

## **C. Test Results: Metrics Change Management Verification and Validation Review (PMR3)**

### **1.0 Description**

The objective of the Metrics Change Management Verification and Validation Review (PMR3) was to evaluate BellSouth's management of changes related to the production of its Service Quality Measurements (SQMs), including changes in the various legacy/source systems used to provide data for SQM calculations.

### **2.0 Methodology**

This section summarizes the test methodology.

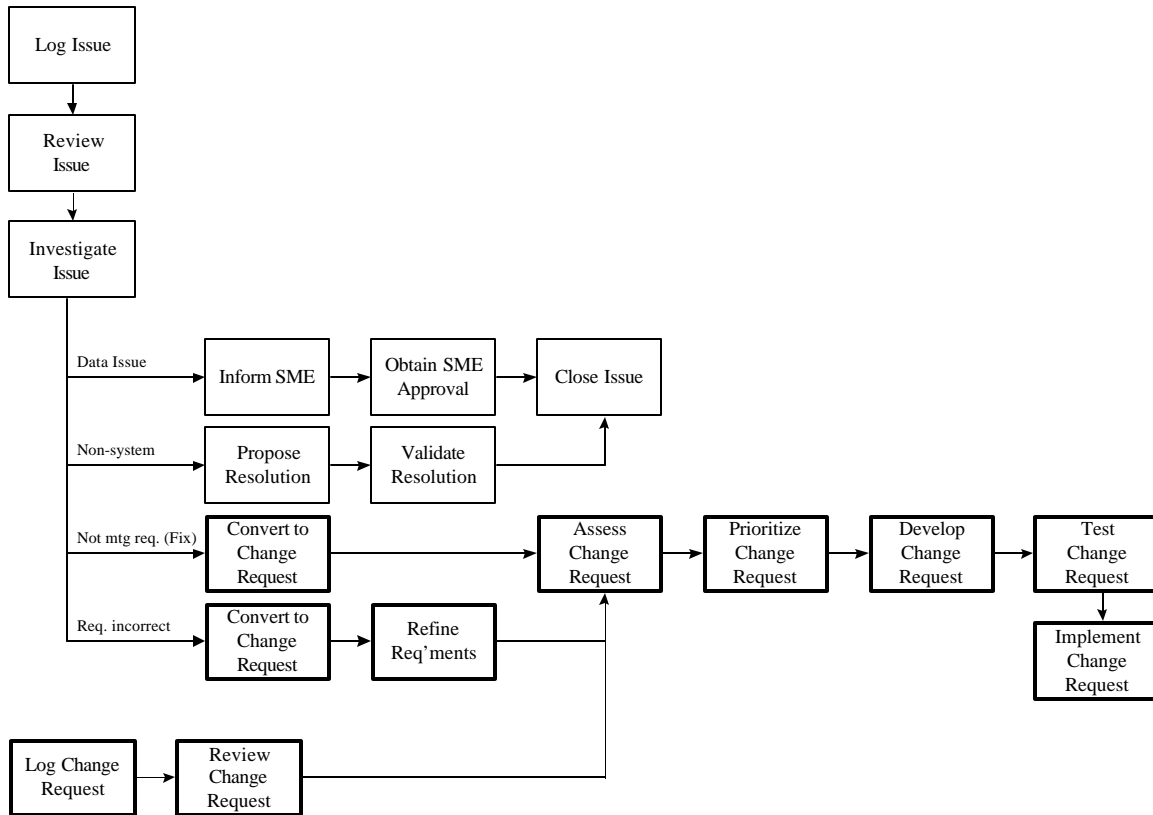
#### **2.1 Business Process Description**

BellSouth's change management process for the production of performance measures is applicable to changes in the production and reporting of SQMs. Figure VIII-3.1 illustrates the procedures followed by BellSouth to consider changes to existing SQMs, and to address related production issues that may arise. Change requests arise from regulatory mandates as well as evolving internal and external business practices. Initially, requests are referred to the appropriate BellSouth Subject Matter Experts (SMEs), based upon the SQM(s) in question. When a change involves modifications to the Performance Measurement and Analysis Platform (PMAP) or other systems, the respective system managers and database administrators become involved in the change management process. Change requests are discussed during Change Control Board Meetings and other meetings concerned with the SQM production cycle.

The process also considers other issues that are related to the production of SQMs. These issues are classified into four categories: Data Issue, Non-System, Not Meeting Requirements, or Requirements Incorrect. These issues may be raised by any member of the PMAP production team, by SMEs, or by other BellSouth personnel. Issues falling in the last two categories are immediately converted into change requests and handled according to change request procedures.

All change requests and logged issues are entered into a database that BellSouth calls *Issue Tracker*. All SMEs and members of the PMAP production team have access to this database, and are expected to use it to log change requests or issues for consideration by the Change Control Board. Entries include a description of the issue or the required change, the date on which it was opened, the originator of the issue, the individual to whom it should be assigned, and fields for how and when the issue or change request is resolved. *Issue Tracker* assigns a number to each entry for tracking purposes.



**Figure VIII-3.1: BellSouth Change Control and Issues Management Process Map**

Source: BellSouth, *Issue Management and Change Control Process*, December 21, 1999, p. 5.

## 2.2 Scenarios

Scenarios were not applicable to this test.

## 2.3 Test Targets & Measures

The target of this test was the change management process employed by BellSouth in the production of performance measures. Processes, sub-processes, and evaluation measures are summarized in the following table. The last column "Test Cross Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

**Table VIII-3.1: Test Target Cross-Reference**

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Change Management	Development of change proposals	Completeness and consistency of the change development process	PMR-3-1-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	Evaluation of change proposals	Completeness and consistency of the change evaluation process	PMR-3-1-2
	Implementation of changes	Completeness and consistency of the change implementation process	PMR-3-1-3
	Determination of change intervals	Reasonableness of the change interval	PMR-3-1-4
	Updating of documentation	Timeliness of documentation updates	PMR-3-1-5
	Tracking of change proposals	Adequacy and completeness of the change management tracking process	PMR-3-1-6

## 2.4 Data Sources

The data collected for the test are summarized in the table below.

**Table VIII-3.2: Data Sources for Metrics Change Management Verification and Validation Review**

Document	File Name	Location in Work Papers	Source
KCI Request for Documents 121799	Request for Documents 121799.doc	PMR-3-A-1	KCI
BLS Raw Data Validation Procedures	RWDATVAL.doc	PMR-3-A-1	BLS Interconnection Operations – CLEC Performance Measurements
BLS Response to Question 1B of KCI Memo	QUES1B.doc	PMR-3-A-1	BLS Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
BLS Response to Question 1D of KCI Memo	QUES1D.doc	PMR-3-A-1	BLS Interconnection Operations – CLEC Performance Measurements
KCI Request for Documents 010700	Request for Documents 0107.doc	PMR-3-A-2	KCI
BLS Response to January 7, 2000 Request for Documentation memo	PROCES~1.doc	PMR-3-A-2	BLS Interconnection Operations – CLEC Performance Measurements
Georgia Public Service Commission Docket No. 7892-U	7892_ORDER.TIF	PMR-3-A-2	BLS Interconnection Operations – CLEC Performance Measurements
KCI Request for Completed Run Books	PMR1012500DocRqstAlford.doc	PMR-3-A-3	KCI
KCI Request for Updated Issue Tracker	PMR3030300DocRqstAlford.doc	PMR-3-A-4	KCI
BLS Interview Report of the January 13, 2000 interview with Bill Sellers	PMR1_000113_IntReportAlford.doc	PMR-3-A-5	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of February 2, 2000 interview with Stephanie Ford and Richard Bray	PMR2_000202_IntReportMoulin.doc	PMR-3-A-6	KCI
KCI Interview Report of the February 8, 2000 interview regarding Legacy Source systems.	PMR1_000208_IntReportAlford.doc	PMR-3-A-7	KCI

Document	File Name	Location in Work Papers	Source
BLS Response to 2/8 Meeting Action Items	KPMG 02152000 Audit Response.doc	PMR-3-A-7	BLS Interconnection Operations – CLEC Performance Measurements
BLS Storage Manager Overview	KPMG Audit Attach #3.XLS	PMR-3-A-7	BLS Interconnection Operations – CLEC Performance Measurements
BLS LCSC Order Tracker Release Management Process	KPMG Audit Attach #5.vsd	PMR-3-A-7	BLS Interconnection Operations – CLEC Performance Measurements
BLS Audit Attachment #1	KPMG Audit Attach #1.doc	PMR-3-A-7	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of the February 21, 2000 interview with Ray Lee	PMR1_000221_IntReport Alford.doc	PMR-3-A-8	KCI
BLS Completed Interview Guide from Ray Lee	IGLEE2.DOC	PMR-3-A-8	BLS Interconnection Operations – CLEC Performance Measurements
BLS Responses on Interview Summary from February 21, 2000 interview with Ray Lee	RAYSUM.DOC	PMR-3-A-8	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of the February 29, 2000 and March 1, 2000 meetings with various SMEs	PMR1_000229_IntReport AlfordSMEs.doc	PMR-3-A-9	KCI

Document	File Name	Location in Work Papers	Source
BLS Response on Interview Summary from the February 29, 2000 interview with Terri Ferrara	KPMG-I~1.DOC	PMR-3-A-9	BLS Interconnection Operations – CLEC Performance Measurements
BLS Response on Interview Summary from the March 1, 2000 interview with Treva Garner	TGSMEI~1.DOC	PMR-3-A-9	BLS Interconnection Operations – CLEC Performance Measurements
BLS Response on Interview Summary from the February 29, 2000 interview with Linda Gilley	GILLEY.DOC	PMR-3-A-9	BLS Interconnection Operations – CLEC Performance Measurements
BLS Response on Interview Summary from the March 1, 2000 interview with Steve Elliott	KPMGNTV1.DOC	PMR-3-A-9	BLS Interconnection Operations – CLEC Performance Measurements
BLS Response on Interview Summary from the March 1, 2000 interview with Ted McDonald	No Electronic Copy	PMR-3-A-9	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of the March 7, 2000 interview with Phil Porter	PMR1_000307_IntRptAlfordPorter.doc	PMR-3-A-10	KCI
BLS Confirmation of the Interview Summary sent by KCI regarding the March 7, 2000 interview with Phil Porter	No Electronic Copy	PMR-3-A-10	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of the March 15, 2000 interview with Richard Bray	PMR1_031500_IntReportAlfordBray.doc	PMR-3-A-11	KCI

Document	File Name	Location in Work Papers	Source
BLS Response to the Interview Summary of the March 15, 2000 interview with Richard Bray	No Electronic Copy	PMR-3-A-11	BLS Interconnection Operations – CLEC Performance Measurements
KCI Interview Report of the various meetings of the Change Control Board	PMR3_IntReportAlford_ChangeControlMeetings.doc	PMR-3-A-12	KCI
BLS Pre-production notes sent from Bill Sellers	WES0007.DOC	PMR-3-A-12	BLS Interconnection Operations – CLEC Performance Measurements
BLS Post Mortem notes for the February production run	No Electronic Copy	PMR-3-A-12	BLS Interconnection Operations – CLEC Performance Measurements
BLS Service Quality Measurements Functional Organization	MOOREORG.PPT	PMR-3-A-13	BLS Interconnection Operations – CLEC Performance Measurements
BLS flow chart of the flow of information from Source Systems, through Staging, NODS, and DDS	PAGE4.DOC	PMR-3-A-14	BLS Interconnection Operations – CLEC Performance Measurements
BLS Issues Management and Change Control Process Guide, Version 2.1. —BLS Proprietary	CHANGER3.DOC	PMR-3-A-15	BLS Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
BLS PMAP Run Book, Draft 11/02/99—BLS Proprietary	RUNBOO~1.DOC	CD: PMR1-CD1	BLS Interconnection Operations – CLEC Performance Measurements
KCI request for documentation resulting from interview with Bill Sellers	WES0006.DOC	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements
BLS Performance Measurement and Analysis Platform (PMAP) Backup & Disaster Recovery Overview—BLS Proprietary	Backrec.doc	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements
BLS Periodic Activities of an Oracle DBA—BLS Proprietary	DBAHBV3.doc	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements
BLS Audit and Control Doc. for KCI—BLS Proprietary	Audit and Control Points2.doc	CD: PMR1-CD1	BLS Interconnection Operations – CLEC Performance Measurements
BLS <i>Issue Tracker</i> , issues #5000 - #5543—BLS Proprietary	No Electronic Copy	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements
BLS <i>Issue Tracker</i> , issues #5536 - #5686—BLS Proprietary	No Electronic Copy	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements



Document	File Name	Location in Work Papers	Source
BLS “Binder4.zip / Binder5.zip” Zip Disk—BLS Proprietary	Binder4.zip and Binder5.zip	PMR-3-A-16	BLS Interconnection Operations – CLEC Performance Measurements
BLS Spreadsheet comparing number of records in various files used as a control to ensure proper transfer of files in PMAP—BLS Proprietary	No Electronic Copy	PMR-3-A-17	BLS Interconnection Operations – CLEC Performance Measurements
BLS PMAP Run Book “December Run” —BLS Proprietary	No Electronic Copy	PMR-3-A-17	BLS Interconnection Operations – CLEC Performance Measurements
BLS PMAP Run Book “Jan 2000 Run Book” —BLS Proprietary	No Electronic Copy	PMR-3-A-17	BLS Interconnection Operations – CLEC Performance Measurements
BLS Implementation Manual—BLS Proprietary	No Electronic Copy	PMR-3-A-17	BLS Interconnection Operations – CLEC Performance Measurements
BLS Audit documentation request for ICAIS Parity Reporting System—BLS Proprietary	Smith – Audit113099.doc	CD: PMR1-CD1	BLS Interconnection Operations – CLEC Performance Measurements

#### 2.4.1 Data Generation/Volumes

This test relied on examination of BellSouth documentation and interviews with BellSouth personnel.

## 2.5 Evaluation Methods

KCI evaluated BellSouth's change management process in two stages. In the first stage, KCI reviewed BellSouth documentation related to the change management process for metrics production. In the second stage, KCI developed a series of questions for BellSouth personnel involved with this process, conducted interviews, and observed the regular meetings related to this process.

## 2.6 Analysis Methods

The Metrics Change Management Verification and Validation Review included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth-Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the Metrics Change Management Verification and Validation Review Test.

The data collected were analyzed employing the evaluation criteria referenced above.

## 3.0 Results Summary

This section identifies discrete evaluation criteria and test results.

### 3.1 Results & Analysis

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

**Table VIII-3.3: Evaluation Criteria and Results**

Test Cross-Reference	Evaluation Criteria	Result	Comments
PMR-3-1-1	BLS has a complete and consistent change development process.	Satisfied	<p>BLS procedures for the change management process related to the production of SQMs by PMAP are documented in the publication, <i>Issue Management and Change Control Process Guide</i> ("the Guide"). BLS considers all issues and proposed changes during meetings of the Change Control Board. Issues that relate to SQM production are considered in pre-production and post-production meetings as well.</p> <p>Interviews with BLS personnel indicated that this policy is also followed for manual SQMs. KCI found several issues and</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>changes in <i>Issue Tracker</i> relating to manual SQMs. Initially, the Guide did not explicitly include the manual SQMs. However, it was updated to cover the manual SQMs as well as the PMAP SQMs.</p> <p>Additionally, BLS had no formal mechanism by which changes in the legacy/source systems were conveyed to the PMAP change management process. On several occasions, systems changes have hindered the production of accurate, complete reports for the Trunking SQMs and the Average Response Time and Response Interval SQM. See Exception 70 for additional information on this issue.</p> <p>In the period since this exception was issued, BLS has developed a mechanism whereby legacy/source system owners and PMAP personnel discuss any changes to the legacy systems to ensure that the changes do not hinder accurate and complete report production. These new procedures were communicated to relevant personnel by BLS senior management. Exception 70 is closed.</p> <p>The change development process would be improved by involving CLECs in meetings of the Change Control Board and other meetings related to change management.</p> <p>Initially, BLS did not have an adequate change control procedure for revising its <i>PMAP Raw Data User Manual</i>. This document does not always reflect all types of changes. Additionally, changes among different versions of the manual that may affect a CLEC's ability to replicate an SQM report were not always clearly and completely documented in the manual's version change log. See Exception 88 for additional information on this issue.</p> <p>BLS responded to the issues identified in Exception 88 by developing a new procedure to ensure that the <i>Raw Data Users Manual</i> is synchronized with</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			changes in SQMs. KCI reviewed change requests that affect SQM report validation programs, and confirmed that any code changes that would require an update to the Raw Data User Manual were accurately reflected. Exception 88 is closed.
PMR-3-1-2	The methods and approaches used by BLS to evaluate change proposals are complete and consistent.	Satisfied	<p>The methods used to evaluate change proposals are consistent. BLS created the Change Control Board to consider all proposed and pending changes. One method used is to categorize changes according to standards defined in the Guide.</p> <p>Regarding completeness, KCI found that BLS does not actively seek comments from CLECs regarding change requests, but relies entirely on mandates from the GPSC.</p> <p>While KCI believes including a mechanism for incorporating CLEC comments would enhance the completeness of the process, the absence of this component does not significantly impede BLS' ability to evaluate change proposals.</p>
PMR-3-1-3	BLS' implementation of changes is complete and consistent.	Satisfied	Change implementation procedures are described in the Guide. All changes must be approved by the appropriate Subject Matter Expert (SME). BLS tests all programming changes with prior month's data. These tests must be approved by the relevant SME and by the PMAP Production Manager before being migrated into the production code.
PMR-3-1-4	BLS evaluates its change proposals within a reasonable time frame.	Satisfied	KCI's analysis of the <i>Issue Tracker</i> sample provided revealed that the median time to resolve change requests or database changes is 38 calendar days. This figure is based on those entries that indicate the closure date. <i>Issue Tracker</i> also includes other similar requests that have been closed for which no closure date is indicated in <i>Issue Tracker</i> . BLS has revised its procedures for <i>Issue Tracker</i> and KCI is satisfied with the changes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PMR-3-1-5	BLS updates its documentation in a timely manner.	Satisfied	<p>BLS publishes two basic documents that need to reflect changes in a timely manner.</p> <p>BLS updates the SQM document (which describes the metrics, their definitions, exclusions employed, and calculations) monthly for internal purposes. Updated versions are provided to CLECs on a quarterly basis via the PMAP Web site.</p> <p>BLS also produces <i>the PMAP Raw Data Users Manual</i> that allows CLECs to validate the performance measures specific to their business, and to develop their own measures for management purposes. This manual should be kept up-to-date by reflecting all changes within PMAP.</p> <p>Initially, KCI found two errors in the October 1999 manual. One was corrected in the December 1999 version. The other was not corrected until the February 2000 version. See Exception 88 for additional information. BLS responded by developing a new procedure to ensure that the <i>Raw Data Users Manual</i> is synchronized with changes in SQMs. KCI reviewed change requests that affect SQM report validation programs, and confirmed that any code changes that would require an update to the Raw Data User Manual were accurately reflected in the manual. Exception 88 is closed.</p> <p>BLS uses e-mail to communicate changes to CLECs in the current month's reported SQM values in a timely manner. BLS uses the PMAP Web site to communicate changes to prior month's reports.</p>
PMR-3-1-6	BLS' process for tracking changes is adequate and complete.	Satisfied	<p>BLS uses <i>Issue Tracker</i> to keep track of outstanding SQM-related issues and change requests. This database is accessible to all BLS personnel who are involved with the change management process. BLS also uses the various meetings of the Change Control Board and meetings related to the production cycle, to update the status of critical issues or</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
			<p>change requests, and to discuss these issues' resolution.</p> <p>Based on initial observations, KCI concluded that the process for tracking changes could be improved in two ways. First, as indicated in PMR-3-1-4, the date of closure for issues and changes must be recorded faithfully in <i>Issue Tracker</i>.<sup>1</sup> Second, <i>Issue Tracker</i> should be made available to non-BLS personnel. BLS does not automatically provide information on any proposal to those outside the company. BLS has upgraded its Issue Tracker to ensure that the closure date is recorded.</p> <p>BLS currently provides two versions of the SQM document—one in which the changes from the previous version are presented in "legislative format," and another version that does not highlight the changes. In the future, BLS intends to provide the revised version along with a version change log. KCI maintains that it would be preferable to provide all three documents: the revised version, a version change log, and a version in "legislative" format. However, providing only the revised version and a version change log does not significantly impede the review of changes to the document.</p> <p>See Exception 19 for additional information on this issue. Exception 19 is closed.</p>

<sup>1</sup>Twenty-one entries included the date they were closed. Sixty-two reported "Yes" as the date closed, and 16 had no entry for resolution, but have been closed. One resolution entry referred to another issue. All should have reported the date that they were closed.