PIC change, etc.) for which the equivalent retail order type flows through EASE for SWBT retail service."[1]

Findings

HP found the methods and procedures by which SWBT identifies wholesale orders for inclusion in the PM13 calculation to be adequate. HP also found SWBT's Project in Process (PIP) documentation sufficiently supports the changes SWBT implemented in response to Order 33. Of the 43 class of service and order type combinations HP identified as retail flow-through eligible, HP verified that 41 are designed to flow through for wholesale orders. HP was unable to verify the remaining two combinations due to the absence of those order types in the wholesale data HP reviewed.

Objective 2

The second objective of PM13 Test Plan One was to determine whether "PM13 captures all CLEC order types that are MOG-eligible."[2]

[1] See PUCT Audit Plan, section II.A.1.a.
[2] See PUCT Audit Plan, section II.A.1.b.

Findings HP identified the CLEC order types that accounted for reported flow-through failures for May 2001. HP found that SWBT's PM13 source code accurately reflects order type inclusions and exclusions as indicated in the System Requirements documents covering both pre-POR and post-POR statement periods. HP also found that SWBT pre-POR code supports the inclusion of 17 additional order types per Order No. 33.

HP also found that SWBT DSS tables use "upstream" LASR tables, which indicate whether an order is MOG-eligible. If this indicator is correct, the code will accurately categorize orders for inclusion in or exclusion from PM13. However, if the indicator is marked incorrectly, orders will not be properly counted in the measure. Finally, in its evaluation of the PM13 Business Rule specification, HP has determined that the PM13 business rule specified in the Texas T2A Agreement, version 2.0 could be enhanced with further specification, including a matrix.

Objective 3 The third objective of PM13 Test Plan One was to determine whether "PM13 results reported for SWBT retail include only those order types that are designed to flow through EASE."[3]

Findings HP found that the PM13 results reported for SWBT retail include only those order types that are designed to flow through EASE. HP also found that SWBT counts those orders that flow through EASE, but subsequently fall out for manual handling before distribution in SORD, as flow-through failures in its calculation of PM13 retail. This conforms to the published PM13 business rules.

HP also found, the PM13 business rules do not include an explanation of the orders that are not designed to flow through to distribution in SORD. Finally, HP found that SWBT's retail result for PM13 is consistently lower than the wholesale performance.

Objective 4 The fourth objective of PM13 Test Plan One was to determine whether "reporting CLEC data for PM13 in numbers of back-end service orders, rather than LSRs, is not distorting the results" of PM13.[4]

Findings HP found that SWBT's reporting of PM13 in terms of back-end service orders does not distort the results as compared to reporting the results by LSRs. An LSR can only be counted as a flow-through failure once, regardless of the number of associated service orders that fail to flow through. Conversely, when the measure is calculated in terms of back-end service orders, each flow-through failure counts equally in the measure.

Objective 5 The fifth objective of PM13 Test Plan One was to determine whether "flow-through failures in the form of erroneous and improper rejects are being [properly] captured in the PM13 data.[5]

Findings HP found that SWBT correctly calculated PM13 results with respect to the treatment of erroneous and improper rejects. HP also found that SWBT did not apply the ITRAK-FID to any of the erroneous reject examples CLECs provided to HP during the audit. HP was unable to determine the process by which a flow-through eligible LSR that is improperly rejected would be included in the PM13 calculation.

Objective 6 The final objective of PM13 Test Plan One was to ensure that "no other errors or departures from the business rules are apparent in SWBT's current collection, calculation, and reporting of PM13 data."[6]

[3] See PUCT Audit Plan, section II.A.1.c.
[4] See PUCT Audit Plan, section II.A.1.d.
[5] See PUCT Audit Plan, section II.A.1.e.
[6] See PUCT Audit Plan, section II.A.1.f.

Findings

HP did not find any additional errors or departures from the PM13 business rules in SWBT's current collection, calculation, and reporting of PM13 data that were not previously addressed in the PUCT Audit Plan.

PM13 Test Plan Two—Accuracy of SWBT Restatement of PM13

The second part of HP's audit of SWBT PM13 reporting was to determine whether SWBT has accurately restated its PM13 data to include CLEC order types that were previously excluded for which the SWBT retail equivalent would flow through EASE and to correct any other errors. To complete this test plan, HP evaluated the following three objectives:

- The restated CLEC data includes all CLEC orders of the type that will flow through EASE for SWBT retail, and the SWBT retail data provides an appropriate parity comparison;
- All required changes to the collection, analysis, and reporting of PM13 data have been properly implemented; and,
- SWBT has properly calculated Tier 1 and Tier 2 payments, based on the restated PM data.

The following sections provide summaries of HP's activities and findings with respect to the above-named objectives.

Findings Summary

Objective 1

The first objective of PM13 Test Plan One was to determine whether "restated CLEC data includes all CLEC orders of the type that will flow through EASE for SWBT retail, and the SWBT retail data provides an appropriate parity comparison."[7]

Findings

HP identified 13 order types that SWBT does not include in the calculation of PM13. HP found that some of these order types flow through EASE for SWBT retail. HP validated that SWBT's restated data included most relevant CLEC orders of the type that would flow through EASE for SWBT retail. To the extent SWBT has correctly determined which order types should be excluded, HP found that SWBT retail data provides an appropriate parity comparison for PM13. During its audit activities, HP found that there were discrepancies between SWBT's System Requirements documentation and actual systems operations.

Objective 2

The second objective of PM13 Test Plan One was to determine whether SWBT has properly implemented "all required changes to the collection, analysis, and reporting of PM13 data."[8]

Findings

HP found SWBT has properly implemented all required changes in the collection and analysis of data, and reporting of PM13 for the order types it determined should be included. Although HP calculations did not match SWBT's reported PM13 results in all cases, the variances were small.

Objective 3

The final objective of PM13 Test Plan One was to determine whether "SWBT has properly calculated Tier 1 and Tier 2 payments, based on the restated PM data."[9]

Findings

HP found that SWBT has properly calculated its Tier 1 and Tier 2 payments for the restated PM13 data in compliance with Order 33 requirements. HP also determined that SWBT correctly adjusted its Tier 1 payments for PM13 to reflect the shift from low to high priority and from capped to uncapped penalties for the month of March

[7] See PUCT Audit Plan, section II.A.2.a.
[8] See PUCT Audit Plan, section II.A.2.b.
[9] See PUCT Audit Plan, section II.A.2.c.

2002.

Further, in computing PM13 data, HP observed that the PM13 business rules formula applies a methodology designed for use with a sample of the population. However, SWBT applies this formula to the entire population of orders. This methodology requires SWBT to provide better performance to CLECs than to its own retail customers to avoid penalties.

LMOS Test Plan One—Accuracy of Current LMOS Update Processes

The first part of HP's audit of SWBT LMOS processes and measurements was to determine whether SWBT's current systems, processes, and methods and procedures properly update the LMOS records for incoming CLEC orders. To complete this test plan, HP evaluated the following three objectives:

- Verify that CLEC UNE-P orders received on or after May 12, 2001 result in correct updating of the LMOS database;
- Verify that 'C' orders generated by SWBT systems in response to a CLEC UNE-P LSR post to LMOS after the 'D' order generated in response to the same CLEC LSR; and,
- Verify that CLEC UNE-P trouble reports submitted electronically do not result in a notification that "this TN has been disconnected or ported out. No information available," or equivalent notification, if the trouble report is submitted after the time allowed for posting of the 'C' order to LMOS.

The following sections provide summaries of HP's activities and findings with respect to the above-named objectives.

Findings Summary

Objective 1

The first objective of LMOS Test Plan One was to "verify that CLEC UNE-P orders received on or after May 12, 2001 result in correct updating of the LMOS database."[10]

Findings

For CLEC UNE-P orders received on or after May 12, 2001, HP's sample data show that 87.8 percent of 'C' orders correctly update the LMOS Host database within 2 days of the service order completion. As a result, at any given time, there are inconsistencies in the LMOS database. The main source of these inaccuracies is the lag between the posting of 'D' and 'C' orders to LMOS.

Objective 2

The second objective of LMOS Test Plan One was to "verify that 'C' orders generated by SWBT systems in response to a CLEC UNE-P LSR post to LMOS after the 'D' order generated in response to the same CLEC LSR."[11]

Findings

SWBT's implementation of system changes in March 2001 largely rectified 'C' and 'D' order-sequence problems. HP found that the order sequencing problems can still occur if the 'D' order errors out and the 'C' order does not, though occurrences of this issue are rare.

Objective 3

The final objective of LMOS Test Plan One was to "verify that CLEC UNE-P trouble report[s] submitted electronically do not result in a notification that 'this TN has been disconnected or ported out. No information available,' or equivalent notification, if the trouble report is submitted after the time allowed for posting of the 'C' order to LMOS."[12]

[10] See PUCT Audit Plan, section II.B.1.a.
[11] See PUCT Audit Plan, section II.B.1.b.
[12] See PUCT Audit Plan, section II.B.1.c.

Findings

CLEC UNE-P trouble reports submitted electronically still get the notification that "this TN has been disconnected or ported out. No information available" under specific circumstances. In May 2002, SWBT received 24,958 electronic UNE-P trouble reports from CLECs, and SWBT systems returned this error message for UNE-P trouble reports on 92 different telephone numbers. Most of these notifications were provided in response to electronic tickets received following service order activity and prior to the posting of the 'C' order to LMOS. There is no standard time requirement by which 'C' orders post to LMOS.

LMOS Test Plan Two—Accuracy of the Embedded LMOS Database

The second part of HP's audit of SWBT LMOS processes and measurements was to determine whether SWBT's LMOS database contains complete and accurate records of all lines serving CLEC customers, regardless of the date on which the CLEC service was initiated. To complete this test plan, HP evaluated the following objective:

- The SWBT LMOS database accurately identifies the CLEC service provider and class of service associated with TNs that were converted to CLEC UNE-P service prior to May 12, 2001.

The following section provides a summary of HP's activities and findings with respect to the above-named objective.

Findings Summary

Objective

The objective of LMOS Test Plan Two was to determine whether SWBT's LMOS database "accurately identifies the CLEC service provider and class of service associated with TNs that were converted to CLEC UNE-P service prior to May 12, 2001."[13]

Findings

HP's analysis indicates that, at any given point in time, more than 99% of the records in the embedded LMOS database for UNE-P service are consistent with CABS records for service provider and class of service. "Bashing" the LMOS and CABS databases was the main technique SWBT used to resolve the LMOS inaccuracy issue, but the bash assumes that CABS itself is accurate.

LMOS Test Plan Three—Current LMOS-Related Performance Measures

The third part of HP's audit of SWBT LMOS processes and measurements was to determine whether SWBT's current reporting of LMOS-related performance measurements is accurate. To complete this test plan, HP evaluated the following seven objectives:

- All CLEC UNE-P trouble reports submitted electronically are accurately captured in the LMOS-related PMs, if the trouble report does not result in electronic notification to the CLEC that "this TN has been disconnected or ported out. No information available" or equivalent notification;
- All manual UNE-P trouble reports submitted by a CLEC to the LOC, following receipt of a notification (in response to an effort to submit an electronic trouble report) that "this TN has been disconnected or ported out. No information available" or equivalent notification, are accurately captured in the LMOS-related PMs;
- All electronic UNE-P trouble reports submitted on SWBT's telephone number formatted service associated with recent service order activity in pending or completion status are accurately reflected in the LMOS-related PMs;
- SWBT is accurately implementing PM35.1 (trouble reports submitted for

[13] See PUCT Audit Plan, section II.B.2.a.

UNE-P orders on date of completion), notwithstanding that the lag between the posting of D and C orders in LMOS means that the LMOS record may not be updated during the relevant time for measuring performance under that measure;

- SWBT has provided appropriate notification and documentation to CLECs regarding alternative manual and electronic options for reporting trouble following receipt of a notification that "this TN has been disconnected or ported out. No information available" or equivalent notification, and SWBT LOC personnel have been properly trained and instructed to accept manual trouble reports from CLECs;
- If a valid electronic LSR is not processed by SWBT's systems, through updating the LMOS database, without manual intervention, that LSR is reflected as a flow-through miss under PM13.1; and,
- Verify how LMOS was updated on a Line Shared Loop prior to June 1, 2001. Verify this separately for new connect orders and conversion orders.

The following sections provide summaries of HP's activities and findings with respect to the above-named objectives.

Findings Summary

Objective 1

The first objective of LMOS Test Plan Three was to determine whether "all CLEC UNE-P trouble reports submitted electronically are accurately captured in the LMOS-related PMs, if the trouble report does not result in electronic notification to the CLEC that 'this TN has been disconnected or ported out. No information available,' or equivalent notification."[14]

Findings

SWBT has processes in place to capture CLEC UNE-P trouble reports, including those submitted electronically that do not result in CLEC receiving the "disconnected or ported out" notification. Part of SWBT's process includes the manual classification of unclassified trouble reports, which represented 0.28 percent of the trouble reports in the study period. These manually classified trouble reports caused variances between the May 2002 PMs HP calculated from SWBT raw data and the SWBT published PM results.

Objective 2

The second objective of LMOS Test Plan Three was to determine whether "all manual UNE-P trouble reports submitted by a CLEC to the LOC, following receipt of a notification (in response to an effort to submit an electronic trouble report) that "this TN has been disconnected or ported out. No information available" or equivalent notification, are accurately captured in the LMOS-related PMs."[15]

Findings

HP found that SWBT includes in the LMOS PMs manual trouble reports that CLECs submit to the LOC after unsuccessful attempts to enter the reports electronically. HP found differences between its calculation of the LMOS PMs from SWBT raw data and the PM values SWBT reported for May 2002, and noted the impact of SWBT's manual classification of trouble reports.

Objective 3

The third objective of LMOS Test Plan Three was to determine whether "all electronic UNE-P trouble reports submitted on SWBT's telephone number formatted service associated with recent service order activity in pending or completion status are accurately reflected in the LMOS-related PMs."[16]

[14] See PUCT Audit Plan, section II.B.3.a.
[15] See PUCT Audit Plan, section II.B.3.b.
[16] See PUCT Audit Plan, section II.B.3.c.

Findings HP found that the LMOS-related PMs completely and accurately reflect UNE-P trouble reports that CLECs submit electronically through SWBT systems. HP found differences between its calculation of the LMOS PMs from SWBT raw data and the PM values SWBT reported for May 2002, and noted the impact of SWBT's manual classification of trouble reports.

Objective 4 The fourth objective of LMOS Test Plan Three was to determine whether "SWBT is accurately implementing PM35.1 (trouble reports submitted for UNE-P orders on date of completion), notwithstanding that the lag between the posting of 'D' and 'C' orders in LMOS means that the LMOS record may not be updated during the relevant time for measuring performance under that measure."[17]

Findings HP found that PM35.1, as SWBT currently implements the measure, accurately captures trouble reports submitted for UNE-P orders on the date of completion, notwithstanding the lag between the postings of 'D' and 'C' orders.

Objective 5 The fifth objective of LMOS Test Plan Three was to determine whether "SWBT has provided appropriate notification and documentation to CLECs regarding alternative manual and electronic options for reporting trouble[s] following receipt of a notification that 'this TN has been disconnected or ported out. No information available' or equivalent notification, and SWBT LOC personnel have been properly trained and instructed to accept manual trouble reports from CLECs."[18]

Findings HP found the online documentation SWBT provides to CLECs outlining the procedures for submitting trouble reports manually to be adequate. Further, SWBT has appropriate processes, procedures, and training in place to enable LOC personnel to properly assist CLECs in the submission of manual trouble reports.

Objective 6 The sixth objective of LMOS Test Plan Three was to determine whether, "if a valid electronic LSR is not processed by SWBT's systems through [the] updating [of] the LMOS database, without manual intervention, that LSR is reflected as a flow-through miss under PM13.1."[19]

Findings SWBT does not currently include LMOS posting in the calculation of PM13.1. HP found that successful or unsuccessful posting of an order to LMOS does not affect whether the order is counted in the numerator for the PM13.1 calculation.

Objective 7 The final objective of LMOS Test Plan Three was to verify how LMOS was updated on a Line Shared Loop prior to June 1, 2001 for new connect orders and conversion orders.[20]

Findings For Line Shared Loop orders, HP found that only the 'C' orders post to LMOS. The 'D' orders do not currently post to LMOS, nor did they post to LMOS prior to June 1, 2001. Therefore, HP found that Line Shared Loop orders would not be subject to the order sequencing issues that could cause LMOS records to be incomplete or incorrect.

[17] See PUCT Audit Plan, section II.B.3.d.
[18] See PUCT Audit Plan, section II.B.3.e.
[19] See PUCT Audit Plan, section II.B.3.f.
[20] See PUCT Audit Plan, section II.B.3.f(7).

LMOS Test Plan Four—Past LMOS-Related Errors

The final part of HP's audit of SWBT LMOS processes and measurements was to determine the magnitude of SWBT's past errors in the reporting LMOS-related PMs. To complete this test plan, HP evaluated the following objective:

- SWBT has restated previously reported data for LMOS-related PMs in a manner that fairly adjusts that data for the errors that resulted from SWBT's failure to accurately update LMOS records to reflect CLEC service provider status.

The following section provides a summary of HP's activities and findings with respect to the above-named objective.

Findings Summary

Objective

The objective of LMOS Test Plan Four was to determine whether "SWBT has restated previously reported data for LMOS-related PMs in a manner that fairly adjusts that data for the errors that resulted from SWBT's failure to accurately update LMOS records to reflect CLEC service provider status."[21]

Findings

During the period before April 2001, HP found that SWBT did have problems correctly classifying the participating CLEC's trouble reports. HP found, for all market reporting areas in which the participating CLEC served customers during this period, that SWBT mistakenly classified some of the participating CLEC's UNE-P trouble reports as resale troubles belonging to the participating CLEC, as resale and UNE-P troubles belonging to other CLECs, and as troubles belonging to SWBT. Overall, the extent of SWBT's misclassification ranged from 23.97 percent of the participating CLECs trouble reports in Central/West Texas to 55.11 percent of its troubles in Kansas.

During its recalculation of the participating CLEC's LMOS-related PMs, HP found that SWBT's misclassification of trouble reports caused varying degrees of reporting variance in the participating CLEC's reported PMs. Because every trouble report is not included in the calculation of each LMOS PM, there was not a one-to-one increase in the participating CLEC's results when HP calculated the measures from the corrected data. Further, HP found that, because some measures are calculated using trouble reports in the numerator only while others count troubles in the numerator and denominator, the inclusion of previously misclassified trouble reports did not always cause an increase in the participating CLEC's PM results.

[21] See PUCT Audit Plan, section II.B.4.a.

1.0 Overview

1.1 Background

At the direction of the Public Utilities Commission of Texas (PUCT), HP undertook an audit of Southwestern Bell Telephone Company (SWBT) to determine the validity and accuracy of data SWBT uses in the calculation of Key Performance Indicators. HP's audit was intended to inform the PUCT and interested parties of the reasonableness and fairness with which SWBT processes Competitive Local Exchange Carrier (CLEC) transactions.

HP began its audit on March 20, 2002 with a presentation to the PUCT at the kick-off meeting in Austin, Texas. HP's audit team was divided into three functional areas covering each of the portions of the audit: PM13, LMOS, and the Independent Verification of SWBT's PM13 and PM13.1 Flow-Through. During the course of the audit, each of the three functional groups of HP's audit team executed the approved test plans to meet the objectives of the PUCT Audit Plan. To complete their audit activities, the functional groups issued information requests to SWBT and participating CLECs to obtain information and data relevant to their activities. The PM13 audit team issued 75 information requests, the LMOS team issued 65 information requests, and the Independent Verification team issued 12 information requests. The HP audit team also met with SWBT and CLEC personnel to address specific topics related to the audit test plans.

HP held regular meetings throughout the audit project to keep interested parties informed of the progress of the audit and to discuss issues that arose during the course of HP's audit work. HP held bi-weekly meetings with the state commission staffs from the SWBT territory (Texas, Missouri, Kansas, Oklahoma, and Arkansas). Between April and November, 2002, HP conducted 15 state commission meetings. HP also conducted bi-weekly Stakeholders conference calls that included all participants in the audit project. Between April and November, 2002, HP held 16 Stakeholders' meetings. Finally, HP made presentations at open meetings of the PUCT on June 4, 2002, and September 12, 2002, to update the PUCT and stakeholders of the progress of HP's audit work.

1.2 Purpose of Document

The *Final Report of HP's Findings and Activities* (*Final Report*) provides a detailed description of the processes that HP carried out to evaluate the various objectives within each test plan of the audit. For each objective, the *Final Report* provides details of the SWBT processes HP evaluated, the activities HP carried out in its evaluation, and the findings that resulted from HP's work.

This document is intended for use by the PUCT and other state utility commissions, SWBT, CLECs, and other interested parties.

1.3 Scope

The *PUCT Audit Plan* defined the scope of the audit. The *Final Report* provides the results HP obtained for each of the PM13 and LMOS Test Plans it completed during the course of the audit. The activities HP performed to complete the Test Plans focused primarily on obtaining results for Texas. However, for some plans HP's activities also cover SWBT processes and data for Arkansas, Kansas, Missouri, and Oklahoma.

1.4 Document Structure

This document provides detailed documentation of HP's activities and findings as they relate to each objective of the following PUCT Audit Test Plans:

- Independent Verification of PM13 and PM13.1 Flow-Through;
- PM13 Test Plan One: Accuracy of Current SWBT Reporting;
- PM13 Test Plan Two: Accuracy of SWBT Restatement of PM13;
- LMOS Test Plan One: Accuracy of Current LMOS Update Processes;
- LMOS Test Plan Two: Accuracy of the Embedded LMOS Database;
- LMOS Test Plan Three: Accuracy of Current LMOS-Related Performance Measures; and,
- LMOS Test Plan Four: Magnitude of Past LMOS-Related PM Errors.

Within each Test Plan section of this document, HP presents the defined objectives of the Test Plan, the activities and steps it carried out to complete the test plan, and the findings it makes with respect to each objective.

Supporting information for various aspects of HP's activities and findings is located in the appendices to this *Final Report*. The following table identifies the contents of each appendix.

Figure 1.1: Table of Appendices

Appendix	Title
A	Table of Acronyms
B	Documents Requested and Supporting Information Used in HP's Review of SWBT Retail Order Types for Ease Flow-Through
B.1	Excerpt from the Southwestern Bell Telephone Company Business Rule Document
C	SWBT System Architecture and Ordering Processes
D	CABS/LMOS Database Comparisons
E	CLEC Input Regarding LMOS Embedded Database
F	Sampled Records by State
G	Comparison of May 2002 LMOS PM Results

Information and documents identified in the text of the Final Report, and in the footnotes, can be found in the working papers HP compiled during the course of the audit.

2.0 Independent Verification of PM13 and PM13.1 Flow-Through

2.1 Objectives

The objective of the Independent Verification of PM13 and PM13.1 Flow-Through Test Plan was to determine whether SWBT accurately captured orders derived from LSRs submitted through EDI in the calculation of PM13 and PM13.1.[22]

HP provided an independent examination of whether SWBT was appropriately capturing orders derived from LSRs submitted through EDI in the PM13 and PM13.1 flow-through measurements. During the test, HP used the EDI data and DSS files collected from SWBT to independently calculate results for PM13 and PM13.1 to be used for direct comparison to those calculations provided by SWBT for the same reporting period.

2.2 Activities

HP undertook several activities to complete the Independent Verification portion of the audit. These activities can be classified as:

- Collecting EDI Transaction Data;
- Certifying the Independence of Captured EDI Transactions; and,
- Analyzing and Comparing EDI Transactions.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Collecting EDI Transaction Data

The Independent Verification Test Plan originally proposed by HP and accepted by the PUCT and SWBT required the insertion of independent 'Sniffer' technology within the SWBT Communications Framework. The Sniffer was to have been inserted after the SWBT Secure Access Server (Firewall), and before the EDI decryption facility. As a passive listening device, the Sniffer would neither interfere with SWBT's communications with its trading partners, nor would it introduce latency into the downstream processing activities or applications. This technology would have allowed HP to see each EDI transaction received by SWBT (i.e., requests) and each transaction communicated by SWBT (i.e., responses) in real time. SWBT claimed that this plan was not feasible due to the level of risk involved. This arrangement would have necessitated the sharing of Private and Public Decryption Keys for each of the Trading Partners doing business with SWBT. In addition, not all of SWBT's trading partners supported Interactive Agent Protocol. In order to meet the objective of this element of the test, the PUCT, SWBT and HP agreed on an alternative plan that was developed, as described below.

Obtaining EDI Transaction Information

Under the alternative plan, SWBT provided HP with decrypted EDI records for the reporting month of October 2002. SWBT selected these records from the files "EDIT.RECEIVE.REPORTS," which contains inbound EDI requests, and "EDIT.SEND.REPORTS," which contains outbound EDI responses. These files are located on the mainframe that hosts SWBT's EDI translator, and contain the decrypted, untranslated (raw) EDI transactions for all the CLEC Trading Partners doing business in the SWBT region.

SWBT developed a mainframe procedure to pull the decrypted inbound EDI transactions from its business partners and the outbound EDI transactions sent to its business partners for the month of October 2002. SWBT placed each day's

transactions in files designating the date and inbound or outbound status (e.g., "SWBT_in_Oct07.txt"). SWBT transferred the files in binary format to a PC that it used to put the files on CD-ROMs for transmission to HP via UPS Next Day.[23]

The EDI data HP received from SWBT included the ISA segment envelopes that contained the SWBT repopulated timestamps. As part of the data collection agreement, SWBT agreed to make available to HP all the EDI transaction log files upon request. Based on the information it found in the EDI data, HP did not have to request this information during the test.

Figure 2.1, below, provides the dates on which HP received EDI files from SWBT. For each date, the table identifies the files HP received.

Figure 2.1: EDI Files Received from SWBT

Date	File Details
Friday, September 20, 2002	Sample files HP used to set up its EDI parser
Thursday, September 26, 2002	Sample transaction files for HP EDI parser
Thursday, October 17, 2002	SWBT Inbound/Outbound files for October 1-15, 2002
Wednesday, October 23, 2002	SWBT Inbound/Outbound files for October 16-21, 2002
Friday, October 25, 2002	SWBT Inbound/Outbound files for October 22-23, 2002
Tuesday, October 29, 2002	SWBT Inbound/Outbound files for October 24-27, 2002
Friday, November 1, 2002	SWBT Inbound/Outbound files for October 28-30, 2002
Tuesday, November 5, 2002	SWBT Inbound/Outbound files for October 31, 2002 through November 3, 2002
Thursday, November 11, 2002	SWBT Inbound/Outbound files for September 28-30, 2002
	Rhythms Sample EDI Data, November 4-11, 2002

[22] See Independent Verification of PM 13 and PM 13.1 Flow-Through Test Plan, version 1.4.
[23] See Information Request PM13-0910-067.

Obtaining PM13 and PM13.1 Order Completion Information

Under the original test plan, HP was to provide SWBT with PON/VER information on a daily basis. SWBT would then provide HP with information on the distribution of service orders associated with the PONS HP provided. HP planned to use this information as the basis for selecting the numerator and denominator candidates in accordance with the appropriate business rules.[24]

At the beginning of the test period, HP requested SWBT provide a sample EDI file to allow HP to set up and test its analyzer software.[25] HP did this to ensure it would be properly parsing the EDI data it received from SWBT. During the testing of its analyzer, HP discovered a truncation problem in the SWBT data, in which the ISA segment was truncated due to a parsing error in SWBT's selection process. To fix this problem, HP and SWBT provided files and results so that SWBT could fix the problem on its end. Once SWBT was able to properly pull the EDI data, HP used this data to verify that it was correctly parsing the EDI data received from SWBT.

During the course of HP's conversations with SWBT to resolve the parsing error, SWBT requested the data transfer process be made more manageable by sending HP CD-ROMs that contain the daily EDI data files twice weekly.[26] HP agreed to SWBT's request to send the daily EDI files on CD-ROMs under the following schedule:

- Every Tuesday SWBT would send the files for the previous Friday, Saturday, Sunday, and Monday; and,
- Every Friday SWBT would send the files for the previous Tuesday, Wednesday, and Thursday.

Using the EDI files it received from SWBT, HP selected the PON/VER information and requested that SWBT provide the service order information contained in its Decision Support Systems (DSS) associated with the identified PONs.[27] HP provided SWBT with two files, "list850.txt" and "list860.txt," to complete this activity. The "list850.txt" file contained 104,709 PON/VER combinations associated with transaction set ID 850 that HP found in the EDI data it received from SWBT. The 850 transaction set ID is an EDI order request that is an initial request by the CLEC for services to be provided by the ILEC. The "list860.txt" file contained 15,638 PON/VER combinations associated with transaction set ID 860. The 860 transaction set ID is a supplemental change to a previous 850 request.

In its response to HP's request, SWBT indicated that this data would not be available until after the October End-of-Month data had been processed, and would not be released until November 20, 2002.[28] As an alternative SWBT explained that it had month-to-date DSS files that were not published final data, but rather were internal daily use files that contained the information HP requested.[29] SWBT noted that the only difference between these files and the end-of-month files was that instead of having 'Datamonth' as the first column of each record, there was a 'RUNDATE' field in the last column, populated in the date format CCYYMMDD.

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[24] Appendix Performance Measurements Business Rules (Version 2.0) –TX (T2A) 07/29/02
[25] See Information Request PM13-0910-067.
[26] See SWBT e-mail from Senior Business Manager Karen Faszold, dated October 9, 2002, 1:01 p.m.
[27] See HP e-mail response to PM13-0910-067 sent to Karen Faszold, dated October 24, 2002, 4:38 p.m.
[28] See SWBT e-mail response to PM13-0910-067 from Karen Faszold, dated October 24, 2002, 5:16 p.m.
[29] See SWBT e-mail response to PM13-0910-067 from Karen Faszold, dated October 31, 2002, 1:40 p.m.
[30] See Information Request PM13-1025-079.
[31] SBC 271 Parity Performance Measure, System Requirements Measure 13, Ver. 1.7 8/22/02
[32] SBC 271 Parity Performance Measure, System Requirements Measure 13.1, Ver. 1 9/10/02

As a result of this disclosure, HP issued a formal request to SWBT for the data contained in the SWBT DSS files "LC013d_edi.csv," for PM13 calculations and "LC013_1D.EDI.CSV" for PM13.1 calculations.[30] HP used these files and the SWBT-provided documentation to select the numerator and denominator candidates for the PM13[31] and PM13.1[32] calculations in accordance with the appropriate business rules.

Obtaining PM13.1 LMOS and CABS Transaction Information

Under the original test plan, HP planned to request that SWBT run queries against the AskMe and SORD databases using PON/VER information HP provided. HP intended to use the AskMe queries to determine when the orders posted to the LMOS database, and the SORD queries to determine when the orders completed in CABS.

After meeting with SWBT, HP determined that SWBT's implementation of PM13.1 did not include the posting of orders to LMOS in its calculations.[33] Therefore, HP would not need SWBT to provide AskMe data.

Further, in discussions with SWBT concerning the transfer of EDI and DSS data files, HP learned that the information necessary to determine when the order completed in the billing systems was contained in the DSS files. As such, HP concluded that it would not require SWBT to run queries of the SORD database for CABS completion information.

Certifying the Independence of Captured EDI Transactions

HP used a three-pronged approach to verify that the EDI data it received from SWBT was the same data it would have collected under its original proposal. First, HP examined the application code and scripts SWBT used to collect the EDI files. On October 31, 2002, HP conducted a code review of the application software in SWBT's St. Louis, Missouri facility. The EDI data was located in files on the mainframe that hosts SWBT's EDI translator. HP reviewed the CLIST code SWBT used to select the records, and the JCL used to execute the CLIST on the mainframe. As part of HP's code review, SWBT presented an overview that detailed how it gathered EDI data from the three interfaces: NDM, the VAN, and Interactive Agent. SWBT stores the data in a Generated Data Group (GDG) dataset labeled "EDIT.RECEIVE.REPORTS," which is used as input to the EDI translator. (EDIT is EDI for SWBT region, EDIP is EDI for the Pacific Bell region). The translator output is placed into a GDG dataset labeled "EDIT.SEND.REPORTS," which is then distributed to one of the three interfaces.

Second, HP verified whether the data on the CD-ROMs it received was the actual data pulled from the SWBT systems. HP observed the process SWBT followed to create the CD-ROMs it sent to HP. On October 31, 2002, HP reviewed the SWBT procedures for collecting and copying EDI information to CD-ROM. This procedure involved doing a binary copy of the EBCDIC files containing the EDI data to a PC hard drive. The files were then copied to CD-ROM using a CD-ROM burner program. HP then observed the collection of the EDI data and the copying of the data to CD-ROM. The procedures HP observed included the labeling of the CD-ROM and the creation of the cover letter accompanying the CD-ROM. HP's observation concluded with the placement and sealing of the contents in a UPS Next Day envelope addressed to the HP office in New Jersey.

Third, HP requested EDI transaction information from participating CLECs for select days. HP used this information to compare specific CLEC records of EDI transactions sent to SWBT. For this verification, HP requested and received all PON/VER records from AT&T for October 9, 2002, and from WorldCom for October 16, 2002.[34] HP cross-referenced this data against the EDI and DSS data it collected

[33] Meeting between HP and SWBT in St. Louis, Missouri on June 26, 2002, 2:30 p.m.

[34] See Information Requests PM13-1031-080-IV (CLEC) and PM13-1031-081-IV (CLEC).

from SWBT. When discrepancies were noted, HP issued information requests to get further information.

Through its examination of the relevant code, observation of the process used to prepare the data for submission to HP, and the matching of CLEC EDI transaction data to the data SWBT provided, HP has determined that the data used for this test plan is equivalent to that which HP would have collected under its original proposal for the Independent Verification Test Plan.

Analyzing and Comparing EDI Transactions

HP's PM13 Independent Verification audit team employed the MOG-Eligible LSR criteria established in Version 4 of SWBT's MOG User Guide, and subsequent modifying bulletins to that document, to parse records from the EDI transaction files for specific MOG-eligible PON/VER combinations to determine numerator and denominator candidates for the PM13 and PM13.1 calculations.[35] HP's audit team verified whether the orders derived from the LSRs were of the type that were designed to flow through EASE in SWBT's retail operations, and determined whether or not they were MOG-eligible. During this effort, HP reconciled all LSRs that did not flow through and determined that this information was correctly identified in the DSS files and SWBT documentation. HP applied the PL/SQL reports designed under the PM13 facet of the audit to the data captured under this test plan. HP used its Analyzer software to calculate PM13 and PM13.1 results in its own production environments using the data captured and stored under the Independent Verification phase of the audit.

HP verified its Analyzer software calculations using SWBT's published Performance Reports and raw data for May 2002.[36] HP ran its calculations using SWBT's May 2002 end-of-month files "LC013D_EDI.CSV" for PM13, and "LC013_1D_EDI.CSV" and "LC013_1D_LEX.csv" for PM13.1 to determine the accuracy of its analyzer. HP's results exactly matched the numbers SWBT reported for May 2002.

2.3 Findings

Objective

The objective of the Independent Verification of PM13 and PM13.1 flow-through is to determine whether SWBT accurately captures the correct subset of LSRs via EDI for inclusion in the calculation of PM13 and PM13.1 flow-through rates.

Findings Summary

1. HP can not validate that SWBT provided all of the information requested by HP in the context of the Independent Verification test plan
2. Hewlett-Packard's independent verification efforts found that, for the period and CLECs[37] under study, approximately 10% of orders received by SWBT for the State of Texas were omitted from SWBT's PM13 calculations and 9% were missing from PM13.1 calculations. In the time available for this analysis, HP was able to determine that many of the orders were improperly omitted as a result of errors in data handling processes that occur in areas not currently addressed in the PM13 and PM13.1 business rules. The scheduled completion date for this report did not allow a full analysis of the impact of these data issues on metrics reported to the PUCT. However, the problems identified may be attributable to internal control and quality assurance weaknesses.
3. In addition to the data inconsistencies described above, HP found that

[35] See Information Request PM13-0828-064.

[36] See Information Request PM13-1108-084-IV.

[37] HP examined data for AT&T, MCI Worldcom, and IP Communications. HP notes that the Independent Verification Test Plan called for SWBT to provide data for all CLECs. However, the PUCT staff never approved the Independent Verification Test Plan, and SWBT elected to commit to providing HP with data only for AT&T, MCI Worldcom, and IP Communications.

SWBT had significant difficulty in providing HP with accurate responses to information requests, and that many key information request responses involved delay and required significant additional follow-up by HP to determine the true nature of SWBT's data. HP believes that the problems identified during this audit can be attributed to Inadequate internal controls over CLEC service quality data and inadequate quality testing surrounding metrics-impacting system changes

Findings Detail

During the course of the Independent Verification test, HP received data that was the actual EDI data created at the SWBT firewall and pulled from the SWBT mainframe. HP then compared this firewall data to the DSS data used by SWBT to perform PM13 and PM13.1 calculations.

Through its efforts to verify the EDI data provided by SWBT was accurate, HP requested that AT&T and MCI Worldcom provide HP with a list of the PONs they sent to SWBT for a specified day during the test period. HP requested that AT&T provide PONs for October 9, 2002,[38] and requested Worldcom provide PONs for October 16, 2002.[39]

As a result of its comparisons between SWBT, AT&T, and MCI data, HP found that some AT&T orders were missing from the SWBT data. Therefore, HP cannot validate that SWBT provided all of the information HP requested in the context of the Independent Verification test plan.

PM13 Findings

HP believes that approximately 10 percent of the orders found in the EDI data were improperly omitted from PM13 metrics calculation data. Specifically, HP found approximately 16,715 orders of 165,779 orders found in the EDI data were improperly omitted from the PM13 calculation.

For the CLECs HP studied in the Independent Verification process, HP found 165,779 distinct PONs in the daily EDI firewall data it received from SWBT for AT&T, MCI, and IP Communications. HP found that 44,878 of the 165,779 PONs were not included in the DSS metrics calculation data provided by SWBT. To gain a complete understanding of why these PONs were not reflected in the DSS data, HP submitted information requests to gain a further understanding of these data inconsistencies.

HP requested information for the 44,878 PONs in which SWBT received an LSR, but for which no information could be found in the DSS metrics calculation data.[40] SWBT stated that it was unable to accommodate this request and asked that HP reduce the sample to a more manageable number. In an effort to meet the project schedule, HP removed the PONS identified in Figure 2.2, below, from its information request. HP removed these PONs from its request because it believed they were appropriately excluded from the metrics calculation.

Figure 2.2: PONs Removed from HP Sample

Number of Orders	Cause for Removal
11,252	Canceled by CLEC
9,703	Directory Service Requests
6,943	Rejected due to Error
27,898	***Total Orders Removed from Sample***

[38] PM13-1031-080-IV
[39] PM13-1031-081- IV
[40] See Information Request PM13-1111-086-IV.

HP's amended request sought information for 16,980 PONs that SWBT received, but which were not included in the DSS metrics calculation data. The PONs are categorized in Figure 2.3, below.

Figure 2.3: PONs Submitted by HP for Further Information

Number of PONs	Order Information
34	LSR received by SWBT, no responses found in EDI data, no information in DSS tables
16,708	LSR received by SWBT, FOC identified in EDI data, no information in DSS tables
238	LSR received by SWBT, no FOC in EDI data, SOC identified in EDI data, no information in DSS tables
16,980	***Total PON Count***

To further accommodate the limited analysis time available, HP submitted the 34 PONs that received no response, a random sample of 100 of the 16,708 PONs that were missing FOC responses, and a random sample of 24 of the 238 PONs that were missing SOC responses to SWBT for investigation.[41]

In its response to HP's information request, SWBT provided explanations as to why the identified PONs were excluded from the data. SWBT's responses are presented in detail in Appendix B. HP conducted an initial review of SWBT's responses, and, based upon the explanations SWBT provided, HP has modified the number of orders it considers improperly missing from the DSS data to be 16,715 PONs. Figure 2.4, below, identifies the PONs HP believes were improperly omitted from the DSS data.

Figure 2.4: PONs Improperly Omitted from DSS Data

Number of PONs	Order Information
5	LSR Received by SWBT, no responses found in EDI data, no information in DSS tables
16,708	LSR received by SWBT, FOC identified in EDI data, no information in DSS tables
2	LSR received by SWBT, no FOC in EDI data, SOC identified in EDI data, no information in DSS tables
16,715	***Total PON Count***

PM13 Calculations

HP calculated the PM13 Measurement using the following formula:

((# of service orders where 'flow_thru_ind'='Y' and 'excluded_ind'='N')/

(# of service orders where 'excluded_ind'='N')) * 100

HP calculated PM13 for October 2002 through two slightly different methods. In the first calculation, HP used only the DSS data from the table LC013D_EDI.CSV to calculate the results. In the second calculation, HP scanned the EDI data for unique requests during the month of October. HP then pulled the associated service orders for these requests from the DSS data, and used only these items in

[41] See Information Request PM13-1111-086amend.

the PM13 calculation.

Figure 2.5, below, provides the results of HP's calculations for the October 2002 PM13 measurement. HP notes that it made these calculations without benefit of a full understanding and reconciliation of the SWBT data inconsistencies discussed in this report.

Figure 2.5: HP October 2002 PM13 Calculations (DSS Data)

Submeasure	Denominator (HP Order Count)	Numerator (HP Flow-Through Count)	PM13 Result (HP Flow-Through Percent)
PM13-03 (Aggregate)	322,525	308,109	95.5%
PM13-03.1 (Resale)	6,982	6,740	96.5%
PM13-03.2 (UNE Combos)	307,784	296,208	96.2%
PM13-03.3 (Specials)	53	40	75.5%
PM13-03.4 (UNE Loops)	3,445	1,520	44.1%
PM13-03.5 (DSL Loops)	2,900	2,249	77.6%
PM13-03.6 (Other)	1,361	1,352	99.3%

Figure 2.6, below, provides the results of the October 2002 PM13 DSS and EDI data. HP notes that it made these calculations without the benefit of a full understanding and reconciliation of the SWBT data inconsistencies discussed in this report.

Figure 2.6: HP October 2002 PM13 Calculations (DSS and EDI data)

Submeasure	Denominator (HP Order Count)	Numerator (HP Flow-Through Count)	PM13 Result (HP Flow-Through Percent)
PM13-03 (Aggregate)	197,800	187,317	94.7%
13-03.2 (UNE Combos)	193,446	185,201	95.7%
13-03.3 (Specials)	43	39	90.7%
13-03.4 (UNE Loops)	1,688	43	2.5%
13-03.5 (DSL Loops)	1,309	728	55.6%
13-03.6 (Other)	1,314	1,306	99.4%

PM13.1 Findings

HP believes that SWBT has not adequately explained why any of the 8,557 PONs discussed in Figure 2.7, below, should have been excluded from the PM13.1 measurement. Therefore, HP concludes that approximately 9% of PONs were improperly excluded from PM 13.1 calculations (8,557 of the 98,572 PONs under study).

Figure 2.7: PM13.1 Data Inconsistencies

Number of PONs	Order Information
8,557	PONs in EDI data but not in DSS Metrics Calculation Data
28	PONs in DSS data with Value in State of '??'
2	MCI PONs in DSS Data but not in EDI Data
199	AT&T PONs in DSS Data but not in EDI Data
8,786	***Total Number of PONs***

HP investigated these inconsistencies and received the following information from SWBT.

SWBT indicated that the 8,557 PONs HP found in the EDI data but not in the DSS tables should have been included in the PM13.1 measurement. However, according to SWBT, the PONs were missing from the PM13.1 data due to one of two reasons:

1. The LSRs were improperly excluded from measurement. SWBT indicated that the orders in question did in fact flow through, and should have been counted in both the denominator and numerator for the PM13.1 measurement. However, due to business requirements that were not provided to HP, the code implemented excluded the orders from both the denominator and numerator of PM13.1. HP was unable to verify SWBT's claim; or,
2. The LSRs were improperly excluded from measurement. As a result of an erroneous omission in the DSS AECN table, all PONs with AECN 7524 in the LSR were excluded. If an AECN is not in the DSS AECN table it is excluded from the measurement. HP was unable to identify the timing, nature, or extent of any AECN table problems.

Due to the timing of this report, HP was unable to validate these assertions made by SWBT.

For the orders that contained '??' in the state field, on November 19, 2002, SWBT provided HP with the following explanation:[42]

> *For the 28 DSS entries in the detail file with a ?? in the state field, these were all LASR version 3.06 LSRs with no orders attached. For LSOR version 3.06 data, we pull state information from service order data. Since there was none, state could not be determined for these. They were dropped from the measure.*

HP found that the two MCI PONs excluded from the data had been submitted by Rhythms, which was acquired by MCI. Rhythms used an MCI AECN, but SWBT pulled the data by Trading Partner ID. Rhythms was not using an MCI trading partner ID. With respect to these PONs, on November 19, 2002, SWBT provided

the following explanation for these PONs:[43]

> *These PONs both came in under the company name Rhythms with its trading partner ID which was not a company name or trading partner ID provided to SWBT to retain for IV testing. Though they carried the MCI Metro AECN, because they did not come in under an MCI Metro trading partner ID these were not provided to HP as part of the IV data. The receipt date/time and FOC date/time are provided from SWBT's PM5 detail file and completion date was found on the PM7.1 detail file for October. EDI outbound data will be included in a file with the CD produced for 083-IV tomorrow.*

Finally, with respect to the 199 AT&T PONs, on November 19, 2002, SWBT provided the following information:[44]

> *These PONs both came in during September, so they would not show up on the inbound EDI data provided for October. Both were for AT&T Local Services (DLS) but they came in through EDI as AT&T Broadband. The ATT Broadband files had not been part of the [Independent Verification data] collection process because of a control card oversight. The outbound EDI data for these early October dates are no longer available.*

HP's understanding is that the controlling timing factor for inclusion in the PM13.1 metrics calculation is the time at which the order received a SOC. If the order received a SOC in October, the associated EDI data should have been captured regardless of what happened to the order prior to that date. Therefore, these PONs should have been included in the PM13.1 data.

On November 21, 2002, SWBT stated that the explanation it provided for the initial two AT&T PONs also applied to the remainder of the 199 AT&T PONs.[45]

Based upon this information, HP concluded that the 8,557 PONs it identified as missing from metrics calculation should have been included in the PM13.1 calculation. Therefore, HP found the percentage of PONs missing from PM13.1 calculations to be nine percent (8,557 of 98,572).

PM13.1 Calculations

HP calculated the PM13.1 measurement using the following formula:

((# of LSR orders where 'flow_thru_ind'='Y' for all service orders for the LSR)/
(# of LSR orders where included='Y')) * 100

HP verified its calculation by comparing the PM13.1 results SWBT reported to the DOJ for May 2002 to HP's PM13 calculation for the same period using the PM13.1 IV calculation script. The results matched exactly. The DSS table used in this calculation was the LC013_1D_EDI.CSV table.

HP calculated PM13.1 for October 2002 using two slightly different methods. Under the first approach, HP used only the DSS data from the table LC013_1D_EDI.CSV to calculate the PM13.1 results. Under the second approach, HP scanned the EDI data for unique responses that had a SOC response during the month of October. HP then pulled the associated service orders for these requests from the DSS data and used only these items in the calculation.

Figure 2.8, below, provides HP's October 2002 PM13.1 calculations using only DSS

[42] See SWBT Response to Information Request PM13-1108-085-IV.
[43] See SWBT Response to Information Request PM13-1108-085-IV.
[44] See SWBT Response to Information Request PM13-1108-085-IV.
[45] See SWBT Response to Information Request PM13-1111-088-IV.

data. HP notes that it made these calculations without benefit of a full understanding and reconciliation of the SWBT data inconsistencies discussed in this report.

Figure 2.8: HP October 2002 PM13.1 Calculation (DSS Data)

Submeasure	Denominator (HP Order Count)	Numerator (HP Flow-Through Count)	PM 13.1 Calculation (HP Flow-Through Percent)
PM13.1-03 (Aggregate)	177,552	133,873	75.4%
13.1-03.1 (Resale)	7,942	2,516	31.7%
13.1-03.2 (UNE Combos)	162,905	130,731	80.2%
13.1-03.3 (Specials)	88	0	0.0%
13.1-03.4 (UNE Loop)	2,411	0	0.0%
13.1-03.5 (DSL Loop)	2,287	466	20.4%
13.1-03.6 (Other)	1,919	160	8.3%

Figure 2.9, below, provides HP's October 2002 PM13.1 results using both DSS and EDI data. HP notes that it made these calculations without benefit of a full understanding and reconciliation of the SWBT data inconsistencies discussed in this section.

Figure 2.9: HP October 2002 PM13.1 Calculation (DSS and EDI Data)

Submeasure	Denominator (HP Order Count)	Numerator (HP Flow-Through Count)	PM 13.1 Calculation (HP Flow-Through Percent)
PM13.1-03 (Aggregate)	98,572	75,124	76.2%
13.1-03.1 (Resale)	96,432	74,976	77.8%
13.1-03.2 (UNE Combos)	46	0	0.0%
13.1-03.3 (Specials)	52	0	0.0%
13.1-03.4 (UNE Loop)	866	29	3.3%
13.1-03.5 (DSL Loop)	1,176	119	10.1%

3.0 PM13 Test Plan One–Accuracy of Current SWBT Reporting

3.1 Objectives

HP tested the following objectives, which appear in the PUCT Audit Plan, dated October 8, 2001 in Section II.A.1:[46]

- PM13 captures all CLEC order types (e.g., restoration of service, PIC change, etc.) for which the equivalent retail order type flows through EASE for SWBT retail service.
- PM13 captures all CLEC order types that are MOG-eligible.
- PM13 results that are reported for SWBT retail include only those order types that are designed to flow through EASE.
- Reporting CLEC data for PM13 in numbers of back-end service orders, rather than LSRs, is not distorting the results.
- Flow-through failures in the form of erroneous and improper rejects are being captured in the PM13 data.
- No other errors or departures from the business rules are apparent in SWBT's current collection, calculation, and reporting of PM13 data.

The following sections describe HP's activities and findings with respect to these objectives.

3.2 Activities

In completing PM13 Test Plan 1, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Capturing CLEC Order Types;
- Evaluating MOG-Eligibility;
- Reviewing SWBT Retail Order Types for Ease Flow-Through;
- Comparing LSRs to Back End Service Orders;
- Reviewing Erroneous and Improper Rejects; and,
- Reviewing Additional Departures.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Capturing CLEC Order Types

As a primary step in completing this test plan, HP determined which CLEC order types are captured in the PM13 measure. HP carried out this step through the completion of the three sub-activities that appear in the sections that follow: Determining EASE Flow-Through Order Types, Evaluating PM13 Data Inclusion, and Evaluating Order 33 Implementation.

Determining EASE Flow-Through Order Types

HP reviewed SWBT documentation and raw data to determine the universe of order types that flow-through EASE for SWBT retail.[47] As part of this review, SWBT provided HP with the "SBC Southwestern Bell Services and Order Types for Retail and Wholesale Services," a detailed list of all retail order types and their definitions.[48] During the review of the retail EASE raw data, HP found that EASE orders, whether retail or wholesale, do not have designated order types. Therefore,

HP determined that class of service was the only means to determine which retail order categories flowed through EASE. The EASE retail diagnostic results are not disaggregated in the same format as wholesale EASE. The retail EASE system will only allow the SWBT customer service representative to input POTS type services. Since order types are not disaggregated, SWBT does not capture the class of

[46] The objectives in this section correspond to PM13 objectives in the *PUCT Audit Plan*.
[47] See Information Request PM13-0611-028.
[48] See Information Request PM13-0324-001.
[49] See Information Request PM13-0917-074.
[50] See Information Request PM13-0326-003.
[51] See Information Request PM13-0326-006.
[52] See Information Request PM13-0412-010.
[53] See Information Request PM13-0517-011.
[54] See Information Request PM13-0517-013.
[55] See Information Request PM13-0517-016.

service in the raw files.

HP also created an Oracle database to query SWBT's May 2002 raw data. HP used the SWBT Systems Requirements Document to build the database and load all necessary data. On several occasions, HP found the documentation to be inadequate for the purpose of loading the data. SWBT was responsive to HP in correcting or adding to the information that was needed to fulfill the request. SWBT and HP met on August 5, 2002, to discuss and resolve issues related to HP's loading of the May 2002 DSS data into its Oracle database.

To verify the types of retail orders which are designed to flow through EASE, HP selected a random sample of 400 retail EASE service orders from the Oracle database and requested that SWBT provide the associated class of service information for these orders.[49] HP then compiled a list of the order types and classes of services that successfully flowed through EASE in the sample.

For additional data regarding SWBT's order flow-through processing, HP reviewed the following SWBT documentation received in response to various information requests:

- System architecture diagrams indicating the data flow-through of SWBT's OSS systems used when calculating the PM13 measure.[50]
- A detailed flow diagram of the SWBT retail and wholesale order processes for EDI, LEX, and EASE from order entry point to completion.[51]
- The MOG Bullets, which contain any changes with respect to flow-through capability of SWBT MOG system[52].
- The "Resale Services and Unbundled Loop with Port EASE and MOG Flow Through Exceptions" document which allowed HP to correlate flow-through and exceptions for retail EASE, with LEX/EDI on the wholesale side.[53]
- The list of all order types that were not designed to flow through EASE, including B-EASE and C-EASE.[54]
- The "Change Management Release Schedule" for EASE, including B-EASE and C-EASE, for the period of January 2000-April 2002.[55]

Evaluating PM13 Data Inclusion

HP examined the May 2002 Post "Plan of Record" (POR) data to determine whether SWBT included in the denominator of the PM13 measure all CLEC orders that are equivalent to the order types designed to flow through EASE for SWBT retail. HP reviewed the April 6, 2002, POR Release, which resulted in several changes to SWBT's Mechanized Order Generator (MOG). The specific issues pertaining to this release are discussed in the Evaluating MOG Eligibility section of this report. HP also received the MOG User's Guide from SWBT, and reviewed the document to gain a better understanding of how MOG works, and of the role MOG plays in the calculation of PM13.[56]

HP received from SWBT all DSS summary and detail files as well as the LASR, EASE, and SORD/SOT tables used by DSS for the reporting month May 2002.[57] Because DSS uses LASR, EASE, and SORD/SOT table data, HP requested and examined the source code related to the derivation of DSS tables subsequently used in the calculation of PM13. HP loaded the DSS data into its Oracle database, and examined the data in its entirety. HP compared the random sample of retail EASE orders described in the previous section to the wholesale DSS detail data to ensure the classes of service for retail EASE flow-through orders were also represented in the CLEC data. HP reviewed the data in the DSS detail data for EDI,

[56] See Information Request PM13-0326-004.
[57] See Information Request PM13-0611-028.

LEX and wholesale EASE.

Evaluating Order 33 Implementation

HP examined the extent to which SWBT implemented Order 33[58] to capture CLEC order types for which the equivalent SWBT retail order type is designed to flow through EASE. HP's evaluation involved a review of SWBT documentation, source code, and raw data. As part of its requirements under Order 33, SWBT was to update its "Mid-Level" document.[59] The "Mid-Level" document shows SWBT's data collection process for PM13 Business rules. Upon review of this document, HP found that SWBT had not made the necessary updates. Therefore, in order to complete this portion of the audit, HP requested that SWBT update the "Mid-Level" document to reflect Performance Measurements business rules version 2.0.[60] Additionally, HP requested and reviewed SWBT documentation relating to the implementation of Order 33 as it applies to PM13.[61] HP also requested PM13 raw data for the period from March 2002 through May 2002.[62]

Finally, HP reviewed the SWBT Project in Process (PIP) documentation and the EASE/OSS Platform Flow Through Comparison document that established the necessary changes to systems to account for all changes associated with Order 33.[63] This documentation provides detail as to SWBT's accounting for non-flow through wholesale orders for which there is an equivalent retail EASE flow through order. The documentation explains how these order types are counted in the PM13 measure.

Evaluating MOG-Eligibility

The PUCT Audit Plan specified three activities within the objective of evaluating MOG-eligibility:

1. Review SWBT raw data to identify order types accounting for reported flow-through failures;
2. Review SWBT source code to determine how CLEC order types are selected for inclusion in or exclusion from the PM13 measure; and,
3. Determine whether further specification of CLEC MOG-eligible order types should be included in the PM13 business rules.

To complete these activities, HP developed a database to analyze SWBT data, identified specific flow-through failures, reviewed CLEC order type inclusion, and evaluated the PM13 business rule specifications. The following sub-sections provide details of HP's activities within each of these areas.

Developing the Database

HP independently developed an Oracle database to store the DSS data it received from SWBT. The database allowed HP to develop queries that would address various requirements of this test plan. Through the Oracle database, HP examined the accuracy of SWBT's PM13 calculations, and its reported performance results.

HP performed three levels of data validation to evaluate the integrity of SWBT's data. First, HP validated the calculated performance measurement. HP then validated SWBT's DSS output files. Last, HP performed a source table validation, which included a valid value check.

Furthermore, HP developed criteria for the database queries and used the criteria to determine the universe of order types that accounted for flow-through failures in the data set. Finally, HP examined the resulting data to determine if orders identified as

[58] See PUCT Case 20400 – 363 Project No. 20400 Order 33.
[59] See PUCT Case 20400 – 363 Attachment, pages 29-34.
[60] See Information Request PM13-0611-026.
[61] See Information Request PM13-0611-027.
[62] See Information Request PM13-0326-003.
[63] See Information Request PM13-0611-027.

flow-through failures were MOG-eligible.

Identifying Flow-Through Failures

HP examined SWBT-provided May 2002 data—including DSS summary and detail files, and the LASR, EASE, and SORD/SOT tables used by DSS—to determine the universe of order types that account for all flow-through failures.[64]

For EDI and LEX, HP examined the total DSS data set for all CLECs for May 2002. Specifically, HP used the following criteria to determine EDI and LEX flow-through failures:

- Orders with a state of Texas indicator;
- Orders flagged as MOG-eligible;
- Orders included in the PM13 measurement; and,
- Orders that did not flow through.

For EASE orders, HP examined Texas orders that did not flow through. The results of HP's analysis, including the totals for each category, can be found in the Objective Two Findings in section 3.3, below. In its evaluation, HP used the Class of Service and order type information provided in the DSS data sets to classify the EDI, LEX, and EASE data.

Based on its review of May 2002 DSS data, HP issued an information request to SWBT requesting an explanation of an apparent contradiction between the flow-through indicators and MOG-eligibility indicators for 19,383 orders.[65] In its response, SWBT provided HP with a document entitled "Resale Services and Unbundled Loop with Port EASE and MOG Flow Through and Exceptions." The document indicated that Supplemental Orders were not flow-through candidates.

HP also requested SWBT provide an explanation for 82 examples Birch Telecom provided for which the flow-through indicator and the MOG-eligibility indicator conflicted.[66] In the examples Birch provided, the flow-through indicator was populated with a 'Y' and the MOG-eligibility indicator was populated with an 'N'. In its response, SWBT explained that all of the Birch examples were Supplemental Orders, and, therefore, were not flow-through candidates.

Reviewing CLEC Order Type Inclusion

As part of its audit activities, HP reviewed all relevant SWBT source code and documentation related to the inclusion or exclusion of data in the calculation of PM13. HP sought to determine which order types are excluded from the measure.

HP also examined SWBT May 2002 raw data, including DSS summary and detail files and LASR, EASE, and SORD/SOT tables. At HP's request, SWBT provided system architecture diagrams indicating the flow of data through the OSS systems used in the calculation of PM13.[67] HP also requested the pre- and post-POR LASR/DSS EIA and SOT EIA documents.[68] Additionally, HP requested a white paper documenting SWBT's methods and procedures for the collection, distribution, and processing of PM13 data as reported monthly by the SBC Long Distance Compliance group.[69] HP also examined how DSS uses the LASR, EASE, and SORD/SOT tables to produce DSS output tables. Specifically, HP examined how SWBT derives the 11 fields subsequently used in the determination of the PM13

measure.[70] HP also reviewed SWBT's MOG User Guide and supplemental MOG

[64] See Information Request PM13-0611-028.
[65] See Information Request PM13-0828-063.
[66] See Information Request PM13-1003-077.
[67] See Information Request PM13-0326-003.
[68] See Information Request PM13-0517-017.
[69] See Information Request PM13-0517-023.
[70] The combined number of derived fields for both wholesale and retail.

Bulletins.

HP examined SWBT System Requirements documents to determine which orders are specifically included or excluded with respect to MOG-eligibility. HP examined source code to ensure SWBT implemented the necessary code changes to include each of the 17 order scenarios which are not MOG-eligible but for which there exists a retail EASE equivalent. HP also reviewed the code to determine how SWBT currently (as of May 2002) includes or excludes various order types. Finally, HP ensured the actual system code supports the provided System Requirements documents.

HP examined three sets of source code—the PM13 code prior to restatement (November 2001, pre-POR), the PM13 code following restatement (December 2001, pre-POR), and the PM13 May 2002 code (post-POR). HP also examined SWBT's System Requirements Document (SRD) versions 1.6.1 and 1.7.1. The SRD outlines the data sources, measurement procedures, data manipulation, and final output (files sent to the DSS server) for PM13. The SRD version 1.6.1 contains pre-POR specifications and supplements the November/December 2001 system code, and the SRD version 1.7.1 contains post-POR specifications and supplements the May 2002 system code.

As part of its code review, HP examined how SWBT uses various derived fields to include or exclude order types. The 'MOG' derived field is populated based on information contained in the 'EAMATCH' derived field, to determine if the order meets one of the 17 scenarios for which an order is not MOG-eligible but has a retail EASE equivalent, and therefore must be included in the measure. During its code review, HP verified the existence of an additional SWBT table, which details the 17 scenarios. This table is queried to determine an EASE match.

SWBT identifies orders for exclusion from PM13 through both the use of derived fields and the definitions of tables used in the creation of DSS detail files. HP identified four fields that would cause a derived field, 'P1078FLG', to be populated with an 'N', which would then cause the order to be excluded from the measure. Further, during the definition of the 'MATHOLD' table, the application reviews the data for additional conditions that would cause an order to be excluded. Exclusions from the PM13 data can generally be classified in one of the following groups:

- Hot-cut and expedited orders;
- Specific MOG errors;
- Test AECNs;
- Population of Specified Excluded Fields; and,
- Particular Exclusions (e.g., a specific MOG error associated with a specific project ID).

Evaluating the PM13 Business Rule Specification

HP's evaluation of the PM13 business rule specifications focused on a review of the SWBT PM13 Business Rules, versions 1.7 and 2.0, as incorporated in the Texas T2A agreements. Versions 1.7 and 2.0 apply to the periods before and after SWBT's implementation of Order 33, respectively. HP conducted multiple meetings with Birch Telecom and AT&T to determine whether and how the CLECs believe the business rules were misinterpreted or misapplied.[71]

In addition to HP's discussions with CLECs, HP also examined publicly available SWBT documentation. HP examined the SWBT "Flow-Through and Exceptions Matrix," versions 5.00 and 5.01, available on the CLEC website. HP initially used these SWBT documents and the "SBC Southwestern Bell Services and Order

[71] HP held several meetings with CLECs during the period of May-June 2002.

Types - Retail and Wholesale Services" document to evaluate the relationship and correlation between SWBT documentation. HP concluded that a more direct comparison between CLEC-submitted orders and the corresponding retail EASE equivalent would be helpful to CLECs. HP's recommendations are provided in the Findings section of this report.

Reviewing SWBT Retail Order Types for Ease Flow-Through

HP reviewed SWBT retail order type flow-through by completing the following five sub-activities:

- Identifying Retail Flow-Through Failures;
- Reviewing Retail Order Type Inclusion;
- Determining EASE Retail Orders;
- Evaluating the PM13 Business Rule Specification for Parity Comparison; and,
- Validating the Exclusion of Non-MOG-Eligible Service Orders from the PM13 Numerator.

The following subsections detail the steps HP carried out with respect to these activities.

Identifying Retail Flow-Through Failures

As referenced previously in this report, HP developed an Oracle database to store the SWBT DSS data it used in the audit. HP developed queries for the database to review and identify the order types reported as flow-through failures. HP also reviewed SWBT source code and documentation related to the selection of order types for inclusion in the PM13 calculation, and examined SWBT-provided May 2002 data (including DSS summary and detail files, as well as the EASE and SORD/SOT tables used by DSS) to determine the universe of order types that accounted for all flow-through failures.[72]

For EASE retail, HP examined orders from Texas that did not flow through. HP classified the EASE data by Class of Service and Service Order type because those criteria were the specific classifications SWBT provided in the DSS data set. To verify EASE retail flow-through order types, HP selected a random sample of 400 retail EASE service orders from the Oracle database and requested that SWBT provide the associated class of service information for these orders. HP then compiled a list of the order types and classes of services that showed flow-through failure for EASE retail in the sample.[73]

Reviewing Retail Order Type Inclusion

As part of the SWBT retail order type inclusion audit process, HP reviewed all relevant SWBT source code and documentation pertaining to data inclusion for SWBT retail order types. In doing so, HP sought to determine what order types were excluded from the measure. HP reviewed the SWBT retail PM13 results to ensure that the measure includes only those order types designed to flow through EASE.

HP examined SWBT system source code to determine how SWBT includes or excludes various order types, as of May 2002, and to ensure that the actual system source code supports the provided System Requirements documents.

HP examined the PM13 source code for the period prior to SWBT's restatement of PM13 (November 2001, pre-POR), the period after SWBT's restatement of PM13 (December 2001, pre-POR), and May 2002 (post-POR). As part of its code review, HP also examined System Requirements Document (SRD), version 1.6.1 (pre-POR specifications) and version 1.7.1 (post-POR specifications). The SRD outlines the

data sources, measurement procedures, data manipulation and final output (files sent to DSS server) for PM13. SRD version 1.6.1 supplements the November/December 2001 source code, and version 1.7.1 supplements the May 2002 code. HP also requested the SOT EIA documents, for both the pre- and post-POR periods.[74]

HP also examined how DSS uses the EASE and SORD/SOT tables to produce the DSS output tables. Specifically, HP examined how SWBT derives the 11 fields it subsequently uses in the PM13 calculation. [75] HP reviewed the system architecture document entitled "Mid-level diagram" to obtain an understanding of the flow of data through SWBT OSS systems and the determination of retail order inclusions.

HP received a demonstration of the Business and Consumer EASE ordering systems, and observed SWBT customer service representatives at the St. Louis RSC as they entered orders in Consumer EASE. HP also reviewed the list of order types that were not designed to flow through EASE, including B-EASE and C-EASE,[76] and the *Change Management Release Schedule* for EASE, including B-EASE and C-EASE, for the period of January 2000-April 2002.[77]

Finally, HP reviewed a SWBT white paper documenting procedures SWBT employs to collect, distribute, and process PM13 data as reported monthly by the SBC Long Distance Compliance group.[78]

Determining EASE Retail Orders

In accordance with the Audit Plan, HP analyzed whether the PM13 denominator includes only those retail order types that, if input through EASE, are expected to result in mechanically generated service orders. HP examined the May 2002 Post "Plan of Record" (POR) data to determine whether the PM13 denominator included all CLEC orders in the universe of order types that would flow through EASE for SWBT retail.

HP requested from SWBT all DSS summary and detail files and the EASE and SORD/SOT tables used by DSS for the reporting month May 2002.[79] Because DSS uses the EASE and SORD/SOT table data, HP examined the source code related to the derivation of the DSS tables used in the PM13 calculation. HP loaded the DSS data into its Oracle database, and was able to look at the data in its entirety. HP compared a random sample of retail EASE orders to the wholesale DSS detail data to ensure the classes of service for retail EASE flow-through orders were also represented in the SWBT data.[80] HP also reviewed the data in the DSS detail data for retail EASE.

Evaluating the PM13 Business Rule Specification for Parity Comparison

To complete its evaluation of SWBT's PM13 Business Rule Specification for parity comparison purposes, HP reviewed the following:

- Ease/SORD issues and processes;
- Performance Measurement Calculations and the effect of orders on the PM calculations;

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[72] See Information Request PM13-0611-028.
[73] See Information Request PM13-1114-089.
[74] See Information Request PM13-0517-017.
[75] HP completed this activity at a meeting with SWBT personnel in St. Louis, MO, on May 21, 2002.
[76] See Information Request PM13-0517-013.
[77] See Information Request PM13-0517-016.
[78] See Information Request PM13-0517-023.
[79] Information Request PM13-0611-028
[80] HP used the same random sample of retail EASE orders it generated to verify retail EASE flow-through order types, as w as described earlier in this section.

- PM13 Measurements and the comparison of EASE retail and wholesale flow-through results;
- Causes for Ease Order Failures;
- Other Business and EASE Processes; and,
- SWBT-provided information with participating CLECs.

In order to review the EASE/SORD issues and processes, HP held a conference call with SWBT on October 10, 2002 to review these processes. HP received SWBT documentation describing the EASE order processes and applicable failures. HP also reviewed SWBT's Performance Measurement Calculation information related to retail and wholesale EASE.

During the period of examination, January 2000 through May 2002, HP reviewed the retail and wholesale EASE flow-through measurements and compared them to the SWBT-reported EASE flow-through results. HP documented differences between retail and wholesale EASE flow-through percentages and discussed these differences with representatives from SWBT and the participating CLECS. SWBT and the CLECs provided explanations for the differences between the retail and wholesale EASE results. HP's review of SWBT documentation for all processes related to EASE and EASE flow-through failures included additional EASE processes related to undistributed orders, alternative methods for CLECs to correct undistributed orders, and CLEC/SWBT communications.

HP posted the meeting minutes from the October 10 conference call on October 11, 2002. After it posted the meeting minutes, HP and a participating CLEC raised additional questions on this subject. HP held another conference call with SWBT on October 29, 2002, to review questions related to:

- Ease/SORD flow-through failures;
- SWBT retail EASE flow-through percentages compared to wholesale EASE flow-through;
- SWBT Retail orders compared to certain types of CLEC orders; and,
- Alternative methods and EASE flow-through.

On November 4, 2002, SWBT provided a written response to the above questions, and HP posted this response on its audit website. On November 12, 2002, HP reviewed the EASE/SORD responses with Birch Telecommunications.

Evaluating Orders Excluded from the Numerator

To validate that the PM13 numerator excludes only those service orders that do not mechanically generate, HP submitted an information request to SWBT requesting examples of SORD edits that are not programmed in EASE.[81] HP also reviewed the SWBT System Requirements documentation for information regarding the application of the exclude indicator. Further, HP examined how the SWBT Typist ID and Origination Code affect the inclusion or exclusion of service orders that fall out for manual processing prior to distribution in SORD.

HP reviewed the SWBT System Requirements documentation to verify that only those retail service orders that mechanically generate are included in SWBT's PM13 reporting through examination of any instances where an order, after falling out for manual processing, would receive an exclude indicator of 'Y'.

As detailed in Step Three of this Report, HP also verified the application of the Origination Code '5' to count EASE flow-through orders, as well as the application of Typist IDs. Additionally, HP examined SWBT source code for EASE retail files to determine the inclusion and exclusion criteria for service orders.

[81] See Information Request PM13-0522-018.

Finally, HP held a conference call with SWBT on November 14, 2002 to discuss further the calculation of the PM13 numerator.

Comparing LSRs to Back End Service Orders

To complete its activities related to the comparison of LSRs to back-end service orders, HP carried out the following steps:

- Restate May 2002 CLEC results on an LSR basis;
- Compare restated results to diagnostic results; and,
- Aggregate restated results into LEX and EDI results.

The following subsections detail the work HP completed with respect to each of these steps.

Restate May 2002 CLEC Results on an LSR Basis

To prepare for the restatement of PM13 results on an LSR basis, HP requested data from SWBT regarding the relationship between Service Orders and LSRs within SWBT's OSS. HP received the documentation for reporting PM13, and requested the self-reported raw data for the month of May 2002.[82]

HP reviewed the PM13 raw data on an LSR basis rather than a back-end service order basis. SWBT currently reports PM13 as the percentage of back-end service orders that flow through. Thus, if an LSR has three associated service orders, and one of those service orders fails to flow through, the flow-through rate under the PM13 business rules is 66.7 percent. However, if the measure were calculated on an LSR basis, the LSR would be considered a flow-through failure if one or more of the associated service orders fails to flow through, and the resulting measure in the above example would be zero percent flow-through.

HP assessed the impact of using back-end service orders to calculate PM13 by translating the PM13 raw data count into a corresponding number of LSRs. HP requested data from SWBT to determine how the Service Orders and LSRs are related. HP also received from SWBT the process documentation for reporting PM13 and the raw data for the month of May 2002.[83] HP then reviewed the translated data and counted any LSR for which at least one associated service order failed to flow through as a flow-through failure. Upon completion of this review, HP recalculated the PM13 flow-through rate in terms of the percentage of LSRs that flowed through in relation to the total number of LSRs processed.

Compare Restated Results to Diagnostic Results

HP ran queries against its Oracle database for May 2002 LEX data that SWBT provided. The database files from which HP gathered the data were in the DSS detail files. The purpose of this section of the audit is to show the difference, if any, between the PM13 results SWBT reports to the DOJ and HP's calculated PM13 results for LSRs. HP calculated the numerator and the denominator by LSR to determine if there was a difference when compared to back-end service orders. PM13-02.1 through PM13-02.6 provide disaggregations of the LEX flow-through results by DSL Loop, UNE loop, Specials, Resale POTS, UNE combination, and Other. HP compared its LSR-based PM13 calculations to the PM13 LEX disaggregated results posted on the DOJ website.

Aggregate restated results into LEX and EDI results

HP was tasked with calculating the aggregate PM13 results by LSR and comparing these results to the back-end service order results SWBT reported to the DOJ. First, HP calculated PM13 at each level of disaggregation for EDI and LEX, and then HP calculated the measures on an aggregate basis. HP used the DSS detail LEX and EDI files to calculate the measure. HP then compared the aggregate results from its

[82] See Information Request PM13-0611-028.
[83] See Information Request PM13-0611-028.

Reviewing Erroneous and Improper Rejects

database queries to the PM13 results SWBT calculated from back-end service orders and reported to the DOJ.

HP examined flow-through failures in the form of erroneous and improper rejects to determine if these rejected orders are being captured in the PM13 data. HP evaluated LSRs that were submitted, and subsequently rejected in error, and analyzed whether these erroneously rejected orders were properly captured in the PM13 measure.

HP received samples of orders believed to be erroneously and improperly rejected from both Birch Telecom and AT&T. HP then worked with SWBT to research the causes of error for these orders to determine if they were in fact improperly rejected. HP observed SWBT personnel reviewing the initial LSRs to determine what was requested by the CLEC in each order. HP then observed as SWBT personnel reviewed each individual screen to determine whether the LSRs were rejected for valid reasons. SWBT also reviewed the comments between the LSC and the CLEC at the time the order was submitted. HP was present during SWBT's research of the Birch-provided orders, but was not present for SWBT's research of all the AT&T examples. HP reviewed SWBT's initial findings for the CLEC orders, and requested SWBT provide detailed information on each order. HP provided SWBT with the list of orders, and requested that SWBT provide the following information for each order:

- Information as to whether the order was of a type designed to flow through;
- SWBT's view as to whether the order was properly or erroneously rejected; and,
- Information indicating whether the order was included in the PM13 denominator. [84]

HP further requested that SWBT and AT&T continue research into the specific causes of AT&T's rejected orders, and provide to HP a record of the results of this research. [85] In its response to HP's request, SWBT outlined events that took place regarding the change of the AWS USOC to EW5++ for UNE-P products. SWBT stated that AT&T received the Accessible letters and coded its system to reflect this change. Because SWBT mechanically changed the old USOC on these accounts, there were several that had not been changed. Thus several of AT&T's orders dropped for manual handling. SWBT indicated AT&T's system would not populate the old USOC, and AT&T was not able to correct these orders with out making a code change. According to SWBT, both parties agreed to work these original examples as a project. SWBT counted the orders that were flow-through eligible in the PM13 denominator, but, since the orders were processed manually, they were not counted in the PM13 numerator.

AT&T also provided HP with a summary of what occurred regarding these orders. AT&T states that it had established an agreement with SWBT that the rework of the errors sent to SWBT in a spreadsheet could be handled as a project, but that the initial orders were not to be handled as a project. AT&T also stated that the same USOC issue was responsible for rejected AT&T orders as late as August 2002 for. AT&T did not provide these examples to HP.

Additionally, HP reviewed the profile for SWBT's Mechanized Customer Production Support Center (MCPSC) to support its evaluation of erroneous and improper rejects. The MCPSC helps CLECs analyze error codes and process flows related to

SWBT OSS.[86] CLECs use this call center to clarify issues with orders they believe to have been erroneously or improperly rejected.

HP also evaluated SWBT's use of the ITRAK-FID to determine if SWBT properly applies the FID to CLEC service orders. SWBT uses the ITRAK-FID when negotiating FOC times with CLECs for processing transactions on a "special project" basis. HP reviewed how the ITRAK-FID is applied, and assessed whether its application has any impact on the reporting of PM13.

For the ITRAK-FID review, HP requested from SWBT all orders that had the ITRAK-FID affixed. HP requested these records in the form of back-end Service Orders for the months of March, April, and May 2002 per the PUCT Audit Plan.[87] SWBT also provided HP with documentation explaining how ITRAK-FID is applied to specific LSRs, at what point in the system ITRAK-FID is applied, and other relevant information pertaining to the ITRAK-FID.[88]

HP used the orders submitted by Birch Telecom and AT&T to determine whether SWBT had applied the ITRAK-FID following the rejection of these orders. Birch Telecom provided 19 examples from May and June 2002. However, HP was only able to verify the 12 examples from May 2002 because the ITRAK-FID data it received from SWBT was for the period March through May 2002. HP used the telephone numbers and PONs that Birch provided, and checked whether the same orders appeared in SWBT's list of orders for which ITRAK-FID was applied. HP followed the same process to research the erroneous or improper rejects that AT&T provided.

[84] See Information Request PM13-0821-058.
[85] See Information Requests PM13-0919-075 and PM13-0918-076-CLEC.
[86] See Information Request PM13-0517-019.
[87] See Information Request PM13-0709-041.
[88] See Information Requests PM13-0411-009, PM13-0709-043, and PM13-0709-044

Reviewing Additional Departures

As its last activity for PM13 Test Plan 1, HP reviewed SWBT processing to ensure it had committed no additional errors or departures from the PM13 business rules. HP reviewed the process by which SWBT currently collects, calculates, and reports the PM13 measures. To ensure there were no additional issues, HP requested participating CLECs provide information related to any concerns with SWBT's PM13 reporting that were not already addressed in the test plan.[89]

Pursuant to these activities, HP requested from Birch Telecom its call log with SWBT, and members of the HP Audit team met with Birch Telecom personnel on June 12, 2002 to discuss issues they had related to PM13 reporting.[90] HP also reviewed the SWBT change management website, including the published *Flow-through and Exception Matrix 5.01*, for content. SWBT maintains this website to inform the CLEC community of any updates and provide a mechanism to address any issues they have with SWBT. HP reviewed the CLEC Change Request Log and found no outstanding issues pertaining to PM13 that were not already included in the PUCT Audit Plan.

As part of its task to review additional departures from the PM13 reporting business rules, HP was asked to "validate how SWBT has implemented exclusion for CLEC orders that would flow through under a more recent version of an OSS system, but do not actually flow through because the CLEC used an older version of the OSS."[91] HP requested that SWBT provide an explanation as to how it accounted for this issue. SWBT provided HP with documentation to support the business rules version 2.0, which states if a CLEC does not upgrade to the newer version of an OSS, orders that are not designed to flow through the OSS version the CLEC uses are excluded from the calculation of PM13.[92] Subsequently, HP received a Project in Process (PIP) document providing an example of a CLEC that has not upgraded to the latest version of an OSS.

Additionally, the PUCT audit plan directed HP to review CLEC generated data for the month of May 2002, if the CLECs provided such data. After consultation with the CLECs, HP determined that reviewing CLEC-generated data would not add value to the audit as the CLECs indicated their data would be identical to the data already provided.

3.3 Findings

Objective 1

The first stated objective for this test plan is: "PM13 captures all CLEC order types (e.g., restoration of service, PIC change, etc.) for which the equivalent retail order type flows through EASE for SWBT retail service."

Findings Summary

1. Of the 43 combinations of Class of Service and order type identified in the retail sample, HP verified 41 of the combinations are designed to flow through for wholesale orders. HP was not able to verify two of the combinations as no instances of those combinations were found in the wholesale data for the time period analysed.
2. HP found the means by which SWBT designates orders for inclusion or exclusion from the PM13 measure to be effective. HP also found SWBT's Project in Process (PIP) documentation sufficiently supports the changes SWBT implemented as a result of Order 33.

[89] See Information Requests PM13-0911-070-CLEC, PM13-0911-071-CLEC, PM13-0911-072-CLEC, and PM13-0911-073-CLEC.
[90] See Information Request PM13-0613-035.
[91] See Texas Public Utility Commission Audit Plan Section II.A.f(2).
[92] See Information Request PM13-0828-065.

Findings Detail

HP identified several combinations of Classes of Service and order types represented in the random sample of 400 EASE retail service orders from Texas in May 2002 that showed flow through success.

Figure 3.1, below, identifies the Classes of Service and order types that were represented in the sample of 400 retail EASE orders that HP reviewed.

Figure 3.1: Retail EASE Flow-Through Classes of Service & Order Types

Class of Service	Order Types				
	(C) Change	(D) Discon-nect	(F) Discon-nect due to Move	(N) New	(T) Outside Move
1BH-M	X	X		X	X
1EL-M				X	
1EW	X	X	X		
1EW-M	X	X			X
1FL	X	X		X	
1FL-M	X	X	X	X	
1FW	X	X	X	X	X
1FW-M	X	X	X	X	X
1FW-O	X				
1ML-M				X	
1MW		X	X		
LFV	X				
LL4	X	X	X		X
LL4-M	X				
N1R		X			
1NK-M	X				
P6NLX		X		X	
RCFVE				X	

HP used the list of Classes of Service and order types from the EASE retail data to determine whether the same combinations of class of service and order types were present in the wholesale May 2002 detail DSS data for Texas. Two class of service and order type combinations, F-1MW and T-1EW-M, were not found in the May 2002 wholesale data. As a result, HP can make no findings as to the flow-through capability of these order types in the wholesale environment.

HP also found two combinations that were in the wholesale detail data but were not shown as being MOG-eligible in the EDI, LEX or EASE wholesale files. One combination, N-1FL-M, appeared once in the May 2002 wholesale data, and one combination, N-P6NLX, was ordered twice. All of the other Class of Service and order type combinations were represented in the wholesale data, and HP found evidence that all are MOG-eligible orders.

HP found the means by which SWBT designates orders for inclusion or exclusion from the PM13 measure to be effective. HP also found SWBT's Project in Process

(PIP) documentation sufficiently supports the changes SWBT implemented as the result of Order 33. HP reviewed all source code related to the implementation of Order 33 and all corresponding documentation. The PM13 audit team worked with SWBT programmers to complete the source code review. HP reviewed the SWBT source code used prior to the implementation of Order 33 (January 2000 through November 2001) and after Order 33 implementation (December 2001 through present) noting the changes between the two sets of code. The SWBT data programmers assisted HP in identifying the changes that were made in response to Order 33. Specifically, SWBT made an addition to the code that created a new table to establish the 17 EASE accounts for the scenarios that compare to CLEC ordering in EDI, LEX, and EASE wholesale.

Additionally, HP reviewed the process by which SWBT derives various fields (from source LASR, EASE, SORD/SOT tables to DSS detail and summary files) to determine whether or not an order is to be included or excluded in the SWBT PM13 calculation.

Finally, HP reviewed the Change Management Release schedule for EASE (including B-EASE and C-EASE), and subsequently observed a SWBT service representative in the St. Louis LSC. As a result of these activities, HP found SWBT does not make EASE updates simultaneous to its SORD edit implementations. Thus, there is a potential impact on the PM13 results reported for retail and wholesale EASE. SWBT provides SORD training to CLECs at no charge to assist them in working undistributed orders which would count as failures or rejects. Outside of this training, CLECs can communicate issues to SWBT through either the Change Management Process or an OSS Support team, including an account manager.

Objective 2

The second stated objective for this test plan is: “PM13 captures all CLEC order types that are MOG-eligible.”

Findings Summary

1. HP identified the order types accounting for the reported flow-through failures for May 2001.
2. HP found that SWBT source code accurately reflected order type inclusions and exclusions as indicated in the System Requirements documents covering both pre-POR and post-POR statement periods. HP also found that SWBT pre-POR code supports the inclusion of 17 additional order types per Order 33.
3. HP found that SWBT DSS tables use “upstream” LASR tables, which indicate whether an order is MOG-eligible. If this indicator is correct, then the code will accurately categorize orders for inclusion/exclusion. However, if the indicator is marked incorrectly, orders will not be appropriately accounted for.
4. Finally, in the evaluation of the PM13 Business Rule specification, HP has determined that the PM13 business rule specified in the Texas T2A Agreement, version 2.0 could be enhanced with further specification, including a matrix.

Findings Detail

Flow-Through Failure Identification

As required by the Audit Plan, HP identified the order types accounting for the reported flow-through failures for May 2002. To identify these orders, HP developed criteria for extracting the relevant orders form SWBT’s raw data. HP extracted from the MAY 2002 SWBT data all CLEC orders from the state of Texas that were marked MOG-eligible, were not flagged to be excluded from the measure, and failed to flow through.

HP determined that SWBT reviews all incoming orders, including Supplemental Orders to fatal and non-fatal rejects, for MOG-eligibility in the same manner. Primarily, LASR determines whether an order is MOG-eligible. Because Supplemental Orders are not designed to flow through, and cannot be entered by CLECs into EASE, these orders are populated with an 'N' in the MOG-eligibility indicator. There are some circumstances under which LASR passes an order to MOG and then MOG makes the determination as to whether the order is designed to flow through. Within the DSS tables, a designation of 'Y' in the exclude indicator reflects that the order is not included in the PM13 measurement calculation.

Figures 3.2 through 3.4, below, identify the CLEC flow-through failures, by order type.

Figure 3.2: May 2002 EDI Flow-Through Failures by Order Type

Activity	Request Type	Total Flow-Through Failures	Total Activity/ Request Type Combination	% Flow-Through Failures
B – Restore	M – Loop w/Unbundled Local Switching	30	3,875	0.77%
C – Change	A – Loop Service	2	3	66.67%
C – Change	E – Resale	1	197	0.51%
C – Change	M – Loop w/Unbundled Local Switching	4,994	43,055	11.60%
D – Disconnect	A – Loop Service	1,034	14,081	7.34%
D – Disconnect	E – Resale	40	537	7.45%
D – Disconnect	M – Loop w/Unbundled Local Switching	204	28,614	0.71%
N – New	A – Loop Service	2,492	44,797	5.56%
N – New	E – Resale	3	294	1.02%
N – New	M – Loop w/Unbundled Local Switching	120	13,367	0.90%
R – Record Change	M – Loop w/Unbundled Local Switching	1,483	1,483	100.00%
S – Suspend	M – Loop w/Unbundled Local Switching	210	17,359	1.21%
T – Outside Move	E – Resale	8	8	100.00%
T – Outside Move	M – Loop w/Unbundled Local Switching	3,483	3,483	100.00%
V – Conversion w/Change	B – Loop Service w/Number Portability	10	20	50.00%
V – Conversion w/Change	C – Number Portability	9	2,108	0.43%
V – Conversion w/Change	M – Loop w/Unbundled Local Switching	2,176	158,040	1.38%
Y - Deny	E – Resale	18	254	7.09%
	Totals	***16,317***	***331,575***	***4.92%***

Figure 3.3: May 2002 LEX Flow-Through Failures by Order Type

Activity	Request Type	Total Flow-Through Failures	Total Activity/ Request Type Combination	% Flow-Through Failures
B – Restore	E – Resale	156	355	43.94%
B – Restore	M – Loop w/Unbundled Local Switching	77	1,092	7.05%
C – Change	A – Loop Service	1	11	9.09%
C – Change	E – Resale	118	862	13.69%
C – Change	M – Loop w/Unbundled Local Switching	2,213	8,551	25.88%
D – Disconnect	A – Loop Service	3	1,698	0.18%
D – Disconnect	E – Resale	243	1,736	14.00%
D – Disconnect	M – Loop w/Unbundled Local Switching	166	11,290	1.47%
N – New	A – Loop Service	156	1,581	9.87%
N – New	E – Resale	73	1,481	4.93%
N – New	F – Unbundled Local Switching	3	3	100.00%
N – New	M – Loop w/Unbundled Local Switching	171	18,838	0.91%
R – Record Change	E – Resale	57	57	100.00%
R – Record Change	M – Loop w/Unbundled Local Switching	1,354	1,354	100.00%
S – Suspend	E – Resale	7	66	10.61%
S – Suspend	M – Loop w/Unbundled Local Switching	356	5,922	6.01%
T – Outside Move	E – Resale	390	390	100.00%
T – Outside Move	M – Loop w/Unbundled Local Switching	11,310	11,311	99.99%
V – Conversion w/Change	A – Loop Service	11	11	100.00%
V – Conversion w/Change	B – Loop Service w/Number Portability	33	33	100.00%
V – Conversion w/Change	C – Number Portability	22	339	6.49%
V – Conversion w/Change	E – Resale	43	578	7.44%

Activity	Request Type	Total Flow-Through Failures	Total Activity/ Request Type Combination	% Flow-Through Failures
V – Conversion w/Change	M – Loop w/Unbundled Local Switching	1,007	45,661	2.21%
W – Conversion As Is	E – Resale	39	129	30.23%
Y - Deny	E – Resale	136	744	18.28%
	Totals	***18,145***	***114,093***	***15.90%***

Figure 3.4: May 2002 EASE Flow-Through Failures by Order Type

Class of Service	Service Order	Total Flow-through Failures	Total Activity/Request Type Combination	% Flow-through Failures
1BH-M – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	14	145	9.66%
1BH-M – CRIS POTS Bus Flat Rate	N – New	2	42	4.76%
1BH-M – CRIS POTS Bus Flat Rate	R – Records Only	5	5	100.00%
1EL – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	1	2	50.00%
1EL-M – CRIS POTS Bus Flat Rate	D – Disconnect	2	8	25.00%
1EL-M – CRIS POTS Bus Flat Rate	R – Records Only	1	1	100.00%
1EW	C – Change, Conversion, Deny, Suspend, Restore	18	574	3.14%
1EW	D – Disconnect	4	223	1.79%
1EW	N – New	37	169	21.89%
1EW	R – Records Only	2	2	100.00%
1EW-M	C – Change, Conversion, Deny, Suspend, Restore	2	14	14.29%
1EW-O	C – Change, Conversion, Deny, Suspend, Restore	2	5	40.00%

Class of Service	Service Order	Total Flow-through Failures	Total Activity/Request Type Combination	% Flow-through Failures
1FL – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	7	127	5.51%
1FL – CRIS POTS Bus Flat Rate	D – Disconnect	3	61	4.92%
1FL – CRIS POTS Bus Flat Rate	N – New	15	145	10.34%
1FL – CRIS POTS Bus Flat Rate	R – Records Only	5	5	100.00%
1FL – CRIS POTS Bus Flat Rate	T – Outside Move	1	4	25.00%
1FL-M – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	12	310	3.87%
1FL-M – CRIS POTS Bus Flat Rate	D – Disconnect	6	148	4.05%
1FL-M – CRIS POTS Bus Flat Rate	N – New	25	309	8.09%
1FL-M – CRIS POTS Bus Flat Rate	R – Records Only	6	6	100.00%
1FL-M – CRIS POTS Bus Flat Rate	T – Outside Move	2	15	13.33%
1FL-O – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	1	2	50.00%
1FW	C – Change, Conversion, Deny, Suspend, Restore	239	24,521	0.97%
1FW	D – Disconnect	384	11,886	3.23%
1FW	F – Outside Move	3	954	0.31%
1FW	N – New	399	14,303	2.79%
1FW	R – Records Only	64	64	100.00%
1FW	T – Outside Move	17	952	1.79%
1FW-M	C – Change, Conversion, Deny, Suspend, Restore	46	147	31.29%
1FW-M	D – Disconnect	7	53	13.21%
1FW-M	N – New	8	102	7.84%
1FW-O	C – Change, Conversion, Deny, Suspend, Restore	37	95	38.95%
1FW-O	R – Records Only	2	2	100.00%

Class of Service	Service Order	Total Flow-through Failures	Total Activity/Request Type Combination	% Flow-through Failures
1NK-M – CRIS POTS Bus Flat Rate	C – Change, Conversion, Deny, Suspend, Restore	2	7	28.57%
1NK-M – CRIS POTS Bus Flat Rate	R – Records Only	1	1	100.00%
LL4	C – Change, Conversion, Deny, Suspend, Restore	11	140	7.86%
LL4	D – Disconnect	1	26	3.85%
LL4	F – Outside Move	1	3	33.33%
LL4	N – New	4	176	2.27%
LL4-M	N – New	1	1	100.00%
RBU-M – CRIS Other, LSP End User Misc Billing	R – Records Only	1	1	100.00%
RCFVC	C – Change, Conversion, Deny, Suspend, Restore	3	3	33.33%
RCFVE – CRIS POTS Telebranch	N – New	1	2	50.00%
RCFVF – CRIS POTS Telebranch	C – Change, Conversion, Deny, Suspend, Restore	2	24	8.33%
RCFVF – CRIS POTS Telebranch	D – Disconnect	3	39	7.69%
RCFVF – CRIS POTS Telebranch	N – New	4	44	9.09%
RCFVF – CRIS POTS Telebranch	R – Records Only	2	2	100.00%
RCFVS – CRIS POTS Telebranch	C – Change, Conversion, Deny, Suspend, Restore	1	4	25.00%
RCFVS – CRIS POTS Telebranch	D – Disconnect	1	1	100.00%
RCFVS – CRIS POTS Telebranch	N – New	1	1	100.00%
RCFWS – CRIS POTS Telebranch	D – Disconnect	1	1	100.00%
XBU – CRIS Other, Toll File Guide	R – Records Only	4	4	100.00%
	Totals	***1,424***	***55,881***	***2.55%***

CLEC Order Type Inclusion

Pursuant to the Audit Plan, HP reviewed the source code and documentation to determine how CLEC order types are selected for inclusion in the PM13 results. HP found that SWBT source code accurately reflected order type inclusions and

exclusions as indicated in the System Requirements documents covering both the pre-POR and post-POR statement periods. Further, HP finds that the SWBT pre-POR code supports the inclusion of 17 additional order types per Order 33.

When HP examined SWBT changes in system code from November 2001 to December 2001, it found evidence that SWBT incorporated code to include 17 additional order types. Although these 17 order types are not MOG-eligible, they do have corresponding retail EASE equivalent order types. Through SWBT's use of derived fields, if an order meets one of these 17 scenario definitions, it is included in the PM13 calculation. Further, HP verified through its May 2002 source code examination that SWBT's use of this table has been consistently carried forward into the post-POR period. Finally, HP verified SWBT's inclusion and exclusion of orders through its examination of versions 1.6.1 and 1.7.1 of the Systems Requirement Document.

Business Rule Specifications

HP found that SWBT DSS tables use "upstream" LASR tables, which indicate whether an order is MOG-eligible. If this indicator is correct, then the code will accurately categorize orders for inclusion in or exclusion from PM13. However, if the indicator is marked incorrectly, orders will not be appropriately counted. HP did not assess the validity of what SWBT stated it excluded, specifically, the MOG or SD errors.

Finally, HP has determined that the PM13 business rules, as currently specified in the Texas T2A Agreement, version 2.0, could be modified. HP recommends the SWBT Business Rules, or other appropriate documentation, be modified to specify the CLEC MOG-eligible order types to be included in the measure. Further, HP recommends the Business Rules include specification of the scenarios for which a CLEC order may not be MOG-eligible but is equivalent to a SWBT retail order type that flows through EASE and is recorded in the measure. The matrix HP received from SWBT on May 17, 2002, entitled "Resale Services and Unbundled Loop with Port EASE and MOG Flow Through and Exceptions" would provide such clarification.[93] This document lists, by product and scenario (e.g. Basic Exchange – Residence, Single Line/Multi Line, Conversions As Is/As Specified), the orders that are MOG Flow-Through Eligible, MOG Exceptions, have corresponding Retail EASE Flow-Through Eligibility, and have Retail EASE Exceptions.

Objective 3

The third stated objective for this test plan is: "PM13 results reported for SWBT retail include only those order types that are designed to flow through EASE."

Findings Summary

1. HP found that the PM13 results reported for SWBT retail include only those order types that are designed to flow through EASE.
2. HP found that the PM13 business rules do not include an explanation of the orders that are not designed to flow through to distribution in SORD.
3. HP found that SWBT counts those orders that flow through EASE, but subsequently fall out for manually handling after distribution in SORD, as flow-through failures in its calculation of PM13 retail. This conforms to the published PM13 business rules.
4. HP found that the retail measure for PM13 is consistently lower than the wholesale measure.

[93] See SWBT Response to Information Request PM13-0517-011.

Findings Detail

HP found that PM13 results reported for SWBT retail include only order types that are designed to flow through EASE. SWBT maintains a Service Order Tracking table that indicates whether or not an order is to be included in the retail EASE measure. SWBT's Systems Requirements Document states that retail orders entered via EASE are assigned a system origination code of '5' for selection to be included in the retail PM13 calculation.[94] HP reviewed the SWBT source code used to create the summary and detail files for the PM13 retail EASE measure. In its review, HP found code requiring that an order have a system origination code of '5' to be included in the detail DSS file for inclusion in PM13.

Figure 3.5, below, identifies the classes of service and order types that represented Retail EASE flow-through failures in the sample of 400 orders HP selected from the May 2002 DSS detail data files it received from SWBT. SWBT manually retrieved the class of service and order type information from its records. SWBT was unable to provide HP with information for six of the service orders in HP's sample because the orders were archived in a separate location, and project time constraints prevented SWBT from retrieving these archived orders.[95]

The following activities and class of service combinations were represented in the 400 sample pulled from the DSS data. These orders were only orders that did not show flow through succession. SWBT provided to HP the classes of service with the associated service order for which HP randomly pulled from the data base. Of these 400 SWBT was only unable to find 6 of the service orders classes of service. These classes of service were pulled manually by SWBT and due to time constraints of the project were unable to pull those 6 out of archive, which are located at a different premise.

[94] See SBC 271 Parity Performance Measurements System Requirements, SWBT Measure 13 FCC Measure 3, version 1.7, at p. 24.
[95] See SWBT Response to Information Request PM13-1114-089.

Figure 3.5: Retail EASE Flow-Through Failure Classes of Service and Order Types

Class of Service	Order Types					
	(C) Change	(D) Discon-nect	(F) Discon-nect due to Move	(N) New	(T) Outside Move	(R) Record
1BH-M	X			X		X
1EL-M						
1EW	X			X		X
1EW-M						X
1FL	X				X	X
1FL-M				X		X
1FW	X		X	X	X	X
1FW-M	X		X	X	X	X
1FW-O	X					
1ML-M						
1MW						X
LFV						
LGV				X		
LL4	X			X	X	X
LL4-M						
N1R						
1NK-M						
P6NLX						
RCFVE						
RCFVF		X				
RKW				X		
R5F				X		X
LF5	X					
XBU				X		
XRU				X		

HP found that the PM13 business rules, as defined in the Texas T2A agreement, version 2.0, do not include an explanation of the orders that are not designed to flow through to distribution in SORD. This documentation should include a description of the order types that are not designed to flow through to SORD, and of those that are edited out of SORD prior to distribution.

HP also found that SWBT includes orders that flow through EASE, but fall out due to edits in SORD prior to distribution, as flow-through failures in the Pm13 calculation. However, SWBT does not count retail orders that flow through EASE, but subsequently fall out for manually handling after distribution in SORD, as flow-through failures. Orders that fall out after distribution in SORD are counted in

the denominator and the numerator as flow-through successes.

HP confirmed that the application of Origination Code and Typist ID fields prevents the exclusion of orders that fall out after distribution in SORD. SWBT counts all orders with an Origination Code indicating the order originated in EASE, and for which the originating and distributing typist location code or the originating and distributing typist initials do not match, as flow-through failures in PM13.[96] When an order is entered via EASE, it is assigned an Origination Code of '5' and the Typist ID1 initials are assigned. The Typist ID2 initials are assigned in SORD prior to distribution. If the order has not fallen out for manual handling prior to distribution in SORD, the Typist ID2 will be the same as the Typist ID1. If the order does fall out prior to distribution in SORD, the Typist ID2 will be different from the Typist ID1. The Typist ID cannot be changed after the order is distributed in SORD. There is a separate and distinct field that is used when an order falls out after distribution to SORD. This field was not present in the Systems Requirement documentation, nor did HP identify the field in its review of the PM13 source code.

The SWBT formula for the retail PM13 measurement is:

- The Origination Code must be '5' to indicate EASE;
- If TYPIST ID1 = TYPIST ID2, the order completed without manual intervention and is included in the PM13 numerator and denominator; and,
- If TYPIST ID1 does not equal TYPIST ID2, the order required manual intervention, would be treated as a failure, and would be included in the denominator only.

HP noted previously that SWBT maintains a Service Order Tracking table that indicates whether an order is to be included in the retail EASE measure, and that SWBT's Systems Requirements Document states that retail orders entered via EASE are marked with a system origination code of '5' for selection to be included in the retail PM13 calculation.[97] SWBT counts retail EASE orders as flow-through failures if either the originating and distributing typist location code or the originating and distributing typist initials do not match.[98] This supports the finding that SWBT excludes only those orders that do not mechanically generate, and does not exclude service orders that are mechanically generated but subsequently fall out to manual processing after distribution in SORD. HP's review of the SWBT source code used to create the files for the PM13 Retail EASE measure also supports this finding.

HP concludes that orders that fall out after distribution in SORD are not counted in PM13. HP notes that SWBT does not develop and implement changes to the SORD system and to the EASE, LEX and EDI order entry systems simultaneously. As a general matter, SWBT develops and implements edits for SORD before it does so for the order entry systems. Some changes SWBT develops for SORD are never implemented in the order entry systems. SWBT indicated that it implements edits in SORD to reduce the errors created in the downstream systems, such as those related to provisioning and billing activities. HP found the only reason an order input into EASE would fail to successfully distribute in SORD is due to the impact of certain SORD edits that create EASE flow-though failures. Some SORD edits are coded into the SWBT system to enforce business rules. SWBT indicated that, rather

than coding edits directly into EASE, LEX or EDI, it provides training to those that use the systems. SWBT provided HP with twenty examples of these types of SORD edits in response to an information request.[99]

As a result of its activities, HP found that failures within SORD are handled as "undistributed orders" by the SWBT RSC (for retail orders) or LSC (for wholesale orders). Within the SWBT RSC or LSC, a customer service representative corrects the orders in SORD according to the error message generated by the failure/reject. This customer service representative generally has a specific job responsibility that includes correcting undistributed orders in SORD. The main responsibility of the SWBT RSC is the selling and generating orders. CLECs have two options for handling "undistributed orders." They can process the order through the LSC with their specific CLEC representative, or they can correct the order themselves through SORD. SWBT makes training on the SORD system available to its CLEC customers. HP found that, in general, CLECs find it most effective to correct failures by working with the SWBT LSC representative, rather than making changes directly in SORD.

The flow-through success rate for SWBT retail, as reported in PM13, is consistently lower than that for wholesale customers.[100] SWBT indicated there are various factors that contribute to these results. According to data SWBT provided, SWBT retail systems submit more complex orders, such as business services, through EASE than do SWBT wholesale customers. The SWBT retail order mix is about 88 percent POTS, whereas, for wholesale customers, POTS products account for over 98 percent of orders. As simple POTS orders are more likely to flow through to successful distribution in SORD, this difference in product mix may contribute to the consistently higher flow-through success rates reported for CLECs.

Birch Communications disputed SWBT's explanation. Birch stated that in Kansas and Missouri its customer base is 55% business customers, and it uses EASE to submit orders. Birch indicated that its monthly flow-through rate has been 98 percent over the past 12 months.[101]

SWBT also suggested that its handling of orders related to promotion pricing may also contribute to their higher rate of flow-through failures for retail orders. SWBT stated that promotional pricing specials result in more work for the RSC customer service representatives that input the orders into EASE, which may the increase errors that can cause flow-through failures. Pursuant to the Audit Plan, HP did not complete any audit work to verify or disprove this possibility.

Objective 4

The forth stated objective for this test plan is: "Reporting CLEC data for PM13 in numbers of back-end service orders, rather than LSRs, is not distorting the results."

Findings Summary

HP found that SWBT's reporting of PM13 in terms of back-end service orders does not distort the results as compared to reporting the results by LSRs. An LSR can only be counted as a flow-through failure once, regardless of the number of

[96] See SBC 271 Parity Performance Measurements System Requirements, SWBT Measure 13 FCC Measure 3, version 1.7, at p. 29.

[97] See SBC 271 Parity Performance Measurements System Requirements, SWBT Measure 13 FCC Measure 3, version 1.7, at p. 24.

[98] See SBC 271 Parity Performance Measurements System Requirements, SWBT Measure 13 FCC Measure 3, version 1.7, at p. 29.

[99] See SWBT Response to Information Request PM13-0522-018.

[100] These results can be observed in SWBT's publicly reported Performance Measurement reports, as well as the HP sampling results included in § 3.3 (*PM13 Calculations and Parity Results Tables*) of this report

[101] Birch communicated this information to HP via e-mail on Wednesday, November 13, 2002. The communication is currently posted on the website.

associated service orders that fail to flow through. Conversely, when the measure is calculated in terms of back-end service orders, each flow-through failure counts equally in the measure.

Findings Detail

Restatement of May 2002 CLEC Results on an LSR Basis

As described in the activities above, HP reviewed SWBT's PM13 raw data, and converted the back-end service order data into a corresponding count of LSRs processed in Texas for the reporting month of May 2002. Figure 3.6, below, identifies, for both LEX and EDI, the LSR counts HP derived from its analysis.

Figure 3.6: May 2002 EDI and LEX LSR Counts

Disaggregations	EDI LSRs	LEX LSRs
DSL Loops	10	3
UNE Loops	1,859	2,787
Specials	6	89
Resale POTS	1,297	5,240
UNE Combinations	122,217	42,652
Other	1,804	245
Totals	***127,193***	***51,016***

Comparison of Restated Results to Diagnostic Results

As described in the activities above, HP restated the disaggregated CLEC PM13 results for May 2002 LEX orders in terms of LSRs. HP then compared the PM13 results it obtained to the results SWBT reported to the DOJ for May 2002. Figure 3.7, below, provides the PM13 results HP calculated from the LEX LSR base as compared to SWBT's reported PM13 results calculated from back-end service orders. HP found that for all disaggregations except UNE Combinations (PM13-02.2), the flow-through rates were higher when reported on an LSR basis.

Figure 3.7: May 2002 LEX PM13 Results Comparison

Disaggregations	SWBT Reported Result	LEX LSR Count	LEX Flow-Through LSRs	LEX LSR FT %
Resale POTS (13-02.1)	81.2%	5,240	4,563	87.1%
UNE Combinations (13-02.2)	84.0%	42,652	35,555	83.4%
Specials (13-02.3)	11.4%	89	11	12.4%
UNE Loops (13-02.4)	94.1%	2,787	2,656	95.3%
DSL Loops (13-02.5)	92.4%	3	3	100.0%
Other (13-02.6)	96.5%	245	238	97.1%
Totals	***84.1%***	***51,016***	***43,026***	***84.3%***

Aggregation of Restated Results into LEX and EDI Results

Following the calculation of the LSR count, HP determined the number of LSRs that flowed through by eliminating the LSRs for which at least one service order failed to flow through. Figures 3.8 and 3.9, below, provide the EDI and LEX LSR counts that HP found to have flowed through and the resulting flow-through rate based on LSR counts. The tables also present the SWBT-reported PM13 results based on back-end service orders. The totals provided in each table show the aggregate results for LEX and EDI, respectively. HP found that, for the aggregate EDI results, the flow-through percentage was 1.6 percent lower when calculated by LSRs than what SWBT reported in terms of back-end service orders to the DOJ.

Figure 3.8: May 2002 EDI Results (PM13-03)

Disaggregations	SWBT Reported Result	EDI LSR Count	EDI Flow-Through LSRs	EDI LSR FT %
DSL Loops	90.8%	10	10	100.0%
UNE Loops	71.4%	1,859	1,501	80.7%
Specials	16.7%	6	1	16.7%
Resale POTS	94.6%	1,297	1,231	94.9%
UNE Combinations	95.3%	122,217	114,386	93.6%
Other	99.7%	1,804	1,797	99.6%
Totals	***95.1%***	***127,193***	***118,926***	***93.5%***

Figure 3.9: May 2002 LEX Results (PM13-02)

Disaggregations	SWBT Reported Result	LEX LSR Count	LEX Flow-Through LSRs	LEX LSR FT %
DSL Loops	92.4%	3	3	100.0%
UNE Loops	94.1%	2,787	2,656	95.3%
Specials	11.4%	89	11	12.4%
Resale POTS	81.2%	5,240	4,563	87.1%
UNE Combinations	84.0%	42,652	35,555	83.4%
Other	96.5%	245	238	97.1%
Totals	***84.1%***	***51,016***	***43,026***	***84.3%***

As the data in the above tables show, for most disaggregations of PM13 there are minimal differences between the SWBT-reported results and the results HP calculated in terms of LSRs submitted. In many instances, the flow through rate is higher when expressed in terms of LSRs. This is due to the fact that an LSR can only be counted as a flow-through failure once, regardless of the number of associated service orders that fail to flow through, whereas, when the measure is calculated in terms of back-end service orders, each flow through failure counts equally in the measure. For LEX orders, HP found the aggregate flow-through rate to be 0.2 percent higher when expressed in terms of LSRs than when calculated from back-end service orders.

HP notes that its calculated DSL results for EDI and LEX show 100 percent flow-through, while SWBT's reported measures for DSL were less than 100 percent (90.8 percent for EDI and 92.4 percent for LEX). There is a contradiction in these results because SWBT's published measures show that individual service orders

failed to flow through, and, thus, the LSRs associated to those service orders should have been recorded as flow-through failures, making HP's calculated result of 100 percent impossible. Because the fields in the SWBT raw detail files were not consistently formatted, when HP queried the data to obtain DSL orders for the measurements, it had to use wildcards to obtain orders that either started with "DSL" or contained "DSL" in the field. Because fo this, HP was not able to identify the specific cause of the discrepancies between its calculated results and the SWBT published results.

Objective 5

The fifth stated objective for this test plan is: "Flow-through failures in the form of erroneous and improper rejects are being captured in the PM13 Data."

Findings Summary

1. HP found that SWBT was correctly calculating the PM13 measure with regard to erroneous and improper rejects.
2. HP found that the ITRAK-FID was not affixed to any of the Birch Telecom examples. The same results were found for all AT&T provided examples.
3. HP could not document how an LSR, if it is flow-through eligible but is improperly rejected, is correctly reflected into the PM13 calculation.

Findings Detail

SWBT reviewed all of the erroneously rejected orders the participating CLECs provided to HP. According to the research of these orders SWBT provided to HP, SWBT considered all of the orders to have been erroneously rejected. The erroneously rejected orders that were of an order type designed to flow through were counted in the denominator of PM13, but not in the numerator. Conversely, the orders that were not designed to flow through were not counted in PM13. SWBT's methods and procedures for treating erroneously rejected orders are consistent with the Business Rules version 2.0 posted on the CLEC website.

Of the 1324 examples provided by AT&T, SWBT stated that 1101 were MOG-eligible. SWBT also stated that, for Birch Telecom, there were 20 PON and Supplemental unique combinations, and 7 of those were MOG-eligible. SWBT counted all of the MOG-eligible examples in the PM13 denominator, but not the numerator, in accordance with the Performance Measurement Business Rules version 2.0.

With regard to the ITRAK-FID, HP found that SWBT had not applied the ITRAK-FID to any of the erroneously rejected orders Birch Telecom or AT&T provided. Therefore, PM13 does not appear to be affected due to this finding.

In its review of SWBT documentation related to the ITRAK-FID, HP concluded that the ITRAK-FID is applied according to the following process:

1. The FID is affixed to the Service Order on the time of entry into SORD.
2. The LSC service representative populates the field if one of the by the following apply:
   - Orders containing an associated MBOS;
   - Complex or Large Volume requests or accounts;
   - CLEC to CLEC migration involving porting in of a TN, which involves a 48-hour FOC from another provider;
   - SBC identified projects; and,
   - Process outlined in Flash 233.

SWBT does not program specific exceptions or conditions that would cause the LSR to drop out for manual processing due to the ITRAK-FID. SWBT also stated there are no mechanical processes that populate ITRAK-FID. Consequently, there are no associated business rules that apply for this field.

SWBT conducts an internal audit of random orders for which the ITRAK-FID was

used to negotiate FOC intervals on a monthly basis.[102] Data for the random sample is collected from DSS and each order is then researched to find corresponding documentation of either an authorizing CLEC contact name or one of the five reasons listed above as the cause for the application of the ITRAK-FID.

SWBT's internal review team then conveys the results of the review to the LSC teams and, when necessary, provides follow-up training on the application of the ITRAK-FID. After the LSC has been retrained, the internal review team manager is provided confirmation of the retraining. HP reviewed the findings of SWBT's internal audit for the months of March, April and May of 2002 and found that the percentage of orders that received a FOC and had the ITRAK-FID populated was less then 0.5 percent.

HP also reviewed the Mechanized Customer Production Support Center (MCPSC) profile and determined that there are controls in place (i.e., a work-around) to help with erroneous fatal edits. The work-around enables the CLEC to get its order processed, but requires the CLEC to spend time researching errors and talking with the MCPSC.

The profile states that the MCPSC staff assigns a report number to each case and sends it to the group that will work the error. SWBT does *not* state that it takes this error into account for purposes of Performance Measure calculation. Through analysis of SWBT's documented procedures, HP could not determine how an LSR, if it is flow-through eligible and is improperly rejected, is then included in the PM13 calculation.

Objective 6

The sixth stated objective for this test plan is: "HP is to ensure that there does not exist any other errors or departures from the business rules that are apparent in SWBT's current collection, calculation, and reporting PM13 data."

Findings Summary

HP did not find any additional errors or departures from the PM13 business rules in SWBT's current collection, calculation, and reporting of PM13 data that were not previously addressed in the PUCT Audit Plan.

Findings Detail

HP reviewed the DOJ report and finds that SWBT currently reports diagnostic results in alignment with the business rules version 2.0. They report in the following manner:

- Ease wholesale – Resale POTS and Specials
- LEX – Resale POTS, UNE Combos, Specials, UNE Loop, DSL Loop, and Other.
- EDI - Resale POTS, UNE Combos, Specials, UNE Loop, DSL Loop, and Other.

HP did find that SWBT was mislabeling the EDI measures. PM13-03.5 was labeled Resale POTS while the results were actually for DSL Loops, and PM13-03.6 was labeled UNE Combos while the data was for Other. The reported results were not affected by the incorrect labeling. SWBT stated it would not change and re-issue previous reports, since the error affected only the labels for the measures and not the data itself, but it would correct the label headings beginning with the September 20, 2002, posting of August PM13 data.

Figures 3.10 through 3.12, below, provide a comparison between HP's count of disaggregated service orders and SWBT's reported numbers for the month of May 2002. For its calculations, HP used the DSS detail tables provided by SWBT to

[102] See Information Request PM13-0826-060.

[103] https://clec.sbc.com/clec/

recalculate PM13 using the logic present in the Systems Requirements Document. HP ran several queries against the Oracle database to derive the results in the tables below. HP took the SWBT counts and flow-through measures from the posted Performance Measurements on the CLEC website.[103]

Figure 3.10: May 2002 PM13 Comparison EASE (PM13-01)

PM13 Disaggregation	SWBT Order Count	SWBT FT Count	SWBT FT %	HP Order Count	HP FT Count	HP FT%
Resale POTS (13-01.1)	56,089	54,665	97.5%	56,089	54,665	97.5%
Specials (13-01.2)	9	9	100.0%	9	9	100.0%

Figure 3.11: May 2002 PM13 Comparison LEX (PM13-02)

PM13 Disaggre-gation	SWBT Order Count	SWBT FT Count	SWBT FT %	HP Order Count	HP FT Count	HP FT%
Resale POTS (PM13-02.1)	6,323	5,135	81.2%	6,323	5,135	81.2%
UNE Combos (PM13-02.2)	103,994	87,349	84.0%	103,994	87,349	84.0%
Specials (PM13-02.3)	105	12	11.4%	105	12	11.4%
UNE Loop (PM13-02.4)	2,827	2,660	94.1%	2,827	2,660	94.1%
DSL Loop (PM13-02.5)	498	460	92.4%	498	460	92.4%
Other (PM13-02.6)	345	333	96.5%	345	333	96.5%
Total (PM13-02)	114,092	95,949	84.1%	114,092	95,949	84.1%

Figure 3.12: May 2002 PM13 Comparison EDI (PM13-03)

PM13 Disaggregation	SWBT Order Count	SWBT FT Count	SWBT FT %	HP Order Count	HP FT Count	HP FT%
Resale POTS (PM13-03.1)	1,306	1,235	94.6%	***1,305***	1,235	94.6%
UNE Combos (PM13-03.2)	292,209	278,449	95.3%	***268,549***	***255,870***	95.3%
Specials (PM13-03.3)	6	1	16.7%	6	1	16.7%
UNE Loop (PM13-03.4)	1,819	1,299	71.4%	***1,817***	1,299	***71.5%***
DSL Loop (PM13-03.5)	2,977	2,704	90.8%	***2,617***	***2,370***	***90.6%***
Other (PM13-03.6)	2,026	2,019	99.7%	2,026	2,019	99.7%
Total (PM13-03)	300,343	285,707	95.1%	***276,320***	***262,794***	***95.1%***

4.0 PM13 Test Plan Two–Determination of the Accuracy of SWBT Restatement of PM13

4.1 Objectives

HP tested the following objectives, which appear in the PUCT Audit Plan, dated October 8, 2001 in Section II.A.2:[104]

- The restated CLEC data includes all CLEC orders of the type that will flow through EASE for SWBT retail, and the SWBT retail data provides an appropriate parity comparison.
- All required changes to the collection, analysis, and reporting of PM13 data have been properly implemented.
- SWBT has properly calculated Tier 1 and Tier 2 payments, based on the restated PM data.

The following sections describe HP's activities and findings with respect to these objectives.

4.2 Activities

In completing PM13 Test Plan 2, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Reviewing Appropriate CLEC Order Type Inclusion;
- Collecting PM13 Data for Analysis and Reporting; and,
- Evaluating Tier 1 and Tier 2 Payment Calculations.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Reviewing Appropriate CLEC Order Type Inclusion

HP examined raw SWBT CLEC data—including numerator, denominator, and excluded order data—prior to and after restatement[105] to determine whether SWBT properly accounted for all appropriate CLEC order types (i.e., those CLEC order types that would flow-through EASE for SWBT retail). HP identified all order types that are designed to flow through SWBT retail systems and compared them to CLEC order flow-through rates. HP also examined the source code SWBT uses for inclusion of specific order types in the PM13 calculation. Further, HP analyzed the corresponding SWBT retail order types and data logic to determine if they provide an appropriate parity comparison. To accomplish this, HP requested from SWBT the original and restated raw data for the period from January 2000 through April 2002.

HP executed queries against the raw data detail files to validate the order types included in PM13 and the SWBT-reported numbers. HP also reviewed SWBT internal documentation related to the inclusion of order types used in PM13 reporting.[106] HP reviewed SWBT's flow-through comparisons for retail and wholesale, and whether or not the scenario was to be included in the PM13 calculation. In reviewing SWBT documentation and process changes, HP noted that SWBT addressed a total of 35 individual ordering scenarios. Figure 4.1, below, identifies the order types SWBT addressed, and indicates whether the order types are included in the PM13 calculation.

Figure 4.1: SWBT Wholesale Order Type Flow-Through

Order Type	Counted in PM13 Flow-through calculation	Order Type	Counted in PM13 Flow-through calculation
Add or Change Lines involving Hunting Activity	YES	Record Activity	YES
Multiple Hunt Groups	YES	Add/Disc. Line from Hunt Group	YES
Change Hunting Line to Disassociated Group	YES	Add/Disc. Line from Hunt Group & Add or Remove features	YES
Remove 1 Line from Hunt Group and Add New Line with a New TN as Disassociated	YES	Personalized Ring	YES
Add New Line as "Bill On"	YES	Change TN	YES
DIRIDL Populated on LSR	YES	Charter Number - Resale	YES
Outside Moves	YES	Disc. Hunting from all Lines in Hunt Group	YES
DIRSUB Populated on LSR	YES	WPP Populated on LSR	YES
Dir. List. Other than LAM, LAL, or LML	YES	Telebranch (RCF)	YES
TC Option if 1st Position is N,F or H	YES	Import/Export a TN	YES
Change Res to Bus	YES	Change Bus to Res	YES
EBD	NO	Conversion of Master and Sys and Add Sys Numbers to Hunt with Master TNs.	NO
Charter Number – UNE-P	NO	Partial Conversion of SYS	NO
Complex Products	NO	Rearrange Hunt Group & Change TN	NO
Circuits	NO	PIC Change	NO
Quantity of Lines: 20 EDI/LEX,5 Consumer EASE, 30 Bus EASE	NO	Establish Hunt Group 2 or More Disassociated Lines	NO
Designed Trunks	NO	Change Bus to Res	NO
Change Res to Bus	NO		

[104] The objectives in this section correspond to PM13 objectives in the *PUCT Audit Plan*.

[105] For the purposes of HP's PM13 audit, raw data refers to the DSS system output files for SWBT retail and wholesale orders used in PM13 reporting.

[106] See SWBT response to Information Request PM13-0611-027.

Additionally, HP examined the quantity of products ordered and flow-through rates for suspend and restore. HP reviewed SWBT source code and business processes to determine the appropriate inclusion or exclusion of order types in the calculation of PM13. Because SWBT EASE logic treats outside moves and record only orders as non-flow through transactions, HP did not receive data related to the flow through rates for these products and therefore, HP is not able to provide any findings on this matter.

Collecting PM13 Data for Analysis and Reporting

As part of its auditing activities, HP analyzed all relevant documentation pertaining to PM13 measurement and calculation to determine whether SWBT has properly implemented all changes required by PUCT Docket 20400, Order No. 33 (Order 33). During the documentation review, HP reviewed SWBT methods and procedures documenting the collection, distribution, and processing of PM13 data as reported monthly by the SBC Long Distance Compliance group.[107] In order to validate SWBT processes for the calculations, HP also requested an updated "Mid-Level" document[108] and documentation defining SWBT methods and procedures used in the calculation of PM13.[109] Additionally, HP requested SWBT documentation supporting the "before" and "after" changes resulting from the restatement.[110] HP received and reviewed the Project in Process (PIP) *PM13 PIP History* document, including the SWBT document indicating the status and actions taken for the restatement. At HP's request, SWBT also provided the *Change Management Release Schedule* for EASE, including B-EASE and C-EASE, beginning January 2000 and ending April 2002.[111] HP also received the SWBT *MOG User Guide*, version 4.0, and supplemental MOG Bulletins.

In its review of SWBT data collection processes, HP conducted interviews with SWBT personnel to gather information on the specific systems (Data Support Systems), output, and data flow from CLEC order submittal through internal SWBT systems, the SWBT manual error check process, SWBT's remedy calculation process, and verification that the correct SWBT remedy payments were issued. Additionally, HP analyzed SWBT System Requirements documentation in order to execute queries and validate reported data. HP also conducted face-to-face meetings, on-site analysis, and conference calls with SWBT to audit SWBT methods and procedures employed in the collection of data used for restatement reporting. HP monitored the activities SWBT conducted in the process of gathering data for the PM13 calculation to validate SWBT's compliance with its written and stated M&P. HP employed this process to audit and validate SWBT's determination of the total number of orders, the number of flow-through orders, and the CLEC and SWBT flow-through percentages for reporting PM13 performance.

To address §2.A.1 of the Audit Plan, HP requested SWBT raw data for the original and restated PM13 measurements from January 2000 through April 2002. HP executed queries against this data to determine the total orders and order types captured in the data. HP reviewed all SWBT changes in the collection, analysis, and reporting of this data, and also examined SWBT changes to source code and methods and procedures.[112] HP analyzed five months of data, including January

[107] See SWBT Response to Information Request PM13-0517-023.

[108] See Information Request PM13-0611-026.

[109] See Information Request PM13-0611-027.

[110] See SWBT Response to Information Request PM13-0619-038, "Overview of Remedy Calculation Process.doc (SWBT)."

[111] See Information Request PM13-0517-016.

[112] HP received and reviewed SWBT source during meetings with SWBT personnel held August 13-15, 2002 in St. Louis, Missouri. HP also reviewed the PIP 1012 and PIP 1013 M&P documents.

2000, February 2001, November 2001, December 2001, and March 2002. HP found the data from these months to be the most relevant to analyzing changes between "Originally Reported" and "Restated" data, and the transitions from SWBT's original to its revised reporting methods (restated) and ongoing reporting methods. The results of HP's analysis are detailed in the tables located in section 4.3, Findings, Objective 2.

Evaluating Tier 1 and Tier 2 Payments

In evaluating SWBT's calculation of performance penalties, HP reviewed the methods and procedures SWBT employs to calculate and report Tier 1 and Tier 2 performance results and penalties.[113] HP performed on-site reviews of these methods and procedures with SWBT personnel on two occasions, August 28, 2002 and September 4, 2002, and observed and verified the SWBT-defined processes, databases employed, data import process, program logic, and workbook and database calculations employed by SWBT in PM reporting. HP's observations included SWBT's reporting methods and the processes for obtaining input data and executing calculations. HP validated the following calculations:

- Z-values and Z-scores;
- K-values and eliminations;
- Version numbers;
- PM miss numbers;
- Monetary assessments;
- Performance months;
- Reporting months; and,
- Payment months.

Additionally, HP validated SWBT's table data and calculation formulas by recalculating the order count data and verifying the SWBT results. HP analyzed the Tier 1 calculation and reporting process by reviewing SWBT raw data, methods and procedures, and source code for deriving output files, detail files, summary files, and for calculating critical Z, Z values, K eliminations, and PM13 numerators and denominators.

In the Tier 1 Audit process, HP also reviewed the SWBT remedy sub-processes, including Visual Basic Remedy calculation and the application of sub-measure records, to validate SWBT's end-to-end compliance. HP examined these records to validate whether SWBT's calculation of remedies was consistent with defined processes and the T2A Attachment 17. HP examined applicable code for the calculation of Z-scores, Observation and Penalty calculations, and K Exclusion Ordering calculations to ensure they complied with the Plan.

HP analyzed the Tier 2 calculation process by independently validating the numerators and denominators based on SWBT raw data, and recalculating and validating SWBT reported performance measure results. Additionally, HP reviewed and validated the formulas SWBT uses in calculating the Tier 2 numerators and denominators, modified Z-scores, K eliminations, and remedy payments that it reports to the PUCT.

To address the impact of SWBT's implementation of PUCT Order 33 on remedy calculations and payments, HP also requested from SWBT the originally reported and recalculated Tier 1 data for the month of March 2002 pursuant to Order 33.[114] HP reviewed all changes SWBT incorporated in the calculation tables to develop the revised calculations, including the shift from Low to High priority and from

[113] See Information Requests PM13-0821-059 and PM13-0821-059v2.
[114] See SWBT response to Information Request PM13-0926-068.

capped to uncapped penalties.

4.3 Findings

Objective 1

The first stated objective for this test plan is: "The restated CLEC data includes all CLEC orders of the type that will flow through EASE for SWBT retail, and the SWBT retail data provides an appropriate parity comparison."

Findings Summary

1. HP has found 13 order types that SWBT does not include in PM13. Some of these 13 order types flow through EASE retail, while some do not.
2. HP validated that SWBT restated data includes most relevant CLEC orders of the type that will flow-through EASE for SWBT retail, and, to the extent SWBT has correctly determined which order types should be excluded, the SWBT retail data provides an appropriate parity comparison
3. HP has also determined that inconsistencies exist within SWBT supporting System Requirements documentation and actual system operations. These inconsistencies created additional complexity to and caused delays HP's analysis.[115]

Findings Detail

HP has found 13 order types that SWBT does not include in the calculation of PM13. Some of these 13 order types flow through EASE retail. SWBT documentation that HP reviewed addresses the 13 order types that were not included as flow-through scenarios.

Figures 4.2 and 4.3, below, identify the products excluded from PM13 and, if provided, the SWBT explanation for the order type's exclusion.

Figure 4.2: Orders which SWBT has determined are not EASE Wholesale Flow-Through eligible

Order Type	SWBT Explanation
EBD	SWBT Policy is that the CLEC should not be dictating the EBD and requires validation. With POR CLECs no longer have access to this field.
Charter Number – UNE-P	None provided
Partial Conversion of SYS	None provided
PIC Change	This is "P" activity and there is no P activity in EASE. Retail principally depends on receipt of CARE Tapes from the IXC and can do "C" activity at the request of the end user. "C" activity with LNA of "C" does flow through.
Establish Hunt Group 2 or More Disassociated Lines	SWBT treats order as one negotiation and EASE requires two negotiations, therefore not the same process

[115] See HP Change Request 10, dated August 19, 2002.

Figure 4.3: Orders that do not Flow Through SWBT EASE Retail and are therefore not EASE Wholesale Flow-Through eligible

Order Type	Additional Comments
Conversion of Master and Sys and Add Sys Numbers to Hunt with Master TNs.	End User either has to have the SYS number added to hunt group through the BO prior to conversion or the CLEC must convert and then subsequent order activity to disconnect the SYS and add to hunt with the Master.)
Complex Products	None provided
Circuits	None provided
Quantity of Lines: 20 EDI/LEX,5 Consumer EASE, 30 Bus EASE	None provided
Designed Trunks	None provided
Change Res to Bus	None provided
Rearrange Hunt Group & Change TN	None provided
Change Bus to Res	None provided

HP validated that SWBT restated data includes all the relevant CLEC orders of the types that SWBT determined should be included because they flow-through EASE for SWBT retail. To the extent SWBT has correctly determined which order types should be excluded, the SWBT retail data provides an appropriate parity comparison. HP's source code review indicated that the SWBT process for inclusion of order types pursuant to Order 33 is valid and includes an additional 22 order types for CLECs that will flow through EASE for SWBT retail compared to originally stated performance remedies (January 2000, Original data). HP determined that of the 35 order types reviewed by SWBT as possible flow-through scenarios, 22 were added by SWBT to EASE flow-through scenarios, but 13 were not added. Additionally, through its examination of changes SWBT implemented to comply with Order 33, including internal work requests to add Suspend, Restore, Outside Move, and Record Only order types to the PM13 calculation, HP determined that SWBT added these, and 16 other order types, to the PM13 calculation. HP confirmed that internal work and business requirement changes were implemented to properly effectuate the inclusion of these order types.

HP's audit of this section of the Plan included loading SWBT detail data files and executing queries against the four order types specified by the Commission in Order 33, and against additional EASE flow-through scenarios. The results of these queries are reported in *Objective 2, Findings Detail.* The originally reported January 2000 data does not include these order types, as SWBT did not include such orders in its original PM13 reporting. However, the restated January 2000 data includes the order types, but does not show flow-through rates for suspend or restore orders because SWBT did not add these products as system flow-through scenarios until October 20, 2001. Therefore, query results from November 2001 forward include total orders placed and flow-through rates for suspend and restore orders. SWBT has not yet added system flow-through data capabilities for outside move and record only orders, and the data was not available to HP to audit.

HP also determined that the System Requirements documentation supporting the reporting of the raw data of PM13 as originally reported, and as corrected by SWBT (numerators, denominators and parity), was inconsistent with the actual format and layout of the data tables. Discrepancies were most apparent in version 1.6 and 1.6.1, which mapped to older data and older calculations as early as January 2000.

These discrepancies added a complexity to the process HP employed to validate SWBT's order inclusion pursuant to Order 33. Additionally, the raw data SWBT provided to HP for the audit was initially incomplete. Specifically, SWBT did not provide HP with March 2002 EASE retail and wholesale data. SWBT did eventually provide the missing data to HP, allowing HP to complete the data audit of SWBT March 2002 reporting.

Starting with December 2001, SWBT incorporated the modifications mandated by Order 33, as discussed above, into its PM13 calculations. Therefore, the December 2001 through May 2002 data does not include original and restated data, and is considered to be "restated" in its entirety. During its work to validate and reconstruct the disaggregations by specific order type, HP noted that there exists original data for June 2001 through November 2001 for the comparison of the original order type against the corrected order type. This type of disaggregation was started by SWBT in June 2001 and continues to present.

Objective 2

The second stated objective for this test plan is: "All required changes to the collection, analysis, and reporting of PM13 data have been properly implemented."

Findings Summary

1. HP found SWBT has properly implemented all required changes in the collection and analysis of data, and reporting of PM13 for the order types it determined should be included. Although HP calculations did not confirm exactly SWBT's reported PM13 results in all cases, the variances were small. In all cases but one, HP attributes the differences to its use of DSS detail data files to test the summary data SWBT uses in the PM13 calculations.
2. HP found that differences between its calculations of November 2001 PM13 data and SWBT's reported calculations were the result of a problem with the include/exclude indicator in the detail files HP used to recalculate the measure.

Findings Detail

HP reviewed SWBT methodologies, calculations, and reporting of PM13 data as described in section 4.2 of this report, and found SWBT activities and procedures, with the exception of those findings identified in Objective 1, above, in compliance with the T2A Attachment 17 and Order 33. HP's review verified that current PM13 data collection includes additional order types as identified in Objective 1. The review also verified that downstream systems account for all valid orders, and that SWBT's calculation of PM13 is in compliance with Order 33 and Attachment 17 of the T2A. Through its examination of front-end and back-end systems and source code, calculation formulae, and reported results, HP validated that SWBT's reporting of PM13 through the data collection, analysis, and reporting phases is consistent with the T2A and Order 33.

The following tables contain the results of HP's audit of SWBT's PM13 data. The tables also provide analysis and confirmation of the order types included in PM13 pursuant to Order 33. For each month included in HP's analysis, there is a table identifying the SWBT-reported and the HP-calculated PM13 results for each order interface (EDI, LEX, EASE Retail, and EASE Wholesale), and, for those months where SWBT produced both original and restated EDI and LEX data, there are additional tables identifying the SWBT and HP results for the restated data. The "Analysis of Order 33" tables identify the order types SWBT included in the calculation of PM13 as required by Order 33, the HP-calculated count of total orders for each order type, and the associated flow-through count. Because SWBT did not implement flow-through measures for Suspend and Restore orders until October 20, 2001, there are no flow-through distinctions for these order types prior to the November 2001 data. To date, SWBT does not disaggregate the flow-through measurements for Outside Move and Record Only orders.

There were several instances in which HP's calculations did not exactly match the SWBT results. Specifically, HP's calculations varied from the SWBT-reported results for January 2000 restated EDI and LEX data, February 2001 LEX and EDI data, and December 2001 EASE retail data. In these instances, the differences in total percentages reported had no impact on the remedy results, performance penalty calculations, Z values, or K eliminations. HP's analysis of the originally reported November 2001 EDI and LEX detail data files found lower order counts than SWBT had reported, resulting in a 0.5 percent variation in the LEX parity calculation and 0.0 percent variation in the EDI calculation. SWBT's explanation of this variance was that

> *The (HP) question about the November 2001 detail file turned out to be a problem with the include/exclude indicator on the detail file only. This indicator was being set (by SWBT) incorrectly for November 2001. The results published from the summary file were correct and were not impacted by this issue.*

HP ran its data queries on the SWBT-provided detail data files rather than the summary files to capture the complete SWBT datasets for all orders. Therefore, variances of this type are possible.

Figures 4.4 through 4.10, below, provide the results of HP's analysis of SWBT's January 2000 PM13 data.

Figure 4.4: January 2000 Original Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	46,786	46,786	0
Denominator	47,747	47,747	0
Parity %	***97.98%***	***97.98%***	***0.00%***

Figure 4.5: January 2000 Restated Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	46,755	46,749	-6
Denominator	47,758	47,758	0
Parity %	***97.90%***	***97.89%***	***0.01%***

Figure 4.6: January 2000 Original Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	27,258	27,258	0
Denominator	31,015	31,015	0
Parity %	***87.89%***	***87.89%***	***0.00%***

Figure 4.7: January 2000 Restated Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	30,201	30,192	-9
Denominator	36,039	36,039	0
Parity %	***83.80%***	***83.78%***	***0.02%***

Figure 4.8: January 2000 Restated Data Validation (PM13.01 EASE Retail)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	1,272,933	1,272,933	0
Denominator	1,384,785	1,384,785	0
Parity %	***91.92%***	***91.92%***	***0.00%***

Figure 4.9: January 2000 Restated Data Validation (PM13.01 EASE Wholesale)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	64,487	64,487	0
Denominator	65,590	65,590	0
Parity %	***98.32%***	***98.32%***	***0.00%***

Figure 4.10: Analysis of Order 33 Implementation (January 2000 Restated Data)

Product Type Added	Record Count
Suspend Orders Reqtype E&M, Act S	922
Restore Orders Reqtype E&M, Act B	621
Outside Move Orders Reqtype M, Act T	902
Record Only Orders Reqtype M, Act R	10
EASE Flow through scenarios added	58

Figures 4.11 through 4.18, below, provide the results of HP's analysis of SWBT's February 2001 PM13 data.

Figure 4.11: February 2001 Original Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	199,264	197,672	1,592
Denominator	204,593	202,963	1,630
Parity %	***97.40%***	***97.39%***	***0.01%***

Figure 4.12: February 2001 Restated Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	--	188,969	--
Denominator	256,333	212,648	43,685
Parity %	***89%***	***88.86%***	***.14%***

Figure 4.13: February 2001 Original Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	93,876	92,063	1,813
Denominator	99,427	97,486	1,941
Parity %	***94.42%***	***94.44%***	***0.02%***

Figure 4.14: February 2001 Restated Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	--	85,197	--
Denominator	99,557	99,491	66
Parity %	***85.6%***	***85.63%***	***0.03%***

Figure 4.15: February 2001 EASE Retail Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	678,252	678,252	0
Denominator	758,376	758,376	0
Parity %	***89.43%***	***89.43%***	***0.00%***

Figure 4.16: February 2001 EASE Wholesale Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	59,854	59,854	0
Denominator	62,102	62,102	0
Parity %	***96.38%***	***96.38%***	***0.00%***

Figure 4.17: Analysis of Order 33 Implementation (February 2001 Restated EDI Data)

Product Type Added - EDI	Record Count
Suspend Orders Reqtype E&M, Act S	4,778
Restore Orders Reqtype E&M, Act B	1,904
Outside Move Orders Reqtype M, Act T	7,056
Record Only Orders Reqtype M, Act R	533
EASE Flow through scenarios added	4,195

Figure 4.18: Analysis of Order 33 Implementation (February 2001 Restated LEX Data)

Product Type Added - LEX	Record Count
Suspend Orders Reqtype E&M, Act S	1,905
Restore Orders Reqtype E&M, Act B	2,319
Outside Move Orders Reqtype M, Act T	5,271
Record Only Orders Reqtype M, Act R	1,228
EASE Flow through scenarios added	3,568

Figures 4.19 through 4.26, below, provide the results of HP's analysis of SWBT's November 2001 PM13 data.

Figure 4.19: November 2001 Original Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	215,872	214,986	-886
Denominator	233,215	232,166	-1,049
Parity %	***92.56%***	***92.60%***	***0.04%***

Figure 4.20: November 2001 Restated Data Validation (PM13.03 EDI)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	215,872	215,872	0
Denominator	235,779	235,779	0
Parity %	***91.56%***	***91.56%***	***0.00%***

Figure 4.21: November 2001 Original Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	101,202	98,374	-2,828
Denominator	115,366	111,480	-3,886
Parity %	***87.72%***	***88.24%***	***0.52%***

Figure 4.22: November 2001 Restated Data Validation (PM13.02 LEX)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	101,193	101,193	0
Denominator	120,916	120,916	0
Parity %	***83.69%***	***83.69%***	***0.00%***

Figure 4.23: November 2001 EASE Retail Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	598,246	598,246	0
Denominator	690,751	690,751	0
Parity %	***86.61%***	***86.61%***	***0.00%***

Figure 4.24: November 2001 EASE Wholesale Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	41,958	41,958	0
Denominator	43,095	43,095	0
Parity %	***97.36%***	***97.36%***	***0.00%***

Figure 4.25: Analysis of Order 33 Implementation (November 2001 Restated EDI Data)

Product Type Added	Record Count
Suspend Orders Reqtype E&M, Act S	9,502
Restore Orders Reqtype E&M, Act B	1,944
Outside Move Orders Reqtype M, Act T	5,389
Record Only Orders Reqtype M, Act R	670
EASE Flow through scenarios added (Ease Match)	2,565

Figure 4.26: Analysis of Order 33 Implementation (November 2001 Restated LEX Data)

Product Type Added	Record Count
Suspend Orders Reqtype E&M, Act S	4,581
Restore Orders Reqtype E&M, Act B	1,256
Outside Move Orders Reqtype M, Act T	9,077
Record Only Orders Reqtype M, Act R	1,322
EASE Flow through scenarios added (Ease Match)	5,628

Figures 4.27 through 4.32, below, provide the results of HP's analysis of SWBT's December 2001 PM13 data.

Figure 4.27: December 2001 EDI Data Validation (PM13.03)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	206,942	206,942	0
Denominator	220,379	220,379	0
Parity %	***93.90%***	***93.90%***	***0.00%***

Figure 4.28: December 2001 LEX Data Validation (PM13.02)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	88,821	88,821	0
Denominator	106,522	106,522	0
Parity %	***83.38%***	***83.38%***	***0.00%***

Figure 4.29: December 2001 EASE Retail Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	579,285	579,285	0
Denominator	665,280	665,280	0
Parity %	***87.07%***	***87.07%***	***0.00%***

Figure 4.30: December 2001 EASE Wholesale Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	40,957	40,957	0
Denominator	42,081	42,081	0
Parity %	***97.32%***	***97.32%***	***0.00%***

Figure 4.31: Analysis of Order 33 Implementation (December 2001 EDI Data)

Product Type Added	Record Count	
Suspend Orders Reqtype E&M, Act S	21,985	Flow = 21,563
Restore Orders Reqtype E&M, Act B	4,558	Flow = 4,280
Outside Move Orders Reqtype M, Act T	3,922	
Record Only Orders Reqtype M, Act R	962	
EASE Flow through scenarios added	3,164	

Figure 4.32: Analysis of Order 33 Implementation (December 2001 LEX Data)

Product Type Added	Record Count	
Suspend Orders Reqtype E&M, Act S	4,063	Flow = 3,864
Restore Orders Reqtype E&M, Act B	1,562	Flow = 1,493
Outside Move Orders Reqtype M, Act T	8,144	
Record Only Orders Reqtype M, Act R	1,532	
EASE Flow through scenarios added	4,720	

Figures 4.33 through 4.38, below, provide the results of HP's analysis of SWBT's March 2002 PM13 data.

Figure 4.33: March 2002 EDI Data Validation (PM13.03)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	217,340	217,340	0
Denominator	232,717	232,717	0
Parity	***93.39%***	***93.39%***	***0.00%***

Figure 4.34: March 2002 LEX Data Validation (PM13.02)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	98,603	98,603	0
Denominator	119,091	119,091	0
Parity	***82.80%***	***82.80%***	***0.00%***

Figure 4.35: March 2002 EASE Retail Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	605,343	605,343	0
Denominator	713,549	713,549	0
Parity %	***84.84%***	***84.84%***	***0.00%***

Figure 4.36: March 2002 EASE Wholesale Data Validation (PM13.01)

SWBT Reported	Record Count	HP Calculated	Difference
Numerator	47,140	47,410	0
Denominator	48,606	48,606	0
Parity %	***96.98%***	***96.98%***	***0.00%***

Figure 4.37: Analysis of Order 33 Implementation (March 2002 EDI Data)

Product Type Added	Record Count	
Suspend Orders Reqtype E&M, Act S	10,843	Flow = 10,646
Restore Orders Reqtype E&M, Act B	3,040	Flow = 2,936
Outside Move Orders Reqtype M, Act T	4,473	
Record Only Orders Reqtype M, Act R	1,412	
EASE Flow through scenarios added	3,842	

Figure 4.38: Analysis of Order 33 Implementation (March 2002 LEX Data)

Product Type Added	Record Count	
Suspend Orders Reqtype E&M, Act S	4,627	Flow = 4,442
Restore Orders Reqtype E&M, Act B	1,456	Flow = 1,366
Outside Move Orders Reqtype M, Act T	10,719	
Record Only Orders Reqtype M, Act R	1,558	
EASE Flow through scenarios added	4,718	

Throughout the course of the audit, HP found numerous discrepancies in the SWBT System Requirements documentation as it related to the format of the SWBT detail data files provided to HP. These discrepancies had a significant impact on HP's ability to validate effectively the order counts, data calculations, and PM13 reporting. The discrepancies HP found in the SWBT System Requirements document version 1.6.1 included mismatches between detail data and table definitions, missing column names, incorrect precision definitions, incorrect table names, and missing columns. As of the publication of this report, HP understands SWBT has made all necessary corrections to the System Requirements documentation to accurately reflect system operation.

Additionally, HP also received incomplete detail data files from SWBT during the audit. Specifically, HP did not originally receive the March 2002 EASE retail and wholesale data to validate PM13 reporting. SWBT re-sent the March data to HP on October 2, 2002, but did not send the correct dataset. HP received the correct

dataset after it held a conference call with SWBT to address this issue.

Objective 3

The third stated objective for this test plan is: "SWBT has properly calculated Tier 1 and Tier 2 payments, based on the restated PM data."

Findings Summary

1. HP has found that SWBT, based on the order types SWBT determined should be included, has properly calculated Tier 1 and Tier 2 payments based on the restated PM13 data in compliance with the Order and restatement requirements.
2. HP has determined that SWBT has correctly recalculated PM13 data in compliance with Order 33, including Tier 1 low to high recalculation, and a shift from capped to uncapped reporting for the month of March, 2002. Results from the recalculation reflect an increase in Tier 1 payment penalties as described in the findings detail.
3. In computing PM13 data, HP observed that the PM13 business rules formula applies a methodology designed for sampling to the entire population of orders. This methodology requires SWBT to provide better performance to CLECs than to its own retail customers to avoid penalties.

Findings Detail

HP reviewed and recalculated original and restated PM13 data for January 2000 and November 2001 and original data using revised calculation methods for the months of December 2001 and March 2002. HP found that, for the order types SWBT determined should be included in PM13, SWBT implemented the required processes and changes to report correctly the data and remedies for PM13. HP received from SWBT raw data detail files, established queries based on SWBT system requirements and executed such queries to validate SWBT's reporting of PM13 numerators, denominators, parity measures, and remedy payments.

HP found the SWBT methods and procedures and calculations applied to the restatement period were correct and complied with Order 33. HP accomplished this by comparing source code, Project in Process detail, order type inclusion, changes in the Z-score and K elimination calculations, and reported results. HP employed data queries against SWBT-provided raw data to validate the PM13 numerators and denominators, and found that SWBT recalculated remedies in compliance with Order 33 and the T2A.

SWBT's recalculation of March 2002 Tier 1 remedies incorporating the PUCT Order to shift from Low to High penalty calculations reflect an increase in payments to CLECs of $6,273,675.00 before K elimination is applied, and $6,282,100.00 after K elimination is applied. The originally reported penalty for Tier 1 was $128,375 for all CLECs under the T2A agreement. HP confirmed that no changes were required to the SWBT underlying programming code or business processes and rules to implement Order 33. The only changes SWBT implemented in the Tier 1 remedy program was a change made to the tables for measurement type from Low to High priority and from capped to uncapped penalties.

SWBT's Tier 2 remedy payment recalculations for Texas, based on Order 33, exceeded the applied cap penalty amounts and did not change as originally reported.

Finally, during its analysis of the PM13 calculations and penalty payments, HP found that the methodology SWBT applies to determine whether it must pay penalties for PM13 performance is skewed. HP observed that, because SWBT applies the Z test to the entire universe of orders, which is essentially a large "sample" under the methodology, even slight differences between SWBT's and the CLECs' PM13 results will result in large Z-scores and reduction of Type II error to nearly zero. Because of this situation, SWBT will be required to pay penalties almost every time its retail PM13 results exceed the results for wholesale orders.

5.0 LMOS Test Plan One–Accuracy of Current LMOS Update Processes

5.1 Objectives

HP tested the following objectives, which appear in the PUCT Audit Plan, dated October 8, 2001 in Section II.B.1:[116]

- Verify that CLEC UNE-P orders received on or after May 12, 2001 result in correct updating of the LMOS database.
- Verify that C orders generated by SWBT systems in response to a CLEC UNE-P LSR post to LMOS after the D order generated in response to the same CLEC LSR.
- Verify that CLEC UNE-P trouble reports submitted electronically do not result in a notification that "this TN has been disconnected or ported out. No information available" or equivalent notification, if the trouble report is submitted after the time allowed for posting of the C order to LMOS.

The following sections describe HP's activities and findings with respect to these objectives.

5.2 Activities

In completing LMOS Test Plan 1, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Reviewing System Architecture and Process Documentation;
- Confirming the Process for UNE-P Migration;
- Determining Dates for SWBT Software Changes;
- Reviewing the WFA/DO Implementation;
- Reviewing Manual Trouble report Operations at LOC;
- Observing CABS/LMOS Comparison;
- Observing Manual LMOS Update Procedures at LDRC;
- Measuring 'C' and 'D' Order Posting Lag;
- Determining Impact of CABS Interim Periods on 'C' Order Posting;
- Examining UNE-P Trouble Reports;
- Reviewing CLEC Study; and,
- Examining UNE-P Trouble Reports Submitted Electronically.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Reviewing System Architecture and Process Documentation

HP evaluated how LMOS interacts with service order and performance management systems. HP requested documentation from SWBT on its LMOS, CABS, WFA/DO, and SORD systems. Specifically, HP was interested in the systems and how they relate to the posting of UNE-P service orders to the LMOS database.[117]

HP reviewed SWBT process flows for inconsistencies and documented its observations. HP held meetings with SWBT on April 3-5, 2002 to discuss the process flow diagrams in detail and resolve outstanding questions. As a result of the meeting, SWBT provided updated diagrams illustrating how the current process

[116] The objectives in this section correspond to LMOS objectives in the *PUCT Audit Plan*.
[117] See Information Request LMOS-0324-001.

flows are implemented in the SWBT system architecture. The diagrams show the interaction of the LMOS, WFA, CRIS, CABS, SORD, EASE, and LEX systems. Appendix D discusses SWBT system architecture and order processes for various order types.

Confirming Process for UNE-P Migration

HP analyzed system documentation and discussion with SWBT subject matter experts to confirm the current process for updating UNE-P service accounts in the LMOS records. When a customer account migrates from SWBT retail to a CLEC UNE-P account, the MOG generates 'C' and 'D' orders. The 'C' and 'D' orders are passed from SORD to WFA/DO, and WFA/DO auto-completes or dispatches the orders, then passes the orders back to SORD. SORD passes the 'D' order directly to LMOS via the BU340 file, and passes the 'C' order to CABS for billing purposes. CABS then passes the 'C' order to CRIS and to LMOS via the BJ501 file.

Both the 'C' and the 'D' order must successfully post to LMOS before the LMOS record is completely updated. The 'C' and 'D' orders must also post in the proper sequence, with the 'D' order posting before the 'C' order. The 'C' order will be rejected if it arrives prior to the 'D' order, and, once the 'D' order posts, LMOS will report the line as "disconnected" until the record is repaired. This is known as the "sequence problem".

Errors, or fallout, may occur anywhere in the path. 'C' or 'D' orders may error in SORD, WFA/DO, or LMOS. 'C' orders may also encounter delay during the CABS billing cycle. This is known as the "billing lag." 'C' orders can be held for 2 to 4 days during this period.

Normal and abnormal batch processing delays, fallout, and manual or automated error correction all contribute to the possibility of delay in updating LMOS records.

Once the LMOS Host is updated, the LMOS Front-End, which is used in electronic trouble reporting and by CSRs in the Local Operations Center (LOC) for manual trouble reporting, is updated through automated processes. According to SWBT procedures, this Host to Front-End update process runs overnight. Electronic trouble reports cannot be entered on an account until the LMOS Front-End is updated.

Thus, CLECs cannot enter electronic trouble reports on an account until at least one day *after* the 'C' and 'D' orders completely update the LMOS Host record. The time period between service order completion (SOC) and LMOS Front-end update is referred to as the "lag problem."

Determining Dates of SWBT Software Changes

HP reviewed applicable SWBT software changes to determine the impact these changes may have had on UNE-P order sequencing. HP requested from SWBT documentation for all programming and system changes it made related to the UNE-P order sequencing issue.[118] HP reviewed the implementation dates, the content of the changes, and the subsequent impact of the changes on 'C' and 'D' order processing, particularly as it pertained to SORD and CRIS. HP also examined the source code for LMOS, SORD, CRIS, and WFA/DO both before and after the implementation of the changes. HP paid particular attention to the software changes referred to as "BE294," implemented on March 20, 27, 28, and 29, 2001. HP also reviewed interface source code and requested SWBT logs documenting system changes.[119]

[118] See Information Request LMOS-0607-035.

[119] SWBT provided, as part of its response to Information Request LMOS-0324-001, a file titled "Req001-WR unep_disc.doc." The file is a "LMOS Work Request" with the Log number 010219-00147 Ver01, and specifies the "BE294" changes required, requesting a completion date of March 29, 2001 for all SWBT regions. HP visited SWBT's St. Louis, Missouri, offices June 26-27, 2002, and reviewed the installation dates for the LMOS Work Request. The review showed the following dates: Houston on March 20, 2001,

Arkansas, Oklahoma, and San Antonio on March 29, 2001, Kansas on June 6, 2001, and Dallas on June 7, 2001. The installation date for Missouri was not found during the visit. However, on June 28, 2002, in response to Information Request LMOS-0607-036, SWBT provided documentation that the BE294 program was put in production in Missouri and Kansas on March 27, 2001 and in Dallas on March 28, 2001. This information was in an excerpt from system logs provided in a file titled “TM4219.LOG.MISC”.

Reviewing WFA/DO Implementation

HP reviewed SWBT's implementation of the Telcordia WFA/DO Release 4.6 (providing order type as a selection criteria for sending auto-completion messages to SORD), and its impact on order sequence.[120]

As part of this activity, HP requested from SWBT documentation describing the role of WFA/DO in the overall SWBT system architecture. On June 27, 2002, HP interviewed SWBT employees in St. Louis, Missouri, regarding the WFA/DO implementation. HP requested documentation explaining the process flow of 'C' and 'D' orders before and after the changes.[121] In response to this request, SWBT indicated that level of detail was not available. HP examined available system logs to determine the date of the change, and reviewed process flow charts to determine whether the Telcordia WFA/DO Release 4.6 could change the sequence of update times of 'C' and 'D' orders. HP originally expected to examine the Release 4.6 source code to determine the impact of WFA/DO on SWBT systems, but the code is proprietary to Telcordia, and HP found the examination of WFA/DO source code to be unnecessary once it understood the overall system architecture and timing of system changes.

Reviewing Manual Trouble Report Operations at LOC

Once HP had reviewed the system architecture, the next stage of its review involved observing the facilities and systems themselves.

On May 1-3, 2002, HP conducted on-site observations at the SWBT LOC in Fort Worth, Texas. The Fort Worth LOC is dedicated to SWBT's wholesale local service business, and handles trouble reporting from CLECs for SWBT's five state service area. CSRs at the LOC handle telephone calls from CLECs regarding maintenance problems, create manual trouble reports, and process trouble reports that fall out of the electronic trouble reporting system. If a CSR encounters incomplete or inaccurate records in the LMOS database, he or she completes an LDRC form, which is faxed to the LMOS Database Resolution Center (LDRC) for correction. The CSR also adds a unique identifier to the trouble report, "LSP/AECN," which can be used to sort out trouble reports for which there was an incorrect LMOS record.

HP requested a report from SWBT's AskMe database listing the UNE-P trouble reports entered at the LOC for which the class of service and/or carrier identification was missing or incorrect. The report covered the week prior to HP's LOC visit, April 22-27, 2002, and included tickets associated with CLEC-to-CLEC customer transactions.[122] The report included all five states in SWBT's serving area. In response to the request, SWBT provided HP with a list of 281 trouble reports. Upon review, HP determined that 18 of the trouble reports were associated with coin service and were outside the scope of the audit. HP removed these tickets from the review, and analyzed the remaining 263 tickets.

HP auditors sat with LOC CSRs to review the LMOS records for each of the trouble reports. HP reviewed the LMOS Front End database to see if the LMOS records had been updated, and recorded the results for each ticket. If HP found the LMOS record to have incomplete or incorrect information, the CSR brought up pending service order activity to determine whether there were outstanding orders on the account. By the final day of HP's LOC visit, May 3, 2002, the LMOS records for 235 of the trouble reports had been updated. Most of the LMOS record errors were associated with delays in the posting of 'C' orders to the LMOS line record. Some of the errors were corrected automatically when the 'C' orders posted to LMOS, and others were corrected via the manual process performed by the LOC and LDRC.

[120] See PUCT Audit Plan, Section II.B.1.a.3.
[121] See Information Request LMOS-0611-037.
[122] See Information Request LMOS-0503-010.
[123] See Information Request LMOS-0508-012.

HP submitted the remaining 28 records to SWBT and requested further research on the cause and resolution of the LMOS record errors.[123]

Figure 5.1, below, identifies the disposition HP received from SWBT on May 24, 2002, for the remaining 28 records:

Figure 5.1: Disposition of LMOS Records from May 1-3, 2002 HP LOC Study

Result of Analysis	Number of Records
Excluded from further analysis -- not UNE-P accounts	7
Accounts no longer in CABS due to disconnection or returned to retail service	9
Already corrected by LDRC	9
LMOS record was updated through order posting	3
Total	***28***

In summary, during the week of April 22-27, 2002, the LOC entered 254 UNE-P trouble reports for which there were errors in the LMOS records. By May 3, 2002, 235 of the records had been updated, either automatically via the posting of orders or manually via LOC and LDRC correction processes. On May 6, 2002, the CABS/LMOS Comparison process corrected one of the records, and by May 24, 2002, all of the 254 records had been either updated or otherwise resolved.

Appendix E provides further information related to the CABS/LMOS Comparison process.

Observing CABS/LMOS Comparison

SWBT conducts a twice-monthly comparison of the UNE-P records in the CABS and LMOS databases to identify and correct errors in LMOS records, including errors in the carrier identification (Master Customer Number, or MCN), and account status (connected/disconnected). HP reviewed SWBT documentation describing the CABS/LMOS Comparison process, also referred to as the CABS/LMOS "Bash," and observed the Comparison SWBT conducted on May 6, 2002. HP reviewed the records for which the Comparison determined that the LMOS and CABS records were inconsistent, and documented the details of the inconsistencies where possible.

During the CABS/LMOS Bash on May 6, 2002, HP identified one instance of a UNE-P 'C' and 'D' order sequence problem. Although the 'C' order (317857) and 'D' order (685036) were issued to change billing, rather than to migrate the account from one carrier to another, the example demonstrates that 'C' orders can reach LMOS for posting before its associated 'D' order posts. SWBT is able to detect this problem via the CABS/LMOS Comparison. The service order activity level for UNE-P accounts during the time period preceding the bash was approximately 89,000.

The results of the CABS/LMOS Comparisons are discussed in LMOS Test Plan 2. Appendix E contains additional detail related to SWBT's CABS/LMOS Comparisons.

Observing Manual LMOS Update Procedures at LDRC

The HP LMOS audit team visited the LDRC in San Antonio, Texas, to observe the manual LMOS update processes. HP received copies of SWBT's process documentation and evaluated SWBT's compliance with the documented procedures.[124] Employees at the LDRC receive LDRC forms from LOC customer service representatives via fax. Each LDRC form provides information about a particular LMOS record for which LOC CSRs found incomplete or inaccurate information. The LDRC employees research the record and make changes to the LMOS database as needed.

Measuring C and D Order Posting Lag

Conducting Initial Sample of Orders

The next activity that HP conducted was to assess the 'C' and 'D' order posting times. HP requested from SWBT the total population of Texas UNE-P conversion 'C' and 'D' orders for one week.[125] HP selected a random sample of 15 'C' orders across five days and all three Texas regions (Dallas, San Antonio, and Houston), and requested that SWBT provide the LMOS posting times for the 'C' orders and their corresponding 'D' orders. HP tested this sample of 15 orders as a precursor to the full sample discussed in the following section.

HP found that, on average, the 'C' orders posted to LMOS less than two days after service order completion. The lag for one order was five days, demonstrating that the lag period can vary from order to order due to CABS billing cycles (billing lag) and service order fallout (error situations).

Conducting Analysis of a Large Sample of Orders

Following its 15-order study, HP analyzed the order posting times for a full month's data. HP requested from SWBT the transaction details for all Texas UNE-P 'C' orders for May 2002. HP requested SWBT include in its response the date, TN, AECN, RRSO (all related 'D' orders), MCN, RMKS section, and S&E section for each 'C' order.[126] HP used the application dates to define which orders to include in the population, causing some of the LMOS posting dates to extend into June 2002.

SWBT provided HP with 52,296 service order records. HP determined that 384 records would constitute a statistically significant sample size, but used 410 records in order to ensure sufficient sample size in case of order cancellation or other problems.

HP provided its sample of 'C' orders to SWBT and requested SWBT provide the LMOS posting times for each 'C' order and any corresponding 'D' orders, and the service order completion time for each 'C' order.[127] HP also requested details for any orders that erred out and did not post on the first attempt.

Statewide, 97.8 percent of the 'D' orders in the sample posted to the LMOS Host on the same day as the service order completion in SORD for the 'C' order. In the Dallas region, two orders were canceled, one had its due date extended beyond the test period, and one 'D' order posted the day following the 'C' order SOC. In the San Antonio region, one 'D' order posted the day before the 'C' order SOC, and two 'D' orders posted the day after the 'C' order SOC. In the Houston region, one 'D' order posted three days after, and another posted six days after, the 'C' order SOC.

All 'C' orders posted to LMOS Host after their related 'D' orders. In some cases, the lag between 'D' and 'C' order posting was six calendar days. HP measured the lag in calendar days rather than business days because the consequence of the lag—

[124] See Information Request LMOS-0503-010.
[125] See Information Request LMOS-0510-019.
[126] See Information Request LMOS-0603-029.
[127] See Information Request LMOS-0712-050.

the inability of CLECs to submit electronic trouble reports—applies to weekends as well as weekdays. Figure 5.2, below, shows the number of 'C' orders that posted each day following the posting of their related 'D' orders. A lag of zero indicates that both the 'D' and 'C' orders posted on the same day.

Figure 5.2: Lag Time Between 'D' and 'C' Order Posting to LMOS Host

Lag (Days)	Dallas		San Antonio		Houston		Texas Aggregate	
	#	Cum. %	#	Cum. %	#	Cum. %	#	Cum. %
0	76	58.9%	63	48.8%	96	63.2%	235	57.3%
1	33	84.5%	43	82.2%	32	84.2%	108	83.7%
2	5	88.4%	4	85.3%	8	89.5%	17	87.8%
3	4	91.5%	4	88.4%	10	96.1%	18	92.2%
4	6	96.1%	5	92.2%	0	96.1%	11	94.9%
5	1	96.9%	2	93.8%	6	100.0%	9	97.1%
6	1	97.7%	7	99.2%	0	100.0%	8	99.0%
No Data	3	100.0%	1	100.0%	0	100.0%	4	100.0%
Totals	***129***		***129***		***152***		***410***	

No data was available for four of the records due to cancellation of the orders or because due dates were extended beyond the end of the study period.

Determining Impact of CABS Interim Periods on C Order Posting

SWBT uses CABS to bill CLECs for wholesale services. During certain times each month, specific to particular CLECs, SWBT holds 'C' orders from processing in CABS while the billing cycle is in progress. The holding period is called the CABS Interim Period. HP used the sample data obtained in the activities described above to determine the impact of the CABS Interim Periods on the posting of 'C' orders to LMOS.

Figure 5.3, below, illustrates the impact of the CABS Interim Periods and weekends on the posting of 'C' orders to LMOS. Of particular note is that:

- Nothing posts to LMOS on weekends,
- 'D' orders post more evenly throughout the month than do 'C' orders; and,
- Shorter CABS Interim Periods in Houston enabled the 'C' orders to post more evenly over the course of the month when compared to the Dallas and San Antonio regions.

Figure 5.3: Quantity of 'C' and 'D' Orders Posting to LMOS per Day

Day	Date	Dallas & San Antonio		Houston	
		'C' Orders	'D' Orders	'C' Orders	'D' Orders
Wed.	5/1/02	0	0	1	2
Thu.	5/2/02	0	2	0	1
Fri.	5/3/02	9	9	5	4
Sat.	5/4/02	0	0	0	0
Sun.	5/5/02	0	0	0	0
Mon. (Bash)	5/6/02	3	11	1	8
Tue.	5/7/02	1	2	1	5
Wed.	5/8/02	2	10	0	8
Thu.	5/9/02	0	17	27	7
Fri.	5/10/02	46	12	5	6
Sat.	5/11/02	0	0	0	0
Sun.	5/12/02	0	0	0	0
Mon.	5/13/02	12	11	5	4
Tue.	5/14/02	6	7	7	7
Wed.	5/15/02	11	11	6	6
Thu.	5/16/02	8	11	7	10
Fri.	5/17/02	14	13	8	5
Sat.	5/18/02	0	0	0	0
Sun.	5/19/02	0	0	0	0
Mon. (Bash)	5/20/02	0	19	7	8
Tue.	5/21/02	33	11	10	9
Wed.	5/22/02	8	10	3	3
Thu.	5/23/02	8	5	6	7
Fri.	5/24/02	10	11	9	9
Sat.	5/25/02	0	0	0	0
Sun.	5/26/02	0	0	0	0
Mon.	5/27/02	0	0	0	0
Tue.	5/28/02	0	17	1	15
Wed.	5/29/02	20	12	11	9
Thu.	5/30/02	7	11	9	3
Fri.	5/31/02	28	15	10	7
Sat.	6/1/02	0	0	0	0
Sun.	6/2/02	0	0	0	0
Mon. (Bash)	6/3/02	6	5	7	3
Tue.	6/4/02	8	8	3	3
Wed.	6/5/02	0	0	0	1

Day	Date	Dallas & San Antonio		Houston	
		'C' Orders	'D' Orders	'C' Orders	'D' Orders
Thu.	6/6/02	0	5	0	0
Fri.	6/7/02	0	1	0	0
Sat.	6/8/02	0	0	0	0
Sun.	6/9/02	0	0	0	0
Mon.	6/10/02	0	2	2	1
Tue.	6/11/02	2	0	1	1
Wed.	6/12/02	0	1	0	0
Thu.	6/13/02	8	1	0	0
Fri.	6/14/02	1	1	0	0
Sat.	6/15/02	0	0	0	0
Sun.	6/16/02	0	0	0	0
Mon.	6/17/02	1	1	0	0
Tue.	6/18/02	4	4	0	0
Thu.	6/27/02	1	1	0	0
Canceled Order		1	1	0	0
Totals		***258***	***258***	***152***	***152***

**Note: Shaded cells in table represent CABS Interim Periods. However, the CABS Interim Periods do not fill all of the days in the period. Generally, the period begins between 5:00 and 6:00 p.m. on the start day, and can end at any time on the final day of the period. For example, the CABS Interim Period for Houston that started on May 15, 2002, began at 5:40 p.m. and ended on May 17, 2002, at 11:21 p.m.

Reviewing AT&T Study

HP reviewed a study AT&T conducted in October 2001 on the ability to submit electronic trouble reports for recently completed orders. HP received documentation describing the study and its results from AT&T in lieu raw data that HP had requested. [128]

AT&T's study consisted of 121 UNE-P orders, with specific TNs that had service order completion dates of October 9, 2001. AT&T used SWBT's TBTA system to attempt to submit electronic trouble reports for each of the UNE-P accounts during the three days following the service completion (October 10-12, 2001). None of the dates involved in AT&T's study fell on a weekend.

According to the study, AT&T only submitted one successful trouble report via TBTA on the first day after service order completion. However, by the third day after the service order completion, October 12, 2001, AT&T had successfully entered electronic trouble reports for all but three of the 121 accounts.

The AT&T study included examples from 15 different area codes, including 210 (3 TNs), 214 (1), 361 (22), 409 (4), 713 (3), 806 (13), 817 (31), 830 (3), 903 (7), 915 (17), 936 (1), 940 (4), 956 (8), 972 (3), and 979 (1).

The AT&T study results suggest that most of the 'D' orders associated with AT&T's orders posted to LMOS Host on the service order completion date or one day after the completion. Further, the data suggests most of the 'C' orders posted to LMOS Host during the second day following service order completion, and the LMOS Front-end was automatically updated overnight between the second and third days

[128] See Information Request LMOS-0501-014.

(i.e., between October 11 and 12, 2002).

At the end of the final day of the study, AT&T was unable to submit electronic trouble reports for three of the UNE-P in its sample. This implies that the 'C' orders for these accounts had still had not posted to LMOS, or that there were other problems or delays that affected the service orders.

Figure 5.4, below, summarizes the results of the AT&T study as they were provided to HP, and breaks down the error messages AT&T received when it was unable to submit its trouble reports electronically. HP did not have the opportunity to visit AT&T's operation center to review its raw data or evaluate the methodology it employed in its study.

Figure 5.4: Summary of AT&T Study Findings

Response	Oct 10	Oct 11	Oct 12
Accepts TN as a valid working number	1	10	107
TN is not part of AT&T CLEC profile	14	13	0
TN has disconnected or ported out.	106	97	3

HP presented the 121 AT&T UNE-P accounts to SWBT, and asked SWBT to provide its data on the service order completion dates for the orders.[129] SWBT records indicated that all of the orders had service order completion dates of October 9, 2001. SWBT noted that it had a CABS Interim Period that ran from October 5-10, 2001, and that this Interim Period could have affected AT&T orders in Dallas and San Antonio on October 10, 2001.

Examining UNE-P Trouble Reports Submitted Electronically

HP conducted a review of electronically submitted trouble reports for UNE-P accounts. HP examined the electronic trouble report records SWBT received in May 2002, focusing on those tickets that resulted in the CLEC receiving the message "*This TN has been disconnected or ported out. No information available"* or an equivalent notification. HP reviewed the order activity for these tickets, identified instances in which the LMOS record for the line had not been updated to reflect a 'C' order. HP recorded the number of instances in which the trouble report was submitted before the 'C' order had posted to LMOS, and for which the ticket was submitted after the 'C' order had posted to LMOS. HP's review included instances in which the end customer changed local service from one CLEC to another CLEC.[130]

In 76.7% of the instances in which the CLEC received the message *"This TN has been disconnected or ported out. No information available*", the error was caused by the lag between the posting of the 'D' and 'C' orders to LMOS. The "disconnected" notification can also be the result of incorrect data being manually entered into the LMOS database. In some cases, the reason for the "disconnect" notification could not be determined because multiple changes had been made to the LMOS record after the attempted ticket entry.

With assistance from Birch Telecom, HP also conducted a small-scale analysis of electronic trouble reports on May 16, 2002, at the Birch operations center. HP observed as Birch employees attempted to enter trouble reports on ten recently completed orders. Two of the orders had a SOC date of May 13, 2002 (three days prior to the trouble report attempt), five orders completed on May 14, 2002 (two days before the ticket attempt), and the final three orders received a SOC on May

[129] See Information Request LMOS-0820-059.
[130] See Information Request LMOS-0611-038.

15, 2002 (the day before HP observed the ticket entry). Figure 5.5, below, summarizes the results of the study HP conducted with Birch Telecom.

Figure 5.5: Analysis of Birch Trouble Report Attempts

SOC Date	Attempted Tickets	Errors	Successful Tickets
05/13/02	2	0	2
05/14/02	5	1	4
05/15/02	3	3	0

The results of the small-scale test were consistent with the lag between SOC and LMOS Front End update that HP observed at the LOC, and were consistent with the C and D posting lag measured by HP's sample of 410 orders.

Birch Telecom also provided some specific examples of electronic trouble reports where problems had surfaced. HP analyzed the examples and reported the results in Test Plan Two.

5.3 Findings

Objective 1

The first stated objective of this test plan is: "Verify that CLEC UNE-P orders received on or after May 12, 2001 result in correct updating of the LMOS database."

Findings Summary

1. For CLEC UNE-P orders received on or after May 12, 2001, HP's sample data show that 87.8 percent of 'C' orders correctly update the LMOS Host database within 2 days of the service order completion. As a result, at any given time, there are inconsistencies in the LMOS database. The main source of these inaccuracies is the lag between the posting of 'D' and 'C' orders to LMOS.
2. Although SWBT's CABS/LMOS Comparison works to ensure consistency between the CABS and LMOS databases, depending on the timing of an error, an incomplete or incorrect record may not be corrected for more than two weeks due to the timing of the Bashes.

Findings Detail

HP's analysis showed that 87.8 percent of 'C' orders posted to the LMOS Host database within 2 days of the service order completion. This indicates that electronic trouble reports entered three days after the order is completed should have a success rate of 87.8 percent.

HP concluded that the lag between the posting of 'D' and 'C' orders still exists. When the 'D' order posts to LMOS, it removes class of service and MCN information, and changes the status of the account to "disconnected." The 'C' order posts the new information to LMOS, but 'C' orders can be delayed by the CABS billing cycle or other error situations. The length of the lag can vary greatly for each order.

The results of HP's lag analysis on 410 sampled 'C' and 'D' orders are consistent with what HP auditors observed at the SWBT LOC in their analysis of 254 UNE-P trouble reports that had received error messages. These results are also consistent those of the small-scale test HP conducted with Birch Telecom, in which all three trouble reports attempted on the day after service order completion received an error message, while six of the seven trouble reports attempted two to three days after the SOC date were successful.

Although delayed 'C' orders can cause the LMOS line record to be inaccurate, most inaccuracies are self-correcting. The LMOS line record is automatically updated when the 'C' order posts to LMOS. For some errors, such as an order sequence

problem in which the 'C' order attempts to post to LMOS before the 'D' order posts, the CABS/LMOS Comparison process identifies the incorrect LMOS records for correction.

The results of the May 6, 2002, CABS/LMOS Comparison support the contention that the LMOS update process is working to ensure consistency between the CABS and LMOS databases. The Comparison process corrects inconsistencies between CABS and LMOS records on the first and third Mondays of each month. However, depending on the timing of an error, an incomplete or incorrect record may not be corrected for more than two weeks due to the time between the Bashes.

Objective 2

The second stated objective of this test plan is: "Verify that 'C' orders generated by SWBT systems in response to a CLEC UNE-P LSR post to LMOS after the 'D' order generated in response to the same CLEC LSR."

Findings Summary

SWBT's implementation of system changes in March 2001 largely rectified 'C' and 'D' order-sequence problems. HP notes that 'C' and 'D' order sequencing problems can still occur if the 'D' order errors out and the 'C' order does not, though HP believes this issue occurs in less than one percent of orders.

Findings Detail

The system changes SWBT implemented on March 20, 27, 28, and 29, 2001, addressed the 'C' and 'D' order sequence problem for SWBT retail to CLEC UNE-P conversions. SWBT changed its process to allow 'D' orders to flow directly from SORD to LMOS without going to CRIS. This reduced the number of inaccuracies introduced to the LMOS database by reducing the frequency of 'C' orders attempting to post to LMOS before their associated 'D' orders.

In SWBT's current environment, 'C' and 'D' order sequencing problems can still occur if the 'D' order errors out and the 'C' order does not. HP found one instance of a sequence problem in the results for the May 6, 2002 CABS/LMOS Bash. However, this is an unusual occurrence, as 'D' orders do not error out frequently. The service order activity level for UNE-P accounts during the time period preceding the May 6, 2002, CABS/LMOS Bash was approximately 89,000 orders, and the CABS database held approximately 1.6 million UNE-P records at the time.

SWBT System logs show that WFA/DO 4.6.0.2 was successfully installed in Texas (IMST7) on May 6, 2001, and in MOKA (IMSC7) on April 21, 2001. Given SWBT's current system architecture, it is difficult to identify scenarios for which WFA/DO would have an impact on the sequence of UNE-P 'C' and 'D' orders posting to LMOS.

Objective 3

The third stated objective of this test plan is: "Verify that CLEC UNE-P trouble reports submitted electronically do not result in a notification that "*this TN has been disconnected or ported out. No information available*" or equivalent notification, if the trouble report is submitted after the time allowed for posting of the 'C' order to LMOS."

Findings Summary

CLEC UNE-P trouble reports submitted electronically still get the notification that "*this TN has been disconnected or ported out. No information available*" under specific circumstances. In May 2002, SWBT systems returned this error message for electronically submitted UNE-P trouble reports on 92 different telephone numbers. Most of these notifications were provided in response to electronic tickets received following service order activity and prior to the posting of the 'C' order to LMOS. During the month, SWBT received 24,958 electronic UNE-P trouble reports from CLECs. There is no standard timeline by which 'C' orders post to LMOS.

Findings Detail

CLECs receive the error message "*this TN has been Disconnected or Ported Out*" when they attempt to enter an electronic trouble report while the LMOS record has a status of *disconnected* or *ported out*. In these instances, SWBT processes do not

allow the CLEC to submit an electronic trouble report. The CLEC may, however, enter a manual trouble report by calling the LOC. Currently, the primary reason a CLEC receives this error message is that the 'D' order has posted to LMOS, but the associated 'C' order has not. HP's analysis of electronic trouble reports submitted during May 2002 showed that in 70 of the 92 instances in which a CLEC received the message "*this TN has been disconnected or ported out*" (76.1 percent), the CLEC had attempted to submit the trouble report before the 'C' order posted to LMOS.[131] During May 2002, SWBT received 24,958 electronic UNE-P trouble reports from CLECs.

Additionally, HP also identified instances in which the lag in the posting of 'C' orders for CLEC-to-CLEC conversions resulted in CLECs receiving the error message. This evidence confirms the CLEC-to-CLEC conversion architecture is also subject to lags. There is no standard definition for the "time allowed" for posting of the 'C' order to LMOS.

CLECs receive the error message "*Our records indicate this account is not part of your company profile. Do you wish to continue with this transaction?*" when the line is working, but the MCN on the LMOS record does not match that of the CLEC entering the trouble report.[132] SWBT processes allow the CLEC to continue with the entry of the electronic trouble report on the account, acknowledging it is not part of its User Profile (and therefore will not be reported in its PMs).[133]

HP's analysis of CABS/LMOS Comparisons and of the April 22-27, 2002, UNE-P trouble reports support the finding that, at any given point in time, there are errors in the LMOS records caused by lags in 'C' order posting or other problems. However, most of these inaccuracies are corrected automatically, while some require manual intervention.

[131] This result was derived from HP's analysis of SWBT's response to Information Request LMOS-0611-038.

[132] See SWBT response to Information Request LMOS-0606-032.

[133] See Joint Reply Affidavit of Coleman et al., in MO 271 FCC Proceedings, Paragraph 40, copy filed in Project 20400 May 17, 2001.

6.0 LMOS Test Plan Two–Accuracy of the Embedded LMOS Database

6.1 Objectives

HP tested the following objective, which appears in the PUCT Audit Plan, dated October 8, 2001 in Section II.B.2:[134]

- The SWBT LMOS database accurately identifies the CLEC service provider and class of service associated with TNs that were converted to CLEC UNE-P service prior to May 12, 2001.

The following sections describe HP's activities and findings with respect to these objectives.

6.2 Activities

In completing LMOS Test Plan 2, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Reviewing SWBT documentation regarding LMOS Database Correction;
- Reviewing CLEC input;
- Comparing a sample of CABS and LMOS UNE-P records; and,
- Analyzing trends in CABS/LMOS Comparison Results.

HP designed test activities to produce findings that would be applicable to all five states in the SWBT serving area. HP considered several different data sets and employed multiple analysis tools to test the objective.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Reviewing SWBT Documentation Regarding LMOS Database Correction

To begin its analysis under LMOS Test Plan 2, HP requested that SWBT provide documentation of all activity it undertook to correct the embedded LMOS database.[135] The "embedded database" refers to records stored in LMOS as of May 11, 2001. In response, SWBT provided documentation that showed there was a 28.76% error rate in LMOS as of April 27, 2001. SWBT also provided a timeline detailing the process of performing CABS/LMOS comparisons.[136]

Although the execution of CABS/LMOS comparisons was SWBT's primary solution for correcting the embedded database, HP also learned that SWBT's LOC and LDRC organizations correct inaccurate LMOS records that are uncovered in the normal course of business, and the LDRC also corrects inaccurate records uncovered by the CABS/LMOS comparisons. As discussed in LMOS Test Plan 1, HP auditors visited the LOC and LDRC organizations and reviewed the data correction processes. HP requested information on SWBT's process for training customer service representatives for those circumstances in which information was determined to be missing from or inaccurate in LMOS during the submission of trouble reports.[137] SWBT provided documents describing the training it provides to representatives, the objectives of the classes, and the class subject matter.[138]

Since SWBT relies heavily on the CABS/LMOS comparisons to correct the embedded database, HP analyzed the results of CABS/LMOS comparisons over

[134] The objectives in this section correspond to LMOS objectives in the *PUCT Audit Plan*.
[135] See Information Request LMOS-0324-001.
[136] See SWBT response to Information Request LMOS-0324-001.
[137] See Information Request LMOS-0503-010.
[138] See SWBT response to Information Request LMOS-0503-010.

Reviewing CLEC Input Regarding LMOS Database Correction

several months, looking for stability of results that would indicate the resolution of errors in the embedded LMOS database. The results of this analysis are located later in this section, under the headings "Analyzing Trends in CABS/LMOS Comparison Results" and "Multi-State Comparisons."

HP received input from CLECs regarding manual reconciliation efforts with SWBT. HP documented these discussions in the CLEC meeting notes (April 09, 2002) and the Birch Telecom meeting notes (May 16, 2002).

In January 2001, SWBT recommended fixing LMOS database problems manually, and initiated a manual 6-week reconciliation of data with Birch Telecom in early 2001. Birch Telecom maintained that manual processes were not a sustainable methodology given the number of records involved, and the manual reconciliation effort was not completed. In general, the CLECs concluded that the manual reconciliation process consumed a significant amount of resources without providing much benefit in terms of better LMOS performance.

HP also examined data submitted for pre-May 12, 2001 orders for which the CLECs experienced difficulty submitting trouble reports, or otherwise had reason to believe still may be affected by an error in the LMOS records. HP sent Information Requests to two participating CLECs.[139] HP submitted 373 telephone numbers, received from the two CLECs, to SWBT for further investigation.[140] Specifically, HP asked SWBT to provide the class of service and carrier identification for the TNs. The data HP received from SWBT confirmed that the LMOS database changes frequently due to normal service order activity.

HP submitted a follow-up request to SWBT asking for the AskMe trouble report reports for specific TNs. This request was limited to 279 examples that included both a TN and trouble report date provided by one of the CLECs. The requested starting point for the AskMe trouble reports was the open date of the trouble report. This enabled HP to determine the elapsed time between the original reporting of the trouble report and the current status of the TN in LMOS.[141] In response to HP's request, SWBT provided results for the 279 TNs, indicating there were 93 duplicate trouble reports in which the open or close date was the only difference between the examples. After reviewing the customer accounts in question, HP determined that all of the LMOS records had been revised since the time the trouble report was initially submitted. At present, 26 of the 179 TNs have no carrier identification (MCN).[142] Appendix F provides the details of HP's analysis.

HP also researched an issue raised by Birch Telecom regarding an 8-line account that was converted from SWBT retail to Birch Telecom in 1999. Birch Telecom documented the issue in an e-mail to HP on June 14, 2002, indicating it had received the "Disconnected or ported out" error message when it tried to enter trouble reports on seven of the eight lines. HP discussed Birch's concern with SWBT at a meeting in St. Louis on June 26, 2002 and followed up with an information request.[143] SWBT explained the cause of this issue as follows:

> *These TN's were not updated by the CABS-LMOS Bash because they did not meet all of the selection criteria [CS=XPU and NC=SPSL and Circuit ID=SPRF] for the bash updates. These TN's are in the CABS database with "NC=SPSC". LMOS shows that of the 7 TN's, all have been disconnected since 2001 with the*

exception of 409-840-9910 which is disconnected but was possibly touched by the LDC on 6-14-02. A LOC referral was received by the LDRC in June 2002. It is our opinion that the LDRC clerk built the line record on this one TN and then re-disconnected it when they identified that it did not meet the criteria for UNE. The LOC referral form stated "/NC SPSC not kept in LMOS".

Additional investigation revealed that the original service order carried the NC=SPSC code, however the remarks on the service order indicated they wanted 8db. This was a human error on the part of the LSC service order typist.[144]

HP investigated another issue raised by Birch Telecom in which a Birch TN with a Network Channel (NC) of SPSC was located in the LMOS records. Birch documented this example in an e-mail dated August 20, 2002. Birch contended the account was converted to Birch Telecom service on order number C610592 in April 2001, Birch entered a trouble report on the account in LMOS on July 18, 2001, and the TN was then counted by SWBT in PM37 for that month. This example involved the embedded LMOS database and a SPSC circuit that should not have been stored in LMOS according to SWBT business rules. SWBT responded to this issue on August 27, 2002, with the following explanation:

This number 785-539-XXXX should not be in LMOS, rather it should be in WFA/C. It is not a UNE-P account, it is a designed specials account (trunk). The CLEC should have reported the trouble on the circuit #73.TKXU.785.739.XXXX (in WFA/C) rather than on the POTS TN (in LMOS). The trouble narrative indicated that it was known that the outage was involving trunks."

No positive conclusion can be stated due to the age of any processes or files that could confirm actual events, however, this is what we believe may have happened. The first CABS/LMOS Compare appears to have updated the record even though it was not a valid LMOS candidate due to the /NC SPSC [vs/NC SPSL]. This scenario was identified after the first CABS/LMOS Compare [May 9/10, 2001]. As many records [with /NC SPSC] that could be identified were then subsequently disconnected in LMOS. This TN, apparently, was not identified & therefore, not disconnected in LMOS.

The LMOS trouble ticket reflected NUNE class of service and service code XPU which translates to UNE-P. The MCN contains the Birch AECN of 8856. Therefore it was picked up in the PM37 for July '01.

On September 12, 2002, Birch Telecom provided 15 additional examples of TNs with a NC code of SPSC. HP requested that SWBT provide both the current LMOS data for carrier and class of service information for the 15 examples and an

[139] See Information Requests LMOS-0508-015-CLEC and LMOS-0508-018-CLEC.
[140] See Information Request LMOS-0614-041.
[141] See Information Request LMOS-0820-058.
[142] See SWBT response to Information Request LMOS-0820-058.
[143] See Information Request LMOS-0722-052.
[144] See SWBT response to Information Request LMOS-0722-052.
[145] See Information Request LMOS-0917-065.
[146] See SWBT response to Information Request LMOS-0917-065.

explanation on whether tickets on these accounts were included in the calculation of PM37.[145] SWBT's response indicated that all 15 TNs were found in LMOS and showed Birch Telecom as the carrier and a class of service of UNE-P. SWBT also indicated that trouble reports entered on the accounts were included in the PM37 calculations.[146] HP reviewed SWBT's response with Birch Telecom, and Birch disagreed with SWBT's explanation of five of the TNs, which were associated to the following service orders: C639294, C074332, C258029, and C064632. Birch Telecom stated its records show the accounts as SPSC circuits, and it expected them to be inventoried in WFA rather than in LMOS.

Comparing a Sample of CABS and LMOS Records

The HP LMOS audit team analyzed a sample of UNE-P records from the current LMOS database that

1. Were "embedded" in the LMOS database (i.e., had been in service at least since May 11, 2001); and,
2. Had not had subsequent service order activity on the account that would have changed the LMOS records.

HP requested that SWBT provide all LMOS records that met these criteria.[147] Figure 6.1, below, summarizes the data SWBT provided in response to this request:[148]

Figure 6.1: Embedded LMOS Database UNE-P Record Count

State	UNE-P Records in Embedded LMOS Database
Arkansas Total	1,741
Kansas	25,583
Oklahoma	10,150
Missouri	27,262
Texas	361,240

[147] See Information Request LMOS-0605-030.
[148] See SWBT response to Information Request LMOS-0605-030.

HP selected two random samples from the records SWBT provided and generated a subsequent Information Request requesting SWBT provide the class of service and carrier identification information for each sampled TN.[149] The first sample included only Texas UNE-P data, and consisted of 384 records. The second sample, containing 382 records, was made up of UNE-P records for the remaining four states: Arkansas, Kansas, Missouri, and Oklahoma. Appendix G provides a breakdown of the two sample sets by state and NPA code.

Using the sampled data, HP conducted an on-site study at SWBT's LDRC in San Antonio on July 10, 2002, and compared the LMOS and CABS records for each of the sample accounts. HP examined the sampled records for discrepancies in the class of service or Master Customer Number (MCN). After reviewing a total of 766 TNs for the five-state SWBT service area, HP identified ten records that contained discrepancies in the MCN and no records that had discrepancies with regard to class of service.[150] HP requested SWBT provide additional research on the ten discrepancies.[151] In its response, SWBT indicated that five were no longer UNE-P accounts and had been disconnected from LMOS through normal order flow. One discrepancy was caused by a character transposition error going from the LMOS database to the Excel spreadsheet used for the analysis, one discrepancy was no longer a working account and had been disconnected from LMOS through the order process, and one discrepancy was a CLEC-to-CLEC migration in which the second C order had not yet posted to LMOS. The final two discrepancies were attributed to incorrect circuit identifiers in CABS. Although those two records were consistent in CABS and LMOS with regard to carrier and class of service, the ability to compare them was hampered by the incorrect circuit identifiers in CABS.

Analyzing Trends in CABS/LMOS Comparison Results

HP reviewed the results of all SWBT CABS/LMOS Comparisons (referred to as "Bashes"). Details regarding the Bash process appear in Appendix E.

HP requested from SWBT the results of all instances of the CABS/LMOS Comparison process from the first instance to the present time.[152] In response to this request, SWBT provided HP with five e-mails containing the data for the CABS/LMOS Comparisons from May 10, 2001 through June 17, 2002.[153] Figure 6.2, below, summarizes the information SWBT provided with respect to each of the Comparisons.

[149] See Information Request LMOS-0701-044.
[150] See PUCT Audit Plan Section II.B.2 Step 3 regarding problems with class of service.
[151] See Information Request LMOS-0712-046.
[152] See Information Request LMOS-0611-039.
[153] See SWBT response to Information Request LMOS-0611-039. Because the request was submitted on June 19, 2002, SWBT provided the results for all comparisons through June 17, 2002.

Figure 6.2: CABS/LMOS Comparison Results Summary

Date of Bash (Effective date)	Total UNE-P Records	Mismatched Records	% LMOS Records Updated	Activity Level (Denominator)	LMOS Records Updated as percent of Activity Level
05/10/01	1,277,554	118,070	9.24	Unavailable	Unavailable
06/06/01	1,307,710	3,961	0.30	Unavailable	Unavailable
07/20/01 [154]	1,337,875	7,141	0.53	Unavailable	Unavailable
08/03/01	1,349,770	3,105	0.23	Unavailable	Unavailable
08/21/01	1,367,913	1,769	0.13	Unavailable	Unavailable
09/10/01 [155]	1,382,932	6,024	0.44	Unavailable	Unavailable
09/18/01	1,393,899	3,453	0.25	Unavailable	Unavailable
10/01/01	1,404,166	5,161	0.37	42,980	12.01
10/15/01	1,415,952	1,768	0.12	63,372	2.79
11/05/01	1,442,376	1,611	0.11	85,544	1.91
11/19/01	1,457,403	1,220	0.08	56,371	2.16
12/03/01	1,462,275	1,212	0.08	42,602	2.85
12/17/01	1,475,472	1,478	0.10	56,481	2.62
01/07/02 [156]	1,484,203	1,242	0.08	64,929	1.91
01/21/02	1,495,838	2,473	0.17	51,108	4.84
02/04/02	1,505,602	2,160	0.14	50,328	4.29
02/18/02	1,514,631	2,892	0.19	48,320	5.99
03/04/02	1,528,545	3,690	0.24	51,324	7.19
03/18/02	1,545,765	431	0.03	59,776	0.72
04/01/02	1,560,557	240	0.02	55,994	0.43
04/15/02	1,575,656	374	0.02	50,648	0.74
05/06/02	1,592,719	447	0.03	88,990	0.50
05/20/02	1,607634	280	0.02	62,767	0.45
06/03/02	1,621,182	271	0.02	61,295	0.44
06/17/02	1,637,555	410	0.03	70,771	0.58

The embedded LMOS database was subject to two CABS/LMOS Comparisons in the June-July 2001 time period and two comparisons per month since then.

[154] With respect to the July 20, 2001 comparison, SWBT noted the San Antonio figures were adjusted to exclude 25,814 LMOS line records that were updated in this process, but had been disconnected as a result of erroneous CABS D orders issued on three CABS BANs.

[155] CABS/LMOS Comparison Data Adjusted: Effective September 10, 2001* Corrected September 19, to include 9-5 partial data.

[156] SWBT made a correction to the data: Effective December 17, 2001, correction January 7, 2002 due to transpose error.

Appendix E provides further details related to the CABS/LMOS Comparison process.

Multi-State Comparisons

To detect variations in the effectiveness of SWBT's efforts to eliminate inaccuracies in the LMOS database, HP conducted an analysis of SWBT's CABS/LMOS Comparison results by region over the April 2002 through August 2002 time period.[157] HP chose to aggregate the mismatched records over a period of several months to reduce the effect of potential anomalies that could affect the data for a single month. Figure 6.3, below, provides the results of this analysis. The final column of the table, "Percentage of Records with Errors," presents the total number of mismatches over the time period compared to the average number of UNE-P accounts in service, rather than the typical rate of error at a given point in time. The mismatched records counts include errors in both MCN and MTN data between the CABS and LMOS records.

Figure 6.3: April-August 2002 CABS/LMOS Comparisons

Region/State	Total Mismatched Records	Average Count of UNE-P Records[158]	Percentage of Records with Errors
Houston	4,612	428,332	1.08%
San Antonio	7,106	510,831	1.39%
Dallas	5,434	381,622	1.42%
Missouri	1,121	109,439	1.02%
Oklahoma	292	55,745	0.52%
Kansas	2,080	124,865	1.67%
Arkansas	282	39,963	0.71%

Overall, the calculated percentages across regions were in the range of 0.52 to 1.67 percent, accumulated over the time period.

6.3 Findings

Objective

The stated objective for this test plan is: "The SWBT LMOS database accurately identifies the CLEC service provider and class of service associated with TNs that were converted to CLEC UNE-P service prior to May 12, 2001."

Findings Summary

HP's analysis indicates that more than 99% of the records in the embedded LMOS database for UNE-P service are consistent with CABS records for service provider and class of service, at any given point in time. "Bashing" the LMOS and CABS databases was the main technique SWBT used to resolve the LMOS inaccuracy issue, but the bash assumes that CABS itself is accurate.

Findings Detail

Overall, analysis of the sample data indicated consistency between CABS and LMOS records, for service provider and class of service, at over 99%.

Once SWBT developed the process for the CABS/LMOS Comparisons, the LMOS and CABS databases became much more consistent. However, one limitation of SWBT's using the CABS/LMOS comparison to ensure LMOS data integrity is that if CABS records are incorrect or incomplete, the comparison will fail to identify LMOS

[157] See Information Requests LMOS-0430-008 and LMOS-0814-054.

[158] The average number of UNE-P records was calculated by taking the total number of UNE-P records in service from the April 1st bash and the August 19th bash for each city/state and dividing by two.

database inaccuracies. One example of this was found by analyzing TN 785-539-xxxx from Birch Telecom. The TN was recorded in CABS, correctly identified as a wholesale trunk line, but was incorrectly recorded in LMOS as a UNE-P account. Because SWBT's CABS/LMOS Comparison process only selects the UNE-P records housed in CABS for the comparison, and because the comparison is a one-way process from CABS to LMOS, the inaccurate LMOS record would not be detected by the comparison. HP's analysis of the sample of 766 CABS and LMOS records revealed two records that had incorrect circuit identifiers in CABS that would hamper the CABS/LMOS comparison process. If CABS has no record of a UNE-P service, there is nothing to bash against LMOS, and there would be no fallout. This means that no further analysis would be done by SWBT. The rationale for conducting the CABS/ LMOS Comparisons in this manner appears to be that, because CABS records are used to bill the CLECs—and because CLECs would challenge any bill that was incorrect—then there is no need to take further steps in the comparison process. However, a CLEC might not notice if SWBT was failing to bill for some UNE-P TNs that were actually in service.

HP found that SWBT made efforts to manually correct the LMOS database during the first quarter of 2001. However, the manual reconciliation of CLEC records with SWBT data is problematic because there is not a one-to-one relationship between CLEC LSRs and SWBT service orders. Also, SWBT's efforts to correct LMOS data during the first quarter of 2001 were likely hampered by the order sequencing problem (C orders posting before the D orders). SWBT began implementing system changes to address the order-sequencing problem in late March of 2001. Prior to that date, new errors were being created on a mechanized basis, while existing errors were being corrected on a manual basis.

A measure of the adequacy of the manual correction processes SWBT conducted in the first quarter of 2001 was provided by the first CABS/LMOS Comparison, conducted on May 10, 2001. It showed 118,070 LMOS records as disconnected, while the corresponding CABS records showed the accounts as being in service. SWBT updated LMOS with the CABS data to correct the LMOS database. SWBT has conducted repeated, regularly scheduled, CABS/LMOS comparisons since the completion of the first comparison in May 2001. The embedded LMOS database, defined as those records in the database prior to May 12, 2001, has been subject to over 32 CABS/LMOS bashes. Appendix E provides further details regarding the CABS/LMOS Comparison process.

The May 10, 2001 CABS/LMOS Comparison revealed significantly higher error rates in Missouri, Kansas, and Arkansas than it did in Texas and Oklahoma. However, more recent data from HP's review of April 2002 through August 2002 comparisons shows that the range of errors by region has stabilized. HP finds it is reasonable to expect a similarity of comparison results across regions and states because the same systems are used in each state, the same LOC serves all states, and the LDRCs, while they serve distinct regions, have common practices and management. Differences in LMOS error rates between states can occur when there are problems that affect only specific states. For example, the CABS/LMOS comparison conducted on September 18, 2001 reported problems with the data for San Antonio and Dallas. However, these seem to be one-time, rather than persistent variations.

7.0 LMOS Test Plan Three–Current LMOS-Related Performance Measures

7.1 Objectives

HP tested the following objectives, which appear in the PUCT Audit Plan, dated October 8, 2001 in Section II.B.3:[159]

- All CLEC UNE-P trouble reports submitted electronically are accurately captured in the LMOS-related PMs, if the trouble report does not result in electronic notification to the CLEC that "this TN has been disconnected or ported out. No information available" or equivalent notification.
- All manual UNE-P trouble reports submitted by a CLEC to the LOC, following receipt of a notification (in response to an effort to submit an electronic trouble report) that "this TN has been disconnected or ported out. No information available" or equivalent notification, are accurately captured in the LMOS-related PMs.
- All electronic UNE-P trouble reports submitted on SWBT's telephone number formatted service associated with recent service order activity in pending or completion status are accurately reflected in the LMOS-related PMs.
- SWBT is accurately implementing PM35.1 (trouble reports submitted for UNE-P orders on date of completion), notwithstanding that the lag between the posting of D and C orders in LMOS means that the LMOS record may not be updated during the relevant time for measuring performance under that measure.
- SWBT has provided appropriate notification and documentation to CLECs regarding alternative manual and electronic options for reporting trouble following receipt of a notification that "this TN has been disconnected or ported out. No information available" or equivalent notification, and SWBT LOC personnel have been properly trained and instructed to accept manual trouble reports from CLECs.
- If a valid electronic LSR is not processed by SWBT's systems, through updating the LMOS database, without manual intervention, that LSR is reflected as a flow-through miss under PM13.1, "Overall Percent LSR Process Flow-Through."
- Verify how LMOS was updated on a Line Shared Loop prior to June 1, 2001. Verify this separately for new connect orders and conversion orders. If the trouble reports on Line Shared Loops were impacted by the LMOS issues, then a full audit should be done on the following PM's: PM59-09, PM65-09, PM65.1-09, PM66-02, PM67-09 and PM69-09.

The following sections describe HP's activities and findings with respect to these objectives.

7.2 Activities

In completing LMOS Test Plan 3, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Reviewing the SWBT Documentation;

[159] The objectives in this section correspond to LMOS objectives in the *PUCT Audit Plan*.

- Reviewing Data Related to Electronic Trouble Reports;
- Reviewing SWBT Retail Data and Documentation;
- Reviewing Documentation of LMOS-related Performance Measures;
- Examining Raw Data Reported for PM35.1;
- Reviewing SWBT Implementation of PM13.1; and,
- Verifying LMOS Updates on Line Shared Loops.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Reviewing the SWBT Documentation

To gain a complete understanding of the processes by which SWBT has developed and implemented the LMOS-related PMs, HP reviewed current process flows, source code, and documentation SWBT has developed to document the implementation, data collection, data analysis, and reporting processes. HP also met with SWBT staff to discuss SWBT's implementation of the LMOS-related PMs, and reviewed SWBT documentation addressing the notification and guidance SWBT provides to CLECs regarding manual and electronic trouble reporting alternatives.

HP also investigated SWBT's training and direction of LOC personnel to accept CLEC manual trouble reports.[160] HP met with SWBT LOC personnel in Fort Worth, Texas to determine if SWBT has documented procedures and training for the CSRs that process manual trouble reports. The Fort Worth LOC serves CLEC wholesale customers in the entire SWBT five-state service area. HP requested a list of CSRs working in the LOC, and randomly selected 15 candidates from a list of 70 CSRs. From the 15 candidates, HP selected nine CSRs to interview. On the morning of the interviews, HP shared the names of the nine interviewees, and the list of questions HP intended to ask, with the LOC management staff. During the interviews, HP assured the CSRs that the interviews were intended to evaluate SWBT processes and not the CSR's individual performance. Also, HP assured the CSRs it interviewed that any information HP obtained from the interviews that it shared with SWBT would not identify the individual who provided the information.

Reviewing Data Related to Electronic Trouble Reports

HP reviewed SWBT data related to electronic trouble reports received from CLECs after May 11, 2001. HP compared the SWBT reported PM data for May and June 2001 to verify the extent to which CLEC trouble reports were captured in the PM data. For any trouble reports in the PMs that HP found to be recorded in error, HP noted whether the CLEC had submitted the trouble report electronically and which trouble report entry system or service the CLEC used.[161]

HP also reviewed CLEC-submitted electronic trouble reports from March 2002 and the SWBT March 2002 Performance Results. HP reviewed any errors or discrepancies between these data with SWBT staff to determine cause.

To further evaluate SWBT's capturing of electronic trouble report data, HP requested from SWBT the May 2002 published LMOS-related PM results for each of SWBT's reported service areas.[162] HP also requested that SWBT provide detail data files for all trouble reports submitted during May 2002.[163] HP recalculated the LMOS PMs from the trouble report detail data and compared its results to SWBT's published PM results. HP then requested that SWBT provide an explanation for the

[160] See PUCT Audit Plan, Section II.B.3.a.1.
[161] See PUCT Audit Plan, Section II.B.3.a.2.
[162] See Information Request LMOS-0807-055.
[163] See Information Request LMOS-0815-057.
[164] See Information Request LMOS-0903-061.

discrepancies HP found between its recalculated results from the detail data and the published May 2002 PM results.[164]

Reviewing Data Related to Manual Trouble Reports

HP reviewed SWBT data related to manual trouble reports received from CLECs after May 11, 2001. HP compared the SWBT reported PM data for May and June 2001 to verify the extent to which CLEC trouble reports were captured in the PM data. For any trouble reports in the PMs that HP found to be recorded in error, HP noted whether the CLEC had submitted the trouble report manually.[165]

HP also reviewed CLEC-submitted manual trouble reports from March 2002 and the SWBT March 2002 Performance Results. HP reviewed any errors or discrepancies between these data with SWBT staff to determine cause.

To further evaluate SWBT's capturing of manual trouble report data, HP requested from SWBT the May 2002 published LMOS-related PM results for each of SWBT's reported service areas.[166] HP also requested that SWBT provide detail data files for all trouble reports submitted during May 2002.[167] HP recalculated the LMOS PMs from the trouble report detail data and compared its results to SWBT's published PM results. HP then requested that SWBT provide an explanation for the discrepancies HP found between its recalculated results from the detail data and the published May 2002 PM results.[168]

Reviewing SWBT Retail Data and Documentation

HP reviewed documentation and data related to the retail data SWBT reports for LMOS-related PM parity comparisons, and determined whether changes are required to provide appropriate comparison.[169]

HP requested from SWBT the May 2002 published LMOS-related PM results for each of SWBT's reported service areas.[170] HP also requested that SWBT provide detail data files for all trouble reports submitted during May 2002.[171] HP recalculated the LMOS PMs from the trouble report detail data and compared its results to SWBT's published PM results.

Reviewing Documentation of LMOS-Related Performance Measures

HP reviewed current process flows, source code, and documentation SWBT has developed to document the implementation, data collection, data analysis, and reporting processes. Additionally, HP reviewed SWBT documentation related to any changes in the data collection, analysis, or reporting processes for the LMOS-related PMs. HP also reviewed the documentation SWBT makes available to CLECs regarding manual and electronic trouble reporting alternatives, and the training materials and procedural documentation SWBT provides to its LOC personnel for the processing of CLEC manual trouble reports.[172]

Examining Raw Data Reported for PM35.1

HP examined raw data reported for PM35.1, as well as SWBT documentation and source code related to its implementation of PM35.1. HP considered separately any CLEC-supplied data addressing UNE-P trouble reports submitted on the completion date. HP reviewed the method by which SWBT includes trouble reports in the reporting of PM35.1 when the LMOS records have not been updated at the time a trouble report is submitted. HP focused on the cause of the lapse in updates: the C

[165] See PUCT Audit Plan, Section II.B.3.b.2.
[166] See Information Request LMOS-0807-055.
[167] See Information Request LMOS-0815-057.
[168] See Information Request LMOS-0903-061.
[169] See PUCT Audit Plan, Section II.B.3.a.5.
[170] See Information Request LMOS-0807-055.
[171] See Information Request LMOS-0815-057.
[172] See PUCT Audit Plan, Section II.B.3.d.1.
[173] See PUCT Audit Plan, Section II.B.3.d.4.

order not posting to LMOS on the day of completion.

HP confirmed the notification a CLEC receives when it attempts to submit an electronic trouble report during this "lag" time, and reviewed the alternative trouble report submission methods available to the CLEC when it receives notification that an electronic ticket cannot be submitted.[173]

Reviewing SWBT Implementation of PM13.1

HP reviewed documentation related to SWBT's implementation of PM13.1 to determine whether the measurement captures order processing through all relevant systems and databases, as provided in the business rule, including LMOS.[174] HP requested that SWBT provide a white paper explaining its implementation of PM13.1.

Verifying LMOS Update on Line-shared Loop

To investigate how LMOS is updated for Line Sharing orders, HP requested that SWBT provide documentation that describes the flow of LSRs to service orders, including the process for updating LMOS.[175] HP also met with IP Communications in Dallas, Texas to discuss Line Sharing issues. HP's discussion with IP Communications addressed the following topics:

- General discussion of Line Sharing;
- Discussion of HP Information Request LMOS-0508-017; and,
- Observation of Line Sharing orders being placed.

HP requested that IP Communications provide examples of Line Sharing LSRs for New Connects and Conversions. HP requested that the examples include the following information:

- PON;
- TN/Circuit ID; and,
- Due Date (MM/DD/YY).[176]

HP forwarded the examples it received from IP Communications to SWBT, and requested that SWBT provide information on all Service Order activity associated with the example LSRs.[177] HP reviewed SWBT's response, and noted that the service order activity consisted only of 'C' (change) orders. This information matched the explanation SWBT provided to HP in a white paper in response to an earlier information request.[178] HP visited SWBT's Arlington, Texas site to verify the service order activity information SWBT provided for IP Communications' Line Sharing orders. While viewing the actual service orders, HP focused on any related service orders associated to the primary service order activity.

7.3 Findings

Objective 1

The first stated objective of this test plan is: "All CLEC UNE-P trouble reports submitted electronically are accurately captured in the LMOS-related PMs, if the trouble report does not result in electronic notification to the CLEC that 'this TN has been disconnected or ported out. No information available' or equivalent notification."

[174] See PUCT Audit Plan, Section II.B.3.f.6.
[175] See PUCT Audit Plan, Section II.B.3.
[176] See Information Requests LMOS-0625-042 and LMOS-0625-043.
[177] See Information Request LMOS-0712-049.
[178] See Information Request LMOS-0423-007.

Findings Summary

SWBT has processes in place to capture CLEC UNE-P trouble reports, including those submitted electronically that do not result in CLEC receiving the "disconnected or ported out" notification. Part of SWBT's process includes the manual classification of unclassified trouble reports, which represented 0.28 percent of the trouble reports in the study period. These manually classified trouble reports caused variances between the May 2002 PMs HP calculated from SWBT raw data and the SWBT published PM results.

Findings Detail

HP requested from SWBT the May 2002 published LMOS-related PM results for each of SWBT's reported service areas.[179] HP also requested that SWBT provide detail data files for all trouble reports submitted during May 2002, including both retail and wholesale trouble reports for all classes of service.[180] HP recalculated the LMOS PMs from the trouble report detail data and compared its results to SWBT's published PM results.

Figure 7.1, below, provides the results of HP's analysis and comparison for PM41, Percent Repeat Reports, for the Texas market reporting areas. Appendix H includes the results of HP's analysis and comparison for all LMOS-related PMs and all SWBT market reporting areas.

Figure 7.1: May 2002 PM41-03 Results Comparison

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	4,036	4,051	15	0.37%
	Repeat Reports	252	252	0	0.00%
	% Repeat Reports	6.24%	6.22%	-0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	6,309	6,334	25	0.39%
	Repeat Reports	408	409	1	0.24%
	% Repeat Reports	6.47%	6.46%	-0.01%	
Houston, TX					
	Trouble Reports	7,958	7,981	23	0.29%
	Repeat Reports	527	528	1	0.19%
	% Repeat Reports	6.62%	6.62%	0.00%	
South Texas					
	Trouble Reports	3,770	3,778	8	0.21%
	Repeat Reports	251	251	0	0.00%
	% Repeat Reports	6.66%	6.64%	-0.02%	

HP also found discrepancies between its calculations and the published results for

the remaining LMOS PMs. For some submeasures, HP's calculations matched the reported results exactly, while for others the variances ranged from less than one to nearly 10 percent. In every instance where there was a variance, SWBT's trouble report count was higher than that which HP had calculated. HP inferred from this that the variances were due to SWBT's process of manually classifying the "unclassified" trouble reports and including them in the appropriate measures.

SWBT sometimes receives electronic trouble reports from CLECs that have incomplete information. These trouble reports are marked with a class of service of '200' and are placed in an "unclassified" category until SWBT completes research on the report to fill in the missing information. HP did not include the unclassified trouble reports in its calculations of the LMOS PMs because the raw data detail files do no indicate how the trouble reports should be classified.

HP requested that SWBT provide an explanation for the discrepancies HP identified in the data for Central/West Texas.[181] In its response, SWBT explained that the differences between the numbers were the result of the manual effort it undertakes to classify the unclassified trouble reports.

To quantify the potential impact of the unclassified trouble reports, HP reviewed the SWBT raw data detail files for trouble reports that had a class of service of '200'. Figure 7.2, below, provides the counts of unclassified trouble reports by SWBT reporting region.

Figure 7.2: May 2002 Unclassified Trouble Reports

Region/State	Total Trouble Reports	SWBT Retail Reports	CLEC Trouble Reports	Unclassified Reports	% Unclassified Reports
Arkansas (AR)	36,520	34,854	1,655	11	0.03%
Central/West, TX (CW)	54,941	46,356	8,350	235	0.43%
Dallas/Ft. Worth, TX (DF)	108,172	93,550	14,180	442	0.41%
Houston, TX (HS)	112,003	96,166	15,377	460	0.41%
Kansas (KK)	38,998	35,075	3,880	43	0.11%
Kansas City, MO (KM)	38,337	36,438	1,864	35	0.09%
Oklahoma (OK)	59,987	57,412	2,535	40	0.07%
South Texas (ST)	62,105	54,447	7,374	284	0.46%
St. Louis, MO (SL)	57,978	55,275	2,634	69	0.12%
Totals	***569,041***	***509,573***	***57,849***	***1,619***	***0.28%***

Objective 2

The second stated objective of this test plan is: "All manual UNE-P trouble reports submitted by a CLEC to the LOC, following receipt of a notification (in response to an effort to submit an electronic trouble report) that "this TN has been disconnected or ported out. No information available" or equivalent notification, are accurately captured in the LMOS-related PMs."

[179] See Information Request LMOS-0807-055.
[180] See Information Request LMOS-0815-057.
[181] See Information Request LMOS-0903-061.

Findings Summary

HP found that SWBT includes in the LMOS PMs manual trouble reports that CLECs submit to the LOC after unsuccessful attempts to enter the reports electronically. HP's calculation of the LMOS PMs from SWBT raw data resulted in differences of less than one percent from the PM values SWBT reported for May 2002. HP attributes these differences to SWBT's manual classification of "unclassifed" trouble reports. HP did not replicate SWBT's manual classification process.

Findings Detail

HP found that SWBT has processes and procedures in place to handle the submission of manual trouble reports and correctly reflect the trouble report data in the LMOS Database. Once the LMOS Database Line Record and the LMOS FE Mini-Line Record reflect the correct COS and CLEC ownership, the trouble report is correctly classified. When a CLEC contacts the LOC to enter a trouble report, and the LOC staff determines that the account owner differs from the information in the LMOS database Line Record, the LOC representative completes a LDRC Form and faxes it to the LDRC so that the Line Record can be corrected.

SWBT provides training on these procedures and processes to all new LOC CSRs during training period of up to six weeks, depending on the CSR's prior experience. HP interviewed LOC CSRs and observed CSRs during their normal operations, and found that the LOC CSRs followed the defined processes and procedures.

HP also visited the LDRC (LMOS Database Resolution Center) in San Antonio, Texas, and determined that the LDRC has procedures in place to process the LDRC forms it receives from the LOC. HP observed LDRC staff processing LDRC forms and updating LMOS Line Records. HP learned that the LDRC staff researches pending service order traffic before making any changes to the LMOS Database. If there is pending service order activity on the account, the LDRC representatives will let the service order activity automatically update the LMOS Line Record rather than correct the record manually prior to service order completion.

As discussed in section 7.3, Findings, Objective 1, above, HP compared the trouble report detail data to SWBT's published Performance Reports for May 2002, and found that trouble reports were being captured accurately in the LMOS PMs. Also, as indicated in the findings detail for Objective 1, HP noted that 0.28 percent of the total trouble report count were unclassified trouble reports subject to SWBT's manual classification process. The differences between HP's calculation of the May 2002 LMOS PMs and the SWBT-reported PM results are documented in Appendix H.

Objective 3

The third stated objective of this test plan is: "All electronic UNE-P trouble reports submitted on SWBT's telephone number formatted service associated with recent service order activity in pending or completion status (see Joint Reply Affidavit of Coleman, et al., in Missouri 271 FCC Proceedings, at ¶ 40, copy filed in Project 20400 May 17, 2001) are accurately reflected in the LMOS-related PMs."

Findings Summary

Electronic UNE-P trouble reports submitted on SWBT's telephone number formatted service are correctly reflected in the LMOS-related PMs.

Findings Detail

As discussed in section 7.3, Findings, Objective 1, above, HP compared the trouble report detail data to SWBT's published Performance Reports for May 2002, and found that trouble reports were being captured accurately in the LMOS PMs.

Figures 7.3 through 7.10, below, identify the submeasures of each LMOS PM for which HP calculated a different PM result than that which SWBT had published in the May 2002 Performance Reports. Appendix H provides details of the differences in the trouble counts and PM results for each submeasure and reporting area.

Figure 7.3: PM35 Submeasure Variances

Region/State	Submeasures											
	1	2	3	4	5	6	7	8	9	10	11	12
Dallas / Ft. Worth, TX		x						x		x		x
South TX			x								x	x
Central West, TX			x									x
Houston, TX		x	x	x				x		x	x	x
St. Louis, MO			x									x
Kansas City, MO		x						x				x
Kansas											x	
Arkansas			x									x
Oklahoma		x	x	x					x			

Figure 7.4: PM35.1 Submeasure Variances

Region/State	Submeasures
	1
Dallas / Ft. Worth, TX	x
South TX	
Central West, TX	x
Houston, TX	x
St. Louis, MO	
Kansas City, MO	
Kansas	
Arkansas	
Oklahoma	

Figure 7.5: PM37 Submeasure Variances

Region/State	Submeasures		
	1	2	3
Dallas / Ft. Worth, TX	x	x	x
South TX	x	x	x
Central West, TX	x	x	x
Houston, TX	x	x	x
St. Louis, MO	x	x	x
Kansas City, MO		x	
Kansas	x	x	x
Arkansas	x	x	x
Oklahoma	x	x	x

Figure 7.6: PM37.1 Submeasure Variances

Region/State	Submeasures		
	1	2	3
Dallas / Ft. Worth, TX	x	x	x
South TX	x	x	x
Central West, TX	x	x	x
Houston, TX	x	x	x
St. Louis, MO	x	x	
Kansas City, MO		x	
Kansas	x	x	x
Arkansas	x	x	x
Oklahoma	x	x	x

Figure 7.7: PM38 Submeasure Variances

Region/State	Submeasures					
	1	2	3	4	5	6
Dallas / Ft. Worth, TX	x	x		x	x	
South TX	x	x			x	x
Central West, TX	x	x			x	x
Houston, TX	x	x		x	x	
St. Louis, MO	x	x			x	x
Kansas City, MO		x		x		x
Kansas	x	x			x	
Arkansas			x	x	x	
Oklahoma	x	x	x		x	

Figure 7.8: PM39 Submeasure Variances

Region/State	Submeasures											
	1	2	3	4	5	6	7	8	9	10	11	12
Dallas / Ft. Worth, TX		x		x	x	x		x	x		x	
South TX		x			x	x				x	x	
Central West, TX	x	x				x			x	x	x	x
Houston, TX	x	x		x	x	x			x		x	
St. Louis, MO					x	x			x	x	x	
Kansas City, MO		x				x		x		x		
Kansas	x	x				x			x		x	
Arkansas			x				x	x			x	
Oklahoma	x	x			x	x	x				x	

Figure 7.9: PM40 Submeasure Variances

PM40	Submeasures		
	1	2	3
Dallas / Ft. Worth, TX	x	x	x
South TX	x	x	x
Central West, TX	x	x	x
Houston, TX	x	x	x
St. Louis, MO	x	x	x
Kansas City, MO		x	
Kansas		x	x
Arkansas	x	x	x
Oklahoma	x	x	x

Figure 7.10:PM41 Submeasure Variances

PM41	Submeasures		
	1	2	3
Dallas / Ft. Worth, TX	x	x	x
South TX	x	x	x
Central West, TX	x	x	x
Houston, TX	x	x	x
St. Louis, MO	x	x	x
Kansas City, MO		x	
Kansas	x	x	x
Arkansas	x	x	x
Oklahoma	x	x	x

Objective 4

The fourth stated objective of this test plan is: "SWBT is accurately implementing PM35.1 (trouble reports submitted for UNE-P orders on date of completion), notwithstanding that the lag between the posting of D and C orders in LMOS means that the LMOS record may not be updated during the relevant time for measuring performance under that measure."

Findings Summary

PM35.1, as implemented by SWBT, accurately captures trouble reports submitted for UNE-P orders on the date of completion, notwithstanding the lag between the postings of D and C orders.

Findings Detail

As discussed in section 7.3, Findings, Objective 1, above, HP compared the trouble report detail data to SWBT's published Performance Reports for May 2002, and found that trouble reports were being captured accurately in the LMOS PMs. While HP did find discrepancies between its PM35.1 calculations and SWBT's published results, SWBT explained that the differences between the results were due to the manual effort SWBT undertakes to classify any unclassified trouble reports. SWBT's explanation for these discrepancies is consistent with its explanation of the

discrepancies HP found in its recalculation of the other LMOS PMs. During its activities associated with LMOS Test Plan 4, HP did find issues with SWBT's past reporting of PM35.1 results. HP's findings are discussed in section 8.3, below.

Objective 5

The fifth objective of this test plan is: "SWBT has provided appropriate notification and documentation to CLECs regarding alternative manual and electronic options for reporting trouble following receipt of a notification that "this TN has been disconnected or ported out. No information available" or equivalent notification, and SWBT LOC personnel have been properly trained and instructed to accept manual trouble reports from CLECs."

Findings Summary

HP found the online documentation SWBT provides to CLECs outlining the procedures for submitting trouble reports manually to be adequate. Further, SWBT has appropriate processes, procedures, and training in place to enable LOC personnel to properly assist CLECs in the submission of manual trouble reports.

Findings Detail

HP reviewed documentation posted on SWBT's CLEC website that outlines the procedures a CLEC can follow to enter trouble reports manually if it is unable to submit the tickets electronically. HP found this documentation provided sufficient information to CLECs to enable them to successfully process manual trouble reports.

Further, HP found that the processes, procedures, and training SWBT provides its LOC representatives for the manual processing of trouble reports is sufficient to enable LOC representatives to properly assist CLECs in the submission of manual trouble reports. SWBT provides training on these processes and procedures to all new LOC CSRs during a training period of up to six weeks, depending on the CSR's prior experience. HP interviewed LOC CSRs and observed CSRs during their normal operations, and found that the LOC CSRs followed the defined processes and procedures.

Objective 6

The sixth objective of this test plan is: "If a valid electronic LSR is not processed by SWBT's systems, through updating the LMOS database, without manual intervention, that LSR is reflected as a flow-through miss under PM13.1, "Overall Percent LSR Process Flow-Through."

Findings Summary

As implemented by SWBT, the PM13.1 calculation does not count an order as a flow-through miss if it fails to post to LMOS without manual intervention.

Findings Detail

HP requested and received documentation from SWBT that defines and explains the PM13.1 business rules and calculation, including the start and end points of the order flow process encompassed by the measure. According to the documentation HP reviewed, SWBT does not currently include successful posting of an order to LMOS as a requirement for inclusion in the PM13.1 calculation.

Objective 7

The seventh objective of this test plan is: "Verify how LMOS was updated on a Line Shared Loop prior to June 1, 2001. Verify this separately for new connect orders and conversion orders. If the trouble reports on Line Shared Loops were impacted by the LMOS issues."[182]

Findings Summary

HP concluded that, for Line Sharing loops, only 'C' orders post to LMOS. The update process did not utilize 'D' orders prior to June 1, 2001, and does not use 'D' orders currently.

[182] This objective was listed as step 7 in the PUCT audit plan. It is shown as an objective here because it seems separate from the other objectives.

Findings Detail

During its evaluation, HP determined that SWBT's Line Sharing product requires that a working line be in place prior to the processing of a Line Sharing order. HP found this requirement to be true for both New Connect and Conversion orders. A new installation would require that a line be installed first, and then the CLEC can request to change the basic service to a Line Sharing offering.

During its meeting with IP communications, HP confirmed that the SWBT white paper describing the Line Sharing ordering process is accurate. HP reviewed the service order activity details SWBT provided for the Line Sharing order examples IP Communications provided. HP found that all of the associated service orders for the Line Sharing orders were 'C' orders, and, thus, would be unaffected by the 'C' and 'D' order sequencing problems. HP confirmed this information during its site visit to SWBT's Arlington, Texas facility.

8.0 LMOS Test Plan Four–Past LMOS-Related PM Errors

8.1 Objectives

HP tested the following objective, which appears in the PUCT Audit Plan, dated October 8, 2001 in Section II.B.4:[183]

- SWBT has restated previously reported data for LMOS-related PMs in a manner that fairly adjusts that data for the errors that resulted from SWBT's failure to accurately update LMOS records to reflect CLEC service provider status.

The following sections describe HP's activities and findings with respect to these objectives.

8.2 Activities

In completing LMOS Test Plan 4, HP undertook several activities to meet the defined objectives. These activities can be classified as:

- Gathering Data; and,
- Analyzing Data.

The following subsections detail the tasks HP completed in its execution of each of these activities.

Gathering Data

HP's data gathering activities included submitting data requests to both SWBT and the participating CLEC, and participating in meetings with SWBT and CLEC personnel to obtain background information. The process HP adhered to is outlined in the sections that follow.

Retaining CLEC Participation and Obtaining SWBT Data

To execute the steps associated to LMOS Test Plan 4 as outlined in the PUCT Audit Plan, HP first retained the participation of a CLEC to use its LMOS performance measures and supporting data. Complying with the timeframes identified in the PUCT Audit Plan, HP requested customer account information from the participating CLEC for all UNE-P customers in service prior to April 2001. Specifically, HP requested the telephone numbers, service start dates, and service end dates for all of the CLEC's UNE-P customers for each state in the SWBT service territory that the CLEC serves.[184]

Once the participating CLEC was identified and confirmed, HP obtained from SWBT the performance reports for the participating CLEC—and for all CLECs in the aggregate—for the reporting month of February 2001.[185] Additionally, HP obtained from SWBT the detailed trouble report information that SWBT used to calculate the LMOS performance measures for the participating CLEC.[186]

Reconstructing the Reporting Measurements

Prior to evaluating the extent to which SWBT incorrectly reported CLEC trouble reports, HP first attempted to validate and reconstruct SWBT's originally reported measurements. Using the supporting data for the participating CLEC's LMOS PM

reports, HP applied the published business rules to the data and regenerated the calculated PMs. To assist in its efforts, HP requested clarification from SWBT for various details of the information provided in the supporting data and for information related to the application of exclusions in the LMOS PM business rules.[187]

Analyzing Data

Upon its receipt of the data necessary to execute the Test Plan, HP analyzed the data through documentation reviews, validation of SWBT-reported LMOS performance measures, and application of class of service and carrier identification adjustments to the performance measure data. The process HP adhered to is outlined in the sections that follow.

[183] The objectives in this section correspond to LMOS objectives in the *PUCT Audit Plan*.

[184] See Information Request LMOS-0529-027-CLEC.

[185] In accordance with the PUCT Audit Plan, HP chose to use February 2001 data, as it was the reporting month closest to the Audit Plan's pre-April 2001 requirement during which SWBT made no changes to its LMOS trouble reporting processes. SWBT implemented process changes to LMOS in March 2001 that affected how line information is updated. Therefore, to avoid any potential skewing effects these changes may have had on trouble report data, HP chose to examine the February 2001 LMOS PM data.

[186] See Information Request LMOS-0531-028.

[187] See Information Requests LMOS-0612-040 and LMOS-0709-045.

Adjusting Trouble Report Information

Once it completed its validation of SWBT's originally reported LMOS PMs for the participating CLEC, HP began the process of adjusting the trouble report information to correct reporting errors that resulted from incorrect class of service and carrier identification information. To correct Class of Service errors, HP compared each of the trouble reports identified in the detail data files (provided by SWBT) to the UNE-P customer account information (provided by the participating CLEC). Where HP found telephone numbers in the participating CLEC's UNE-P customer information associated to trouble reports identified in the SWBT detail files as "business" or "residential resale," HP changed the class of service code in the trouble report detail files to reflect the UNE-P class of service.[188]

To adjust the participating CLEC's LMOS PMs for trouble reports erroneously assigned to another carrier, HP provided SWBT with a list of the participating CLEC's UNE-P account telephone numbers that were in service during February 2001. HP requested that SWBT provide any trouble reports reported against these telephone numbers during the February 2001 reporting period.[189] In response to this request, SWBT provided HP with trouble report detail files for each CLEC market reporting area. Because HP did not edit the participating CLEC's UNE-P account telephone numbers to remove TNs for which SWBT had originally classified troubles as the participating CLEC's, the detail files included the participating CLEC's troubles that were correctly identified as UNE-P, troubles that were classified as the participating CLEC's resale accounts, and troubles that were erroneously classified as other carriers' accounts.

Reviewing the Data

Upon receiving the trouble report detail files, HP reviewed the raw data and removed any trouble reports that were entered outside the time period for which the participating CLEC owned the customer account. HP then applied SWBT's published PM business rules to the trouble report information to derive revised measures for the participating CLEC. HP used the same formulas to calculate the revised measures as it used to validate SWBT's reported PMs in the original detail files. Following the calculation of the revised PMs, HP compared its results to the SWBT-published PMs to derive the reporting error for the participating CLEC. The results of this comparison are provided in detail in section 8.3, "Findings," below.

HP also used the revised measures to develop a reporting error range for SWBT's published CLEC aggregate PM results for February 2001. HP applied two scenarios to the reporting error for each of participating CLEC's LMOS PMs to extrapolate the error to the CLEC aggregate. In the first scenario, HP applied the reporting error under the assumption that the participating CLEC was the only CLEC to be affected by the misclassification of trouble reports. While it is unlikely that this scenario holds true—some of the participating CLEC's trouble reports were originally attributed to other CLECs, proving that other CLECs' PMs were affected by SWBT's misclassification—the results of applying this scenario portrays the low-end reporting error for the CLEC aggregate. The second scenario HP applied to the CLEC aggregate results calculates the reporting error under the assumption that all CLECs were equally affected by SWBT's misclassification of trouble reports. This scenario provides a more likely result than the first scenario, though it is not an exact representation of the error rate in SWBT's reporting of the CLEC aggregate measures.[190] Because only one CLEC participated in the execution of this portion of

[188] HP preserved the original trouble report detail files that SWBT provided in response to LMOS Information Request #028, and made changes to copies of the original files. This enabled HP to make side-by-side comparisons between the original and adjusted data sets.

[189] See Information Request LMOS-0715-051.

[190] An exact error rate for the CLEC aggregate can only be achieved through performing the steps described in this test plan for each CLEC that operated in the SWBT territory during February 2001. Such

the LMOS Audit, HP was unable to apply a third scenario to assess the CLEC aggregate reporting error. It is possible that the participating CLEC was affected by SWBT's misclassification of trouble reports to a lesser degree than were other CLECs. If this were true, the reporting error range that HP has derived from the two scenarios described in this report would understate the CLEC aggregate reporting error. However, because HP was only able to evaluate the error with respect to a single participating CLEC, it is unable to determine the upper level of the reporting error range. The results of HP's application of the participating CLEC's reporting error to the CLEC aggregate, under both scenarios described above, are provided in section 8.3, "Findings," below.

8.3 Findings

Objective

As stated in the Audit Plan, the stated objective of this test plan is to determine if: "SWBT has restated previously reported data for LMOS-related PMs in a manner that fairly adjusts that data for the errors that resulted from SWBT's failure to accurately update LMOS records to reflect CLEC service provider status."

Findings Summary

1. For the period prior to April 2001, HP observed that SWBT misclassified the participating CLEC's UNE-P trouble reports as "resale" trouble reports and as belonging to other carriers.
2. SWBT's misclassification of trouble reports caused varying degrees of reporting errors in the participating CLEC's LMOS-related performance measures, as well as in the CLEC aggregate PMs.

Findings Detail

Misclassification of Trouble Reports

During its review of the trouble report detail files that SWBT provided, HP found that a portion of the participating CLEC's UNE-P trouble reports were misclassified, and, thus, not accounted for in the participating CLEC's LMOS-related performance measures. HP observed that there was no single classification under which the participating CLEC's trouble reports were erroneously placed, but rather SWBT had classified the trouble reports as resale troubles that belong to both the participating CLEC and other CLECs, and as UNE-P troubles belonging to other CLECs. HP also identified several tickets in various CLEC market reporting areas that were identified as SWBT UNE-P troubles. However, in all CLEC market reporting areas, the majority of misclassified trouble reports were labeled as SWBT business or residential retail troubles.

Texas Results

As presented in the table below, within Texas, HP found that 71.81% of the participating CLEC's UNE-P trouble reports were correctly classified. An additional 1.77% of its UNE-P troubles were correctly assigned to the participating CLEC, but were mistakenly identified as resale troubles. SWBT assigned 2.51% of the participating CLEC's trouble reports to other CLECs, assigning them as either resale or UNE-P troubles, and the remaining 23.90% were attributed to SWBT, with 0.50% of the total tickets labeled SWBT UNE-P troubles.

The following table relates the original classification of the participating CLEC's UNE-P trouble reports throughout each of the four CLEC market areas in Texas, and for Texas statewide.

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an undertaking would require every CLEC to provide HP with the same UNE-P account customer information that the participating CLEC provided during this audit.

Figure 8.1: Texas Trouble Report Classifications

	CLEC Market Area				Texas Aggregate
	Central/ West	Dallas/ Ft. Worth	Houston	South	
Correctly Labeled Participating CLEC UNE-P	76.03%	70.16%	69.59%	72.53%	71.81%
Originally Labeled Participating CLEC Resale	1.34%	2.46%	1.55%	1.58%	1.77%
Originally Labeled Other CLEC Resale	2.78%	1.85%	1.46%	3.95%	2.25%
Originally Labeled Other CLEC UNE-P	0.31%	0.35%	0.17%	0.20%	0.26%
Originally Labeled SWBT Retail	18.93%	24.56%	26.98%	21.15%	23.40%
Originally Labeled SWBT UNE-P	0.62%	0.62%	0.26%	0.59%	0.50%
Total Misclassified Trouble Reports:	***23.97%***	***29.84%***	***30.41%***	***27.47%***	***28.17%***

Kansas Results

For Kansas, SWBT correctly classified only 44.89% of the participating CLEC's UNE-P trouble reports. Another 18.61% of the troubles were correctly assigned to the participating CLEC, but were identified as resale account troubles. SWBT classified 31.75% of the participating CLEC's UNE-P troubles as its own retail tickets, and the remaining 4.74% of troubles were originally identified as other CLECs' resale tickets.

The following table identifies the original classification of the participating CLEC's UNE-P trouble reports for the Kansas City, Kansas CLEC market reporting area, the only reporting area in Kansas.

Figure 8.2: Kansas Trouble Report Classifications

	Kansas City, KS
Correctly Labeled Participating CLEC UNE-P	44.89%
Originally Labeled Participating CLEC Resale	18.61%
Originally Labeled Other CLEC Resale	4.74%
Originally Labeled Other CLEC UNE-P	0.00%
Originally Labeled SWBT Retail	31.75%
Originally Labeled SWBT UNE-P	0.00%
Total Misclassified Trouble Reports:	***55.11%***

Missouri Results

Within Missouri, 72.49% of the participating CLEC's UNE-P trouble reports were correctly classified by SWBT. SWBT correctly assigned an additional 5.17% of troubles to the participating CLEC, though it labeled them as resale tickets. 2.65% of the participating CLEC's UNE-P tickets were assigned to other CLECs—2.23% as resale troubles and 0.42% as UNE-P troubles. Finally, 19.69% of the participating CLEC's UNE-P trouble reports were included in SWBT's trouble report counts, including 0.42% that were labeled SWBT UNE-P troubles.

The following table relates the original classification of the participating CLEC's UNE-P trouble reports for both the Kansas City, MO and St. Louis CLEC market reporting areas in Missouri, and for Missouri on a statewide basis.

Figure 8.3: Missouri Trouble Report Classifications

	CLEC Market Area		Missouri Aggregate
	Kansas City, MO	St. Louis	
Correctly Labeled Participating CLEC UNE-P	75.42%	71.01%	72.49%
Originally Labeled Participating CLEC Resale	9.58%	2.94%	5.17%
Originally Labeled Other CLEC Resale	0.83%	2.94%	2.23%
Originally Labeled Other CLEC UNE-P	0.00%	0.63%	0.42%
Originally Labeled SWBT Retail	14.17%	21.85%	19.27%
Originally Labeled SWBT UNE-P	0.00%	0.63%	0.42%
Total Misclassified Trouble Reports:	***24.58%***	***28.99%***	***27.51%***

Oklahoma Results

In the Oklahoma reporting area, SWBT correctly classified 73.09% of the participating CLEC's UNE-P trouble reports. SWBT correctly assigned an additional 1.99% of tickets to the participating CLEC, but erroneously identified the tickets as resale troubles. SWBT assigned 2.33% of the participating CLEC's troubles to other CLECs, classifying 1.33% as UNE-P and 1.00% as resale troubles. The remaining 22.59% of the participating CLEC's UNE-P troubles were initially classified as SWBT troubles. 3.65% of the total Oklahoma tickets were classified as SWBT UNE-P troubles.

The following table identifies the original classification of the participating CLEC's UNE-P trouble reports for the Oklahoma CLEC market reporting area.

Figure 8.4: Oklahoma Trouble Report Classifications

	Oklahoma
Correctly Labeled Participating CLEC UNE-P	73.09%
Originally Labeled Participating CLEC Resale	1.99%
Originally Labeled Other CLEC Resale	1.00%
Originally Labeled Other CLEC UNE-P	1.33%
Originally Labeled SWBT Retail	18.94%
Originally Labeled SWBT UNE-P	3.65%
Total Misclassified Trouble Reports:	***26.91%***

Arkansas Results

HP is unable to provide any assessment of SWBT's misclassification of UNE-P trouble reports in Arkansas because the participating CLEC did not do business in Arkansas in February 2001. As there was only one CLEC that volunteered to participate in the execution of this test plan, HP did not have any data available that would enable it to perform an assessment of SWBT's misclassification of Arkansas UNE-P trouble reports.

Effect of Trouble Report Misclassification on Participating CLEC and CLEC Aggregate LMOS Performance Measures

SWBT's misclassification of the participating CLEC's UNE-P trouble reports caused the participating CLEC's published LMOS PMs to be skewed. As a result of the misclassification, the published LMOS PMs for the participating CLEC were calculated using only a portion of the CLEC's total UNE-P trouble reports. Further, because many of the misclassified trouble reports were identified as either resale or SWBT troubles, the CLEC aggregate PMs were also calculated using incomplete

raw data.

Each of the LMOS PMs was affected differently by the trouble report misclassification. This is primarily due to variances in the performance measure business rules, which treat tickets differently for inclusion or exclusion in each PM. For example, subsequent trouble reports entered on lines with an existing trouble are excluded from PMs 35, 35.1, 39, 40, and 41, but are not excluded from PMs 37, 37.1, and 38. Also, because the denominators for PMs 35, 35.1, 37, and 37.1 do not consist of counts of trouble reports, the misclassification of tickets affected only the numerators of these PMs.[191]

The following sections provide a detailed description of the effects that SWBT's misclassification of trouble reports had on both the participating CLEC's and the CLEC aggregate PM results.

PM35 – Percent POTS/UNE-P Trouble Reports Within 10 Days (I-10) of Installation

The installation trouble report rate measures the number of CLEC orders that encounter troubles within ten days of the installation date. The measure's denominator is the number of CLEC orders completed in the reporting month, and, thus, SWBT's misclassification of trouble reports had no effect on the denominator. Because HP's correction of the misclassified trouble reports increased the participating CLEC's raw number of trouble reports in almost all instances, the recalculation of PM35 resulted in a higher installation trouble rate than that SWBT had originally published. There were, however, two CLEC market areas in which HP determined that troubles counted as the participating CLEC's UNE-P tickets in the original calculation of PM35 did not belong to the participating CLEC. Thus, these tickets were removed from the calculation, and, because HP's reclassification of tickets did not identify any additional tickets to be included in the PM35 counts in these reporting areas, the recalculated PM35 result was lower than that which SWBT originally published.

The following tables show the published February 2001 installation trouble rates, the recalculated rates, and the reporting variances for PM35 'C' fieldwork and non-fieldwork orders for each CLEC market reporting area in which the CLEC operated during February 2001. In each reporting area, the SWBT published PM reports for the participating CLEC—and for the CLEC aggregate results—indicated that no qualifying 'N' and 'T' orders were completed during the reporting month, and, thus, an installation trouble rate was not calculable. Therefore, HP is unable to report any variances for either the 'N & T' fieldwork or non-fieldwork disaggregations.

[191] See SWBT Response to Information Request LMOS-0612-040.

Figure 8.5: PM35 Participating CLEC 'C' Orders - Fieldwork

CLEC Market Reporting Area	Published Feb. 2001 PM Result	HP Recalculated Result	Reporting Variance
Central/West Texas	2.91%	3.49%	20.00%
Dallas/Ft. Worth	3.94%	3.45%	-12.50%
Houston, TX	7.11%	8.12%	14.29%
South Texas	3.81%	4.76%	25.00%
Texas Aggregate	***4.58%***	***5.02%***	***9.68%***
Kansas	***0.65%***	***1.31%***	***100.00%***
St. Louis, MO	9.73%	8.85%	-9.09%
Kansas City, MO	5.33%	8.00%	50.00%
Missouri Aggregate	***7.98%***	***8.51%***	***6.67%***
Oklahoma	***7.58%***	***7.58%***	***0.00%***

Figure 8.6: PM35 Participating CLEC 'C' Orders – No Fieldwork

CLEC Market Reporting Area	Published Feb. 2001 PM Result	HP Recalculated Result	Reporting Variance
Central/West Texas	2.05%	2.79%	35.71%
Dallas/Ft. Worth	1.95%	3.07%	57.58%
Houston, TX	1.54%	2.87%	86.36%
South Texas	2.37%	3.00%	26.32%
Texas Aggregate	***1.93%***	***2.93%***	***51.96%***
Kansas	***1.01%***	***1.41%***	***40.00%***
St. Louis, MO	2.81%	3.86%	37.50%
Kansas City, MO	1.33%	1.86%	40.00%
Missouri Aggregate	***2.22%***	***3.07%***	***38.10%***
Oklahoma	***3.67%***	***5.10%***	***39.13%***

The following tables show the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM35 results. As described in the LMOS Test Plan 4 activities, above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. Further, because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.7: CLEC Aggregate 'C' Orders - Fieldwork

State	Participating CLEC Reporting Variance	Published Feb. 2001 PM Result	Scenario 1 Recalculated Result	Scenario 2 Recalculated Result
Texas	9.68%	3.16	3.18	3.47
Kansas	100.00%	0.42	0.85	0.85
Missouri	6.67%	6.15	6.56	6.56
Oklahoma	0.00%	5.17	5.17	5.17

Figure 8.8: CLEC Aggregate 'C' Orders – No Fieldwork

State	Participating CLEC Reporting Variance	Published Feb. 2001 PM Result	Scenario 1 Recalculated Result	Scenario 2 Recalculated Result
Texas	51.96%	1.12%	1.16%	1.68%
Kansas	40.00%	0.38%	0.54%	0.54%
Missouri	38.10%	1.59%	1.92%	2.18%
Oklahoma	39.13%	1.59%	1.90%	2.14%

PM35.1 – Percent UNE-P Trouble Reports on the Completion Date

The completion date trouble report rate measures the number of CLEC UNE-P conversion 'C' orders that encounter troubles on the completion date. The measure's denominator is the number of CLEC UNE-P conversion 'C' orders completed in the reporting month, and, thus, SWBT's misclassification of trouble reports had no effect on the denominator.

During its attempts to validate and reconstruct SWBT's published LMOS PM reports for the participating CLEC, HP observed inconsistencies between the reported results for PM35.1 and HP's validation results. Specifically, HP's validation counted trouble reports in the PM35.1 numerator that were not flagged in SWBT's detail files as part of the PM35.1 counts. HP also observed that several trouble reports included in SWBT's counts for PM35.1 were not received on the service completion date, and, thus, should not have been included in the PM35.1 results. HP requested clarification from SWBT as to the cause for these inconsistencies in the PM35.1 reported results.[192]

With respect to the trouble reports not counted by SWBT that were included in the validation counts for PM35.1, SWBT explained that the accounts on which the tickets were entered were not UNE-P conversion accounts. SWBT stated that UNE-P conversions are identified in its databases as "IUNEP='1'," and the tickets in question had IUNEP flags of '0'. Thus, the tickets were excluded from both the denominator count of installations and the numerator count of tickets entered on the service completion date.[193] HP was unable to exclude these tickets from its initial validation counts because the IUNEP flag was not present in the detail files it used to perform the validations.

In its response to HP's information request, SWBT also stated that the tickets it counted in the reported results for PM35.1 that were *not* received on the service

completion date were the result of a system error that was corrected in February 2002. SWBT indicated that it did not republish corrected results for PM35.1 because the error resulted in a higher trouble rate, which was to the favor of CLECs.[194] Based on SWBT's explanation of this error, HP made appropriate adjustments to its validation counts to remove the troubles SWBT had erroneously included in its initial reporting of the measure, in addition to including any previously misclassified tickets.

The following tables show the number of completion date troubles SWBT reported in its published February 2001 data, the recalculated number of troubles, and the reporting variances for PM35.1 fieldwork and non-fieldwork orders for each CLEC market reporting area in which the CLEC operated during February 2001. The reporting variance reflects both the removal of trouble reports SWBT erroneously included due to its system error and the inclusion of valid troubles identified in the misclassified trouble reports.

Figure 8.9: PM35.1 Participating CLEC 'C' Orders – Fieldwork

CLEC Market Reporting Area	Published Feb. 2001 Trouble Count	HP Recalculated Count	Reporting Variance
Central/West Texas	0	0	0.00%
Dallas/Ft. Worth	1	1	0.00%
Houston, TX	0	0	0.00%
South Texas	1	0	-100.00%
Texas Aggregate	***2***	***1***	***-50.00%***
Kansas	***0***	***0***	***0.00%***
St. Louis, MO	5	1	-80.00%
Kansas City, MO	1	0	-100.00%
Missouri Aggregate	***6***	***1***	***-83.33%***
Oklahoma	***1***	***1***	***0.00%***

[192] See Information Request LMOS-0709-045.
[193] See SWBT response to Information Request LMOS-0709-045.
[194] See SWBT response to Information Request LMOS-0709-045.

Figure 8.10: PM35.1 Participating CLEC 'C' Orders – No Fieldwork

CLEC Market Reporting Area	Published Feb. 2001 Trouble Count	HP Recalculated Count	Reporting Variance
Central/West Texas	7	0	-100.00%
Dallas/Ft. Worth	15	2	-86.67%
Houston, TX	9	4	-55.56%
South Texas	6	0	-100.00%
Texas Aggregate	***37***	***6***	***-83.78%***
Kansas	***5***	***1***	***-80.00%***
St. Louis, MO	3	0	-100.00%
Kansas City, MO	0	0	0.00%
Missouri Aggregate	***3***	***0***	***-100.00%***
Oklahoma	***7***	***1***	***-85.71%***

The following table shows the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM35.1 results. As described in the LMOS Test Plan 4 activities, above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification (Scenario 2). Further, because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures. Though SWBT provided HP with data for the participating CLEC's completion date troubles for fieldwork orders, under the Performance Measurements Business Rules, SWBT only reports results for non-fieldwork orders. Therefore, HP only applied the non-fieldwork results for the participating CLEC to the CLEC aggregate PM results.

Figure 8.11: PM35.1 CLEC Aggregate 'C' Orders – No Fieldwork

State	Participating CLEC Reporting Variance	Published Feb. 2001 PM Result	Scenario 1 Recalculated Result	Scenario 2 Recalculated Result
Texas	-83.78%	0.73%	0.68%	0.12%
Kansas	-80.00%	0.29%	0.06%	0.06%
Missouri	-100.00%	0.39%	0.16%	0.00%
Oklahoma	-85.71%	0.89%	0.59%	0.15%

PM37 – Trouble Report Rate

The trouble report rate measures the number of troubles in the reporting month as a percentage of the carrier's lines in service. Because the measure's denominator is the number of CLEC lines in service during the reporting month, SWBT's misclassification of trouble reports had no effect on the denominator count. For the participating CLEC's data, HP's correction of misclassified trouble reports increased

the raw number of trouble reports—and, thus, the number of troubles that met the PM37 business rules—in all instances, HP's recalculation of PM37 resulted in a higher trouble rate than that SWBT had originally published.

The following tables show the published February 2001 trouble rates, the recalculated rates, and the reporting variances for PM37 for each CLEC market reporting area in which the CLEC operated.

Figure 8.12: PM37 Participating CLEC Trouble Report Rate

CLEC Market Reporting Area	Published Feb. 2001 PM Result	HP Recalculated Result	Reporting Variance
Central/West Texas	1.46%	2.14%	46.44%
Dallas/Ft. Worth	1.69%	2.52%	49.28%
Houston, TX	1.85%	2.87%	55.34%
South Texas	1.56%	2.35%	50.22%
Texas Aggregate	***1.65%***	***2.49%***	***50.57%***
Kansas	***0.43%***	***0.87%***	***100.00%***
St. Louis, MO	1.21%	1.74%	43.61%
Kansas City, MO	1.00%	1.39%	38.40%
Missouri Aggregate	***1.14%***	***1.61%***	***41.94%***
Oklahoma	***1.78%***	***2.74%***	***53.38%***

The following table shows the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM37 results. As described in the LMOS Test Plan 4 activities above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. Further, because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.13: PM37 CLEC Aggregate Trouble Report Rate

State	Participating CLEC Reporting Variance	Published Feb. 2001 PM Result	Scenario 1 Recalculated Result	Scenario 2 Recalculated Result
Texas	50.57%	1.62%	1.71%	2.44%
Kansas	100.00%	0.24%	0.45%	0.48%
Missouri	41.94%	1.06%	1.40%	1.50%
Oklahoma	53.38%	1.53%	1.97%	2.32%

PM37.1 – Trouble Report Rate Net of Installation and Repeat Reports

The net trouble report rate measures the number of troubles in the reporting month, excluding installation troubles (counted in PM35) and repeat trouble reports (counted in PM41) as a percentage of the carrier's lines in service. Because the measure's denominator is the number of CLEC lines in service during the reporting

month, SWBT's misclassification of trouble reports had no effect on the denominator count. For the participating CLEC's data, HP's correction of misclassified trouble reports increased the raw number of trouble reports—and, thus, the number of troubles that met the PM37.1 business rules—in all instances, HP's recalculation of PM37.1 resulted in a higher trouble rate than that SWBT had originally published.

The following tables show the published February 2001 trouble rates, the recalculated rates, and the reporting variances for PM37.1 for each CLEC market reporting area in which the CLEC operated.

Figure 8.14: PM37.1 Participating CLEC Trouble Report Rate net Installation & Repeat Reports

CLEC Market Reporting Area	Published Feb. 2001 PM Result	HP Recalculated Result	Reporting Variance
Central/West Texas	1.20%	2.14%	46.44%
Dallas/Ft. Worth	1.43%	2.52%	49.28%
Houston, TX	1.58%	2.87%	55.34%
South Texas	1.27%	1.84%	44.81%
Texas Aggregate	***1.38%***	***2.03%***	***46.75%***
Kansas	***0.31%***	***0.65%***	***112.50%***
St. Louis, MO	0.96%	1.41%	47.62%
Kansas City, MO	0.75%	1.07%	44.09%
Missouri Aggregate	***0.88%***	***1.29%***	***46.53%***
Oklahoma	***1.23%***	***1.97%***	***59.80%***

The following table shows the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM37.1 results. As described in the LMOS Test Plan 4 activities, above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. Further, because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.15: PM37.1 CLEC Aggregate Trouble Report Rate net Installation & Repeat Reports

State	Participating CLEC Reporting Variance	Published Feb. 2001 PM Result	Scenario 1 Recalculated Result	Scenario 2 Recalculated Result
Texas	46.75%	1.33%	1.40%	1.95%
Kansas	112.50%	0.18%	0.35%	0.39%
Missouri	46.53%	0.82%	1.12%	1.21%
Oklahoma	59.80%	1.13%	1.47%	1.78%

PM38 – Percent Missed Repair Commitments

PM38 measures the percentage of trouble reports for which SWBT misses its repair commitment interval. The measure's denominator is the count of CLEC trouble reports entered during the reporting month, excluding tickets cleared with an excludable disposition code—code "13" reports. Because both the numerator and denominator in PM38 are trouble report counts, HP's reclassification of the participating CLEC's UNE-P trouble reports affected both separately. The reporting variance for the PM was dependent on the variances of both the numerator and denominator. If the numerator variance was higher than that of the denominator, then the recalculated PM38 would be higher than the originally published result. Likewise, if the denominator variance is greater than that of the numerator, the recalculated result would have a negative variance from the originally published measure.

SWBT reports PM38 results for two disaggregations—dispatched troubles and non-dispatched troubles. The following tables show the published February 2001 PM38 results for the participating CLEC, the denominator and numerator variances between the original and reclassified data, the recalculated PM38 results, and the overall PM38 reporting variances for each CLEC market reporting area in which the CLEC operated.

Figure 8.16: PM38 Participating CLEC Missed Repair Commitments – Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result	Reporting Variance
Central/ West TX	9.23%	41.88%	38.89%	9.04%	-2.11%
Dallas/Ft. Worth	14.22%	50.23%	41.30%	13.37%	-5.94%
Houston, TX	4.21%	51.28%	85.71%	5.17%	22.76%
South Texas	6.59%	47.99%	44.44%	6.44%	-2.39%
Texas Aggregate	***8.85%***	***48.02%***	***47.40%***	***8.81%***	***-4.21%***
Kansas	***13.79%***	***104.31%***	***68.75%***	***11.39%***	***-17.41%***
St. Louis, MO	8.55%	42.76%	69.23%	10.14%	18.54%
Kansas City, MO	6.41%	30.77%	60.00%	7.84%	22.35%
Missouri Aggregate	***7.83%***	***38.70%***	***66.67%***	***9.40%***	***20.17%***
Oklahoma	***3.11%***	***52.17%***	***280.00%***	***7.76%***	***149.71%***

Figure 8.17: PM38 Participating CLEC Missed Repair Commitments – No Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result	Reporting Variance
Central/ West TX	0.00%	57.41%	n/a	2.35%	n/a
Dallas/Ft. Worth	6.15%	66.15%	25.00%	4.63%	-24.77%
Houston, TX	0.00%	84.75%	n/a	0.92%	n/a
South Texas	7.41%	35.19%	0.00%	5.48%	-26.03%
Texas Aggregate	***3.45%***	***61.64%***	***50.00%***	***3.20%***	***-7.20%***
Kansas	***0.00%***	***111.11%***	***n/a***	***5.26%***	***n/a***
St. Louis, MO	10.00%	100.00%	0.00%	5.00%	-50.00%
Kansas City, MO	0.00%	110.00%	n/a	0.00%	0.00%
Missouri Aggregate	***5.00%***	***105.00%***	***0.00%***	***2.44%***	***-51.22%***
Oklahoma	***0.00%***	***40.91%***	***n/a***	***0.00%***	***0.00%***

The following tables show the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM38 results. As described in the LMOS Test Plan 4 activities above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. In both scenarios, HP applied the denominator and numerator variances to the published CLEC aggregate counts to provide a more accurate recalculated result. Because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.18: PM38 CLEC Aggregate Scenario 1 Missed Repair Commitments – Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	20,184	*21,218*	1,370	*1,460*	6.79%	*6.88%*	***1.38%***
Kansas	134	*255*	17	*28*	12.69%	*10.98%*	***-13.45%***
Missouri	597	*773*	44	*68*	7.37%	*8.80%*	***19.36%***
Oklahoma	292	*372*	10	*24*	3.43%	*6.45%*	***88.39%***

Figure 8.19: PM38 CLEC Aggregate Scenario 2 Missed Repair Commitments – Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	20,184	*29,802*	1,370	*2,012*	6.79%	*6.75%*	***-0.54%***
Kansas	134	*274*	17	*29*	12.69%	*10.58%*	***-16.57%***
Missouri	597	*825*	44	*73*	7.37%	*8.85%*	***20.06%***
Oklahoma	292	*437*	10	*38*	3.43%	*8.70%*	***153.91%***

Figure 8.20: PM38 CLEC Aggregate Scenario 1 Missed Repair Commitments – No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	1,972	*2,115*	87	*91*	4.41%	*4.30%*	***-2.47%***
Kansas	9	*19*	0	*1*	0.00%	*5.26%*	***n/a***
Missouri	26	*47*	1	*1*	3.85%	*2.13%*	***-44.68%***
Oklahoma	27	*38*	0	*0*	0.00%	*0.00%*	***0.00%***

Figure 8.21: PM38 CLEC Aggregate Scenario 2 Missed Repair Commitments – No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	1,972	*3,187*	87	*131*	4.41%	*4.11%*	***-6.83%***
Kansas	9	*19*	0	*1*	0.00%	*5.26%*	***n/a***
Missouri	26	*53*	1	*1*	3.85%	*1.89%*	***-50.94%***
Oklahoma	27	*38*	0	*0*	0.00%	*0.00%*	***0.00%***

PM39 – Mean Time to Restore

The Mean Time to Restore (MTTR) PMs measure the average length of time that SWBT takes to clear open trouble reports. The measure is calculated by totaling the receipt-to-clear time of CLEC trouble reports, excluding subsequent reports on open tickets and tickets cleared with an excludable disposition code—code "13" reports. The PM39 MTTR is the arithmetic mean of the total time to clear of the CLEC trouble reports.

Because the denominators for PM39 are trouble report counts, and the numerator is the total time to clear the trouble reports, HP's reclassification of the participating CLEC's UNE-P trouble reports affected both separately. The reporting variance for the PM was dependent on the variances of both the numerator and denominator. If the numerator variance was higher than that of the denominator, then the recalculated PM38 would be higher than the originally published result. Likewise, if the denominator variance is greater than that of the numerator, the recalculated result would have a negative variance from the originally published measure.

SWBT reports PM39 results through four disaggregations—Affected Service Dispatched and Non-Dispatched troubles, and Out of Service Dispatched and Non-Dispatched troubles. The following tables show the published February 2001 PM39 results for the participating CLEC, the denominator and numerator variances between the original and reclassified data, the recalculated PM39 results, and the overall PM39 reporting variances for each CLEC market reporting area in which the CLEC operated.

Figure 8.22: PM39 Participating CLEC MTTR – Affected Service Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result (Hrs.)	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result (Hrs.)	Reporting Variance
Central/ West TX	33.21	28.88%	28.58%	33.13	-0.23%
Dallas/Ft. Worth	42.40	33.52%	36.95%	43.49	2.57%
Houston, TX	21.23	39.30%	80.37%	27.49	29.48%
South Texas	22.35	33.66%	29.96%	21.73	-2.77%
Texas Aggregate	***30.48***	***33.98%***	***42.70%***	***32.46***	***6.51%***
Kansas	***45.18***	***73.08%***	***18.82%***	***31.01***	***-31.35%***
St. Louis, MO	13.80	38.54%	248.89%	34.75	151.83%
Kansas City, MO	21.08	18.64%	14.60%	20.36	-3.41%
Missouri Aggregate	***16.57***	***30.97%***	***135.42%***	***29.79***	***79.76%***
Oklahoma	***25.50***	***37.93%***	***35.71%***	***25.09***	***-1.61%***

Figure 8.23: PM39 Participating CLEC MTTR – Affected Service No Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result (Hrs.)	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result (Hrs.)	Reporting Variance
Central/ West TX	9.29	40.00%	54.94%	10.28	10.67%
Dallas/Ft. Worth	23.61	32.00%	62.15%	29.00	22.84%
Houston, TX	18.15	72.73%	7.91%	11.34	-37.52%
South Texas	8.75	21.43%	33.51%	9.62	9.95%
Texas Aggregate	***15.01***	***43.24%***	***37.44%***	***14.40***	***-4.05%***
Kansas	***6.16***	***175.00%***	***209.13%***	***6.93***	***12.41%***
St. Louis, MO	9.49	40.00%	35.34%	9.17	-3.33%
Kansas City, MO	5.95	11.11%	0.31%	5.37	-9.72%
Missouri Aggregate	***7.21***	***21.43%***	***16.77%***	***6.94***	***-3.84%***
Oklahoma	***11.17***	***10.00%***	***0.04%***	***10.16***	***-9.05%***

Figure 8.24: PM39 Participating CLEC MTTR – Out of Service Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result (Hrs.)	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result (Hrs.)	Reporting Variance
Central/ West TX	33.78	28.32%	34.80%	35.48	5.04%
Dallas/Ft. Worth	44.98	39.95%	28.95%	41.45	-7.86%
Houston, TX	21.48	40.64%	38.42%	21.14	-1.58%
South Texas	21.08	43.14%	39.08%	20.48	-2.83%
Texas Aggregate	***31.67***	***37.41%***	***33.47%***	***30.76***	***-2.87%***
Kansas	***19.22***	***103.39%***	***77.86%***	***16.81***	***-12.55%***
St. Louis, MO	15.21	31.32%	28.21%	14.85	-2.37%
Kansas City, MO	34.12	28.57%	17.05%	31.06	-8.96%
Missouri Aggregate	***21.18***	***30.45%***	***22.53%***	***19.90***	***-6.07%***
Oklahoma	***18.36***	***50.00%***	***42.12%***	***17.40***	***-5.25%***

Figure 8.25: PM39 Participating CLEC MTTR – Out of Service No Dispatch

CLEC Market Reporting Area	Feb. 2001 Published PM Result (Hrs.)	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result (Hrs.)	Reporting Variance
Central/ West TX	18.16	27.27%	38.21%	19.72	8.59%
Dallas/Ft. Worth	43.15	59.26%	48.75%	40.30	-6.60%
Houston, TX	11.78	47.83%	69.72%	13.53	14.81%
South Texas	28.39	35.00%	10.07%	23.15	-18.46%
Texas Aggregate	***26.12***	***43.48%***	***40.23%***	***25.53***	***-2.27%***
Kansas	***24.34***	***66.67%***	***105.00%***	***29.94***	***23.00%***
St. Louis, MO	5.38	40.00%	97.71%	7.59	41.22%
Kansas City, MO	20.55	300.00%	245.09%	17.73	-13.73%
Missouri Aggregate	***7.91***	***83.33%***	***161.56%***	***11.28***	***42.67%***
Oklahoma	***11.37***	***22.22%***	***0.49%***	***9.35***	***-17.78%***

The following tables show the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM39 results. As described in the LMOS Test Plan 4 activities above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. In both scenarios, HP applied the denominator and numerator variances to the published CLEC aggregate counts to provide a more accurate recalculated result. Because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.26: PM39 CLEC Aggregate Scenario 1 MTTR – Affected Service Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	4,857	*5,081*	8,925,195	*9,443,561*	30.63	*30.98*	***1.14%***
Kansas	56	*94*	144,144	*170,677*	42.90	*30.26*	***-29.46%***
Missouri	210	*257*	201,600	*408,852*	16.00	*26.51*	***65.72%***
Oklahoma	93	*115*	130,293	*161,979*	23.35	*23.48*	***0.54%***

Figure 8.27: PM39 CLEC Aggregate Scenario 2 MTTR – Affected Service Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	4,857	*6,478*	8,925,195	*12,695,444*	30.63	*32.66*	***6.65%***
Kansas	56	*97*	144,144	*171,269*	42.90	*29.43*	***-31.40%***
Missouri	210	*274*	201,600	*472,725*	16.00	*28.75*	***79.72%***
Oklahoma	93	*128*	130,293	*176,820*	23.35	*23.02*	***1.40%***

Figure 8.28: PM39 CLEC Aggregate Scenario 1 MTTR – Affected Service No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	713	*761*	636,994	*674,427*	14.89	*14.77*	***-0.80%***
Kansas	4	*11*	1,479	*4,572*	6.16	*6.93*	***12.41%***
Missouri	16	*19*	6,316	*7,332*	6.58	*6.43*	***-2.24%***
Oklahoma	11	*12*	6,706	*6,709*	10.16	*9.32*	***-8.29%***

Figure 8.29: PM39 CLEC Aggregate Scenario 2 MTTR – Affected Service No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	713	*1,021*	636,994	*875,476*	14.89	*14.29*	***-4.02%***
Kansas	4	*11*	1,479	*4,572*	6.16	*6.93*	***12.41%***
Missouri	16	*19*	6,316	*7,375*	6.58	*6.47*	***-1.67%***
Oklahoma	11	*12*	6,706	*6,709*	10.16	*9.32*	***-8.29%***

Figure 8.30: PM39 CLEC Aggregate Scenario 1 MTTR – Out of Service Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	14,393	*14,870*	25,501,517	*26,313,067*	29.53	*29.49*	***-0.13%***
Kansas	72	*133*	82,166	*135,148*	19.02	*16.94*	***-10.96%***
Missouri	344	*424*	390,096	*466,136*	18.90	*18.32*	***-3.05%***
Oklahoma	166	*204*	181,770	*218,041*	18.25	*17.81*	***-2.39%***

Figure 8.31: PM39 CLEC Aggregate Scenario 2 MTTR – Out of Service Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	14,393	*19,744*	25,501,517	*33,989,764*	29.53	*28.69*	***-2.84%***
Kansas	72	*146*	82,166	*146,138*	19.02	*16.68*	***-12.29%***
Missouri	344	*447*	390,096	*477,835*	18.90	*17.82*	***-5.73%***
Oklahoma	166	*243*	181,770	*254,741*	18.25	*17.47*	***-4.26%***

Figure 8.32: PM39 CLEC Aggregate Scenario 1 MTTR – Out of Service No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	1,104	*1,144*	1,354,608	*1,412,608*	20.45	*20.58*	***0.64%***
Kansas	3	*5*	4,382	*8,983*	24.34	*29.94*	***23.00%***
Missouri	9	*14*	5,076	*9,674*	9.40	*11.52*	***22.52%***
Oklahoma	13	*15*	7,558	*7,588*	9.69	*8.43*	***-12.99%***

Figure 8.33: PM39 CLEC Aggregate Scenario 2 MTTR – Out of Service No Dispatch

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator (Minutes)	HP Recalculated Numerator (Minutes)	Feb. 2001 Published Measure (Hrs.)	HP Recalculated Measure (Hrs.)	Reporting Variance
Texas	1,104	*1,584*	1,354,608	*1,899,514*	20.45	*19.99*	***-2.27%***
Kansas	3	*5*	4,382	*8,983*	24.34	*29.94*	***23.00%***
Missouri	9	*17*	5,076	*13,277*	9.40	*13.02*	***38.48%***
Oklahoma	13	*16*	7,558	*7,595*	9.69	*7.91*	***-18.35%***

PM40 – Percent Out of Service <24 Hours

PM40 measures the percentage of out of service trouble reports that are cleared within one business day. The measure's denominator is the count of CLEC trouble reports entered during the reporting month for which the line is out of service. The denominator excludes subsequent reports, tickets cleared with an excludable disposition code—code "13" reports, and tickets that are marked as "no access" to customer premises during the repair attempt. PM40's numerator is the count of tickets in the denominator that are cleared within one business day. SWBT's business rules define one business day as 24 hours from ticket entry if the ticket is entered on a weekday, and 48 hours from ticket entry if the ticket is entered on a Saturday. If the ticket is entered on a Sunday, the business rules count the ticket as cleared within one business day if it is cleared before midnight on Monday.

Because both the numerator and denominator in PM40 are trouble report counts, HP's reclassification of the participating CLEC's UNE-P trouble reports affected both separately. The reporting variance for the PM was dependent on the variances of both the numerator and denominator. If the numerator variance was higher than that of the denominator, then the recalculated PM40 would be higher than the originally published result. Likewise, if the denominator variance was greater than that of the numerator, the recalculated result would have a negative variance from the originally published measure.

The following table shows the published February 2001 PM40 results for the participating CLEC, the denominator and numerator variances between the original and reclassified data, the recalculated PM40 results, and the overall reporting variances for each CLEC market reporting area in which the CLEC operated.

Figure 8.34: PM40 Participating CLEC Percent OOS < 24 Hours

CLEC Market Reporting Area	Feb. 2001 Published PM Result	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result	Reporting Variance
Central/ West TX	56.77%	27.67%	21.83%	54.18%	-4.57%
Dallas/Ft. Worth	51.19%	41.38%	52.85%	55.35%	8.11%
Houston, TX	87.28%	41.40%	38.29%	85.36%	-2.20%
South Texas	82.25%	39.64%	35.25%	79.66%	-3.15%
Texas Aggregate	***67.93%***	***37.48%***	***37.32%***	***67.85%***	***-0.12%***
Kansas	***85.25%***	***100.00%***	***100.00%***	***85.25%***	***0.00%***
St. Louis, MO	89.02%	30.64%	30.52%	88.94%	-0.09%
Kansas City, MO	87.01%	58.44%	28.36%	84.31%	-3.10%
Missouri Aggregate	***88.40%***	***31.20%***	***29.86%***	***87.50%***	***-1.02%***
Oklahoma	***82.35%***	***48.24%***	***48.57%***	***82.54%***	***0.23%***

The following tables show the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM40 results. As described in the LMOS Test Plan 4 activities above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. In both scenarios, HP applied the denominator and numerator variances to the published CLEC aggregate counts to provide a more accurate recalculated result. Because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.35: PM40 CLEC Aggregate Scenario 1 Percent OOS < 24 Hours

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	14,627	*15,109*	10,317	*10,642*	70.53%	*70.44%*	***-0.14%***
Kansas	73	*134*	63	*115*	86.30%	*85.82%*	***-0.56%***
Missouri	328	*405*	292	*357*	89.02%	*88.15%*	***-0.98%***
Oklahoma	166	*204*	142	*173*	85.54%	*84.80%*	***-0.86%***

Figure 8.36: PM40 CLEC Aggregate Scenario 2 Percent OOS < 24 Hours

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	14,627	*20,075*	10,317	*14,132*	70.53%	*70.40%*	***-0.20%***
Kansas	73	*146*	63	*126*	86.30%	*86.30%*	***0.00%***
Missouri	328	*429*	292	*378*	89.02%	*88.11%*	***-1.03%***
Oklahoma	166	*240*	142	*205*	85.54%	*85.42%*	***-0.15%***

PM41 – Percent Repeat Reports

PM41 measures the percentage of trouble reports that are entered within ten calendar days of a previous trouble report. The measure's denominator is the count of CLEC trouble reports entered during the reporting month, excluding subsequent reports, troubles caused by customer premise equipment (CPE) or inside wiring, and tickets cleared with an excludable disposition code—code "13" reports. Because both the numerator and denominator in PM41 are trouble report counts, HP's reclassification of the participating CLEC's UNE-P trouble reports affected both separately. The reporting variance for the PM was dependent on the variances of both the numerator and denominator. If the numerator variance was higher than that of the denominator, then the recalculated PM41 would be higher than the originally published result. Likewise, if the denominator variance is greater than that of the numerator, the recalculated result would have a negative variance from the originally published measure.

The following table shows the published February 2001 PM41 results, the denominator and numerator variances between the original and reclassified data, the recalculated PM41 results, and the overall PM41 reporting variances for each CLEC market reporting area in which the CLEC operated.

Figure 8.37: PM41 Participating CLEC Percent Repeat Reports

CLEC Market Reporting Area	Feb. 2001 Published PM Result	Denomi-nator Variance	Numerator Variance	HP Recal-culated Result	Reporting Variance
Central/ West TX	12.24%	31.97%	22.22%	11.34%	-7.39%
Dallas/Ft. Worth	9.13%	37.34%	31.82%	8.76%	-4.02%
Houston, TX	9.28%	44.13%	44.90%	9.33%	0.53%
South Texas	9.31%	39.22%	52.63%	10.21%	9.64%
Texas Aggregate	***10.03%***	***38.31%***	***34.94%***	***9.79%***	***-2.44%***
Kansas	***15.63%***	***90.63%***	***66.67%***	***13.66%***	***-12.57%***
St. Louis, MO	10.37%	33.20%	32.00%	10.28%	-0.90%
Kansas City, MO	15.65%	32.17%	11.11%	13.16%	-15.94%
Missouri Aggregate	***12.08%***	***32.87%***	***23.26%***	***11.21%***	***-7.23%***
Oklahoma	***8.53%***	***44.96%***	***81.82%***	***10.70%***	***25.43%***

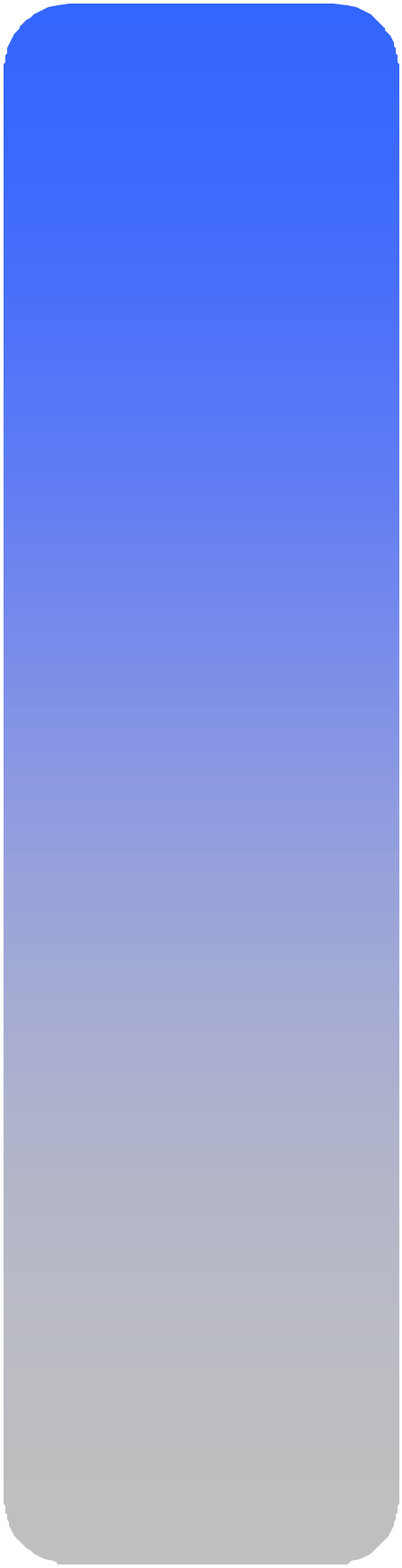
The following tables show the potential effects of SWBT's misclassification of trouble reports on the CLEC aggregate PM41 results. As described in the LMOS Test Plan 4 activities above, HP applied the reporting variance of the participating CLEC's results to the CLEC aggregate under two scenarios—Scenario 1, in which the participating CLEC was the only carrier affected by the errors, and Scenario 2, in which all CLECs were equally affected by the misclassification. In both scenarios, HP applied the denominator and numerator variances to the published CLEC aggregate counts to provide a more accurate recalculated result. Because a certain portion of the participating CLEC's UNE-P trouble reports were originally counted as other CLECs' UNE-P troubles, these tickets would have already been counted in SWBT's published CLEC aggregate PM reports. Therefore, for the purposes of applying the reporting error to the CLEC aggregate, HP removed these tickets to eliminate any double counting of troubles in the recalculated measures.

Figure 8.38: PM41 CLEC Aggregate Scenario 1 Percent Repeat Reports

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	16,114	*16,741*	1,317	*1,375*	8.17%	*8.21%*	***0.49%***
Kansas	108	*195*	15	*25*	13.89%	*12.82%*	***-7.69%***
Missouri	473	*589*	60	*70*	12.68%	*11.89%*	***-6.31%***
Oklahoma	235	*291*	23	*32*	9.79%	*11.00%*	***39.13%***

Figure 8.39: PM41 CLEC Aggregate Scenario 2 Percent Repeat Reports

State	Feb. 2001 Published Denominator	HP Recalculated Denominator	Feb. 2001 Published Numerator	HP Recalculated Numerator	Feb. 2001 Published Measure	HP Recalculated Measure	Reporting Variance
Texas	16,114	*22,219*	1,317	*1,777*	8.17%	*8.00%*	***-2.15%***
Kansas	108	*206*	15	*25*	13.89%	*12.14%*	***-12.62%***
Missouri	473	*627*	60	*74*	12.68%	*11.80%*	***-6.96%***
Oklahoma	235	*337*	23	*42*	9.79%	*12.46%*	***27.34%***



Appendix A: Acronyms

Acronym	Description
AECN	Access Exchange Carrier Number
AskMe	A database utilized in the calculation of LMOS performance measurements similar to the DSS database utilized in PM13 Order flow-through
CABS	Carrier Access Billing System
CLEC	Competitive Local Exchange Carrier
CRIS	Customer Record Information System
CSR	Customer Service Record. Details of a customer's service and equipment
DSS	Decision Support System Reporting system receiving data feeds from EASE, LEX, and EDI interfaces as well as LASR and SORD
EASE	Easy Access Sales Environment
EDI	Electronic Data Interchange, Electronic Data Interchange A national standard used for exchanging information.
FOC	Firm Order Confirmation
Focus	A part of the DSS performance measurement database
HP	Hewlett-Packard Company
ILEC	Incumbent Local Exchange Carrier
LASR	Local Access Service Request The order edit engine for wholesale ordering.
LCR	Local Change Request LCRs are issued to identify changes that need to be made to either SWBT's OSS and/or documentation. LCRs would include inconsistencies and problems identified by the CLEC and/or SWBT, in addition to recommended changes.
LDRC	LMOS Data Resolution Center
LEX	LSR Exchange System An online WEB-based system that provides electronic access to order information as well as enable CLECs to submit LSRs.
LMOS	Loop Maintenance Operations System
LOC	LMOS Operations Center
LSC	Local Service Center
LSR	Local Service Request Form sent to Incumbent Local Exchange Carrier requesting local telephone services.
MCN	Master Customer Number
MOG	Mechanized Order Generator: The wholesale service order front end to the SORD service order system.
MTN	Master Telephone Number: A TN specific to an individual CLEC, used in the CABS billing process.
NC	Network Channel
NID	Network Interface Device
OSS	Operations Support Systems Systems used to perform pre-ordering, ordering, provisioning, maintenance and repair, and billing.
PM	Performance Measure
PUCT	Public Utility Commission of Texas
RFP	Request for Proposal

Acronym	Description
SORD	Service Order Retrieval and Distribution Online application that accepts, edits, stores, and distributes orders for Resale and UNE basic and complex services.
SOT	Service Ordering Tracking (a subset of the DSS performance measurement database)
SPORT	SORD Posted Order Retrieval and Tracking
STAR	Application used for Software Change Management
SWBT	Southwestern Bell Telephone Company
TN	Telephone Number
UNE	Unbundled Network Element
UNE-P	Unbundled Network Element – Platform
VANTIVE	Application used to move WFA software into production. WFA now uses STAR.
WFA	Work Force Administration Application used to manage installation and trouble requirements.
WFA-DI	WFA Dispatch In Work force administration for central office employees.
WFA-DO	WFA Dispatch Out: Work force administration for field technicians.

Appendix B: HP PM13 Independent Verification Data Explanations

The following tables provide details related to the data HP found to be excluded from the PM13 DSS tables during its Independent Verification test.

Figure B.1 details the 34 PONs HP identified in the EDI data for which it was unable to locate EDI responses. HP did not locate these orders in the DSS data it received from SWBT.

Figure B.1: PONs Identified in EDI Data without EDI Responses Not Found in DSS Metric Calculation Data

Number of PONs	SWBT Explanation
16	The PONs were not counted in the PM13 calculations because they were listed as "Reject." No information was provided to determine why these order were rejected.
13	The PONs were not counted in the PM13 calculation because they were listed as "Error." No information was provided as to the reason why these orders were flagged as errors.
1	This PON was listed as "Exceptioned due to conversion to number portability from UNE-P. Not designed for flow through and not an EASE-like comparison. Not counted in denominator."
2	Per SWBT, "This version rec'd 9/30 - it MOG'd and FOC'd on 09/30."
2	Per SWBT, "Note: Attempted to locate utilizing each of MCI and ATT AECNs for all states. Unable to locate. Must have appropriate AECN for further analysis."

Figure B.2 provides SWBT's explanations for the 100 orders HP sampled from the 16,708 PONs for which HP did not find FOC responses in the EDI data. These PONs were not included in the DSS data HP received.

Figure B.2: Disposition of Sampled PONs from 16,708 with missing FOC Responses in the EDI Data and Not Found in the DSS Metric Calculation Data

Number of PONs	SWBT Explanation
4	The FOCs were listed as "Order created by LSC and distributed." According to SWBT, these orders would not have flowed through.
47	Per SWBT, "Order MOG'd mechanically created and distributed. In the programming MOG checks for pending order activity. If flow through is successful and a pending order found, an informational edit (SD2082) is sent to the LSC. *These requests should be counted in did in fact flow through and should be counted in both the denominator and numerator but due to business requirements that were not clarified, the code implemented excluded the orders from both the denominator and numerator. These are wholesale orders received via LEX/EDI that had they been included would have reflected higher flow through rates than what has been stated* (emphasis added)."
13	The FOCs were listed as "ACT 'R' - NO service orders because the LSR didn't provide any data" According to SWBT subject matter experts,[195] the LASR system waits for the service order to complete before writing the DSS information. ACT 'R' types are processed immediately and, through omission in code, these orders are not being counted when they should be. Depending on the type of order, this can affect PM13 calculations. SWBT did not provide enough information HP to determine the status of these PONs.
1	The FOC was listed as "ACT 'R' - NO service orders because the LSR had incorrect data" According to SWBT subject matter experts,[196] the LASR system waits for the service order to complete before writing the DSS information. ACT 'R' types are processed immediately and, through omission in code, these orders are not being counted when they should be. Depending on the type of order, this can affect PM13 calculations. SWBT did not provide enough information for HP to determine the status of this PON.

[195] 11/19/02 phone call from Gerrie Orr, SWBT at 6:32 p.m. to follow up in e-mail sent that day.
[196] 11/19/02 phone call from Gerrie Orr, SWBT at 6:32 p.m. to follow up in e-mail sent that day.

Number of PONs	SWBT Explanation
3	Per SWBT, these PONs were "Received SD2188 that order distributed but SUS/RES and pending order found - code excludes these from denominator and numerator. *It should in fact be counted in both for PM13* (emphasis added)." The AECN 7297 and the EDIT_ID SD2188 are clearly listed as being excluded in SWBT documentation.[197] This explanation contradicts the documentation that SWBT provided to HP. SWBT states these orders should have been included.
10	These orders were listed as "Received SD2188 that order distributed but SUS/RES and pending order found" The AECN 7297 and the EDIT_ID SD2188 are clearly listed as being excluded in SWBT documentation.[198] This explanation contradicts the documentation that SWBT provided to HP. SWBT states these orders should have been included.
10	These FOCs were listed as "MOG'd and is contained in PM 13 EOM file" On October 31, 2002, in response to Information Request PM13-1025-079-IV, SWBT informed HP via e-mail: "The final IV EDI inbound and outbound file copies will be created on Monday, November 4. This will include EDI inbound and outbound files for October 31-Nov 3. The November 4 copy of the DSS MTD October LC013d_edi.csv and LC013_1d.csv files will also be included in that shipment. It should be noted the MTD DSS files you have been receiving are not published final data for PM13 but are internal use daily files. Finalized data on EOM DSS detail files for the month of October will not be available until November 20th." This was the first time SWBT informed HP of this fact. On November 5, 2002, HP received the month to date files from SWBT. The directory entries show that SWBT cut these files on November 4, 2002. HP used these files to load the DSS information into its systems to determine the PM13 and PM13.1 calculations presented in this report. This is a clear example of data that is not captured in the daily DSS files. SWBT did not provide these PONs to HP in a timely manner. The EOM files arrived at HP on November 21, 2002, and this did not provide HP time to analyze the results to determine the actual status of these orders.
5	These FOCs were listed as "LNA 'P' which is not designed to flow through and does not have an EASE comparison – not included in demoniator."
2	These FOCs were listed as "Request to convert account in suspend status - request must be handled manually to restore service and then process conversion request - Not designed to flow through and not EASE comparable - Regulatory mandated process."
2	These FOCs were listed as "Request to convert account and embedded account has invalid address info - request dropped for manual correction of address and then process conversion - not designed to flow through and not EASE comparable."
1	These FOCs were listed as "Request to Suspend account - Pending order found with a different AECN - must be dropped to manual for investigation if there is a pending CLEC-to-CLEC migration - not designed to flow through – not EASE comparable – Process Implemented in response to Reg."
1	This FOC was listed as "Rec'd and service order dist'd on 11/01 - should not be in October data."
1	This FOC was listed as a "Reject."

[197] SBC 271 Parity Performance Measure. System Requirements Measure 13, Ver. 1.7 8/22/02 Page 25

[198] SBC 271 Parity Performance Measure. System Requirements Measure 13, Ver. 1.7 8/22/02 Page 25

Figure B.3 presents SWBT's explanations for the 24 orders HP sampled from the 238 PONs for which HP found SOCs but no FOCs in the EDI data. HP did not identify these orders in the DSS data.

Figure B.3: Disposition of Sampled PONs from 238 with FOC Responses Missing from but SOC Included in the EDI Data but Not Found in the DSS Metric Calculation Data

Number of PONs	SWBT Explanation
19	These orders were listed as "Rec'd and service order dist'd on 9/30 - should not be in October data."
2	These orders were listed as "LSR rec'd, service order issued and confirmed 9/28 - Not OCT data."
2	These orders were listed as "Exceptioned due to conversion to number portability from UNE-P. Not designed for flow-through and not an EASE-like comparison. Not counted in denominator."
1	This order was listed as "LSR rec'd, service order issued and confirmed 9/26 - Not OCT data." HP could not confirm this order as the test plan only provided for HP to receive data for the period from September 28, 2002 through November 11, 2002.

Appendix C: Documents Requested and Supporting Information Used in HP's Review of SWBT Retail Order Types for Ease Flow-Through

HP requested the following materials to conduct its review of SWBT Retail Order Types.

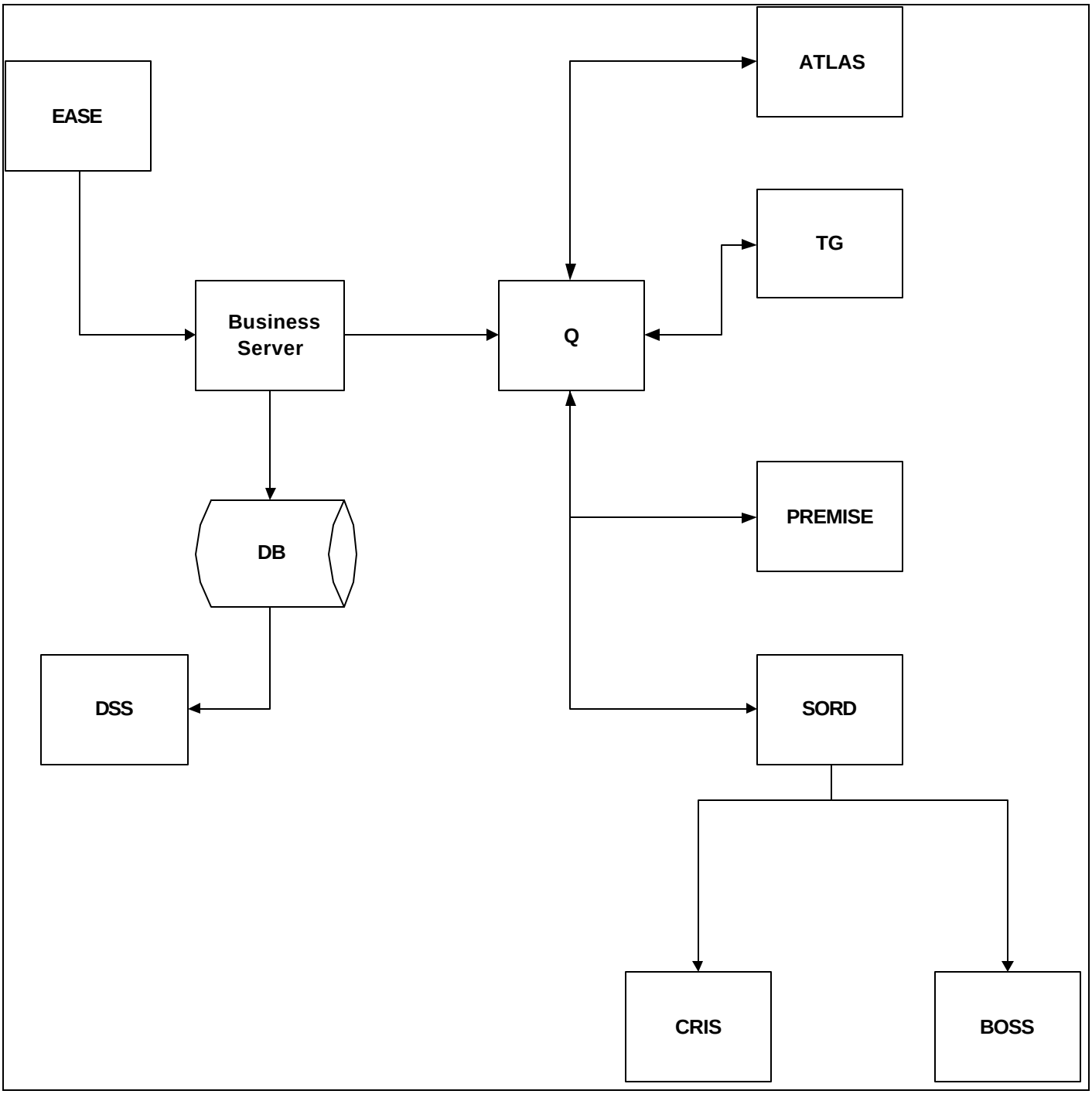
- A detailed list of order types and definitions, including all orders entered through EASE, LEX, and EDI. [199]
- System architecture diagrams indicating the flow of data through SWBT's OSS systems.[200]
- A detailed flow diagram indicating the process flow for all SWBT retail order types.[201]
- Documentation of all changes to the flow-through capabilities of SWBT's ordering systems.[202]
- The "Resale Services and Unbundled Loop with Port Ease and MOG Flow Through and Exceptions," dated April 17, 2002, and "LSOR3.06 and SBC Southwestern Bell Flow Through and Exceptions LSOR 5," dated May 9, 2002.[203]
- A detailed list of SWBT retail orders that do not flow–through EASE.[204]
- The change release schedule for EASE for January 2000 through to May 2002. [205]
- A list of orders that flowed-through EASE but subsequently failed SORD edits.[206]
- The Enhanced Business EASE Master requirements List, version 4.11, section 3, Overview. [207]
- Documentation related to SWBT's determination of the criteria for EASE flow-through. [208]
- The 271 Parity Performance Measurements System Requirements Document, version 1.3.
- An updated Mid-Level document that reflected the inclusion of all order types that would flow through EASE consistent with the business rules and Order 33. [209]
- Documentation explaining the methods by which SWBT implemented Order 33.

HP also observed SWBT Customer Service Representatives inputting order through Consumer EASE on May 22, 2002.

HP viewed a demonstration by SWBT personnel of the operation of both Consumer EASE and Business EASE on May 21, 2002. SWBT also provided a diagram to assist HP's understanding of the flow of the negotiation process through EASE. The diagram appears in Figure C.1, below:

[199] See Information Request PM13-0324-001.
[200] See Information Request PM13-0326-003.
[201] See Information Request PM13-0326-006.
[202] See Information Request PM13-0412-010.
[203] See Information Request PM13-0517-011.
[204] See Information Request PM13-0517-013.
[205] See Information Request PM13-0517-016.
[206] See Information Request PM13-0517-018.
[207] See Information Request PM13-0517-021.
[208] See Information Request PM13-0517-024.
[209] An excerpt from the Southwestern Bell Business Rules document appears in Appendix B.1.

Figure C.1: Negotiation Process for CLECs or SWBT Retail Customers



Appendix C.1: Excerpt from the Southwestern Bell Telephone Company Business Rule Document

Southwestern Bell Telephone Company

Excerpt from Business Rule Implementation Document

PM13

June 2002

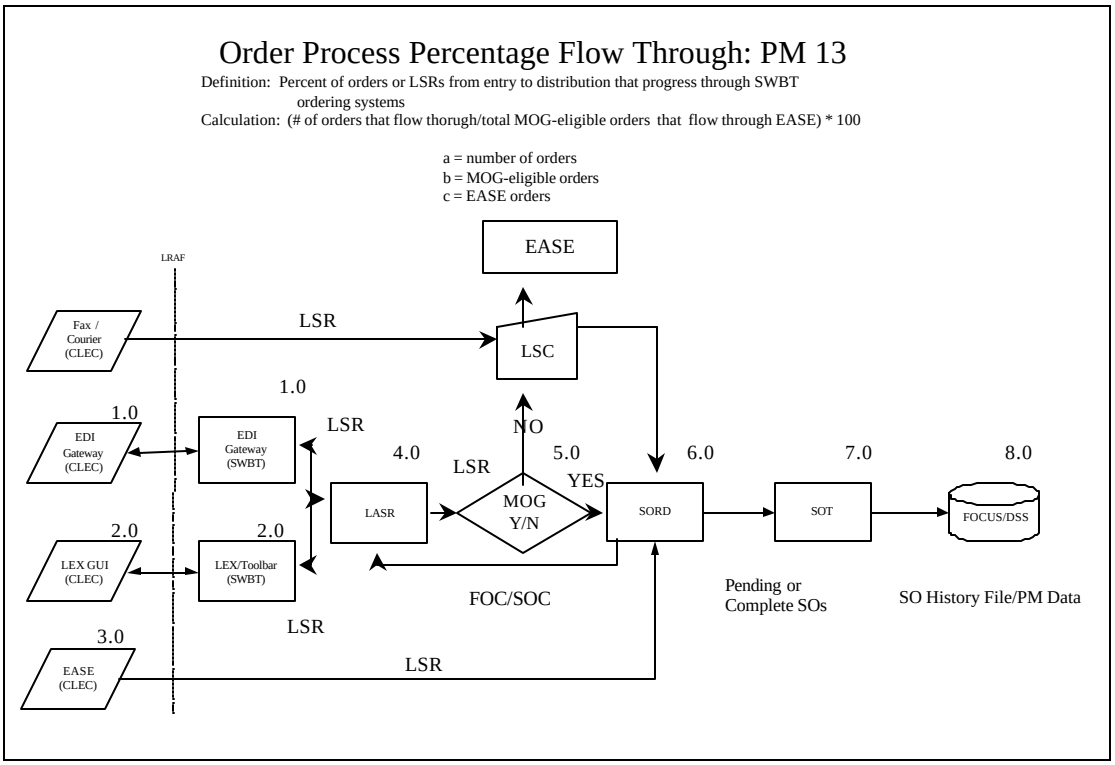
13. Measurement: [210]

Order Process Percent Flow Through

Definition:

Percent of orders from entry to distribution that progress through SWBT ordering systems.

Data Collection Flow:



LEX and EDI:

MOG eligible orders that have a Marketing Office Indicator* of LX (order initiated by CLEC via LEX) or ED (order initiated by CLEC via EDI) associated with the original pass, on Service Order Tracking (SOT), are selected for inclusion in this measurement.

* The Marketing Office Indicator is used to indicate who initiated the order, who input it, how it was originated, which system was used to originate it, and how it was received.

The base for the calculation is the total number of MOG Eligible orders (those identified within LASR as being MOG Eligible) and CLEC resale orders that, although not MOG eligible would be expected to flow through had SWBT's EASE application. The base has been used or those UNE-P orders that if were resale and entered via EASE would flow through.

[210] PM13 revised on 6/11/02.

Those that flow through (get from LASR to SORD distribution without error) are identified as having the same originating and distributing typing location and initials, AND, the originating typing location and initials identified as MOG originated (BBZP, BCZP, DS26, DS27 or DS28).

Those resale orders that are not MOG eligible but match EASE scenarios are included in the PM13 denominator. These orders are denoted with 'Record' (R) and 'Outside Move' (T) Activity Types. Additionally, orders based on business requirements for EASE scenarios and LASR data are included. Indicators are set for each order if it matches the activity or the EASE scenario to include in the denominator.

EASE:

Orders that have a Marketing Office Indicator of EA (order originated by CLEC via EASE) associated with the original pass, on SOT are selected for inclusion in the RESALE version of this measurement.

Orders with a System Origination of 5 (EASE) are selected for inclusion in the RETAIL version of this measurement.

The order must distribute in SORD to be included in this measurement. The order is said to have flow through to SORD if the typist location/initials are the same as the distributing location/initials.

Appendix D: SWBT System Architecture and Ordering Processes

CLECs may order local service via EDI or web interfaces. EDI is processed by LASR. All flow-through eligible orders are processed by the MOG front-end. The MOG system generates internal service orders, which continue processing at SORD and "Business as Usual Systems" such as WFA/DO, CABS and LMOS.

Maintenance and Electronic Trouble Report Process and Architecture

Generally, service orders flow from SORD to WFA/DO for auto-completion. After returning to SORD, a disconnect ('D') service order may flow directly to LMOS. A change ('C') service order flows through the billing systems (CABS and CRIS) before updating LMOS.

LMOS must be updated completely before a CLEC can enter electronic trouble reports on an account without error.

If a CLEC enters an electronic trouble report on an account for which the LMOS record is in a disconnected or ported out status, it will receive the error message "this TN has been Disconnected or Ported Out." This condition occurs when a CLEC is attempting to enter a trouble report an account that has been disconnected, such as if the 'D' order has updated LMOS, but the 'C' order has not. In this case, SWBT processes do not allow the CLEC to continue with the entry of an electronic trouble report. The CLEC may submit a manual trouble report.

If a CLEC enters an electronic trouble report on an account for which the MCN information in the LMOS record does not match the CLEC's MCN, it will receive the error message "Our records indicate this account is not part of your company profile. Do you wish to continue with this transaction?" This condition occurs when a CLEC is attempting to enter a trouble report an account that has not been updated, and neither the 'D' order nor the 'C' order has updated LMOS. In this case, SWBT processes allow the CLEC to continue with the entry of the electronic trouble report on the account, acknowledging it is not part of its User Profile (and therefore will not be reported in its PMs).

LMOS Update Process and Architecture

Both the 'C' and the 'D' orders must successfully post to LMOS before LMOS is completely updated. Until the LMOS record is completely updated, electronic trouble reports will be rejected. Additionally, 'C' and 'D' orders must post to LMOS in the proper sequence, with the 'D' order posting before the 'C' order. If the 'C' order arrives for posting prior to the 'D' order, it will be rejected and the line will remain in a disconnected state when the 'D' order posts until it is repaired manually or via the CABS/LMOS Comparison process. This is known as the "sequence problem."

Because a CLEC cannot enter electronic trouble reports until both the 'D' and 'C' orders have posted to LMOS, there is also a delay, or "lag," problem. The lag is defined as the number of days between the service order completion and the posting of the 'C' order to LMOS.

At any point in the order flow process, errors (fallout) may occur that prevent the 'D' and/or 'C' orders from properly posting to LMOS. 'D' or 'C' orders may error in SORD, WFA/DO, or at LMOS. Additionally, 'C' orders may error in CABS or CRIS.

'C' orders may also encounter delays related to the CABS billing cycle. This problem is known as the "billing lag." If a 'C' is affected by the "billing lag," it may be delayed for two to four days.

Normal and abnormal batch processing delays, fallout, and manual or automated error correction all contribute to the possibility of delay. Delay can be amplified if the 'C' order arrives at LMOS before the 'D' order since the sequence problem will force the LMOS line record to remain in an incorrect status until corrected manually or via the CABS/LMOS Comparison.

Order Types

There are numerous order scenarios that have similar but unique processes and may be subject to sequence or lag problems:

SWBT Retail to CLEC UNE-P migration

In this scenario, the MOG generates 'C', 'D', and 'N' orders. The 'C' and D' orders pass from SORD to WFA/DO. WFA/DO performs auto-completion or dispatch, and then passes the orders back to SORD. SORD passes the 'D' order directly to LMOS via the BU340 file, and passes the 'C' order to CABS. CABS then passes the 'C' order to CRIS and to LMOS via the BJ501 file.

Both the 'C' and the 'D' orders must successfully post to LMOS before LMOS is completely updated. The 'N' order does not update LMOS. This scenario is subject to sequence and lag problems.

CLEC Resale to CLEC UNE-P migration

In this scenario, the MOG generates ‘D’, and ‘C-IN’ orders. The resale ‘D’ order posts to LMOS from the BU340 upon completion, as it does in the SWBT Retail to CLEC UNE-P migration. After posting in CABS, the CABS ‘C-IN’ order posts to LMOS via the BJ501 file, similar to the SWBT Retail to CLEC UNE-P migration.

Since this scenario is identical to SWBT Retail to CLEC UNE-P migration, it is subject to the same lag and sequence problems.

UNE-P CLEC to UNE-P CLEC migration

In this scenario, the MOG generates ‘C-OUT’, and ‘C-IN’ orders. The ‘C-OUT’ order is the CABS ‘C’ order that disconnects the CLEC 'A' line and the ‘C-IN’ order is the CABS ‘C’ order that establishes the line for CLEC 'B'.

After completion in CABS, the ‘C-OUT’ and ‘C-IN’ orders both post to LMOS on the BJ501 file.

Since this scenario is similar to SWBT Retail to CLEC UNE-P migration, it is subject to the same lag and sequence problems. The ‘C-OUT’ order is similar to a ‘D’ order, and must post to LMOS before the ‘C-IN’ order.

SWBT Win-Back

In this scenario, the MOG generates ‘C-OUT’ and ‘N-IN’ orders. After it completes in CABS, the ‘C-OUT’ order posts to LMOS on the BJ501 file. The CRIS ‘N-IN’ order also posts to LMOS on the BJ501 file.

It is unclear whether this scenario is subject to lag or sequence problems.

Line Sharing Loops

Following completion in CRIS, the ‘C’ order for the LFPL-POTS service posts to LMOS on the BJ501 file.

The HFPL-DATA side of the line sharing loop needs WFAC/NSDB response rather than LMOS.

Appendix E: CABS/LMOS Database Comparisons

This material is based on information provided by Steve Drury of SWBT to Wayne Brodbeck of HP on May 6, 2002, and on written procedures documented in SWBT's APEX document, "SBC-002216080."

The CABS/LMOS Comparison process, also referred to as the "Bash," is performed on the first and third Mondays of each month. The underlying database is IMS. SWBT uses Batch Message Processing (BMP) to conduct the comparison. A DLR-L command displays the DLR (LMOS line record). The MCN should be included in the LN field. SWBT uses the telephone numbers as a link between the CABS and LMOS databases. The scope of the comparison is limited to CABS records showing a UNE-P class of service.

The selection criteria for records to be included in the bash are:

- Class of Service = XPU
- Network Channel =SPSL
- Circuit ID = SPRF

The CABS/LMOS Comparison is done for each of 7 regions:

- Houston
- San Antonio
- Dallas
- Missouri
- Kansas
- Arkansas
- Oklahoma

The CABS/LMOS Comparison process is designed to correct the following situations:

- Mismatch of only the Master Customer Number (MCN) data
- Mismatch of only the Master Telephone Number (MTN) data
- Mismatch of both MTN and MCN data
- Working in CABS but disconnected in LMOS
- Working in CABS but unassigned in LMOS

Appendix F: CLEC Input Regarding LMOS Embedded Database

HP examined data that CLECs provided related to pre-May 12, 2001 orders for which the CLEC was unable to submit electronic trouble reports, or were otherwise affected by errors in the LMOS records. Both AT&T and Birch Telecom provided examples to HP. Figure E.1, below, summarizes the data HP received from the CLECs.

Figure F.1: CLEC Trouble Report Samples

CLEC	Total Number of TNs Submitted	Year 2000	Year 2001	In Response To	Reason Code
AT&T	174	46	128	LMOS-0508-015-CLEC	Ported Out or Disconnected
Birch	199	199	0	LMOS-0508-018-CLEC	Ported Out or Disconnected

HP submitted the 373 CLEC examples to SWBT, and requested that SWBT provide additional information on the accounts.[211] In its response, SWBT provided a detailed report showing the current status of each of the accounts in question.[212] Figures E.2 through E.7, below, provide summaries of the information HP received from SWBT.

Figure F.2: Breakdown of Error Messages Received for CLEC Examples

CLEC Error Message	Totals
# Ported Out	285
NCP/Date/Number	88
Total TNs Submitted:	***373***

Figure F.3: CLEC Examples by Region/State CLEC Error Message: "# Ported Out"

Region/State:	Totals	Duplicate TNs Submitted
Missouri	19	1
Oklahoma	2	0
Arkansas	0	0
Kansas	26	2
San Antonio, TX	103	1
Dallas, TX	60	0
Houston, TX	75	1
Total:	***285***	***5***

Figure F.4: CLEC Examples by Region/State CLEC Error Message: "NCP/Date/#"

City/State:	Totals	Duplicate TNs Submitted
Missouri	10	0

[211] See Information Request LMOS-0614-041.
[212] See SWBT response to Information Request LMOS-0614-041.

City/State:	Totals	Duplicate TNs Submitted
Oklahoma	3	0
Arkansas	0	0
Kansas	11	0
San Antonio	15	1
Dallas	20	1
Houston	29	1
Total:	***88***	***3***

Figure F.5: CLEC Examples by MCN and Error Message Received

MCN/SORD	CLEC Error Message	Total
N/A	# Ported Out	48
N/A	NCP/Date/#	15
None	# Ported Out	3
14750501002 / 1BH	NCP/Date/#	1
Mac: 000052531/1FL	# Ported Out	1
LSP w/carrier ID	NCP/Date/#	67
LSP w/carrier ID	# Ported Out	238
	Total:	***373***

Figure F.6: SWBT Results for MCN "N/A" and Error Message "# Ported Out"

Region/State	Total
Missouri	2
Oklahoma	0
Arkansas	0
Kansas	1
San Antonio	25
Dallas	16
Houston	4
Total:	***48***

Figure F.7: SWBT Results for MCN "N/A" and Error Message "NCP/Date/#"

Region/State	Total
Missouri	3
Oklahoma	0
Arkansas	0
Kansas	1
San Antonio	1

Region/State	Total
Dallas	2
Houston	8
Total:	***15***

Charts were not done for the LSP MCN on a city/state basis because the rest of the TNs that are not listed in the above tables fit into that category.

In Information Request LMOS-0820-058, HP requested that SWBT provide trouble report information for a total of 279 TNs. In its response, SWBT indicated 93 TNs were duplicates with the exception of the open/close dates of the trouble reports.

The LMOS records in the embedded database that did not have an MCN associated with TNs have been corrected by service order activity or one of the CABS/LMOS bashes. Figure E.8, below, provides a summary of the MCN information SWBT provided for the 279 TNs.

Figure F.8: MCN Information for TNs Submitted in Information Request LMOS-0820-058

	Overall Count
Invalid MCNs	26
Corrected MCNs	160
Duplicate TNs	93
Total:	***279***

Figure E.9, below, provides details of the 26 TNs that had invalid MCNs assigned.

Figure F.9: Breakdown of Tickets with Invalid MCNs from Response to Information Request LMOS-0820-058

MCN Provided	Totals
N/A	23
None	1
14750501002	1
MAC:000052531	1
Total:	***26***

Legend for chart:

- N/A: The current Class of Service is not UNE-P & therefore the MCN was not applicable as such.
- None: UNE-P Class of Service with no MCN on the line record. These were either disconnected accounts or Retail accounts, which hadn't updated the class of service to retail yet.
- 14750501002: A valid format for MCN for other than wholesale customers.
- MAC:000052531: A valid format for MCN for other than wholesale customers.

Appendix G: Sampled Records by State

For LMOS Test Plan 2, HP selected two random samples. The first included Texas UNE-P data, and consisted of 384 records. The other sample included 382 UNE-P records from the remaining four states in the SWBT service area: Arkansas, Kansas, Missouri, and Oklahoma. Figures F.1 and F.2, below, identify the SWBT data provided in response to Information Request LMOS-0605-030, and reflects the number of telephone numbers selected per area code for each state.

Figure G.1: Texas Sample UNE-P Records by Area Code

Area Code	Number of TNs in Sample
214	18
254	1
817	37
903	18
940	8
972	29
281	47
409	15
713	42
832	1
936	3
979	4
210	32
254	13
361	15
512	27
806	18
830	5
915	35
956	16
Total	***384***

Figure G.2: MOKA Sample UNE-P Records by Area Code

State	Area Code	Number of TNs in Sample
Arkansas	479	3
Arkansas	501	6
Arkansas	870	1
Kansas	316	43
Kansas	620	16
Kansas	785	46
Kansas	913	46
Missouri	314	73
Missouri	417	6
Missouri	573	5

State	Area Code	Number of TNs in Sample
Missouri	636	18
Missouri	660	2
Missouri	816	57
Oklahoma	405	32
Oklahoma	580	6
Oklahoma	918	22
	Total	***382***

Appendix H: Comparison of May 2002 LMOS PM Results

The figures contained in this appendix provide the results of HP's recalculation of the May 2002 LMOS-related Performance Measures from the raw data detail files HP obtained from SWBT. For each measure (and its associated submeasures) the tables identify, for each market reporting area, SWBT's published PM results, HP's recalculated results, any differences between the two results, and the percent variance from SWBT's published result. Following the tables, HP has provided a list of the LMOS PM submeasures that relate specifically to UNE-P services.

Figure H.1: PM35-01—Percent Trouble Reports within 10 Days of Installation
Residential POTS Resale 'N' & 'T' Orders – Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	29	29	0	0.00%
	Trouble Rate	4.60%	4.60%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	39	39	0	0.00%
	Trouble Rate	3.04%	3.04%	0.00%	
Houston, TX					
	Trouble Reports	39	39	0	0.00%
	Trouble Rate	4.14%	4.14%	0.00%	
South Texas					
	Trouble Reports	13	13	0	0.00%
	Trouble Rate	3.06%	3.06%	0.00%	
Kansas					
	Trouble Reports	19	19	0	0.00%
	Trouble Rate	4.17%	4.17%	0.00%	
Oklahoma					
	Trouble Reports	32	32	0	0.00%
	Trouble Rate	3.93%	3.93%	0.00%	
Kansas City, MO					
	Trouble Reports	11	11	0	0.00%
	Trouble Rate	3.43%	3.43%	0.00%	
St. Louis, MO					
	Trouble Reports	19	19	0	0.00%
	Trouble Rate	4.22%	4.22%	0.00%	
Arkansas					
	Trouble Reports	14	14	0	0.00%
	Trouble Rate	2.86%	2.86%	0.00%	

Figure H.2: PM35-02—Percent Trouble Reports within 10 Days of Installation
Business POTS Resale 'N' & 'T' Orders – Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1	2	1	50.00%
	Trouble Rate	0.74%	1.48%	0.74%	
Houston, TX					
	Trouble Reports	4	6	2	33.33%
	Trouble Rate	1.69%	2.53%	0.84%	
South Texas					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	1.44%	1.44%	0.00%	
Kansas					
	Trouble Reports	5	5	0	0.00%
	Trouble Rate	3.09%	3.09%	0.00%	
Oklahoma					
	Trouble Reports	1	2	1	50.00%
	Trouble Rate	1.00%	2.00%	1.00%	
Kansas City, MO					
	Trouble Reports	1	2	1	50.00%
	Trouble Rate	1.03%	2.06%	1.03%	
St. Louis, MO					
	Trouble Reports	4	4	0	0.00%
	Trouble Rate	2.58%	2.58%	0.00%	
Arkansas					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	8.33%	8.33%	0.00%	

Figure H.3: PM35-03—Percent Trouble Reports within 10 Days of Installation
Residential POTS Resale 'N' & 'T' Orders – No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	152	154	2	1.30%
	Trouble Rate	6.41%	6.50%	0.09%	
Dallas/Ft. Worth, TX					
	Trouble Reports	348	348	0	0.00%
	Trouble Rate	7.15%	7.15%	0.00%	
Houston, TX					
	Trouble Reports	397	399	2	0.50%
	Trouble Rate	8.88%	8.93%	0.05%	
South Texas					
	Trouble Reports	146	147	1	0.68%
	Trouble Rate	7.10%	7.15%	0.05%	
Kansas					
	Trouble Reports	99	99	0	0.00%
	Trouble Rate	4.31%	4.31%	0.00%	
Oklahoma					
	Trouble Reports	190	195	5	2.56%
	Trouble Rate	7.12%	7.31%	0.19%	
Kansas City, MO					
	Trouble Reports	82	82	0	0.00%
	Trouble Rate	6.89%	6.89%	0.00%	
St. Louis, MO					
	Trouble Reports	64	65	1	1.54%
	Trouble Rate	4.93%	5.01%	0.08%	
Arkansas					
	Trouble Reports	75	76	1	1.32%
	Trouble Rate	4.22%	4.28%	0.06%	

Figure H.4: PM35-04—Percent Trouble Reports within 10 Days of Installation
Business POTS Resale 'N' & 'T' Orders – No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	1.16%	1.16%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	1.04%	1.04%	0.00%	
Houston, TX					
	Trouble Reports	2	3	1	33.33%
	Trouble Rate	1.23%	1.84%	0.61%	
South Texas					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	1.18%	1.18%	0.00%	
Kansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	0.54%	0.54%	0.00%	
Arkansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.5: PM35-05—Percent Trouble Reports within 10 Days of Installation
Residential POTS Resale 'C' Orders –Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Houston, TX					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	20.00%	20.00%	0.00%	
South Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	11.11%	11.11%	0.00%	
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Arkansas					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.6: PM35-06—Percent Trouble Reports within 10 Days of Installation
Business POTS Resale 'C' Orders –Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	100.00%	100.00%	0.00%	
Houston, TX					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
South Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	3	3	0	0.00%
	Trouble Rate	30.00%	30.00%	0.00%	
Arkansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.7: PM35-07—Percent Trouble Reports within 10 Days of Installation
Residential POTS Resale 'C' Orders –No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	26	26	0	0.00%
	Trouble Rate	0.49%	0.49%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	67	67	0	0.00%
	Trouble Rate	0.55%	0.55%	0.00%	
Houston, TX					
	Trouble Reports	53	53	0	0.00%
	Trouble Rate	0.56%	0.56%	0.00%	
South Texas					
	Trouble Reports	25	25	0	0.00%
	Trouble Rate	0.53%	0.53%	0.00%	
Kansas					
	Trouble Reports	40	40	0	0.00%
	Trouble Rate	0.69%	0.69%	0.00%	
Oklahoma					
	Trouble Reports	13	13	0	0.00%
	Trouble Rate	0.29%	0.29%	0.00%	
Kansas City, MO					
	Trouble Reports	9	9	0	0.00%
	Trouble Rate	0.23%	0.23%	0.00%	
St. Louis, MO					
	Trouble Reports	13	13	0	0.00%
	Trouble Rate	0.40%	0.40%	0.00%	
Arkansas					
	Trouble Reports	18	18	0	0.00%
	Trouble Rate	0.36%	0.36%	0.00%	

Figure H.8: PM35-08—Percent Trouble Reports within 10 Days of Installation
Business POTS Resale 'C' Orders – No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	5	5	0	0.00%
	Trouble Rate	1.78%	1.78%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	5	6	1	16.67%
	Trouble Rate	0.94%	1.13%	0.19%	
Houston, TX					
	Trouble Reports	10	12	2	16.67%
	Trouble Rate	2.69%	3.23%	0.54%	
South Texas					
	Trouble Reports	9	9	0	0.00%
	Trouble Rate	3.25%	3.25%	0.00%	
Kansas					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	0.32%	0.32%	0.00%	
Oklahoma					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	1	2	1	50.00%
	Trouble Rate	0.14%	0.29%	0.15%	
St. Louis, MO					
	Trouble Reports	6	6	0	0.00%
	Trouble Rate	0.66%	0.66%	0.00%	
Arkansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.9: PM35-09—Percent Trouble Reports within 10 Days of Installation
UNE-P 'N' & 'T' Orders – Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	n/a	n/a	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	n/a	n/a	0.00%	
Houston, TX					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	n/a	n/a	0.00%	
South Texas					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	n/a	n/a	0.00%	
Kansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	0	1	1	100.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	2	2	0	0.00%
	Trouble Rate	n/a	n/a	0.00%	
Arkansas					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.10: PM35-10—Percent Trouble Reports within 10 Days of Installation
UNE-P 'N' & 'T' Orders – No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	8	8	0	0.00%
	Trouble Rate	n/a	n/a	n/a	
Dallas/Ft. Worth, TX					
	Trouble Reports	8	15	7	46.67%
	Trouble Rate	n/a	n/a	n/a	
Houston, TX					
	Trouble Reports	2	6	4	66.67%
	Trouble Rate	n/a	n/a	n/a	
South Texas					
	Trouble Reports	4	4	0	0.00%
	Trouble Rate	n/a	n/a	n/a	
Kansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	n/a	n/a	n/a	
St. Louis, MO					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	n/a	n/a	n/a	
Arkansas					
	Trouble Reports	0	0	0	0.00%
	Trouble Rate	0.00%	0.00%	0.00%	

Figure H.11: PM35-11—Percent Trouble Reports within 10 Days of Installation
UNE-P 'C' Orders – Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	45	45	0	0.00%
	Trouble Rate	2.28%	2.28%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	135	135	0	0.00%
	Trouble Rate	3.88%	3.88%	0.00%	
Houston, TX					
	Trouble Reports	136	137	1	0.73%
	Trouble Rate	4.06%	4.09%	0.03%	
South Texas					
	Trouble Reports	67	68	1	1.47%
	Trouble Rate	3.18%	3.23%	0.05%	
Kansas					
	Trouble Reports	21	22	1	4.55%
	Trouble Rate	3.51%	3.67%	0.16%	
Oklahoma					
	Trouble Reports	9	9	0	0.00%
	Trouble Rate	2.44%	2.44%	0.00%	
Kansas City, MO					
	Trouble Reports	4	4	0	0.00%
	Trouble Rate	n/a	n/a	n/a	
St. Louis, MO					
	Trouble Reports	9	9	0	0.00%
	Trouble Rate	1.75%	1.75%	0.00%	
Arkansas					
	Trouble Reports	7	7	0	0.00%
	Trouble Rate	2.45%	2.45%	0.00%	

Figure H.12: PM35-12—Percent Trouble Reports within 10 Days of Installation
UNE-P 'C' Orders – No Fieldwork

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	362	367	5	1.36%
	Trouble Rate	1.12%	1.14%	0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	721	733	12	1.64%
	Trouble Rate	1.27%	1.29%	0.02%	
Houston, TX					
	Trouble Reports	838	847	9	1.06%
	Trouble Rate	1.34%	1.36%	0.02%	
South Texas					
	Trouble Reports	381	386	5	1.30%
	Trouble Rate	1.37%	1.39%	0.02%	
Kansas					
	Trouble Reports	137	137	0	0.00%
	Trouble Rate	0.81%	0.81%	0.00%	
Oklahoma					
	Trouble Reports	66	66	0	0.00%
	Trouble Rate	1.01%	1.01%	0.00%	
Kansas City, MO					
	Trouble Reports	57	58	1	1.72%
	Trouble Rate	0.88%	0.89%	0.01%	
St. Louis, MO					
	Trouble Reports	88	92	4	4.35%
	Trouble Rate	1.06%	1.11%	0.05%	
Arkansas					
	Trouble Reports	61	63	2	3.17%
	Trouble Rate	1.09%	1.13%	0.04%	

Figure H.13: PM35.1-01—Percent UNE-P Trouble Reports on the Completion Date

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	18	20	2	10.00%
	Trouble Rate	0.14%	0.16%	0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	19	20	1	5.00%
	Trouble Rate	0.08%	0.09%	0.01%	
Houston, TX					
	Trouble Reports	22	25	3	12.00%
	Trouble Rate	0.09%	0.10%	0.01%	
South Texas					
	Trouble Reports	26	26	0	0.00%
	Trouble Rate	0.26%	0.26%	0.00%	
Kansas					
	Trouble Reports	4	4	0	0.00%
	Trouble Rate	0.04%	0.04%	0.00%	
Oklahoma					
	Trouble Reports	3	3	0	0.00%
	Trouble Rate	0.08%	0.08%	0.00%	
Kansas City, MO					
	Trouble Reports	4	4	0	0.00%
	Trouble Rate	0.09%	0.09%	0.00%	
St. Louis, MO					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	0.09%	0.09%	0.00%	
Arkansas					
	Trouble Reports	1	1	0	0.00%
	Trouble Rate	0.06%	0.06%	0.00%	

Figure H.14: PM37-01—Trouble Report Rate – Residential POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	525	528	3	0.57%
	Trouble Rate	2.00%	2.01%	0.01%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1,080	1,085	5	0.46%
	Trouble Rate	2.69%	2.70%	0.01%	
Houston, TX					
	Trouble Reports	1,100	1,105	5	0.45%
	Trouble Rate	3.48%	3.49%	0.01%	
South Texas					
	Trouble Reports	459	460	1	0.22%
	Trouble Rate	2.77%	2.78%	0.01%	
Kansas					
	Trouble Reports	677	678	1	0.15%
	Trouble Rate	1.69%	1.70%	0.01%	
Oklahoma					
	Trouble Reports	727	732	5	0.68%
	Trouble Rate	2.45%	2.46%	0.01%	
Kansas City, MO					
	Trouble Reports	410	410	0	0.00%
	Trouble Rate	2.35%	2.35%	0.00%	
St. Louis, MO					
	Trouble Reports	384	386	2	0.52%
	Trouble Rate	2.25%	2.26%	0.01%	
Arkansas					
	Trouble Reports	553	555	2	0.36%
	Trouble Rate	2.29%	2.30%	0.01%	

Figure H.15: PM37-02—Trouble Report Rate – Business POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	97	105	8	7.62%
	Trouble Rate	0.56%	0.61%	0.05%	
Dallas/Ft. Worth, TX					
	Trouble Reports	159	187	28	14.97%
	Trouble Rate	0.47%	0.55%	0.08%	
Houston, TX					
	Trouble Reports	215	255	40	15.69%
	Trouble Rate	0.66%	0.79%	0.13%	
South Texas					
	Trouble Reports	126	135	9	6.67%
	Trouble Rate	0.75%	0.80%	0.05%	
Kansas					
	Trouble Reports	138	146	8	5.48%
	Trouble Rate	0.54%	0.57%	0.03%	
Oklahoma					
	Trouble Reports	34	54	20	37.04%
	Trouble Rate	0.34%	0.54%	0.20%	
Kansas City, MO					
	Trouble Reports	89	96	7	7.29%
	Trouble Rate	0.65%	0.70%	0.05%	
St. Louis, MO					
	Trouble Reports	253	263	10	3.80%
	Trouble Rate	0.74%	0.77%	0.03%	
Arkansas					
	Trouble Reports	20	21	1	4.76%
	Trouble Rate	0.66%	0.69%	0.03%	

Figure H.16: PM37-03—Trouble Report Rate – UNE-P

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	4,131	4,146	15	0.36%
	Trouble Rate	1.40%	1.41%	0.01%	
Dallas/Ft. Worth, TX					
	Trouble Reports	6,436	6,461	25	0.39%
	Trouble Rate	1.65%	1.66%	0.01%	
Houston, TX					
	Trouble Reports	8,086	8,109	23	0.28%
	Trouble Rate	1.85%	1.86%	0.01%	
South Texas					
	Trouble Reports	3,848	3,856	8	0.21%
	Trouble Rate	1.76%	1.77%	0.01%	
Kansas					
	Trouble Reports	1,580	1,585	5	0.32%
	Trouble Rate	1.30%	1.31%	0.01%	
Oklahoma					
	Trouble Reports	833	834	1	0.12%
	Trouble Rate	1.44%	1.44%	0.00%	
Kansas City, MO					
	Trouble Reports	581	581	0	0.00%
	Trouble Rate	1.26%	1.26%	0.00%	
St. Louis, MO					
	Trouble Reports	775	777	2	0.26%
	Trouble Rate	1.19%	1.20%	0.01%	
Arkansas					
	Trouble Reports	518	520	2	0.38%
	Trouble Rate	1.56%	1.57%	0.01%	

Figure H.17: PM37.1-01—Trouble Report Rate net Installation and Repeat Reports
Residential POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	303	304	1	0.33%
	Trouble Rate	1.16%	1.16%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	575	580	5	0.86%
	Trouble Rate	1.43%	1.44%	0.01%	
Houston, TX					
	Trouble Reports	557	561	4	0.71%
	Trouble Rate	1.76%	1.77%	0.01%	
South Texas					
	Trouble Reports	258	259	1	0.39%
	Trouble Rate	1.56%	1.56%	0.00%	
Kansas					
	Trouble Reports	486	487	1	0.21%
	Trouble Rate	1.22%	1.22%	0.00%	
Oklahoma					
	Trouble Reports	460	465	5	1.08%
	Trouble Rate	1.55%	1.57%	0.02%	
Kansas City, MO					
	Trouble Reports	281	281	0	0.00%
	Trouble Rate	1.61%	1.61%	0.00%	
St. Louis, MO					
	Trouble Reports	263	265	2	0.75%
	Trouble Rate	1.54%	1.55%	0.01%	
Arkansas					
	Trouble Reports	404	406	2	0.49%
	Trouble Rate	1.67%	1.68%	0.01%	

Figure H.18: PM37.1-02—Trouble Report Rate net Installation and Repeat Reports
Business POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	78	85	7	8.24%
	Trouble Rate	0.45%	0.69%	0.24%	
Dallas/Ft. Worth, TX					
	Trouble Reports	137	162	25	15.43%
	Trouble Rate	0.40%	0.48%	0.08%	
Houston, TX					
	Trouble Reports	186	220	34	15.45%
	Trouble Rate	0.57%	0.68%	0.11%	
South Texas					
	Trouble Reports	107	116	9	7.76%
	Trouble Rate	0.64%	0.69%	0.05%	
Kansas					
	Trouble Reports	125	131	6	4.58%
	Trouble Rate	0.49%	0.52%	0.03%	
Oklahoma					
	Trouble Reports	31	47	16	34.04%
	Trouble Rate	0.31%	0.47%	0.16%	
Kansas City, MO					
	Trouble Reports	81	85	4	4.71%
	Trouble Rate	0.59%	0.62%	0.03%	
St. Louis, MO					
	Trouble Reports	217	227	10	4.41%
	Trouble Rate	0.64%	0.67%	0.03%	
Arkansas					
	Trouble Reports	17	18	1	5.56%
	Trouble Rate	0.56%	0.59%	0.03%	

Figure H.19: PM37.1-03—Trouble Report Rate net Installation and Repeat Reports
UNE-P

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	3,474	3,483	9	0.26%
	Trouble Rate	1.18%	1.18%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	5,162	5,176	14	0.27%
	Trouble Rate	1.33%	1.33%	0.00%	
Houston, TX					
	Trouble Reports	6,581	6,595	14	0.21%
	Trouble Rate	1.51%	1.51%	0.00%	
South Texas					
	Trouble Reports	3,143	3,149	6	0.19%
	Trouble Rate	1.44%	1.44%	0.00%	
Kansas					
	Trouble Reports	1,351	1,354	3	0.22%
	Trouble Rate	1.12%	1.12%	0.00%	
Oklahoma					
	Trouble Reports	710	711	1	0.14%
	Trouble Rate	1.23%	1.23%	0.00%	
Kansas City, MO					
	Trouble Reports	485	485	0	0.00%
	Trouble Rate	1.05%	1.05%	0.00%	
St. Louis, MO					
	Trouble Reports	632	632	0	0.00%
	Trouble Rate	0.97%	0.97%	0.00%	
Arkansas					
	Trouble Reports	410	411	1	0.24%
	Trouble Rate	1.24%	1.24%	0.00%	

Figure H.20: PM38-01—Missed Repair Commitments
Residential POTS Resale - Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	750	754	4	0.53%
	Missed Appt.	34	34	0	0.00%
	% Missed Appt.	4.53%	4.51%	-0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1,506	1,511	5	0.33%
	Missed Appt.	69	69	0	0.00%
	% Missed Appt.	4.58%	4.57%	-0.01%	
Houston, TX					
	Trouble Reports	1,451	1,456	5	0.34%
	Missed Appt.	23	24	1	4.17%
	% Missed Appt.	1.58%	1.65%	0.07%	
South Texas					
	Trouble Reports	547	548	1	0.18%
	Missed Appt.	14	14	0	0.00%
	% Missed Appt.	2.56%	2.55%	-0.01%	
Kansas					
	Trouble Reports	838	839	1	0.12%
	Missed Appt.	20	20	0	0.00%
	% Missed Appt.	2.39%	2.38%	-0.01%	
Oklahoma					
	Trouble Reports	893	899	6	0.67%
	Missed Appt.	13	13	0	0.00%
	% Missed Appt.	1.46%	1.45%	-0.01%	
Kansas City, MO					
	Trouble Reports	493	493	0	0.00%
	Missed Appt.	4	4	0	0.00%
	% Missed Appt.	0.81%	0.81%	0.00%	
St. Louis, MO					
	Trouble Reports	550	552	2	0.36%
	Missed Appt.	7	7	0	0.00%
	% Missed Appt.	1.27%	1.27%	0.00%	
Arkansas					
	Trouble Reports	675	675	0	0.00%
	Missed Appt.	11	11	0	0.00%
	% Missed Appt.	1.63%	1.63%	0.00%	

Figure H.21: PM38-02—Missed Repair Commitments
Business POTS Resale - Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	143	154	11	7.14%
	Missed Appt.	9	10	1	10.00%
	% Missed Appt.	6.29%	6.49%	0.20%	
Dallas/Ft. Worth, TX					
	Trouble Reports	221	255	34	13.33%
	Missed Appt.	15	17	2	11.76%
	% Missed Appt.	6.67%	6.67%	0.00%	
Houston, TX					
	Trouble Reports	301	355	54	15.21%
	Missed Appt.	7	7	0	0.00%
	% Missed Appt.	2.33%	1.97%	-0.36%	
South Texas					
	Trouble Reports	154	163	9	5.52%
	Missed Appt.	15	15	0	0.00%
	% Missed Appt.	9.74%	9.20%	-0.54%	
Kansas					
	Trouble Reports	182	194	12	6.19%
	Missed Appt.	18	19	1	5.26%
	% Missed Appt.	9.89%	9.79%	-0.10%	
Oklahoma					
	Trouble Reports	52	74	22	29.73%
	Missed Appt.	5	7	2	28.57%
	% Missed Appt.	9.61%	9.46%	-0.15%	
Kansas City, MO					
	Trouble Reports	123	134	11	8.21%
	Missed Appt.	13	14	1	7.14%
	% Missed Appt.	10.57%	10.45%	-0.12%	
St. Louis, MO					
	Trouble Reports	363	374	11	2.94%
	Missed Appt.	18	18	0	0.00%
	% Missed Appt.	4.96%	4.81%	-0.15%	
Arkansas					
	Trouble Reports	27	27	0	0.00%
	Missed Appt.	2	2	0	0.00%
	% Missed Appt.	7.41%	7.41%	0.00%	

Figure H.22: PM38-03—Missed Repair Commitments
Residential POTS Resale – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	29	29	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	102	102	0	0.00%
	Missed Appt.	5	5	0	0.00%
	% Missed Appt.	4.90%	4.90%	0.00%	
Houston, TX					
	Trouble Reports	75	75	0	0.00%
	Missed Appt.	1	1	0	0.00%
	% Missed Appt.	1.33%	1.33%	0.00%	
South Texas					
	Trouble Reports	44	44	0	0.00%
	Missed Appt.	1	1	0	0.00%
	% Missed Appt.	2.27%	2.27%	0.00%	
Kansas					
	Trouble Reports	44	44	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	18	19	1	5.26%
	Missed Appt.	1	1	0	0.00%
	% Missed Appt.	5.55%	5.26%	-0.29%	
Kansas City, MO					
	Trouble Reports	20	20	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	13	13	0	0.00%
	Missed Appt.	1	1	0	0.00%
	% Missed Appt.	7.69%	7.69%	0.00%	
Arkansas					
	Trouble Reports	31	33	2	6.06%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	

Figure H.23: PM38-04—Missed Repair Commitments
Business POTS Resale – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	6	6	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Dallas/Ft. Worth, TX					
	Trouble Reports	15	20	5	25.00%
	Missed Appt.	0	1	1	100.00%
	% Missed Appt.	0.00%	5.00%	0.00%	
Houston, TX					
	Trouble Reports	17	19	2	10.53%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
South Texas					
	Trouble Reports	17	17	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Kansas					
	Trouble Reports	10	10	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	2	2	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Kansas City, MO					
	Trouble Reports	2	3	1	33.33%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	10	10	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Arkansas					
	Trouble Reports	0	1	1	100.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	

Figure H.24: PM38-05—Missed Repair Commitments
UNE-P – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	5,724	5,738	14	0.24%
	Missed Appt.	499	501	2	0.40%
	% Missed Appt.	8.72%	8.73%	0.01%	
Dallas/Ft. Worth, TX					
	Trouble Reports	9,021	9,049	28	0.31%
	Missed Appt.	491	492	1	0.20%
	% Missed Appt.	5.44%	5.44%	0.00%	
Houston, TX					
	Trouble Reports	10,682	10,708	26	0.24%
	Missed Appt.	348	349	1	0.29%
	% Missed Appt.	3.26%	3.26%	0.00%	
South Texas					
	Trouble Reports	4,858	4,866	8	0.16%
	Missed Appt.	275	275	0	0.00%
	% Missed Appt.	5.66%	5.65%	-0.01%	
Kansas					
	Trouble Reports	1,963	1,968	5	0.25%
	Missed Appt.	89	90	1	1.11%
	% Missed Appt.	4.53%	4.57%	0.04%	
Oklahoma					
	Trouble Reports	1,020	1,021	1	0.10%
	Missed Appt.	37	37	0	0.00%
	% Missed Appt.	3.63%	3.62%	-0.01%	
Kansas City, MO					
	Trouble Reports	802	802	0	0.00%
	Missed Appt.	25	25	0	0.00%
	% Missed Appt.	3.12%	3.12%	0.00%	
St. Louis, MO					
	Trouble Reports	1,133	1,135	2	0.18%
	Missed Appt.	32	33	1	3.03%
	% Missed Appt.	2.82%	2.91%	0.09%	
Arkansas					
	Trouble Reports	607	609	2	0.33%
	Missed Appt.	14	14	0	0.00%
	% Missed Appt.	2.31%	2.30%	-0.01%	

Figure H.25: PM38-06—Missed Repair Commitments
UNE-P – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	190	192	2	1.04%
	Missed Appt.	7	7	0	0.00%
	% Missed Appt.	3.68%	3.65%	-0.03%	
Dallas/Ft. Worth, TX					
	Trouble Reports	602	602	0	0.00%
	Missed Appt.	7	7	0	0.00%
	% Missed Appt.	1.16%	1.16%	0.00%	
Houston, TX					
	Trouble Reports	584	584	0	0.00%
	Missed Appt.	10	10	0	0.00%
	% Missed Appt.	1.71%	1.71%	0.00%	
South Texas					
	Trouble Reports	405	406	1	0.25%
	Missed Appt.	5	5	0	0.00%
	% Missed Appt.	1.23%	1.23%	0.00%	
Kansas					
	Trouble Reports	85	85	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
Oklahoma					
	Trouble Reports	43	43	0	0.00%
	Missed Appt.	1	1	0	0.00%
	% Missed Appt.	2.33%	2.33%	0.00%	
Kansas City, MO					
	Trouble Reports	39	40	1	2.50%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	
St. Louis, MO					
	Trouble Reports	31	33	2	6.06%
	Missed Appt.	1	4	3	75.00%
	% Missed Appt.	3.22%	12.12%	8.90%	
Arkansas					
	Trouble Reports	40	40	0	0.00%
	Missed Appt.	0	0	0	0.00%
	% Missed Appt.	0.00%	0.00%	0.00%	

Figure H.26: PM39-01—Mean Time to Restore – Residential POTS Resale Affected Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	108	110	2	1.82%
	MTTR	Not Calculated	11.32		
Dallas/Ft. Worth, TX					
	Trouble Reports	201	201	0	0.00%
	MTTR	Not Calculated	20.02		
Houston, TX					
	Trouble Reports	172	174	2	1.15%
	MTTR	Not Calculated	13.99		
South Texas					
	Trouble Reports	63	63	0	0.00%
	MTTR	Not Calculated	14.03		
Kansas					
	Trouble Reports	161	162	1	0.62%
	MTTR	Not Calculated	18.35		
Oklahoma					
	Trouble Reports	133	134	1	0.75%
	MTTR	Not Calculated	13.32		
Kansas City, MO					
	Trouble Reports	96	96	0	0.00%
	MTTR	Not Calculated	16.68		
St. Louis, MO					
	Trouble Reports	88	88	0	0.00%
	MTTR	Not Calculated	15.84		
Arkansas					
	Trouble Reports	111	111	0	0.00%
	MTTR	Not Calculated	12.62		

Figure H.27: PM39-02—Mean Time to Restore – Business POTS Resale
Affected Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	36	37	1	2.70%
	MTTR	Not Calculated	9.39		
Dallas/Ft. Worth, TX					
	Trouble Reports	68	74	6	8.11%
	MTTR	Not Calculated	12.76		
Houston, TX					
	Trouble Reports	77	93	16	17.20%
	MTTR	Not Calculated	11.88		
South Texas					
	Trouble Reports	47	49	2	4.08%
	MTTR	Not Calculated	18.09		
Kansas					
	Trouble Reports	39	44	5	11.36%
	MTTR	Not Calculated	13.75		
Oklahoma					
	Trouble Reports	17	24	7	29.17%
	MTTR	Not Calculated	17.27		
Kansas City, MO					
	Trouble Reports	31	34	3	8.82%
	MTTR	Not Calculated	11.87		
St. Louis, MO					
	Trouble Reports	105	105	0	0.00%
	MTTR	Not Calculated	11.65		
Arkansas					
	Trouble Reports	8	8	0	0.00%
	MTTR	Not Calculated	6.41		

Figure H.28: PM39-03—Mean Time to Restore – Residential POTS Resale Affected Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	6	6	0	0.00%
	MTTR	Not Calculated	17.16		
Dallas/Ft. Worth, TX					
	Trouble Reports	33	33	0	0.00%
	MTTR	Not Calculated	13.76		
Houston, TX					
	Trouble Reports	25	25	0	0.00%
	MTTR	Not Calculated	8.75		
South Texas					
	Trouble Reports	13	13	0	0.00%
	MTTR	Not Calculated	2.28		
Kansas					
	Trouble Reports	10	10	0	0.00%
	MTTR	Not Calculated	5.06		
Oklahoma					
	Trouble Reports	6	6	0	0.00%
	MTTR	Not Calculated	14.06		
Kansas City, MO					
	Trouble Reports	7	7	0	0.00%
	MTTR	Not Calculated	2.1		
St. Louis, MO					
	Trouble Reports	4	4	0	0.00%
	MTTR	Not Calculated	13.47		
Arkansas					
	Trouble Reports	8	9	1	11.11%
	MTTR	Not Calculated	1.06		

Figure H.29: PM39-04—Mean Time to Restore – Business POTS Resale Affected Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	3	3	0	0.00%
	MTTR	Not Calculated	0.94		
Dallas/Ft. Worth, TX					
	Trouble Reports	9	10	1	10.00%
	MTTR	Not Calculated	3.87		
Houston, TX					
	Trouble Reports	9	11	2	18.18%
	MTTR	Not Calculated	10.97		
South Texas					
	Trouble Reports	8	8	0	0.00%
	MTTR	Not Calculated	0.17		
Kansas					
	Trouble Reports	3	3	0	0.00%
	MTTR	Not Calculated	15.44		
Oklahoma					
	Trouble Reports	1	1	0	0.00%
	MTTR	Not Calculated	0.00		
Kansas City, MO					
	Trouble Reports	0	0	0	0.00%
	MTTR	Not Calculated	0.00		
St. Louis, MO					
	Trouble Reports	4	4	0	0.00%
	MTTR	Not Calculated	2.00		
Arkansas					
	Trouble Reports	0	0	0	0.00%
	MTTR	Not Calculated	0.00		

Figure H.30: PM39-05—Mean Time to Restore – Residential POTS Resale Out of Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	633	635	2	0.31%
	MTTR	Not Calculated	11.04		
Dallas/Ft. Worth, TX					
	Trouble Reports	1,281	1,286	5	0.39%
	MTTR	Not Calculated	16.77		
Houston, TX					
	Trouble Reports	1,256	1,259	3	0.24%
	MTTR	Not Calculated	12.89		
South Texas					
	Trouble Reports	471	472	1	0.21%
	MTTR	Not Calculated	16.41		
Kansas					
	Trouble Reports	659	659	0	0.00%
	MTTR	Not Calculated	13.56		
Oklahoma					
	Trouble Reports	753	758	5	0.66%
	MTTR	Not Calculated	12.8		
Kansas City, MO					
	Trouble Reports	389	389	0	0.00%
	MTTR	Not Calculated	9.2		
St. Louis, MO					
	Trouble Reports	455	457	2	0.44%
	MTTR	Not Calculated	8.98		
Arkansas					
	Trouble Reports	559	559	0	0.00%
	MTTR	Not Calculated	9.72		

Figure H.31: PM39-06—Mean Time to Restore – Business POTS Resale Out of Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	103	112	9	8.04%
	MTTR	Not Calculated	9.38		
Dallas/Ft. Worth, TX					
	Trouble Reports	150	177	27	15.25%
	MTTR	Not Calculated	15.63		
Houston, TX					
	Trouble Reports	218	254	36	14.17%
	MTTR	Not Calculated	10.48		
South Texas					
	Trouble Reports	103	110	7	6.36%
	MTTR	Not Calculated	11.65		
Kansas					
	Trouble Reports	136	143	7	4.90%
	MTTR	Not Calculated	7.30		
Oklahoma					
	Trouble Reports	35	50	15	30.00%
	MTTR	Not Calculated	8.27		
Kansas City, MO					
	Trouble Reports	90	97	7	7.22%
	MTTR	Not Calculated	7.56		
St. Louis, MO					
	Trouble Reports	246	256	10	3.91%
	MTTR	Not Calculated	8.85		
Arkansas					
	Trouble Reports	19	19	0	0.00%
	MTTR	Not Calculated	7.40		

Figure H.32: PM39-07—Mean Time to Restore – Residential POTS Resale Out of Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	21	21	0	0.00%
	MTTR	Not Calculated	8.07		
Dallas/Ft. Worth, TX					
	Trouble Reports	66	66	0	0.00%
	MTTR	Not Calculated	10.97		
Houston, TX					
	Trouble Reports	46	46	0	0.00%
	MTTR	Not Calculated	6.20		
South Texas					
	Trouble Reports	30	30	0	0.00%
	MTTR	Not Calculated	9.08		
Kansas					
	Trouble Reports	33	33	0	0.00%
	MTTR	Not Calculated	7.76		
Oklahoma					
	Trouble Reports	11	12	1	8.33%
	MTTR	Not Calculated	3.30		
Kansas City, MO					
	Trouble Reports	11	11	0	0.00%
	MTTR	Not Calculated	2.42		
St. Louis, MO					
	Trouble Reports	8	8	0	0.00%
	MTTR	Not Calculated	2.79		
Arkansas					
	Trouble Reports	23	24	1	4.17%
	MTTR	Not Calculated	1.37		

Figure H.33: PM39-08—Mean Time to Restore – Business POTS Resale Out of Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	3	3	0	0.00%
	MTTR	Not Calculated	6.87		
Dallas/Ft. Worth, TX					
	Trouble Reports	6	9	3	33.33%
	MTTR	Not Calculated	9.65		
Houston, TX					
	Trouble Reports	8	8	0	0.00%
	MTTR	Not Calculated	5.39		
South Texas					
	Trouble Reports	9	9	0	0.00%
	MTTR	Not Calculated	4.59		
Kansas					
	Trouble Reports	7	7	0	0.00%
	MTTR	Not Calculated	7.41		
Oklahoma					
	Trouble Reports	1	1	0	0.00%
	MTTR	Not Calculated	0.43		
Kansas City, MO					
	Trouble Reports	2	3	1	33.33%
	MTTR	Not Calculated	6.39		
St. Louis, MO					
	Trouble Reports	5	5	0	0.00%
	MTTR	Not Calculated	1.67		
Arkansas					
	Trouble Reports	0	1	1	100.00%
	MTTR	Not Calculated	1.85		

Figure H.34: PM39-09—Mean Time to Restore – UNE-P
Affected Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	1,388	1,393	5	0.36%
	MTTR	Not Calculated	13.01		
Dallas/Ft. Worth, TX					
	Trouble Reports	1,995	1,999	4	0.20%
	MTTR	Not Calculated	16.34		
Houston, TX					
	Trouble Reports	2,690	2,696	6	0.22%
	MTTR	Not Calculated	14.05		
South Texas					
	Trouble Reports	1,201	1,201	0	0.00%
	MTTR	Not Calculated	19.16		
Kansas					
	Trouble Reports	546	548	2	0.36%
	MTTR	Not Calculated	11.67		
Oklahoma					
	Trouble Reports	295	295	0	0.00%
	MTTR	Not Calculated	15.59		
Kansas City, MO					
	Trouble Reports	217	217	0	0.00%
	MTTR	Not Calculated	15.13		
St. Louis, MO					
	Trouble Reports	307	308	1	0.32%
	MTTR	Not Calculated	10.55		
Arkansas					
	Trouble Reports	141	141	0	0.00%
	MTTR	Not Calculated	13.40		

Figure H.35: PM39-10—Mean Time to Restore – UNE-P
Affected Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	81	82	1	1.22%
	MTTR	Not Calculated	3.63		
Dallas/Ft. Worth, TX					
	Trouble Reports	198	198	0	0.00%
	MTTR	Not Calculated	7.64		
Houston, TX					
	Trouble Reports	224	224	0	0.00%
	MTTR	Not Calculated	8.37		
South Texas					
	Trouble Reports	142	143	1	0.70%
	MTTR	Not Calculated	9.57		
Kansas					
	Trouble Reports	45	45	0	0.00%
	MTTR	Not Calculated	3.51		
Oklahoma					
	Trouble Reports	19	19	0	0.00%
	MTTR	Not Calculated	4.14		
Kansas City, MO					
	Trouble Reports	18	19	1	5.26%
	MTTR	Not Calculated	6.77		
St. Louis, MO					
	Trouble Reports	9	11	2	18.18%
	MTTR	Not Calculated	0.28		
Arkansas					
	Trouble Reports	17	17	0	0.00%
	MTTR	Not Calculated	5.96		

Figure H.36: PM39-11—Mean Time to Restore – UNE-P
Out of Service – Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	4,213	4,222	9	0.21%
	MTTR	Not Calculated	12.54		
Dallas/Ft. Worth, TX					
	Trouble Reports	6,840	6,864	24	0.35%
	MTTR	Not Calculated	17.02		
Houston, TX					
	Trouble Reports	7,837	7,857	20	0.25%
	MTTR	Not Calculated	14.87		
South Texas					
	Trouble Reports	3,561	3,569	8	0.22%
	MTTR	Not Calculated	17.10		
Kansas					
	Trouble Reports	1,350	1,353	3	0.22%
	MTTR	Not Calculated	11.50		
Oklahoma					
	Trouble Reports	697	698	1	0.14%
	MTTR	Not Calculated	12.26		
Kansas City, MO					
	Trouble Reports	566	566	0	0.00%
	MTTR	Not Calculated	10.94		
St. Louis, MO					
	Trouble Reports	799	800	1	0.13%
	MTTR	Not Calculated	9.71		
Arkansas					
	Trouble Reports	454	456	2	0.44%
	MTTR	Not Calculated	12.56		

Figure H.37: PM39-12—Mean Time to Restore – UNE-P
Out of Service – No Dispatch

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	101	102	1	0.98%
	MTTR	Not Calculated	10.63		
Dallas/Ft. Worth, TX					
	Trouble Reports	393	393	0	0.00%
	MTTR	Not Calculated	14.26		
Houston, TX					
	Trouble Reports	341	341	0	0.00%
	MTTR	Not Calculated	9.25		
South Texas					
	Trouble Reports	248	248	0	0.00%
	MTTR	Not Calculated	10.92		
Kansas					
	Trouble Reports	35	35	0	0.00%
	MTTR	Not Calculated	3.20		
Oklahoma					
	Trouble Reports	22	22	0	0.00%
	MTTR	Not Calculated	6.15		
Kansas City, MO					
	Trouble Reports	15	15	0	0.00%
	MTTR	Not Calculated	1.98		
St. Louis, MO					
	Trouble Reports	19	19	0	0.00%
	MTTR	Not Calculated	19.49		
Arkansas					
	Trouble Reports	21	21	0	0.00%
	MTTR	Not Calculated	8.19		

Figure H.38: PM40-01—Percent Out of Service Less than 24 Hours
Residential POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	609	611	2	0.33%
	OOS <24 Hrs.	585	587	2	0.34%
	% OOS <24 Hrs.	96.05%	96.07%	0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1,236	1,239	3	0.24%
	OOS <24 Hrs.	1,056	1,059	3	0.28%
	% OOS <24 Hrs.	85.44%	85.47%	0.03%	
Houston, TX					
	Trouble Reports	1,213	1,216	3	0.25%
	OOS <24 Hrs.	1,136	1,139	3	0.26%
	% OOS <24 Hrs.	93.65%	93.67%	0.02%	
South Texas					
	Trouble Reports	481	482	1	0.21%
	OOS <24 Hrs.	424	425	1	0.24%
	% OOS <24 Hrs.	88.15%	88.17%	0.02%	
Kansas					
	Trouble Reports	672	672	0	0.00%
	OOS <24 Hrs.	606	606	0	0.00%
	% OOS <24 Hrs.	90.18%	90.18%	0.00%	
Oklahoma					
	Trouble Reports	693	709	16	2.26%
	OOS <24 Hrs.	633	647	14	2.16%
	% OOS <24 Hrs.	91.34%	91.26%	-0.08%	
Kansas City, MO					
	Trouble Reports	382	382	0	0.00%
	OOS <24 Hrs.	370	370	0	0.00%
	% OOS <24 Hrs.	96.86%	96.86%	0.00%	
St. Louis, MO					
	Trouble Reports	452	454	2	0.44%
	OOS <24 Hrs.	446	448	2	0.45%
	% OOS <24 Hrs.	98.67%	98.68%	0.01%	
Arkansas					
	Trouble Reports	553	554	1	0.18%
	OOS <24 Hrs.	544	545	1	0.18%
	% OOS <24 Hrs.	98.37%	98.38%	0.01%	

Figure H.39: PM40-02—Percent Out of Service Less than 24 Hours
Business POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	101	110	9	8.18%
	OOS <24 Hrs.	96	105	9	8.57%
	% OOS <24 Hrs.	95.05%	95.45%	0.40%	
Dallas/Ft. Worth, TX					
	Trouble Reports	148	177	29	16.38%
	OOS <24 Hrs.	129	154	25	16.23%
	% OOS <24 Hrs.	87.16%	87.01%	-0.15%	
Houston, TX					
	Trouble Reports	217	252	35	13.89%
	OOS <24 Hrs.	208	240	32	13.33%
	% OOS <24 Hrs.	95.85%	95.24%	-0.61%	
South Texas					
	Trouble Reports	109	116	7	6.03%
	OOS <24 Hrs.	100	107	7	6.54%
	% OOS <24 Hrs.	91.74%	92.24%	0.50%	
Kansas					
	Trouble Reports	139	144	5	3.47%
	OOS <24 Hrs.	134	139	5	3.60%
	% OOS <24 Hrs.	96.40%	96.53%	0.13%	
Oklahoma					
	Trouble Reports	31	47	16	34.04%
	OOS <24 Hrs.	30	46	16	34.78%
	% OOS <24 Hrs.	96.77%	97.87%	1.10%	
Kansas City, MO					
	Trouble Reports	91	99	8	8.08%
	OOS <24 Hrs.	90	98	8	8.16%
	% OOS <24 Hrs.	98.90%	98.99%	0.09%	
St. Louis, MO					
	Trouble Reports	239	249	10	4.02%
	OOS <24 Hrs.	236	246	10	4.07%
	% OOS <24 Hrs.	98.74%	98.80%	0.06%	
Arkansas					
	Trouble Reports	17	18	1	5.56%
	OOS <24 Hrs.	17	18	1	5.56%
	% OOS <24 Hrs.	100.00%	100.00%	0.00%	

Figure H.40: PM40-03—Percent Out of Service Less than 24 Hours
UNE-P

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	4,159	4,169	10	0.24%
	OOS <24 Hrs.	3,905	3,915	10	0.26%
	% OOS <24 Hrs.	93.87%	93.91%	0.04%	
Dallas/Ft. Worth, TX					
	Trouble Reports	6,852	6,875	23	0.33%
	OOS <24 Hrs.	5,870	5,891	21	0.36%
	% OOS <24 Hrs.	85.67%	85.69%	0.02%	
Houston, TX					
	Trouble Reports	7,775	7,795	20	0.26%
	OOS <24 Hrs.	7,070	7,087	17	0.24%
	% OOS <24 Hrs.	90.93%	90.92%	-0.01%	
South Texas					
	Trouble Reports	3,680	3,688	8	0.22%
	OOS <24 Hrs.	3,201	3,209	8	0.25%
	% OOS <24 Hrs.	86.98%	87.01%	0.03%	
Kansas					
	Trouble Reports	1,342	1,345	3	0.22%
	OOS <24 Hrs.	1,239	1,240	1	0.08%
	% OOS <24 Hrs.	92.32%	92.19%	-0.13%	
Oklahoma					
	Trouble Reports	660	683	23	3.37%
	OOS <24 Hrs.	610	632	22	3.48%
	% OOS <24 Hrs.	92.42%	92.53%	0.11%	
Kansas City, MO					
	Trouble Reports	552	552	0	0.00%
	OOS <24 Hrs.	512	512	0	0.00%
	% OOS <24 Hrs.	92.75%	92.75%	0.00%	
St. Louis, MO					
	Trouble Reports	771	772	1	0.13%
	OOS <24 Hrs.	748	749	1	0.13%
	% OOS <24 Hrs.	97.02%	97.02%	0.00%	
Arkansas					
	Trouble Reports	453	455	2	0.44%
	OOS <24 Hrs.	436	438	2	0.46%
	% OOS <24 Hrs.	96.25%	96.26%	0.01%	

Figure H.41: PM41-01—Percent Repeat Reports
Residential POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	517	521	4	0.77%
	Repeat Reports	15	16	1	6.25%
	% Repeat Reports	2.90%	3.07%	0.17%	
Dallas/Ft. Worth, TX					
	Trouble Reports	1,066	1,071	5	0.47%
	Repeat Reports	51	51	0	0.00%
	% Repeat Reports	4.78%	4.76%	-0.02%	
Houston, TX					
	Trouble Reports	1,085	1,090	5	0.46%
	Repeat Reports	53	53	0	0.00%
	% Repeat Reports	4.88%	4.86%	-0.02%	
South Texas					
	Trouble Reports	448	449	1	0.22%
	Repeat Reports	17	17	0	0.00%
	% Repeat Reports	4.78%	4.76%	-0.02%	
Kansas					
	Trouble Reports	662	663	1	0.15%
	Repeat Reports	33	33	0	0.00%
	% Repeat Reports	4.98%	4.98%	0.00%	
Oklahoma					
	Trouble Reports	714	725	11	1.52%
	Repeat Reports	29	31	2	6.45%
	% Repeat Reports	4.06%	4.28%	0.22%	
Kansas City, MO					
	Trouble Reports	404	404	0	0.00%
	Repeat Reports	27	27	0	0.00%
	% Repeat Reports	6.68%	6.68%	0.00%	
St. Louis, MO					
	Trouble Reports	378	380	2	0.53%
	Repeat Reports	25	25	0	0.00%
	% Repeat Reports	6.61%	6.58%	-0.03%	
Arkansas					
	Trouble Reports	550	552	2	0.36%
	Repeat Reports	41	41	0	0.00%
	% Repeat Reports	7.45%	7.43%	-0.02%	

Figure H.42: PM41-02—Percent Repeat Reports
Business POTS Resale

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	95	104	9	8.65%
	Repeat Reports	12	13	1	7.69%
	% Repeat Reports	12.63%	12.50%	-0.13%	
Dallas/Ft. Worth, TX					
	Trouble Reports	155	185	30	16.22%
	Repeat Reports	13	15	2	13.33%
	% Repeat Reports	8.39%	8.11%	-0.28%	
Houston, TX					
	Trouble Reports	211	249	38	15.26%
	Repeat Reports	13	14	1	7.14%
	% Repeat Reports	6.67%	5.62%	-1.05%	
South Texas					
	Trouble Reports	122	131	9	6.87%
	Repeat Reports	7	7	0	0.00%
	% Repeat Reports	5.74%	5.34%	-0.40%	
Kansas					
	Trouble Reports	134	142	8	5.63%
	Repeat Reports	6	8	2	25.00%
	% Repeat Reports	4.48%	5.63%	1.15%	
Oklahoma					
	Trouble Reports	33	54	21	38.89%
	Repeat Reports	2	4	2	50.00%
	% Repeat Reports	6.06%	7.41%	1.35%	
Kansas City, MO					
	Trouble Reports	88	95	7	7.37%
	Repeat Reports	6	7	1	14.29%
	% Repeat Reports	6.82%	7.37%	0.55%	
St. Louis, MO					
	Trouble Reports	244	253	9	3.56%
	Repeat Reports	21	21	0	0.00%
	% Repeat Reports	8.61%	8.30%	-0.31%	
Arkansas					
	Trouble Reports	20	21	1	4.76%
	Repeat Reports	1	1	0	0.00%
	% Repeat Reports	5.00%	4.76%	-0.24%	

Figure H.43: PM41-03—Percent Repeat Reports
UNE-P

		HP Calculated Result	SWBT Published Result	Differential	Variance
Central/West Texas					
	Trouble Reports	4,036	4,051	15	0.37%
	Repeat Reports	252	252	0	0.00%
	% Repeat Reports	6.24%	6.22%	-0.02%	
Dallas/Ft. Worth, TX					
	Trouble Reports	6,309	6,334	25	0.39%
	Repeat Reports	408	409	1	0.24%
	% Repeat Reports	6.47%	6.46%	-0.01%	
Houston, TX					
	Trouble Reports	7,958	7,981	23	0.29%
	Repeat Reports	527	528	1	0.19%
	% Repeat Reports	6.62%	6.62%	0.00%	
South Texas					
	Trouble Reports	3,770	3,778	8	0.21%
	Repeat Reports	251	251	0	0.00%
	% Repeat Reports	6.66%	6.64%	-0.02%	
Kansas					
	Trouble Reports	1,525	1,530	5	0.33%
	Repeat Reports	71	71	0	0.00%
	% Repeat Reports	4.66%	4.64%	-0.02%	
Oklahoma					
	Trouble Reports	796	812	16	1.97%
	Repeat Reports	47	48	1	2.08%
	% Repeat Reports	5.90%	5.91%	0.01%	
Kansas City, MO					
	Trouble Reports	561	561	0	0.00%
	Repeat Reports	35	35	0	0.00%
	% Repeat Reports	6.82%	6.24%	-0.58%	
St. Louis, MO					
	Trouble Reports	753	755	2	0.26%
	Repeat Reports	44	44	0	0.00%
	% Repeat Reports	5.84%	5.83%	-0.01%	
Arkansas					
	Trouble Reports	506	508	2	0.39%
	Repeat Reports	39	39	0	0.00%
	% Repeat Reports	7.71%	7.68%	-0.03%	

PMs Specific to UNE-P

- PM35 -- Percent Trouble Report within 10 Days of Installation
  - 35-09 – N and T orders, Field work
  - 35-10 – N and T orders, No Field work
  - 35-11 – C orders, Field work
  - 35-12 – C orders, No Field work
- PM35.1 – Percent UNE-P Trouble Reports on the Completion Date
- PM37 – Trouble Report Rate
  - 37-03 – UNE-P
- PM37.1 – Trouble Report Rate Net of Installation and Repeat Reports
  - 37.1-03 -- UNE-P
- PM38 – Percent Missed Repair Commitments
  - 38-05 -- Dispatch
  - 38-06 – No Dispatch
- PM39 – Mean Time to Restore
  - 39-09 – Affecting service, dispatch
  - 39-10 -- Affecting service, no dispatch
  - 39-11 – Out-of-service, dispatch
  - 39-12 – Out-of-service, no dispatch
- PM40 – Percent Out-of-Service less than 24 Hours
  - 40-03 -- UNE-P
- PM41 – Percent Repeat Reports
  - 41-03 -- UNE-P