

B. Test Results: Resale Usage Functional Evaluation (BLG8)

1.0 Description

The Resale Usage Functional Evaluation examined the functional elements associated with message processing of usage data by BellSouth on behalf of a Competitive Local Exchange Carrier (CLEC). For purposes of this evaluation, KCI simulated a non-facility based CLEC providing resale services to business and residential customers. For usage testing purposes, the KCI CLEC subscribed to BellSouth resale services.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

Message processing of usage data begins at the telephone switch. Usage is recorded by the switch and is retrieved by BellSouth on a daily basis. This information is used to create a file of call events. Call events associated with resale services provided to a CLEC are assembled for input into Daily Usage Files (DUFs) and delivered to CLECs electronically or on cartridge tapes, based on a schedule published by BellSouth (see Table V-2.5).

Events are consolidated or “packed” to ensure that a CLEC receives only one DUF feed per day, rather than multiple daily feeds. Files may contain a minimum of one message and a maximum of 99,999 messages. In most instances, DUFs are sent to CLECs on the second business day after the actual recording of the message (call details). Customers may request that prior period usage from the original transmission date up to 90 days be re-sent.

For the purposes of the DUF test, Optional Daily Usage File (ODUF) and Enhanced Optional Daily Usage File (EODUF) were produced by BellSouth and utilized by KCI. ODUFs include local billable messages carried over the BellSouth network, operator- handled calls, and BellSouth incoming collect calls. EODUFs include local call detail from flat-rated resale lines. Throughout this report, usage of the acronym DUF includes both ODUF and EODUF.

2.2 Scenarios

The usage-based evaluation involved test calls from both business and residential classes of service. Telephone lines used in the test were provisioned across four central offices using three switch types, including #5ESS, DMS 100/200, and 1AES. These telephone lines included resale business and residential lines. The twenty-eight call types, included in the DUF test are shown in Table V-2.1.



Table V-2.1: DUF Test Call Types

Call Types	
1.	Local Call
2.	Toll Call
3.	Collect Local Call (Operator Serviced)
4.	Collect Toll Call (Operator Serviced)
5.	Collect Local Call (Operator Completed)
6.	Collect Toll Call (Operator Completed)
7.	Third Party Local Telephone Call (Operator Serviced)
8.	Third Party Toll Telephone Call (Operator Serviced)
9.	Third Party Local Telephone Call (Operator Completed)
10.	Third Party Toll Telephone Call (Operator Completed)
11.	Operator Interruption of Local Call
12.	Operator Verification of Busy Local Number
13.	Operator Refund for Local Call
14.	Operator Refund for Toll Call
15.	Operator Assisted Toll Call without Service Charges
16.	Operator Assisted Local Call without Service Charges
17.	Operator Completed Toll Call with Service Charges
18.	Operator Completed Local Call with Service Charges
19.	Directory Assistance for Local Number
20.	Directory Assistance with Local Call Completion
21.	Customer Service Call
22.	Toll Free (800, 888, 877) Call
23.	Information Provider 900/976 Call
24.	Phonesmart Repeat Dial Call
25.	Phonesmart Dial Back Call
26.	Three Way Call
27.	Operator Assisted Third Party (Out-of-Area Caller) Local Call
28.	Operator Assisted Third Party (Out-of-Area Caller) Toll Call

2.3 Test Targets & Measures

For the DUF activity test, the test target was the recording, assembly, and delivery of relevant usage data. 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 V-2.2: BLG8 Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Reporting of Usage	Track Usage	Completeness	BLG-8-1-1, BLG-8-1-2, BLG-8-1-3
	Verify Usage Data	Completeness and Accuracy of data	BLG-8-1-1, BLG-8-1-2, BLG-8-1-3, BLG-8-1-4
	Verify no empty set files	Completeness and Accuracy of data	BLG-8-1-1, BLG-8-1-2, BLG-8-1-3, BLG-8-1-4
Receipt of Usage	Verify Header/Trailer Record counts	Completeness of data	BLG-8-1-1
	Track receipt of files	Timeliness of DUF files and Records	BLG-8-1-3

2.4 Data Sources

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

Table V-2.3: Data Sources for the BLG8: Resale Usage Functional Evaluation

Document	File Name	Location in Work Papers	Source
Soft Copies of Test Records & DUF Files	RSLMatch.xls	BLG-8-A-5	KCI
Exchange Message Interface/Ordering and Billing Forum (EMI/OBF)	EMI16r2.pdf Version 16r2, July 1999	BLG-2-A-5	Alliance for Telecommunications Industry Solutions (ATIS)
BLS Optional Daily Usage File (ODUF), December 1999	No Electronic Copy	BLG-2-A-7	BLS http://www.interconnection.bellsouth.com/products/billing/oduf.html

Document	File Name	Location in Work Papers	Source
<i>BLS Enhanced Optional Daily Usage File (EODUF), December 1999</i>	No Electronic Copy	BLG-2-A-8	BLS http://www.interconnection.bellsouth.com/products/billing/eoduf.html
<i>Facility-Based CLEC Starter Kit – Daily Usage File, Issue 2, December 31, 1997</i>	No Electronic Copy	BLG-2-A-9	BLS
<i>Usage Process: Timing of ADUF Messages, Issue Date: February 17, 1998; Revision Date: July 12, 1998</i>	No Electronic Copy	BLG-2-A-13	BLS
<i>CLEC Advisory Training</i>	No Electronic Copy	BLG-2-A-15	BLS
<i>Electronic Interface – Billing Optional Daily Usage Files, September 31, 1999</i>	No Electronic Copy	BLG-2-B-1	BLS
<i>Chapter 3.0 Billing Format Options</i>	No Electronic Copy	BLG-2-B-3	BLS http://www.interconnection.bellsouth.com/guides/actreq2_fac/c3_4.htm
<i>BLS Optional Daily Usage File (ODUF) Revision Date: April 30, 1999</i>	No Electronic Copy	BLG-2-B-4	BLS

2.4.1 Data Generation/Volumes

This test required usage data generation. Each tester received instructions and training for placing and recording calls. Testers recorded actual call information in the test call log and submitted both written and electronic copies of the logs. Testers were instructed to place calls to particular telephone numbers in specific ways. Testers were required to log all attempted and completed calls. A total of 898 originating and terminating calls were included in the evaluation. To generate test calls of sufficient variety, testers were dispatched to four locations within the BellSouth calling region. These locations are listed in Table V-2.4:

Table V-2.4: Test Call Sites (BellSouth Central Offices)

Central Office	Address
Macon	787 Cherry Street, Macon, GA 31201
Powers Ferry	1732 Powers Ferry Road SE, Marietta, GA 30067
Rome	708 East First Street, Rome, GA 30161
Toco Hills	2204 La Vista Road NE, Atlanta, GA 30320
Floater	Various locations throughout Georgia

One additional tester, traveling within Georgia, placed third party billing and collect calls from non-test lines to test lines¹ in the BellSouth calling region.

Each tester was given a spreadsheet containing the telephone numbers to be called and any special instructions needed to ensure that a wide variety of call types and call lengths were placed. Testers recorded actual call information on the spreadsheets.

Calls were grouped in four categories: Local, Toll, Operator Services and Other. 'Local' calls are defined as calls made to destinations within the local calling area, and are charged by standard measured service or a monthly flat fee. 'Toll' calls are calls made to destinations outside of the local calling region, but within the same Local Access Transport Area (LATA). Operator Services calls include credit calls, directory assistance calls, and special service calls. 'Other' calls consist of information provider calls (900 services) and casual calls (10-10-XXX dialed, e.g. 10-10-321)². BellSouth retains the access records for resale accounts, and is entitled to bill access charges to long distance carriers for resale accounts; therefore, long distance calls were not placed as part of the resale test.

2.5 Evaluation Methods

The following methodology was employed to evaluate the accuracy, completeness and timeliness of DUFs:

1. The testers placed scripted test calls across all 28 call categories.
2. Test log records for the completed test calls and DUF records received were compiled in a database. Each test call was examined to determine if the specific call should result in the generation of a DUF record.

¹ Test lines are provisioned for use by KCI; non-test lines are non-KCI lines utilized during the test

² Information provider calls are calls to information providers accessed by dialing 1-900-xxx-xxxx; casual calls are long-distance calls placed by first utilizing a 10-10-xxxx dialing pattern to gain access (dial tone) from an alternative long-distance carrier, rather than direct-dialing the call.

- Individual call records on the DUF were matched against call details from the test call logs. All call types were reviewed for accuracy, validation of the date and time of placement, origination and termination TNs, call duration, method of recording, rate class, indicators, and message type. If a unique record could not be identified as a match to the call log, the expected DUF record was designated as missing. KCI also examined the database to identify any unexpected DUF records.
3. The record layout and content of DUF headers and trailers, as defined by Exchange Message Interface-Ordering and Billing Forum (EMI-OBF) guidelines³, were examined to verify that the DUFs actually contained the number of records indicated in the header and trailer. DUFs were examined to verify that no empty files were transmitted, and that the volume of records contained in the DUFs were within BellSouth's published specifications.
 4. The transmission date and time of DUFs were recorded, and the number of calendar days between the message creation date and the DUF transmission date was noted. This number was used in the determination of timeliness of usage data delivery. Although BellSouth offers a variety of DUF delivery methods to CLECs, this test involved only the CONNECT:Direct® delivery method. Therefore, all delivery time analysis was completed from files transmitted via CONNECT:Direct and over an eight-day period beginning on April 3, 2000.

The timeliness of delivery of DUFs was evaluated based on the following message transmission timing factors as published by BellSouth.⁴

³ Exchange Message Interface-Ordering and Billing Forum (EMI-OBF) EMI16r2.pdf Version 16r2, July 1999

⁴ BellSouth ADUF document entitled *Data Delivery*, Chapter 6 p.vi.6.1 - "Usage Processing, Timing of ADUF Messages."

Table V-2.5: BellSouth Schedule of Message Recording and Delivery to CLECs

Message Recorded	BIBS Sends (Processing Ctr. 1) ⁵	MD03B01 Receives (Processing Ctr. 2) ⁶	MD03B02 Consolidator in Mississippi Receives (BLS Processing Ctr. 3) ⁷	CLEC Receives
Mon	Tues 1:00pm	Tues between 1:00pm and 12:00am	Wed 7:00am	Wed 9:00am
Tues	Wed 1:00pm	Wed between 1:00pm and 12:00am	Thurs 7:00am	Thurs 9:00am
Wed	Thurs 1:00pm	Thurs between 1:00pm and 12:00am	Fri 7:00am	Fri 9:00am
Thurs	Fri 1:00pm	Fri between 1:00pm and 12:00am	Mon 7:00am	Mon 9:00am
Fri	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am
Sat	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am
Sun	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am

2.6 Analysis Methods

The test 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 Resale Usage Functional Evaluation.

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

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

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

Table V-2.6: BLG8 Evaluation Criteria and Results

⁵ BellSouth Industrial Billing System (BIBS) processes and feeds ODUF and EODUF.

⁶ MD03B01 processes jobs in each of the Revenue Accounting Offices (RAO); performs system edits and EMI conversion.

⁷ MD03B02 Consolidator processes all files from RAO and packs data into header and trailer records.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-8-1-1	For all scripted and completed test calls that should generate a DUF record, appropriate DUF records are contained in the electronically delivered Daily Usage Files.	Satisfied	<p>During the period April 4-7, 2000, KCI completed 898 test calls for which DUF files were expected. In the majority of cases, BLS provided appropriate DUF records for these calls. KCI did observe several minor issues with the DUF records:</p> <ul style="list-style-type: none"> • In several cases, BLS was inconsistent in providing local call detail records for directory assistance call completion on flat-rated lines. • BLS occasionally provided unexpected operator-completed intralata toll records immediately following customer credit requests. • BLS provided inconsistent records for operator-handled versus non-operator-handled local calls in several instances. • BLS did not provide customer service call detail from the Rome or Macon central offices.
BLG-8-1-2	For all scripted and completed test calls that should generate a DUF record, all expected DUF records are contained in the electronically delivered Daily Usage Files.	Satisfied	<p>KCI completed 898 test calls during the Resale Usage Functional Evaluation. BLS failed to deliver DUF records for 12% of the test calls for which records were expected. As a result, KCI issued Exception 94. Upon further investigation, which revealed switch records that errored in the BLS billing system (BLS utilizes the same system for retail and resale billing which includes the same edits and error processes) and some KCI logging errors, KCI concluded that BLS did, in fact, deliver DUF records for 95% of the test calls for which records were expected.</p> <p>Exception 94 is closed. See Exception 94 for additional information on this issue.</p>

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-8-1-3	For all scripted and completed test calls that should generate a DUF record, 95% are delivered within six calendar days.	Satisfied	During the period April 4-7, 2000, KCI completed 898 test calls for which DUF files were expected. BLS delivered 100% of the DUF records within six calendar days.
BLG-8-1-4	DUF records transmitted to the KCI test CLEC contained billable information.	Satisfied	All of the DUF file transmissions BLS provided to KCI contained billable information.

3.2. DUF Accuracy and Completeness Summary Data Analysis

Table V-2.7 illustrates timeliness results for the BellSouth DUF Usage test. DUF records received after six calendar days are considered to be untimely based on the intervals specified in KCI's interconnection agreement.

Table V-2.7: DUF Timeliness

Timeliness Criteria	Percent Received	Cumulative Percent Received
% DUF in 1 calendar day	24%	24%
% DUF in 2 calendar days	0%	24%
% DUF in 3 calendar days	45%	69%
% DUF in 4 calendar days	30%	99%
% DUF in 5 calendar days	1%	100%
% DUF in 6 calendar days	0%	100%
% DUF in >6 calendar days	0%	100%

Table V-2.8 displays results by location from KCI's analysis of DUFs for accuracy and completeness.

Table V-2.8: Results by Location

Evaluation Criteria	Macon	Powers Ferry	Rome	Toco Hills	Total
1) Total number of test calls	241	224	237	196	898

Evaluation Criteria	Macon	Powers Ferry	Rome	Toco Hills	Total
2) Number of Calls for which no DUF was expected	84	89	94	55	322
3) Total number of calls for which a DUF record was expected	157	135	143	141	576
4) Total number of calls for which an expected DUF record wasn't found	12	11	14	8	45
5) Number of expected DUFs that were not found as a percentage of total number calls for which a DUF was expected	8	8	10	6	8
6) Total number of scripted test calls for which an unexpected DUF record was found	0	0	0	0	0
7) Percentage of total test calls for which an unexpected DUF record was found (6/1)	0%	0%	0%	0%	0%

Note: Totals may not sum due to rounding

Table V-2.9 illustrates the results of analysis done to validate transmitted file completeness.

Table V-2.9: DUF Transmission Completeness Validation

Create Date	DUF File	File Count	Actual Count	Discrepancies
04/07/2000	Dsadufga.zxc.194653.D2000098.T071946.20000407090003952	313	313	0
04/07/2000	Dsadufga.zxc.194801.D2000098.T071948.20000407090004220	173	173	0

Create Date	DUF File	File Count	Actual Count	Discrepancies
04/10/2000	Dsadufga.zxc.302702.D2000101.T073027.20000410090004444	166	166	0
04/07/2000	Dsodufga.zxc.233363.D2000098.T122333.20000407150002292	208	208	0
04/07/2000	Dsodufga.zxc.233827.D2000098.T122338.20000407150004953	221	221	0
04/07/2000	Dsodufga.zxc.234171.D2000098.T122341.20000407150006788	99	99	0
04/07/2000	Dsodufga.zxc.234518.D2000098.T122345.20000407150007579	36	36	0
04/10/2000	Dsodufga.zxc.345991.D2000101.T073459.20000410090007787	191	191	0
04/10/2000	Dsodufga.zxc.350690.D2000101.T073504.20000410090010951	238	238	0
04/10/2000	Dsodufga.zxc.350690.D2000101.T073506.20000410090011115	117	117	0
04/11/2000	Dsodufga.zxc.410386.D2000102.T074103.20000411090006463	231	231	0
04/11/2000	Dsodufga.zxc.410735.D2000102.T074107.20000411090009408	139	139	0
04/11/2000	Dsodufga.zxc.410900.D2000102.T074109.20000411090011780	19	19	0
04/03/2000	Dsodufga.zxc.450365.D2000094.T084503.20000403120004341	1	1	0