A. Test Results: TAG Pre-Ordering Functional Test (PRE-1)

1.0 Description

The objective of the Telecommunications Access Gateway (TAG) Pre-Ordering Functional Test (PRE-1) was to evaluate the systems, processes, and other operational elements associated with BellSouth's ability to provide Competitive Local Exchange Carriers (CLECs) with non-discriminatory access to its Operational Support Systems (OSS) supporting pre-order functions. CLECs submit pre-order queries to validate existing customer information, to check BellSouth facility availability, and to obtain data (e.g., telephone numbers and service feature codes) that will be input on subsequent service orders. This evaluation assessed BellSouth's ability to process accurate and timely pre-order transactions via the TAG Client Application Program Interface (API).

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section IV, "Pre-Ordering Overview" for a description of the BellSouth pre-ordering process via TAG.

2.2 Scenarios

KCI generated and transmitted pre-order queries based on the ten pre-order scenarios listed in the *Master Test Plan (MTP).* The *MTP* defined the pre-order scenarios to be tested in PRE-1, outlining specific requirements for transaction types and customer types.

The list of pre-order scenarios that were used for this test is presented in Section V, Table IV-1.1.

2.3 Test Targets & Measures

The test target was BellSouth's pre-order inquiry process via the TAG interface. Sub-processes, functions, and evaluation criteria 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 IV-1.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Validate Address	Send address request using Billing Telephone Number (BTN)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using Working Telephone Number (WTN)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using full address	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using partial address	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-1 PRE-1-3-2
	Receive near match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Receive no match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send address inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-1 PRE-1-3-2

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Retrieve Customer Service Record	Send CSR request using BTN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using WTN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using circuit identifier and state code	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using miscellaneous account number	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
	Receive no-match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-2 PRE-1-3-5
	Correct error(s)	Clarity of Information	PRE-1-4-2
	Resend CSR inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
Determine Product / Service Availability	Send service availability (Local Primary Interexchange Carrier [LPIC], Primary Interexchange Carrier [PIC], Switch Service Availability) request transaction	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive availability response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-8
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-8

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send service availability inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-4-8
Request Available Telephone Number(s)	Send Telephone Number (TN) request for specific number(s), i.e., Easy, Sequential, Ascending, Vanity, etc.	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for random number(s)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for a range of specific numbers	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for a range of random numbers	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive available numbers response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send available telephone number request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive available numbers response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Reserve TNs	Send reservation for a single TN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation for Multi-Line-Hunt TNs	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation for Direct In-Dial TNs	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation extension request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send TN reservation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
Cancel TN Reservation	Send cancel reservation request for Single TN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send cancel reservation request for Multi-Line Hunt	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send cancel reservation request for Direct-In-Dial	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send cancel TN reservation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
Determine Appointment Availability	Send request for appointment availability	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-3
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-3
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send available due date request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-3
Calculate Due Date	Send request for due date calculation	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-9
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-9
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send due date calculation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-9

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Pre-Order / Order Integration	Submit pre-order transactions designated for integration test	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-2-1 through PRE-1-2-9
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-2-1 through PRE-1-2-9
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send transactions	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid responses	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-2-1 through PRE-1-2-9

2.4 Data Sources

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

Table IV-1.2: Data Sources for TAG Pre-Ordering Functional Test

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules, Versions 2.0, 3.0, 4.0, 5.0, 6.0, and 7.0	No Electronic Copy	PRE-1-A-1	BLS
Pre-Order Business Rules Data Dictionary, Versions 1.0 and 3.0	No Electronic Copy	PRE-1-A-2	BLS
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.0.11	No Electronic Copy	PRE-1-A-3	BLS
TAG Programmers Job Aid	No Electronic Copy	PRE-1-A-4	BLS
Pre-Order Test Case Master	POTestCases.xls	PRE-1-A-5	KCI

Document	File Name	Location in Work Papers	Source
Transaction Submission Schedule	Schedule.xls	PRE-1-A-6	KCI
HP TAG System Availability Logs	TAGSystAvail.mdb	PRE-1-A-7	HP
Pre-Order Response Completeness Results Log	PreOrderResponse.xls	PRE-1-A-8	KCI
Pre-Order Timeliness Report Detail: Initial Test	PreOrderTimes.xls	PRE-1-A-9	KCI
Pre-Order Timeliness Report Detail: Re-Test	PreOrderTimesRetest.xls	PRE-1-A-10	KCI
CDD Interval Tracking Log	CDDTracking.xls	PRE-1-A-11	KCI
Service Availability Query (SAQ) Detail: Re-Test	SAQDetail.xls	PRE-1-A-12	KCI
Help Desk Log – Pre-Orders	Help Desk Log.xls	PRE-1-A-13	KCI
Pre Order Expected Response Log	POExpectedResponses.xls	PRE-1-A-15	KCI

2.4.1 Data Generation/Volumes

Data for this test were generated through pre-order transaction submissions via TAG. The number of transactions submitted during functional testing was determined based on the number of pre-order query types available to CLECs via the TAG interface.

This test is a feature function test and did not rely on volume testing.

2.5 Evaluation Methods

To facilitate pre-order inquiry submission, BellSouth provided KCI with test bed accounts that were provisioned according to KCI specifications[1]. Using this test bed information, as well as BellSouth Pre-ordering Business Rules[2], KCI developed test cases and instances (individual pre-order transactions) to be submitted via TAG.

1 Refer to Section V, "O&P Overview" for a more detailed description of the Ordering and Provisioning test bed. The Pre-Order Functional Test utilized the test bed account information provided for the Ordering and Provisioning tests.

2 An initial version of the *BellSouth Pre-order Business Rules* was distributed on the BellSouth Interconnection Web site on 12/16/99. Prior to this date, KCI utilized the *TAG API Guide*, in conjunction with information distributed during BellSouth TAG training, to populate pre-order transactions.

Pre-order transactions were submitted and the results logged and compared to expected pre-ordering system functionality and business processes, as outlined in Section V, "Ordering & Provisioning Overview."

2.6 Analysis Methods

The TAG Pre-Ordering Functional 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 Pre-Ordering Functional Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[3]. For those evaluation criteria that do not map to the GPSC-approved measures, or where BellSouth does not specify and publish a standard business interval for a given procedure, KCI applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the 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 IV-1.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Availability			
PRE-1-1-1	TAG pre-order transaction capability is consistently available	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[4].

[3] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6, 2000 test standards.

4 Regular scheduled hours of availability for the TAG interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BLS Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	during scheduled hours of operation.		During the course of this test, Hewlett Packard attempted to maintain a constant connection to BLS's TAG interface by implementing regular system 'pinging.' Based on an analysis of HP's TAG system availability logs between 2/15/00 and 7/27/00[5], KCI observed that the TAG interface was available during 99.5% of scheduled hours of availability[6].
Presence of Functionality			
PRE-1-2-1	BLS's TAG interface provides expected system responses.	Satisfied	The KCI standard is 99% of expected system responses received. BLS's TAG interface provided responses (TAG API error, back-end error, or back-end success response) for 100% of 1,317 pre-order transactions submitted during initial functional testing.
PRE-1-2-2	BLS systems or representatives provide required pre-ordering functionality.	Satisfied	BLS systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Section V, Table IV-1.1). KCI initially encountered functionality deficiencies when processing Calculate Due Date[7] (CDD) requests for the following order types: • Loop with Number Portability – Migration as-is • Stand-Alone Number Portability – Migration as-is. When performing due date calculations for the above order types, KCI received error messages indicating

5 HP maintained detailed logs of system availability beginning on 2/15/00. Comprehensive system availability data for the test period prior to this date is unavailable.

6 KCI could not conclusively determine the root source for all recorded downtime (BellSouth or HP).

7 CDD queries are performed to determine a standard service provisioning interval for a specified order Requisition (REQ) and Activity (ACT) combination. KCI attempted to execute CDD pre-orders for each REQ ACT combination performed in the order functional evaluation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			that the REQ / ACT type was invalid. KCI issued Exception 65. BLS implemented the required functionality to process Number Portability CDD transactions with version 2.2.0.11 of TAG. KCI performed a re-test of CDD functionality and found that TAG 2.2.0.11 contained the necessary functionality to process Number Portability CDD requests. See Exception 65 for additional information on this issue. Exception 65 is closed. Following the release of TAG 2.2.0.11, KCI was unable to perform CDD transactions associated with UNE Loop-Port Combination accounts. At the time of the interface release, the Pre-Order Business Rules did not provide information on a new field (RSPRODUCT) added to the CDD query. BLS released updated Business Rules on 11/9/00 to address this field. In addition, BLS announced a functionality workaround for processing CDD queries for UNE Loop-Port Combination customers. This workaround was communicated via the Carrier Notification process on December 29, 2000. Following this clarification on valid entries for the RSPRODUCT field, KCI was able to successfully execute CDD transactions for Loop-Port Combinations. See Exception 116 for additional information on this issue. KCI has recommended closure of Exception 116 to the GPSC. While executing pre-order requests in

[8] This second ordering re-test was initiated on January 19, 2001. KCI executed pre-order transactions in support of this re-test via TAG Version 2.2.0.11.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			support of the second ordering functional re-test[8], KCI was unable to perform Telephone Number Selection Queries (TNSQs) for customers served out of Macon or Augusta Central Offices (COs). In response to TNSQs submitted, BLS delivered error messages advising KCI to call BLS's Electronic Commerce (EC) Support Desk. On 2/9/01, BLS determined that an audit table entry was missing from BLS back-end tables and added the appropriate audit record. Following this fix, KCI was able to successfully execute TNSQ transactions for all relevant COs. See Exception 130 for additional information on this issue. KCI has recommended closure of Exception 130 to the GPSC.
Timeliness of Response[9] [10] [11]			
PRE-1-3-1	The TAG interface provides timely pre-order responses from	Satisfied[13]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI

[9] See Exception 24 for additional information on BellSouth's pre-order response timeliness performance for all query types. Based on BLS system upgrades implemented with TAG Version 2.2.0.7, KCI initiated a re-test on 4/19/00.

[10] In accordance with the GPSC's June 6, 2000 measures and standards to be used for purposes of this evaluation, KPMG reviewed pre-order timeliness results relative to BellSouth retail pre-order timeliness. This standard does not include allowances for transaction transmission time from the test CLEC to BellSouth, and for response transmission time from BellSouth back to the test CLEC. The GPSC's Order specifies that pre-order timeliness results should be disaggregated by the following back-end systems: RSAG-TN; RSAG-ADDR; DSAP; ATLAS; CSRACCTS; CSROCSR.

[11] KCI analyzed BellSouth-published retail performance data for the month of June 2000. Since Bellsouth retail data is reported by business and residential pre-order categories, KCI compared re-test results to a weighted average of BellSouth residential and business results. For those query types where BellSouth retail data was available, KCI performed three "t-tests". The first test compared the average of BellSouth retail business and residence averages to the KCI data. The other two tests separately compared the KCI data to: 1) the average of BellSouth retail business data; and 2) the average of BellSouth retail residence data. The results of the three tests demonstrated consistent variation from the retail performance for each query type. KCI also conducted statistical analysis to determine whether the KCI result was statistically different from the BellSouth combined average.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	BLS's RSAG-TN back end system[12].		determined the retail standard response time for AVQ_TN inquiries to be 1.1 seconds. Responses to AVQ_TNs received during KCI's initial testing were delivered in an average of 11.8 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to AVQ_TNs received during re-testing were delivered in an average of 1.2 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back end system[14].	Satisfied[15]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AVQ inquiries to be 1.8 seconds. Responses to AVQs received during KCI's initial testing were delivered in an average of 68.3 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to

[12] BellSouth's RSAG-TN system processes Address Validation Queries by Telephone Number (AVQ_TNs).

[13] Although the test performance is above the BellSouth parity threshold of 1.1 seconds, the statistical evidence is not strong enough to conclude that the performance is above the threshold with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating within the standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.1970 , above the .0500 cutoff for a statistical conclusion of failure.

[14] BellSouth's RSAG-Address system processes Address Validation Queries (AVQs).

[15] Although the test performance is above the BellSouth parity threshold of 1.8 seconds, the statistical evidence is not strong enough to conclude that the performance is above the threshold with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating within the standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.4083, above the .0500 cutoff for a statistical conclusion of failure.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			AVQs received during re-testing were delivered in an average of 1.9 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-3	The TAG interface provides timely pre-order responses from BLS's DSAP back end system[16].	Satisfied[17]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AAQ inquiries to be 0.5 seconds. Responses to AAQs received during KCI's initial testing were delivered in an average of 10.5 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to AAQs received during re-testing were delivered in an average of 1.0 second. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-4	The TAG interface provides timely pre-order responses from BLS's ATLAS back end system[18].	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for TNAQ, TNSQ, and TNCAN_TN inquiries to be 1.2 seconds. Responses to TNAQs, TNSQs, and TNCAN_TNs received during KCI's initial testing were delivered in an average of 44.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS

[16] BellSouth's DSAP system processes Appointment Availability Queries (AAQs).

[17] Although the result of 1.0 seconds exceeds the BLS retail average of 0.5 seconds by a statistically significant interval, it is KCI's professional judgment that the average response interval for Test-CLEC-submitted AAQ pre-orders is within a reasonable timeframe.

[18] BellSouth's ATLAS system processes Telephone Number Assignment Queries (TNAQs), Telephone Number Selection Queries (TNSQs), and Telephone Number Cancellations by TN (TNCAN_TN).

Test Cross-Reference	Evaluation Criteria	Result	Comments
			TAG system upgrades. Responses to TNAQs, TNSQs, and TNCAN_TNs received during re-testing were delivered in an average of 1.2 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR and CSRACCTs back end systems[19].	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AVQ_TN queries to be 3.1 seconds. Responses to CSRQs received during KCI's initial testing were delivered in an average of 8.7 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to CSRQs received during re-testing were delivered in an average of 1.8 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.

[19] BellSouth's CRSECSR and CSRACCT systems process Customer Service Record Queries (CSRQs).

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system[20].	Satisfied[21]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to TNAQ_MLH and TNCAN_MLHs received during KCI's initial testing were delivered in an average of 31.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to TNAQ_MLH and TNCAN_MLHs received during re-testing were delivered in an average of 1.0 second. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.

[20] BellSouth's ATLAS-MLH system processes Telephone Number Assignment and Cancellation Queries for Multi-Line Hunt numbers (TNAQ_MLH and TNCAN_MLH).

[21] BellSouth retail analog data on responses from ATLAS-MLH is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_MLH and TNCAN_MLH timeliness results in comparison to a retail benchmark for electronic response timeliness. The result for this criteria is based on KCI's professional judgment.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system[22].	Satisfied[23]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to TNAQ_DID and TNCAN_DIDs received during KCI's initial testing were delivered in an average of 9.8 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to TNAQ_DID and TNCAN_DIDs received during re-testing were delivered in an average of 2.0 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end	Satisfied[25]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for SAQ queries to be 1.3

[22] BellSouth's ATLAS-DID system processes Telephone Number Assignment and Cancellation Queries for Direct-In-Dial numbers (TNAQ_DID and TNCAN_DID).

[23] BellSouth retail analog data on responses from ATLAS-DID is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving DID numbers. As a result, KCI is unable to evaluate TNAQ_DID and TNCAN_DID timeliness results in comparison to a retail benchmark for electronic response timeliness. The result for this criteria is based on KCI's professional judgment.

[24] BellSouth's OASIS system processes Service Availability Queries (SAQs).

Test Cross-Reference	Evaluation Criteria	Result	Comments
	system[24].		seconds. Responses to SAQs received during initial testing were delivered in an average of 33.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to SAQs received during re-testing were delivered in an average of 11.6 seconds[26]. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.	Satisfied[27]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to CDDs received during initial testing were delivered in an average of 0.1 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to CDDs received during re-testing were delivered in an average of 0.1 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
Accuracy of Response[28]			

[25] Although the result of 11.6 seconds exceeds the BLS retail average of 1.3 seconds by a statistically significant interval, it is KCI's professional judgment that the average response interval for Test-CLEC-submitted SAQ pre-orders is within a reasonable timeframe.

[26] Service Availability Queries (SAQs) may be performed by requesting a) information on a specific service / feature or group of related features; or b) information on all features available from a particular BLS switch. The current SQM-related standard for pre-order response timeliness does not distinguish between variations of SAQs. In addition, BLS retail timeliness results are not disaggregated by "full" versus "partial" SAQ inquiries. The distribution of SAQ pre-order variations executed by KCI may not reflect the distribution of SAQ variations included in the BLS retail results. The average response time for "full" SAQs performed during the KCI re-test was 31 seconds. For SAQs requesting partial information, the average re-test response time was 2 seconds.

[27] BellSouth retail analog data is not available for the CDD query. BellSouth retail representatives do not utilize this function when retrieving information needed to process retail orders. As a result, KCI is unable to evaluate CDD timeliness results in comparison to a retail benchmark. The result for this criteria is based on KCI's professional judgment.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-4-1	BLS system or representative provides clear, accurate, and complete pre-order success responses.	Satisfied	A sample of pre-order responses to all inquiry types was examined for clarity, completeness, and accuracy relative to the BLS Business Rules. Responses were received to valid pre-order inquiries. Responses contained complete information with respect to BLS Business Rules requirements in most cases. CDD query responses were missing the value in the INQNUM data element, a value initially required according to the Pre-Order Business Rules. BLS updated its Business Rules on 10/9/00 to remove this field from the CDD response list. See Exceptions 63 and 66 for additional information on this issue. Exceptions 63 and 66 are closed. KCI also encountered discrepancies between service due date intervals obtained via CDD queries and those obtained via BLS documentation for the same order type. BLS performed several activities to correct these discrepancies: • Implemented a change on July 21, 2000 to update the BLS interval tables used to generate CDD response intervals. • Introduced modifications in TAG Version 2.2.0.11 to correct errors in generating CDD intervals for Loop-Port Combination requests. • Updated the Product and Services Interval Guide (Issue 3b) to more accurately reflect service delivery intervals for REQ TYPE J. KCI performed a re-test to evaluate BLS changes to TAG 2.2.0.11. CDD queries

[28] KCI defined an accurate pre-order success or back-end error response to contain: a) all required data values; b) no prohibited data values. Expected and prohibited values should be contained within BellSouth Business Rule documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			covering the range of electronically-available order types were submitted, and the CDD interval responses were compared to the intervals provided in BLS documentation. While the CDD pre-order provides intervals in line with BLS documentation for standard order types, the CDD query does not allow data inputs to sufficiently identify a more detailed service request type variation. For example, the service interval for a feature change differs based on whether the change requires a technician dispatch or not. No field within the CDD pre-order allows the CLEC to provide the level of detail needed to differentiate between a non-dispatch and a dispatch service request. The deficiency noted is not significant enough to affect the overall evaluation. See Exception 71 for additional information on this issue. KCI has recommended closure of Exception 71 to the GPSC.
PRE-1-4-2	BLS system or representative provides clear, accurate, and complete back-end or TAG API errors.	Satisfied	A sample of error responses to all inquiry types was examined for clarity, completeness, and accuracy relative to the BLS Business Rules. Error messages were received in response to invalid pre-order requests and provided an adequate level of information to determine the cause of error and contained complete information with respect to BLS Business Rule requirements in appropriate cases.

Table IV-1.4: Average Pre-Order Response Timeliness by Category

Pre-Order Category (BLS back-end system)	Query Type(s) within Category	Average Response Time (seconds) – Initial Testing[29]	Average Response Time (seconds) – Retest[30]	BLS Retail Average[31]
RSAG, by TN	AVQ_TN	11.8	1.21	1.1
RSAG, by Address	AVQ	63.3	1.9	1.8
ATLAS	TNAQ; TNSQ; TNCAN_TN;	44.9	1.2	1.2
CRSECSR	CSRQ	8.7	1.8	3.1
DSAP	AAQ	10.5	1.0	0.5
ATLAS – MLH	TNAQ_MLH; TNCAN_MLH	31.9	1.0	N / A
ATLAS – DID	TNAQ_DID; TNCAN_DID	9.8	1.96	N / A
OASIS	SAQ	33.9	11.6	1.3
N / A[32]	CDD	0.1	0.1	N / A

[29] Initial testing was conducted during November 1999 – March 2000.

[30] Re-testing was conducted during April – May 2000.

[31] BellSouth Retail pre-order response times were obtained from the June performance measurement reports.

[32] CDD pre-order queries are not processed by BellSouth back-end systems. Results are generated based on a series of tables and algorithms applied by the TAG API.

Table IV-1.5: Pre-Order Response Timeliness – Initial Test Results [33,34]

AAQ	**Appointment Availability Query**								
228 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	27	2	1	0	0	0	0	0	30
	90%	7%	3%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	36	57	67	20	10	7	0	1	198
	18%	29%	34%	10%	5%	4%	0%	1%	100%
AVQ_TN	**Address Validation Query by Telephone Number**								
107 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	25	4	6	0	0	0	0	2	37
	68%	11%	16%	0%	0%	0%	0%	5%	100%
BLS Back-end System Responses	12	16	14	16	5	6	1	0	70
	17%	23%	20%	23%	7%	9%	1%	0%	100%
TNAQ	**Telephone Number Assignment Query**								
180 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	19	1	0	0	2	0	0	3	25
	76%	4%	0%	0%	8%	0%	0%	12%	100%
BLS Back-end System Responses	44	9	75	13	13	0	1	0	155
	28%	6%	48%	8%	8%	0%	1%	0%	100%
TNSQ	**Telephone Number Selection Query**								
133 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	45	0	0	0	0	0	0	0	45
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System	23	3	48	11	3	0	0	0	88

[33] Totals may not equal 100% due to rounding.

[34] Timeliness results in the following tables (IV-1.5 and IV-1.6) are disaggregated by response source to provide a more detailed view of timeliness of responses from both the TAG API and the BLS back-end systems. TAG API errors are generated by the CLEC's interface, prior to the transaction being sent through the BLS TAG gateway. Response timeliness results presented in Table IV – 1.4 represent an average of total (API and back-end) responses.

Responses									
	26%	3%	55%	13%	3%	0%	0%	0%	100%

AVQ	**Address Validation Query**								
137 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	17	0	0	0	0	0	0	3	20
	85%	0%	0%	0%	0%	0%	0%	15%	100%
BLS Back-end System Responses	11	6	26	23	25	23	3	0	117
	9%	5%	22%	20%	21%	20%	3%	0%	100%
SAQ	**Service Availability Query**								
97 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	33	4	1	0	0	0	0	0	38
	87%	11%	3%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	2	5	5	0	4	0	21	22	59
	3%	8%	8%	0%	7%	0%	36%	37%	100%
CSRQ	**Customer Service Record Query**								
148 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	35	22	24	3	2	0	0	0	86
	41%	26%	28%	3%	2%	0%	0%	0%	100%
BLS Back-end System Responses	27	0	20	13	2	0	0	0	62
	44%	0%	32%	21%	3%	0%	0%	0%	100%
CDD	**Calculated Due Date**								
154 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	40	0	0	0	0	0	0	0	40
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	114	0	0	0	0	0	0	0	114
	100%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Assignment Query for Multi-Line Hunting Numbers**								
46 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	10	1	0	0	1	0	0	3	15
	67%	7%	0%	0%	7%	0%	0%	20%	100%

BLS Back-end System Responses	9	1	13	5	2	0	0	1	31
	29%	3%	42%	16%	6%	0%	0%	3%	100%

TNAQ_DID	**Telephone Number Assignment Query for Direct Inward Dial Numbers**								
29 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	5	1	0	0	0	0	0	0	6
	83%	17%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	8	0	9	4	2	0	0	0	23
	35%	0%	39%	17%	9%	0%	0%	0%	100%

TNCAN-TN	**Telephone Number Cancellation for General Pool TNs**								
26 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	4	0	0	0	0	0	0	0	4
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	11	0	9	2	0	0	0	0	22
	50%	0%	41%	9%	0%	0%	0%	0%	100%
TNCAN-MLH	**Telephone Number Cancellation for Multi-Line Hunting Numbers**								
14 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	4	0	0	0	0	0	0	0	4
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	9	0	1	0	0	0	0	0	10
	90%	0%	10%	0%	0%	0%	0%	0%	100%
TNCAN-DID	**Telephone Number Cancellation for Direct Inward Dial Numbers**								
18 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	1	0	0	0	0	0	0	0	1
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	9	0	7	1	0	0	0	0	17
	53%	0%	41%	6%	0%	0%	0%	0%	100%
TOTAL	**ALL QUERY TYPES**								
1317 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	265	35	32	3	5	0	0	11	351

	75%	10%	9%	1%	1%	0%	0%	3%	100%
BLS Back-end System Responses	315	97	294	108	66	36	26	24	966
	33%	10%	30%	11%	7%	4%	3%	2%	100%

Table IV-1.6: Pre-Order Re-Test Response Timeliness[35]

AAQ	**Appointment Availability Query**								
73 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	29	0	0	0	0	0	0	0	29
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	29	11	3	1	0	0	0	0	44
	66%	25%	7%	2%	0%	0%	0%	0%	100%
AVQ_TN	**Address Validation Query by Telephone Number**								
57 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	24	0	0	1	0	0	0	0	25
	96%	0%	0%	4%	0%	0%	0%	0%	100%
BLS Back-end System Responses	12	11	8	1	0	0	0	0	32
	38%	34%	25%	3%	0%	0%	0%	0%	100%
TNAQ	**Telephone Number Assignment Query**								
68 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	22	0	0	1	0	0	0	0	23
	96%	0%	0%	4%	0%	0%	0%	0%	100%
BLS Back-end System Responses	20	13	7	3	1	1	0	0	45
	44%	29%	16%	7%	2%	2%	0%	0%	100%
TNSQ	**Telephone Number Selection Query**								
52 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	26	0	0	0	0	0	0	0	26
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	13	8	2	2	0	1	0	0	26
	50%	31%	8%	8%	0%	4%	0%	0%	100%
AVQ	**Address Validation Query**								

[35] Totals may not equal 100% due to rounding.

68 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	30	1	0	0	0	0	0	0	31
	97%	3%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	8	9	6	9	1	2	2	0	37
	22%	24%	16%	24%	3%	5%	5%	0%	100%

SAQ	**Service Availability Query**								
96 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	30	2	0	0	0	1	0	1	34
	88%	6%	0%	0%	0%	3%	0%	3%	100%
BLS Back-end System Responses	0	11	28	4	0	0	0	19	62
	0%	18%	45%	6%	0%	0%	0%	31%	100%
CSRQ	**Customer Service Record Query**								
51 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	25	0	0	0	0	0	1	0	26
	96%	0%	0%	0%	0%	0%	4%	0%	100%
BLS Back-end System Responses	0	15	7	3	0	0	0	0	25
	0%	60%	28%	12%	0%	0%	0%	0%	100%
CDD	**Calculated Due Date**								
83 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	34	0	0	0	0	0	0	0	34
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	49	0	0	0	0	0	0	0	49
	100%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Assignment Query for Multi-Line Hunting Numbers**								
56 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	27	0	0	0	0	0	0	0	27
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	15	10	2	0	1	1	0	0	29
	52%	34%	7%	0%	3%	3%	0%	0%	100%
TNAQ_DID	**Telephone Number Assignment Query for Direct Inward Dial Numbers**								
54 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL

TAG API Responses	26	0	0	0	0	0	0	2	28
	93%	0%	0%	0%	0%	0%	0%	7%	100%
BLS Back-end System Responses	2	3	10	4	1	5	1	0	26
	8%	12%	38%	15%	4%	19%	4%	0%	100%

TNCAN-TN	**Telephone Number Cancellation for General Pool TNs**								
52 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	25	0	0	0	0	0	0	0	25
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	11	13	1	1	0	0	1	0	27
	41%	48%	4%	4%	0%	0%	4%	0%	100%
TNCAN-MLH	**Telephone Number Cancellation for Multi**								
51 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	24	0	0	0	0	0	0	0	24
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	18	6	3	0	0	0	0	0	27
	67%	22%	11%	0%	0%	0%	0%	0%	100%
TNCAN-DID	**Telephone Number Cancellation for Direct Inward Dial Numbers**								
66 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	28	0	0	0	0	0	0	0	28
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	16	14	5	2	0	1	0	0	38
	42%	37%	13%	5%	0%	3%	0%	0%	100%
ALL QUERY TYPES									
827 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	350	3	0	2	0	1	1	3	360
	97%	1%	0%	1%	0%	0%	0%	1%	100%
BLS Back-end System Responses	193	124	82	30	4	11	4	19	467
	41%	26%	18%	6%	1%	2%	1%	4%	100%