Letter

Petition

Attachment

1-6

Working Docket

TC01-165

Filed : Docketed

Part One

Scan #___ Pages___

TC01-165

HB
KF/SD

DOCKET NO. TC01-165

In the Matter of IN THE MATTER OF THE ANALYSIS OF QWEST CORPORATION'S COMPLIANCE WITH SECTION 271(c) OF THE TELECOMMUNICATIONS ACT OF 1996

Public Utilities Commission of the State of South Dakota

DATE		MEMORANDA
10/25	01	Filed and Docketed;
11/1	01	Weekly Filing;
11/7	01	Petition for Leave to Intervene (Black Hills Telecom);
11/9	01	Petition to Intervene (Midcontinent Comm.);
11/15	01	AT&T's Petition for Leave to Intervene;
11/28	01	Notice of Filing Report of Independent Auditors;
12/3	01	Qwest's Sept. 2001 Performance Data (Created "Informal" Docket to Rec'd pursuant to Rec
12/7	01	Order Granting Intervention;
12/7	01	Qwest's Report on the Status of Change Management Process Followup;
12/7	01	Qwest's Proposed Procedural Schedule;
12/7	01	AT&T's Proposed Procedural Schedule;
12/7	01	Midcontinent's Proposed Procedural Schedule;
12/7	01	Joinder in AT&T's Proposed Procedural Schedule (Black Hills Telecom);
12/12	01	Qwest's Response to Procedural Schedule Comments of AT&T & Black Hills Telecom;
12/12	01	Motion for Admission of Non-Resident Attorney (John L. Munn);
12/12	01	Order Admitting Non-Resident Attorney (John L. Munn);
12/18	01	Order for and Notice of Procedural Schedule and Hearing;
12/21	01	Qwest Submission of Supplemental KPMG Affidavit;
1/7	02	Qwest's Oct. 2001 Performance Data as reported (Attempt to Docket Rec'd
1/17	02	Contract between PSI Consulting and SD PUC;
1/18	02	Section 271 Issues List (Staff);
1/18	02	Midcontinent's Comments to Docket TC01-165;
1/18	02	AT&T's List of Disputed Issues;
1/18	02	Statement of Issues (Black Hills Telecom);

STATE PUBLISHING CO., PIERRE, SOUTH DAKOTA—SHEAD 104 SP14180

1/24/02	Amended Certificate of Service;
2/7/02	Response to Staff Data Request;
2/20/02	Transcript of Prehearing Conference held 2/7/02;
2/5/02	Black Hills' Motion for Order Denying Petition;
2/5/02	Brief in Support of Black Hills' Motion for Order Denying Petition;
2/6/02	Notice of Filing Motion to Remove Document from Commission Record
2/6/02	Motion to Remove Document from Commission Record;
2/7/02	Motion for Definition of Track A Analysis;
2/7/02	Brief in Support of Motion for Definition of Track A Analysis;
2/11/02	Motion to Suspend Procedural Schedule or Supplement Prefiled Testimony;
2/12/02	AT+T's Joinder in Nidcentennial's Motion to Suspend Procedural Schedule and Request for Expedited Ruling
2/12/02	Qwest's Performance Data;
2/12/02	Rebuttal Testimony of Mark L. Stacy and Marlon Griffing, Ph.D.;
2/12/02	Prefiled Testimony of W. Tom Simmons;
2/19/02	Prefiled Testimony of Kyle D. White, Ronald Schaible, Steve Turner + Nicholas Thieben;
2/19/02	Verification of Kenneth L. Wilson + AT+T Testimony;
2/19/02	Certificate of Service;
2/20/02	Order Granting Motion and Denying Motion;
2/22/02	Brief in Response to the Motions Filed by Black Hills Telecom, Inc. and Nidcontinent;
2/25/02	Corrected Page 1 to Qwest's Brief;
2/25/02	Qwest's Data Response to Black Hills Telecom, Nidcontinent and AT+T;
2/27/02	Black Hills' Reply Brief Re: Track A Proceedings;
3/21/02	Reply to Qwest's Response to Motions Filed by Black Hills + Nidcontinent Requesting Stay of 271 Application;
3/28/02	Order Admitting Nonresident Attorney (Jonathan Frankel);
4/3/02	Rebuttal Affidavits of Qwest;
4/10/02	Ord Granting Motions; Order Amending Procedural Schedule + Extending Hearing Date;
4/11/02	AT+T's Procedural Motion Regarding the 271 Process;
4/16/02	Errata to the Affidavit of Kenneth L. Wilson;
4/12/02	Statement of Supplemental Authority Regarding Qwest's Performance Assessment;
4/15/02	Qwest's Proposed Order of Witnesses;
4/16/02	AT+T's Motion for Extraordinary Protective Order;
4/16/02	Nidcontinent's Request for Confidential Treatment of Information;
4/16/02	Nidcontinent's Response to Qwest's Data Requests of March 22, 2002;
4/16/02	Supplemental Prefiled Testimony of W. Tom Simmons;
4/19/02	10 Orders Admitting Nonresident Attorneys;
4/19/02	Black Hills' Responses to Qwest's Data Requests for Black Hills;
4/23/02	Revised Order of Witnesses;

4/22/02	Affidavit of Barbara Bickland Dennis Pappas;
4/22/02	Supplemental Affidavit of Roberta Stewart;
4/22/02	Request AT+T's Motion for Extraordinary Protective Order;
4/22/02	Order Admitting Nonresident Attorney to Practice (Steven H. Heidel);
4/22/02	Motion to Strike Supplemental Testimony Public Exhibits and Request for Official Notice;
4/22/02	Motion Requiring Proceeding on Third Party Testing of Quest's OSS;
4/22/02	Supplemental Affidavit of Larry L Gotherson;
4/22/02	Additional Statement of Supplemental Authority, Regarding Issuance of Qwest Performance;
4/25/02	AT+T's Request for Confidential Treatment of Information;
4/25/02	AT+T's Response to Qwest's Requests for Information;
4/29/02	Qwest's Submission of Attendance QPAP Proposals;
4/29/02	QPAP Approved as Amended;
4/29/02	Qwest's Motion to Enter AT+T's Track A Data Request Responses into Evidence;
5/1/02	Qwest's November 2001 through February 2002 Responses to Data Requests Related to Qwest Performance Testing;
5/3/02	Additional Statement of Supplemental Authority, Regarding Qwest's Performance Issuance Order;
5/7/02	Transcripts of Hearing Held on April 23, 24, 25, & 30, 2002;
5/9/02	Additional Statement of Supplemental Authority, Regarding Qwest Performance Issuance Order;
5/9/02	Staff's Late-Filed Exhibits;
5/13/02	Notice of Appearance of Additional Counsel on Behalf of Intervenor Electric Lightwave;
5/13/02	Qwest's Exhibit 80;
5/14/02	AT+T's Motion to Reopen Proceeding;
5/15/02	Staff's Exhibit 6;
5/17/02	Additional Statement of Supplemental Authority, Regarding Qwest's Performance Issuance Order;
5/22/02	Qwest's Overview Post-Hearing Brief and Index to Briefing Matrix;
5/22/02	Qwest's Opening Post Hearing Brief on Issue Relating to Incumbent Local Exchange Carrier Checklist Item #2 (Checklist Item #13 Reciprocal Compensation);
5/22/02	Qwest's Post Hearing Brief on Issues Relating to Checklist Item #1 (Interconnection Trunking Facilities);
5/22/02	Qwest's Opening Post Hearing Brief on Emerging Services and Miscellaneous Issues (Checklist Item #14 Resale, Checklist Item #15 Unbundled Network Elements, Checklist Item #16 Unbundled Access to Poles, Ducts, Conduits and Rights-of-Way);
5/22/02	Qwest's Opening Post-Hearing Brief on Checklist Item 5, Pricing of Unbundled Network Elements (Checklist Item #17 Combinations);
5/22/02	Qwest's Opening Post-Hearing Brief on General Terms & Conditions, Section 272 & Track A;
5/22/02	Qwest's Post Hearing Brief in Support of the QPAP;
5/22/02	Qwest's Opening Post-Hearing Brief on the Public Interest;
5/22/02	Qwest's Opening Post-Hearing Brief on Performance (PIDs, Retail Performance and Data Reconciliation);
5/22/02	Qwest's Additional Exhibits;
5/22/02	Index of Exhibits;
5/22/02	Qwest's Exhibits 81, 81A, 82, 82A, 83, 84 & 85;
5/22/02	AT+T's Additional Statement of Supplemental Authority;
5/24/02	Qwest's Opposition to AT+T's Motion to Reopen Proceeding;
5/30/02	AT+T's Reply to Qwest's Opposition to AT+T's Motion to Reopen Proceeding;
6/4/02	AT+T's Additional Statement of Supplemental Authority;
6/4/02	Touch America's Petition to Intervene and Motion to Reopen Issues;
6/10/02	Qwest's Jan 2002 thru April 2002 Performance Data as Revised (Page 1 of 3);
6/11/02	Qwest's Opposition to Touch America's Petition to Intervene and to Reopen Issues;

6/13/02 Touch America's Reply to Qwest's Opposition;
6/13/02 Notice of Filing of Affidavits of Todd Lundy and Don Hunt;
6/13/02 Request for Confidential Treatment of Information;
6/13/02 Affidavit of Todd Lundy;
6/13/02 Affidavit of Don Hunt;
6/13/02 Order Admitting Nonresident Attorney (Todd Lundy);
6/17/02 CO-Com ROC OSS Test Final Report;
6/19/02 Order for and Notice of Procedural Schedule and Hearing;
6/25/02 Qwest's Motion to Amend the Scheduling Order for Reopening of the ROC OSS Test;
6/27/02 Order Denying Motion to Reopen Record; Order Denying Extension of Time to File Briefs;
6/27/02 Order Amending Briefing Schedule;
7/1/02 Staff's Brief;
7/1/02 Intervenors' Post Hearing Brief;
7/1/02 AT&T's Brief Regarding Public Interest;
7/1/02 AT&T's Brief Regarding Qwest's Change Management Process;
7/1/02 Response Brief of AT&T Regarding Pricing Flexibility;
7/1/02 AT&T's Response to Qwest's Post Hearing Brief to Qwest's Post Hearing Brief in Support of the QPAP and Request for Additional Supplementation of the Record;
7/1/02 AT&T's Response to Qwest's Opening Post-Hearing Brief on Emerging Services;
7/1/02 AT&T's Brief Regarding Qwest's Intervenor Funding Obligations;
7/1/02 AT&T's Brief on Checklist Items 2, 5 & 6 and Section 272 Compliance;
7/1/02 Response Brief of AT&T Regarding Checklist Item 11 - Local Number Portability;
7/2/02 Intervenor Rock Hills Telecom's Response to Qwest's Post-Hearing Brief;
7/3/02 AT&T's Comments on the ROC OSS Final Report;
7/3/02 Qwest's Verified Comments;
7/3/02 Request for Confidential Treatment;
7/3/02 Staff's Comments;
7/10/02 Intervenors' Joinder in Staff's Position on Public Interest;
7/15/02 Transcript of Hearing held 7/1/02;
7/17/02 Qwest's Consolidated Reply Brief;
7/17/02 Qwest's Post-Hearing Reply Brief on Compliance with the 14-Point Competitive Checklist;
7/17/02 Qwest's Reply Brief in Support of the QPAP;
7/17/02 Qwest's Post Hearing Reply Brief on Resale Terms + Conditions, Items 2, 5 & 6;
7/17/02 Qwest's Post Hearing Reply Brief on the Public Interest;
7/17/02 Qwest's Post Hearing Reply Brief Regarding Change Management;
7/17/02 Qwest Exhibit 92;
7/17/02 Qwest's Exhibit 93;
7/17/02 Certificate of Service;
7/22/02 Motion for Withdrawal of Counsel (Regency & Brandon);
7/22/02 Request for Confidential Treatment of Information;
8/2/02 Qwest Performance Results - Report 14.0 - July 2001 - June 2002;
9/11/02 Procedural History Order Regarding Checklist Items 2, 5 & 6, 10 & 12;
9/19/02 Order Regarding Checklist Items 1, 11, 13 & 14;
9/25/02 Qwest's Notice of Updated Statement of Generally Available Terms and Conditions;
9/27/02 AT&T's Motion to Reopen and Supplement the Record;
9/30/02 Qwest's Request for Acceptance of PO-20 Late-Filed Exhibits in the QPAP;
9/30/02 Memorandum in Support of Public Request for Acceptance of PO-20 Late-Filed Exhibits;
10/7/02 Certificate of Service;
10/16/02 AT&T & Intervenors Comments on Qwest's Proposed PO-20 Enhancements;
10/16/02 Opposition of Qwest to AT&T's Motion to Reopen and Supplement the Record;
10/16/02 AT&T's Notice of Supplemental Authority Regarding PO-20;
10/24/02 Notice of Supplemental Authority Regarding AT&T's Motion to Reopen and Supplement the Record;
10/28/02 Notice of Supplemental Authority Regarding AT&T's Motion to Reopen and Supplement the Record;

11/18/02	Qwest's Notice of Updated Waiver of Dominant Carrier Treatment
11/22/02	Order Regarding Section 272
11/22/02	Order Regarding Operating Report Date, Test & Commercial Performance Data
11/22/02	Order Regarding the Public Interest
12/5/02	Qwest's Notice of Update to Updated Waiver of Dominant Carrier Treatment
12/13/02	Qwest's Notice of Updated Waiver of Dominant Carrier Treatment
12/16/02	Qwest's Notice of Errata to 12/12/02 Updated Waiver of Dominant Carrier Treatment
12/23/02	AT&T's Response to Qwest's Notice of Updated Waiver of Dominant Carrier Treatment
1/21/03	Comm. Staff's Response to Qwest's Notice of Updated Waiver of Dominant Carrier Treatment
1/29/03	Reply to Comm. Staff's Response to Qwest's Notice
2/4/03	Notice of Track Payment Report
2/4/03	Request for Confidential Treatment
2/4/03	Order Regarding Compliance Filings
2/19/03	Qwest's Notice of Performance Assurance Plan Filing
2/26/03	Order Regarding Public & Final Recommendation
2/26/03	Docket Closed.
3/3/03	Track Payment Report
3/4/03	Qwest's Notice of Filing of Revised Track Report
4/1/03	Track Payment Report
5/1/03	Track Payment Report
6/2/03	Track Payment Report
6/18/03	Memorandum of Understanding

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TC01-165

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John S. Murphy (1924-1965)

October 25, 2001

RECEIVED

OCT 2 5 2001

SOUTH DAKOTA PUBLIC
UTILITIES COMMISSION

HAND DELIVERY

Pamela Bonson, Executive Director
Public Utilities Commission
500 East Capitol
Pierre, SD 57501

Re: In The Matter Of The Investigation Into Qwest Corporation's Compliance With Section 271 (C) Of The Telecommunications Act Of 1996
Our File No. 2104.006

Dear Ms. Bonson:

Please find enclosed the original and ten (10) copies of the Petition of Qwest Corporation for Commission Recommendation that the FCC Grant Entry into the In-Region InterLATA Market Under Section 271 of the Telecommunications Act of 1996. Accompanying the petition are:

ATTACHMENT 1 Affidavit of Larry W. Toll, South Dakota Issues

ATTACHMENT 2 Affidavit of Thomas R. Freeberg, Checklist Item 1 – Interconnection

ATTACHMENT 3 Affidavit of Margaret S. Bumgarner, Checklist Item 1 – Collocation

ATTACHMENT 4 Affidavit of Lori A. Simpson, Checklist Item 2 – Unbundled Network Elements - Platform

ATTACHMENT 5 Affidavit of Karen A. Stewart, Checklist Item 2 – Access to Unbundled Network Elements

ATTACHMENT 6 Affidavit of Lynn M. V. Notarianni, Checklist Item 2, Operations Support Systems (OSS)

ATTACHMENT 7 Affidavit of Karen A. Stewart, Checklist Item 2 – Emerging Services

ATTACHMENT 8 Affidavit of Thomas R. Freeberg, Checklist Item 3 – Poles, Ducts, Conduit, ROW

ATTACHMENT 9 Affidavit of Jean M. Liston, Checklist Item 4 Unbundled Loops, NIDs and Line Splitting

ATTACHMENT 10 Affidavit of Karen A. Stewart, Checklist Item 5 - Unbundled Local Transport

ATTACHMENT 11 Affidavit of Lori A. Simpson, Checklist Item 6 - Unbundled Network Elements Switching

ATTACHMENT 12 Affidavit of Margaret S. Bumgarner, Checklist Item 7 - 911 and E911 Access

ATTACHMENT 13 Affidavit of Lori A. Simpson, Checklist Item 7 - Operator Services and Directory Assistance Services

ATTACHMENT 14 Affidavit of Lori A. Simpson, Checklist Item 8 - White Pages Directory Listings

ATTACHMENT 15 Affidavit of Margaret S. Bumgarner, Checklist Item 9 - Numbering Administration

ATTACHMENT 16 Affidavit of Margaret S. Bumgarner, Checklist Item 10 - Call Related Databases and Associated Signaling

ATTACHMENT 17 Affidavit of Margaret S. Bumgarner, Checklist Item 11 - Number Portability

ATTACHMENT 18 Affidavit of Margaret S. Bumgarner, Checklist Item 12 -- Dialing Parity

ATTACHMENT 19 Affidavit of Thomas R. Freeeberg, Checklist Item 13 - Reciprocal Compensation

ATTACHMENT 20 Affidavit of Lori A. Simpson, Checklist Item 14 - Resale

ATTACHMENT 21 Affidavit of David L. Tietzel, Public Interest

ATTACHMENT 22 Affidavit of Mark Reynolds, Performance Assurance Plan (QPAP)

ATTACHMENT 23 Affidavit of Michael G. Williams, Performance Measures (PIDs)

ATTACHMENT 24 Affidavit of Judith L. Brunsting, Section 272

ATTACHMENT 25 Affidavit of Marie E. Schwartz, Section 272

ATTACHMENT 26 Revised version of Qwest's Statement of Generally Available Terms, which reflects the consensus reached with CLECs in Section 271

proceedings in other jurisdictions on numerous provisions and the recommendations of the facilitator in the Seven-State Process (SGAT)

ATTACHMENT 27 Paper Workshop Report, issued in the Seven-State Process on March 19, 2001

ATTACHMENT 28 Workshop One Report, issued in the Seven-State Process on May 15, 2001

ATTACHMENT 29 Emerging Services Report, issued in the Seven State Process on June 11, 2001

ATTACHMENT 30 Unbundled Network Element Report, issued in the Seven-State Process on August 20, 2001

ATTACHMENT 31 General Terms and Conditions, Section 272 & Track A Report issued in the Seven State Process on September 12, 2001

ATTACHMENT 32 QPAP Report issued in the Seven State Process on October 22, 2001

ATTACHMENT 33 Public Interest Report issued in the Seven-State Process on October 22, 2001.

I have also enclosed original Orders Admitting Non-Resident Attorney for Ted Smith and Mary Hobson which have been marked by the Circuit Court clerk as 427 and 428.

Also enclosed are an original and ten (10) copies of the Request for Confidential Treatment of Information with the attached confidential documents. Persons wanting to access the confidential information will need the permission of Qwest and execute a Confidentiality Agreement. Please direct persons wanting to sign such a Confidentiality Agreement to me.

Sincerely yours,

BOYCE, MURPHY, MCDOWELL
& GREENFIELD, L.L.P.

Thomas J. Welk

TJW:vp
Enclosure
cc: Mary Hobson
Ted Smith
John Munn
Colleen Sevold
Larry Toll
Cindy Pierson

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996

Docket No. TC 01- 427

ORDER ADMITTING NON-RESIDENT ATTORNEY

It is hereby

ORDERED that the Motion for Admission for Ted Smith, a non-resident attorney, to appear on behalf of Qwest Corporation before the Public Utilities Commission for the State of South Dakota relating to this matter is granted.

Dated this 17, day of October, 2001.

BY THE COURT:

Hon. Steven L. Zinter
Circuit Court Judge
Sixth Judicial District

ATTEST:
Mary Erickson, Clerk

By: Shaye McEntaffer
Deputy

(SEAL)

STATE OF SOUTH DAKOTA
CIRCUIT COURT, HUGHES CO.
FILED
OCT 17 2001
Mary L. Erickson CLERK
By _____ Deputy

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996

Docket No TC 01-421

ORDER ADMITTING NON-RESIDENT ATTORNEY

It is hereby

ORDERED that the Motion for Admission for Mary S. Hobson, a non-resident attorney, to appear on behalf of Qwest Corporation before the Public Utilities Commission for the State of South Dakota relating to this matter is granted.

Dated this 17, day of October, 2001.

BY THE COURT:

Hon. Steven L. Zinter
Circuit Court Judge
Sixth Judicial District

ATTEST:
Mary Erickson, Clerk

By Sharon McEntaffer
Deputy
(SEAL)

STATE OF SOUTH DAKOTA
CIRCUIT COURT, HUGHES CO.
FILED
OCT 17 2001
Mary S. Erickson, Clerk
By _____ Deputy

List of Attachments

To the Petition of Qwest Corporation for Commission Recommendation that the FCC Grant Entry into the In-Region InterLATA Market Under Section 271 of the Telecommunications Act of 1996

ATTACHMENT 1	Affidavit of Larry W. Toll, South Dakota Issues
ATTACHMENT 2	Affidavit of Thomas R. Freeberg, Checklist Item 1 – Interconnection
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ATTACHMENT 4	Affidavit of Lori A. Simpson, Checklist Item 2 - Unbundled Network Elements--Platform
ATTACHMENT 5	Affidavit of Karen A. Stewart, Checklist Item 2—Access to Unbundled Network Elements
ATTACHMENT 6	Affidavit of Lynn M. V. Notarianni, Checklist Item 2—Operations Support Systems (OSS)
ATTACHMENT 7	Affidavit of Karen A. Stewart, Checklist Item 2—Resale Services
ATTACHMENT 8	Affidavit of Thomas R. Freeberg, Checklist Item 3—Poles, Ducts, Conduit, ROW
ATTACHMENT 9	Affidavit of Jean M. Liston, Checklist Item 4—Unbundled Loops, NIDs, and Line Splitting
ATTACHMENT 10	Affidavit of Karen A. Stewart, Checklist Item 5—Unbundled Local Transport
ATTACHMENT 11	Affidavit of Lori A. Simpson, Checklist Item 6—Unbundled Network Elements—Switching
ATTACHMENT 12	Affidavit of Margaret S. Bumgarner, Checklist Item 7—911 and E911 Access
ATTACHMENT 13	Affidavit of Lori A. Simpson, Checklist Item 7—Operator Services and Directory Assistance Services

ATTACHMENT 14	Affidavit of Lori A. Simpson, Checklist Item 8 – White Pages Directory Listings
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ATTACHMENT 26	Revised version of Qwest's Statement of Generally Available Terms, which reflects the consensus reached with CLECs in Section 271 proceedings in other jurisdictions on numerous provisions and the recommendations of the facilitator in the Seven-State Process (SGAT)
ATTACHMENT 27	Paper Workshop Report, issued in the Seven-State Process on March 19, 2001
ATTACHMENT 28	Workshop One Report, issued in the Seven-State Process on May 15, 2001

ATTACHMENT 29	Emerging Services Report, issued in the Seven-State Process on June 11, 2001
ATTACHMENT 30	Unbundled Network Element Report, issued in the Seven-State Process on August 20, 2001
ATTACHMENT 31	General Terms and Conditions, Section 272 & Track A Report, issued in the Seven-State Process on September 12, 2001
ATTACHMENT 32	QPAP Report, issued in the Seven-State Process on October 22, 2001
ATTACHMENT 33	Public Interest Report, issued in the Seven-State Process on October 22, 2001

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OTHER ITEMS

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1 CTG /CIRCUIT TERMINATION NO CHG NR 010

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1 TMECS/SPECIAL CHANNEL TERMINATION 125.00 FS 010

RMKR (1) TERM IN RJ48X

TOTAL FOR CKI A1 260.00

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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996

TC 01-____

REQUEST FOR CONFIDENTIAL TREATMENT OF INFORMATION

Pursuant to ARSD 20:10:01:41, Qwest Corporation ("Qwest "), through the undersigned counsel, requests confidential treatment for the following information in this docket:

1. Exhibits to the following attachments to the Petition:
   a. Attachment 11 - Affidavit of Lori Simpson, Exhibit 2C;
   b. Attachment 21, Affidavit of David Tietzel, Exhibit 2, pg. 1, Exhibit 4, pg. 1, Exhibit 7, pg. 1, Exhibit 8, pp. 1-2, Exhibit 9, pp. 1-2, Exhibit 10, pg. 1, Exhibit 14, pg. 1, Exhibit 15, pp. 1-8, and Exhibit 17, pp. 1-2;
   c. Attachment 22, Affidavit of Mark Reynolds, Exhibit 3C;
   d. Attachment 24, Affidavit of Judith Brunsting, Section 272, Exhibits 5C and 6C; and
   e. Attachment 25, Affidavit of Marie Schwartz, Section 272, Exhibits 3C and 18C.

The exhibits are marked as confidential (proprietary information) and are provided in a sealed envelope filed separately from the Petition.

2. The exhibits must be protected for the life of this docket. When the docket is closed all protected information must be returned to Qwest.

3. The person to be notified is Colleen Sevold, Qwest Corporation, 125 S. Dakota Avenue, 8th floor, Sioux Falls, SD 57194, telephone (605) 335-4596.

4. The claim for protection is based on ARSD 20:10:01:39 (4) and (6) and SDCL 37-29-1(4).

5. The exhibits contain proprietary business documents. Disclosure of these documents will provide actual and potential competitors with information which could provide them with a unique and unfair competitive advantage. Accordingly, Qwest respectfully requests that the Commission grant this request for confidential protection.

DATED this 25th day of October, 2001.

Thomas J. Welk
Boyce, Murphy, McDowell & Greenfield, L.L.P.
101 N. Phillips Avenue, Suite 600
Sioux Falls, SD 57104
Attorneys for Qwest Corporation

Begin

Confidentia

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BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

AFFIDAVIT

OF

LARRY W. TOLL

SOUTH DAKOTA ISSUES

October 23, 2001

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AFFIDAVIT

OF

LARRY W. TOLL

South Dakota Issues

Larry W. Toll, duly sworn upon oath, states as follows:

My name is Larry Toll. I am the State Vice President for Qwest Corporation ("Qwest") in South Dakota. I have over thirty years in the telecommunications business with over twenty of those years dealing with issues related to public policy. Twelve of those years have been in South Dakota – seven as a general manager and the last five as the State Vice President. In my capacity I am responsible for all regulatory, legislative and community issues. The information I provide in this affidavit is from my personal knowledge.

The purpose of my affidavit is to highlight and enhance, from a local perspective, the testimony of others in this filing. I will also try to put this filing in a historical context of how we got to this point in time. I will also give a South Dakota perspective on how aggressive and successful local competitors are in our state.

I highlight the seven-state collaborative process in which Qwest and interested competitive local exchange carriers ("CLECs") participated and which the South Dakota Commission monitored. These collaborative workshops were held over a year's time and were very thorough.

Lastly, and probably most importantly, I will highlight the benefits consumers will see when Qwest's entry into the long distance business is approved.

I. BACKGROUND

As a result of a government-filed antitrust suit against AT&T in the mid 1970's an agreement – known as the Modified Final Judgement (MFJ) – was reached in early 1982 between the government and AT&T that led to the breakup of the Bell System in 1984. Among other items in the agreement, the local operating companies, of which Qwest is a successor company, were banned from providing long distance between Local Access & Transport Areas (LATAs). In South Dakota, the entire state was essentially one LATA. Qwest, therefore, can only complete calls within the state of South Dakota, and Qwest customers must choose another provider for calls completed outside the state. To give the Commission a feel of how competitive that market is, one only has to look at the revenue impact long distance competition within South Dakota has had on Qwest. In 1985, the long distance revenues for Northwestern Bell in South Dakota were approximately $44 million. It is projected that long distance revenues for Qwest in South Dakota this year will be less than $8 million. If a dollar in 1985 were reduced by inflation, it would probably be worth only 50 cents today. That means that the $8 million of long distance today equates to $4 million of the 1985 dollars.

The 1996 Federal Telecommunications Act provides a method for the Regional Bell Operating Companies like Qwest to get back into the interLATA long distance business. The Act requires Qwest to demonstrate that it has opened its network to its

competitors sufficiently and has safeguards in place to insure continued access by its competitors. The testimony in this case will demonstrate that Qwest has sufficiently opened its network and complies with the 14-point "competitive checklist" laid out in Section 271 of the 1996 Federal Act. The affidavits filed in this case demonstrate in excruciating detail the steps Qwest has undertaken to allow competitors access to its network and its systems. Qwest is also submitting evidence and affidavits to describe Qwest's plan, to be filed with the FCC, that ensures that Qwest will not "backslide" once it is allowed into the interLATA long distance business. Hundreds of audited performance measurements will be provided monthly to demonstrate our commitment to our wholesale customers. Failure to maintain good service to our wholesale customers would result in significant monetary penalties to Qwest.

III. STATE OF COMPETITION IN SOUTH DAKOTA

One of the witnesses filing an affidavit with this application, Dave Teitzel, uses many estimation techniques in an attempt to quantify the amount of competition in South Dakota. Mr. Teitzel's estimation that 65,000 access lines are provided by local competitors would indicate that more than 20% of the lines in Qwest exchanges are provided by competitors. For business customers the number jumps to 33% provided by local competitors.

This Commission asked South Dakota CLECs several years ago for information regarding their market share, and the figure it developed was greater than the figure Qwest had calculated at the time. To obtain a totally accurate assessment of

competition in South Dakota the Commission should require CLECs to provide the number of access lines they serve in Qwest's territory in South Dakota.

III. SOUTH DAKOTA COMPETITORS

One reason for the robust competition in South Dakota may be that local CLECs committed to the South Dakota market are competing with Qwest for South Dakota consumers. Companies like DTG (now McLeod), for example, sprang up following passage of the Act to compete with Qwest – not as resellers, but as facilities-based providers. DTG placed its own fiber with facilities directly into customers' homes and businesses. DTG provides both in and out-of-state long distance service, cable television services, local dial tone, and high speed Internet service to DTG's own Internet service provider. Significantly, this is a total package that Qwest is precluded from providing. In some South Dakota towns, DTG has captured many more customers than Qwest serves by making available this type of attractive, "bundled" offering. For example, DTG overbuilt Qwest in towns like Watertown, Elk Point, Tea, Harrisburg, Madison, Canton, and Yankton and became the "home town" provider by working door-to-door.

DTG is not the only South Dakota based CLEC. In the Black Hills, Black Hills Corporation has been overbuilding all Qwest exchanges from Rapid City to Belle Fourche and in many towns in between. Its overbuild is very similar to the DTG model. Black Hills began operation in 1999 and has been aggressively expanding ever since.

Similarly, in Aberdeen, Northern Valley Communications has placed its own facilities to offer a facilities-based alternative.

In Sioux Falls, MidContinent has demonstrated almost every method of competing for the local business. In some cases it resells Qwest services. In others it combines Qwest's unbundled loops running to the customers' locations and its own switching capacity to provide service. In still other cases MidContinent uses the hybrid fiber coax cable network that supports its cable TV distribution network, combined with its switch to provide service. MidContinent has demonstrated the innovation to meet customer needs on any level.

On a resale level, First Tel (now Ionex) was a home-grown company based in Sioux Falls that at one time had a resold line in every community Qwest serves in South Dakota – from Sioux Falls to Lake Preston. First Tel came out very aggressively and marketed throughout the state.

Where does all of this lead? It's obvious that 100% of Qwest's South Dakota customers have access to local competitors that resell Qwest services. What is not so obvious is that adding up the efforts of all of the companies that have overbuilt Qwest exchanges in the state results in the amazing conclusion that almost 70% of our business and residence customers have a facility-based option in their backyard or their business. Almost 70%! Local competition is alive and thriving in our state.

IV. QWEST'S COMMITMENT TO SOUTH DAKOTA AND OFFERING COMPETITIVE LONG DISTANCE SERVICE TO SOUTH DAKOTA CONSUMERS

Following the merger with U S WEST last year, Qwest made reentry into the full long distance business a priority. Both the financial and human resources needed to succeed have been brought to bear on this priority. Qwest has spent billions of dollars to open its network and has dedicated 2,600 people to meeting the needs of wholesale customers, i.e., Qwest's competitors. The seven-state collaborative process dealt with more than 1,100 issues relating to the precise terms under which Qwest makes its network open to competition. I have seen estimates that almost 50 days were spent in five workshops in this multistate process over the last year[1]. Many of the issues were resolved by the parties themselves, and those not resolved were left to a facilitator to make recommendations to the state commissions. With few exceptions, concessions and agreements that Qwest has made, as well as the SGAT changes recommended by the seven-state facilitator, are incorporated into the filing of the new Statement of Generally Accepted Terms (SGAT) that accompanies this Petition.

Finally, I would like to address the most important impact of allowing Qwest back into the interLATA long distance business. Qwest has 0% market share in the South Dakota interlata long distance market. To have any market share would violate the law. Once approved, the only way my company could entice customers to utilize Qwest as their long distance carrier would be to provide greater value--better service for a lower cost. A study by Professor Jerry Hausman, director of the Massachusetts Institute of Technology (MIT) Telecommunications Economics Research Program, indicates that South Dakota customers will save over $16 million annually if Qwest is allowed in the

[1] Throughout the 14 states over 300 days were spent in these kinds of workshops

full long distance business. That $16 million in annual savings comes from reductions in both local and long distance savings arising from competition. Qwest will obviously offer an aggressive long distance package to attract customers from the big three -- AT&T, MCI and Sprint--who still control the vast majority of the interLATA long distance market. In addition, experience from New York where Verizon was allowed back into the full long distance market indicates that competitors will also became more aggressive in their local service pricing, thereby delivering savings for local service customers.

V. CONCLUSION

Qwest's reentry into the full long distance market will only provide customers with more options and better value. Qwest has demonstrated in this filing that its networks and systems are open to competitors. Indeed, competition in South Dakota is thriving. Qwest's evidence further demonstrates that Qwest's networks and systems will remain open. Now is the time for the South Dakota Commission to support Qwest's section 271 application at the FCC and to help bring the benefits of increased competition to South Dakota consumers.

Being first duly sworn upon oath, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 19th day of October, 2001.

LARRY W. TOLL

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA

Subscribed and sworn to before me this 19th day of October, 2001.

Notary Public

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

AFFIDAVIT

OF

THOMAS R. FREEBERG

CHECKLIST ITEM #1 -- INTERCONNECTION

OCTOBER 24, 2001

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AFFIDAVIT

OF

THOMAS R. FREEBERG

Checklist Item #1 -- Interconnection

Thomas R. Freeberg certifies as follows:

My name is Thomas R. Freeberg. My business address is Room 100, 301 W. 65th St., Richfield, Minnesota. I am a Director in Wholesale Markets for Qwest Corporation ("Qwest").[1]

I. EXECUTIVE SUMMARY.

Checklist Item No. 1 requires Qwest to make interconnection available to competitive local exchange carriers ("CLECs") at any technically feasible point on its network in a nondiscriminatory manner.

The South Dakota Utilities Commission has approved 34 interconnection agreements between Qwest and CLECs in South Dakota, and 31 interconnection agreements are pending approval.

Qwest offers interconnection to all competitors pursuant to its Statement of Generally Available Terms and Conditions ("SGAT") filed in South Dakota on November 22, 2000, and as amended this month in response to the seven-state collaborative workshops.

---

[1] Professional experience, education and other biographical information is set forth in Exhibit TRF-INTER-1.

As of August 27, 2001, CLECs had more than 7,000 interconnection trunks in service. In August 2001, Qwest exchanged more than 53 million minutes of local calls with CLECs over the local interconnection trunks. The volume of local traffic exchanged with CLECs continues to grow. CLECs project increases in the number of interconnection trunks in South Dakota. During the past 12 months, the number of interconnection trunks in service in South Dakota grew by 53%.

Qwest has made available several arrangements to accomplish interconnection of networks, including (1) a Qwest-provided facility; (2) physical or virtual collocation associated with a CLEC-provided facility; (3) mid-span meet point of interface ("POI") facilities; (4) and other technically feasible methods of interconnection including, among other things, single point local interconnection at Access or toll tandem switches.

Qwest provides for exchange of many types of traffic at the six feasible points of interconnection identified by the Commission: the line-side of a local switch, the trunk-side of a local switch, the trunk interconnection points for a tandem switch, central office cross-connection points, signal transfer points, and points of access to unbundled network elements. This affidavit focuses on trunk-side interconnection at tandem and end office switches.

To ensure nondiscrimination, Qwest provisions interconnection trunks with the same equipment, interfaces, technical criteria, and service standards as Qwest's "retail" trunks between pairs of its own switches. Retail trunks may also carry the calls of a CLEC's subscriber.

Qwest is measuring its performance against performance indicator definitions ("PIDs")[2] developed in collaborative workshops before the Regional Oversight Committee ("ROC") and the Arizona Corporation Commission. The performance data during the past six months show that Qwest is meeting CLECs' demand for interconnection at the required level of quality. In March-August 2001, Qwest met 100% of its installation commitments to CLECs for interconnection trunks. The average installation intervals for wholesale trunks were longer than the intervals for Qwest's retail trunks[3], but the difference was the result of specific CLEC requests for intervals longer than the standard. Blockage on local interconnection trunks was 0% in every month except one and was, on average, far below the performance benchmark of 1%. The trouble report rate was non-discriminatory 0.07% for both wholesale and retail trunks in August. Qwest cleared 78% of CLEC trouble reports within four hours, and again, a non-discriminatory record.

CLECs in South Dakota have, and will continue to have, access to the fundamental prerequisite of local exchange competition – the ability to readily send their retail customers' local calls to, and receive local calls from, retail customers of the incumbent carrier. As a result, the Commission should find that Qwest has satisfied the requirements of Checklist Item No. 1 for interconnection.

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[2] The PIDs are attached to the Affidavit of Michael G. Williams as Exhibit MGW-PERF-6.

[3] Per ROC Performance Measurement definitions, Qwest's "retail trunks" are, in this case, those trunks that Qwest has arranged between itself and an Interexchange Carrier.

II. QWEST HAS COMPLIED WITH THE ACT'S INTERCONNECTION REQUIREMENTS.

A. Qwest Has A Concrete Legal Obligation To Provide Interconnection To Competitors In South Dakota.

The Telecommunications Act of 1996 ("the Act") requires incumbent local exchange carriers, including Qwest, to provide CLECs with interconnection (1) "at any technically feasible point within the carriers network"; (2) "that is at least equal in quality to that provided by the local exchange carrier to itself"; and (3) "on rates terms and conditions that are just, reasonable and nondiscriminatory."[4]

The FCC has defined "interconnection" as "the linking of two networks for the mutual exchange of traffic."[5] The traffic exchanged is local, toll, and a variety of specialized traffic, including directory assistance, operator services, and 911.

The FCC has found that interconnection is "technically feasible" at the following points: the line-side of a local switch, the trunk-side of a local switch, the trunk interconnection points for a tandem switch, central office cross-connection points, signal transfer points, and points of access to unbundled network elements.[6]

Qwest is obligated to provide interconnection to CLECs in South Dakota pursuant to the SGAT filed on November 22, 2000, and as amended now in response to the outcomes of collaborative workshops hosted by eleven state Commissions. Section 7.0 of the SGAT describes Qwest's obligation to interconnect with CLEC networks for

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4 47 U.S.C. § 251(c)(2)

5 47 C.F.R. § 51.5

6 47 C.F.R. § 51.305(a)(2)

the purpose of exchanging local switched traffic.[7] To the extent CLECs have interconnection agreements that differ from the current SGAT, they may incorporate terms of the SGAT into their agreements upon request to Qwest.

Section 7.1.2 of the SGAT specifies the types of interconnection Qwest has agreed to provide. They are: (1) a DS1 or DS3 entrance facility provided by Qwest; (2) physical or virtual collocation associated with a CLEC-provided facility; (3) negotiated mid-span meet facilities; and (4) other technically feasible methods of interconnection.

An entrance facility is a Qwest-provided transport system from the CLEC's central office or other chosen POI to the nearest Qwest wire center, often referred to as the Qwest "serving wire center." Qwest's private line transport service is also available as an alternative to a separate local entrance facility for a CLEC that uses a private line or special access facility for non-local services.[8] An illustration of an entrance facility interconnection arrangement is set forth below.

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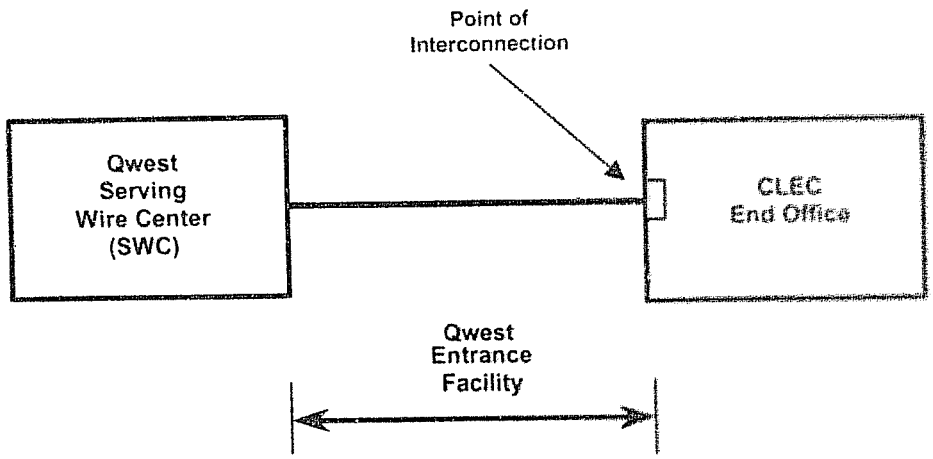
7 *See* Exhibit TRF-INTER-1, SGAT § 7

8 SGAT § 7.1.2.1

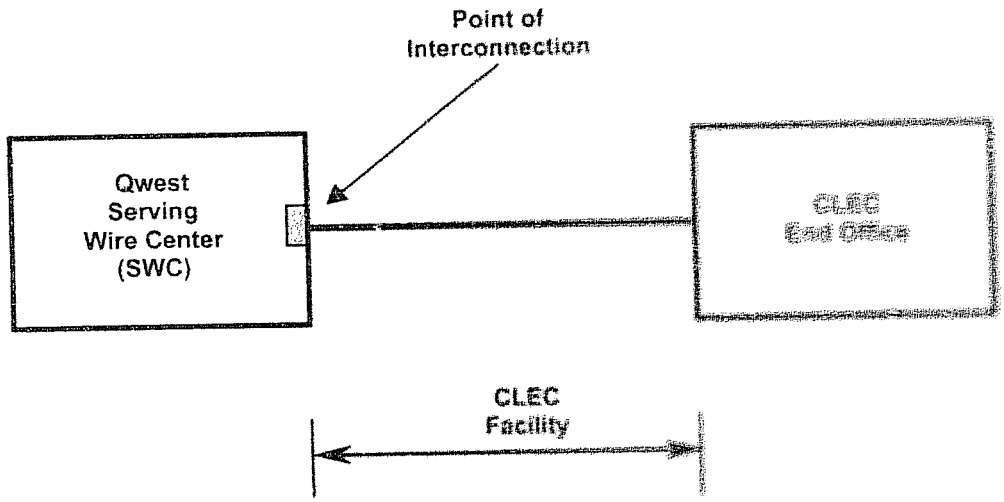
Entrance Facility Interconnection Arrangement



In a collocation-based interconnection arrangement, the CLEC typically provides transport from its switch to its collocated equipment.[9] The testimony of Margaret Bumgarner describes in detail the various collocation arrangements that Qwest provides.

[9] SGAT § 7.1.2.2

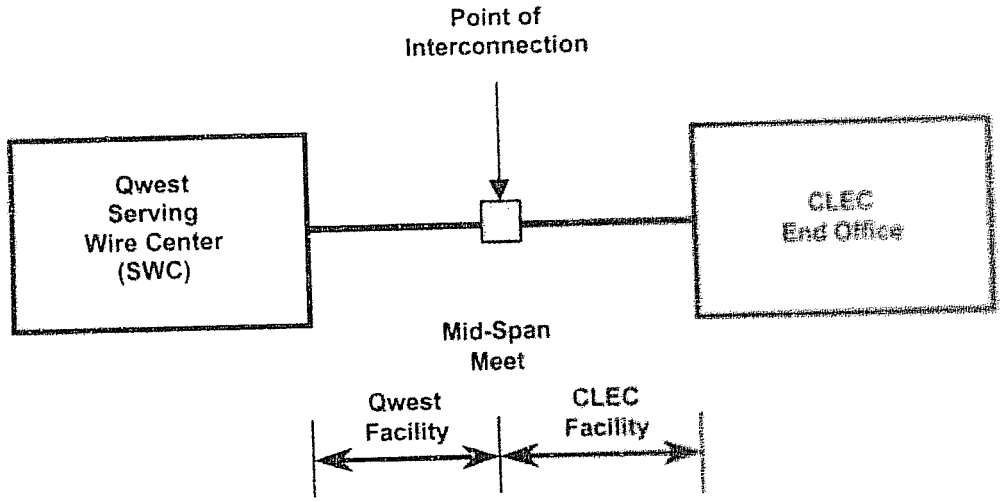
Collocation Interconnection Arrangement



In a mid-span meet interconnection arrangement, Qwest and a CLEC extend transport from their respective networks to a negotiated point.[10] Included below is an illustration of a mid-span meet interconnection arrangement.

10 SGAT § 7.1.2.3

Mid-Span Meet Interconnection Arrangement



In a mid-span meet arrangement, the parties establish technical interface specifications for the successful exchange of traffic. The parties negotiate the physical POI and the facilities to be used, subject to the limits of technical feasibility and equitable sharing of costs. In a mid-span meet, each party typically owns and operates its equipment on its side of the POI.[11]

CLECs may designate a mid-span fiber meet as the target architecture, except when it is not technically feasible or when the parties disagree on midpoint location. In this case, the CLEC is responsible for providing, at its location, a fiber optic terminal ("FOT"), multiplexing, and fiber required to terminate the optical signal provided by

11 *Id.*

Qwest. Qwest is responsible for providing corresponding FOT(s), multiplexing, and fiber required to terminate the optical signal provided by the CLEC.[12]

At their own expense, Qwest and the CLEC procure, install, and maintain the FOT(s) with capacity sufficient to provision and maintain all trunk groups. The parties negotiate the capacity of the FOT(s) based on equivalent DS1s and DS3s necessary for transport of forecasted local interconnection trunking.[13]

Qwest provides interconnection at any feasible point on its network. Some CLECs wish to limit the number of points to one in each LATA. Qwest permits those CLECs to arrange direct and common transport to carry calls from a single POI to a Qwest wire center in a distant local calling area.[14] Alternatively, the CLEC may construct, or purchase from a third party, a facility from its switch into the next Qwest local calling area it wishes to serve.[15] Qwest's approach to single POI per LATA interconnection is very similar to that offered by Verizon and SBC in the states where checklist satisfaction has been demonstrated by those ILECs. An illustration of this type of interconnection is set forth below.

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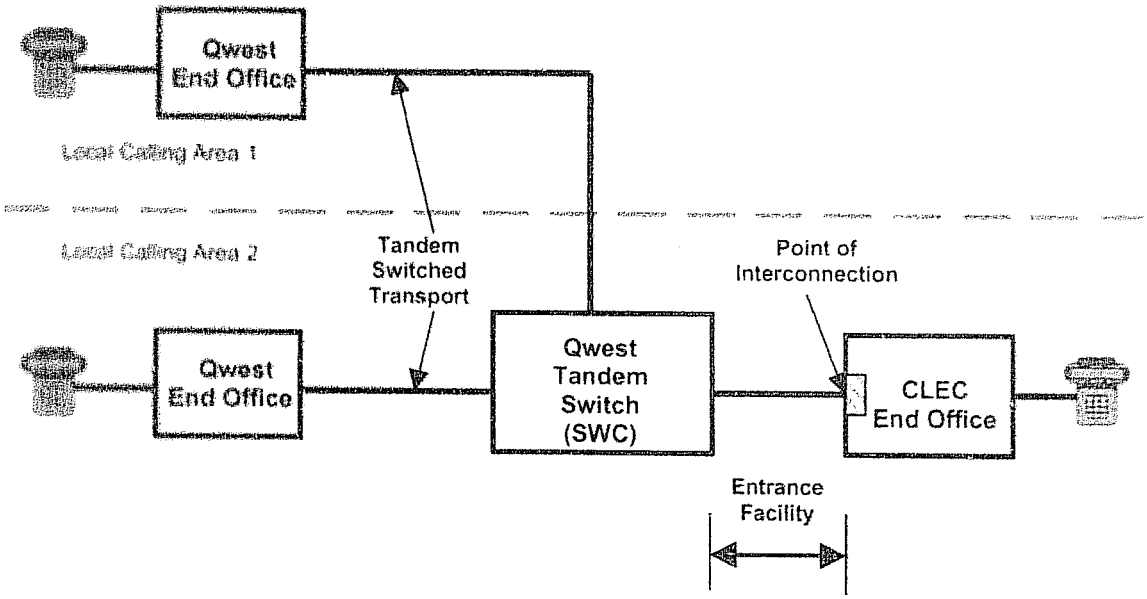
12 SGAT § 7.1.2.3.2

13 SGAT § 7.1.2.3.3

14 Qwest does not provide facilities across LATA boundaries.

15 SGAT § 7.1.2.

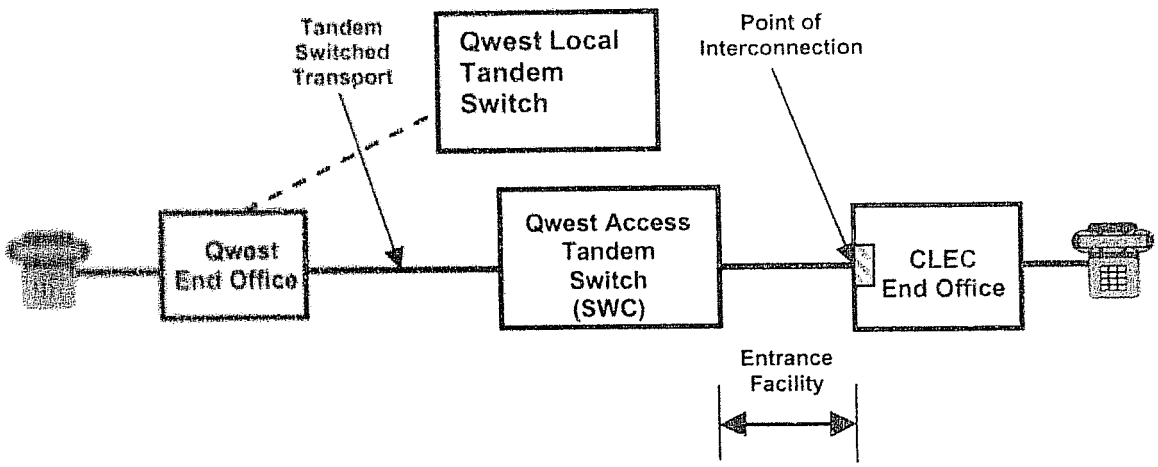
Interconnection via a Single Point of Interface



Upon request, Qwest provides interconnection at an access tandem switch. An access tandem is a switch that, prior to the Act, carried only toll calls that a retail customer placed by dialing a "1" as the first digit and for which the retail customer paid a usage sensitive charge. Local calls, which did not involve dialing a "1" as the first digit and typically were not subject to per minute charges, were not routed via the access tandem switch. When a CLEC has existing trunks connecting its network to a Qwest access tandem switch for purposes of transporting interLATA calls, Qwest permits use of those connections to exchange local calls provided that the existing trunk groups have sufficient capacity to carry local calls.[16] An illustration of this type of interconnection is set forth below.

[16] SGAT §§ 4.1.1.2; 7.2.2.9.6

Interconnection to an Access Tandem Switch



Qwest satisfies any other requests for interconnection through the Bona Fide Request ("BFR") process. This process allows CLECs to request unique interconnection arrangements or modifications to existing interconnection arrangements. Qwest analyzes the technical feasibility of each BFR and prepares a preliminary report for the requesting carrier within 30 days. If the request is technically feasible and the CLEC authorizes further development, Qwest will negotiate a schedule for arriving at price and implementation terms (which generally will not extend beyond 90 days from Qwest's receipt of the request). To date, Qwest has not received BFRs for interconnection trunking in South Dakota.

B. Qwest Is Fulfilling Significant CLEC Demand For Interconnection.

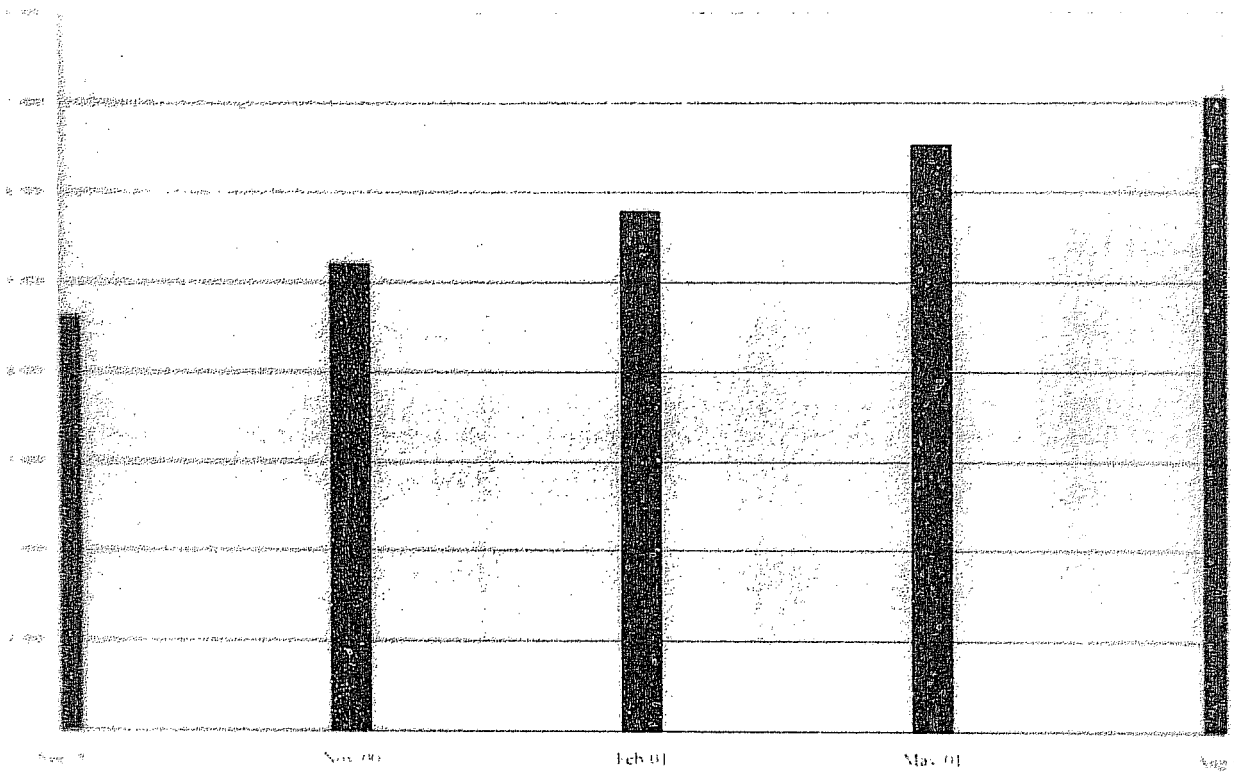
Currently, Qwest provides interconnection trunking to 6 facilities-based CLECs in South Dakota. As of September 1, 2001, CLECs had 7,049 interconnection trunks in service in South Dakota. Of those, 4,990 connected CLEC end offices with Qwest end offices, and 2,059 connected CLEC end offices with Qwest tandem offices. Ninety-four percent of the interconnection trunks (6,600) were two-way trunks. Listed below are the types and number of trunks in service.

Trunk Type	Trunks in Service
E911	22
Local	5,376
Operator	67
Toll	1,584
Total	7,049

In August 2001, a typical recent month, Qwest exchanged more than 53 million minutes of local calls with CLECs over interconnection trunks. The volume of local traffic exchanged with CLECs continues to grow.

CLECs project large increases in the number of interconnection trunks in South Dakota. In the past 12 months, the number of interconnection trunks in service grew by 53%. The graph that follows shows the growth of South Dakota LIS Trunks between August 200 and August 2001.

South Dakota In Service LIS Trunks Quarterly



C. Qwest Is Provisioning, Maintaining, And Repairing Interconnection Trunks In Accordance With The ROC's Performance Measures.

The ROC, after extensive workshop input from CLECs and Qwest, adopted specific PIDs to measure Qwest's success in providing interconnection to CLECs. The PIDs calibrate trunk provisioning, network blocking, and trunk repair. Each month, Qwest collects and reports detailed performance results for each PID.

The ROC generally decided to use a "parity" standard rather than a benchmark standard for each of the interconnection performance measurements. Below I describe each of the areas for which the ROC developed PIDs and discuss Qwest's performance under each performance metric.[17]

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[17] *See* Ex. TRF-INTER-2, Performance Data

The Liberty Consulting Group (Liberty) conducted a thorough audit of Qwest's performance results. For each PID, Liberty:

(1) examined Qwest's data collection systems to ensure that Qwest was accurately capturing, calculating, and reporting performance results;

(2) conducted an end-to-end analysis of sample data sets to verify that the data collection systems worked as designed; and

(3) independently calculated certain performance results to corroborate Qwest's results.

In its final report, issued on September 25, 2001, Liberty concluded that, "The audited performance measures accurately and reliably report actual Qwest performance."

1. Trunk Provisioning.

Immediately following passage of the Telecom Act, rather than develop an entirely new set of forms, systems and practices, Qwest used the very familiar process for ordering Exchange Access as a model for the interconnection ordering process. Since 1984, the Exchange Access ordering process has allowed an interexchange carrier to originate and terminate its subscriber's long distance calls. By using this model, Qwest contributed to the establishment of more interconnection trunks sooner than would have been possible if an entirely new approach had been devised. Nomenclature and business practices were familiar to the employees of many CLECs and Qwest. The most notable differences between local interconnection services and

interexchange carrier access services were the lower TELRIC-based prices of the local interconnection rate elements.

CLECs order local interconnection trunks with a well known form called an Access Service Request ("ASR"),[18] which was created by the Ordering and Billing Forum of the Alliance for Telecommunications Industry Solutions. Instructions for use of the form are provided on Qwest's website and in the publicly available Access Service Ordering Guidelines. Examples of industry-defined order entry data are Network Channel and Network Channel Interface codes. These codes specify the characteristics of the circuit at its connecting points.

Before submitting its first order, CLEC representatives typically meet with a Qwest account manager to plan the proposed trunking interconnection. The CLEC provides its best estimate of the traffic distribution to each Qwest end office and tandem office. The parties agree upon configuration and due dates for the initial interconnection orders.[19] After the initial order, Qwest routinely accepts orders without a meeting.

Although Qwest accepts paper orders by mail or facsimile, most carriers submit their orders via an electronic system called EXACT, which existed prior to the passage of the Act.

When ordering trunks, a CLEC specifies requirements on the ASR.[20] For example, a CLEC specifies the number of interconnection facilities to terminate at the

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[18] SGAT § 7.4.1

[19] SGAT § 7.4.4

[20] SGAT § 7.4.1

POI, the type of interoffice transport, (i.e., Direct Trunked Transport or Tandem Routed Transport), the geographic identities of the switches at either end of the trunk group, and any optional features. When a CLEC requests facilities, routing, or optional features different than those determined to be available, the parties work cooperatively to determine an acceptable configuration.[21] The parties design interconnection facilities in accordance with current industry standards.[22]

Qwest has invested considerable resource and energy into constructing the current level of interconnection. Qwest centers that fulfill interconnection service orders are staffed with trained personnel who have fulfilled CLEC demand for interconnection for several years. To assist new CLECs with ordering and obtaining interconnection, Qwest offers training and facility tours. Qwest's account team members frequently interact with CLEC representatives to discuss specific requirements.

The ROC requires Qwest to measure certain aspects of the trunk provisioning process. Among other things, Qwest tracks the percentage of time it installs a trunk on or before the due date ("commitments met") and the average installation interval.[23] For both of these indicators, Qwest also collects data for its own interoffice trunks for comparison. I will discuss the data from the most recent six months for which data is available, from March through August 2001.

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21 *Id.*

22 SGAT § 7.2.2.9.1

23 *See* TRF-INTER-2 at 1, OP-3, OP-4

The performance data show that Qwest has installed trunks for CLECs in timeframes and at percentages that are similar to comparable retail performance. Qwest met 100% of its installation commitments to CLECs.[24] The CLEC average installation interval was 42 days. Although that was longer than the average retail[25] interval of 19 days, by inspection of the orders, I verified that the intervals were the result of CLEC-specific requests for intervals longer than the standard.[26]

Overall, installation quality was very good - 88% of new trunks were installed without a CLEC filing a trouble report. [27]

2. Trunk Forecasting and Blockage.

Section 7.2.2.8 of the SGAT defines the parties' responsibilities regarding interconnection forecasting, including: forms and format, required information, forecast cycle, joint planning meetings, Qwest's Trunk Group Servicing Request ("TGSR") process, and trunk group resizing guidelines.

CLECs and Qwest share estimates of the future size of each trunk group. Requirements are typically projected for a two-year period. These forecasts aid the parties in identifying the best available interconnection options and constructing inventory in anticipation of orders.

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24 *Id.*, OP-3

25 Interexchange Carrier Feature Group D Access Trunking.

26 TRF-INTER-2 at 1, OP-4

27 I computed averages by adding the numerators for March through August and dividing them by the sum of the denominators for those months. TRF-INTER-2 at 1, OP-5

Trunk groups are sized to operate at service objectives. The performance metric for assessing trunk group service performance is call blockage. "Blockage" is defined as attempted calls that cannot be further advanced toward the call destination due to equipment shortage or network failure.

Trunking theory assumes that not all customers will seek to use the network at the same time. If Qwest were to design its network so that no call was ever blocked, a separate path would be needed between each telephone in the network. For networks of more than a few telephones, this would be cost prohibitive. The solution is to provide switches and fewer paths (trunks between switches) that many telephones can access at will. This creates a probability that some calls will be blocked. Qwest's network is based upon the application of these longstanding principles.

Qwest satisfies the service-blocking objective for interconnection trunking and for its embedded trunking by providing facilities and equipment in sufficient quantities to connect the number of people who might, under busy-hour conditions,[28] simultaneously attempt to pass calls between networks. One-percent blocking on final routes is a design that achieves an industry-accepted balance between caller expectation and economic efficiency. Day-to-day variations in the level of busy hour traffic can cause anomalous blocking of service beyond the design criterion. To the extent unexpected trunk blockage occurs, either party may initiate a request for additional trunks.

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[28] "Busy hour" is the sixty minute interval that on each day during a one month period carries the heaviest traffic load.

Qwest has generally considered blocking on local trunk groups below a one-percent threshold to be incidental. A CLEC may choose another threshold and build interconnection trunks with Qwest to accommodate its desired design. Primary or high-use (non-final) trunk groups are designed to block at higher rates since overflow calls are not blocked, but are handled by alternate-final groups.

Direct traffic involves two switches and a single path. Tandem-switched traffic involves at least three switches and two paths. The tandem-switched route is generally more costly; therefore, the direct route is typically favored when a trunk group requires 24 members or more. Most often, a CLEC requests a combination of direct and tandem-switched trunks. The proper mix of end office switching and tandem switching is important to ensure the most efficient and cost effective trunking between the two networks.

Direct trunks to Qwest end offices are required as the traffic between a Qwest end office and a CLEC end office exceeds the busy hour equivalent of approximately one DS1 (*i.e.*, 24 voice grade trunks or approximately 512 CCS). Thus, to ensure efficient network engineering on both Qwest's and interconnecting carriers' networks, the SGAT requires that, "where there is a DS1's worth of traffic (512 CCS) between the originating Party's End Office Switch delivered to the other Party's tandem switch for delivery to one of the other Party's End Office Switches, the originating Party will order a direct trunk group to the other Party's end office."[29]

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[29] SGAT § 7.2.2.1.3

Qwest actively monitors interconnection traffic in South Dakota. Qwest service assurance employees routinely collect traffic data on all interconnection trunk groups. The traffic data is analyzed in monthly reports that are shared with CLECs to identify trunk group blocking beyond incidental levels.[30]

If the monthly reports show excessive blocking for any two-way interconnection trunk group, Qwest issues a TGSR advising the CLEC of the need to provision additional trunks. In response to the TGSR, the CLEC may review its traffic data and determine whether it believes augmentation is appropriate.[31]

The TGSR process is not new. Qwest uses the TGSR process internally and for CLEC, Inter-Exchange Carrier, Independent Local Exchange Carrier, and Wireless interconnection trunk groups. This process allows interconnected carriers to minimize blocking.

The ROC concluded that blockage less than or equal to 1% is always acceptable. The ROC also determined that, if blockage exceeds 1%, the blockage on interconnection trunks must be the same or better than on Qwest's own interoffice trunks.[32] The defined "acceptable" level of blockage on both direct trunks and tandem trunks is the result of exhaustive traffic studies, probability theory, technological advances, and the use of economic models.

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30 SGAT § 7.2.2.9.1.1

31 SGAT § 7.2.2.8.11

32 See Ex. TRF-INTER-2 at 7-8, NI-1

Blockage is measured on (1) on interconnection local final trunk groups that connect CLEC end offices with Qwest tandems, and (2) on interconnection local final trunk groups that directly connect CLEC end offices with Qwest end offices. To ensure interconnection equal in quality to its own connections, Qwest also measures blocking on comparable retail trunks. [33]

Two of the ROC's performance measures exclude from the total blockage figure any blockage on trunks for which Qwest issued a timely TGSR. This weeds out blockage caused by a CLEC failing to place an order for more trunks for whatever reason. [34]

Qwest's performance in controlling blockage has been outstanding. In March-August 2001, average the trunk blockage on CLEC interconnection to Qwest tandem offices in South Dakota was 0.20%, with no blockage whatsoever in the last four months. [35] Trunk blockage on CLEC interconnection to Qwest end offices averaged 0.12%. [36] These results are far below the ROC's 1% benchmark.

3. Trunk Maintenance and Repair.

After interconnection trunks have been installed, Qwest and CLECs participate in periodic joint planning meetings to establish trunk re-design and servicing requirements. The parties provide forecast information to each other to ensure reliable call completion.

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[33] Per ROC Performance Measurement definitions, "retail trunks" here refer to final trunk groups carrying local calls between pairs of Qwest switches.

[34] See TRF-INTER-2 at 7, NI-1A, NI-1B

[35] TRF-INTER-2 at 7, NI-1A

[36] *Id.*, NI-1B

The ROC adopted specific performance measures for maintenance and repair of interconnection trunks. These include the overall trouble report rate, the percentage of trouble reports cleared within four hours, and the mean time to restore service.[37]

Qwest has achieved great success in maintaining and repairing interconnection trunks. The rate of CLEC trouble reports for interconnection trunks has been very low, with an average of 0.06%.[38] Qwest cleared 78% of those trouble reports within four hours.[39] The mean time to restore service was comparable for wholesale and retail trunks. These results show that Qwest has provided interconnection trunking on a nondiscriminatory basis.

III. SUMMARY AND CONCLUSION

Qwest has satisfied each of the requirements of the Act with regard to interconnection. Qwest has a concrete and specific legal obligation to continue to provide interconnection under the SGAT and interconnection agreements between Qwest and CLECs in South Dakota. Checklist Item 1 is also satisfied by the specific procedures Qwest employs to implement interconnection with CLECs. Qwest has fulfilled considerable CLEC demand for interconnection across the state. Qwest's trained personnel are well prepared to meet future demand for interconnection.

The procedures Qwest has in place for establishing and expanding interconnection to CLECs ensure that the requirements of the Act have been, and will

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[37] See TRF-INTER-2 at 4, MR-5, MR-6, MR-8

[38] *Id.* at 4, MR-8

[39] *Id.*, MR-5

continue to be, satisfied in South Dakota. The performance data show that Qwest provisions interconnection trunks to CLECs on a nondiscriminatory basis, with a comparable percentage of commitments met, and that trunk blockage is within reasonable limits. All of Qwest's processes, procedures, capabilities, and performance for interconnection ensured that efficient carriers are afforded a reasonable opportunity to compete.

Based on this evidence, I respectfully submit that the Commission should find that Qwest has satisfied the requirements of Checklist Item 1, Interconnection, of Section 271(c)(2)(B)(i) of the Act.

Being first duly sworn upon oath, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 10TH day of October, 2001.

Thomas R. Freeberg

STATE OF MINNESOTA

COUNTY OF HENNEPIN

Subscribed and sworn to before me this 10 day of Oct., 2001.

Notary Public

ERIC J. SUNSDAHL
Notary Public
Minnesota
My Commission Expires Jan 31, 2005

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

EXHIBITS of the AFFDAVIT

OF

THOMAS R. FREEBERG

CHECKLIST ITEM #1 -- INTERCONNECTION

OCTOBER 24, 2001

INDEX TO EXHIBITS

DESCRIPTION	Exhibit
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Performance Results	TRF-INTER-2

QUALIFICATIONS OF THOMAS R. FREEBERG

Mr. Freeberg holds a Bachelor of Science degree in Civil Engineering from the University of Minnesota, Institute of Technology, and is a Registered Professional Engineer in Minnesota, License Number 16738 MN.

Excluding a two-year break, he has worked for Qwest and its predecessors since 1979 in various engineering, construction, administration, planning, and operations positions. As part of Qwest's construction operation, Mr. Freeberg directly supervised cable placement and splicing for interoffice and loop facilities. As part of Qwest's order provisioning operation, he directly supervised order administrators and facilities specialists who maintained records of idle and working cable and electronics inventories as orders were processed. As part of Qwest's engineering operation, he drafted blueprints for outside plant augments, ran computer models comparing the economics of various network augment options (switching, loop and transport), and developed the cost portion of business cases for potential new services. Finally, as part of Qwest's wholesale operation, Mr. Freeberg directly supervised the development and documentation of provisioning and maintenance processes associated with new resale, interconnection, and unbundled local services. These efforts were intended to ensure that basic provisioning and maintenance were in place to support the initial rollout of local wholesale services.

Mr. Freeberg has actively participated in the state proceedings in which Qwest is seeking approval to provide interLATA services within its 14 state region. He

has submitted testimony and participated in workshops in every state with [illegible] proceedings, including South Dakota

Performance Results

South Dakota

March 2001 - August 2001

October 2, 2001

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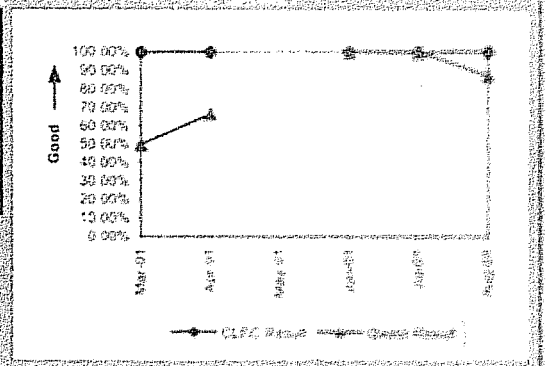
Checklist #1 - Local Interconnection - LIS Installation

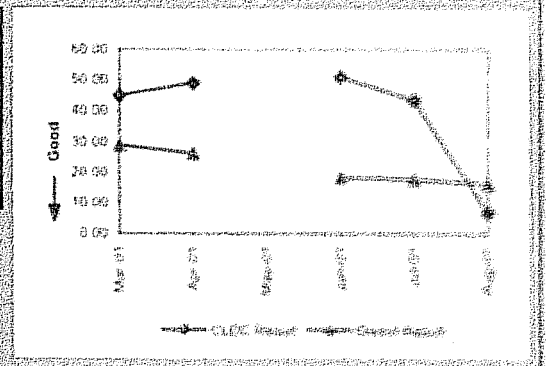
Installation Commitments Met (Percent) (OP-3) – Interval Zone Two

Date	CLEC Num	CLEC Dem	CLEC Result	Std Dev	Qwest Num	Qwest Dem	Qwest Result	Mod Z Scr	Parity Scr
[illegible]	4	6	100.00%	0.00%	1	2	50.00%	-1.22	-1.74
[illegible]	1	1	100.00%	0.00%	2	3	66.67%	-0.61	-1.37
[illegible]									
[illegible]	5	5	100.00%	0.00%	6	6	100.00%	N/A	N/A
[illegible]	1	1	100.00%	0.00%	7	7	100.00%	N/A	N/A
[illegible]	5	5	100.00%	0.00%	7	8	87.50%	-0.36	-1.22



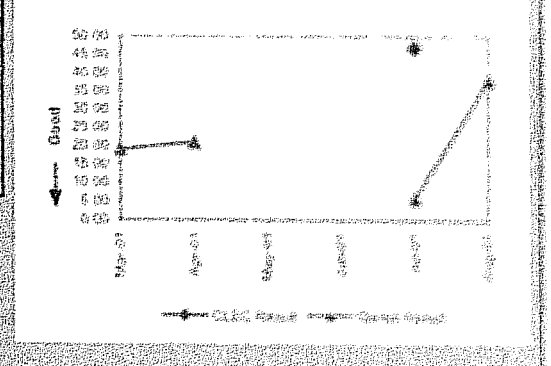
Installation Interval (Average Days) (OP-4) – Interval Zone Two

Date	CLEC Num	CLEC Dem	CLEC Result	Std Dev	Qwest Num	Qwest Dem	Qwest Result	Mod Z Scr	Parity Scr
[illegible]	[illegible]	5	45.00	4.47	58	2	29.00	1.29	-0.22
[illegible]	49	1	49.00		79	3	26.33	0.99	-0.4
[illegible]									
[illegible]	51	1	51.00		110	6	18.33	1.41	-0.15
[illegible]	87	2	43.50	38.06	143	8	17.88	0.98	-0.4
[illegible]	7	1	7.00		131	8	16.38	-0.52	-1.32



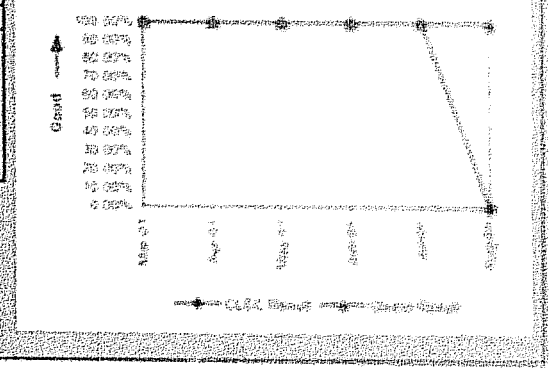
Delayed Days for Non-Facility Reasons (Average Days) (OP-6A) – Interval Zone Two

Date	CLEC Num	CLEC Dem	CLEC Result	Std Dev	Qwest Num	Qwest Dem	Qwest Result	Mod Z Scr	Parity Scr
[illegible]					19	1	19.00		
[illegible]					21	1	21.00		
[illegible]									
[illegible]									
[illegible]	47	1	47.00		6	1	6.00		
[illegible]					38	1	38.00		



New Service Installation Quality (Percent) (OP-5) – Interval Zone One and Two

Date	CLEC Num	CLEC Dem	CLEC Result	Std Dev	Qwest Num	Qwest Dem	Qwest Result	Mod Z Scr	Parity Scr
[illegible]	6	6	100.00%	0.00%	6	6	100.00%	N/A	N/A
[illegible]	5	5	100.00%	0.00%	8	8	100.00%	N/A	N/A
[illegible]	1	1	100.00%	0.00%	4	4	100.00%	N/A	N/A
[illegible]	1	1	100.00%	0.00%	4	4	100.00%	N/A	N/A
[illegible]	2	2	100.00%	0.00%	7	7	100.00%	N/A	N/A
[illegible]	0	2	0.00%	0.00%	8	8	100.00%	N/A	1.84



Checklist #1 - Local Interconnection - LIS Repair

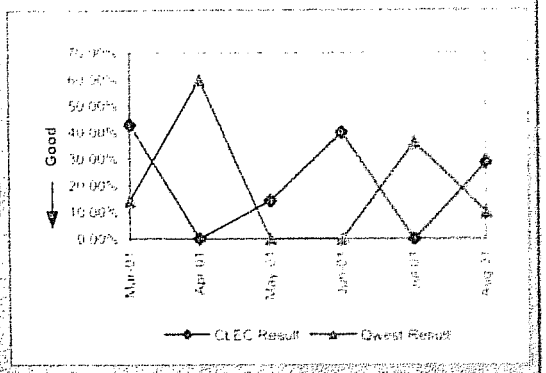
Percent Repairs Cleared within 4 hours (Percent) (MR-5)-- Interval Zone Two

Mean Time to Restore (Hours Minutes) (MR-6)-- Interval Zone Two

Repair Repeat Report Rate (Percent) (MR-7)-- Interval Zone Two

Trouble Rate (Percent) (MR-8)-- Interval Zone One and Two

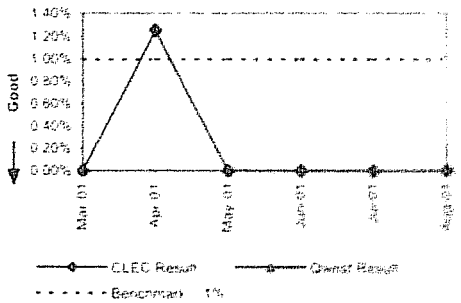
Checklist #1 - Local Interconnection - LIS Repair



Checklist #1 - Trunk Blocking

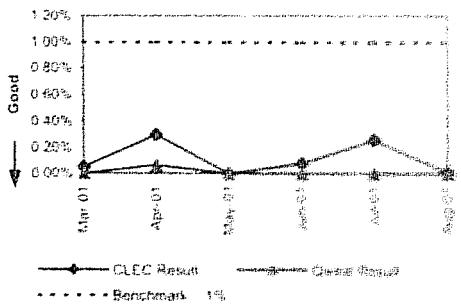
Trunk Blockage to Qwest Tandem Offices (Percent) (NI-1A) – Interval Zone One and Two

					Qwest Num	Qwest Den	Qwest Resu	Mod Z Scr	Parity Scr
				0 00%					
				0 41%					
				0 00%					
				0 00%					
				0 00%					
				0 00%					



Trunk Blockage to Qwest End Offices (Percent) (NI-1B) – Interval Zone One and Two

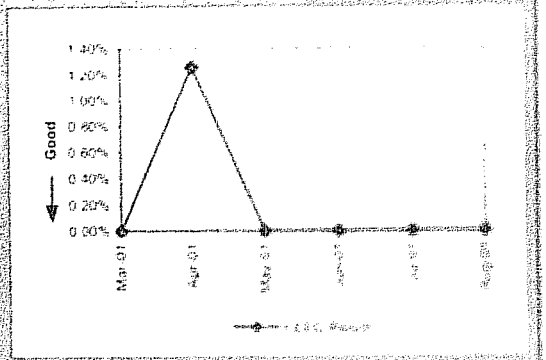
					Qwest Num	Qwest Den	Qwest Resu	Mod Z Scr	Parity Scr
			0 06%	0 20%	0	4569	0 00%		
			0 85%	2 89	2 89	4569	0 06%	65 77	38 98
			0 00%	0 00%	0	4569	0 00%		
			0 08%	0 32%	0	4569	0 00%		
			0 26%	0 54%	0	4569	0 00%		
			0 01%	0 09%	0	4569	0 00%		



Checklist #1 - Trunk Blocking

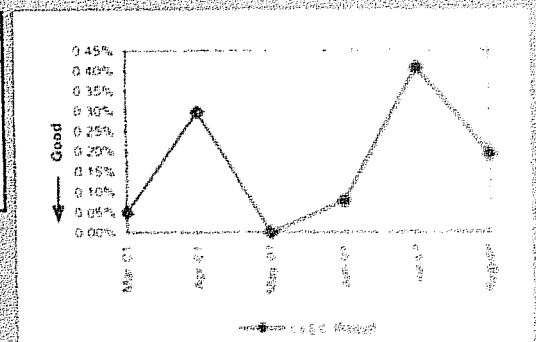
Trunk Blockage to Qwest Tandem Offices (Percent) (NI-1C)-- Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
[illegible]	0	408	0.00%	0.00%
[illegible]	5.13	408	1.26%	0.81%
[illegible]	0	408	0.00%	0.00%
[illegible]	0	408	0.00%	0.00%
[illegible]	0	408	0.00%	0.00%
[illegible]	0	408	0.00%	0.00%

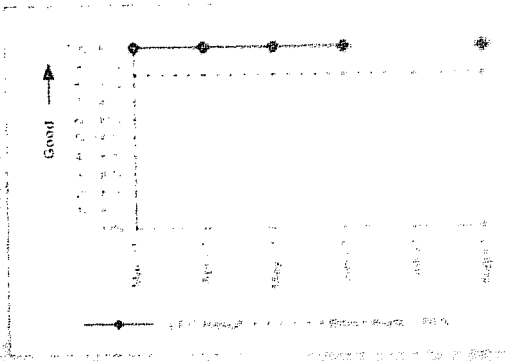


Trunk Blockage to Qwest End Offices (Percent) (NI-1D)-- Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
[illegible]	1.5	3000	0.05%	0.20%
[illegible]	9.18	3096	0.30%	0.85%
[illegible]	0	3096	0.00%	0.00%
[illegible]	2.39	3096	0.08%	0.32%
[illegible]	12.6	3096	0.41%	0.81%
[illegible]	5.89	3096	0.19%	0.75%



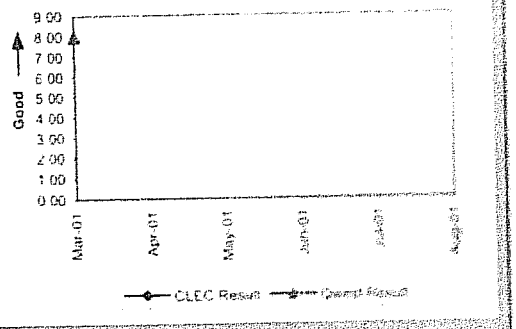
Firm Order Confirmations (FOCs) On Time (Percent) - PO-5 D)			
	CLEC Num	CLEC Denom	CLEC Result
	4	4	100.00%
	5	5	100.00%
	1	1	100.00%
	2	2	100.00%
	3	3	100.00%



Checklist #2 - Jeopardy Notifications - LIS

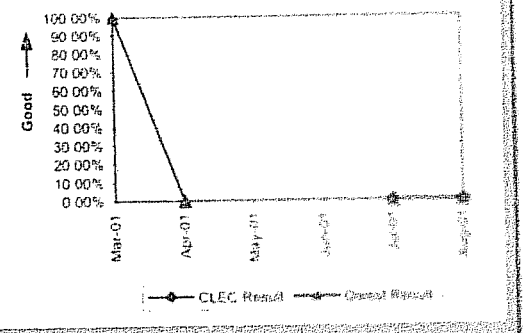
Customer Notice Interval (Average Days) (PG-8 C)

						8	1	8 00	



Percent Jeopardy Notices (Percent) (PO-9 C)

						1	1	100 00%	
						0	1	0 00%	
			0 00%	0 00%	0	2	0 00%	N/A	N/A
			0 00%	0 00%	0	1	0 00%	N/A	N/A



BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

AFFIDAVIT

OF

MARGARET S. BUMGARNER

CHECKLIST ITEM 1 – COLLOCATION

October 24, 2001

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AFFIDAVIT

OF

MARGARET S. BUMGARNER

Checklist Item 1 – Collocation

Margaret S. Bumgarner states as follows:

My name is Margaret S. Bumgarner. My business address is 1600 Seventh Avenue, Seattle, Washington, 98191. I am a Director in the Policy and Law organization at Qwest Corporation ("Qwest"). I submit this affidavit in support of Qwest's application for authority to provide interLATA services originating in South Dakota. In this affidavit, I show that Qwest complies with Checklist Item 1 of Section 271 of the Telecommunications Act of 1996 ("1996 Act" or "Act") as it relates to collocation.[1]

I base this affidavit on professional experience, personal knowledge, and information available to me in the normal course of my duties, including records kept by Qwest in the regular course of business.[2]

I. EXECUTIVE SUMMARY

Qwest satisfies the requirements of Section 271(c)(2)(B)(i) of the Telecommunications Act of 1996 ("1996 Act"),[3] and the Federal Communications

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[1] 47 U.S.C. § 271 (c)(2)(B)(i).

[2] Professional experience, education and other biographical information is set forth in Exhibit MSB-COLLO-1.

Commission ("FCC") with respect to collocation. Qwest provides collocation on rates, terms and conditions that are just, reasonable and non-discriminatory. Qwest has a contractual and specific legal obligation to provide collocation pursuant to its Statement of Generally Available Terms and Conditions ("SGAT") and in the various Commission-approved interconnection agreements with CLECs in South Dakota.

As of August 31, 2001, Qwest had collocation arrangements with seven CLECs in South Dakota. Qwest was providing fourteen units of physical collocation and one unit of virtual collocation in five central office buildings. These central offices represent 38.8 percent of Qwest's retail access lines within South Dakota. Additionally, two of these central office buildings (38.6% of the access lines) currently house three or more collocators' equipment. Qwest stands ready to provide additional collocation to CLECs in South Dakota in accordance with the terms of Qwest's SGAT or under negotiated interconnection agreements.

Qwest has implemented specific procedures to coordinate and fulfill the demand for CLEC collocation in an efficient and timely manner. Qwest's collocation processes, procedures, capabilities, and performance ensure that an efficient competitor is afforded a meaningful opportunity to compete.

All forms of collocation are available to CLECs throughout South Dakota. Physical collocation is available, where space permits, at all Qwest premises that house network facilities. Qwest makes available caged, shared cage, cageless, Interconnection Distribution Frame ("ICDF"), remote and common-area-splitter

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47 U.S.C. § 271(c)(2)(B)(i).

collocation, all at the CLEC's option. Consistent with 47 C.F.R. § 51.323(c), Qwest allows CLECs to collocate any equipment that is necessary for interconnection or access to unbundled network elements ("UNEs"), regardless of whether the equipment also performs a switching function, provides enhanced services capabilities, or offers other functions.

Qwest offers collocation on a first-come, first-served basis. If space exhaustion prohibits physical collocation, Qwest will make available adjacent structure collocation. Qwest makes space available in existing adjacent structures to the extent technically feasible. If no existing adjacent structure space is available, Qwest permits CLECs to construct or otherwise procure such an adjacent structure, on property owned or controlled by Qwest, subject only to reasonable design, safety, and maintenance requirements. If space later becomes available in the Qwest premises, a CLEC may, at its option, relocate its equipment to that interior space.

Qwest also provides for virtual collocation, in which Qwest installs and maintains equipment on behalf of a CLEC. Qwest provides virtual collocation within the same intervals as physical collocation, and installs and maintains the equipment and services at the same level of quality, as it applies to the performance of similar functions for comparable Qwest equipment.

Qwest allows CLEC personnel access to collocated equipment and to common areas (e.g., bathrooms, drinking fountains) twenty-four hours a day, seven days a week. Qwest takes reasonable measures to ensure that CLEC equipment is afforded physical security equal to the security provided for Qwest's own equipment. Qwest imposes

monthly security charges on a per CLEC employee basis for the keys, or the card and card-readers, needed to ensure security of access to the premises.

Qwest completes CLEC collocation orders within the installation intervals permitted by the FCC. Collocation orders commence with a CLEC submitting a Collocation Application Form, upon receipt of which Qwest provides the CLEC with a feasibility study within ten calendar days for both physical and virtual collocation. If the CLEC's first choice for collocation is not available, the study will determine the feasibility of the CLEC's next preferred choice. Once the CLEC's collocation request is found to be feasible, Qwest provides a quotation of the charges associated with the request within twenty-five calendar days of the completion of the feasibility study. Assuming the CLEC formally accepts the quote, Qwest then commences installation of the collocation arrangement. The time of completion varies depending upon the type of collocation requested, whether the CLEC provides a forecast, whether the CLEC timely accepts the collocation quote, whether (for virtual collocation) the CLEC delivers its equipment in a timely manner, and whether major infrastructure additions or modifications are required. Qwest allows CLECs (provided certain conditions are met) to begin installation of their equipment while collocation space is being prepared, even though the FCC requires only that CLECs have reasonable access for job review during the preparation period.

In addition, Qwest provides other types of collocation and services to satisfy CLEC needs. For example, Qwest offers ICDF collocation, which allows CLECs not requiring active equipment to be placed in the Qwest central office to use the ICDF to access Qwest UNEs for the purpose of combining them. Qwest also provides common

[illegible] collocation, which allows CLECs to place digital subscriber line ("DSL") [illegible] on common floor space at Qwest premises, so the CLECs can provide [illegible] data services within the spectrum of an end-user's analog voice-grade [illegible] service. Finally, Qwest provides for CLEC-to-CLEC connections, either [illegible] between CLECs' collocation spaces, or through cross-connects at an ICDF.

Qwest has participated in workshops addressing Checklist Item 1 in Arizona, [illegible], Oregon, Washington and in the Multi-State proceeding involving state [illegible] from Idaho, Iowa, Montana, New Mexico, North Dakota, Utah, and [illegible]. During these Qwest agreed to several modifications to its SGAT to [illegible] CLECs' competitive concerns. All of the modifications made by [illegible] in the workshops have been included in the South Dakota SGAT.

Qwest has implemented performance measures for collocation. Qwest's [illegible] measures, the Performance Indicator Definitions ("PIDs"), were developed [illegible] Regional Oversight Committee ("ROC") collaborative Section 271 performance [illegible] workshops. Those workshops, involving both Qwest and CLECs, were [illegible] under the auspices of the ROC that is composed of 13 state commissions in [illegible] region. For collocation in South Dakota, there has been little collocation data [illegible], however, the performance data that is available show that Qwest has met or [illegible] the benchmark objectives in South Dakota. Qwest has provisioned a [illegible] number of collocations regionally and Qwest's regional performance for [illegible] has been outstanding. Liberty Consulting Group has also recently released

in each of Qwest's performance results and confirmed that Qwest is accurately measuring its performance for collocation.

In the Multi-State Final Report for Workshop One regarding Collocation, the Facilitator recognized that the workshops had raised and resolved 54 collocation issues. There were 15 issues that remained in dispute for which the Facilitator made recommendations to the state commissions. Qwest agreed to accept the recommendations of the Facilitator for 14 of the 15 issues. Qwest's acceptance of the Facilitator's recommendations have been documented in Qwest's methods and procedures and revisions to the SGAT language have been made and included in the South Dakota SGAT. However, Qwest disagreed with the proposal by the Facilitator to add extend collocation intervals when the CLEC fails to submit a forecast. Qwest's SGAT language and proposals for collocation intervals are based on the FCC's Amended Order which clarified its earlier decision, that extended the 90-day default interval when the CLEC failed to provide a forecast. The FCC recognized the importance of forecasts and specifically tied the collocation interval to the existence of a forecast. Accordingly, Qwest has not incorporated this recommendation in its SGAT.

Qwest has a concrete and specific legal obligation to provide collocation under terms and conditions that are just, reasonable and nondiscriminatory to CLECs in South Dakota. Qwest has developed procedures and processes to provision collocation in accordance with the FCC's rules and policies and the performance data show that Qwest has met or exceeded the benchmark on all collocation performance measures in

South Dakota. For these reasons, the South Dakota Commission should find that Qwest satisfies the requirements of Checklist Item 1 for collocation.

II. QWEST COMPLIES WITH THE FCC'S COLLOCATION REQUIREMENTS IN SOUTH DAKOTA.

A. Collocation - General

Qwest satisfies the criterion in Section 271(c)(2)(B)(i) of the 1996 Act, which requires Bell Operating Companies ("BOCs") wishing to offer in-region interLATA service, such as Qwest, to provide interconnection in accordance with the requirements of Sections 251(c)(2) and 252(d)(1).[4] Specifically, consistent with Section 251(c)(2), Qwest provides interconnection that is at least equal in quality to that it provides for itself, at rates that are consistent with the pricing standards in Section 252(d)(1). As part of its commitment to interconnecting, Qwest provides collocation as one of the means of obtaining interconnection and access to network elements. Qwest provides such collocation on an unbundled basis, under rates, terms and conditions that are just, reasonable, and nondiscriminatory, for equipment necessary for interconnection or access to UNEs at the Qwest premises, as required by 47 U.S.C. § 251(c)(6), as well as by the rules the FCC adopted in its first report and order on local competition, and in subsequent advanced services orders, to implement Section 251(c)'s collocation

[4] 47 U.S.C. § 251(c)(2) requires incumbent local exchange carriers ("ILECs"), including BOCs, to provide, on rates, terms and conditions that are just, reasonable and nondiscriminatory, interconnection at any technically feasible point within the ILEC's network for the transmission and routing of telephone exchange service and exchange access.

requirements.[5] These rules govern the provision of space by ILECs for collocation, and the technical, timing, safety, security, and other requirements attendant thereto.[6]

Qwest has obligated itself to provide collocation on rates, terms and conditions that are just, reasonable and nondiscriminatory.[7] CLECs can obtain collocation from Qwest pursuant to Qwest's SGAT, or by negotiating terms and conditions of collocation as an interconnection agreement with Qwest. Moreover, CLECs seeking collocation from Qwest as part of a negotiated interconnection agreement can integrate the provisions of the SGAT into their interconnection agreements, and any CLEC that already has an interconnection agreement with Qwest may replace collocation

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[5] Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, CC Docket Nos. 96-98 and 95-185, First Report and Order, FCC 96-325 11 FCC Rcd 15499, ¶¶ 555-617 (rel. Aug. 8, 1996) (adopting 47 C.F.R. §§ 51.321, 51.323); Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order and Notice of Proposed Rulemaking, CC Docket Nos. 98-147, 98-11, 98-26, 98-32, 98-78 and 98-91, FCC 98-188, 13 FCC Rcd 24011 (rel. Aug. 7, 1998) ("Advanced Services Order"); *aff'd in part, rev'd in part sub nom.*, GTE Service Corp. v. FCC, 205 F.3d 416 (D.C. Cir. 2000); *on remand*, Deployment of Wireline Services Offering Advanced Telecommunications Capability, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, CC Docket No. 98-147 and 96-98, FCC 00-297, 15 FCC Rcd 17806 (rel. Aug. 10, 2000) ("Advanced Services Reconsideration Order"); *see also* Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order, CC Docket No. 98-147, DA 00-2528, 16 FCC Rcd. 3748 (rel. Nov. 7, 2000) ("Collocation Waiver Order"); and Deployment of Wireline Services Offering Advanced Telecommunications Capability, Fourth Report and Order, CC Docket No. 98-147 FCC 01-204, 2001 FCC LEXIS 4303 (rel. Aug. 8, 2001) ("Advanced Services Fourth Order").

[6] *See* 47 C.F.R. §§ 51.321, 51.323.

[7] *See* SGAT § 8.2.1.1.

provisions in its agreement with more favorable collocation provisions from the SGAT, if the CLEC so desires.[8]

Qwest's SGAT and its Section 271 compliance have evolved on not only a state-by-state basis, but holistically across its 14-state region as well, through Section 271 workshops and proceedings that were part of a collaborative process, conducted on an open basis with the full, active, and equal participation by competitive local exchange carriers ("CLECs") and state commission staffs. A significant part of this process has involved responding to collocation concerns raised by CLECs and revising the SGAT when possible to address their needs. The resolution of issues raised by CLECs and addressed through either consensus, concession, or state-commission decision have been integrated into the SGATs of the respective states as well as in other documentation provided to CLECs. The documentation provided to CLECs regarding collocation processes is available in the CLEC Product Catalog ("PCAT") on Qwest's web site.[9]

Qwest's SGAT contains provisions for nondiscriminatory allocation of space for the collocation of equipment, such that space is available on a first-come, first-served basis, and Qwest takes collocation demand into account when forecasting and planning for growth of facilities.[10] Moreover, in compliance with 47 C.F.R. § 51.321(c), to the

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[8] *See* 47 U.S.C. § 252(i); *see also* SGAT § 1.8 *et seq.*

[9] *See* Qwest's CLEC Product Catalog ("PCAT") available at Qwest's website at: http://www.qwest.com/wholesale/pcat/collocation.html.

[10] *See* SGAT § 8.2.1.10.

extent that a CLEC requests a collocation method that is used by an ILEC other than Qwest, and the collocation method is not currently provided for in the SGAT or a Qwest interconnection agreement, Qwest treats the method as presumptively technically feasible and provisions it under the Bona Fide Request ("BFR") process.[11]

1. Collocation Substance

Qwest has implemented collocation policies and procedures to enable competitive entrants to place their equipment at Qwest premises. Qwest has taken pains to ensure that these policies and procedures not only comply with all of the FCC's currently effective rules, including the intervals set forth in 47 C.F.R. § 51.323(l) (as temporarily modified for Qwest as per FCC order)[12], but that they truly afford new entrants an opportunity to compete on equal footing with Qwest. In addition, because Qwest's terms and conditions for collocation are provided via the SGAT or through Commission-approved interconnection agreements, they are legally binding and cannot be changed without review by the state commission.

Section 8 of the SGAT sets forth Qwest's terms and conditions, rate elements, descriptions and arrangements for ordering collocation. Specifically, Section 8 of the SGAT provides for physical collocation (caged, shared caged, cageless, ICDF,

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[11] *See* SGAT § 8.1.1. Where a state commission orders a form of collocation that is not currently provided for in the SGAT, Qwest adds it to the SGAT without requiring CLECs to use the BFR process.

[12] *See* Collocation Waiver Order, *supra* note 5 (granting Qwest and certain other BOCs conditional waivers of the FCC's imposition of a 90-day collocation provisioning interval, pending resolution of their petitions for reconsideration of same).

common-area-splitter, and adjacent) and virtual collocation.[13] In addition, Qwest provides for physical and virtual collocation in remote premises (i.e., non-Central Office premises).

Qwest does not limit the ability of CLECs to obtain more than one form of collocation in a Qwest premises.[14] Consistent with 47 C.F.R. § 51.323(c), Qwest allows CLECs to collocate equipment that is necessary for interconnection or access to UNEs, regardless of whether the equipment also performs a switching function, provides enhanced services capabilities, or offers other functions.[15] The only limitation in Section 8.2.1.2 of the SGAT regarding the type of collocated equipment is that CLECs may not collocate equipment that is not necessary for either access to UNEs or for interconnection, such as equipment used exclusively for enhanced services.[16] Nonetheless, the SGAT makes plain that Qwest will permit collocation of any CLEC equipment, unless Qwest first proves to the South Dakota Commission that a CLEC will not actually use the equipment for purposes of obtaining interconnection or access to unbundled network elements.[17] Moreover, Qwest never requires CLECs to disengage the switching or enhanced services functionality of collocated equipment that is used to access UNEs or for interconnection.

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[13] *See* generally SGAT §§ 8.1.1.1-8.1.1.8.

[14] *See* SGAT § 8.2.1.21.

[15] *See* Advanced Services Order, Advanced Services Reconsideration Order, and Advanced Services Fourth Order, *supra* note 5.

[16] *See* SGAT § 8.2.1.2.4.

[17] *See* 47 C.F.R. §§ 51.323(b), 51.321(e).

All forms of collocation are available to CLECs throughout South Dakota. Sections 8.1.1.1-8.1.1.8 of the SGAT describe the standard collocation arrangements Qwest offers. In addition, CLECs can obtain other non-standard collocation arrangements through the BFR process.[18] Through this process, CLECs may obtain collocation through any method another ILEC uses.[19] In addition, any collocation arrangement that Qwest does not already offer but that the South Dakota Commission subsequently mandates would be made a standard offering available to all CLECs. Collocation arrangements are available at all Qwest premises owned, leased, or otherwise controlled by Qwest that house its network facilities, including central office buildings, controlled environmental vaults or huts, remote terminals, and any other similar structures.[20] Collocation arrangements are also available adjacent to these premises, if physical space for collocation in the premises is exhausted and it is technically feasible to do so.[21]

Qwest allows conversions of collocation arrangements (e.g., from virtual to physical) at intervals determined on an individual case basis ("ICB"). Where such conversion involves only administrative and billing changes, such as conversion from

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18 *See* SGAT § 8.1.1.

19 *See* 47 C.F.R. § 51.321(c).

20 *See* SGAT § 4.46(a) for the definition of "premises."

21 *See* SGAT § 8.1.1.6.

virtual collocation to cageless physical collocation, Qwest will complete the conversion within 30 calendar days.[22]

Qwest provides CLECs with the same network connections as Qwest uses to provision services to its own retail customers.[23] CLEC terminations share frame space with Qwest terminations without a requirement to also traverse an intermediate device, such as an Interconnection Distribution Frame ("ICDF") or Single Point of Termination (SPOT) frame. A direct connection between the collocation space and the same wire center frame terminating similar retail services can be provisioned. Direct connection is described in the Qwest PCAT,[24] Technical Publication 77386, and in SGAT §§ 8.2.1.24-8.2.1.25. If desired, a CLEC may request terminations on alternative frames where space permits.[25]

Consistent with 47 C.F.R. § 51.323(d)(2), Qwest provides at least two interconnection points at each premises where there are at least two entry points for its own cable facilities and space is available for new facilities in a least two of those entry points. Although Qwest does not have the obligation to construct new dual entrances for CLECs, upon request, Qwest provides CLECs with access to available entrance facilities, and considers CLEC needs when new entrance facilities are constructed.[26]

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[22] See SGAT § 8.2.1.27.

[23] See SGAT §§ 8.2.1.24 – 8.2.1.25.

[24] Like the PCAT, Qwest Technical Publications are available for review at Qwest's website at http://www.qwest.com/wholesale/pcat/collocation.html.

[25] See SGAT § 8.2.1.26.

[26] See SGAT § 8.2.4.6.

Collocation Procedure

Qwest's Collocation Project Management Center is a work group dedicated to providing collocation arrangements to CLECs in a timely and efficient manner. The Collocation Project Management Center manages and coordinates each collocation order as it proceeds through each of the work groups, from initial inquiry to completion. The various network work groups perform the space feasibility studies, design engineering and quotes, procurement, vendor installation coordination, job scheduling, billing and administrative system updates, and inspection tours. Also, a State Collocation Manager group supports the Qwest wholesale marketing account teams with CLEC training, escalation and resolution of problems, and provide the inspection tours of collocation arrangements. Once a week the status of each collocation job due in the next 30/60/90 days are reviewed in a multi-department meeting that includes technical and senior managers from several Qwest departments. Collocation projects that are in jeopardy, late, or on-hold are discussed to develop action plans. Qwest dedicates nearly 100 network employees to satisfy collocation requests region-wide, and at least as many employees from other departments spend some portion of their time on collocation provisioning. Qwest will add additional resources, as required, to accommodate CLEC collocation needs.

Section 8.4 of the SGAT includes the specifics of the collocation ordering process and intervals. The process has several steps – forecast, application, feasibility

study design and quote preparation, acceptance, and installation, and where the CLEC orders reservation.[27]

An important first step in the collocation process is the quarterly forecast. This forecast, provided by the CLEC, allows Qwest to plan for the necessary resources to meet the needs of all CLECs.[28] The forecast will, for example, allow Qwest to ensure that certain long lead-time infrastructures – such as power rectifiers, batteries, generators, fuse boards, and air conditioning – are available in a timely manner to allow Qwest to complete CLEC orders. Forecasts also allow Qwest to plan for the necessary personnel for collocation order processing, design, engineering, and installation, both for Qwest internal resources and for its vendors' resources. The forecasting requirements are contained in Section 8.4.1.4 of the SGAT, which reflects the consensus reached between Qwest and the CLECs participating in the various state workshops. CLEC forecasts are treated as confidential information.[29]

To initiate a collocation order, a CLEC must submit a complete Collocation Application Form described in Sections 8.4.1.5 of the SGAT. Upon receipt of a collocation request, Qwest performs the following three steps in the provisioning process:

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[27] See SGAT § 8.4.1

[28] See SGAT §§ 8.4.1.4 *et seq.*

[29] See also SGAT §§ 8.4.2.4 *et seq.*, 8.4.3.4 *et seq.*, 8.4.4.4 *et seq.* (establishing collocation provisioning intervals based on forecasting); Collocation Waiver Order, ¶ 19 (allowing Qwest to base collocation provisioning intervals on CLEC forecasts)

Feasibility Study – First, Qwest provides the CLEC with a study of the feasibility of providing collocation at a particular premises pursuant to the CLEC's request. In accord with the terms of the SGAT, Qwest provides the feasibility study within ten calendar days of the CLEC's initial request for collocation.[30] If the CLEC's first choice for collocation is not available (e.g., caged physical), the study will determine the feasibility of the CLEC's next preferred choices (e.g., cageless physical), as designated by the CLEC in its initial application. If at the time the Application is made a forecasted type of collocation is not available, a CLEC may specify a different type of collocation without affecting the intervals in which Qwest will complete installation.[31]

Quote Preparation – Second, if the CLEC's collocation request is found to be feasible, Qwest provides the CLEC with a quotation of the charges associated with the specific request within twenty-five calendar days of the completion of the feasibility study.[32] A CLEC has seven calendar days to accept the quote and tender a payment. The price quote will be honored for 30 calendar days from the date the quote is provided.

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[30] See SGAT § 8.4.3.1.

[31] See SGAT § 8.4.1.4.

[32] See SGAT §§ 8.4.2.2, 8.4.3.2, 8.4.4.2.

> **Installation** – Third, to continue the processing of a collocation application a CLEC must formally accept the collocation quotation.[33] Qwest then will commence installation of the collocation arrangement. The time of completion varies depending upon the type of collocation requested, and the following: whether the request was forecasted and/or reserved, whether the CLEC timely accepts the collocation quote, whether for virtual collocation it delivers its collocated equipment in a timely manner, and whether major infrastructure additions or modifications are required.[34]

While the FCC requires only that CLECs have reasonable access for job review while the collocation space is being prepared,[35] Qwest allows CLECs to begin installation of their equipment while the space is being prepared. Such "early access" is negotiated by Qwest and the CLEC on a site-specific basis and is subject to the conditions that (i) the CLEC pay 80% of the remaining 50% of quoted non-recurring charges (leaving a holdback of 10% of the originally quoted non-recurring charges); (ii) any enclosure for caged physical collocation must be complete; and (iii) early access does not interfere with the work remaining to be performed by Qwest.[36]

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[33] See SGAT § 8.4.1.6

[34] Qwest's installation intervals comply with the Collocation Waiver Order, *supra* note 5.

[35] See *Advanced Services* Reconsideration Order, ¶59; 47 C.F.R. § 51.321(f).

[36] See SGAT § 8.2.3.7

Qwest also allows a CLEC to reserve space in a Qwest premises for up to one year for transmission equipment, three years for circuit switching equipment, and five years for power equipment under a reservation process that requires a CLEC to submit a Collocation Space Reservation Application Form.[37] Within ten calendar days of the application, Qwest will provide a space feasibility study to the CLEC.[38] Qwest then provides a quotation for the reserved collocation space.[39] Upon payment of 25% of the nonrecurring charges for the space reserved, the reservation will go into effect.[40] In implementing space reservations, Qwest honors requests for contiguous space if possible.[41]

Qwest also allows CLECs to option collocation space for caged, cageless and virtual collocation at Qwest wire center premises, under terms similar to those applicable to space reservations.[42] Such options give CLECs a right of first refusal against subsequent collocation requests that require use of the optioned space.[43]

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[37] See SGAT §§ 8.4.1.7 *et seq.*

[38] See SGAT § 8.4.1.7.1.

[39] See SGAT § 8.4.1.7.2.

[40] See SGAT § 8.4.1.7.3. CLECs may cancel a space reservation at any time during the applicable reservation period, and Qwest will, upon notification of the cancellation, refund a portion of the payment, prorated to reflect how long the reservation was actually held. SGAT § 8.4.1.7.4.

[41] See SGAT § 8.4.1.7.

[42] See SGAT §§ 8.4.1.8 *et seq.* When a CLEC that has optioned collocation space proceeds with a collocation application, all such payments are applied to the application. SGAT § 8.4.1.8.8.

[43] See SGAT § 8.4.1.8.7.

[illegible] [illegible] [illegible] [

[illegible] Qwest has the obligation to CLECs before the end of the maximum time allowed. Qwest typically has the completed collocation space as soon as the job is completed. Thus, if Qwest's collocation job is "easy," it will be completed and turned over before the expiration of the 90-day interval.

Collocation in South Dakota

Taken together, the above measures demonstrate Qwest's legal obligation to provide collocation in addition, Qwest is actually providing collocation to CLECs in South Dakota. As of August 31, 2001, Qwest had collocation arrangements with seven CLECs in South Dakota. Qwest was providing fourteen units of physical collocation and one unit of virtual collocation in five central office buildings. These central offices represent 63.6 percent of Qwest's retail access lines within South Dakota. Additionally, two of these central office buildings (38.6 percent of the retail access lines) currently have three or more collocators equipment.

Qwest has several performance measures for collocation. Qwest's performance measures, the Performance Indicator Definitions ("PID"), were developed in the Regional Oversight Committee ("ROC") collaborative Section 271 performance measures workshops. These workshops, involving both Qwest and CLECs, were conducted under the auspices of the ROC which is composed of 13 state commissions in the Qwest region, including South Dakota. The collocation PIDs were redefined by the ROC in March 2001 to reflect the FCC's decisions regarding provisioning

intervals.[49] Qwest's began reporting performance results based on the new PIDs in April 2001.

Qwest has two specific performance measurements to ensure on-time provision of feasibility studies. Qwest reports CP-3, which measures the average interval to respond to collocation studies for feasibility of installation. This PID measures the interval between the collocation application date and Qwest's completion of the feasibility study to ensure that they are provided within the ten calendar days, as the FCC requires. In addition, CP-4 measures the percentage of collocation feasibility studies Qwest completes within the allotted ten calendar days. The ROC established a 90 percent benchmark for the CP-4 PID. There has been only one feasibility study to report in South Dakota since the new PIDs went into effect, and Qwest exceeded the benchmark on that measurement by completing the feasibility study in seven days and 100 percent commitments.[50]

Among Qwest's performance measurements for collocation, several measure its timely installation of collocations. The installation PIDs cover the entire collocation interval from receipt of the collocation application to the Ready For Service ("RFS") date (i.e., includes all three components for collocation provision: feasibility, quote, and installation). First, CP-1 measures whether collocation installations are provided within the intervals required under the FCC's rules. CP-1A measures collocation installations for which the scheduled interval from Collocation Application Date to the Ready for

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[49] Exhibit MSB-COLLO-2 are the ROC PIDs for collocation.

[50] Exhibit MSB-COLLO-3 are the collocation performance results for South Dakota

Service ("RFS") date is 90 calendar days or less. CP-1B measures collocation installations for which the scheduled interval from Collocation Application Date to RFS is 91 to 120 days. CP-1C measures installations for which the scheduled interval is 121 to 150 days. These PIDs exclude RFS dates missed due to the CLEC not being ready, and cancelled collocation applications.

Qwest also reports the percentage of collocation applications that are completed within the standard intervals, as described above for CP-1, under the CP-2 measurements. The CP-2 PIDs measure the percentage of collocation installations for which Qwest met the scheduled interval when the Collocation Application Date to RFS date is 90 calendar days or less (CP-2A); 91-120 days (CP-2B); and 121 to 150 days (CP-2C). These performance measures exclude RFS dates missed due to the CLEC not being ready and cancelled requests, as well as RFS dates missed for reasons beyond Qwest's control. There were no performance results reported for collocation installation intervals from April through August 2001 in South Dakota.[51]

Although there is little performance data to report for collocation in South Dakota since the implementation of the redefined PIDs in April 2001, Qwest uses the same work centers, systems and processes on a region-wide basis so one can look to the regional results to demonstrate that Qwest's collocation performance meets or exceeds the benchmarks established by the ROC.[52] As of August 31, 2001, regionally there was a total of 99 CLECs with collocation. Qwest has provisioned 3,318 collocations in 505

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51 Exhibit MSB-COLLO-3 are the collocation performance results for South Dakota.

52 Exhibit MSB-COLLO-4 are the regional collocation performance results.

Qwest premises throughout the fourteen states. These include 3,147 physical collocations and 171 virtual collocations. In addition, Qwest has completed 2,859 jobs for augments to collocations. On a regional basis, Qwest met the 10-day benchmark for feasibility studies in two of the last four months, achieving it's best results in August with 8.85 days and averaging 10.24 days for the four month period. In the performance measurement audit process, discussed below, it was found that Qwest was incorrectly counting the start of the feasibility interval. Qwest took action to put processes in place to correct the handling and reporting of the feasibility studies and the results were recalculated for each month back to April 2001. Qwest's new processes were put in place at the end of July 2001 and are reflected in the much improved results for August. On a regional basis, Qwest exceeded all of the collocation installation (commitments met) benchmarks for each category (CP-1 and CP-2) of collocation for every month April through August 2001. As described above, the installation intervals for collocation include the feasibility interval and Qwest has met all of the installation performance measures for each month since the new PIDs were implemented in April.

As the collocation performance results for South Dakota demonstrate, Qwest has met or exceeded the benchmark on the collocation performance measures. In South Dakota, Qwest met its commitments for providing feasibility studies under CP-4 100% of the time, and Qwest has exceeded the CP-3 benchmark for the feasibility study interval for collocation. On a regional basis, Qwest has demonstrated outstanding performance for collocation.

On September 25, 2001, Liberty Consulting Group, an [illegible] firm [illegible] retained as part of the ROC OSS Test, completed its audit of Qwest's performance measures (PIDs) and concluded that "the audited performance measures accurately and reliably report actual Qwest performance."[53] Qwest has offered to have Liberty verify its audit by conducting data reconciliation with any CLEC that believes Qwest's performance data is inaccurate. No party has questioned the authenticity or accuracy of the performance data related to Checklist Item 1 for collocation.

B. Physical Collocation

Qwest offers all of the forms of physical collocation, along with adjacent collocation, consistent with 47 C.F.R. § 51.323(k), and other forms of physical collocation, as described below:

Caged Physical Collocation – Caged physical collocation allows the CLEC to place its equipment on Qwest's premises surrounded by a secure cage.[54]

Shared Caged Physical Collocation – Under shared caged physical collocation, one CLEC obtains a caged physical collocation arrangement

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53 The Liberty Consulting Group Final Report on the Audit of Qwest's Performance Measures at 2-3. The Final Audit Report can be found at http://www.sim.sbs.state.edu/oss/master/pd/pap/pmaudreport.pdf. A copy of the Audit Report is also Exhibit MGW-PERF-2 to the Affidavit of Michael G. Williams.

54 *See* SGAT §§ 8.1.1.2. and 8.2.3 *et seq.*

from Qwest. A second CLEC may share the first CLEC's space under terms and conditions agreed to between the CLECs.[55]

Cageless Physical Collocation – Cageless physical collocation allows the CLEC to place its equipment in the Qwest central office in small increments of floor space among Qwest's or other CLECs' equipment and not separated from other providers' equipment by a secure barrier.[56]

ICDF Collocation – ICDF collocation is offered to CLECs that do not require active equipment to be placed in the Qwest central office, but require physical access to UNEs for the purpose of combining them.[57]

Common Area Splitter Collocation – Common Area Splitter collocation allows a CLEC to place digital subscriber line ("DSL") splitters on common floor space on Qwest's premises, thus affording the CLEC a means of providing advanced data services within the spectrum of an end-user's analog voice-grade telephone service.[58]

Remote Collocation – Remote collocation allows a CLEC to collocate in a Qwest outside plant facility structure which is located remote from a Qwest central office building property. This includes all structures that house Qwest network facilities on public rights-of-way, and all land owned

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55 *See* SGAT §§ 8.1.1.4; and 8.2.3 *et seq*

56 *See* SGAT §§ 8.1.1.3; and 8.2.3 *et seq*

57 *See* SGAT §§ 8.1.1.5; and 8.2.5 *et seq*

58 *See* SGAT §§ 8.1.1.7; and 9.4 *et seq*

leased, or otherwise controlled by Qwest, such as controlled environmental vaults, controlled environmental huts, cabinets, pedestals, and other remote terminals.[59]

Adjacent – Adjacent collocation allows the CLEC another option when space for physical collocation is unavailable on Qwest's premises, by making space available in a structure adjacent to a Qwest central office or remote premises, such as a controlled environmental vault or a modular building designed for primary telecommunications functions. Adjacent collocation facilities can be owned and constructed or procured by a CLEC and placed on Qwest property.[60]

Qwest allows physical collocation of telecommunications equipment a CLEC uses for the purpose of transmitting and routing telephone exchange service or exchange access service pursuant to 47 U.S.C. § 251(c)(2), or for obtaining access to Qwest's unbundled network elements pursuant to 47 U.S.C. § 251(c)(3) to provide telecommunications service. CLECs own or lease their transmission equipment located within the physically collocated space obtained from Qwest, and are responsible for the installation, maintenance and repair of same.[61]

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[59] *See* SGAT §§ 8.1.1.8; 8.2.7 *et seq.*; and 8.2.6 *et seq.*

[60] *See* SGAT §§ 8.1.1.6; 8.2.6 *et seq.*; and 8.4.6 *et seq.*

[61] *See* SGAT § 8.2.3.6.

1. Caged

Qwest provides physical caged collocation to CLECs for access to UNEs and ancillary services and interconnection. Physical collocation is offered in wire centers on a space-available, first-come, first-served basis, consistent with 47 C.F.R. § 51.323(f)(1).[62] For caged physical collocation, a CLEC's leased floor space is separated from other CLECs and Qwest space through a cage enclosure.[63] Qwest designs the floor space within each wire center that will constitute the CLEC's leased space.[64] Consistent with 47 C.F.R. § 51.323(j), a CLEC may either have Qwest construct the enclosure, choose from Qwest-approved contractors, or use another vendor of the CLEC's own choosing (subject to Qwest's approval, which involves only security access arrangements).[65] Approval by Qwest of a CLEC's employees, vendors or subcontractors is based on the same criteria that Qwest uses for vendors or contractors for its own purposes.[66]

The interval for provisioning caged collocation varies depending upon three factors: (1) whether the request was forecasted and/or the space was reserved, (2) whether the CLEC provides its acceptance within seven calendar days of receipt of the

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62 *See* SGAT § 8.2.3.2.

63 *See* SGAT § 8.2.3.12.

64 *See* SGAT § 8.2.3.4.

65 *See* SGAT §§ 8.2.1.28, 8.2.3.12.

66 *See* SGAT § 8.2.3.12.

quotation, and (3) whether the application requires major infrastructure additions or modifications.[67]

For any premises included in a CLEC's forecast at least 60 calendar days prior to submission of an application, if the CLEC timely accepts within seven calendar days of receiving Qwest's cost quotation, Qwest completes the collocation installation within 90 calendar days of receipt of the application.[68] If a premises is included in a forecast as indicated above, but the CLEC provides its acceptance more than seven but less than 30 calendar days after receipt of the quotation, Qwest completes the installation within 90 calendar days of the acceptance.[69]

For premises not included in a CLEC's forecast, Qwest completes installation within 120 calendar days of receipt of the application, provided the CLEC timely accepts the quotation (*i.e.*, within seven days of receipt of the quotation from Qwest).[70] For premises not included in a CLEC's forecast, where the CLEC accepts the quotation more than seven but less than 30 calendar days after receipt of the quotation, Qwest completes the installation within 120 calendar days of the acceptance.[71]

For collocations requiring major infrastructure modifications (e.g., those requiring building structural modifications, a DC power plant, a standby generator, or installation

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67 *See* SGAT § 8.4.3.4.

68 *See* SGAT § 8.4.3.4.1.

69 *See* SGAT § 8.4.3.4.2. If the acceptance is outside 30 days after receipt of the quotation, the CLEC must submit a new application.

70 *See* SGAT § 8.4.3.4.3.

71 *See* SGAT § 8.4.3.4.4.

of heating, venting and air conditioning equipment) that are triggered by a CLEC forecast or reservation, Qwest takes the steps necessary to ensure that it meets the intervals set forth above.[72] Where the CLEC has not forecasted its collocation needs, the above-listed installation intervals may be extended. In such cases, Qwest proposes to complete installation of the collocation arrangement within no more than 150 calendar days after receipt of the collocation application. The need for, and the duration of, extended intervals is provided to the CLEC as a part of the quotation, and the CLEC may dispute the need for, and the duration of, the extended interval, in which case Qwest either attempts to complete installation within the timeframes outlined above, or it requests a waiver from the South Dakota Commission to obtain an extended interval.[73] However, when Qwest is permitted to complete a collocation installation in an interval that is longer than the standard intervals listed above, Qwest uses its best efforts to minimize the extension of the intervals.[74]

2. Shared Caged

Consistent with 47 C.F.R. §§ 51.323(k)(1), Qwest allows CLECs to share physical caged collocation space.[75] Such sharing occurs at the sole discretion of the CLEC that is the original occupant of the caged collocation space (the "original

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72 *See* SGAT § 8.4.3.4.6. If notwithstanding these efforts, Qwest is unable to meet the interval and cannot reach agreement with CLEC for an extended interval, Qwest may seek a waiver from the South Dakota Commission to obtain an extended interval.

73 *See* SGAT § 8.4.3.4.5.

74 *See* SGAT § 8.4.3.4.

75 *See* SGAT § 8.1.1.4.

collocator"). A CLEC seeking to share space with an original collocator (the "secondary collocator") is responsible for any nonrecurring and recurring costs associated with a shared physical caged collocation arrangement, including separate entrance facilities, power requirements, and usage and terminations provided by Qwest.

The decision to establish shared physical caged collocation is based on a common agreement between the two CLECs and is pursuant to the original collocator's interconnection agreement. When a CLEC requests shared physical caged collocation, an amendment to its interconnection agreement is negotiated, which then must be approved by the South Dakota Commission, as was the initial interconnection agreement. In order to minimize delays while awaiting South Dakota Commission approval, Qwest processes the shared physical caged collocation application on a parallel track with the South Dakota Commission's review. When requesting shared physical caged collocation, the secondary collocator is responsible for negotiating an agreement for space with the original collocator of record. Qwest does not accept applications requesting shared physical caged collocation unless the secondary collocator provides a letter of authorization from the original collocator.

Each CLEC's telecommunications equipment will have its own unique Common Language Location Identifier code for delineating the telecommunications equipment within the shared space. Requests for terminations to the appropriate cross-connect device or InterConnection Distribution Frame ("ICDF") also are unique to each CLEC in the shared space.

3. Cageless

Qwest allows physical cageless collocation through the provision of a non-caged area within the Qwest central office building in which CLECs can place and maintain their own transmission equipment for the purpose of interconnection and access to Qwest UNEs, consistent with 47 C.F.R. § 51.323(k)(2).[76] For cageless physical collocation, the minimum square footage is nine square feet per bay (however, if smaller bays are or become available, Qwest will reduce the minimum square footage accordingly). Requests for multiple bay space will be provided in adjacent bays where possible. When contiguous space is not available, bays may be commingled with other CLECs' equipment bays. CLECs may request a price quote for Qwest to rearrange its equipment to facilitate the CLEC having adjacent cageless space.[77] CLECs maintain exclusive use of their bays. These provisions are consistent with FCC rule revisions that require physical collocation arrangements for competing carriers, including shared caged, cageless, and adjacent collocation.[78]

The CLEC is responsible for the delivery and placement of its own bays in a physical cageless collocation arrangement. CLECs with approved interconnection agreements will have access to the Qwest central office for the purpose of installing, maintaining and combining their collocated equipment with Qwest UNEs within the physical cageless space.

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76 *See* SGAT § 8.1.1.3.

77 *See* SGAT § 8.2.3.13.

78 *See* Advanced Services Order, *supra* note 5.

The intervals for provisioning cageless physical collocation are the same as those set forth above with regard to caged physical collocation.

4. ICDF

ICDF collocation may be used by CLECs that do not have physical or virtual collocation equipment placed in a Qwest central office, but want to combine Qwest UNEs.[79] ICDFs are cross-connect points, shared by multiple CLECs, located within Qwest's central office buildings to allow access to UNEs. ICDF collocation is offered at a DS-3, DS-1 or DS-0 level. CLECs may have ICDF collocation on a stand-alone basis, or in combination with physical and/or virtual collocation within the same premises. There are multiple frames that could be used for ICDF collocation, including, but not limited to, (i) existing ICDFs, (ii) existing DSX panels (for DS-1 and DS-3 services), (iii) new ICDF(s), (iv) existing toll frame, (v) fiber distribution panel(s), or (vi) existing intermediate frame(s).[80]

The interval for provisioning ICDF collocation varies depending upon whether the request was forecasted and/or space was reserved, and whether the CLEC timely provides acceptance within seven calendar days of receiving the quotation from Qwest. For any premises included in a CLEC's forecast at least 60 calendar days prior to submission of an application and for which the CLEC provides timely acceptance within seven calendar days of receiving Qwest's cost quotation, Qwest completes the

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[79] *See* SGAT § 8.2.5.

[80] *See* SGAT § 8.2.5.1.

installation within 45 calendar days of the receipt of the application.[81] If a premises is included in a forecast as indicated above but the CLEC provides acceptance more than seven days but less than 30 calendar days after receipt of the quotation, Qwest completes installation within 45 calendar days of the receipt of the acceptance.[82]

For premises not included in a CLEC's forecast as indicated above, Qwest completes installation within 90 calendar days of receipt of the application, provided the CLEC timely accepts the quotation (*i.e.*, within seven days of receipt).[83] For premises not included in a CLEC's forecast, where the CLEC accepts the quotation more than seven but less than 30 calendar days after receipt of the quotation, Qwest completes the installation within 90 calendar days of the acceptance.[84] However, when Qwest is permitted to complete a collocation installation in an interval longer than the standard intervals listed above, Qwest uses its best efforts to minimize the extension of the intervals.[85]

5. Common Area Splitter

Common Area Splitter collocation is one process by which "POTS splitter" equipment is installed in a Qwest central office. POTS splitters literally split voice and data traffic on a single loop into two distinct transmission paths, thereby allowing the

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81 *See* SGAT § 8.4.4.4.1.

82 *See* SGAT § 8.4.4.4.2. If the acceptance is outside 30 days after receipt of the quotation, the CLEC must submit a new application.

83 *See* SGAT § 8.4.4.4.3.

84 *See* SGAT § 8.4.4.4.4.

85 *See* SGAT § 8.4.4.4.

voice traffic to be carried to the Qwest switch, and the data traffic to be carried to the CLEC's collocation space.[86]

When Qwest provides the retail voice side of the line (Plain Old Telephone Service or "POTS"), and a CLEC provides the data circuit (digital subscriber line or "xDSL") on the frequency range above the voice band, this is known as line sharing.[87] When a CLEC is using the Qwest central office switch (*i.e.*, UNE-P-POTS) to provide the retail voice service to an end user customer, and another CLEC is providing the data service, this type of "line sharing" is referred to as line splitting. A POTS splitter must be installed in the central office before any type of "line sharing" orders can be placed.

The CLEC has the choice of either purchasing the POTS splitter of its choosing, or having Qwest purchase the POTS splitter on the CLEC's behalf subject to full reimbursement. Qwest installs the POTS splitter in one of three locations: (i) a relay rack as close to the CLEC DS-0 termination point as possible; (ii) on an intermediate frame where such frames are used; or (iii) where no relay rack or intermediate frames are used, in the central office on main distribution frames, or in other appropriate locations, which may include existing Qwest relay racks or bays.[88]

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[86] POTS splitters can also be used to split the voice and data paths on a single unbundled loop by sending the low frequency portion (i.e. the voice portion) to one CLEC's collocation space, while the high frequency potion of the loop (i.e. the data portion) is directed to a different CLEC's collocation space.

[87] *See generally* SGAT § 9.4.1.

[88] *See generally* SGAT § 9.4.2.3.1.

In addition, the CLEC may, at its option, place POTS splitters in its own collocation area, and not require the use of Common Area Splitter collocation. In such cases, Qwest reclassifies TIE cables, re-stencils framing, and performs any related work required.

Under either option, the POTS splitter will be appropriately hard-wired or pre-wired so that Qwest is required to inventory no more than two points of termination. Additional information on POTS Splitter placement and Qwest line sharing offerings is described in the Affidavit of Karen A. Stewart on Emerging Services.

6. Remote

Remote collocation allows CLECs to collocate in a Qwest premises located remotely from Qwest wire center building property, including in controlled environmental vaults ("CEVs"), controlled environmental huts, cabinets, pedestals and other remote terminals.[89] Qwest provides remote collocation under the terms and conditions for physical collocation or virtual collocation appropriate to, and technically feasible for, the structure in which the CLEC seeks remote collocation.[90] Qwest provides space for

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[89] *See* SGAT § 8.2.7.1.

[90] *See* SGAT § 8.2.1.9.2. Qwest maintains and makes available an inventory report for remote premises which provides the locations of Qwest's remote premises and the customer addresses served by them. This information is available at Qwest's website: http://www.qwest.com/iconn. If a CLEC is unable to obtain the remote premises information it seeks using database tools, Qwest will provide the CLEC with a report containing the information and/or a copy of Qwest's distribution area map associated with the subject remote premises(s), along with access to any relevant plats, maps, engineering records or other similar data. In addition, CLECs can request copies of Qwest distribution area maps associated with a remote premises.

remote collocation in increments appropriate to the remote premises structure (i.e., shelf, relay rack, etc.).

As with physical collocation at a Qwest central office, adjacent collocation, as described in the following section, is available in the context of remote collocation when space is exhausted in an existing remote premises.[91]

7. Adjacent

Qwest complies with 47 C.F.R. § 51.323(k)(3), adopted as part of the *Advanced Services Order*,[92] by making available adjacent collocation in those instances where space is legitimately exhausted in a particular Qwest premises to accommodate any of the other forms of physical collocation. Qwest makes space available in adjacent controlled environmental vaults ("CEVs"), controlled environmental huts, or similar structures to the extent technically feasible.[93] In addition, Qwest permits CLECs to construct or otherwise procure an adjacent structure and own such structure, to place on property owned, leased, or otherwise controlled by Qwest contiguous to the premises, subject only to reasonable safety and maintenance requirements, and a requirement that the adjacent structure is in accordance with Qwest's design and space planning for the site.[94] Upon request, Qwest will evaluate all parking or other spaces outside the Qwest premises building on Qwest property that can be reasonably made

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91 *See* SGAT § 8.2.7.2.

92 *See supra,* note 5.

93 *See* SGAT § 8.1.1.6.

94 *See* SGAT § 8.2.6.1.1.

available to CLECs for adjacent collocation. Qwest will retain a reasonable amount of parking space for Qwest technicians or other vehicles, including those belonging to collocating CLECs.[95]

Qwest permits CLECs to place their own equipment in adjacent facilities provisioned by Qwest, the CLEC itself, or by a third party.[96] A CLEC may propose the design for the adjacent structure, including modular buildings designed for telecommunications functions, subject to Qwest's approval. Property leased by Qwest to the CLEC for adjacent collocation is based on a reasonable ground space lease.

In order to assist the CLEC in obtaining any building permits or other approvals necessary for constructing adjacent collocation facilities, Qwest provides written authorization for use of its property to the CLEC or the CLEC's contractor, to the extent that Qwest owns or controls such property The CLEC is then responsible for construction of the structure or procurement of an existing structure, and is further responsible for meeting all State and municipal building and zoning requirements.[97] Qwest will provide power and all other physical collocation services and facilities.[98]

Consistent with 47 C.F.R. § 51.323(I)(3), if physical collocation space becomes available in a previously exhausted Qwest structure, Qwest does not require CLECs to move, or prohibit CLECs from moving collocation arrangements into the newly available

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[95] *See* SGAT § 8.2.6.4.

[96] *See* SGAT § 8.1.1.6.

[97] *See* SGAT § 8.2.6.2.

[98] *See* SGAT § 8.2.6.3.

space in the Qwest structure. Instead, Qwest will allow CLECs to continue to be collocated in any existing adjacent premises.[99]

Shared CLEC adjacent space collocation in CEVs owned by one CLEC, with space being leased to another CLEC within the same unit, is the choice of the CLECs involved.[100] CLECs are responsible for negotiating terms and conditions among themselves, and while each must order separate terminations into the Qwest premises, Qwest imposes no additional burdens on a secondary adjacent collocator beyond those to which the original adjacent collocator is bound.

C. Virtual Collocation

Virtual collocation allows a CLEC to deliver equipment to Qwest for Qwest to engineer, install, and maintain on behalf of the CLEC.[101] This type of arrangement is used, principally, when there is no space for physical collocation, consistent with 47 C.F.R. § 51.321(e).

Qwest is responsible for installing and maintaining virtually collocated equipment for the purpose of interconnection or to access unbundled loops, ancillary and finished services.[102] Consistent with 47 C.F.R. § 51.323(e), when Qwest provides virtual collocation, it installs, maintains, and repairs collocated equipment within the same time periods and with failure rates that are no greater than those that apply to the

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[99] *See* SGAT § 8.2.6.5.

[100] *See* 47 C.F.R. § 51.323(g).

[101] *See* SGAT § 8.1.1.1.

[102] *See* SGAT §§ 8.2.2.1, 8.6.1.2.

performance of similar functions for comparable Qwest equipment.[103] The CLEC is responsible for the procurement of its own telecommunications equipment. The CLEC is also responsible for payment of reasonable charges incurred in the maintenance and/or repair of its virtually collocated equipment, unless the CLEC and Qwest agree otherwise.[104]

In the unlikely event of a failure of a CLEC's virtually collocated equipment, Qwest will promptly notify the CLEC of such failure and the corrective action needed. Qwest will repair such equipment within the same time periods and with failure rates that are no greater than those that apply to the performance of similar functions for comparable Qwest equipment. The CLEC is responsible for purchasing and maintaining a supply of maintenance spares and transportation and delivery of maintenance spares to the Qwest premises that houses the failed equipment.[105]

The interval for provisioning virtual collocation varies depending upon four factors: (1) whether the request was forecasted and/or the space was reserved; (2) whether the CLEC provides its acceptance within seven calendar days of receipt of the quotation; (3) whether the CLEC timely delivers its equipment to be collocated to Qwest

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103 *See* SGAT § 8.2.2.1.

104 *See* SGAT § 8.2.2.8. However, CLECs are not responsible for any costs or charges incurred in the maintenance and/or repair of its virtually collocated equipment where such costs or charges result from Qwest's fault or negligence.

105 *See* SGAT § 8.6.1.3.

within 53 calendar days of submitting the collocation application, and (4) whether the application requires major infrastructure additions or modifications.[106]

For any premises included in a CLEC's forecast at least 60 calendar days prior to submission of an application, if the CLEC timely accepts Qwest's cost quotation within seven calendar days, and the CLEC's equipment is timely made available at the Qwest premises within 53 calendar days after submission of the application, Qwest completes installation within 90 calendar days of receipt of the collocation application. If a premises is included in a forecast but the CLEC provides acceptance more than seven but less than 30 calendar days after receipt of the quotation, and the equipment is timely provided, Qwest completes installation within 90 calendar days of the acceptance.[107]

For premises not included in a CLEC's forecast described above, Qwest completes installation within 120 calendar days of receipt of the application, provided the CLEC timely accepts the quotation (*i.e.*, within seven calendar days of receipt) and timely provides the equipment (*i.e.*, within 53 calendar days of the application). For premises not included in a CLEC's forecast, where the CLEC accepts the quotation

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106 *See* SGAT § 8.4.2.4.

107 *See* SGAT §§ 8.4.2.4.1 - 8.4.2.4.2. If a CLEC's equipment is not timely delivered to Qwest, Qwest completes installation within 45 calendar days after receiving all of the CLEC's equipment. Moreover, if acceptance is more than 30 days after receipt of the quotation, the CLEC must submit a new application.

more than seven but less than 30 calendar days after receipt of the quotation, Qwest completes installation within 120 calendar days of acceptance of the quotation.[108]

For collocations requiring major infrastructure modifications (e.g., those requiring building structural modifications, a DC power plant, a standby generators, or installation of heating, venting or air conditioning equipment) that are triggered by a CLEC forecast or reservation, Qwest takes the steps necessary to ensure that it meets the intervals set forth above. Where the CLEC has not forecasted its need, though, the above-listed installation intervals may be extended. In such cases, Qwest typically proposes to complete installation of the collocation arrangement within no more than 180 calendar days after receipt of the collocation application. The need for, and the duration of, extended intervals is provided to the CLEC as a part of the quotation, and the CLEC may dispute the need for, and the duration of, the extended interval, in which case Qwest either attempts to complete installation within the timeframes outlined above, or it requests a waiver from the South Dakota Commission to obtain an extended interval.[109] However, when Qwest is permitted to complete a collocation installation in an interval that is longer than the standard intervals listed above, Qwest uses its best efforts to minimize the extension of the intervals.[110]

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108 SGAT §§ 8.4.2.4.3 - 8.4.2.4.4. As with forecasted virtual collocations, if a CLEC's equipment is not timely delivered to Qwest, Qwest's installation interval is delayed, such that Qwest completes installation within 75 calendar days of receiving all of the CLEC's equipment. Moreover, if acceptance is outside 30 days after receipt of the quotation, the CLEC must submit a new application.

109 *See* SGAT §§ 8.4.2.4.5 - 8.4.2.4.6.

110 *See* SGAT § 8.4.2.4.

D. Other Collocation Issues

1. Space Availability Options and Requirements

a. General

Section 8.2.1.9 of the SGAT describes the information that Qwest provides to a CLEC seeking information about space availability. Upon a request by a CLEC, consistent with 47 C.F.R. § 51.321(h), Qwest will submit within ten calendar days of the CLEC's request a report for each requested premises. Such reports include: (i) available collocation space in a particular Qwest premises; (ii) the number of collocators; (iii) any modifications in the use of the space since the last report; (iv) the measures that Qwest is taking to make additional space available. In addition to the information required by the FCC's rules, Qwest makes available information about: (i) whether sufficient power is available to meet the specific CLEC request; (ii) the number of CLECs in queue at the wire center, if any; (iii) whether the wire center is equipped with DS3 capability; and (iv) the number and description of space reservations by Qwest and its affiliates, and by CLECs in the premises.[111]

If a CLEC requests a Space Availability Report for a premises other than a wire center, (i.e., for a remote premises) Qwest will assist the CLEC to identify the specific remote premises that serves the address or specific geographic area of interest to the CLEC.[112] Prior to undertaking a specific inventory request on behalf of the CLEC, Qwest will estimate the cost and time required for the inventory effort, and the CLEC

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[111] *See Advanced Services Order*, ¶ [illegible]

[112] *See* SGAT § 8.2.1.9.2

must submit payment of such cost to Qwest prior to performing the inventory of the remote premises.

Pursuant to FCC requirements, Qwest maintains a publicly available document, posted for viewing on the Internet, listing all premises known to be full.[113] Qwest updates this document within ten calendar days of the date when it learns that a premises is out of physical space for collocation, and will update the information within ten calendar days of the date that space becomes available. In addition to the information the FCC requires, Qwest also posts to the website information regarding the number of CLECs in queue at the premises, if any; premises that have not been equipped with DS3 capability; the estimated completion date for power equipment additions; and the addresses and space availability information for any remote premises that have been inventoried via a Space Availability Request.[114]

Consistent with 47 C.F.R. § 51.323(f)(2), Qwest, to the extent possible, makes contiguous space available to CLECs seeking to expand existing collocation space, and where adjoining space is not available, a CLEC may provide interconnection facilities between its non-adjoining CLEC collocation spaces through CLEC-to-CLEC connections.[115] In addition to providing connections between a CLEC's non-adjoining collocation spaces, Qwest also provides for connections between CLECs' collocation

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113 The Qwest website address is: http://www.qwest.com/wholesale/notices/collo/spaceAvail.html

114 *See* SGAT § 8.2.1.13.

115 *See* SGAT §§ 8.2.1.10; *see also* Sections 8.2.1.23 *et seq.*

spaces in one of two ways: (i) CLECs can place facilities between their collocation spaces; or (ii) CLECs can cross-connect their facilities at the ICDF.[116]

When planning renovations of existing facilities or constructing or leasing new facilities, Qwest takes into account the projected demand for collocation of equipment.[117]

While Qwest may retain a limited amount of floor space for its own specific future uses, neither Qwest nor any of its affiliates may reserve space for future use on terms more favorable than those that apply to CLEC reservations of collocation space for the CLEC's own future use.[118] In addition, consistent with 47 C.F.R. § 51.323(f)(5), Qwest will relinquish any space held for future use before denying a request for virtual collocation on the grounds of space limitations, unless Qwest proves to the South Dakota Commission that virtual collocation at that point is not technically feasible.[119]

b. Denials of Space

Consistent with 47 C.F.R. § 51.323(f)(1), Qwest offers collocation on a first-come, first-served basis.[120] Requests for collocation may be denied due to the lack of sufficient space in a Qwest premises for placement of a given CLEC's equipment. If a request for collocation is denied due to lack of space, that CLEC will be offered a

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116 *See* SGAT § 8.2.1.23.

117 *See* 47 C.F.R. § 51.323(f)(3) and SGAT § 8.2.1.10.

118 *See* 47 C.F.R. § 51.323(f)(4) and SGAT § 8.2.1.16.

119 *See* SGAT § 8.2.1.16.

120 *See* SGAT §§ 8.2.3.2; 8.2.1.10.

number of alternatives. If the CLEC identifies alternative choices for collocation on its original collocation request, Qwest will determine the feasibility of the CLEC's next preferred option in the event the CLEC's first choice is not available. If the CLEC did not specify an alternative form of collocation on the original order form, the CLEC will be required to submit a new order for the CLEC's preferred alternative collocation arrangement. However, in cases where Qwest has determined that the amount of space the CLEC requested for caged physical collocation is not available, but a lesser amount of space is available, that lesser amount of space will be offered to the CLEC for caged physical collocation, as noted above. Alternatively, the CLEC will be offered cageless physical collocation or virtual collocation as an alternative to caged physical collocation.[121]

If Qwest denies a request for collocation due to lack of space, Qwest will identify whether administrative (office) space is available in the premises to be reconditioned, and if CLEC so requests, will assess the cost of reconditioning the administrative (office) space. Qwest will provide a quote for prorated charges based on the amount of space the CLEC requests.[122] Qwest will proactively reclaim space prior to denial of a collocation application by removing, at its own expense, unused or obsolete Qwest equipment to make space available for collocation, consistent with 47 C.F.R. § 51.321(i).[123]

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[121] *See* SGAT § 8.2.1.10.

[122] *See* SGAT § 8.2.1.14.2.

[123] *See* SGAT § 8.2.1.14.1.2.

Qwest maintains a separate list of denied collocation requests, in order of the date of receipt, for each premises where space is exhausted. When space becomes available in a premises in which a queue has developed, Qwest will inform CLECs in the queue that space for collocation has become available. If there is insufficient space to accommodate all of the CLECs in queue, Qwest notifies CLECs of the availability of space in accordance with each CLEC's position in the queue. A CLEC must respond within ten calendar days of receipt of notification from Qwest with a new collocation application. If the CLEC does not provide a collocation application within this time frame, or if the CLEC responds that it no longer requires the collocation space, the CLEC is removed from the queue and the available space is offered to the next CLEC in the queue. If the space made available to a CLEC is not sufficient to meet such CLEC's needs, it may deny the space offered and maintain its position in the queue.[124]

In the event of space request denials, consistent with 47 C.F.R. 51.321(f), Qwest allows, within ten calendar days of the denial of collocation space and upon request by a CLEC, CLEC representatives to tour the entire premises escorted by Qwest personnel. Such tours are without charge to the CLEC. If, after the tour of the premises, Qwest and the CLEC disagree about whether space limitations at the premises preclude additional collocation, Qwest and the CLEC may present their arguments to the South Dakota Commission, consistent with the FCC's rules. If the Commission determines that Qwest has incorrectly identified space limitations, Qwest honors the CLEC's original collocation application date for determining when the

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124 *See* SGAT § 8.2.1.10.1.

collocation must be ready for service, unless both parties agree to a revised date.[125] Qwest complies with 47 C.F.R. § 51.321(f) by providing the state commission with detailed floor plans or diagrams of any premises where collocation was denied for lack of space.

2. Security Options and Requirements

Qwest's security arrangements that apply to CLEC personnel on Qwest's premises are set forth in SGAT Section 8.2.1.18, and are consistent with 47 C.F.R. § 51.323(i). Qwest takes reasonable measures to ensure that CLEC equipment collocated in Qwest premises is afforded physical security at parity with Qwest's similarly situated equipment. Should an event occur within a Qwest premises that suggests vandalism or other tampering with a CLEC's equipment, Qwest will, at the CLEC's request, vigorously and thoroughly investigate the situation. Qwest keeps the CLEC apprised of the progress of any investigation, and reports conclusions in a timely manner.[126]

Qwest provides access to CLEC's collocated equipment and existing eyewash stations, bathrooms, and drinking water within the collocation premises on a twenty-four-hour-a-day, seven-day-a-week basis for CLEC personnel and designated agents. Such access is permitted without requiring either a security escort, or delaying a CLEC's employee's entry into Qwest's premises. Qwest provides CLECs with access to

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125 *See* SGAT § 8.2.1.11.

126 *See* SGAT § 8.2.1.18.1.

other basic facilities, including parking, where available, on a first-come, first-served basis.[127]

Pursuant to 47 C.F.R. § 51.323(j), Qwest permits CLECs to subcontract the construction and build-out of physical collocation arrangements with contractors approved by Qwest (which approvals involve only security access arrangements). CLECs are not required to use Qwest or Qwest-contracted personnel for the engineering and installation of collocated equipment. Qwest's approval of a CLEC's employees, vendors or subcontractors is based on the same criteria that Qwest uses in giving building access to its vendors and contractors for its own purposes.[128]

Qwest imposes security charges, which are assessed per CLEC employee on a monthly basis, only for the keys, or the card and card-readers, necessary for the CLEC employees access to the Qwest premises.[129]

3. NEBS Compliance of Collocated Equipment

Consistent with 47 C.F.R. § 51.323(b), Qwest does not impose safety or engineering requirements on the CLEC that are more stringent than the safety or engineering requirements Qwest imposes on its own equipment located on its premises.[130] Qwest requires collocated equipment to meet only safety and earthquake

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127 *See* SGAT § 8.2.1.19.

128 *See* SGAT § 8.2.1.28.

129 *See* SGAT § 8.3.1.12.

130 *See* SGAT § 8.2.1.8.

CONTINUATION

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requirements that Qwest imposes on its own equipment.[131] As the FCC expressly permits,[132] Section 8.2.2.5 of the SGAT requires that a CLEC's collocated equipment comply with the Network Equipment Building System ("NEBS") Level 1 generic equipment requirements from TR-NWT-000063 and any statutory requirements (local, state or federal) in effect at the time of the equipment installation or that subsequently become effective. CLECs must provide Qwest with interface specifications (*e.g.*, electrical, functional, physical and software) of virtually collocated CLEC equipment. Any safety and engineering standards apply to CLEC equipment only to the degree that they apply to Qwest equipment.[133]

Qwest conducts audits to ensure that collocated CLEC equipment does not present a safety hazard to the central office or personnel working in the office. Consistent with 47 C.F.R. § 51.323(b), when a safety hazard is identified, Qwest provides written notice to the CLEC that identifies the specific equipment and/or installation that is not in compliance, the NEBS Level 1 safety requirement not met by the equipment and/or installation, the basis for that conclusion, and a list of all equipment that Qwest locates at the premises. This information is accompanied by an affidavit attesting that all Qwest equipment meets or exceeds the safety standard Qwest

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[131] See SGAT § 8.2.1.17. All collocation equipment and installation must meet earthquake rating requirements contained in the Network Equipment Building System ("NEBS") – BR GR-63-CORE document. Qwest makes a list of its wire centers and their earthquake ratings available for review on the Qwest PCAT website at: http://www.qwest.com/wholesale/pcat/collocation.html.

[132] See Advanced Services Order, ¶ 36.

[133] See SGAT § 8.2.2.5.

contends the CLEC's equipment fails to meet. If the condition is not corrected in fifteen calendar days, Qwest may take action to correct the condition through resolution by the appropriate administrative agency or by a court. If there is an immediate threat to the safety of Qwest employees, or the physical integrity of the premises or equipment therein, Qwest may take action as is necessary to correct the condition at the CLEC's expense.[134]

4. CLEC Interconnection

Qwest allows a CLEC to interconnect its collocated equipment with the collocated equipment of another party. Qwest also binds itself to design and engineer the most efficient route and cable racking for the connection between a CLEC's equipment in its collocated spaces to the collocated equipment of another CLEC located in the same Qwest premises, or to the CLEC's own non-contiguous collocation space.[135]

CLECs have access to the designated route and may construct connections, using copper, coax or optical fiber equipment, by utilizing a Qwest-approved vendor, or another vendor of the CLEC's own choosing. CLECs may place their own connecting facilities outside of the actual physical collocation space, subject only to reasonable NEBS Level 1 safety limitations and using the route Qwest specifies. In addition, CLECs may perform such interconnections at the ICDF, if desired.[136] A CLEC may

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134 *See* SGAT § 8.2.3.10.

135 *See* SGAT § 8.2.1.23.

136 *See* SGAT § 8.2.1.23.

interconnect its network to any other collocating carrier's network, to any collocated affiliate of the CLEC, or to any end user's premises, and the CLEC may interconnect its own collocated space and/or equipment (*i.e.*, the CLEC's physical and virtual collocation on the same Qwest premises).[137]

III. RESOLUTION OF ISSUES IN THE MULTI-STATE WORKSHOPS

Qwest has participated in Section 271 collaborative workshops addressing Checklist Item 1 in Arizona, Colorado, Oregon, Washington and in the Multi-State proceeding involving state commissions from Idaho, Iowa, Montana, New Mexico, North Dakota, Utah, and Wyoming. During these workshops, Qwest agreed to several modifications to its SGAT to accommodate CLECs' competitive concerns. All of these consensus modifications have been included in the South Dakota SGAT.

In the Multi-State Final Report for Workshop One regarding collocation, the Facilitator recognized that the workshops had raised and resolved 54 collocation issues.[138] There were 15 issues that remained in dispute for which the Facilitator made recommendations to the state commissions. Qwest agreed to accept the recommendations of the Facilitator for 14 of the 15 issues. Qwest acceptance of the Facilitator's recommendations have been documented in Qwest's methods and procedures and revisions to the SGAT language have been made and included in the South Dakota SGAT. However, Qwest disagreed with the proposal by the Facilitator to

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137 *See* SGAT § 8.2.1.23.

138 Workshop One – Second Report, at 52-95 (Multi-State Workshop May 15, 2001).

not extend collocation intervals when the CLEC fails to submit a forecast.[139] Qwest's SGAT language and proposals for collocation intervals are based on the FCC's Amended Order which clarified its earlier decision, that extended the 90-day default interval when the CLEC failed to provide a forecast.

Qwest's proposed intervals are consistent with the FCC's decisions which recognized the importance of forecasts and specifically tied the collocation interval to the existence of a forecast. The interim standards the FCC approved require timely forecasts form CLECs as a precondition for the provisioning of collocation in a 90-day time frame.[140] The FCC's interim standards allow for longer intervals of 120 to 150 days for unforecasted collocation applications.

The Multi-State Facilitator rested his decision on the premise that the SGAT should not punish CLECs for "a failure to provide perfect foresight." However, there is no incentive for CLECs to provide forecasts. Actually, by not requiring forecasts, Qwest will be penalized under the Performance Assurance Plan if it fails to meet the shortened collocation intervals. This creates a disincentive for CLECs to provide any forecasts.

Collocation forecasting gives Qwest a comprehensive picture of the CLECs' future collocation needs. Forecasts allow Qwest to plan for the necessary resources to meet its commitments for completing collocation installations in a timely manner. To date, the volume of collocation applications region-wide has varied dramatically from

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139 Workshop One – Second Report, at 94-95 (Multi-State Workshop May 15, 2001).

140 *See* FCC's Amended Order, ¶19 n.36 ("Specifically, a carrier that submits an acceptable collocation application to Qwest 60 days after submitting a forecast would be entitled to a provisioning interval of no more than 90 days.").

month to month.[141] Qwest uses the forecasts to plan for the resources necessary: for engineering and related personnel to process the applications, and design and engineer the collocation request; Qwest and vendor-provided installation personnel to provision the collocations; and, warehousing of cabling and other common hardware for provisioning collocation. Forecasts allow Qwest to ensure that adequate resources are available for the provisioning of collocation requests. Qwest believes that the requirement for collocation forecasts is reasonable for the shortened intervals. Accordingly, Qwest has not included the Facilitator's recommendation on this issue in its South Dakota SGAT.

IV. SUMMARY AND CONCLUSION

As demonstrated herein, Qwest satisfies the collocation requirements of Section 271(c)(2)(B)(i). Qwest provides collocation under rates, terms and conditions that are just, reasonable and nondiscriminatory under its SGAT and commission-approved individual interconnection agreements with CLECs in South Dakota. Qwest has developed specific procedures to implement collocation and to assure that it consistently provides collocation in accordance with the FCC's rules and policies. These measures ensure that CLECs have the ability to collocate their equipment at Qwest's premises and that Qwest will continue to provide additional collocation. Qwest's performance in providing collocation in South Dakota and region-wide exceeds the established benchmarks. The Liberty Consulting Group has also audited Qwest's

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[141] Exhibit MSB-COLLO-5 are the volumes of collocation applications submitted.

performance measures and found that Qwest properly reports its results for the measures relevant for collocation. In sum, Qwest's collocation processes, procedures, capabilities, and performance ensure that efficient competitors have a meaningful opportunity to compete in South Dakota. Based on this evidence, the South Dakota Commission should find that Qwest satisfies checklist item 1 for collocation.

Being first duly sworn upon oath, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 15th day of October, 2001.

Margaret S. Bumgarner

Margaret S. Bumgarner

STATE OF WASHINGTON

COUNTY OF KING

Subscribed and sworn to before me this 15th day of October, 2001.

Notary Public

BEFORE THE
PUBLIC UTILITIES COMMISION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

EXHIBITS to the AFFIDAVIT

OF

MARGARET S. BUMGARNER

CHECKLIST ITEM 1 – COLLOCATION

October 24, 2001

INDEX TO EXHIBITS

DESCRIPTION	EXHIBITS
Witness Qualifications	MSB-COLLO-1
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QUALIFICATIONS OF MARGARET S. BUMGARNER

My name is Margaret S. Bumgarner. My business address is 1600 Seventh Avenue, Seattle, Washington, 98191. I am a Director in the Policy and Law organization at Qwest Corporation ("Qwest").

I received a Bachelor of Science Degree in Education/Biology from Washington State University. In 1973, I started working for Pacific Northwest Bell as a supervisor in the network organization. I held several management positions in the network organization, including installation, assignment, installation and repair service centers, network budget analysis, switching operations and network administration staff. In 1982, I began working in the Planning and Engineering department doing network planning for divestiture under the Modified Final Judgment, preparing the network equal access compliance plan filed with the Department of Justice, and supervising the staff for switch engineering and network design. In 1986, I became U S WEST's representative to the national industry forums addressing technical network compatibility issues and numbering issues and also managed the network planning groups responsible for numbering and common channel signaling. In recent years, I was responsible for a wide range of federal public policy issues, including numbering, access reform, and interconnection.

I am currently a Director in the Policy and Law organization responsible for several Section 271 checklist items and Qwest's filing with the Federal Communications Commission ("FCC"). I base this affidavit on professional experience, personal knowledge, and information available to me in the normal course of my duties, including

records kept by Qwest in the regular course of business. Specifically, my experience has allowed me to develop an expertise in several Section 271 checklist areas such that I have testified in the Section 271 workshops in Arizona, Colorado, Oregon, Washington, and the joint seven-state ("Multi-State") workshops involving Idaho, Iowa, Montana, New Mexico, North Dakota, Utah, and Wyoming. I also participated in the Section 271 proceedings in Nebraska.

Through my testimony in the Section 271 workshops, I have directly participated in the development and evolution of the terms and conditions of Qwest's Statement of Generally Available Terms and Conditions ("SGAT"). These workshops and proceedings were part of a collaborative process, conducted on an open basis with the full, active, and equal participation by CLECs and state commission staffs. A significant part of this process has involved responding to issues and concerns raised by competitive local exchange carriers ("CLECs") and revising the SGAT when possible to address their needs. I have also been responsible for ensuring that the resolution of issues raised by CLECs have been integrated into the documentation of Qwest's processes, methods and procedures provided to CLECs, that apply in each state of Qwest's 14-state region.

CP-1 – Collocation Completion Interval

Purpose:

Evaluates the timeliness of Qwest's installation of collocation arrangements for CLECs, focusing on the average time to complete such arrangements.

Description:

Measures the interval between the Collocation Application Date and Qwest's completion of the collocation installation.

- Includes all collocations of types specified herein that are assigned a Ready For Service (RFS) date by Qwest and completed during the reporting period, subject to exclusions specified below.
- Collocation types included are: physical cageless, physical caged, shared physical caged, physical-line sharing, cageless-line sharing, and virtual. NOTE 1
- The Collocation Application Date is the date Qwest receives from the CLEC a complete and valid application for collocation. In cases where the CLEC's collocation application is received by Qwest on a weekend or holiday, the Collocation Application Date is the next business day following the weekend or holiday.
- Major Infrastructure Modifications include conditioning the collocation space, obtaining permits, and installing DC power plant, standby generators, heating, venting or air conditioning equipment.
- Completion of the collocation installation is the date on which the requested collocation arrangement is "Ready for Service" as defined in the Definition of Terms section herein.
- Establishment of RFS Dates: RFS dates are established according to intervals specified in interconnection agreements. Where an interconnection agreement does not specify intervals, or where the CLEC requests, RFS dates are established as follows: NOTE 2
  - **Collocation Applications with Timely Quote Acceptance and, for Virtual Collocations, also with Timely Equipment Ready** – for collocation applications where the CLEC accepts the quote in seven or fewer calendar days after the quote date and, for virtual collocations, where the CLEC provides the equipment to be collocated to Qwest 53 calendar days or less after the Collocation Application Date, the RFS date shall be:
    - **Forecasted Collocations: 90 calendar days after the Collocation Application Date** for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
    - **Unforecasted Collocations: 120 calendar days after the Collocation Application Date** for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
  - **Collocation Applications with Late Quote Acceptance and, for Virtual Collocations, also with Timely Equipment Ready** – for collocation applications where the CLEC accepts the quote in eight or more calendar days after the quote date and, for virtual collocations, where the CLEC provides the equipment to be collocated to Qwest 53 calendar days or less after the Collocation Application Date, the RFS date shall be:
    - **Forecasted Collocations: 90 calendar days after the quote acceptance date** for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
    - **Unforecasted Collocations: 120 calendar days after the quote acceptance date** for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
  - **Virtual Collocation Applications with Timely Quote Acceptance and Late Equipment Ready** – for virtual collocation applications where the CLEC (1) accepts the quote in seven or fewer calendar days after the quote date and (2) provides the equipment to be collocated to Qwest more than 53

calendar days after the Collocation Application Date, the RFS date shall be:

Forecasted Collocations: 45 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

Unforecasted Collocations: 75 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

- **Virtual Collocation Applications with Late Quote Acceptance and Late Equipment Ready** – for virtual collocation applications where the CLEC (1) accepts the quote in eight or more calendar days after the quote date and (2) provides the equipment to be collocated to Qwest more than 53 calendar days after the Collocation Application Date, the RFS date shall be:

  Forecasted Collocations: 45 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

  Unforecasted Collocations: 75 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

- **All Collocations (physical, virtual, forecasted, or unforecasted) requiring Major Infrastructure Modifications: the later of (1) up to 150 calendar days (as specified in the quote) after the Collocation Application Date, or (2) for virtual collocations, 45 days following the date equipment to be collocated is provided to Qwest** for collocations in which Major Infrastructure Modifications are required. Qwest will provide to the CLEC, as part of the quotation, the need for, and the duration of, such extended intervals.
- When a CLEC submits six (6) or more Collocation applications in a one-week period in any state, completion intervals will be individually negotiated. These collocation arrangements will be included in CP-1A, -1B, or -1C according to the interval criteria specified below for these measurements.
- Where there is a CLEC-caused delay, the RFS Date is rescheduled

- RFS dates may be extended beyond the above intervals for CLEC reasons, or for reasons beyond Qwest's control, but not for Qwest reasons.
- Where CLECs do not accept the quote within thirty days of the quote date, the application is considered expired.

CP-1A Measures collocation installations for which the scheduled interval from Collocation Application Date to RFS date is 90 calendar days or less.

CP-1B Measures collocation installations for which the scheduled interval from Collocation Application Date to RFS date is 91 to 120 calendar days.

CP-1C Measures collocation installations for which the scheduled interval from Collocation Application Date to RFS date is 121 to 150 calendar days.

Reporting Period: One month	**Unit of Measure:** Calendar Days
Reporting Comparisons: CLEC aggregate and individual CLEC results	**Disaggregation Reporting:** Statewide level.

Formula: (for CP-1A, CP-1B and CP-1C)
Σ[(Collocation Completion Date) – (Complete Application Date)] / (Total Number of Collocations Completed in Reporting Period)

Exclusions:

- CP-1A: CLEC collocation applications with RFS dates yielding scheduled intervals longer than 90 calendar days from Collocation Application Date to RFS date.
- CP-1B: CLEC collocation applications with RFS dates yielding scheduled intervals shorter than 91 calendar days or longer than 120 calendar days from Collocation Application Date to RFS date.
- CP-1C: CLEC collocation applications with RFS dates yielding scheduled intervals shorter than 121 calendar days or longer than 150 calendar days from Collocation Application Date to RFS date.
- Cancelled or expired applications.

Product Reporting: None	**Standard:** CP-1A 90 calendar days CP-1B 120 calendar days CP-1C 150 calendar days

Availability:	**Notes:**
Available	1. Collocations covered by this measurement are central office related. As additional types of central office collocation are defined and offered, they will be included in this measurement. Non-central office-based types of collocation (such as remote collocation and field connection points) will be considered for either inclusion in this measurement, or in new, separate measurements, after the terms, conditions, and processes for such collocation types become finalized, accepted, mature (i.e., six months of experience from first installations), and ordered in volumes warranting reporting (i.e., consistently more than two per month in any state). 2. The criteria set forth in the Description above, under "Establishment of RFS Dates," may be changed depending upon the outcome of workshops on interconnection and collocation

CP-2 – Collocations Completed within Scheduled Intervals

Purpose:

Evaluates the extent to which Qwest completes collocation arrangements for CLECs within the standard intervals or intervals established in interconnection agreements.

Description:

Measures the percentage of collocation applications that are completed within standard intervals, including intervals set forth in interconnection agreements.

- Includes all collocations of types specified herein that are assigned a Ready for Service RFS date by Qwest and that are completed within the reporting period, including those with CLEC-requested RFS dates longer than the standard interval and those with extended RFS dates negotiated with the CLEC (including supplemented collocation orders that extend the RFS date) subject to exclusions specified below. Collocation types included are: physical cageless, physical caged, shared physical caged, physical-line sharing, cageless-line sharing, and virtual. NOTE 1
- The Collocation Application Date is the date Qwest receives from the CLEC a complete and valid application for collocation. In cases where the CLEC's collocation application is received by Qwest on a weekend or holiday, the Collocation Application Date is the next business day following the weekend or holiday.
- Major Infrastructure Modifications are defined as conditioning the collocation space, obtaining permits, and installing DC power plant, standby generators, heating, venting or air conditioning equipment.
- A collocation arrangement is counted as met under this measurement if its RFS date is met.
- Establishment of RFS Dates: RFS dates are established as follows, except where interconnection agreements require different intervals, in which case the intervals specified in the interconnection agreements apply: NOTE 2
  - **Collocation Applications with Timely Quote Acceptance and, for Virtual Collocations, also with Timely Equipment Ready** – for collocation applications where the CLEC accepts the quote in seven or fewer calendar days after the quote date and, for virtual collocations, where the CLEC provides the equipment to be collocated to Qwest 53 calendar days or less after the Collocation Application Date, the RFS date shall be:

    Forecasted Collocations: 90 calendar days after the Collocation Application Date for physical collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

    Unforecasted Collocations: 120 calendar days after the Collocation Application Date for physical collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
  - **Collocation Applications with Late Quote Acceptance and, for Virtual Collocations, also with Timely Equipment Ready** – for collocation applications where the CLEC accepts the quote in eight or more calendar days after the quote date and, for virtual collocations, where the CLEC provides the equipment to be collocated to Qwest 53 calendar days or less after the Collocation Application Date, the RFS date shall be:

    Forecasted Collocations: 90 calendar days after the quote acceptance date for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

    Unforecasted Collocations: 120 calendar days after the quote acceptance date for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.
  - **Virtual Collocation Applications with Timely Quote Acceptance and Late Equipment Ready** – for

virtual collocation applications where the CLEC (1) accepts the quote in seven or fewer calendar days after the quote date and (2) provides the equipment to be collocated to Qwest more than 53 calendar days after the Collocation Application Date, the RFS date shall be:

Forecasted Collocations: 45 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

Unforecasted Collocations: 75 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

- **Virtual Collocation Applications with Late Quote Acceptance and Late Equipment Ready** – for virtual collocation applications where the CLEC (1) accepts the quote in eight or more calendar days after the quote date and (2) provides the equipment to be collocated to Qwest more than 53 calendar days after the Collocation Application Date, the RFS date shall be:

  Forecasted Collocations: 45 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC provides a complete forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

  Unforecasted Collocations: 75 calendar days after the equipment is provided to Qwest, for collocations for which the CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

- **All Collocations (physical, virtual, forecasted, or unforecasted) requiring Major Infrastructure Modifications: the later of (1) up to 150 calendar days (as specified in the quote) after the Collocation Application Date, or (2) for virtual collocations, 45 calendar days following the date equipment to be collocated is provided to Qwest** for collocations in which Major Infrastructure Modifications are required. Qwest will provide to the CLEC, as part of the quotation, the need for, and the duration of, such extended intervals.
- When a CLEC submits six (6) or more Collocation applications in a one-week period in any state, completion intervals will be individually negotiated. These collocation arrangements will be included in CP-2A, -2B, or -2C according to the criteria specified below for these measurements.
- Where there is a CLEC-caused delay, the RFS Date is rescheduled.
- Where CLECs do not accept the quote within thirty calendar days of the quote date, the application is considered expired

CP-2A **Forecasted Collocations**: Measures collocation installations for which CLEC provides a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

CP-2B **Non-Forecasted and Late Forecasted Collocations**: Measures collocation installations for which CLEC does not provide a forecast to Qwest 60 or more calendar days in advance of the Collocation Application Date.

CP-2C **All Collocations requiring Major Infrastructure Modifications and Collocations with intervals longer than 120 days**: Measures all collocation installations requiring Major Infrastructure Modifications and collocations for which the RFS date is more than 120 calendar days after the Collocation Application Date.

Reporting Period: One month	**Unit of Measure:** Percent
Reporting Comparisons: CLEC aggregate and individual CLEC results	**Disaggregation Reporting:** Statewide level.

Formula: (for CP-2A, CP-2B and CP-2C)
[(Count of Collocations for which the RFS is met) / (Total Number of Collocations Completed in the Reporting Period)] x 100

Exclusions:

- RFS dates missed for reasons beyond Qwest's control.
- Cancelled or expired requests.

Product Reporting: None	**Standard:** CP-2A & -2B: 90 percent or more CP-2C: TBD
Availability: Available	**Notes:** 1. Collocations covered by this measurement are central office related. As additional types of central office collocation are defined and offered, they will be included in this measurement. Non-central office-based types of collocation (such as remote collocation and field connection points) will be considered for either inclusion in this measurement, or in new, separate measurements, after the terms, conditions, and processes for such collocation types become finalized, accepted, mature (i.e., six months of experience from first installations), and ordered in volumes warranting reporting (i.e., consistently more than two per month in any state). 2. The criteria set forth in the Description above, under "Establishment of RFS Dates," may be changed depending upon the outcome of workshops on interconnection and collocation

CP-3– Collocation Feasibility Study Interval

Purpose:
Evaluates the timeliness of the Qwest sub-process function of providing a collocation feasibility study to the CLEC.

Description:
Measures average interval to respond to collocation studies for feasibility of installation.

- Includes feasibility studies, for collocations of types specified herein that are completed in the reporting period, subject to exclusions specified below. Collocation types included are: physical cageless, physical caged, shared physical caged, physical-line sharing, cageless-line sharing, and virtual. NOTE 1
- Interval begins with the Collocation Application Date and ends with the date Qwest completes the Feasibility Study and provides it to the CLEC.
- The Collocation Application Date is the date Qwest receives from the CLEC a complete application for collocation. In cases where the CLEC's application for collocation is received by Qwest on a weekend or holiday, the Collocation Application Date is the next business day following the weekend or holiday.

Reporting Period: One month	**Unit of Measure:** Calendar Days
Reporting Comparisons: CLEC aggregate and individual CLEC results	**Disaggregation Reporting:** Statewide level.

Formula:
Σ[(Date Feasibility Study provided to CLEC) – (Date Qwest receives CLEC request for Feasibility Study)] / (Total Feasibility Studies Completed in the Reporting Period)

Exclusions:
CLEC-caused delays of, or CLEC requests for feasibility study completions resulting in greater than ten calendar days from Collocation Application Date to scheduled feasibility study completion date.

Product Reporting: None	**Standard:** 10 calendar days or less

Availability:
Available

Notes:
1. Collocations covered by this measurement are central office related. As additional types of central office collocation are defined and offered, they will be included in this measurement. Non-central office-based types of collocation (such as remote collocation and field connection points) will be considered for either inclusion in this measurement, or in new, separate measurements, after the terms, conditions, and processes for such collocation types become finalized, accepted, mature (i.e., six months of experience from first installations), and ordered in volumes warranting reporting (i.e., consistently more than two per month in any state).

CP-4 - Collocation Feasibility Study Commitments Met

Purpose:
Evaluates the degree that Qwest completes the sub-process function of providing a collocation feasibility study to the CLEC as committed.

Description:
Measures the percentage of collocation feasibility studies for installations that are completed within the Scheduled Interval

- The Scheduled Interval is ten calendar days from the Collocation Application Date or, if interconnection agreements call for different intervals, within intervals specified in the agreements, or if otherwise delayed by the CLEC, the interval resulting from the delay.
- Includes all feasibility studies for collocations of types specified herein, that are completed in the reporting period. Collocation types included are: physical cageless, physical caged, shared physical caged, physical-line sharing, cageless-line sharing, and virtual.
- Considers the interval from the Collocation Application Date to the date Qwest completes the Feasibility Study and provides it to the CLEC.
- The Collocation Application Date is the date Qwest receives from the CLEC a complete application for collocation. In cases where the CLEC's application for collocation is received by Qwest on a weekend or holiday, the Collocation Application Date is the next business day following the weekend or holiday.
- Subject to superseding terms in the CLEC's interconnection agreement, when a CLEC submits six (6) or more Collocation applications in a one-week period in any state, feasibility study intervals will be individually negotiated and the resulting intervals used instead of ten calendar days in this measurement.

Reporting Period: One month	**Unit of Measure:** Percent
Reporting Comparisons: CLEC aggregate and individual CLEC results	**Disaggregation Reporting:** Statewide level.

Formula:
[(Total Applicable Collocation Feasibility studies completed within Scheduled Intervals) / (Total applicable Collocation Feasibility studies completed in the reporting period)] x 100

Exclusions: None

Product Reporting: None

Standard: 90 percent or more

Availability:
Available

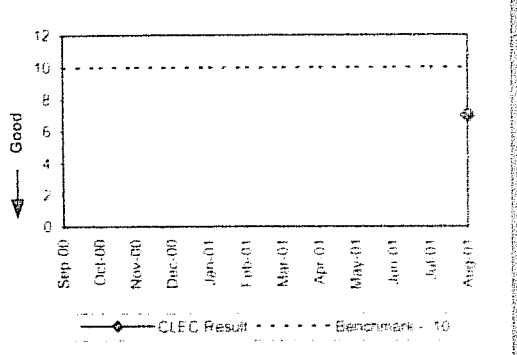
Notes:
1. Collocations covered by this measurement are central office related. As additional types of central office collocation are defined and offered, they will be included in this measurement. Non-central office-based types of collocation (such as remote collocation and field connection points) will be considered for either inclusion in this measurement, or in new, separate measurements, after the terms, conditions, and processes for such collocation types become finalized, accepted, mature (i.e., six months of experience from first installations), and ordered in volumes warranting reporting (i.e., consistently

more than two per month in any state).

Checklist #1 - Collocation

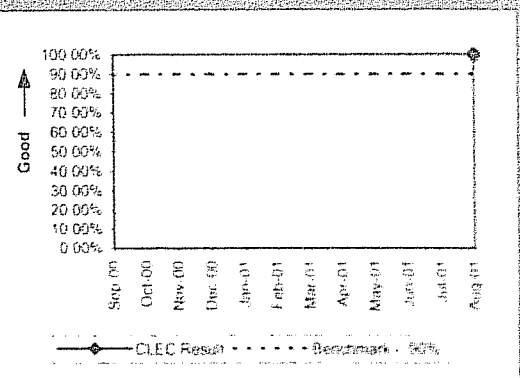
Collocation Feasibility Study Interval (Average Days) (CP-3)– Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01				
May-01				
Jun-01				
Jul-01				
Aug-01	7	1	7.00	



Collocation Feasibility Study Commitments Met (Percent) (CP-4)– Interval Zone One and Two

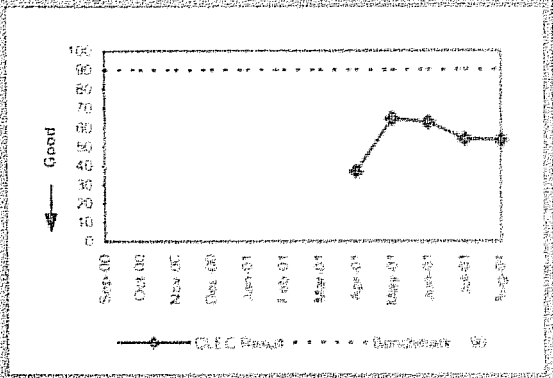
Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01				
May-01				
Jun-01				
Jul-01				
Aug-01	1	1	100.00%	0.00%



Checklist #1 - Collocation

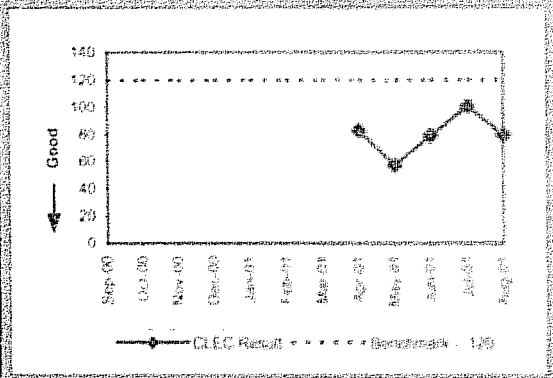
Scheduled Interval 90 Calender Days or Less (Average Days) (CP-1A)-- Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01	37	1	37.00	
May-01	194	3	64.67	7.09
Jun-01	188	3	62.67	8.08
Jul-01	216	4	54.00	13.44
Aug-01	107	2	53.50	16.26



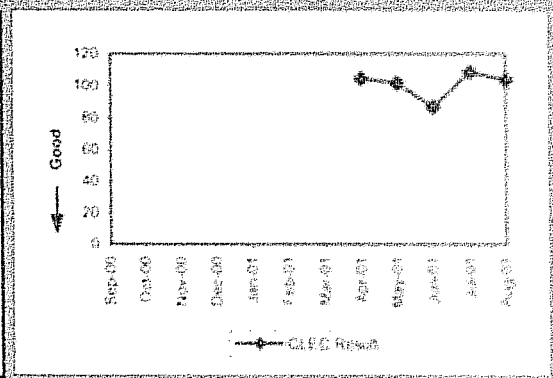
Scheduled Interval 91 to 120 Calendar Days (Average Days) (CP-1B)-- Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01	414	5	82.80	24.59
May-01	514	9	57.11	31.69
Jun-01	395	5	79.00	13.93
Jul-01	806	8	100.75	11.09
Aug-01	874	11	79.45	16.66



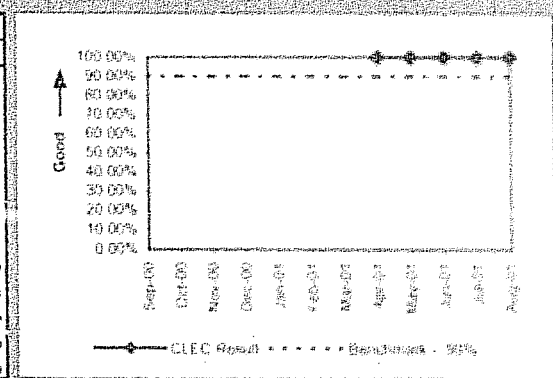
Scheduled Interval 121 to 150 Calendar Days (Average Days) (CP-1C)-- Interval Zone One and Two

Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01	3443	33	104.33	22.67
May-01	1424	14	101.71	32.44
Jun-01	1304	15	86.93	26.33
Jul-01	2604	24	108.50	18.44
Aug-01	3212	31	103.61	25.49



Non-Forcasted & Late Collocations (Percent) (CP-2B)-- Interval Zone One and Two

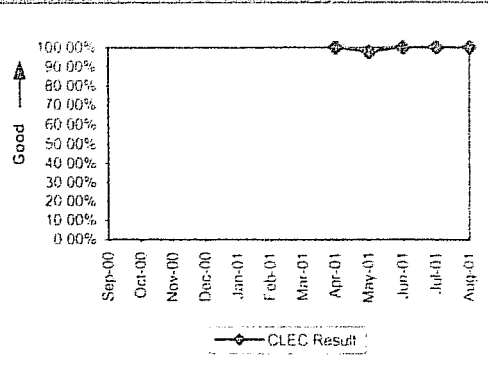
Date	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
Sep-00				
Oct-00				
Nov-00				
Dec-00				
Jan-01				
Feb-01				
Mar-01				
Apr-01	6	6	100.00%	0.00%
May-01	12	12	100.00%	0.00%
Jun-01	8	8	100.00%	0.00%
Jul-01	12	12	100.00%	0.00%
Aug-01	13	13	100.00%	0.00%



Checklist #1 - Collocation

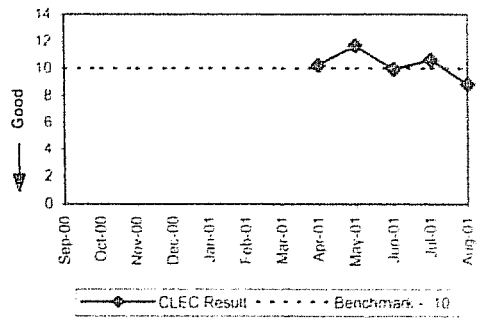
[illegible] with Intervals Longer than 120 Days (Percent) (CP-2) – Interval Zone One and Two

[illegible]	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	78	78	100.00%	0.00%
[illegible]	39	40	97.50%	15.61%
[illegible]	26	26	100.00%	0.00%
[illegible]	39	39	100.00%	0.00%
[illegible]	43	43	100.00%	0.00%



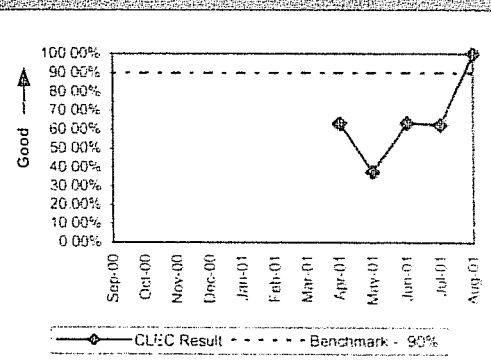
[illegible] Interval (Average Days) (CP-3) – Interval Zone One and Two

[illegible]	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	480	47	10.21	1.77
[illegible]	514	44	11.68	2.07
[illegible]	367	37	9.92	1.82
[illegible]	340	32	10.62	1.86
[illegible]	407	46	8.85	0.87



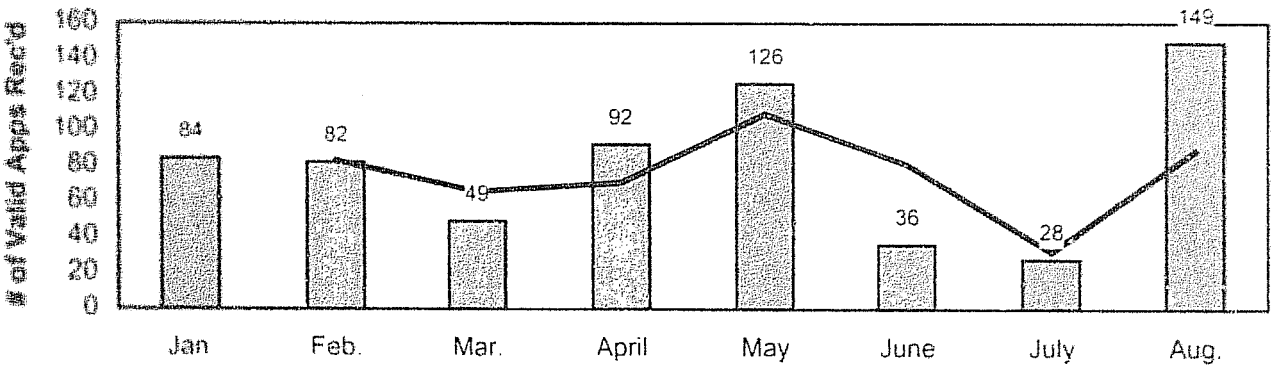
[illegible] Commitments Met (Percent) (CP-4) – Interval Zone One and Two

[illegible]	CLEC Num	CLEC Denom	CLEC Result	CLEC Std Dev
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	36	57	63.16%	48.24%
[illegible]	18	48	37.50%	48.41%
[illegible]	26	41	63.41%	48.17%
[illegible]	25	40	62.50%	48.41%
[illegible]	50	50	100.00%	0.00%

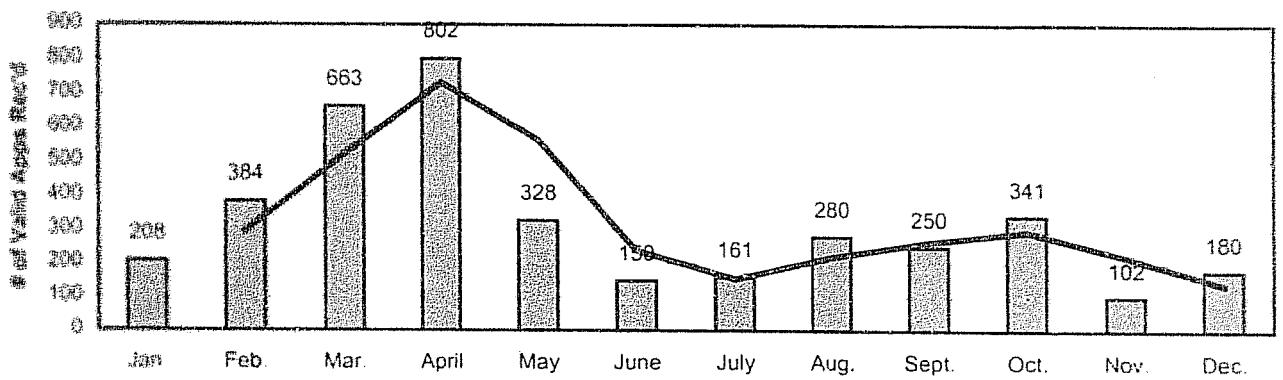


Collocation Applications
Regional and South Dakota

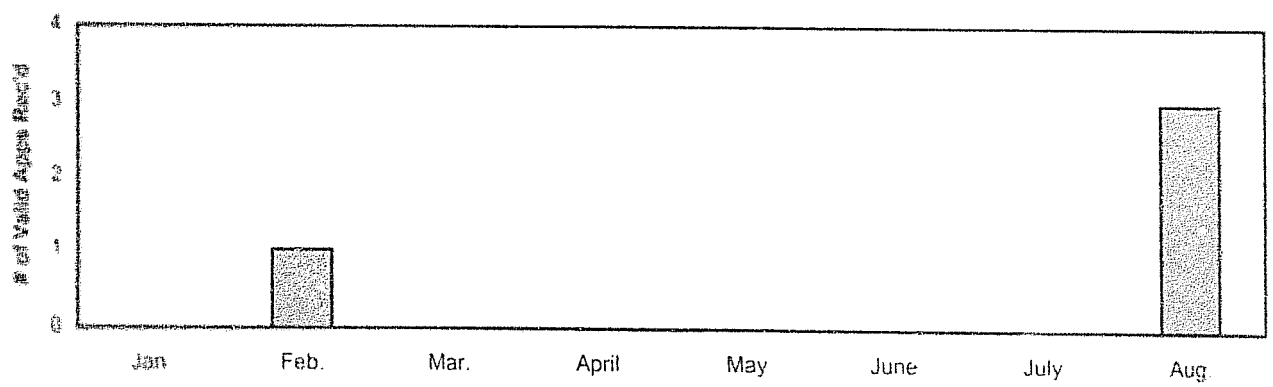
Regular Collocation Application Submit Volume
14 State Region
January 1, 2001 - August 31, 2001
Total Volume: 646 Jobs



Regular Collocation Application Submit Volume
14 State Region
January 1, 2000 - December 31, 2000
Total Volume: 3849 Jobs



Regular Collocation Application Submit Volume
South Dakota
January 1, 2001 - August 31, 2001
Total Volume: 4 Jobs



BEFORE THE
SOUTH DAKOTA
PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

AFFIDAVIT

OF

LORI A. SIMPSON

CHECKLIST ITEM 2 – UNBUNDLED NETWORK ELEMENTS - PLATFORM

OCTOBER 24, 2001

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AFFIDAVIT

OF

LORI A. SIMPSON

Checklist Item 2 — Unbundled Network Elements – Platform

Lori A. Simpson states as follows:

My business address is 301 West 65th Street, Minneapolis, Minnesota. I am Director – Legal Issues for Qwest Corporation ("Qwest"). I submit this affidavit in support of Qwest's application for authority to provide interLATA services originating in South Dakota. In this affidavit, I show that Qwest has complied with Checklist Item Number 2 of Section 271 of the Telecommunications Act of 1996 ("1996 Act" or "Act") as it relates to unbundled network elements - platform.[1]

I base this affidavit on professional experience, personal knowledge, and information available to me in the normal course of my duties, including records regularly kept in the course of business by Qwest.[2]

I. EXECUTIVE SUMMARY

The purpose of this affidavit is to demonstrate that Qwest has satisfied certain requirements of Section 271(c)(2)(B)(ii) of the Act, access to unbundled network elements ("UNEs").

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[1] *See* 47 U.S.C. § 271(c)(2)(B)(ii).

[2] A description of my professional experience and education is included in Exhibit LAS-UNE-P-1 to this Affidavit.

Qwest combines UNEs for CLECs or provides such UNEs in a manner that allows requesting carriers to combine such elements in order to provide telecommunications services. Qwest does not impose limitations, restrictions or requirements on requests for the use of UNEs that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in the manner desired by the requesting telecommunications carrier.

In addition, two standard UNE combinations are available: Unbundled Network Elements – Platform ("UNE-P") and the Enhanced Extended Loop ("EEL"). This affidavit contains testimony about UNE-P combinations, and Ms. Karen Stewart supplies testimony concerning EEL.

When ordered in combination, UNEs that are currently combined and ordered together will not be physically disconnected or separated in any fashion except for technical feasibility reasons or if requested by the ordering CLEC.

Furthermore, Qwest provides UNEs on rates, terms, and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of its South Dakota Statement of Generally Available Terms ("SGAT") and its interconnection agreements. Qwest also provides nondiscriminatory access to UNEs at rates that are nondiscriminatory and based on the cost of providing the UNE.

As of August 31, 2001, Qwest provides 16,411 UNE-P combinations to five CLECs in South Dakota. Qwest measures its performance for providing UNE-P-POTS combination services to CLECs. Qwest's performance indicator definitions ("PIDs") were developed in the Regional Oversight Committee ("ROC") collaborative Section

271 performance measurements workshops. Those workshops, involving both Qwest and CLECs, were conducted under the auspices of the ROC performance measures committee, which is composed of 13 state commissions in the Qwest region. Qwest's performance results indicate that Qwest provides a high quality of UNE-P combination services to South Dakota CLECs.

For these reasons, Qwest has satisfied the requirements of Checklist Item 2 as it relates to access to UNE-P combination service.

II. LEGAL STANDARD AND OBLIGATION TO PROVIDE UNBUNDLED NETWORK ELEMENTS

Section 271(c)(2)(B)(ii) of the Act requires Qwest to provide nondiscriminatory access to unbundled network elements pursuant to section 251(c) and at prices in accordance with the requirements of section 252(d).[3]

The FCC's rules also prohibit an ILEC from imposing limitations, restrictions, or requirements on requests for the use of unbundled network elements (other than those expressly permitted by the FCC's rules) that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in the manner desired by the requesting telecommunications carrier.[4]

Section 251(c)(3) of the Act further requires incumbent LECs to provide unbundled network elements on rates, terms and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of its interconnection

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[3] *See* 47 U.S.C. § 271(c)(2)(B)(ii).

[4] *See* 47 C.F.R. § 51.309(a).

agreements and with the requirements of Sections 251 and 252 of the Act.[5] Section 252(d) requires the rates for network elements to be nondiscriminatory and based on the cost of providing the network element.[6]

Qwest has a concrete and specific legal obligation to provide UNEs to CLECs as detailed above through its interconnection agreements with CLECs and through the terms and conditions of its South Dakota SGAT.[7] Qwest's SGAT was updated as a result of consensus reached in collaborative Section 271 workshop processes, conducted on an open basis with full, active, and equal participation by competitors and state commission staffs. Specifically, Qwest's SGAT was updated with the input of competitors and commission staffs through collaborative Section 271 workshops in Arizona, Colorado, Oregon, Washington, and the seven-state collaborative Section 271 workshops involving Idaho, Iowa, Utah, Montana, North Dakota, Wyoming, and New Mexico. Nebraska conducted a contested hearing but the record from the seven-state collaborative was incorporated. Although South Dakota did not participate in the Section 271 collaborative workshops, Qwest is filing a revised SGAT in South Dakota incorporating consensus language developed through the collaborative workshop processes in other states, so that South Dakota CLECs would also benefit from agreements reached in those workshops. Through these collaborative workshops, consensus has been reached on all possible issues related to UNE-P.

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[5] *See* 47 U.S.C. § 251(c)(3).

[6] *See* 47 U.S.C. § 252(d).

[7] *See* SGAT § 9.

III. QWEST HAS COMPLIED WITH THE FCC'S UNBUNDLED NETWORK ELEMENTS – PLATFORM COMBINATIONS REQUIREMENTS IN SOUTH DAKOTA

Access to UNEs, as well as the quality of the UNEs, is provided on a nondiscriminatory basis as between CLECs. Qwest also provides access to UNEs in substantially the same time and manner in which Qwest provides to itself or its affiliates, or where Qwest does not provide UNEs to itself or its affiliates, Qwest will provide access to UNEs in a manner that allows CLECs a meaningful opportunity to compete.[8]

A. Access to UNE-P Combinations

Under the terms of its South Dakota SGAT, Qwest combines network elements that are currently combined on Qwest's network on the CLEC's behalf when requested to do so and provided facilities are available.[9] CLECs can request access to UNE combinations not provided as standard combinations through the Special Request process which is described in the South Dakota SGAT, Exhibit F.[10]

Network elements to be provisioned together shall be identified and ordered by CLECs as such. When CLECs order UNE combinations, such as UNE-P services, that are currently interconnected and functional, the UNEs will remain interconnected and functional without any disconnection or disruption of functionality.[11]

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[8] See SGAT § 9.1.2.

[9] See SGAT § 9.23.1.1.

[10] See SGAT § 9.23.3.10; *see also* SGAT Exhibit F.

[11] See SGAT § 9.23.1.3.

The South Dakota SGAT provides a definition for UNE-P combinations as follows:

> 4.61 "Unbundled Network Element Platform (UNE-P)" – is a combination of unbundled network elements, including Unbundled Loop, Unbundled Local Switching and Shared Transport. There are several forms of UNE-P, including but not limited to single line residence, single line business, and PBX Trunks.

UNE-P combinations include a loop, a switch port, switch use, shared transport use, and optional vertical switch features. UNE-P combinations also include access to intraLATA and intraLATA toll service, access to 911 emergency services; access to operator services and directory assistance service, and directory listings.[12]

UNE-P combination service is offered in the following forms, as described in the South Dakota SGAT: (1) UNE-P-POTS (plain old telephone service) combination for residential or business customers; (2) UNE-P-ISDN-BRI and UNE-P-ISDN-BRI combinations; (3) UNE-P-DSS (digital switched service) combination; (4) UNE-P-PBX combination; and, (5) UNE-P-Centrex combinations.[13]

As of August 31, 2001, Qwest provides 16,411 UNE-P combinations to five CLECs in South Dakota. This includes 58 UNE-P-POTS combinations provided to five South Dakota CLECs and 16,353 UNE-P-Centrex combinations provided to one South Dakota CLEC.[14]

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[12] See SGAT § 9.23.3.11.1.

[13] See SGAT §§ 9.23.3.2 - 9.23.3.6.

[14] These numbers include 6 UNE-P-POTS-Star and 16,353 UNE-P-Centrex-Star combinations provided to one South Dakota CLEC under a negotiated interconnection agreement containing specific volume, term, pricing, and other

All the vertical switch features that are technically feasible for use with the UNE-P combinations are available. If a feature is available with the comparable Qwest retail service, it is available with the UNE-P combination service.[15]

If the CLEC chooses to have Qwest provide operator services and directory assistance services with the CLECs' UNE-P combinations, those services are offered with standard Qwest branding. At the request of the CLEC and where technically feasible, Qwest will brand operator services and directory assistance services in the CLEC's name, CLEC's choice of name, or in no name.[16] A CLEC can order customized routing in conjunction with UNE-P in order to provide access to its own or a third party's operator services and/or directory assistance platforms.[17]

Qwest provides directory listings with UNE-P combinations. The same listings options that are available to Qwest retail end users are available with UNE-P combination services.[18]

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terms and conditions. The services are specially named only for ease of implementing, tracking, and billing for the services provided under this agreement. Any CLEC may opt into the terms and conditions of this agreement.

[15] *See* SGAT §§ 9.23.3.2 - 9.23.3.6.

[16] *See* my Affidavit filed in this matter concerning Checklist Item Number 7, Access to Operator Services and Directory Assistance Services, for additional information concerning customized CLEC call branding.

[17] *See* my Affidavit filed in this matter concerning Checklist Item Number 6, Unbundled Network Elements - Switching (including customized routing), for additional information.

[18] *See* my Affidavit filed in this matter concerning Checklist Item Number 8, White Pages Directory Listings, for additional information.

Qwest routes the E911/911 calls of CLEC's UNE-P end user customers to the appropriate Public Safety Answering Point ("PSAP") in the same manner that it routes its retail end users' calls to the appropriate PSAP. Qwest uses its standard processes, that are also used for Qwest retail end user information, to update and maintain CLECs' UNE-P end user information in the databases known as the Automatic Location Identification/Database Management System that support E911/911 services.[19]

1. Installation and Provisioning of UNE-P Combinations

CLECs may obtain UNE-P combinations by ordering the conversion of existing services, such as Qwest retail or CLEC resold services, to UNE-P combinations, or by ordering new UNE-P combination services.

Qwest provides the same quality of and access to UNE-P combinations to all CLECs requesting access. Where Qwest provides UNEs to itself, such as is the case with UNE-P combinations given their similarity to comparable Qwest retail services, UNE-P combinations provided to CLECs are provided in "substantially the same time and manner" to that which Qwest provides to itself.[20]

Standard service intervals for UNE-P combinations are set forth in Exhibit C of the SGAT, and they are the same as service intervals for comparable Qwest retail services. Due dates for UNE-P service requests are firm when Qwest receives a complete and accurate LSR via the IMA-GUI or IMA-EDI interface, or by facsimile.

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[19] *See* the Affidavit of Margaret S. Bumgarner filed in this matter concerning Checklist Item Number 7, Access to 911/E911, for additional information.

[20] *See* SGAT § 9.23.3.1.

As part of the ordering process, CLECs provide Qwest with complete and accurate end user customer listing information for directory assistance, directory listings, and 911 emergency services for all end user customers served by UNE-P combinations. Optional vertical switch features, as well as choice of interLATA and intraLATA primary interexchange carrier ("PIC"), are also provided.

Qwest and each CLEC provide each other with points of contact for order entry, problem resolution, repair, and in the event special attention is required on service requests.

2. Billing

Qwest provides monthly summary billing information to CLECs for their UNE-P services within seven to ten calendar days of the last day of the CLEC's most recent billing period. The billing information, which is in a standard electronic billing format, includes (1) a summary bill, and (2) individual end user subaccount information, including charges for switch ports, charges for and number of local originating switch and shared transport minutes of use, and charges for and list of intrastate toll (if applicable).

Qwest provides switched access records which may be used by the CLEC to bill interexchange carriers for use of the CLEC's unbundled switching element portion of its UNE-P combinations for purposes of providing interLATA toll calls.

Qwest provides CLECs local originating usage information. Qwest does not provide CLECs the billing records for terminating local calls completed to the CLECs' UNE-P combinations. Qwest does not have the technical capability to capture such

terminating local usage. When CLECs purchase unbundled local switching, Qwest does not charge those CLECs for any terminating local calls that are completed to their end user customers using the local switching element provided by Qwest. Because Qwest does not charge CLECs for these calls, CLECs do not incur any costs to terminate such calls, and, therefore, are not entitled to charge reciprocal compensation and have no need for billing records.

3. Maintenance and Repair of UNE-P Combinations

Qwest will maintain facilities and equipment that are owned by Qwest and used to provide UNE-P services to CLECs.[21] Qwest provides maintenance for UNE-P combinations provided to CLECs in the same manner as it provides maintenance to itself for providing comparable retail services.

4. Performance Indicators and Performance Results for CLEC Access to UNE-P Combinations

Qwest has implemented performance indicators for UNE-P-POTS combinations.[22] The performance indicators were developed under the auspices of the ROC Third Party Operational Support System ("OSS") Tests. The third party test participants decided to use a "parity" standard, comparing UNE-P performance to Qwest retail performance, for each of these UNE-P performance indicators.

On September 25, 2001, the Liberty Consulting Group, an independent third

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[21] See SGAT § 9.23.7.

[22] The performance indicators and their definitions (PIDs), and performance results, for UNE-P-POTS combinations are attached as exhibits to the affidavit of Michael G. Williams filed in this matter. UNE-P-POTS performance results do not include UNE-P-POTS-Star combinations at this time.

early retained as part of the ROC OSS Test, completed its audit of Qwest's performance indicators and performance indicator definitions ("PIDs") and issued its "Final Report on the Audit of Qwest's Performance Measures." Liberty reported that the performance indicators for UNE-P[23] passed the audit. Liberty concluded that "the audited performance measures accurately and reliably report actual Qwest performance."[24] Qwest has offered to have Liberty verify its audit by conducting data reconciliation with any CLEC that believes Qwest's performance data is inaccurate.

Performance Data for UNE-P-POTS Combinations. Qwest has successfully met the demand for UNE-P combinations in South Dakota by promptly installing and repairing UNE-P services for CLECs.

Installation of UNE-P. Qwest measures its performance for installing and maintaining UNE-P-POTs combinations for CLECs and compares that performance to its performance in installing and maintaining POTS services for its retail end users. The standard for performance for CLECs is parity with Qwest's performance for its retail end users.

Qwest met 100% of its UNE-P-POTS installation commitments to South Dakota CLECs from July, 2000, through August, 2001, results which surpass Qwest's

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[23] Liberty found that performance indicators for provisioning and maintenance of UNE-P services measured what they purported to measure. See "Final Report on the Audit of Qwest's Performance Measures," dated September 25, 2001, at pp 58-103, available at http://www.nrri.ohio-state.edu/oss/master/pid/sept/pmafinalreport.pdf. It is also Exhibit MGW-PERF-2 to the affidavit of Michael G. Williams.

[24] *Id.* at 2-3

performance for its retail end users during the same time period.[25] During this same period, the average installation interval was faster for CLECs than for Qwest retail, with the exception of a single month. During that month, a single CLEC order required three days for installation while the average number of days for Qwest retail installation was just over two days; given the CLEC sample size of a single order, this result cannot be considered dispositive.[26] In only one month during the entire year for which results are provided was there any delay for installation for CLECs due to facility and non-facility reasons, and the performance for CLECs was better than for Qwest retail.[27] Finally, installation quality of UNE-P combinations for CLECs in South Dakota was excellent – Qwest completed 100% of installations without a CLEC filing a trouble report within 30 of installation during four of the past 12 months. For those few months where a CLEC did make a trouble report, Qwest met 100% of its commitments. Overall Qwest provided better quality of UNE-P installation for CLECs than for comparable Qwest retail services during 11 of the past 12 months.[28]

Repair of UNE-P. During the period July, 2000, through August, 2001, the overall trouble rate for CLEC UNE-P-POTS was zero, which was lower than the trouble

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[25] *See* UNE-P performance results attached to Mr. Williams' affidavit; Installation Commitments Met, OP-3. The South Dakota performance results are Exhibit MGW-PERF-3.

[26] *Id.*; Installation Interval, OP-4.

[27] *Id.*; Delayed Days for Non-Facility Reasons, OP-6A; and Delayed Days for Facility Reasons, OP-6B.

[28] *Id.*; New Service Installation Quality, OP-5.

rate for comparable retail services, with the exception of a single month.[29] When troubles occur, Qwest resolves them efficiently. In each case where trouble was reported on UNE-P-POTS combinations in South Dakota during the past year, Qwest cleared the trouble more quickly for CLECs than for comparable services for Qwest retail.[30]

In sum, performance results show that Qwest has successfully and promptly installed and repaired these UNE-P services for CLECs. Given the overwhelmingly positive performance results for UNE-P service in South Dakota, the Commission should find that Qwest satisfies this aspect of checklist item 2.

IV. RESOLUTION OF ISSUES IN MULTISTATE AND OTHER STATE WORKSHOPS

A collaborative 271 workshop was conducted for this checklist item as part of multistate 271 proceedings, and it included participation by CLECs, by other interested parties, by the commission staffs from the states of Idaho, Iowa, Montana, New Mexico, North Dakota, Wyoming, and Utah. Interested parties made written and oral comments concerning Qwest's compliance with the Act's and the FCC's requirements for UNE-P combinations, and seeking changes to numerous SGAT provisions. Qwest collaborated with and made concessions to CLECs on many issues and made numerous SGAT changes.

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[29] *Id.*; Trouble Rate, MR-8.

[30] *Id.*; Out-of-Service Cleared Within 24 Hours, MR-3; All Troubles Cleared Within 48 Hours, MR-4; Mean Time to Restore, MR-6; Repair Repeat Rate, MR-7; and, Repair Appointments Met, MR-9.

At the close of the multistate workshops on UNE-P combinations, no issues remained unresolved. The facilitator who oversaw the multi-state workshops issued a report in which he recommended no SGAT amendments relating to UNE-P and he confirmed that all UNE-P issues had been satisfactorily resolved during the workshops subject to satisfactory performance as verified by the ROC process.[31]

Qwest, CLECs, commission staffs, and other parties also participated in 271 collaborative workshops concerning UNE-P combinations in Washington, Oregon, Colorado, and Arizona, as well as in a hearing in Nebraska. Qwest received many requests from CLECs for changes to SGAT language concerning UNE-P combinations during the course of most of those proceedings. Qwest collaborated with and made concessions to CLECs resulting in changed SGAT language.

Thus far, all state commissions that have considered Qwest's compliance with Checklist Item 2 as it relates to UNE-P combinations have found that Qwest satisfies the requirements subject to satisfactory performance in the ROC OSS test.

Finally, all SGAT changes agreed to in other states for UNE-P Combinations have been included in the South Dakota SGAT filed on the same date as this affidavit was filed.

V. CONCLUSION

For the foregoing reasons, Qwest has satisfied the requirements of Section 271(c)(2)(B)(ii) for the Act regarding unbundled network elements-platform. The South

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[31] See Facilitator's Multi-State Report on Unbundled Network Elements, at 6 (Multi-State Workshop, Aug. 20, 2001).

Dakota Public Utilities Commission should conclude that Qwest has satisfied this checklist item.

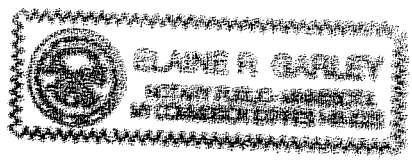
I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 28th day of September, 2001.

Lori A. Simpson

STATE OF MINNESOTA

COUNTY OF HENNEPIN



Subscribed and sworn to before me this 28th day of September, 2001.

Notary Public

BEFORE THE
SOUTH DAKOTA
PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

EXHIBITS to the AFFIDAVIT

OF

LORI A. SIMPSON

CHECKLIST ITEM 2 – UNBUNDLED NETWORK ELEMENTS – PLATFORM

OCTOBER 24, 2001

DESCRIPTION	EXHIBIT
Witness Qualifications	LAS-UNE-P-1

QUALIFICATIONS OF LORI A. SIMPSON

I have been employed by Qwest Corporation, formerly Northwestern Bell Telephone Company and U S WEST Communications, for 28 years. During that time I have worked in the network organization, the carrier organization, Operator and Information Services, the large and small business retail organizations, as well as the residence retail organization. Prior to my work on the 271 team, I most recently held positions related to the Company's legal and regulatory compliance.

I have a Bachelor of Arts degree from the University of Minnesota in Minneapolis, Minnesota, and a Juris Doctor degree from William Mitchell Law School in St. Paul, Minnesota.

I base this affidavit on professional experience, personal knowledge, and information available to me in the normal course of my duties, including records regularly kept in the course of business by Qwest. As part of Qwest's work to ensure its compliance with Section 271, I have participated extensively for more than one year in all of the collaborative state workshops addressing this checklist item in Arizona, Colorado, Oregon, Washington, and the seven-state joint Section 271 workshops involving Idaho, Iowa, Utah, Montana, North Dakota, Wyoming, and New Mexico. Each of these five workshop processes were collaborative, conducted on an open basis with full, active, and equal participation by competitors and state commission staffs. I also participated in the Section 271 proceedings in Nebraska.

BEFORE THE
PUBLIC UTILITY COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271(C) OF THE TELECOMMUNICATIONS ACT OF 1996	)	Docket TC 01

QWEST CORPORATION'S

AFFIDAVIT

OF

KAREN A. STEWART

CHECKLIST ITEM 2 – ACCESS TO UNBUNDLED NETWORK ELEMENTS

OCTOBER 24, 2001

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AFFIDAVIT

OF

KAREN A. STEWART

Checklist Item 2 – Access to Unbundled Network Elements

My name is Karen A. Stewart. I am a Senior Staff Advocate, Policy and Law for Qwest Corporation ("Qwest"). My office is located at 421 SW Oak Street, Portland, Oregon. I base this affidavit on professional experience, personal knowledge, and information available to me in the normal course of my duties. Exhibit KAS-UNES-1 contains my qualification summary.

I. EXECUTIVE SUMMARY

The purpose of this Affidavit is to demonstrate that Qwest has satisfied certain requirements of Section 271(c)(2)(B) of the Act, specifically item (ii), access to unbundled network elements. Other affidavits will address the remaining requirements of checklist item 2.

Qwest provides nondiscriminatory access to unbundled network elements ("UNEs") at any technically feasible point to any requesting telecommunications carrier for the provision of a telecommunications service, in accordance with the Telecommunications Act of 1996, federal rules, and South Dakota law and regulations. Qwest has a concrete and specific legal obligation to provide these unbundled network elements through its interconnection agreements with CLECs and its South Dakota Statement of Generally Available Terms and Conditions ("SGAT"). Qwest provides

CLECs with access to all the features, functions, and capabilities of the network elements in a manner that allows CLECs to provide any telecommunications service that the network element is capable of providing. Qwest does not impose limitations, restrictions or requirements on requests for the use of unbundled network elements that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in the manner desired by the requesting telecommunications carrier, other than those expressly permitted under existing FCC rules.

Qwest combines UNEs for competitive local exchange carriers ("CLECs") or provides such UNEs in a manner that allows CLECs to combine such elements in order to provide telecommunications services. When ordered in combination, UNEs that are currently combined and ordered together will not be physically disconnected or separated in any fashion except for technical reasons or if requested by the ordering CLEC. Two standard UNE combinations are available: UNE platform, or "UNE-P," and the Enhanced Extended Loop ("EEL").

Qwest provides access to UNEs in substantially the same time and manner as it provides to itself, or, if Qwest does not provide access to itself, in a manner that provides the CLEC with a meaningful opportunity to compete. While Qwest has yet to receive an order for an EEL in South Dakota, Qwest has demonstrated in other states that it is provisioning EELs in a non-discriminatory manner.

II. QWEST HAS COMPLIED WITH THE FCC'S UNBUNDLED NETWORK ELEMENT REQUIREMENTS IN SOUTH DAKOTA.

Section 271(c)(2)(B)(ii) of the Act requires Qwest to provide nondiscriminatory access to network elements pursuant to section 251(c) and at prices in accordance with the requirements of section 252(d).[1] Section 251(d) of the Act requires the FCC, when determining what network elements should be made available, to consider, at a minimum, whether "access to such network elements as are proprietary in nature is necessary," and whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[2]

In the *UNE Remand Order*, the FCC applied the "necessary and impair" standard and identified a minimum list of unbundled network elements that incumbent LECs must provide to requesting telecommunications carriers on an unbundled basis.[3] The new list, set forth in Rule 51.319, includes local loops, subloops, network interface devices ("NIDs"), local switching capability, local tandem switching capability, dedicated and shared transport, dark fiber, signaling and call-related databases, and operational support systems ("OSS") functions.[4]

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1 47 U.S.C. § 271(c)(2)(B)(ii).

2 47 U.S.C. § 251(d)(2).

3 Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, CC Docket No. 96-98, FCC 99-238, 15 FCC Rcd 3696, ¶ 15 (rel. Nov. 5, 1999) ("UNE Remand Order").

4 UNE Remand Order, ¶¶ 44-47 and ¶¶ 51-61

Access to UNEs Generally. Qwest provides telecommunications carriers access to these UNEs in accordance with the Act and with FCC rules.[5] Qwest provides CLECs with access to all the features, functions, and capabilities of the network elements in a manner that allows CLECs to provide any telecommunications service that the network element is capable of providing.[6] Qwest has a contractual obligation to provide these unbundled network elements through its interconnection agreements with CLECs and its South Dakota SGAT.

Consistent with its contractual commitments, Qwest makes available nondiscriminatory access to the following core UNEs:

- Local loop, including subloops and high frequency portion of the loop
- Network interface device ("NID")
- Local switching capability, including packet switching
- Local tandem switching capability
- Interoffice transmission facilities, including dark fiber
- Signaling networks and call-related databases
- Operational support systems ("OSS") functions

This list is not exclusive, and, pursuant to changes in FCC rules, state laws or the Bona Fide Request Process, CLECs may identify and request that Qwest furnish additional or

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[5] 47 C.F.R. § 51.307(a), (c).

[6] *See* SGAT § 9.1.5.

revised UNEs to the extent required under section 251(c)(3) of the Act and other applicable laws.[7]

The UNEs listed as separate items on the competitive checklist are addressed in separate affidavits. See Affidavit of Lynn Notarianni (operational support systems), Affidavit of Jean M. Liston (unbundled loops), Affidavit of Karen A. Stewart (subloops), Affidavit of Karen A. Stewart (emerging services), Affidavit of Karen A. Stewart (transport), Affidavit of Lori A. Simpson (switching), and the Affidavit of Margaret S. Bumgarner (call-related databases and associated signaling).[8] As a result, this affidavit primarily addresses CLEC access to unbundled network elements generally and CLEC access to combinations of UNEs.

Section 251(c)(3) further requires incumbent LECs to provide unbundled network elements on rates, terms and conditions that are just, reasonable, and

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[7] *See* SGAT § 9.1.1.

[8] In the UNE Remand Order, the FCC concluded that operator services and directory assistance services are not network elements that incumbent local exchange carriers ("ILECs") are required to unbundle under Section 251(c)(3) of the Act. UNE Remand Order at ¶¶ 446-64. However, the FCC has concluded that a Bell Operating Company ("BOC") must be in compliance with Section 251(b)(3) to satisfy the requirements of Sections 271(c)(2)(B)(vii)(II) and (III). Application by SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance; Pursuant to Section 271 of the Telecommunications Act of 1996 To Provide In-Region, InterLATA Services in Texas, Memorandum Opinion and Order, CC Docket 00-65, FCC 00-238, 15 FCC Rcd 18354, ¶ 346 (rel. June 30, 2000) ("SBC Texas Order"). *See also* 47 U.S.C. §§ 251(b)(3); 271(c)(2)(B)(vii)(II) and (III). Directory assistance and operator call completion services are discussed in the Affidavit of Lori A. Simpson regarding Checklist Item 7(II and III) – Operator Services and Directory Assistance Services filed with this 271 Application.

[redacted] in accordance with the terms and conditions of its interconnection [redacted] and with the requirements of sections 251 and 252.[9] Section 252(d) [redacted] the rates for network elements to be nondiscriminatory and based on the cost [redacted] the network element.[10]

[redacted] may purchase UNEs from Qwest (1) local exchange service to its [redacted] (2) to provide exchange access service to itself, (3) to provide interstate and [redacted] exchange access to its customers, and (4) for all other uses permitted [redacted] the pricing rules.[11] All such uses are subject to the applicable charges and [redacted] federal and state rules and regulations.

[redacted] FCC's rules also prohibit the incumbent LEC from imposing limitations, [redacted] or requirements on requests for the use of unbundled network elements [redacted] those expressly permitted by the FCC's rules) that would impair the ability of [redacted] telecommunications carrier to offer a telecommunications service in the [redacted] chosen by the requesting telecommunications carrier.[12] Requesting CLECs are [redacted] to exclusive use of an unbundled network facility, and to the use of its features, [redacted] or capabilities, for a set period of time, except as is expressly permitted or [redacted] by pricing law or rules.[13] However, Qwest retains ownership of the facility and

[9] 47 U.S.C. § 251(c)(3);

[10] 47 U.S.C. § 252(d);

[11] 47 C.F.R. § 51.309; SGAT §§ 9.2.2 and 9.1.12.

[12] 47 C.F.R. § 51.309(a);

[13] 47 C.F.R. § 51.309; SGAT § 9.1.2

retains the obligation to test, maintain, repair and, if facilities exist, replace UNEs as necessary.[14]

Quality of UNEs. Each network element provided by Qwest meets applicable regulatory performance standards. The quality of, and access to, an unbundled network element that Qwest provides is equal among all carriers requesting access to that element.[15] Where technically feasible, the access to and quality of an unbundled network element will be provided by Qwest in substantially the same time and manner to that which Qwest provides to itself or its affiliates.[16] In those situations in which Qwest does not provide access to an unbundled network element to itself, Qwest will provide access in a manner that provides the CLEC with a meaningful opportunity to compete.[17] The terms and conditions pursuant to which Qwest provides access to UNEs are offered equally to all representing CLECs.[18] In addition, Qwest will comply with all state wholesale service quality requirements.[19]

Access to UNEs at any technically feasible point. Section 251(c)(3) obligates each incumbent LEC to provide nondiscriminatory access to unbundled network elements at any technically feasible point to any requesting telecommunications carrier

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[14] *See* SGAT § 9.1.6.1.

[15] *See* SGAT § 9.1.2.

[16] *See* SGAT § 9.1.2.

[17] 47 C.F.R. § 51.311(a), (b); SGAT § 9.1.2.

[18] 47 C.F.R. § 51.313(a).

[19] SGAT § 9.1.2.

for the provision of a telecommunications service.[20] As required by the Act and FCC rules, Qwest provides requesting CLECs with unbundled access to network elements at any technically feasible point for use in providing telecommunications services to their customers.[21]

Qwest will provide a connection between UNEs and a demarcation point using an Interconnection Tie Pair (ITP). An ITP typically is required for each unbundled network element or ancillary service delivered to a CLEC.[22] A demarcation point is (1) at the CLEC-provided cross connection equipment located in the CLEC's virtual or physical collocation space; (2) at the Interconnection Distribution Frame (ICDF), if the CLEC has elected ICDF collocation or has elected to use an ICDF in association with virtual or physical collocation; (3) at the main distribution frame if the CLEC elects to use a direct connection from its collocation space to the distribution frame serving a particular element; or (4) at another demarcation point mutually agreed to by the parties.[23]

If facilities are not available, Qwest will build facilities dedicated to an end user if Qwest would be legally obligated to build such facilities to meet its obligation as a provider of last resort or its obligation as an eligible telecommunications carrier to

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20 47 U.S.C. § 251(c)(3).

21 47 C.F.R. § 51.307.

22 *See* SGAT § 9.1.4.

23 *See* SGAT § 9.1.4.

provide basic local exchange service.[24] If cable capacity is available, Qwest will complete incremental facility work (*i.e.*, conditioning, place a drop, add a Network Interface Device, card existing subscriber Loop Carrier systems at the Central Office and Remote Terminal, add Central Office tie pairs, add field cross jumpers) to complete facilities to the customer premises.[25] In other situations, Qwest will consider CLEC requests to build UNEs. Qwest will also notify CLECs of situations in which Qwest is currently building facilities and add the CLEC request to that work order.[26] Qwest also will notify CLECs of major loop facility builds through the ICONN database.[27]

Combinations of UNEs. Finally, incumbent LECs are required to provide UNEs in a manner that allows requesting carriers to combine such elements in order to provide telecommunications services.[28] Qwest provides CLECs access to UNEs to permit CLECs to combine such network elements with other network elements obtained from Qwest (or with network elements provided by the CLEC itself to provide telecommunications services to its customers), provided that such a combination is technically feasible and would not impair the ability of other carriers to obtain access to other UNEs or to interconnect with Qwest's network.[29]

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24 *See* SGAT § 9.1.2.1.

25 *See* SGAT § 9.1.2.1.2.

26 *See* SGAT § 9.1.2.1.3.

27 *See* SGAT § 9.1.2.1.4.

28 47 U.S.C. § 251(c)(3).

29 *See* SGAT § 9.23.1.2.2.

A. UNE Combinations Generally

Qwest offers UNE combinations to CLECs on rates, terms and conditions that are just, reasonable and non-discriminatory in accordance with the Act, applicable FCC rules and other applicable laws.[30] The methods of access described in this Affidavit and specifically provided for in Qwest's SGAT are not exclusive; Qwest will allow access via any method requested by CLECs that is consistent with the Act and FCC rules.[31] Generally, Qwest does not require CLECs to access UNE combinations in conjunction with any other service or element unless required for technical reasons.[32]

Qwest combines network elements that are ordinarily combined on Qwest's network on the CLEC's behalf, when requested to do so and provided facilities are available.[33] Further, CLECs can combine any UNE provided by Qwest with another UNE provided by Qwest or with compatible network components provided by a CLEC or provided by third parties to a CLEC in order to provide a telecommunications service.[34] CLECs can request access to UNE combinations not provided as standard combinations through the Special Request Process ("SRP").[35] Information regarding

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30 *See* SGAT § 9.23.1.2.

31 *See* SGAT § 9.23.1.2.

32 *See* SGAT § 9.23.1.2.

33 *See* SGAT § 9.23.1.4.

34 *See* SGAT § 9.23.1.2.2.

35 *See* SGAT § 9.23.3.10. To request UNE combinations not existing in the Qwest network, a CLEC can utilize the Bona Fide Request Process in SGAT § 17.0

the SRP is contained in Exhibit F of the South Dakota SGAT, which has been attached as Exhibit KAS-UNES-2 to this affidavit.

Network elements to be provisioned together shall be identified and ordered by CLECs as such.[36] When CLECs order UNE combinations that are currently interconnected and functional, the UNEs will remain interconnected and functional without any disconnection or disruption of functionality.[37] In addition, UNEs that are currently combined and ordered together will not be physically disconnected or separated in any fashion except for technical reasons or if requested by the ordering CLEC.[38]

Generally, two of Qwest's standard combinations are UNE platform, or "UNE-P," and the Enhanced Extended Loop ("EEL"). For detailed information regarding UNE-P, see the Affidavit of Lori A. Simpson. EELs are specifically discussed later in this affidavit. All of the information provided for UNEs generally in this section also applies to EELs and UNE-P.

Installation and Provisioning. Qwest has established several methods by which CLECs can access UNE combinations. First, CLECs can convert existing arrangements, such as resale services, to UNE combinations.[39] Second, Qwest combines network elements that are ordinarily combined on Qwest's network on the

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[36] *See* SGAT § 9.23.1.3.

[37] *See* SGAT § 9.23.1.3.

[38] *See* SGAT § 9.23.1.3.

[39] *See* SGAT § 9.23.3.13.

CLEC's behalf, when requested to do so and provided facilities are available. Third, Qwest combines for CLECs UNEs that are not ordinarily combined in Qwest's network, provided that facilities are available and the combination (1) is technically feasible; (2) will not impair the ability of other carriers to obtain access to UNEs or to interconnect with Qwest's network; and (3) will not impair Qwest's use of its network.[40] Qwest combines CLEC UNEs with Qwest UNEs, provided that facilities are available and the combination (1) is technically feasible; (2) is performed in a manner that provides Qwest access to necessary facilities; (3) will not impair the ability of other carriers to obtain access to UNEs or to interconnect with Qwest's network; and (4) will not impair Qwest's use of its network.[41]

For CLECs that choose to perform the function of combining UNEs for themselves, Qwest provides such network elements in a manner that allows the CLEC to combine such elements in order to provide a telecommunication service. To combine UNEs themselves, CLECs may choose among the various options as discussed further below.

CLECs can combine UNEs in any technically feasible manner. One typical method is collocation. In addition to a standard physical collocation arrangements, Qwest provides a variety of alternative collocation arrangements that CLECs can use to combine individual network elements, such as smaller physical collocation cages and

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[40] *See* SGAT § 9.23.1.5.

[41] *See* SGAT § 9.23.1.6.

cageless collocation arrangements.[42] Qwest offers each of these arrangements through its SGAT or interconnection agreements.[43] All of these alternative arrangements can be used to combine network elements in substantially the same manner as standard collocation arrangements. UNEs and UNE combinations can be directly connected to a Qwest finished service without going through a collocation arrangement, unless otherwise restricted based on Commission and/or FCC rules.[44] CLECs can also connect their UNE combinations to Qwest's directory assistance and operator services platforms.[45]

The methods of access to UNE combinations described above are not exclusive. Qwest will make available any other form of access requested by CLECs that is consistent with the Act and the regulations thereunder.[46] Qwest does not place any use restrictions or other limiting conditions on UNE combinations accessed by a CLEC except as specified in its interconnection agreement, the SGAT or permitted by existing rules.[47]

Qwest provides the same quality of and access to UNE combinations to all CLECs requesting access. Where technically feasible, the access and UNE

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[42] *See* SGAT § 8.1.1. *See* Affidavit of Margaret S. Bumgarner regarding collocation options available under the Qwest SGAT.

[43] *See* SGAT § 8.1.1.

[44] *See* SGAT § 9.23.1.2.2.

[45] *See* SGAT § 9.23.1.2.2.

[46] *See* SGAT § 9.23.1.2.

combination provided by Qwest is provided in "substantially the same time and manner" to that which Qwest provides to itself.[48] In those situations where Qwest does not provide access to certain UNE combinations to itself, Qwest will provide access in a manner that provides CLECs with a meaningful opportunity to compete.[49]

Service intervals for each standard UNE combination are set forth in Exhibit C of the SGAT.[50] Qwest establishes a due date for an order when it receives a complete and accurate LSR or ASR made through the IMA, EDI or EXACT interfaces or through facsimile.[51]

As part of the ordering process, CLECs provide Qwest with complete and accurate end user customer listing information for directory assistance, directory listings, and 911 emergency services for all end-user customers served by UNE combinations.[52] Feature and interLATA or intraLATA PIC changes or additions for UNE combinations are processed concurrently with the order as specified by CLECs.

To ensure that any problems with the ordering process are resolved promptly and satisfactorily, Qwest and each CLEC provide each other with points of contact for

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47 *See* SGAT § 9.23.1.2.

48 *See* SGAT § 9.23.3.1.

49 *See* SGAT § 9.23.3.1.

50 *See* SGAT § 9.23.5.3.

51 *Id.*

52 *See* SGAT §§ 9.23.5.5, 10.3., 10.4 and 10.5.

order entry, problem resolution, repair, and in the event special attention is required on a service request.[53]

Billing. Qwest provides timely monthly billing information to CLECs.[54] The billing information, which is in an agreed-upon standard electronic billing format, includes (1) a summary bill and (2) individual end user customer sub-account information.[55] See the Affidavit of Lynn Notarianni regarding Qwest's OSS for further information on Qwest's billing processes.

Maintenance and Repair. Qwest will maintain and repair facilities and equipment that comprise the service provided to CLECs as UNE combinations.[56] Exhibit KAS-UNES-3 is a process flow that describes the tasks performed for maintenance of UNE combinations provided to CLECs.

B. Enhanced Extended Loop

The EEL is a combination of loop and dedicated interoffice transport and may also include multiplexing or concentration capabilities.[57] It enables CLECs to access unbundled loops for end users without having to collocate in the central office in which those loops terminate. Qwest provisions the EEL to CLECs when they self-certify to Qwest that the EEL will be used to provide a significant amount of local exchange traffic

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53 *See* SGAT § 9.23.5.7.

54 *See* SGAT § 9.23.6.

55 *Id.*

56 *See* SGAT § 9.23.7.

57 *See* SGAT § 9.23.3.7.

to a particular end user and identify which one of the three local use options it is certifying under.[58] Qwest does not audit a CLEC's self-certification before it installs or converts an existing service to an EEL.[59] Qwest has a concrete and specific legal obligation to provide EELs through its SGAT in South Dakota.[60]

EEL transport and loop facilities may utilize DS-0 through OC-192 or other existing bandwidths. Qwest offers DS-0, DS-1 and DS-3 bandwidths as defined products.[61] CLECs can order other bandwidths existing in the Qwest network through the Special Request Process set forth in Exhibit F of the SGAT. For new bandwidths not yet in the Qwest network, CLECs may use the Bona Fide Request process set forth in Section 17.0 of the SGAT.

EEL combinations may consist of loops and interoffice transport of the same bandwidth (point-to-point EEL).[62] With the use of multiplexing, a CLEC can have EEL combinations of different bandwidths (multiplexed EEL).[63]

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[58] Qwest's SGAT language virtually mirrors the FCC requirements for "significant amount of local traffic." SGAT § 9.23.3.7.2. *See* Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, FCC 00-183, 15 FCC Rcd 9587, ¶ 22 (rel. June 2, 2000) ("Supplemental Order Clarification").

[59] Furthermore, if termination liability payments are due on the account being switched from special access to an EEL, Qwest will not delay a conversion to resolve the termination liability issue.

[60] *See* SGAT § 9.23.3.7.

[61] *Id.*

[62] *See* SGAT § 9.23.3.7.2.12.4.

[63] *Id.*

Qwest will provision EEL service in South Dakota using a defined order and provisioning flow.[64] For newly provisioned EELs, CLECs submit orders using the LSR process via IMA-EDI, IMA-GUI or facsimile. Only one LSR is required when a CLEC orders point-to-point EEL. For multiplexed EEL, one LSR is needed to order the EEL with a multiplexer while additional LSRs are required for each lower speed service "riding" the multiplexed EEL. To convert an eligible special access/private line to an EEL, after certifying significant local usage, the CLEC would use the same LSR order process.[65] See Exhibit KAS-UNES-4 for the order and provisioning flow diagram for new EELs. Qwest has endeavored to make the process of conversion from special access to an EEL as efficient as possible. Qwest allows CLEC to do a streamlined "record-only" change, similar to a change from retail to resale. See Exhibit KAS-UNES-5 for the order and provisioning flow diagram for converted EELs.

Installation intervals for new EEL installations are set forth in Exhibit C to the SGAT. They are equivalent to the installation intervals for private line transport service

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[64] *See generally* SGAT § 9.23.3.8.

[65] Qwest's process is more efficient than the process followed by SBC and approved by the FCC in its Kansas/Oklahoma Section 271 Order. Joint Application by SBC Communications, Inc., Southwestern Bell Telephone Co., and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma, Memorandum Opinion and Order, CC Docket No. 00-217, FCC 01-29, 16 FCC Rcd 6237, ¶ 176 (rel. Jan. 22, 2001) ("SBC Kansas Oklahoma Order"). The FCC stated that it had established a general rule to govern the EEL provisioning process "in recognition that incumbent LECs may adopt different procedures to ensure that access circuits are converted to unbundled loop transport combinations simply and without delay." *Id. See also* Supplemental Order Clarification, ¶¶ 30-31.

of the same bandwidth.[66] Concentration capability installation intervals will be offered on an individual case basis.[67] No private line or special access service shall be available for conversion into an EEL or be combined with other elements to create an EEL on a stand-alone basis billing, commonly referred to as ratcheting.[68]

Qwest will maintain and repair the facilities and equipment that comprise the EEL combination provided to a CLEC.[69] Qwest will maintain EELs in South Dakota using a defined maintenance flow. See the previously identified Exhibit KAS-UNES-2 for a flowchart that delineates the tasks performed by Qwest personnel to maintain various UNE combinations.

Performance Measurements. Qwest, along with interested CLECs through the PIDC workings and the Technical Advisory Group ("TAG"), has identified which performance measurements are to be used for access to EELs. Further product disaggregation of existing measurements have been developed and approved by the PIDC as part of the OSS test. The following measurements apply specifically for EELs:

- OP-3: Installation commitments met
- OP-4: Installation interval
- OP-5: New service installation without trouble report for 30 days after installation

[66] See SGAT § 9.23.3.7.2.12.6.

[67] See SGAT § 9.23.3.7.2.12.7.

[68] See SGAT § 9.23.3.7.2.10. *See also* Supplemental Order Clarification, ¶ 28.

[69] See SGAT § 9.23.7.1

- OP-6 Delayed days
- OP-13 Interval for pending orders delayed past due date
- MR-5 All troubles cleared within four hours
- MR-6 Mean time to restore
- MR-7 Repair repeat report rate
- MR-8 Trouble rate

Additionally, where appropriate, performance results for EELs are included in the pre-ordering/ordering and billing measures. These measures produce results that aggregate UNEs or requests submitted via IMA and EDI. The definitions for each performance measure can be found in the Affidavit of Mr. Michael G. Williams in Exhibit MGW-PERF-4.

On September 25, 2001, the Liberty Consulting Group, an independent third party retained as part of the ROC OSS Test, completed its audit of Qwest's performance measures and concluded that "the audited performance measures accurately and reliably report actual Qwest performance."[70] Qwest has offered to have Liberty verify its audit by conducting data reconciliation with any CLEC that believes Qwest's performance data is inaccurate.

Qwest has not yet provisioned any EELs in South Dakota. Although CLECs have only recently begun ordering EELs in Qwest's region, Qwest has demonstrated in other states within Qwest's region that it is provisioning EELs in a non-discriminatory

[70] See Final Audit Report at 2-3 attached to the Affidavit of Mr. Michael G. Williams as Exhibit MGW-PERF-2.

[redacted] that competitors may reasonably demand. When data becomes [redacted] for South Dakota, it can be found on the following web-site: [redacted]. However, Qwest's processes and performance for [redacted] are being evaluated in the ROC Third Party Test (3PT).

III. CONCLUSION

For the foregoing reasons, Qwest has satisfied the requirements of Section [redacted] for the Act regarding unbundled network elements and unbundled [redacted]. The Commission should conclude that Qwest has [redacted] this checklist item

BEFORE THE

PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

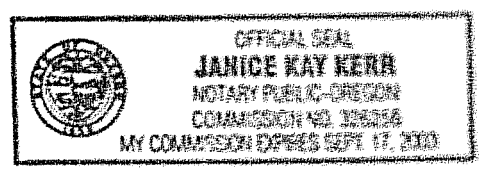
IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996

DOCKET TC01-

Being first duly sworn upon oath, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 11th day of October, 2001.

Karen A. Stewart
Karen A. Stewart



STATE OF Oregon

COUNTY OF Multnomah

Subscribed and sworn to before me this 11 day of October, 2001.

Janice Kay Kerr
Notary Public

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

EXHIBITS TO THE AFFIDAVIT

OF

KAREN A. STEWART

CHECKLIST ITEM 2- ACCESS TO UNBUNDLED NETWORK ELEMENTS

OCTOBER 24, 2001

INDEX TO EXHIBITS

DESCRIPTION	EXHIBIT
Qualifications	KAS-UNES-1
Special Request Process (Exhibit F of the SGAT)	KAS-UNES-2
Process flow describing the tasks performed for maintenance of UNE combinations provided to CLECs	KAS-UNES-3
Order and provisioning flow diagram for new EELs	KAS-UNES-4
Order and provisioning flow diagram for converted EELs	KAS-UNES-5

QUALIFICATIONS OF KAREN A. STEWART

My name is Karen A. Stewart. I am a Senior Staff Advocate, Policy and Law for Qwest. My office is located at 421 SW Oak Street, Portland, Oregon. I am currently a member of the Qwest Policy and Law organization responsible for representing Qwest in a number of 271 workshops related to Qwest's provisioning of unbundled network elements ("UNEs").

I have been employed by Qwest and its predecessor companies (including Pacific Northwest Bell and U S WEST) since 1981. I have held a variety of positions in Qwest, including sales, product management, regulatory affairs, issues management, and E911 project management and technical design.

I received a Bachelor of Science degree in Business Administration from Portland State University in 1980, and a Masters degree in Business Administration from the University of Oregon in July 1994.

EXHIBIT F - SPECIAL REQUEST PROCESS

1. The Special Request Process shall be used for the following requests:

1.1 Requesting specific product feature(s) be made available by Qwest that are currently available in a switch, but which are not activated.

1.2 Requesting specific product feature(s) be made available by Qwest that are not currently available in a switch, but which are available from the switch vendor

1.3 Requesting a combination of Unbundled Network Elements that is a combination not currently offered by Qwest as a standard product and:

1.3.1 that is made up of UNEs that are defined by the FCC or the Commission as a network element to which Qwest is obligated to provide unbundled access, and;

1.3.2 that is made up of UNEs that are ordinarily combined in the Qwest network.

1.4 Requesting an Unbundled Network Element that has been defined by the FCC or the State Commission as a network element to which Qwest is obligated to provide unbundled access, but for which Qwest has not created a standard product, including, but not limited to, OC-192 (and such higher bandwidths that may exist) UDIT, EEL between OC-3 and OC-192 and new varieties of subloops.

2. Any request that requires an analysis of Technical Feasibility shall be treated as a Bona Fide Request (BFR), and will follow the BFR Process set forth in this Agreement. If it is determined that a request should have been submitted through the BFR process, Qwest will consider the BFR time frame to have started upon receipt of the original Special Request application form.

3. A Special Request shall be submitted in writing and on the appropriate Qwest form, which is located on Qwest's website.

4. Qwest shall acknowledge receipt of the Special Request within two (2) business days of receipt.

5. Qwest shall respond with an analysis, including costs and timeframes, within fifteen (15) business days of receipt of the Special Request. In the case of UNE Combinations, the analysis shall include whether the requested combination is a combination of network elements that are ordinarily combined in the Qwest network. If the request is for a combination of network elements that are not ordinarily combined in the Qwest network, the analysis shall indicate to CLEC that it should use the BFR process if CLEC elects to pursue its request.

6. Upon request, Qwest shall provide CLEC with Qwest's supporting cost data and/or studies for Unbundled Network Elements that CLEC wishes to order within seven (7) business days, except where Qwest cannot obtain a release from its vendors within seven (7) business

days, in which case Qwest will make the data available as soon as Qwest receives the vendor release. Such cost data shall be treated as Confidential Information, if requested by Qwest under the non-disclosure sections of this Agreement.

CONTINUATION

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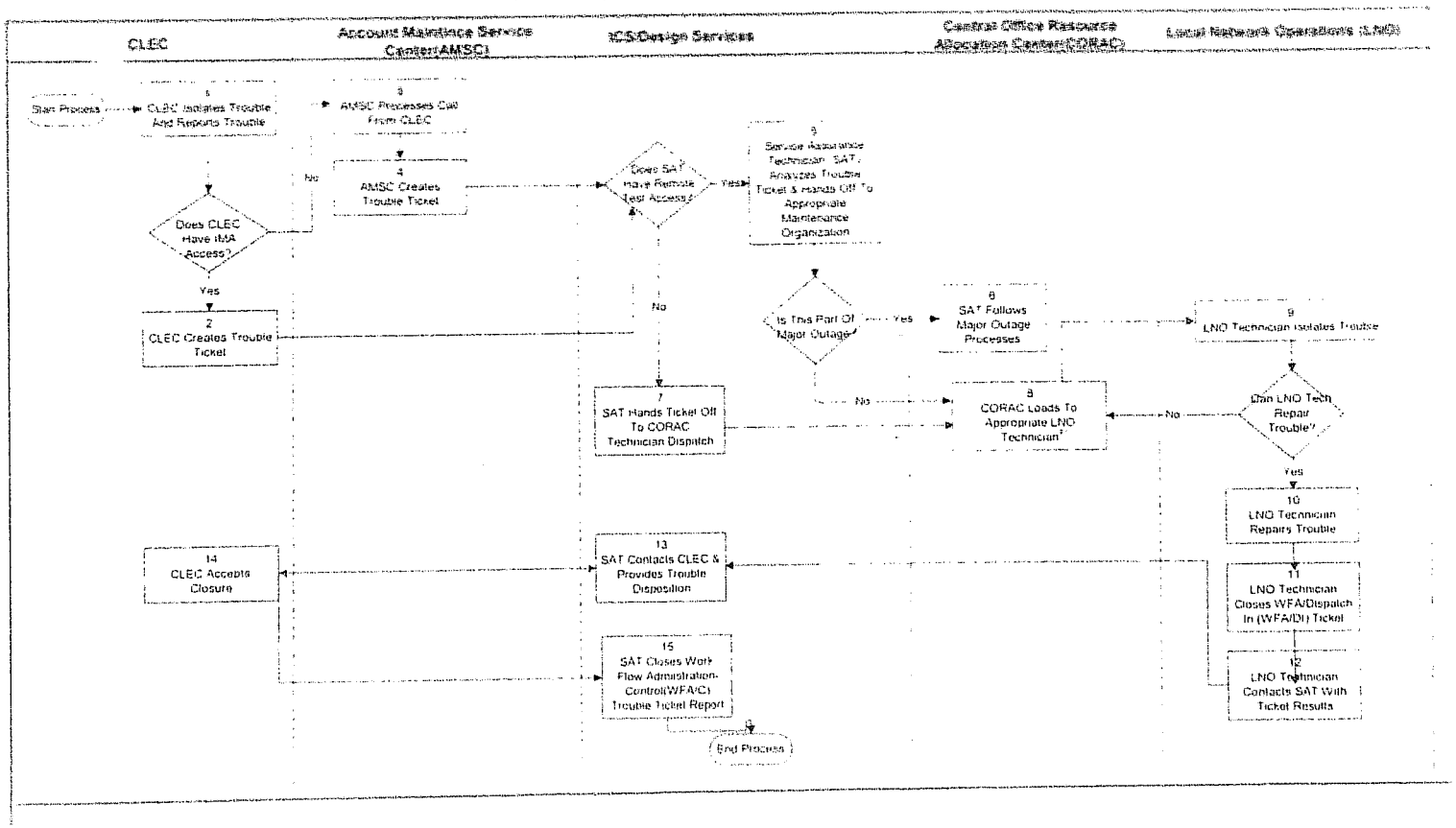
Scan ~ _____ ~ # Pages [___]

UNE Maintenance Process



CONTINUATION

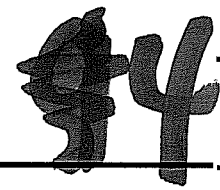
[23]

S # Pgs [ ]

UNE Maintenance Task List

Assoc. Task #	Process
1 or 2	Trouble ticket submitted NOTE: If CLEC has a system interface they may submit report electronically. Otherwise CLEC calls AMSC to report trouble and steps 3 and 4 are bypassed.
3	Process ticket received from CLEC
4	Trouble ticket created
5	Analyze trouble ticket, identify location, and assign to appropriate organization
6	If trouble is related to a major outage SAT follows major outage restoration process.
7	If trouble location can not be identified by SAT the SAT hands off ticket to CORAC to assign technician.
8	CORAC loads to appropriate LNO Technician
9	Trouble is isolated
10	Trouble repaired
11	Trouble ticket updated
12	Contact SAT with ticket results
13	CLEC notified
14 and 15	CLEC accepts service and Trouble ticket closed

CONTINUATION

[]

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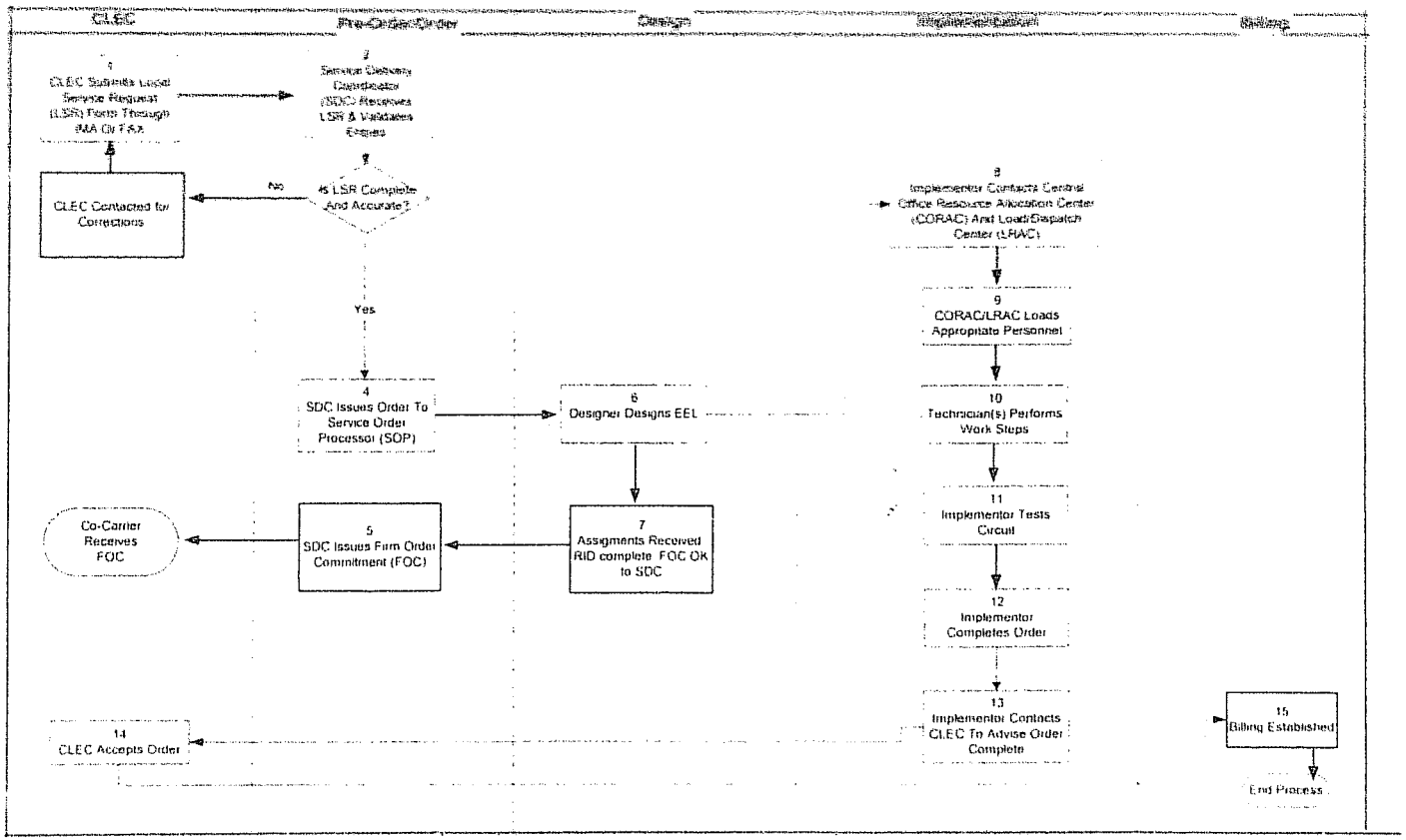
Enhanced Extended Loop (EEL-P) Provisioning Process

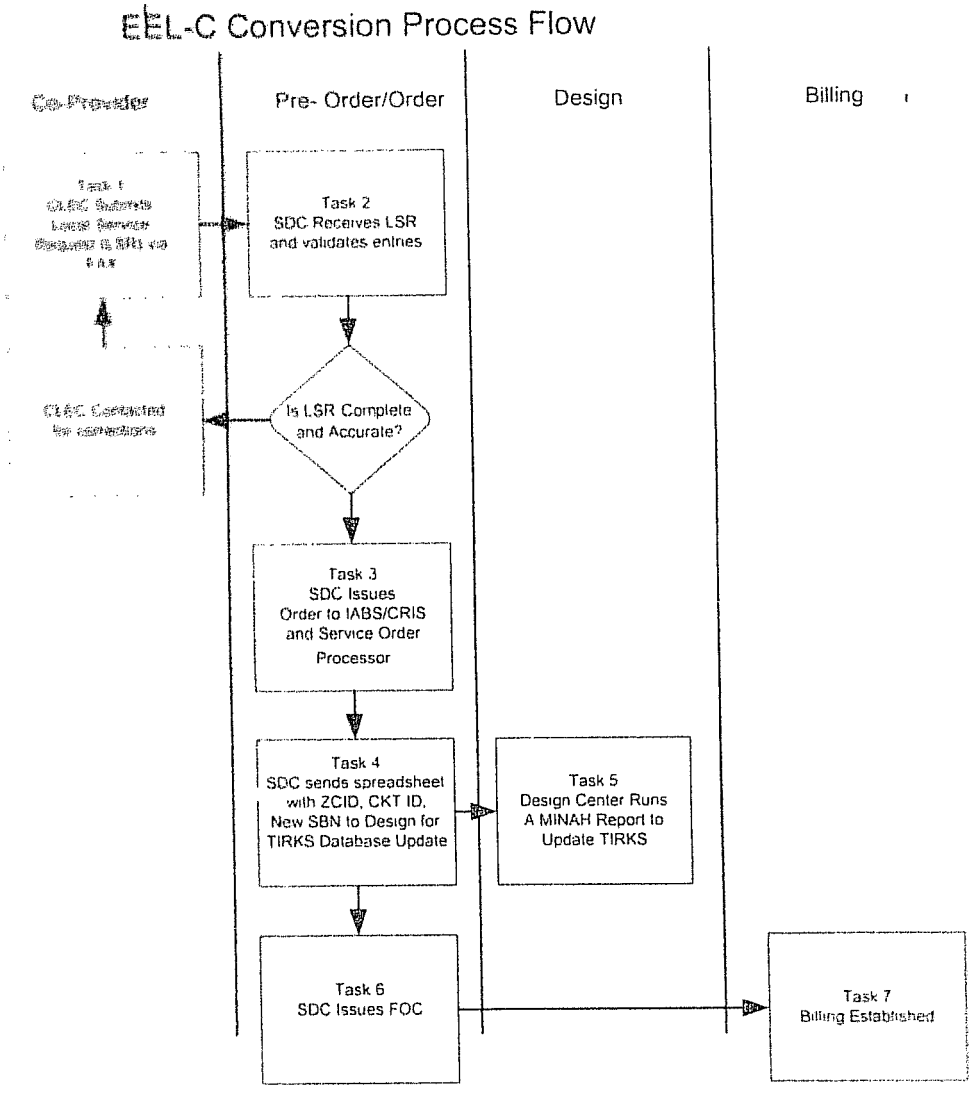


CONTINUATION

[5]

Enhanced Extended Loop (EEL-P) Provisioning Task List

Task #	Process
1	Co-Provider issues complete and accurate Local Service Request (LSR). These requests are issued through EDI or by fax
2	LSR and associated forms reviewed for completeness and accuracy by Service Delivery Coordinator (SDC). Contacts CLEC if necessary for corrections.
3	SDC issues order into the service order processor using appropriate intervals.
4	SDC receives OK from Designers (RID complete) and issues Firm Order Confirmation (FOC).
5	EEL is designed in TIRKS
6	Design Center ensures Assignments are received, completes RID, and authorizes the SDC to issue FOC.
7	Implementor contacts Central Office Resource Allocation Center (CORAC) and the Load and Resource Allocation Center (LRAC)
8	CORAC/LRAC loads appropriate field personnel to perform work steps.
9	LWO, COT Technician(s) receive work request and complete work steps.
10	Implementor tests circuit
12	Implementor completes order and completes in WFA/C
13	Implementor contacts Co-Provider to advise order complete. CLEC accepts circuit.
14	Service orders complete and posts to begin billing.


EEL-C Conversion Process Flow
Co-Provider
Pre- Order/Order
Design
Billing
Task 2
SDC Receives LSR and validates entries
Is LSR Complete and Accurate?
Task 3
SDC Issues Order to IABS/CRIS and Service Order Processor
Task 4
SDC sends spreadsheet with ZCID, CKT ID, New SBN to Design for TIRKS Database Update
Task 5
Design Center Runs A MINAH Report to Update TIRKS
Task 6
SDC Issues FOC
Task 7
Billing Established

EEL-C Conversion
Task List

Task #	Activity
1	Co_provider issues complete and accurate Local Service Request (LSR) via fax or IMA
2	Service Delivery Coordinator (SDC) receives LSR and validates entries.
3	SDC issues orders for records only for billing. One record order issued to stop billing of the existing circuit in IABS. A second record order establishes billing for the circuit in CRIS.
4	SDC sends creates and sends spreadsheet containing ZCID, circuit ID, new special billing number (SBN) to Design Center to update TIRKS database.
5	SDC issues Firm Order Confirmation (FOC) to CLEC.
6	Designer runs a MINAH report to update SBN in TIRKS
7	Billing established in CRIS only.

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION INTO QWEST CORPORATION'S COMPLIANCE WITH SECTION 271 (C) OF THE TELECOMMUNICATIONS ACT OF 1996	))))	DOCKET TC 01-

QWEST CORPORATION'S

AFFIDAVIT

OF

LYNN M. V. NOTARIANNI

CHECKLIST ITEM 2 – OPERATIONS SUPPORT SYSTEMS (OSS)

OCTOBER 24, 2001

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AFFIDAVIT

OF

LYNN M. V. NOTARIANNI

Checklist Item 2 – Operations Support Systems (OSS)

Lynn M. V. Notarianni states as follows:

My name is Lynn M. V. Notarianni. The purpose of this affidavit is to explain how Qwest satisfies the requirements of section 271 of the federal Telecommunications Act of 1996 (FTA96) pertaining to nondiscriminatory access to Operations Support Systems (OSS). I am employed by Qwest Corporation as a Director in the 271 Third Party Test Regulatory group. A summary of my background and qualifications is attached to my affidavit as Exhibit LVN-OSS-1.

I. EXECUTIVE SUMMARY

Competitive Local Exchange Carriers (CLECs) are successfully using Qwest's OSS to provide competitive alternatives for local exchange telephone customers in South Dakota. Table 1 (below) provides a count of the number of CLECs, as of September 2001, with access to Qwest's primary OSS interfaces in South Dakota. The table also provides a total count for the Qwest's 14-state territory.

Table 1 – Commercial Usage
CLECs and Carriers[1] with Interface Access as of September 2001

OSS Function	Interface[2]	South Dakota	Qwest's 14-state Region
Pre-ordering, Ordering & Provisioning	IMA-GUI	22	227
	IMA-EDI	Not Available	16
	EXACT	Not Available	17
	TELIS-UNIX	Not Available	239
Maintenance & Repair	CEMR	Not Available	68
	EBTA	Not Available	5
Billing	Electronic CRIS Summary Bill	5	62
	IABS Bill	2	14
	Loss and Completion Reports	13	179
	DUF	10	139

In addition to Table 1, this affidavit provides evidence establishing that Qwest meets standards set forth by the Federal Communications Commission (FCC) in its *First Report and Order* and in subsequent orders related to section 271. Specifically, my affidavit demonstrates how Qwest provides nondiscriminatory access to OSS in support of the three modes of competitive entry into local exchange markets: 1) facilities-based competition, 2) competition using unbundled network elements, and 3) resale.

The FCC's nondiscriminatory access standard is described in Section II of my affidavit. Section III identifies the systems, databases, and personnel deployed by

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1 The term "carriers" refers to Inter-Exchange Carrier (IXCs), to CLECs, and to other Qwest Wholesale customers.

2 The Interfaces listed here are further described in section III.B (below).

Qwest to provide CLECs access to each OSS function. Section III also explains how Qwest assists CLECs to understand and to implement and use the OSS functions available to them. Section IV shows that the OSS functions deployed by Qwest are operationally ready.

Section V provides a review of the Third Party Test conducted by the Regional Oversight Committee (ROC). As an augmentation to commercial usage data, the comprehensive ROC Third Party Test provides valuable insight into how Qwest provides nondiscriminatory access to its OSS. OSS functional areas tested as part of the Third Party Test are summarized in Table 2 – ROC Third Party Test (below) and are described fully in the Master Test Plan, attachment LVN-OSS-2.

Table 2 – ROC Third Party Test Structure

OSS Functions	TEST TITLE (Test Numbers refer to MTP chapters)	TEST TYPE
Pre-ordering, Ordering & Provisioning	Test 12 - Evaluation of POP[3] Functionality and Performance Versus Parity Standards and Benchmarks	Transaction tests[4]
	Test 13 - Order Flow-Through Evaluation	
	Test 14 – Provisioning Evaluation	
	Test 15 – POP Volume Performance Test	
Maintenance & Repair	Test 16 – CEMR Trouble Functional Evaluation	
	Test 17 – MEDIACC (EBTA) Maintenance & Repair Trouble Functional and Performance Evaluation	
	Test 18 – Maintenance & Repair End to End Trouble Report Processing	
Billing	Test 19 – Billing Usage Functional Evaluation	
	Test 20 – Carrier Bill Functional Evaluation	
Operational tests are not related to a specific OSS function	Test 8 – Evaluation of Qwest's Wholesale Performance Measure Process	Operational tests[5]
	Test 9 – Evaluation of Qwest's Parity Standards Calculation Process	
	Test 10 – Evaluation of Qwest's Order and Transaction Creation Documentation	
	Test 22 – CLEC Network Provisioning Test	
	Test 23 – Change Management Test	
	Test 24 –CLEC Support Processes & Procedures Review	

[3] POP stands for pre-ordering, ordering and provisioning.

[4] Transaction tests rely on initiation of transactions, tracking of transaction progress, and analysis of transaction completion results to evaluate a system.

[5] Operational tests focus on the form, structure, and content of the business process under study to evaluate day-to-day operations and management practices.

II. REGULATORY REQUIREMENTS

To obtain approval to offer in-region,[6] inter-LATA, long distance services, Qwest must prove that it meets each of the requirements of section 271 of FTA96, including the requirement to provide nondiscriminatory access to OSS functions. The FCC uses the term OSS to refer to a variety of systems, databases, and personnel used by a Bell Operating Company (BOC) to provide services to customers.[7] As described by the FCC, nondiscriminatory access to OSS means a BOC must provide access that sufficiently supports each of the three modes of competitive entry into local exchange markets: 1) facilities-based competition, 2) competition using unbundled network elements, and 3) resale.[8]

There are two nondiscrimination standards for OSS. The first standard is for OSS functions analogous to functions provided by a BOC to itself, its customers, or its affiliates. This standard requires a BOC to offer requesting carriers access that is equivalent to the services it provides itself in terms of quality, accuracy, and timeliness. The FCC has indicated that "equivalent access" means a BOC must provide access that

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[6] The term "in-region" refers to those states in which Qwest is designated as the Incumbent Local Exchange Carrier (ILEC): the former 14-state region of U S WEST

[7] Application of Verizon Pennsylvania Inc., Verizon Long Distance, Verizon Enterprise Solutions, Verizon Global Networks Inc., and Verizon Select Services Inc. for Authorization To Provide In-Region, InterLATA Services in Pennsylvania, Memorandum Opinion and Order, CC Docket No. 01-138, FCC 01-269, 2001 FCC LEXIS 5008, Appendix C, ¶ 25 (rel. Sept. 19, 2001) ("Verizon Pennsylvania Order").

[8] Verizon Pennsylvania Order, Appendix C, ¶ 27.

permits competing carriers to perform OSS functions in substantially the same time and manner as the BOC.[5]

The second standard is for OSS functions with no retail analogue. This standard requires the BOC to offer access sufficient to allow an efficient competitor a meaningful opportunity to compete. In assessing whether this standard is met, the FCC examines whether specific performance standards exist for those functions and, if such performance standards exist, whether the BOC's performance is sufficient to allow an efficient competitor a meaningful opportunity to compete.

The FCC uses a two-step approach to determine if a BOC meets these nondiscrimination standards. First, the FCC evaluates whether the BOC has deployed the necessary systems, databases, and personnel to provide sufficient access to each of the necessary OSS functions and whether the BOC is adequately assisting competing carriers to understand how to implement and use all of the OSS functions available to them. This part of the FCC's inquiry includes determining whether the BOC has developed sufficient electronic and manual interfaces, and whether the BOC has provided internal business rules and other formatting information necessary to ensure that a carrier's requests are processed efficiently.

Second, the FCC determines if the deployed OSS functions are operationally ready as a practical matter. This part of the FCC's inquiry involves an examination of

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[5] BellSouth Corp., BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Louisiana, Memorandum Opinion and Order, CC-98-121, FCC98-271, 13 FCC Rcd 20599, ¶ 87 (rel. Oct. 13, 1998) ("BellSouth Louisiana II Order").

performance measures and other evidence of commercial readiness to determine whether a BOC's OSS is handling current demand and will be able to handle reasonably foreseeable future volumes. According to the FCC, the most probative evidence that OSS functions are operationally ready is actual commercial usage. Absent sufficient and reliable commercial usage data for assessing the operational readiness of a BOC's OSS, the FCC considers the results of carrier-to-carrier testing, independent third party testing, and internal testing.[10]

III. DEPLOYMENT OF NECESSARY SYSTEMS, DATABASES, AND PERSONNEL

Qwest has deployed systems, databases, and personnel to provide nondiscriminatory access to OSS functions, and Qwest helps CLECs implement and use all of the OSS functions available to them. Qwest has developed electronic interfaces to its OSS and has significantly enhanced its internal systems in order to facilitate CLEC access to OSS functions. Further, Qwest has deployed extensive processes, personnel, and service centers to support the Qwest-CLEC business relationship.

A. Types of Interfaces

When a CLEC provides service to an end-user customer through Qwest facilities, the CLEC and Qwest must perform operational activities together. These activities and

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[10] Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as amended, to Provide In-Region, InterLATA Services in Michigan, Memorandum Opinion and Order, CC Docket No. 97-137, FCC 97-298, 12 FCC Rcd 20543, ¶ 138 (rel. Aug. 19, 1997) ("Ameritech Michigan Order"). *See also*, Verizon Pennsylvania Order, Appendix C, ¶ 31.

related exchanges of information can be accomplished through manual processes (e.g., paper and phone calls), or they can be accomplished through some level of mechanization (e.g., electronic interfaces). They can also be accomplished through a combination of manual and mechanized processes.

Some CLECs prefer to use an electronic interface to send electronic Local Service Requests (LSRs)[11] to Qwest. When an end-user contacts a CLEC for service, the CLEC employs its defined negotiation and ordering processes. During this process the CLEC can access pre-ordering information using the Qwest electronic interface. Upon successful pre-order negotiations, the CLEC sends Qwest an electronic LSR. When Qwest receives the LSR, the LSR data is converted into Qwest's service order format. Qwest then processes the service order(s) and electronically sends confirmation messages to the CLEC.

Alternatively, some CLECs choose to follow a manual process. In the same situation described above, the CLEC submits a paper LSR to Qwest instead of exchanging information electronically. Qwest receives the LSR and creates the service order(s) using LSR data. Qwest then processes the service order(s) and returns the appropriate confirmation messages to the CLEC.

The FCC has stated that "there may be a number of smaller competing carriers that prefer to fax or phone in their orders because the number of customers they serve would not support the amount of investment required to build a form of electronic

[11] LSRs are transacted in Standard Ordering and Billing Forum (OBF) Local Service Ordering Guidelines (LSOG) format.

interfaces."[4] Qwest continues to support these manual processes for CLECs that prefer not to use Qwest's electronic interfaces.

1. Background Discussion of Electronic Interfaces

Qwest uses a variety of OSS – systems, databases, and personnel – to support the operations of its telecommunications business. The systems provide support to Qwest employees and CLEC employees who perform operational duties, such as selling products and services, issuing service orders, testing trunks, and maintaining switching systems. The systems are highly integrated and specialized, meaning that each system provides specific functions and support to overall business processes. Some systems allow for the ordering of products and services for customers, while others record and process trouble tickets. Some provide billing detail and others help maintain products and services. Because of the broad range of demands on Qwest's OSS, these systems are complex and sophisticated.

Electronic provide two types of access: real-time and batch. A real-time electronic interface processes data in an interactive manner, similar to a conversation. A transaction or query is sent from one computer system to another and a response is returned without waiting for a scheduled transfer time. For example, a CLEC representative submits a request for information (e.g., a Customer Service Record (CSR)). Qwest's system receives the request, makes a query to its databases, and returns the requested information to the CLEC representative immediately.

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[4] Ameritech Michigan Order, fn. 333.

A batch transfer interface typically processes and electronically transmits large amounts of information on a scheduled basis from one computer system to another. For example, although switches can record call detail messages as calls are made, Qwest's Customer Records and Information System (CRIS) processes call details on a scheduled daily basis.

2. Computer-To-Computer Electronic Interfaces

A computer-to-computer interface is an electronic interface through which a CLEC's OSS communicate directly with Qwest's OSS. With a computer-to-computer interface, CLEC representatives use their own OSS to create requests. These requests are automatically translated into standard formats by the CLEC gateway and transmitted to Qwest. Qwest's OSS then translate and process the requests. Responses are returned to the CLEC in standard format, and the CLEC's gateway translates these responses for display to the CLEC representative.

3. Human-To-Computer Electronic Interfaces

A human-to-computer electronic interface provides a CLEC with another way to interact directly with the Qwest OSS. The interface may be text-based, or it may be a graphical user interface (GUI) that employs text, color, graphics, and point-and-click capabilities. Typically, the human-to-computer interface is accessed with a personal computer, a web-browser, and a connection to the World Wide Web. The advantages of a human-to-computer interface include lower setup costs, faster setup time, and increased ease of use resulting from an integrated set of screens.

B. Qwest-Developed Interfaces

Qwest-developed interfaces provide electronic access to the five FCC defined OSS functions: pre-ordering, ordering, provisioning, maintenance and repair, and billing. This section briefly describes these interfaces and also includes a discussion of other data outputs provided by Qwest.

1. Interconnect Mediated Access – Electronic Data Interchange (IMA-EDI)

IMA-EDI is a real-time, computer-to-computer, electronic interface that allows CLECs to access pre-ordering, ordering, and provisioning OSS functions. It enables the electronic submission and processing of LSRs. IMA-EDI provides electronic access directly from CLEC systems to Qwest interfacing systems. As such, IMA-EDI enables CLECs to integrate their own OSS with the Qwest electronic interface. With this integration, a CLEC representative using the IMA-EDI interface interacts directly with CLEC developed software and screens instead of interacting with Qwest developed screens.

CLEC pre-ordering, ordering, and provisioning transactions submitted through the IMA-EDI interface have access to the same information and are processed by the same internal systems that process Qwest retail transactions.

2. Interconnect Mediated Access – Graphical User Interface (IMA-GUI)

IMA-GUI is a real-time, human-to-computer, electronic interface that provides CLECs access to pre-ordering, ordering, and provisioning OSS functions. IMA-GUI facilitates electronic submission and processing of LSRs. CLECs can use the IMA-GUI

interface with only a personal computer, a web browser, and a connection to the World Wide Web.

CLEC pre-ordering, ordering, and provisioning transactions submitted through the Web-GUI interface have access to the same information and are processed by the same internal systems that process Qwest retail transactions.

3. CLEC Telephone and Address GUI (CTAG)

CTAG is a human-to-computer application that enables CLECs to query and reserve vanity telephone numbers[1] and blocks of consecutive telephone numbers. CTAG accesses the same telephone number databases as used by Qwest retail operations.

4. EXchange Access Control Tracking (EXACT)

EXACT is a computer-to-computer interface that allows CLECs to request products that require an Access Service Request (ASR). CLECs can submit ASRs to EXACT either using their own OSS software or using TELecommunications Information Access for UNIX (TELIS-UNIX). TELIS-UNIX is a human-to-computer interface that allows CLECs to submit ASRs using a personal computer and a dial-up connection to Qwest.

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[1] Vanity telephone numbers contain a special pattern of numbers requested by an end-user customer.

5. Loss and Completion Reports

Loss and Completion reports result from the Qwest provisioning process. The Completion Report is sent to the CLEC when a service order resulting from a CLEC request is completed or canceled in the Service Order Processing (SOP) system.[14]

The Loss Report is sent to the CLEC when a service order, showing outward line activity, is completed (i.e., the CLEC "loses" the customer). The Loss Report can result from a complete or partial disconnect order or from a request to change from one provider to another. Both the Loss and Completion reports are available either through the World Wide Web or through Network Data Mover (NDM) with a dedicated circuit or modem.

6. Electronic Bonding – Trouble Administration (EB-TA)

EB-TA is a real-time, computer-to-computer interface that allows CLECs to submit trouble reports, make inquiries, and receive status notifications for trouble reports. CLEC trouble reports entered through EB-TA are processed by the same Qwest systems that process Qwest retail trouble reports.

7. Customer Electronic Maintenance and Repair (CEMR)

CEMR is a real-time, human-to-computer interface that allows CLECs to submit trouble reports, make inquiries, and receive status notifications for trouble reports. CLEC trouble reports entered through CEMR are processed by the same Qwest systems that process Qwest retail trouble reports.

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[14] When a service order appears on the completion report, it has been provisioned but has not necessarily posted to the billing system.

8. Daily Usage File (DUF)

The Daily Usage File (DUF) contains usage records and call detail information for usage generating products. For example, the DUF contains the origin, termination, and duration of end-user calls. This data is gathered from the Automatic Message Accounting (AMA) system and then sent to the Qwest Customer Records and Information System (CRIS). The usage information is then provided to CLECs in the DUF. CLECs may then apply their pricing formulas to the usage data to bill their end-user customers.

CLECs may request that the DUF be sent to them in one of the following transmission methods:

- Network Data Mover (NDM) – dedicated circuit or dial-in
- File Transfer Protocol (FTP) – dedicated circuit
- Web Access

9. CRIS Summary Bill

CRIS is the primary, end-user billing system that generates bills for Qwest's retail operations. CRIS also generates Summary Bills to CLECs for resold products and Unbundled Network Elements (UNEs) including UNE combinations. A Summary Bill is created for each product category in each state. For each CLEC, the Summary Bill provides a summary of charges and a breakdown of individual sub-accounts.

The following media options are available to CLECs for transmission and receipt of the CRIS Summary bill:

- Paper[15]
- EDI format via Network Data Mover (NDM) – dedicated circuit or dial-in
- EDI format via Value Added Network (VAN)
- EDI format via File Transfer Protocol (FTP) – dedicated circuit
- EDI format via Web
- ASCII format via Web – recently implemented
- ASCII format via CD ROM or diskette

10. Integrated Access Billing Systems (IABS)

IABS is the Qwest system that creates bills for network and trunk-side products. For CLECs, the primary products billed in IABS include Local Interconnection Service (LIS), Collocation (monthly recurring charges), Unbundled Dedicated Interoffice Transport (UDIT), and Resale Frame Relay. CLECs can choose to receive the entire IABS bill or only certain sections of the bill. CLECs may also choose from the following IABS formats:

- Paper
- On-line Billing Service (OBS)/Terminal Access Interexchange Inquiry (TAXI) Paper Image – Dial-in

[15] The CRIS Summary Bill is always provided in Paper format. CLECs can also choose from additional electronic delivery options.

- Floppy Diskette in Paper Image or Bill Data Tape (BDT) – Billing Output Specifications (BOS) Guidelines
- Network Data Mover (NDM) in BDT BOS format
- Magnetic Tape (Reel to Reel) in BDT BOS format

11. Billing and Receivable Tracking (BART)

BART is the billing system for products, materials, and services which are not billed by CRIS or IABS, such as Unbundled Dark Fiber and Collocation (non-recurring charges).

C. Service Centers and Support Teams

Qwest has deployed numerous Wholesale Customer Service Operations Centers that are also known as Interconnect Service Centers (ISCs). These centers provide CLECs with pre-ordering, ordering, provisioning, and billing support. The centers are geographically dispersed throughout the mid-western and western United States. However, the geographical dispersion is transparent to CLECs. For example, CLECs fax LSRs to a single fax number, and Qwest internally routes the requests to the appropriate centers for processing.

Qwest has also deployed the Account Maintenance Support Center (AMSC) and the Repair Call Handling Center (RCHC). These centers provide maintenance and repair support to CLECs by initiating trouble reports on behalf of the CLECs. They are available 24x7 to assist CLECs in providing status, escalations, and subsequent handling of trouble tickets.

D. CLEC Support Processes

Qwest assists CLECs in implementing and using OSS functions available to them by assigning key support personnel to each CLEC, offering training classes, supplying system documentation, and providing help desks and call centers.

This section outlines the process established for CLECs to interface with Qwest. The section also describes the OSS information provided to CLECs and discusses other CLEC support.

1. Wholesale Website

The primary source for CLECs to obtain Qwest specific information is Qwest's Wholesale website. Located at http://www.qwest.com/wholesale, this website provides in-depth information on Qwest's wholesale products and services, OSS, and CLEC training. Qwest's Wholesale website is an extensive source of information and resources ranging from technical documentation to interconnection contract templates to industry standard guidelines. The website was designed to guide CLECs through every step of the process of providing telecommunications services in Qwest's 14-state region.

2. Getting Started As a CLEC

CLECs intending to offer telecommunications services in Qwest's 14-state region begin the process of interacting with Qwest by obtaining the "Getting Started As A CLEC" guide from Qwest's Wholesale website. This guide explains the steps CLECs need to follow to resell Qwest's telecommunications services and/or to interconnect with Qwest. Specifically, the guide identifies essential steps for a CLEC to get established in

Qwest's region, provides information a CLEC needs to complete each step, and suggests the timeframe during which a CLEC should complete each step.

3. Interconnection Agreements

CLECs interested in interconnection may negotiate a new interconnection agreement with Qwest, opt into a pre-existing interconnection agreement, or use a template agreement "as is." Once an interconnection agreement is finalized, signed originals are retained by the CLEC and Qwest, and are filed with the appropriate State Commission. Subsequently, a CLEC can propose amendments to its existing interconnection agreement with Qwest by contacting the CLEC's Qwest Service Manager.

Qwest's wholesale website contains the current version of the template agreement located at http://www.qwest.com/wholesale/clecs/negotiations.html. State-specific requirements for interconnection agreements are also available on the website.

4. New Customer Questionnaire

The New Customer Questionnaire is a tool used by the CLEC and Qwest to further facilitate the CLEC set-up process. It can be found on Qwest's Wholesale website at http://www.qwest.com/wholesale/clecs/newcustquestionnaire.html. A CLEC representative and a Qwest representative jointly complete the New Customer Questionnaire. The questionnaire is used to document general CLEC information and specific CLEC preferences for conducting business with Qwest. For example, CLECs can use the questionnaire to specify the types of billing outputs they would like to receive.

5. Checklist for Interconnecting with Qwest

When completing both the interconnection agreement and the New Customer Questionnaire, the CLEC may further define its interconnection relationship with Qwest by using the Interconnecting with Qwest checklist and/or the Connecting with Qwest as a Reseller document. These checklists consist of a Systems Checklist, an OSS Connectivity Set-up Checklist, a Center Assignment Checklist, and a Summary Bill Checklist. Each sub-list details certain interconnection activities (e.g., requesting a digital certificate). The sub-lists also contain the results of performing each activity (e.g., having dedicated access to IMA-GUI), directions for completing each activity (e.g., calling a Service Manager), and the suggested timeframes for when each activity should be conducted.

6. Account Team

The Qwest Account Team is the CLEC's primary point of contact with Qwest. The Account Team assists the CLEC in conducting business with Qwest and consists of a Sales Team and a Service Team.

The Qwest Sales Team responds to CLEC questions and inquiries, provides CLECs with wholesale product information, and generates sales proposals to meet CLEC needs. The Sales Team also helps plan individual CLEC network interconnection, negotiates interconnection agreements, and processes special order requests.

The Qwest Service Team manages issues related to the acceptance, delay, and cancellation of orders. The Service Team also answers interconnection agreement

questions, facilitates escalations, and provides information on major outages. Other tasks performed by the Service Team include performing maintenance and repair root cause analysis, and providing project coordination, providing testing and performance reporting.

Qwest assigns a three-person support team to each CLEC. First, a Negotiation Administrator is assigned. Based on information gathered by the Negotiation Administrator, such as the types of services to be offered and the geographic location of the CLEC, an appropriate Sales Executive and Service Manager are assigned.

7. Implementation and Deployment Manager

To further assist in a CLEC's start-up process, Qwest assigns an Implementation and Deployment Manager (I&D Manager). The I&D Manager helps each CLEC establish billing outputs and access to Qwest electronic interfaces. Even after the interfaces are in place, the I&D Manager continues to support the CLEC. When the CLEC and Qwest confirm that all interfaces and outputs are working properly, the I&D Manager transitions CLEC support duties to the Qwest Help Desks.

8. Wholesale Systems Help Desk and ISC Help Desk

Qwest has deployed help desks to support the ongoing CLEC interconnection process. The IT Wholesale Systems Help Desk (WSHD) supports CLECs by providing the first point of contact for system related questions. These include, but are not limited to, connectivity to Qwest systems, system user ID questions and password resets, billing output receipt, and system outages. The ISC Help Desk works with CLECs to

address questions or problems that impact the electronic interface functions, LSR form population, and product functions, among others.

9. Wholesale Product Catalogs

Qwest provides Product Catalogs (PCATs) on the Qwest Wholesale website. PCAT documentation is a comprehensive collection of Qwest business processes, ordering forms, and product information. This information is cross-referenced and linked to a broader set of documentation, allowing CLECs to not only find information for a specific product, but also to find related Qwest procedures, interface documentation, frequently asked questions, and related product information. Qwest recently undertook an intensive effort to update the PCAT documentation. As a result, the PCATs are now an improved source of valuable information on ordering and using Qwest products.

10. CLEC Training

Qwest offers CLEC training on a wide range of OSS interfaces, products, and business processes. CLEC training information is posted on the Qwest Wholesale website at the following location: http://www.qwest.com/wholesale/training/.

Courses are available in instructor-led training, web-based training, and downloadable formats. Examples of instructor-led courses include Qwest 101, IMA "Hands On" training, and Unbundled Loop training. Examples of web-based training include Local Number Portability (LNP), Introduction to Service Requests and Billing for CLECs, and Collocation. Examples of downloadable training include CEMR high-level overview and IMA Facility-Based CLEC Directory Listings User Document.

Within the past year, Qwest has enhanced and significantly expanded the training available to CLECs. For example, in the first Quarter of 2001, Qwest added 34 instructor-led training classes and six new course offerings to the CLEC training curriculum. CLEC training offered by Qwest will continue to evolve and improve to better meet CLEC needs.

11. Change Management

Qwest and CLECs jointly participate in a forum, known as the Change Management Process (CMP), for managing changes related to Qwest's products, processes, and systems that support the five categories of OSS functions. The change management process is used to communicate changes to Qwest's OSS, such as changes requested by CLECs, changes requested by Qwest, changes in industry standards, changes in regulatory requirements, and emergency changes. To facilitate this communication, collaborative meetings that are open to CLECs are held at least two days per month and written documentation is distributed to CLECs regularly.

The FCC uses the following five criteria to evaluate a BOC's change management process:

- That information relating to the change management process is clearly organized and readily accessible to competing carriers,
- That competing carriers had substantial input in the design and continued operation of the change management process,
- That the change management plan defines a procedure for the timely resolution of change management disputes,

- That a stable testing environment that mirrors production is available, and
- That documentation the BOC makes available for the purpose of building an electronic gateway is effective.

The FCC also requires a 'pattern of compliance' with the change management process by a BOC.

Qwest's change management process is clearly organized and readily accessible to competing carriers through Qwest's Wholesale website. A complete description of the change management process can be found at http://www.qwest.com/wholesale/cmp/index.html.

CLECs have had input into the design of the change management process since 1999 when the process was initially launched. CLECs continue to have substantial input into design and operation of the change management process through a comprehensive CMP re-design effort that began on July 7, 2001 and is currently scheduled to continue until December 2001. This effort provides an opportunity for CLECs and Qwest to jointly re-design the fundamental structure, scope, and purpose of the change management process. When agreements are reached in this process, Qwest is implementing the changes as soon as practicable. All agreements will be reviewed in total at the end of the re-design effort. The augmented CMP, in its most recent state of development, can be found at the following URL: http://www.qwest.com/wholesale/cmp/redesign.html.

One key area already covered by the re-design effort is the timely resolution of change management disputes. Qwest and CLECs have developed an escalation

process and have also agreed to a dispute resolution process. Ultimately, if a change management dispute cannot be resolved through the change management escalation and dispute resolution processes, the issue may be presented to an appropriate state regulatory agency for resolution.

On August 1, 2001, Qwest offered CLECs a stand-alone test environment (SATE) for certifying their system interfaces with Qwest's IMA-EDI system and for testing new releases of IMA-EDI software. Qwest makes test data available to CLECs and provides support teams to assist in testing and certifying CLEC interface software. To the extent possible, the test environment mirrors the production environment and is physically separate from the production environment.

Although Qwest went through a period where documentation was occasionally at issue with the third party testers, Qwest initiated a concerted effort to address documentation concerns. As a result, the Qwest documentation for building an electronic gateway to IMA-EDI is complete, clear, and thorough. Such documentation can be found at http://www.qwest.com/wholesale/ima/edi/document.html.

The change management process has evolved during the past two years, and it will continue to evolve. Qwest has attempted to comply with the process during each phase of its evolution. Qwest will continue to demonstrate compliance with the change management process and will work with CLECs to manage changes in a way that provides Qwest's competitors with a meaningful opportunity to compete.

IV. OPERATIONAL READINESS

The second part of the FCC's two-step approach is to evaluate the operational readiness of the OSS functions deployed by the BOC. As discussed in the Regulatory Requirements section above, the primary evidence for operational readiness is actual commercial usage. Actual commercial usage is presented below and is also referenced in the affidavit of Michael G. Williams, Performance Measures. When sufficient and reliable data on commercial usage are not available, the FCC also considers the results of carrier-to-carrier testing, independent third party testing, and internal testing to assess the commercial readiness of a BOC's OSS.[16]

The FCC has relied on the results of independent third party testing to determine whether a BOC's OSS are operationally ready. My affidavit introduces the Regional Oversight Committee's (ROC) third party testing of Qwest's OSS as a principal source of evidence for evaluating the operational readiness of Qwest's OSS. The ROC Third Party Test is currently in process and, when completed, will provide the South Dakota Public Utilities Commission with evidence to determine that Qwest's OSS are operationally ready.

A. Pre-ordering

The FCC has determined that "[p]re-ordering and ordering includes the exchange of information between LECs about current or proposed customer products and

[16] Ameritech Michigan Order, ¶ 138; Verizon Pennsylvania Order, Appendix C, ¶ 31.

services or unbundled network elements or some combination thereof." [17] Pre-ordering and ordering functions are closely related. However, in this context, pre-ordering transactions generally refer to requests for information needed to submit a service request. Pre-ordering functions provided by Qwest include the following:

- **Validate Address.** CLECs use the Validate Address pre-ordering function to determine if a customer address provided to the CLEC matches an address in Qwest's OSS. CLECs also use this function to create a list of validated addresses that can be used to create other pre-ordering and ordering transactions accurately and efficiently.
- **Review CSR (Customer Service Record).** CLECs use the Review CSR pre-ordering function to review a customer's CSR. The retrieved CSR lists a customer's current product and services, along with listing and account information.
- **Schedule Appointment.** CLECs use the Schedule Appointment pre-ordering function to reserve a date and time with the Qwest Appointment Scheduler system to dispatch a technician for provisioning work. The appointment process is used when the Facility Availability response indicates that a dispatch is necessary, such as when a CLEC submits an LSR for a

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[17] Implementation of the Local Competition Provision in the Telecommunications Act of 1996; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, First Report and Order, CC Docket Nos. 96-98 and 95-185, FCC 96-325, 11 FCC Rcd 15499, ¶ 514 n. 1244, ¶ 523 n. 1273 (rel. Aug. 8, 1996) ("Local Competition Order").

new line installation or when other physical work is needed at the customer's premises.

- **Reserve Telephone Numbers.** The telephone number reservation process is divided into the following functions: telephone number query, selection, exchange, and return. CLECs use the Reserve Telephone Number pre-ordering function to reserve available telephone numbers from the Qwest OSS. These telephone numbers are then included in subsequent LSRs.
- **Service Availability.** CLECs use the Service Availability pre-ordering function to confirm that the products, services, and/or carriers requested by the customer can be supported in the Central Office serving that customer. Using information from the CLEC's contract and the state in which the services are requested, the Service Availability function identifies and displays the USOCs for the products that can be ordered.
- **Check Facility Availability.** CLECs use the Check Facility Availability pre-ordering function to determine whether facilities currently exist or whether new facilities and dispatch are required to fulfill an end-user's request.
- **Validate CFA (Connecting Facility Assignment).** CLECs use the Validate CFA pre-ordering function to query for a list of valid CFAs. This list contains all available and assigned CFAs from the CLEC's CFA list. CFA information is used by CLECs in the ordering of products that require an interconnection meet point (e.g., unbundled loops).

- **Raw Loop Data.** The Raw Loop Data pre-ordering query provides CLECs access to detailed loop make-up information by loop segment and sub-segment. The Raw Loop Data query returns to CLECs all data as required by the FCC's UNE Remand, so that a requesting CLEC can make its own judgment about whether a loop is suitable for the services it seeks to offer (i.e., various types of xDSL service).[18] Qwest also provides loop-qualification tools for specific types of xDSL services.
- **Meet Point Query.** The Meet Point Query provides information to CLECs about their available Meet Points in a Qwest wire center or in the outside plant structure. Meet Points support the provisioning of Qwest's Line Sharing, Line Splitting, and Subloop products in much the same way CFA supports the ordering and provisioning of unbundled loops.

Pre-ordering transactions are supported by the following OSS: IMA-EDI, IMA-GUI, CTAG, and Qwest service centers. Raw Loop Data can also be obtained for an entire wire center on a downloadable basis from the Qwest website.

Both IMA-EDI and IMA-GUI allow a CLEC to integrate pre-ordering and ordering transactions. For example, using either IMA-GUI or IMA-EDI, a CLEC representative can validate a customer's address and use the parsed address information returned to populate the validated address directly onto an LSR.

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[18] Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report And Order And Fourth Further Notice Of Proposed Rulemaking, CC Docket No. 96-98, FCC 99-238, 15 FCC Rcd 3696, ¶¶ 428 - 431 (rel. Nov. 5, 1999) ("UNE Remand Order").

As shown in Table 1 – Commercial Usage[19], 227 CLECs have access to the IMA-GUI interface, and 18 CLECs are certified to submit pre-ordering transactions through the IMA-EDI interface. Because Qwest interfaces are designed to support pre-ordering functions across the Qwest region, state-specific data is not available for every interface. However, 22 CLECs have South Dakota specific access to the IMA-GUI. In addition to commercial usage, the ROC Third Party Test includes extensive testing of the pre-ordering functions provided by Qwest.

B. Ordering

As stated above, the FCC has determined that "[p]re-ordering and ordering includes the exchange of information between LECs about current or proposed customer products and services or unbundled network elements or some combination thereof."[20]

The ordering function generally refers to the submission of an LSR and the conversion of that request into service order format. The ordering process is comprised of three major functions depicted in the following figure and explained below.

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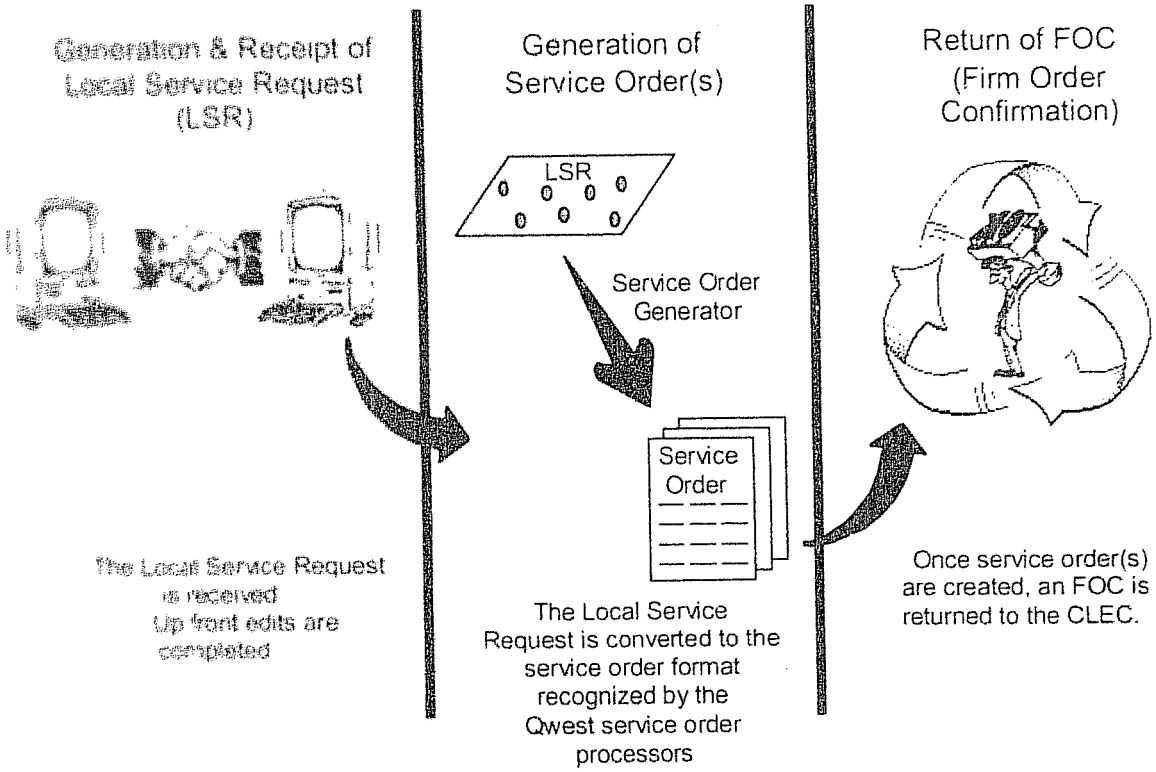
[19] *Supra*, page 2.

[20] Local Competition Order, ¶ 514 n. 1244, ¶ 523 n. 1273.

Figure 1 – Ordering Process Functions



- **Service Request Generation and Receipt.** A CLEC generates an LSR, and transmits it to Qwest either through an electronic interface or by facsimile.
- **Service Order Generation.** Qwest converts the LSR into one or more Qwest service orders. The automatic conversion of a service request to service order(s) is called flow-through.
- **Firm Order Confirmation (FOC) Return.** When the necessary service order(s) have been created for an LSR, an FOC is returned to the CLEC, indicating the requested service will then be provisioned.

Ordering transactions are supported by the following OSS: IMA-EDI, IMA-GUI, EXACT, and Qwest service centers. As shown in Table 1 – Commercial Usage[21], 227 CLECs have access to the IMA-GUI, and 18 CLECs are certified to submit ordering transactions to the IMA-EDI interface. Seventeen carriers have computer-to-computer access to the EXACT interface, and 233 carriers have access to EXACT via TELIS-UNIX. Because these interfaces are designed to support ordering functions across the Qwest region, state-specific data is not available for every interface. However, 22 CLECs have South Dakota specific access to the IMA-GUI. In addition to commercial usage, the ROC Third Party Test will thoroughly test the ordering functions provided by Qwest.

C. Provisioning

The FCC has determined that "[p]rovisioning involves the exchange of information between LECs where one executes a request for a set of products and services or unbundled network elements or combination thereof from the other with attendant acknowledgments and status reports."[22]

CLEC orders, like the Qwest retail orders, pass through the Service Order Processors (SOPs). After generating an FOC, a CLEC service order is provisioned to completion and generates a completion notice. Another example of a provisioning notice or status is the jeopardy notice, which is sent when a service order encounters a condition that jeopardizes the timely completion of the request.

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21 *Supra*, page 2.

22 Local Competition Order Order, ¶ 514 n. 1245, ¶ 523 n. 1273.

Other affidavits in this filing contain product specific information and provisioning process details for the wholesale products provided by Qwest (i.e. Unbundled Loops and Resale products). The provisioning information provided by Qwest includes the following:

- **Proactive Status Notification.** When an LSR status changes, CLECs are notified of the change via the electronic interface used to submit the LSR.
- **LSR Notices.** LSR notices, such as Jeopardy Notices and Completion Notices, are provided to CLECs for significant LSR events.
- **LSR Status Inquiry.** CLECs can inquire and obtain the current status of an LSR and its related service orders.
- **View DLR (Design Layout Record).** When submitting a request for a designed service, CLECs can request that a DLR be created. A DLR contains technical information describing a circuit's facilities and terminations. Once created by Qwest during the design of the circuit, the DLR can be viewed or downloaded by the CLEC.
- **Loss and Completion Reports.** Qwest provides information on completed service orders in daily batch files. Completion Reports are sent to the requesting CLEC, and Loss Reports are sent to the end-user's previous service provider.

As with ordering functions, provisioning functions are supported by the following OSS: IMA-EDI, IMA-GUI, EXACT, and Qwest service centers. The ROC Third Party Test also includes testing of the provisioning functions provided by Qwest.

D. Maintenance and Repair

The FCC defines maintenance and repair (M&R) as "the exchange of information between LECs where one initiates a request for repair of existing products and services or unbundled network elements or combinations thereof from the other with attendant acknowledgements and status reports."[23]

Trouble reports can be submitted to Qwest either through an M&R electronic interface or by calling either the RCHC or the AMSC. CLEC trouble reports follow the same repair processes and systems as Qwest retail trouble reports. The M&R functions provided by Qwest include the following:

- **Perform Pre-Validation Activities.** Qwest provides CLECs with the ability to gather certain information about portions of the network before submitting a repair ticket. For example, CLECs can run a Mechanized Loop Test (MLT) and they can review Trouble Report History.
- **Submit Trouble Report.** When a CLEC determines that maintenance and repair activities are required, the CLEC submits a repair ticket.
- **Inquiry on Trouble Report Status.** This function enables CLECs to obtain the current status of a repair ticket.
- **Update or Cancel Trouble Report.** This function enables CLECs to provide additional information to an open ticket or to cancel existing trouble reports.

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[23] Local Competition Order, ¶ 514 n. 1246, ¶ 523 n. 1273.

Maintenance and repair transactions are supported by the following OSS: EB-TA, CEMR, and Qwest Service Centers. As shown in Table 1 – Commercial Usage[24], currently 98 CLECs / carriers have access to CEMR. Five CLECs / carriers are certified to submit repair transactions to the EB-TA interface. Because these interfaces are designed to support repair functions across the Qwest region, state-specific data is not available. In addition to commercial usage, the ROC Third Party Test includes extensive testing of the maintenance and repair functions provided by Qwest.

E. Billing

The FCC defined billing as "the provision of appropriate usage data by one LEC to another to facilitate customer billing with attendant acknowledgments and status reports. It also involves exchange of information between LECs to process claims and adjustments."[25]

CLEC billing functions provided by Qwest can be divided into two general categories: billing for services provided to CLECs, and information provided to CLECs for billing their own end-user customers. The bills sent by Qwest to CLECs itemize the wholesale charges for the products and services provided to CLECs. Usage data enables CLECs to bill end-users for usage-based services provided.

Access to billing information is provided through the DUF, the CRIS summary bill, the IABS bill, and the BART bill. Billing support and information are also provided by Service Delivery Coordinators (SDCs), who are individually assigned to each CLEC.

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24 *Supra*, page 2.

25 Local Competition Order,¶ 514 n. 1247, ¶ 523 n. 1273.

As shown in Table 1 – Commercial Usage[26], currently in South Dakota, ten CLECs are setup to receive a DUF, five CLECs are receiving electronic Summary Bills, two CLECs are receiving IABS bills, and 13 CLECs are receiving loss and completion reports. Across the Qwest region, 139 CLECs are setup to receive a DUF, 92 CLECs are receiving electronic Summary Bills, 14 CLECs are receiving IABS bills, and 179 CLECs are receiving loss and completion reports. In addition to commercial usage, the ROC Third Party Test includes extensive testing of the billing functions provided by Qwest.

V. ROC THIRD PARTY TEST

The ROC Third Party Test (the ROC Test or the Test) is a primary and credible source of evidence for evaluating Qwest's OSS. The Test provides sufficient evidence to determine that Qwest has deployed the necessary systems, databases, and personnel. The test also provides sufficient evidence that Qwest is adequately assisting CLECs, and that Qwest's OSS are operationally ready.

A. Background and Structure

The ROC is conducting a comprehensive Third Party Test of Qwest's OSS.[27] The ROC Test is designed to evaluate Qwest's operational readiness, performance, and

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[26] *Supra*, page 2.

[27] Extensive information regarding the ROC Test is publicly available on the Internet at the following URL: http://www.nrri.ohio-state.edu/oss/oss.htm.

capability to provide access to pre-ordering, ordering, provisioning, maintenance and repair (M&R) and billing functions to CLECs within the 13 participating ROC states.[28]

For purposes of the Test, the ROC created a Steering Committee comprised of representatives from the 13 state commission staffs, and an Executive Committee comprised of five Commissioners from the state regulatory commissions in Qwest's region. The Technical Advisory Group (TAG) was also created to allow input and to gain concurrence on questions related to the Test. The ROC TAG is an open, collaborative forum with representatives from the 13 state commission staffs, ROC Test vendors, CLECs, industry associations, consumer groups, and Qwest. Any interested party with a desire to participate can become a member of the ROC TAG. TAG meetings for the Test are held frequently and regularly. Examples of the different meetings include the following: performance measure (PID) meetings, weekly project manager's meetings, weekly Observation and Exception (O&E) meetings, and regular test-bed meetings.

In September 1999, the ROC hired Maxim Telecommunications Consulting Group (MTG) to project manage the Test. With MTG's guidance, the TAG immediately began discussions to set the scope of the Test. Since then, the TAG has met weekly to discuss and decide every issue relating to the scope, implementation, and execution of the Test.

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[28] The Arizona Corporation Commission chose to conduct its own third party test of Qwest's OSS.

In late 1999 and early 2000, the TAG held several face-to-face workshops to discuss and to establish test principles, performance measures, and documents describing the Test: the Test Requirements Document (TRD) and the Master Test Plan (MTP). The TRD is attached in Exhibit LVN-OSS-3, and the MTP is provided in Exhibit LVN-OSS-2. The MTP is the comprehensive plan for evaluating Qwest's OSS. The TRD is a high level document that defines the major aspects of the Test. In addition to the TRD and MTP, the TAG agreed to a comprehensive set of measurement definitions, called the Qwest Service Performance Indicator Definitions (PID) document. The PID defines what is to be measured and how it will be measured.

The MTP, TRD, and PID represent a comprehensive collaboration among the CLECs, commission staff members, project managers, and Qwest. TAG members invested substantial resources and effort, including many hours in face-to-face meetings, in order to craft every word and to agree to the final documents. Through these efforts, TAG members resolved hundreds of issues. There were only a handful of issues that the TAG could not resolve. However, the ROC established an impasse resolution process for the few occasions when the TAG might not reach agreement. In these cases, the impasse resolution process escalates issues to the Steering Committee for decision.[29] The process also allows a TAG member to further escalate the Steering Committee's decision to the Executive Committee for a final determination. With few exceptions, the MTP, TRD, and PID represent the parties' compromise

[29] MTP Section 4.13.

positions, the exceptions represent the Steering Committee's and/or the Executive Committee's decision after due consideration of the parties' positions.

The TAG developed the TRD first. That document was finalized in March 2000. Having agreed to the broader principles governing the Test, the TAG then turned to the more detailed MTP, which was finalized in October 2000. The TAG's discussion of the PID occurred concurrently with discussions regarding the TRD and MTP. Rather than develop the ROC PID from scratch, the TAG built upon existing performance measures established in the separate collaborative test being conducted by the Arizona Corporation Commission. Because of the dynamic nature of Qwest's systems and product offerings, the PID has undergone many changes. Agreement was reached on the vast majority of the ROC PID in February 2000. The PID contains 48 measures and more than 150 sub-measures.

B. Test Principles and Design

The TRD sets forth the twenty guiding principles that govern the Test. Several of these principles warrant mention. First, Principle 4 provides that communications relating to the planning, conduct, and evaluation of the Test must include regular, open TAG meetings.[30] Faithful adherence to this principle has resulted in a great deal of participation and collaboration from Commission staff, CLEC representatives, and Qwest. Principle 20 provides that the ROC Test be conducted using the military-style test philosophy, which is a "test until you pass" approach.[31] This approach ensures that

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30 MTP Section 3, Test Principles and Scope, #4.

31 MTP Section 3, Test Principles and Scope, #20.

all significant exceptions will be tested, modified, and re-tested until the specific success criteria are met. Principle 3 states that the Test is "designed and scaled to represent the environment of the 13 states to ensure their ability to use the results in individual state proceedings."[32] Thus, the Test was designed to cover all of Qwest's OSS and wholesale products offered in all of the 13 participating states, including South Dakota.[33]

Qwest's ILEC operating territory -- and therefore much of its OSS legacy architecture -- is the result of merging three former Bell Operating Companies: Pacific Northwest Bell (covering Washington and Oregon), now referred to as Qwest's Western Region; Mountain Bell (covering Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming), now referred to as Qwest's Central Region; and Northwestern Bell (covering Iowa, Minnesota, Nebraska, North Dakota, and South Dakota), now referred to as Qwest's Eastern Region.

KPMG Consulting (KPMG) performed a Regional Differences Assessment to ensure that the ROC Test would provide a valid basis upon which each of the 13 participating ROC states could base their respective recommendations to the FCC regarding Qwest's section 271 applications. KPMG interviewed Qwest personnel and reviewed Qwest documentation to illuminate any differences in systems and processes throughout the Qwest territory. KPMG's Qwest Corporation Regional Differences Assessment, dated October 5, 2000, found that Qwest's order management,

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[32] MTP Section 3, Test Principles and Scope, #3.

[33] TRD Figure 6.4, [Qwest] OSSs Across States, at 49, listing OSSs used in South Dakota; Table 6.7, Wholesale Products by State, at 54, listing wholesale products offered in South Dakota.

provisioning, maintenance and repair, and CLEC relationship management and infrastructure are all materially consistent across the three Qwest regions. The Regional Differences Assessment is attached as Exhibit LVN-OSS-4.

KPMG found that Qwest's CRIS billing system differs by region, but noted that Qwest has standardized most of its processes across the regions. Therefore, KPMG concluded that most of the differences identified are not critical to the general billing process and KPMG did not find that there are material regional differences. Finally, KPMG determined that Qwest's performance in other respects was not necessarily consistent across regions and then analyzed the impact of these differences on the Test. KPMG concluded that, in spite of regional differences, a "Qwest-wide" test was still appropriate and that the MTP could be designed to accommodate those differences. The Test transaction volumes were set at levels and distributed in such a way as to produce statistically valid results, given the identified differences. The KPMG Assessment of Test Impacts is attached as Exhibit LVN-OSS-5

As described in the TRD and detailed in the MTP, the ROC Test includes transactional and operational evaluations, as well as a performance measure audit. Transactional evaluations apply to Qwest's pre-ordering, ordering, provisioning, repair, and billing systems, while operational evaluations apply to Qwest's CLEC support and change management processes and procedures. The ROC Test includes the following comprehensive evaluations:

- **Pre-ordering, ordering, and provisioning functionality test** -- This test validates the existence, functionality, and behavior of the Qwest interfaces

and processes for pre-ordering, ordering, and provisioning. In addition, this test compares actual functionality to Qwest's OSS documentation.

- **Order flow-though test** -- This evaluation verifies Qwest's ability to mechanically convert LSRs into service orders without manual intervention for all order types that are designated as flow-through by Qwest. The test also validates that the flow-through capabilities of Qwest's systems are consistent across the three regions.
- **Pre-ordering, ordering, and provisioning volume test** -- This test measures Qwest's capacity for processing pre-ordering, ordering, and provisioning transactions. It identifies potential choke points at projected future volumes of the graphical user interfaces, computer-to-computer interfaces, and other systems made available to CLECs.
- **M&R functionality and end-to-end trouble report processing tests** -- These tests validate the existence and behavior of Qwest's CEMR functional elements as documented. They also evaluate the equivalence of CEMR functionality to Qwest's retail front-end systems and evaluate Qwest's performance in making repairs under the conditions of various wholesale maintenance scenarios.
- **Billing usage and carrier bill functionality test** -- These tests evaluate the accuracy and completeness of all usage records types on Qwest's daily usage file ("DUF"), the timeliness of DUF delivery, and the timely delivery and accurate and timely appearance of charges on the appropriate carrier bills.

- **CLEC support processes and procedures review** -- These tests evaluate the systems, processes, and documentation provided by Qwest for establishing and maintaining CLEC business relationships. The test includes a determination of whether Qwest is adequately assisting CLECs to understand how to implement and use all of the OSS functions available to them.
- **Change management evaluation** -- This test determines the adequacy and completeness of Qwest's procedures for developing, documenting, conducting, and monitoring change management.
- **Performance measure audit** -- This test entails a rigorous, scientific validation that Qwest's processes, procedures, business rules, and calculation methods used in measuring wholesale operations are valid and that Qwest personnel adhere to those processes. Additionally, it provides a qualitative assessment of the process for developing measurements. The test also includes a data reconciliation effort to ensure the integrity and validity of test transactions and other test data.

To assist with the execution of the Test, the ROC engaged four vendors. As previously stated, the ROC retained MTG to project manage the Third Party Test. MTG's project management personnel play a pivotal role in managing the other vendors, in obtaining approval from the TAG and others on key issues, and in bringing the project to successful closure.

KPMG was hired as the independent third party test administrator. KPMG has extensive experience as a test administrator in other regions where BOCs have obtained approval to offer services pursuant to section 271 of FTA96.

Hewlett Packard Consulting (HPC) was hired to perform the pseudo-CLEC role in the ROC Test. The pseudo-CLEC's role is to emulate a CLEC by establishing a business relationship and conducting ongoing business with Qwest. To ensure the pseudo-CLEC obtains unbiased treatment and valid information about Qwest's OSS, Qwest's operations personnel are "blind"[34] to the identity of the pseudo-CLEC.[35]

The ROC engaged Liberty Consulting Group (Liberty) to perform an independent audit of Qwest's performance measures. Their audit reviewed processes, procedures, business rules, and calculation methods for determining and reporting performance measures based on the PID. Each PID measurement passed Liberty's audit.

C. Test Execution

The MTP provides that no testing or evaluation could proceed until the associated PID was validated through the performance measure audit (PMA). The audit began in July 2000. The first of the PID-dependent evaluations, the Pre-ordering,

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[34] As defined in MTP Section 4.10.1, blindness in the Test "extends beyond keeping the identity of the P-CLEC from Qwest. Blindness is the withholding from certain parties to the test of specific test information in order to protect vendor property, to maintain fairness in reporting test results, or to preserve the veracity of the test. This may result in CLECs and/or Qwest being excluded from meetings or other communications."

[35] MTP Section 3, Test Principles and Scope, #7.

Ordering and Provisioning Functionality Test, began in April 2001. As of mid-October 2001 the PMA was complete and other tests were more than 75% complete.

During the ROC Test, each of the test vendors identifies issues that require explanation, clarification, or modification by Qwest. These issues are raised and escalated through the Observation/Exception process. An Observation is a means of identifying either of the following: (1) a question regarding an area of a Qwest component being tested that the vendor cannot answer without additional guidance from Qwest, or (2) a potential deficiency in a Qwest component that could contribute to a negative finding. An Exception is a means of identifying a deficiency in a Qwest component that will result in a negative comment if left unresolved. Generally, an Observation represents a concern that has not risen to the level of an Exception.

When a vendor identifies an Observation or Exception, the ROC process provides that the vendor will issue a written description of the item, including the relevant background, the impact of the issue, and other relevant information. Qwest responds in writing to Observations and Exceptions. The process allows CLECs to submit written questions and comments regarding both the initial Observation or Exception issued by the vendor and Qwest's response. Many Observations and Exceptions involve supplemental responses and replies from the vendors and Qwest. CLECs can submit written questions and comments according to guidelines agreed to by the ROC TAG. A weekly telephone conference call, in which the CLECs are full and active participants, is held to discuss Observations and Exceptions. Through this process, the vendors have issued more than 100 Observations and 150 Exceptions.

CLECs have actively participated in the review and comment on each Observation and Exception.

In fact, CLECs have had significant and broad input into every aspect and at every stage of test planning, design, and execution in the ROC Test. Coupled with the military-style testing philosophy, this collaboration has produced a comprehensive and rigorous OSS test. The results of this Test will provide the South Dakota Commission a valid basis upon which to determine that Qwest provides nondiscriminatory access to its OSS.

D. Status of the ROC Test

The third party test is progressing as planned. MTG, the test manager, maintains a zero-defect project schedule that shows each task completed and each task yet to be completed. When areas of concern develop, Qwest works toward resolution either with an explanation, an alternative, or a fix to address the concern. Certain functional areas, such as maintenance and repair, billing and the stand-alone test environment, have particularly benefited from Qwest's devotion of significant resources to address the needs identified by the third party test. The Test Final Report is currently due on January 28, 2001.

VI. CONCLUSION

As evidenced by the level of commercial usage and by the ROC Third Party Test, Qwest meets the requirements established in section 271 of the FTA96. In short, Qwest provides nondiscriminatory access to its OSS in a manner that supports each of the three modes of competitive entry into local exchange markets -- facilities-based

competition, competition using unbundled network elements, and competition through resale. Qwest has deployed the necessary systems, databases, and personnel and is adequately assisting CLECs to implement and use the functions available to them. The OSS functions deployed by Qwest are operationally ready, as a practical matter.

BEFORE THE
PUBLIC UTILITIES COMMISION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE INVESTIGATION	)	DOCKET TC 01-
INTO QWEST CORPORATION'S	)	
COMPLIANCE WITH SECTION 271 (C) OF THE	)	
TELECOMMUNICATIONS ACT OF 1996	)	

QWEST CORPORATION'S

EXHIBITS to the AFFIDAVIT

OF

LYNN M. V. NOTARIANNI

CHECKLIST ITEM 2 – OPERATIONS SUPPORT SYSTEMS (OSS)

OCTOBER 24, 2001

INDEX TO EXHIBITS

DESCRIPTION	EXHIBIT
[illegible]	LVN-OSS-1
[illegible]	LVN-OSS-2
[illegible]	LVN-OSS-3
[illegible]	LVN-OSS-4
[illegible]	LVN-OSS-5

QUALIFICATIONS OF LYNN M. V. NOTARIANNI

My name is Lynn Notarianni. I am employed by Qwest Information Technologies, Inc. ("Qwest") as a Director in the Information Technologies (IT) Wholesale Systems organization. My business address is 1999 Broadway, 10th Floor, Denver, Colorado.

My 17-year telecommunications career began in 1984 when I was hired U S WEST Communications, Inc.[1] During my career, I have had involvement in several U S WEST and Qwest organizations, including Information Technologies, Network, Mass Markets and Advanced Technologies. Within each organization, I held a management position and often had major responsibility for managing persons involved in the development and/or implementation of Operations Support Systems (OSS).

Currently, I am leading Qwest's effort to support Operations Support Systems (OSS) tests being conducted by the Regional Oversight Committee (ROC) and the Arizona Corporation Commission. Additionally, I manage Qwest's response to OSS regulatory issues related to the Federal Telecommunications Act of 1996, FCC orders, state commission decisions, and other legal and regulatory matters. I am responsible for testifying before federal and state regulatory agencies in arbitration cases, rulemakings, and complaint proceedings concerning Qwest's conformance with state and federal telecommunications laws and regulations.

My academic credentials include a Bachelor of Science degree in Business Administration (BSBA) from Creighton University and completion of all coursework with a thesis in progress toward a Master of Science degree in Telecommunications at the University of Colorado.

[1] Qwest purchased U S WEST Communications, Inc. in the summer of 2000.

Being first duly sworn upon oath, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information and belief.

Executed on the 15th day of October, 2001.

[redacted]

STATE OF COLORADO

COUNTY OF DENVER

Subscribed and sworn to before me this 15th day of October, 2001.

[redacted]

PAMELA L. LANING
Notary Public
State of Colorado
My Commission Expires
06-29-2002

Master Test Plan

The Regional Oversight Committee (ROC) 3rd Party Test

Qwest
OSS Evaluation Project
Master Test Plan

Revised Release

Version 4.0

Submitted by:

KPMG Consulting

October 3, 2001

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1. Executive Overview

Execution of a Master Test Plan (MTP) based on the Test Requirements Document (TRD) will evaluate the operational readiness, performance and capability of Qwest to provide pre-ordering, ordering, provisioning, maintenance and repair (M&R) and billing Operation Support Systems (OSS) documentation, interfaces and functionality to competitive local exchange carriers (CLECs) within the 13 participating Regional Oversight Committee (ROC) states. KPMG Consulting, in its role as Test Administrator, used the TRD and its OSS testing experience to develop this formal MTP to review and evaluate Qwest's systems and processes.

The TRD was developed in a collaborative process initiated by the ROC. This process included state commission staff, Qwest, CLECs and other industry participants referred to as the ROC Technical Advisory Group (TAG).

KPMG Consulting further refined the scenarios, and will develop the test transaction mix and volume estimates with input from the TAG. KPMG Consulting developed the MTP to be reviewed by the TAG and approved by the ROC. The overall test is designed to be multi-faceted and provide end-to-end coverage of the systems, interfaces, and processes that will impact the ability of CLECs to enter the market in the Qwest region and provide local service to regional consumers at estimated production volumes.

In constructing the TRD and this MTP many factors were considered. They include the systems and processes to be tested, the measurement points and respective evaluation criteria, and the necessary conditions required to stage a successful, efficient, and objective test.

As Test Administrator, KPMG Consulting will ensure that all tests reflected in this plan are executed. Test results and evaluations will be provided to the ROC and TAG as the test progresses. At least one Interim Report, at approximately the mid-point of the test, possibly other interim reports, and a Final Report at test completion will be produced.

Through the ROC's extensive collaborative testing effort, the TRD and MTP, the following benefits should be realized:

- ROC Commission staff, Qwest and CLEC's may eliminate duplicative work across states by determining a complementary set of OSS functionalities, performance measurements and methods to be used in the test.
- Increased administrative efficiency may result in time and cost savings for all participants.

2. Introduction

2.1 Background, Purpose and Objectives

The Telecommunications Act of 1996 (the Act) and related FCC orders require Qwest to provide just, reasonable and nondiscriminatory access to its operations support systems (OSS), to provide the documentation and support necessary for competitive local exchange carriers (CLECs) to access and use these systems, and to demonstrate that Qwest's systems are operationally ready

Compliance with these requirements should allow competitors to obtain pre-ordering information, submit service orders for resold services, UNE Platform and unbundled network elements (UNEs), submit trouble reports and obtain billing information pursuant to interconnection agreements and regulatory requirements at a level deemed to be nondiscriminatory when compared with Qwest's retail operations.

Qwest offers various systems, including both application-to-application interfaces and terminal-type/Web-based systems, which CLECs can use to access Qwest's OSS in order to perform these tasks. The ROC has retained KPMG Consulting to assist it with assessing whether Qwest is meeting these requirements.

The overall objective of this document is to provide a description of a comprehensive plan to test Qwest's OSSs, interfaces and processes. This MTP shall be the basis by which individual tests are developed and executed. The test results should help the ROC to determine whether Qwest's provision of access to OSS functionality enables and supports CLEC entry in the local market. To meet these objectives, KPMG Consulting developed a test plan that is intended to provide adequate breadth and depth to evaluate the entire CLEC/ILEC relationship under real world conditions.

2.2 Principles and Scope

Twenty principles dealing with the 3rd Party OSS Test and its scope were agreed upon in the ROC's Testing and Scoping Principles Workshop held in St. Paul, MN on December 2nd and 3rd, 1999. These principles (which can be found in section 3 of this document) are the guiding principles used to plan, conduct, evaluate and report on the ROC 3rd Party Test of Qwest's OSS. These principles are incorporated into the MTP and the test participants shall be guided by these principles in the development, execution, analysis and report of the test.

Following this philosophy and guided by these principles, this document describes the plan to evaluate Qwest's OSSs, interfaces and processes that enable CLECs to compete with Qwest for customers' local telephone service. In determining the breadth and depth of the test, all stages of the CLEC-ILEC relationship were considered. These include the following:

- Establishing the relationship
- Performing daily operations
- Maintaining the relationship

Further, each of the standard service delivery methods that Qwest makes available to CLECs in the ROC states – resale, interconnection, UNE Platform (UNE-P), and unbundled network elements (UNE) – are included in the scope of the test.

This plan is divided into five key dimensions to organize and facilitate testing: Test Domains, Test Types, Test Processes, Test Scenarios and Evaluation Techniques. Within each of the test types, the methods and processes to be applied to measure Qwest's performance are described along with the specific points in the systems and processes where Qwest performance will be evaluated. The results of the test will be compared against service quality measures identified by the ROC for the purpose of this test, and other measures and criteria as deemed appropriate by the ROC.

This plan also describes the development and application of scenarios used in the test types to evaluate Qwest's OSS and related support services. KPMG Consulting developed these scenarios to test the functionality of Qwest's pre-ordering, ordering and provisioning (POP); maintenance and repair (M&R); and billing systems. The scenarios were designed to depict real world situations that CLEC's currently face or may face in the near future. The scenarios will be used to develop test cases that provide a detailed description of the transactions and introduce additional variables such as errors and supplements to further simulate real world transactions.

Military Style Test

This plan will adopt the military-style test philosophy, which suggests a "test until you pass" approach. This is to be in the best interest of all parties seeking an open, competitive market for all local services in the ROC states. An Observation and Exception process will be utilized to identify and manage resolution of potentially negative test findings. Details of these processes are discussed under separate cover.

2.3 Test Administration

Section 4 defines the organization, processes and communication framework that will govern the test activities outlined in this MTP. It describes the ROC approach to the testing effort, organizational entities, and their respective roles and responsibilities. It also outlines the communications processes for written communications, documents and meetings, both open and closed. Scheduling and tracking requirements are specified along with the issue resolution process.

2.4 Test Framework and Test Elements

In order to develop a comprehensive test of Qwest's OSS, interfaces, and processes, the test framework is defined in terms of a set of elements including the following:

- Qwest's OSS System Architecture
- Test Domains
- Parity standards, Benchmarks, Qualitative Evaluations and Comparisons
- Test Data
- Entrance and Exit Criteria
- Test Process Types and Individual Tests
- Inputs, Activities and Outputs for Specific Tests

2.5 OSS System Architecture

Section 6 provides an overview of Qwest's OSS System Architecture throughout the 13-state area covered by this test. By its nature, the ROC test is somewhat unique because it is the first independent 3rd party testing effort initiated by multiple jurisdictions that will oversee the effort from its formative stage through completion. The broad geographical reach of the test expands

the OSS architecture breadth as well. Qwest's current operating territory, and therefore much of its OSS legacy architecture, is the result of the merging of three predecessor Bell Operating Companies into the Qwest Regional Bell Operating Company (RBOC), including:

- Pacific Northwest Bell (PNB) covering Washington and Oregon now referred to as the Western Region
- Mountain Bell (MB) covering Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming, now the Central Region
- Northwestern Bell (NWB) covering Iowa, Minnesota, Nebraska, North Dakota, and South Dakota, now the Eastern Region

2.6 Performance Measures

The performance measures to be used in the 3rd party OSS test have been collaboratively developed by the TAG. Issue resolution activities resulting from the test may result in changes to the performance measures which will be agreed upon by the TAG.

2.6.1 Performance Measurement Components

OSS performance measurement plans designed to evaluate Incumbent Local Exchange Carrier (ILEC) performance include definitions of performance measures, success criteria, other standards, and reporting requirements. The performance measures quantify the ILEC's performance of wholesale and retail processes. They are defined in terms of purpose, rules used in collecting raw data required, reporting dimensions, calculation formula, etc. Success criteria are defined as either a benchmark or a retail parity standard. A benchmark is established to identify the point at which the ILEC's performance for a wholesale process is deemed adequate for those wholesale processes for which there is no appropriate retail analog. For those wholesale processes for which there is an analogous retail process, parity standards will be used. Parity standards indicate that the wholesale performance of a process should be compared to the ILEC's performance of retail processes. Parity standards require that the ILEC's retail or internal performance is compared to analogous wholesale performance measures to determine if there is nondiscriminatory treatment of wholesale services as required by the Act and orders of state commissions and the FCC.

2.6.2 Performance Measurements in the Context of the ROC's 3rd Party Test

Performance measurements will be a key element of the ROC test of Qwest's OSS. Since the ROC test is the first effort involving multiple state commissions and jurisdictions, it presents some unique challenges. Through a collaborative process, the ROC TAG has developed a comprehensive set of measurement definitions, called the "Qwest Service Performance Indicator Definitions (PID) ROC 271 Working PID" (Appendix B). This collaboration has included an unprecedented breadth and depth of participation from commission staff, CLEC, and Qwest representatives, with the purpose of achieving a beneficial and efficient degree of consistency across Qwest's local exchange operating region. When finalized, this PID will be the document that defines what is measured and how it is to be measured, for purposes of this OSS test.

2.6.3 ROC's Planned Approach to Performance Measurements in its Qwest OSS Test

To support a comprehensive test of Qwest's OSS in a timely manner that includes a pre-determined performance measurement system, the ROC Steering Committee has developed the following consensus:

- The performance measurements, parity comparisons, benchmarks and statistical evaluation methods should be established in advance for use during the ROC test.
- This set of performance measurements and associated parity comparisons and benchmarks has been established for the 3rd party test vendor(s) to test and evaluate the outcomes as required to meet the needs of the ROC states for testing purposes.
- The ROC states will use the test results and evaluation as part of the record in their individual 271 proceedings.
- The ROC states are free to modify the performance measurements (either the set of measurements or the parities/benchmarks) on a going forward basis (irrespective of the 3rd party test) as required to meet their specific needs.
- The ROC has requested and Qwest has agreed that all performance measures agreed upon for the ROC test will be collected not only during the period of the OSS test, but post testing for individual state use until a 271 application for the individual state is submitted to the FCC, or unless otherwise noted in the PID.
- The measurements taken after completion of the ROC test will not be used to re-open military-style testing but may be used to support future filings. This does not preclude looking at such data to help review and/or close exceptions identified during the test.

2.7 Entrance and Exit Criteria

Entrance criteria are those requirements that must be met before individual tests can commence. Exit criteria are those requirements that must be met before the test can be concluded. Global exit criteria apply to every individual test except where noted otherwise. Individual tests each have individual entrance and exit criteria. Entrance and exit criteria link the test plan with Performance Measures. Entrance criteria generally require that Performance Measures are completely defined, available and operational, and audited by Liberty Consulting.

2.8 Test Processes and Test Types

The major test types are Transaction Driven Systems Analysis and Operational Analysis. The first introduces various types of transaction-oriented test data from various sources into Qwest OSS processes and observes the results. Operational analysis assesses aspects of the trading partnership business process that are not transaction driven.

3. Test Principles and Scope

The twenty principles agreed to by the TAG and used as the guide for the development of the MTP are:

1. This test is intended to evaluate whether Qwest provides nondiscriminatory access to its OSS for associated resale, unbundled network elements (UNEs), and interconnection services in order to demonstrate the operational readiness of these OSSs to support sustained commercial operation. As part of nondiscriminatory access, the test will evaluate whether Qwest has deployed the necessary systems and personnel to provide sufficient access to each of the required OSS functions including pre-order, order, provisioning, maintenance and repair, and billing. The test will include an evaluation of Qwest's adherence to telecom industry guidelines for OSS interfaces. It will also evaluate whether Qwest is adequately assisting competitive local exchange carriers (CLECs) to understand how to implement and use all of the OSS functions available to them.
2. An independent test administrator (KPMG Consulting), an independent pseudo-CLEC (Hewlett-Packard [HP]) and a performance measure auditor (Liberty Consulting), performing three separate and distinct roles, under the oversight of the ROC, will conduct this test.
3. The scope of this test will be designed and scaled to represent the environment of the 14 states to ensure their ability to use the results in individual state proceedings. Once regional and state differences in Qwest OSSs are fully understood, a determination will be made on what testing will most appropriately address the impact of the differences. The MTP will be modified as appropriate to address these regional and state differences.
4. The goal of all parties for the ROC test of Qwest's OSS is an open, above-board test environment where all information relating to the test is available to all parties, except information that is commercially sensitive, proprietary, or information that will impact the blindness of the test. To that end, KPMG Consulting will establish procedures concerning communications affecting the planning, execution and evaluation of the test. These procedures will include regular, open meetings between KPMG Consulting, HP, the CLEC community and ROC representatives in a manner similar to the meetings held in the Bell Atlantic-New York test. Issue identification, research, resolution decisions, and other relevant items critical to the transparency of the test will be discussed and documented.
5. The ROC test will use guidelines established by the FCC and DOJ, and will draw on input from the ROC Steering Committee (ROCSC), individual state commissions, CLECs, Qwest, and other TAG members. The CLECs and Qwest should play an active role in developing performance measurements and success criteria. The ROC will ensure that the performance measurements and success criteria are reasonably complete prior to the start of the test.
6. The OSS access that Qwest provides for itself and to CLECs will be evaluated using both qualitative and quantitative methods.
7. This MTP has been developed with input from all ROC participants and will be approved by the ROC prior to any testing activity. The MTP has been designed to maintain adequate blindness with respect to Qwest. The performance measures will be developed in a document separate from this MTP and in a timeframe consistent with principle 5 above.

8. All documentation and assistance made available to HP by Qwest for use by HP in building and/or setting up the required OSS interfaces will be made available to all participants to verify that HP is not being given special treatment.
9. This test will include a thorough and well-documented independent assessment of data collection and calculation processes for performance measurement data – both qualitative verification and against business rules.
10. The test will include an independent review of the Change Management processes and procedures used by Qwest to communicate with CLECs regarding OSS system performance and system updates. This review will include an evaluation of how CLEC suggestions and requests for system corrections, enhancements or new functionalities are handled. The test will evaluate at least one significant software release implementation. Any testing fixes applicable to production will be introduced into the Qwest CLEC Change Management process, unless otherwise determined by the ROC.
11. This test will include normal, high and stress volume testing using a replicate mix of expected flow through transactions that includes normal transactions and transactions with errors, changes and supplements. Scalability of manual processes and supporting hardware and software is to be evaluated in lieu of volume testing for manual processes.
12. The test will include an evaluation of the adequacy of documentation and assistance provided by Qwest to CLECs for establishing, maintaining and using OSS interfaces. HP will be used to evaluate the ability of building, maintaining and using an EDI interface and setting up, maintaining and using a GUI interface. If a CLEC has built an Electronic Bonding Trouble Administration (EB-TA) interface for M&R and is willing to make it available[1] to HP, that interface can be used to evaluate Maintenance and Repair interface maintenance and use. If no CLEC has built an interface or none is willing to make it available, KPMG Consulting should use a HP-built EB-TA interface to test business rules and ability to process transactions. Regardless of whether a new or existing EB-TA interface will be used, the documentation and assistance provided by Qwest for EB-TA will be evaluated.
13. The test can be conducted using transactions (e.g. pre-orders, orders and trouble reports) from a combination of existing CLECs and HP. Similar test cases will be run by both HP and a production CLEC that has completed interface verification with Qwest in order to validate the process under the oversight of KPMG Consulting.
14. The test process will include a formal, predictable and public mechanism to communicate with CLECs and Qwest on issues related to the test. This mechanism will be managed by KPMG Consulting and overseen by the ROC.
15. The test scope will include functional testing of pre-ordering, ordering, provisioning, maintenance and repair, and billing. The functionalities will include a replicate mix of manual requests, electronic transactions, errors, changes, and supplements in both flow through and non-flow through provisioning, as appropriate, with CLECs consulted on the

1. MCI WorldCom has built an EB-TA interface for M&R and is willing to make it available to Hewlett-Packard and KPMG Consulting. It is expected that MCI WorldCom's interface will be used for the test.

determination of the mix. Functional testing will be conducted on an end-to-end basis that results in orders actually being provisioned, as applicable, as determined by the ROC.

16. The 3rd party test will test significant volumes of transactions for xDSL-capable loops and include a qualitative evaluation of pre-ordering functions including loop qualification.
17. Where possible, Qwest wholesale performance measurements will be compared with analogous performance measurements of Qwest's retail performance. Where this retail parity comparison is not possible, Qwest wholesale services will be compared to a fixed benchmark.
18. Testing will also include both qualitative and quantitative evaluation of the usability, capability and accessibility of Qwest wholesale OSS interfaces compared to Qwest retail OSS interfaces.
19. As testing progresses, the need to test or evaluate new products/services or delivery methods will be determined on an individual case basis as they are identified. Based on the associated facts, the new products/services or delivery methods will either be incorporated in the test or handled separately.
20. The ROC test will use military-style testing. This approach ensures that all significant exceptions will be tested until they are corrected and the relevant success criteria are met.

4. Test Administration

The audience for this document falls into two main categories:

1. Readers using this document during the testing process
2. Interested parties who have some stake in the result of the Qwest OSS evaluation and wish to have insight into the evaluation effort.

4.1 Organization and Responsibilities

The primary user of this document is KPMG Consulting in its role as test administrator. Others are the ROC state commissions, Qwest, the CLECs, HP, Liberty Consulting, Mason Telecom Consulting Group (MTG), the Department of Justice (DOJ) and the Federal Communications Commission (FCC).

4.1.1 Regional Oversight Committee

The Regional Oversight Committee (ROC) membership is comprised of the 14 state public utility commissions serving the states in Qwest's operating territory. These include Arizona, Colorado, Iowa, Idaho, Minnesota, Montana, North Dakota, Nebraska, New Mexico, Oregon, South Dakota, Utah, Washington and Wyoming.

State commission participation in the collaborative test will be provided through four organizational entities established for this purpose: the Executive Committee, Steering Committee, Administrative Coordinator and Project Manager, MTG. The ROC is responsible for:

- Providing overall project management of the end-to-end test planning, execution and evaluation effort
- Overseeing the overall test development and testing process
- Determining the overall testing scope and timeline
- Managing and resolving issues escalated from the testing process as required
- Reviewing any interim reports prepared by KPMG Consulting, HP or Liberty Consulting
- Reviewing and approving the Final Report(s) prepared by KPMG Consulting and HP
- Reviewing and approving the final audit report prepared by Liberty Consulting
- Communicating progress, status and issues to all interested parties.

4.2.3 Qwest

Qwest will use the MTP in conjunction with other documents to understand the testing approach in order to prepare its test bed. The MTP describes the requirements Qwest must satisfy to prepare for and execute the tests.

4.2.4 TAG

The ROC Technical Advisory Group (TAG) consists of state commission staff, competitive local exchange carrier (CLEC) representatives, Qwest and other industry members. The Technical Advisory Group will conduct regular meetings, generally weekly, either in-person or via teleconference call to inform all members of testing progress, review current status and identify and resolve issues. Additional special-purpose TAG meetings will also be held as needed to support the test planning, execution and evaluation process. The TAG will initially be chaired by the ROC Project Manager, MTG; however, that may change during the course of the testing effort as deemed appropriate by the ROC Steering Committee and TAG membership. TAG member responsibilities include:

- Providing inputs on order volume, interface usage, product information and test process
- Assisting with scenario definition
- Assisting with issue identification, resolution and, when necessary, escalation to the ROC
- Advising ROC on technical issues

4.2.5 CLECs

The CLECs will use this document to understand the breadth and depth of the test. In addition, this document describes the elements required of the CLECs to prepare for their role in the tests.

4.2.6 Test Administrator – KPMG Consulting

KPMG Consulting has overall responsibility for the management of the testing process described in this document. This document will be used by KPMG Consulting to guide the various parties involved in the testing effort.

4.1.6 Pseudo-CLEC – HP

HP will establish the capabilities, install facilities and connectivity for the EDI, CLEC UNE-IA and manual OSS interfaces to Qwest as required to process the volume and mix of transactions for tests specified in the MTP and test specifications prepared by KPMG Consulting. The test activities of HP are primarily delineated in HP Consulting's Statement of Work for the Regional Oversight Committee and Qwest Corporation (see **http://www.nrri.ohio-state.edu/ros/newbies/hp_sow.pdf**). Various other documents produced in connection with the ROC's OSS Testing effort support definition of the test activities of HP, in particular the ROC's Request for Proposal, TRD and clarification issued to vendor finalists dated 4-24-00. The descriptions of the testing and evaluation activities of HP as contained in these specified documents are hereby incorporated by reference. In general, the goal is to replicate as realistically as practical the responsibilities, behavior and experiences of a true CLEC attempting to do wholesale business with Qwest in the portion of its operating territory represented by the thirteen participating states of the ROC. HP will attempt to re-create the CLEC experience to the fullest extent feasible as described in the TRD.

4.1.7 Performance Measure Auditor (PMA) – Liberty Consulting

Liberty Consulting will use this document to develop and perform an audit to ensure that all aspects of Qwest's wholesale performance measures and retail parity standards are sound and in compliance with the collaboratively developed ROC PID.

4.1.8 Federal Communications Commission (FCC)

The Federal Communications Commission may observe the process of developing, conducting and evaluating the tests.

4.1.9 Department of Justice (DOJ)

The Department of Justice may observe the process of developing, conducting and evaluating the tests.

4.2 Assumptions

This section describes the assumptions made in the development of this Test Plan.

- Qwest, KPMG Consulting, HP and Liberty Consulting will provide suitable resources in sufficient numbers to assist with the evaluation effort.
- Qwest will provide access to appropriate documentation.
- Qwest will provide the necessary resources, facilities and support to set up the work environment and the test bed required to execute the tests (i.e., office space, equipment, IDs, security access, customer accounts and addresses, and appropriate company codes).
- Qwest will process test transactions as part of normal processing including the provisioning of some scenarios/test cases.
- Qwest will provide the test bed facilities required to establish the working lines needed for portions of this test.

- One or more CLECs will volunteer to participate and provide facilities required to execute those scenarios necessitating CLEC participation.
- Qwest and the CLECs will allow KPMG Consulting to observe retail and wholesale processes in use during the evaluation effort.
- Qwest and the CLECs will give KPMG Consulting access to historical data and current operational reports, as needed, to complete the evaluation.
- Qwest will allow KPMG Consulting to inspect algorithms that may have a bearing on parity areas, such as the algorithm used to manage trouble reports.
- KPMG Consulting, HP, Liberty Consulting and any subcontractors will use documentation generally available to the CLECs and support mechanisms to develop its solutions.
- Regulatory, legal and confidentiality issues or concerns can be resolved without significant impact to either the intent of the tests, the ability to execute the tests, or the schedules for their execution.
- The test will be designed to not impair or impede service to customers during its planning and execution stages.

4.3 Limitations

The purpose of this section is to describe some limitations of the testing effort. These limitations are described in terms of what is to be tested and what conclusions can be drawn from the tests.

- In some cases, certain order types, troubles and processes may not be practically tested by submitting transactions during a test of reasonable duration. Examples include orders with very long interval periods (such as the establishment of collocation arrangements) and high volumes of test provisioning transactions. Accordingly, the test may take the form of an interview, inspection, live orders review, review of historical performance or operational reports, or some other method that will capture the performance of Qwest with respect to the order types and processes in question. Detail Test Plans will identify the tests that can be executed live and those that must be executed by other means. Long interval tests that prove to have no alternative test methods that foreshorten the test will be referred, with a recommendation for disposition, to the ROC. The ROC will make the final decision regarding the disposition of such tests.
- Operational, time and resource constraints make it impossible to construct a completely exhaustive test suite. Significant effort has been expended to clearly portray the scope of the proposed suite, and it is believed this suite provides both extensive and sufficient coverage. Provision has been made in the plan to amend or extend the test if, in the judgment of the ROC, an amendment or extension is deemed justifiable.
- It is neither practical, nor desirable to execute certain live tests that would disrupt service to Qwest or CLEC customers. An example would be a Maintenance and Repair test that requires an equipment failure. Qwest performance for these test cases will be evaluated

by other means. The Test Type Evaluation Plans will identify the tests that can be executed live and those that must be executed by other means.

- Limitations to the volume tests as described in section 15.

4.4 Written Communications and Documents

KPMG Consulting shall be responsible for:

- Providing overall communications management within the testing period
- Maintaining daily contact with HP and other participants
- Maintaining close contact with the ROC and the TAG
- Responding to test-related issues and concerns raised by individual state Commissioners or state Staff Members
- Maintaining an electronic contact list (e.g., subject matter experts, escalation) for each test participant, the TAG, and the ROC
- Posting material on the ROC OSS Web site
- Distributing exception reports and soliciting comments on the exceptions from Qwest and the CLECs
- Distributing test management jeopardy reports, as defined in section 4.12, to the appropriate audience as determined by KPMG Consulting
- Maintaining data used to execute the test of Qwest's OSS including the test data base provided at the beginning of the test, the transaction files generated and used during the tests to convey CLEC-to-Qwest and Qwest-to-CLEC transactions over the interfaces, and printed documents related to test processing not otherwise retained in electronic form.

4.5 Principles Governing Written Communications

There are competing forces that must be balanced in determining the principles governing written communications. On one hand, an open communications process is important to maintain both the perception and actuality of a credible test. On the other hand, there are instances where the blindness of Qwest with regard to some aspects of the tests is also critical.

4.6 Formal Documents

Formal documents shall be assumed to be open and available unless:

- They are internal to an entity;
- They contain un-redacted proprietary information; or
- Their distribution would compromise the blindness of the test

Documents that were not made public during the test in order to preserve blindness shall be made available to all participants at the conclusion of the test, and prior to KPMG Consulting's drafting of the Final Report. Documents not made public during the test because they were

internal documents or contained proprietary information need not be made available at the conclusion of the test. Disputes regarding whether or not a document should be considered proprietary will be settled by the ROC.

4.7 ROC Web Site

The ROC has established a Web site for this test (http: www.nm.qbu.state.edu.us.bm). Formal written communications shall be placed on this Web site unless they meet one or more of the previously agreed to criteria. A posting procedure is in place and will be followed by the vendors.

4.8 Informal Communications

Informal communications, such as emails between subject matter experts discussing technical details of an aspect of the test, shall not be posted or otherwise made available unless they become germane to a dispute and are requested by the ROC Executive Committee. KPMG Consulting, Liberty Consulting and HP shall maintain electronic versions of informal communications for a period of one year after the conclusion of the test.

4.9 Management and Administration of the MTP

Once the MTP and PID have been approved by the ROC, the management and administration of the MTP and the PID shall be the responsibility of KPMG Consulting. The ROC Project Manager will work with the TAG and KPMG Consulting to establish a Change Control Process that governs how changes to the MTP are proposed, discussed and implemented. Changes to the MTP and the PID shall be communicated in a timely and open manner to all parties concerned unless the changes contain information that might compromise the blindness of the test. In this case, the changes shall be communicated to all concerned parties except for Qwest. KPMG Consulting shall also establish, publish, and adhere to a rigorous version control process for the MTP, the PID and associated documentation. For relevant documentation, all vendors will use a document control section similar to that shown in Appendix A.

4.10 Meetings

4.10.1 Purpose

Beginning with the 3rd party test of Bell Atlantic-New York's OSS, striking the appropriate balance between an open and transparent testing process and blindness to preserve the realism and integrity of the test has been an important consideration in the conduct of 3rd party tests.

Blindness, for the purpose of this Test, extends beyond keeping the identity of the CLEC from Qwest. Blindness is the withholding from certain parties to the test of specific test information in order to protect vendor property, to maintain fairness in reporting test results, or to preserve the veracity of the test. This may result in CLECs and or Qwest being excluded from meetings or other communications.

The following figure provides a structure that can foster openness except where blindness is required.

Figure 4.10.1.1

	Qwest	CLECs	KPMG Consulting	HP
ROC MTG (May monitor any meeting or call)	Generally Open Announced Open Conference Bridge Notes on Web	Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project	Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project	Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project
Qwest		Generally Open Announced Open Conference Bridge Notes on Web	Generally Open Announced Open Conference Bridge Notes on Web	Generally Open Announced Open Conference Bridge Notes on Web
CLECs			Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project	Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project
KPMG Consulting				Generally Open Announced Open Conference Bridge Notes on Web Closed to Qwest as Appropriate for Blindness Openly Announced Restricted Conference Bridge Notes to ROC Published after Project

Liberty Consulting is not included in the above table because openness/blindness principles do not apply to Liberty Consulting. Liberty Consulting is required to exercise its independent judgment in conducting its audit of the performance measures and inform the ROC and TAG of progress and findings.

4.10.2 General Principles

Meetings will be open unless specifically closed for purposes of blindness.

4.10.3 Open Meetings

The following guidelines will apply to open meetings:

- A meeting announcement and agenda will be posted on the ROC web site
- An open conference bridge will be made available, with the dial in number and pass code provided in the meeting announcement
- Meeting notes will be posted on the ROC web site

These guidelines are generally intended to apply to all contacts between Qwest and KPMG Consulting, and Qwest and HP. At the same time, it is expected that Qwest will have incidental contact with KPMG Consulting and/or HP before and during the testing process. These guidelines are not intended to be rigidly applied to incidental contacts between Qwest and KPMG Consulting, or Qwest and HP.

4.10.4 Meetings Closed to Qwest to Preserve Blindness

The following guidelines will apply to meetings closed for purposes of blindness:

- A meeting announcement will be posted on the ROC web site
- A restricted conference bridge line will be made available, with the dial in number and pass code provided via email
- Meeting notes will be archived
- ROC/MTG may monitor any meeting
- Meeting notes will be published following the completion of testing and prior to the drafting of the Final Report

4.11 Scheduling and Tracking

The ROC Project Manager, MTG, will maintain a high-level project plan for the ROC's overall 3rd party testing endeavor that covers the initial formation of the ROC 3rd Party Testing Organization through the delivery of KPMG Consulting's Final Report to the ROC.

4.12 Operational Reporting

KPMG Consulting will prepare and deliver operational reports of five types to the ROC Project Manager (MTG) and the TAG. These include:

- **Weekly Operational Report** - Overall progress reports will be provided weekly that describe the status on all major milestones and identify new issues requiring resolution.
- **Daily Report** - Detailed status reports on specific transaction tests including potential areas of concern and technical issues.
- **Issue Tracking Report** – Description of the nature of an issue, issue status, action items, responsibility and schedule for resolution.
- **Jeopardy Reports** – Issued when an event causes impact on the project's goals and expectations (such as the schedule) as defined in this MTP.

- **Observation and Exception Reports** – Description of observation and exceptions to the expected outcomes and other conditions encountered during testing are documented by KPMG Consulting, HP, or Liberty Consulting in exception and observation reports which are posted on the web site.

4.13 Issue Resolution

The Issue Resolution process handles any issues which are not addressed in the Observation and Exception process. The Issue Resolution process consists of five steps designed to embrace the open and collaborative spirit of the test, promote timely and reasonable remedies and provide a final decision on contested issues, as required. The steps are:

1. Test participants refer all testing issues to KPMG Consulting for inclusion in the issue resolution process.
2. KPMG Consulting provides the first level of issue management for all testing related issues including the assignment of accountabilities, action plan, tracking, reporting and escalation. KPMG Consulting will enlist the assistance of Qwest, CLECs, HP, and the TAG as required to resolve the issue.
3. If the issue is not resolved in the collaborative process, it may be decided by MTG on behalf of the ROC Steering Committee.
4. If an issue is of sufficient magnitude and/or contention as to warrant broader debate and decision participation to ensure the results are compatible with ROC goals, it will be referred by MTG to the ROC Steering Committee for consideration. The referral will include a description of the issue, alternative positions regarding the issue and a preliminary recommendation. Other test participants may participate in the discussion/debate as deemed appropriate by the ROC Steering Committee.
5. If the issue is not resolved by a decision at the Steering Committee level, it will be referred to the ROC Executive Committee for final resolution. Once a resolution is determined, it will be communicated to all testing participants, included in the issues report and implemented in the testing process.

5. Test Plan Framework and Test Elements

The overall test of Qwest's OSS is designed to be multi-faceted and provide end-to-end coverage of the systems, interfaces, and processes that fall within the scope of the testing effort. In constructing this MTP, many factors were considered, including the systems and processes to be tested, the measurement points and respective evaluation criteria, and the necessary conditions required to stage a successful, efficient, and objective test.

In order to develop a comprehensive, complete, and thorough test of Qwest's OSS systems, interfaces, and processes, the MTP framework is defined in terms of a set of elements including the following:

- Parity Standards, Benchmarks, Qualitative Evaluations and Comparisons
- Test Domains
- Test Types

- Test Processes
- Evaluation Techniques

The *test domains* provide a functional classification of the systems and processes to be tested. The *test types* organize the types of tests to be performed on the systems and processes. The *test processes* define the techniques, measures, inputs, activities and outputs of each component test. The *test scenarios* provide the contextual basis for testing by defining the transactions, products and other variables that must be considered and included during portions of the testing. *Evaluation techniques* serve as the basis for evaluation by defining the norms against which test results are compared.

The test framework and test elements are introduced at a high level in this section. In the remainder of the document, each test element will be described to the extent required to form a comprehensive and detailed set of testing requirements that will govern the conduct of the test. Based on these requirements, KPMG Consulting will create detailed test specifications.

5.1 Parity Standards, Benchmarks, Qualitative Evaluations and Comparisons

The specific parity standards, benchmarks and other performance indicators used in this test have been developed in detail and agreed upon through a collaborative process including performance measurement workshops. Parity standards and benchmarks have been established consistent with those generally accepted within the Telecom industry and are designed to ensure compliance. When appropriate, actual performance measurement data will be taken during the test and compared to the parity standards and benchmarks.

5.2 Test Domains

The areas subject to testing exist in four domains that correspond to major business functions performed by a telecommunications carrier:

- Pre-order, Order, and Provisioning (POP)
- Maintenance and Repair (M&R)
- Billing
- Relationship Management and Infrastructure

These four domains correspond to four respective business functions that comprise the Qwest/CLEC relationship. The domains are useful in defining the areas to be tested and the specific tests to be conducted.

5.2.1 Pre-order, Order, and Provisioning Domain

This domain is comprised of the systems, processes, and other operational elements associated with Qwest's support for pre-ordering, ordering, and provisioning activities for resale, interconnection, and UNE-Platform services and unbundled network elements. The purposes of the POP tests are to evaluate the functionality and performance of Qwest's wholesale systems and procedures; to evaluate compliance with prescribed performance measures, and to provide a

basis for comparing this operational area to parallel systems and processes supporting Qwest's retail operations.

6.2.3 Maintenance and Repair Domain

This domain is comprised of the systems, processes, and other operational elements associated with Qwest's support for wholesale maintenance and repair activities. Tests associated with this domain provide a basis for comparing this operational area to parallel systems and processes supporting Qwest's retail operations.

6.2.4 Billing Domain

This domain is comprised of the systems, processes and other operational elements associated with Qwest's support for wholesale billing. Tests associated with this domain are designed to evaluate Qwest's compliance to measurement agreements and to ensure adherence to sound management practices.

6.2.5 Relationship Management & Infrastructure Domain

This domain is comprised of the systems, processes and other operational support elements associated with establishing and maintaining business relationships with the CLECs. Included in this domain are the network provisioning activities that must be jointly performed by Qwest and the CLEC in order to build the CLEC network that supports the CLECs business.

6.3 Test Types and Test Processes

6.3.1 Transaction Driven System Analysis

Tests utilizing transaction-driven system analysis rely on initiation of transactions, tracking of transaction progress, and analysis of transaction completion results to evaluate a system under test. Transaction-driven system analysis requires defining several key facets of testing, including the data sources (e.g., CLEC live data, Qwest historical data), the system components under test (e.g., application-to-application interfaces, graphical user interfaces), and volumes (e.g., normal, stress) and related performance measures.

One element of transaction driven systems analysis is a structured assessment of the overall quality of the results of the execution of test scenarios.

The transactions, or test instances, used in each transaction-driven system analysis test will be derived from higher level sets of transaction templates called test cases, which in turn have been developed from test scenarios.

Tests that employ Transaction Driven Systems Analysis as the primary test process include, but are not limited to, the following:

- Section 12 Evaluation of POP Functionality and Performance Versus Parity standards and Benchmarks
- Section 13 Order Flow Through Evaluation
- Section 14 Provisioning Evaluation

- Section 17 PMP Volume Performance Test
- Section 18 MA&O/MR/LMR Trouble Functional Evaluation
- Section 19 MR/MA&O/LMR/TA Trouble Functional & Performance Evaluation
- Section 20 MAR End to End Trouble Report Processing
- Section 21 Billing Usage Functional Evaluation
- Section 22 Error Bill Functional Evaluation

6.4.3 Operational Analysis

Test utilizing operational analysis focus on the form, structure, and content of the business process under study. This test method will be used to evaluate day-to-day operations and operational management practices, including procedural development and procedural change management. Operational analysis validates and verifies the results of a process to determine that the process functions correctly according to documentation and expectations. Tests that employ Operational Analysis as the primary test process include, but are not limited to, the following:

- Section 8 Evaluation of Qwest's Wholesale Performance Measurement Process
- Section 9 Evaluation of Qwest's Parity Standards Calculation Process
- Section 10 Evaluation of Qwest's Order and Transaction Creation Documentation
- Section 23 CLEC Network Provisioning Test
- Section 24 Change Management Test
- Section 25 Qwest CLEC Support Processes & Procedures Review

6.4.4 HP Transaction Generator

HP provides the capability to generate the full suite of real world test instances by submitting transactions via Qwest's wholesale transaction interfaces and collecting information about the response times, intervals and other compliance measures.

HP will also generate and submit the required number of transactions to test the expected normal and peak volumes, ensure the processing of the full breadth of transactions during the test period and report test cases in the required volumes in a controlled test environment. A work center will be established to provide for interactive processing, such as handling errors, exceptions and re-submittals. The work center will also submit manual transactions to Qwest and await responses.

Further, HP will be required to document its ability to build, test and place in operation the functionality required to successfully process transactions utilizing Qwest's documentation, change management, help desk and training support.

6.4.5 CLEC Involvement in Transaction Testing

CLEC's operating in the ROC states will be asked to volunteer to participate in certain portions of this test. The inclusion of selected CLEC live transactions provides an alternative test method for transactions which may not be practical to provide through HP, and further facilitates a more

realistic depiction of real world production. CLEC participation will also be solicited to execute end to end cases (e.g. FB-TA) during the test period.

Use of CLEC live transactions allows for an element of blind testing and tracking performance in a real world environment. It also provides a means to help control for "test bias." Use of these transactions will require extensive participation by KPMG Consulting to observe the execution of the transactions in order to measure, audit, inspect and monitor progress and report results or otherwise verify and validate the observed results.

Additionally, some of the transaction types submitted by HP can only be properly executed with direct involvement from the CLECs. One category of such tests is those that include complex transactions involving physical CLEC facilities. For example, UNE orders involving LNP require a physical switch and an operational CLEC in order to be fully completed.

Further, there are scenarios where in-progress transactions cannot be obtained, or are not practical to execute, in a test environment. These will be evaluated utilizing observations of CLEC commercial activity where possible.

The successful execution of those portions of the test requiring CLEC participation is dependent on the extent of that participation. KPMG Consulting will meet with those CLECs who volunteer to participate to mutually agree on the nature and extent of the participation.

5.4 Evaluation Techniques

Each test relies on one or more techniques to collect and record measurements and analyze the results. The five types of techniques defined for this test are described in the chart below.

Table 5.4.1 Evaluation Techniques

Technique	Description
Transaction Generation	Transaction generation is the use of live, historical and/or generated data that is executed through the system under review. The results of this test are evaluated for quality.
Report Review	Review and analysis of historical data, reports, metrics and other information in order to assess the effectiveness of a particular system or business function. This includes performance measurement reports and other management reports.
Inspection	Physical review of process activities and products including site visits, walk-throughs, read-throughs and work center observations.
Logging	Monitoring activities and collecting information by logging process events and products as they happen. Logging can be mechanized or manual.
Document Review	Compilation and review of books, manuals and other publications related to the process and system under study.

6. Qwest OSS System Architecture

6.1 Overview

Qwest asserts that it has developed uniform CLEC-facing OSS interfaces in support of its wholesale services business line. These uniform interfaces support Pre-Ordering, Ordering and Maintenance and Repair transactions initiated by CLECs across all of the 13 states participating

in the ROC 3rd Party Test. Behind the uniform CLEC-facing interfaces are downstream OSS applications that may vary somewhat by region and state, depending on the specific application. An overview of the uniform CLEC-facing interfaces, and known regional and state variations in downstream OSS applications, can be found in Appendix F.

7. Global Exit Criteria

Exit criteria are the requirements that must be met before the tests defined in the Test Plan can be concluded. Exit criteria pertaining to specific tests are listed in respective test sections.

1. **All required test activities have been completed.**

   For each test, all fact finding and analysis activities must be completed to the satisfaction of the ROC. All results and test methodologies have been documented.

2. **Military testing has been successfully completed.**

   Tests have met success criteria. Tests not meeting success criteria have been retested in accordance with the Observation and Exception processes detailed in a separate document.

3. **All change control, verification and confirmation steps have been completed.**

   The results of test activities must be documented and reviewed for accuracy. Any results that require clarification or follow-up are confirmed.

4. **All specific test issues have been closed/resolved or declared at impasse for referral to the ROC.**

   Issues that have been recorded and tracked throughout the conduct of a specific test must be closed or resolved with sufficient documentation that describes the means employed to close or resolve each issue. Any issues that are identified as being at impasse between the parties will be referred to the ROC by KPMG Consulting.

In addition to these global exit criteria, test-specific exit criteria, where applicable, are defined within each test. Participants may elect to escalate test issues declared at impasse to the ROC issues resolution process described in Section 4.7.

Table 7.1 Global Exit Criteria

Criteria	Responsible Party
All required test activities have been completed.	KPMG Consulting
Military testing has been completed.	KPMG Consulting
All change control, verification, and confirmation steps have been completed.	KPMG Consulting
All specific test issues have been closed resolved or declared at impasse.	KPMG Consulting

8. Evaluation of Qwest's Wholesale Performance Measurement Processes

8.1 Description

Performance measurements are the yardsticks or standards to which Qwest OSS *performance* is compared. There are four primary types of quantitative performance measures:

- Parity measurements
- Benchmarks measurements
- Diagnostic measurements
- Parity-by-design measurements

A parity measurement is a yardstick that is calculated through measurement of a particular aspect of access to, functionality and performance of Qwest's OSS in support of its wholesale CLEC and retail operations. Parity measurements are identified in the PID with the word, "parity," in the "standard" box of the definitions of the measurements. Where analogous processes (or agreed-upon proxies) exist between Qwest's retail operations and their wholesale CLEC operations the two processes are compared to the parity of treatment between the two. A typical example where parity measurements are defined is the comparison of performance between Qwest's installation of a new retail customer and Qwest's "installation" of a CLEC's resale customer. The calculation of parity measurements results is accomplished through a formalized and controlled process (See Section 9). Because natural randomness is inherent in any performance, statistical methods (defined in Appendix G) are used to distinguish differences that are significant enough to not be explained merely by randomness. Parity measurements are the only category in which statistical methods are used.

A benchmark measurement is a yardstick that is calculated and compared directly with a fixed level of performance (percentage or interval). In setting the benchmarks, the parties took into account the agreement that statistical methods would not be employed in comparing performance to benchmarks. Generally, benchmark measurements are used where there are no analogous operations that can be compared between Qwest's retail and wholesale operations. For example, there is currently no identifiable retail analog for the Firm Order Confirmation (FOC) interval measurement. In these cases, a quantitative benchmark is used to set a threshold for performance where a numerical range of values is possible.

Quantitative performance measurements, both parity measurements and fixed benchmark measurements, to be used in the 3rd party OSS test have been collaboratively developed. The process began with a straw-man proposal provided to the TAG for comment in December, 1999. The comments were discussed in the ROC's Performance Measurements Workshop held in Salt Lake City, UT on January 19-21, 2000. Issue resolution activities resulting from the workshop along with amendments, additions and deletions to the performance measurement plan continue in subsequent collaborative forums. The primary document that describes quantitative performance measurements, the retail analog (for parity measurements), the numeric value (for fixed benchmarks), the calculation method, scope, restrictions, etc. is the ROC OSS Test PID. (See Appendix B.)

Once quantitative performance measurements are finalized via the collaborative process referenced above, and the quantitative performance measurement process has been validated, the measurements will be used to judge the performance levels resulting from the conduct of the various tests. Quantitative performance measurements are used predominantly, but not exclusively, in judging the results of transaction driven tests. The Qwest systems and processes comprising the validated process will be identified by release and version.

While benchmark and parity measurements both have the same basic function--they are yardsticks to measure the performance of Qwest OSS during the test--they are calculated differently. Fixed benchmarks, as established in the PID, are static throughout the test. Parity measurements use retail operations performance as the standard to be met. In order to provide a valid yardstick for the wholesale operations performance that they are to measure, wholesale and retail performance measurements must be derived contemporaneously.

In addition to parity and benchmark measurements, there are also diagnostic and parity-by-design measurements, for which no standards are set. These are designed primarily for data gathering only. Diagnostic measurements are identified in the PID with the word "diagnostic" in the "standard" box of applicable measurement definitions. Results from diagnostic measurements are used, where useful, in understanding the context of parity or benchmark measurements. Parity-by-design measurements are identified in the "standard" box of applicable measurement definitions with the words, "parity by design." Validation that parity does or does not exist in the processes underlying parity-by-design measurements is one of the objectives of the test, and issues therewith will be handled through the observation and exception processes discussed under separate cover.

Qualitative benchmarks set a threshold for performance where a range of qualitative values is possible. For example, an evaluation of the scalability of a process or evaluation of a support organization is qualitative by nature, and such an evaluation would be based on whether the process or organization contributes to a meaningful opportunity to compete.

Existence criteria are those where only two possible test results exist. For example documentation defining daily billing feeds either exists or does not exist.

8.2 Objectives

Rigorous, scientific measurement of any process, quantity, etc. requires that the measurement processes, standards and yardsticks themselves be validated in a rigorous, scientific manner. The objectives of the Performance Measurement Audit are to:

- Validate that all aspects of Qwest's processes, procedures, business rules, calculation methods, etc. used in measuring wholesale operations processes are valid and that Qwest personnel adhere to those processes
- Provide a qualitative assessment of the process for developing wholesale and retail measurements
- Provide a verification that parity-by-design measurements are indeed at parity due to the design of the data or traffic delivery process – including DB-1, DB-2, DA-1, DA-2, OS-1, OS-2, and others as identified in the final PID agreed upon for use in testing

- Verify that the Interconnect Mediated Access Response Time Measurement (IRTM) application that is used by Qwest to measure pre-order query response times (ROC PID PO-1) for both CLEC and retail queries produces results that are accurate and consistent with results seen by actual CLEC and Qwest customer service representatives.

8.3 Entrance Criteria

Table 8.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, Liberty Consulting*
Performance measurement documentation (PID) has been approved	*ROC*
Qwest wholesale performance measurement processes, systems and software are complete and available for inspection and testing	*Qwest*
Product descriptions and business rules for all performance measurements to be evaluated are available	*Qwest*
Interview guides are available	*Liberty Consulting*
Qwest subject matter experts to be interviewed are projected to be available	*Qwest*

8.4 Test Scope

All aspects of the wholesale performance measurement process, and all of the performance measurements described in the PID are within the scope of this test.

8.5 Test Scenarios

None

8.6 Test Approach

8.6.1 Inputs

1. Performance measurement definitions / PID
2. Product descriptions and business rules for all performance measurements to be evaluated
3. Description of wholesale performance measurement architecture, processes, systems, reports, etc.
4. Interview Guides
5. At least two months raw performance data (transaction specific results data before any exceptions or exclusions are applied by Qwest)
6. Qwest performance results reports

8.6.2 Activities

1. Prepare performance measurement process and system evaluation framework and plan
2. Validate framework and plan with TAG
3. Identify subject matter experts and schedule interviews
4. Conduct interviews
5. Evaluate the process design for measurements identified as "parity by design"
6. Conduct the Evaluation, to include:
   - Assess data collection process and system architecture
   - Evaluate data collection operations
   - Review calculation of performance measurements
   - Independently calculate results, using data provided by Qwest
   - Analyze interview results
   - Independently calculate the appropriate statistics for the performance measurement evaluation
   - Comparison with the same statistics as computed by Qwest
7. Identify observations and exceptions in accordance with established guidelines
8. Recommend approach to clearing exceptions
9. Verify that exceptions are cleared
10. Define monitoring plan
11. Write Final Report

8.6.3 Outputs

1. Performance measurement evaluation framework and plan
2. Observation and Exception reports
3. Monitoring plan
4. Final report

8.7 Exit Criteria

Table 8.7.1 Exit Criteria

Criteria	Responsible Party
Global exit criteria satisfied	See Section 7
All Observations and Exceptions cleared	ROC, Liberty Consulting
Monitoring plan is complete	Liberty Consulting PAC
Final report is complete	Liberty Consulting PAC

9.0 Evaluation of Qwest's Retail Parity Measurements Calculation Process

9.1 Description

Unlike fixed benchmarks, which are numerical values that are set by collaborative agreement, parity measurements are derived through Qwest's measurement of its own retail processes, for comparison with the same measurement applied to its wholesale processes. This section describes a process whereby Liberty Consulting verifies that the retail analogues established in the PID for parity measurements do, in fact, represent the actual access, functionality and performance characteristics of Qwest's OSS in support of its own retail operation.

9.2 Objectives

Parity standards are measures or yardsticks that are established through Qwest's measurement of its own retail processes. The objective of this test is to validate that all aspects of Qwest's process procedures, business rules, calculation methods, etc. used to establish the numerical values of the retail analogues established for parity measurements, as defined in the PID, are valid and that Qwest personnel are following those processes.

9.3 Entrance Criteria

Table 9.3.1 Entrance Criteria

Criteria	Responsible Party
No legally effective orders or injunctions preventing the test exist	ROC, Qwest
Pass/reject criteria have been identified	ROC, Liberty Consulting
Performance measurement documentation (PID) has been approved	ROC
Qwest retail performance measurement processes, systems and software are complete and available for inspection and testing	Qwest
Product descriptions and business rules for all retail measures to be evaluated are available	Qwest
Interview guides are available	Liberty Consulting
Qwest subject matter experts to be interviewed are projected to be available	Qwest

9.4 Test Scope

All aspects of the retail and wholesale performance measurement process and all of the parity measurements described in the PID are within the scope of this test.

9.5 Scenarios

None.

9.6 Test Approach

9.6.1 Inputs

1. Performance measurements / PID and associated documents
2. Product descriptions and business rules for all parity measurements to be evaluated
3. Description of retail performance measurement architecture, processes, systems, reports, etc.
4. Interview guides
5. Raw performance data (transaction specific results data before any exceptions or exclusions are applied by Qwest)
6. Qwest performance results reports

9.6.2 Activities

1. Prepare parity measurements calculation process and system evaluation framework and plan
2. Validate framework and plan with TAG
3. Identify subject matter experts and schedule interviews
4. Conduct interviews

5. Conduct the Evaluation, to include:
   - Assess data collection process and system architecture
   - Evaluate data collection operations
   - Review the calculation of performance measurements
   - Validate that consistency exists between the business rules for calculation and the actual processes the systems use to perform the calculations
   - Analyze interview results
   - Independently calculate results, using data provided by Qwest
   - Independently calculate the appropriate statistics for parity measurements evaluation
   - Compare with the same statistics as computed by Qwest
6. Identify Observations and Exceptions in accordance with the established guidelines
7. Recommend approach to clearing Exceptions
8. Verify that Observations and Exceptions are cleared
9. Define monitoring plan
10. Write final report

9.6.3 Outputs

1. Parity measurement evaluation framework and plan
2. Observation and Exception reports
3. Monitoring plan
4. Final report

9.7 Exit Criteria

Table 9.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*
All Observations and Exceptions cleared	*Liberty Consulting, PAG*
Monitoring plan is complete	*Liberty Consulting, PAG*
Final report is complete	*Liberty Consulting, PAG*

10. Evaluation of Qwest's Order and Transaction Creation Documentation and Maintenance

10.1 Description

This evaluation is designed to evaluate the guidelines and business rules documentation available to the CLEC community to instruct them on how to prepare the forms and other documents required to submit orders and other transactions to Qwest's OSSs. Principles 8 and 12 will be applied in the evaluation of documentation available to CLECs for the creation of orders and transactions.

This test also evaluates key methods and procedures for developing and maintaining order and transaction creation documentation that enable the Qwest and CLEC relationship. It evaluates the documentation created for manual as well as electronic transactions. This documentation is used by CLECs to prepare the necessary forms and other documents to submit/receive transactions via interfaces such as Qwest's IMA GUI interfaces, application-to-application interfaces and data transfer interfaces for the following activities:

- Pre-ordering
- Ordering
- Provisioning

This test will rely on checklists and inspections.

10.2 Objectives

The objectives of this test are:

- To verify that all orders and transactions to be submitted to Qwest via GUI and EDI interfaces, and those capabilities provided via manual interfaces rather than electronically, can be created using documentation and assistance provided by Qwest.
- To determine the adequacy and completeness of the methods and procedures for developing and maintaining the documentation that describes form fields, content, format and any other information relevant to order and transactions input to Qwest's OSS.

10.3 Entrance Criteria

Table 10.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Pre-ordering, ordering and provisioning transactions and related transaction documentation available	*Qwest*
Process evaluation checklist is available	*HP*
Interview guides are available	*KPMG Consulting*
Interviewees are available and scheduled	*Qwest*

10.4 Approach

This test will be a qualitative test of methods and procedures, practices, and documentation available to CLECs to develop orders and transactions to be sent to Qwest's OSS across GUI and EDI, as well as manual, interfaces.

10.4.1 Inputs

1. Qwest order and transaction documentation
2. Industry standards documentation
3. Other procedural and technical documentation
4. Evaluation checklists

10.4.2 Activities

1. Determine areas that require validation or retest
2. Gather information
3. Perform interviews and documentation reviews as required for validation or retest
4. Complete evaluation checklists and interview summaries
5. Develop and document findings

10.4.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Comparison of actual versus expected results for order and transaction creation deliverables
3. Observation and Exception reports
4. Final report

10.5 Exit Criteria

Table 10.5.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*
All Observations and Exceptions cleared	*HP*
Final report is complete	*HP*

11. Transaction Processing Test Data

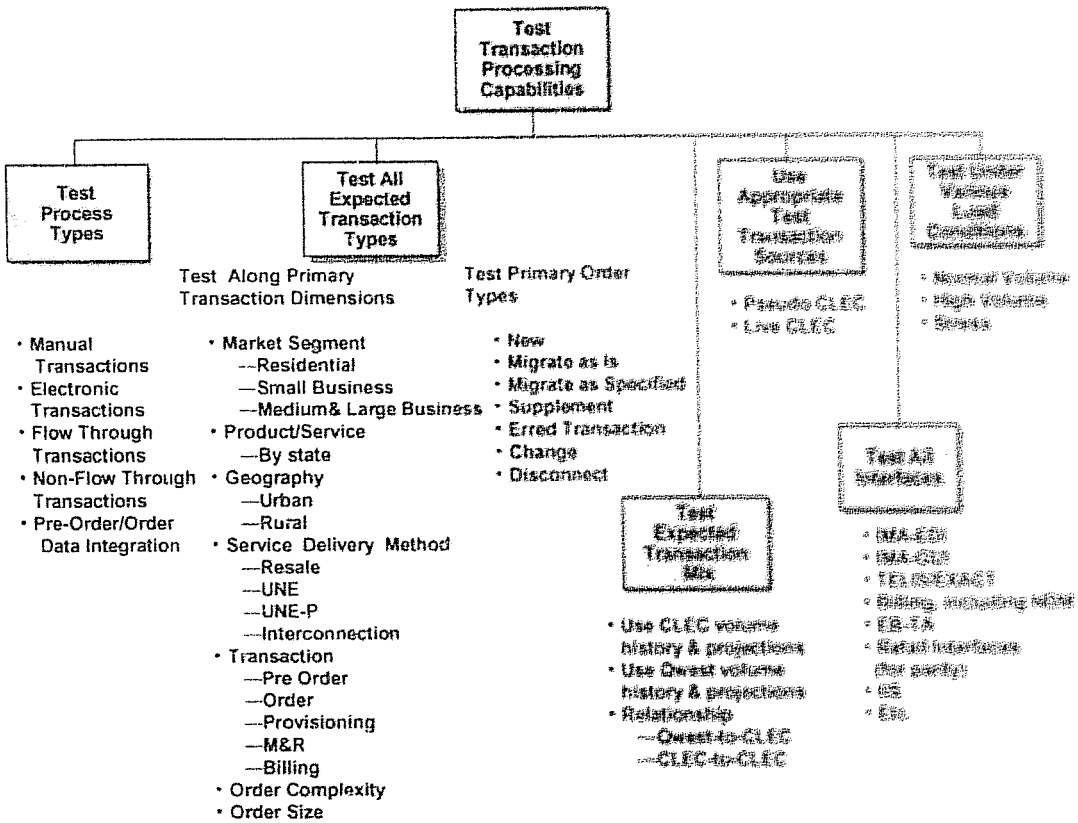
Test data provides the input or stimuli to systems and processes so that functionality and performance can be observed by means of transaction driven system analysis.

Principles numbered 11, 13 and 14 apply to test data.

11.1 Test Data Dimensions

Figure 11.1.1 reflects a testing framework agreed to at the St. Paul workshop that describes the major dimensions and attributes to be incorporated in test data transactions.

Figure 11.1.1 Test Data Dimensions



11.2 Scenarios

Based on industry experience, the knowledge gained from 3rd party testing in other jurisdictions, a review of other OSS tests, as well as a review of the available offerings in the thirteen participating ROC states, KPMG Consulting has developed a representative set of test scenarios. Each test scenario describes a real world situation that will be used to create realistic test cases in which CLECs purchase wholesale services and network elements from Qwest to be resold or repackaged to the CLEC's end-user customer on a retail basis.

Scenarios serve several key purposes. Scenarios help define the products, services, and transactions that should be included for testing. In this regard, test scenarios provide the guidance and framework for developing real world test cases to simulate live production in a controlled test environment. The test cases provide actual detailed instructions required to build individual transaction test instances.

These scenarios will be used to test functionality, performance, and other attributes associated with the ability of CLECs to access information from Qwest business processes and associated systems. Scenarios provide a way to bridge across test domains and families, thereby facilitating both point-specific and end-to-end testing of various systems and processes and providing the breadth and depth of coverage of products and services to be tested.

11.3 Test Cases

Variables will be introduced into the scenarios to create a number of test cases. Types of variables include errors such as invalid USOCs, order entries that "violate" Qwest's business rules (which is a higher class of error than a typographical error), supplements (changes to an order), expedites (end user requested due dates earlier than the standard interval) and Maintenance and Repair (M&R) test situations. Test cases may also vary by the type of features that are requested and the characteristics of the customer. For example, one test case may specify call waiting as a feature but another may use caller ID instead of call waiting. Similarly, for the same scenario, one test case may specify a single-line residence customer and another may specify a five-line business customer. The test cases may also vary the timing and sequence of the transactions.

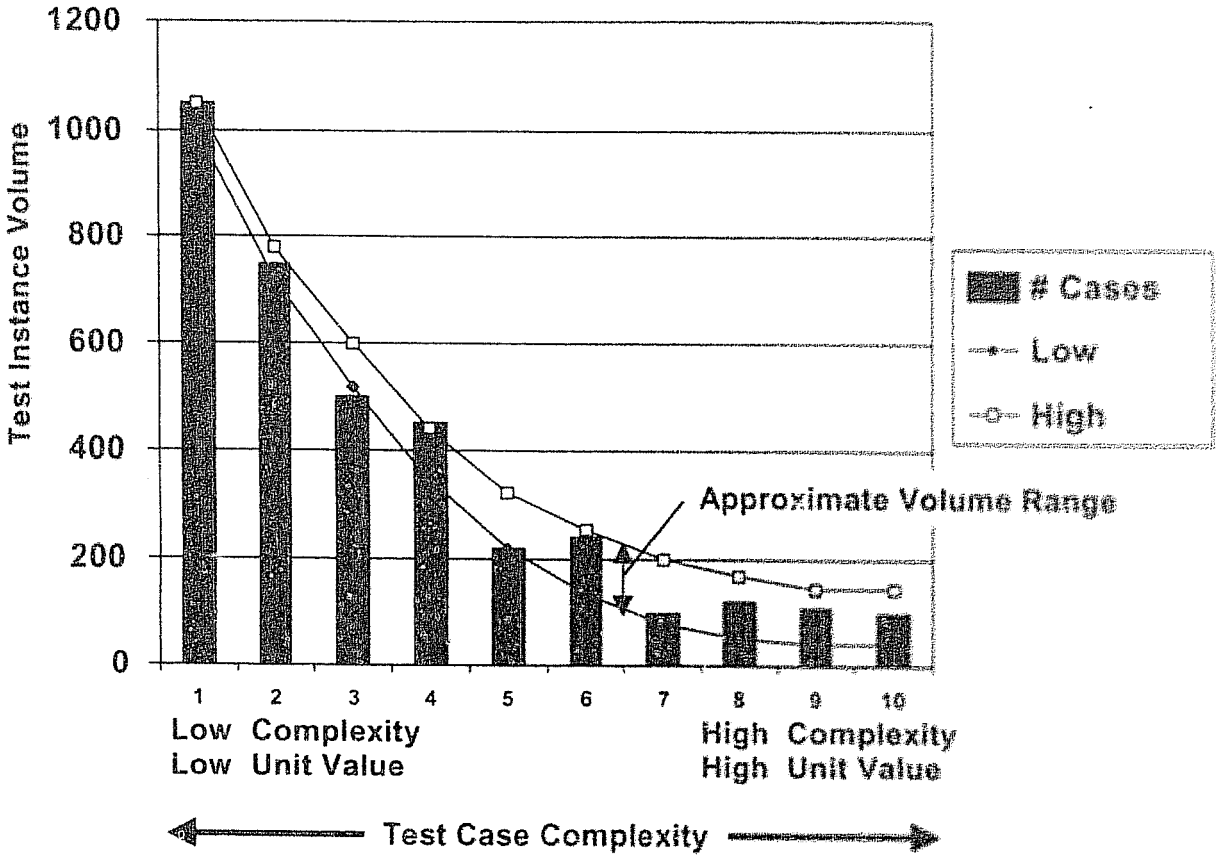
11.4 Detailed Test Instances

Detailed test instances will be generated from these test cases. A test instance represents a set of transactions described by a test case for a specific customer account. For example, a test case might specify "migrate a two-line business customer from Qwest to a CLEC and add call waiting on the primary line". A test instance would perform the necessary pre-ordering inquiries and send an order to accomplish this activity for a specific two-line business customer account.

11.4.1 Functionality Test

For functionality testing, volumes of test instances will be assigned to each of the test cases based, in part, on a determination of the sufficiency of sample sizes to determine compliance with appropriate Performance Measures. However, for practical reasons it is expected that transactions of greater complexity will tend to be executed in smaller volumes. Other considerations that will be taken into account in determining test volumes will be assurance of sufficient samples by customer type (residence vs. business) and by service delivery method. In addition, KPMG Consulting may determine, based on experience in other jurisdictions, and further analysis of CLEC forecasts and experience in the ROC states, to add additional volumes to certain scenarios.

Figure 11.4.1.1 Volume Distribution by Complexity



11.4.2 Volume Test

For volume testing, normal expected volumes will then be assigned to a selected set of the test cases based on expected future real world production. Volume testing conducted as part of this test will be based on level of demand projections that are reasonably foreseeable in a competitive market which may include regional volumes if appropriate. Individual test instances that match the test cases will be generated based on the volume that has been assigned. In addition, for pre-ordering and ordering, a stress volume test will be conducted to test the capacity and identify potential choke points of the interfaces. Peak and Stress volumes will be assigned to a subset of the test case types based on agreed upon multiples of the normal expected volumes.

12. Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks

12.1 Description

The POP Functional Evaluation is a comprehensive review of the functional elements of Pre-Ordering, Ordering, Provisioning, Pre-Order/Order Data Integration; the achievement of the prescribed measures; and an analysis of performance in comparison to Qwest's Retail systems.

The test will consist of live transactions submitted over the Qwest supported interfaces, both interactively via a graphical user interface (IMA GUI) and computer-to-computer interfaces. Current plans call for testing the following Qwest interfaces: IMA GUI and IMA EDI for LSRs, and EXACT/TELUS for ASRs. The following table depicts the functionality with which each interface will be tested:

Table 12.1.1 Functionality and Interfaces

Functionality	*IMA GUI*	*IMA EDI*	*EXACT/TELUS*
Pre-order	*X*	*X*	
Order	*X*	*X*	*X*
Pre-order/Order Data Integration	*X*	*X*	

The master interface list will be finalized during the actual testing to allow for any corrections/additions to be made as interfaces change.

The EDI interface will be tested using an interface built by HP according to specifications and processes provided to CLECs by Qwest. The GUI will be tested through transaction entered directly into the appropriate GUI interface. The ASR interface will be tested through transactions entered into TELUS or an existing CLEC's EXACT interface. Where appropriate, manual transactions will be submitted as well.

Data on the POP processes will be collected, analyzed and used to produce the output reports. The POP functional and performance evaluation will examine an end-to-end view of the pre-ordering through provisioning process. It will include a mix of stand-alone pre-ordering and ordering transactions, along with pre-order transactions followed by orders, supplements, and cancels. KPMG Consulting will collect data provided by HP on transaction submissions and responses, and on Qwest provisioning activities. Where possible and appropriate, this information will be collected and maintained electronically. Both ASR and LSR orders will be tested. Erred as well as error free transactions will be tested. Not all orders will go through the physical provisioning process. Some will be future dated, and others will be canceled before provisioning activities commence. Verification and validation of provisioning activities will be performed in Section 14.

As part of the POP Functional Evaluation, KPMG Consulting will also seek both qualitative and quantitative data on the real world experience of CLECs operating in the thirteen participating

ROC states. CLECs willing to participate in this test will be interviewed and their experiences will be incorporated into the test results after validation by KPMG Consulting. In addition, for some types of transactions, involvement will be sought from willing CLECs to participate in some aspects of the live transaction testing. This will be done for two principal purposes.

First, CLEC participation will be important for complex orders that cannot be simulated adequately in the test environment. Examples include complex facilities-based orders and orders, like those for unbundled loops with LNP, which require an actual CLEC switch to fully complete. Second, it is important to attempt to incorporate information to help control for "experiment bias" of the results. Therefore, KPMG Consulting will ask CLECs to execute live orders that replicate those sent over the test systems.

Successful completion of all of these aspects of the test requires active participation of one or more CLECs. However, CLEC participation is voluntary, and the scope of that participation is up to each individual CLEC.

12.2 Objective

The objective of this test is to validate the existence, functionality, and behavior of the interfaces and processes required by Qwest for pre-ordering, ordering, and provisioning transaction requests and responses. The POP functions tested will also be validated against the Qwest documentation that specifies which functions are and are not available within the Qwest OSS.

12.3 Entrance Criteria

Table 12.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*Qwest, ROC*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interface capabilities must be operationally ready	*Qwest, HP*
HP is operationally ready	*HP*
The statistical plan is in place	*ROC, TAG, KPMG Consulting*
The pass/retest criteria have been identified	*ROC, KPMG Consulting*
Interfaces are built and tested	*KPMG Consulting, HP*
EDI interface is "certified" by transaction/product type	*Qwest*
Inventory of all Qwest relevant (company-wide and regional) systems and interfaces identifying release number and version has been documented	*KPMG Consulting, HP, Qwest*
Wholesale and retail measurement processes evaluated	*ROC, KPMG Consulting, Liberty Consulting*
Measurement collection process is defined	*KPMG Consulting, HP*
Dial-up connectivity to GUI interface established	*Qwest, KPMG Consulting, HP*

Criteria	Responsible Party
Business rules for all mapping rules to be tested are available	Qwest
Test bed accounts and business plans	Qwest
Test bed provisioned and validated	Qwest, KPMG Consulting
LSRs for volunteers identified	KPMG Consulting
Test cases developed	KPMG Consulting
Specific test cases to be executed with CLEC volunteers have been identified	KPMG Consulting
Specific evaluations or changes developed	KPMG Consulting
Evaluation criteria defined	KPMG Consulting
Defect log and status checkpoints created	KPMG Consulting, HP

10.4 Test Scope

Ordering transactions consists of three distinct, but related, processes:

- Pre-order Processing—submission of requests for information required to complete orders.
- Order Processing—submission of orders required to add/delete/change a customer's service.
- Provisioning—physical work performed by Qwest as a result of the submitted orders and software changes accomplished via submitted orders into Qwest switches and network elements.

The ordering transactions test suite will be comprised of real life, end-to-end test cases that cover the entire spectrum of pre-order, order, and provisioning. The following order types will be tested:

- Migrate "as is"
- Migrate "as specified"
- New customer
- Feature Change
- Directory Change
- Number Change
- Add line
- Suspend/Restore
- Disconnect (full/partial)
- Move (inside/outside)
- Number Portability (LNP)

- Change to New Local Service Provider
- UNE Loop Cut Over
- Change of service delivery method

The order types identified above will be ordered using the available and applicable Qwest service delivery methods. The following service delivery methods will be tested:

- Resale
- Unbundled Loops, including xDSL capable loops
- UNE Platform, residential and business
- Other UNE Combinations such as EELs
- Other Unbundled Network Elements such as UDIT
- Any other service delivery methods that may become available at the time of the test which are approved by the ROC for inclusion in the test

The orders will be placed using Qwest's existing interfaces: GUI, computer-to-computer, and manual. The following assumptions pertain to ordering interfaces:

- Qwest electronic interfaces, both GUI and computer-to-computer, will be tested during the Volume Performance Test
- Orders will be issued using both ASR and LSR forms, as appropriate
- The GUI will be tested from multiple terminals at the same time
- If a scenario calls for an order type that can not be submitted electronically, the request will be submitted manually.

Other important aspects of ordering will be tested:

- Flow through order types, as stated and agreed-to by Qwest, will be tested to ensure that they do not require manual handling. The complete set of identified flow through order types will be evaluated to ensure that they actually do flow through (See Section 13).
- Integration of pre-order and order data functionality which transfers values from pre-order responses to ordering documents
- Supplemental orders (changes to orders in process), including cancels, will be tested
- Multiple products and features will be tested; the tests will cover a broad range of the options available to CLECs and resellers
- Multiple switch-types, end-offices, states and cities will be included in the test
- A portion of the orders sent will be physically provisioned (See Section 14). Some orders will be future dated, allowing them to be canceled prior to work scheduling and provisioning

CONTINUATION

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- CLECs will be solicited for involvement in some aspects of the test, especially for assistance in the testing complex services, services with long lead times, and services that require network resources (e.g. loop hot-cuts)
- Timeliness of methods employed by Qwest to process UDIT ASRs
- In addition to normal orders, orders with planned errors will be sent to Qwest to check the accuracy of its system edits and service representatives
- Service locations supported by different Qwest ordering, provisioning, and CO switching and transmission configurations will be tested

As indicated by testing principle number 13, similar test cases may be run by both HP and a production CLEC that has completed interface verification with Qwest in order to validate the processes under the oversight of KPMG Consulting. This validation process is not intended to double-test every scenario by both HP and a production CLEC, and will include no more iterations than are required for validation.

The test will be conducted using the most current release of the Qwest business rules, system releases and versions, interface versions and process/procedure documentation at the time of the test. Should multiple releases be available during the course of the test, KPMG Consulting will work with the ROC to determine which releases to test, and to what extent.

HP will build a pre-order EDI interface using Qwest specifications and evaluate the results for adequacy. The data from this pre-order interface will be integrated with LSRs for ordering on a real time or near real time basis to ensure that the two interfaces can be integrated.

The following chart contains the processes and sub-processes that will be used in evaluating Qwest's pre-ordering, ordering, and provisioning functionality and performance.

Table 12.4.2 Pre-Ordering and Ordering Evaluation Measures

Evaluation Measure	Evaluation Technique	Criteria Type
Clarity, accuracy and completeness of documentation	Document Review, Transaction Generation	Qualitative
Accessibility of GUI (excluding Interoffice facilities)	Transaction Generation	Quantitative
Accessibility of computer-to-computer interface (excluding Interoffice Facilities)	Transaction Generation	Quantitative
Accuracy and completeness of functionality	Transaction Generation	Quantitative
Timeliness of response	Logging	Quantitative
Completeness of response	Transaction Generation, Inspection	Qualitative Quantitative
Clarity and accuracy of error messages	Transaction Generation, Inspection, Document Review	Qualitative
Accuracy, responsiveness, and completeness of Help Desk support	Transaction Generation, Logging	Qualitative Quantitative
Usability of information	Transaction Generation, Inspection	Qualitative
Consistency with retail capability	Inspection	Qualitative Quantitative

Table 12.4.3 Provisioning Evaluation Measures

Evaluation Measure	Evaluation Technique	Criteria Type
Timeliness of provisioning	Transaction Generation, Inspection, Logging	Quantitative
Frequency of delay or rescheduling of provisioning	Transaction Generation, Inspection, Logging	Quantitative
Accuracy and completeness of provisioning	Transaction Generation, Inspection, Logging	Quantitative
Completeness and consistency of process	Inspection, Document Review	Qualitative

12.5 Scenarios

The specific scenarios to be used in this test can be found in Appendix D.

12.6 Test Approach

12.6.1 Inputs

1. Test scenarios and test cases
2. Validated test bed
3. Certified interfaces
4. Documentation (ordering guides, order/pre-order business rules, etc.)
5. Trained personnel to execute test cases
6. Help Desk log and contact checklists

12.6.2 Activities

1. Use test cases to develop transactions and transaction content based upon instructions provided in the appropriate handbook(s).
2. Interview CLEC volunteers and coordinate joint testing activities.
3. Submit transactions. Submittal date and time and appropriate transaction information logged.
4. Receive transaction responses. Receipt date, time, response transaction type, and response condition (valid vs. reject) logged.
5. Report on missing transactions (e.g. missing confirmations and completion notices).
6. Match transaction response to original transaction.
7. Verify transaction response contains expected data and flags unplanned errors.
8. Verify that pre-order data are integrated into ordering documents/processes as appropriate.
9. Manually review unexpected errors. Identify error source (KPMG Consulting, HP or Qwest). Identify and log reason for the error. Determine if test should be suspended or repeated.
10. Contact help desk for support as indicated in test cases and for unexpected errors following the appropriate resolution procedures. Log response time, availability, and other behavior of functions as identified on the help desk checklist.
11. Correct expected errors and resubmit. Re-submittal date, time, and appropriate information logged.
12. Verify receipt of appropriate responses, where multiple responses are expected for the same request.
13. Identify transactions for which duplicate or multiple responses were received in error.
14. Record missing responses.
15. Review status of pending orders. Verify and record accuracy of response.
16. Generate HP reports.
17. Generate Qwest measurement report for test date range.

18. Obtain from Qwest measurement reports for HP, aggregate CLECs and Qwest retail for the test data range.
19. Compare KPMG Consulting-produced HP measures to Qwest-produced HP measures to ensure there is no problem with the data being collected for test reporting purposes.
20. Report CLEC aggregate measures as a data point to check for consistency.
21. Assess quality of business processes and compare, where information is available, with equivalent retail processes.

12.6.3 Outputs

1. Reports that provide the measures to support the standards of performance defined in Appendix C
2. Variance between actual performance and the standards of performance defined in Appendix C
3. Unplanned error count by reason code and percentage of total
4. Reports of missing transactions, e.g., confirmations and completion notices
5. Rejects received after confirmation notification and percentage of total
6. Transaction counts, error ratio, response time, etc., by transaction type, product family, and delivery method
7. Minimum, maximum, mean, average, and aggregate response time/interval per transaction set
8. Transaction counts per response time/interval range per transaction set
9. Orders erred after initial confirmation
10. Completed help desk logs and checklists
11. Help desk accuracy and timeliness report
12. HP measurement reports produced by both KPMG Consulting and Qwest
13. KPMG Consulting-produced, HP data to Qwest-HP data comparison
14. Qwest-produced, HP data to Qwest retail, adjusted[2] retail or benchmark data comparison
15. Measure of parity performance between retail and wholesale
16. Observation and Exception reports
17. Final report

[2] Qwest's retail data for 2 wire non-loaded loops, DS-1-capable loops, and UNE-P POTS is normally disaggregated to MSA/non-MSA and interval zone 1/interval zone 2 and compared at this disaggregated level. Because the TAG has decided not to require statistically significant sample sizes at this level of disaggregation, Qwest's retail data must be adjusted in order to provide for an apples to apples comparison to the data generated by the pseudo-CLEC. Accordingly, Qwest will adjust its retail data to reflect the percentage of MSA/non-MSA and zone 1/zone 2 transactions generated by the pseudo-CLEC. For example, if the pseudo-CLEC's UNE-P transactions are spread across 70% MSA and 30% non-MSA wire centers, Qwest's actual retail comparative results will be adjusted so that the MSA results will be weighted 70% and the non-MSA results will be weighted 30% to arrive at the result for comparison.

12.7 Loop Qualification Process "Parity by Design" Evaluation

In addition to the above elements of this POP Functionality test, KPMG Consulting will perform an evaluation of the Loop Qualification process Qwest provides to wholesale customers compared to the Loop Qualification process it provides to its own retail customers to determine if parity exists in the design, implementation and use thereof. This evaluation will examine the wholesale and retail end-to-end processes, the results of the same queries made to the two processes, and all additional avenues of follow-up or recourse available to either wholesale or retail operations or both. This evaluation should answer the following questions:

- Does a wholesale loop qualification transaction result in the same information as a retail transaction for the same loop?
- Does the loop qualification information come from the same database (directly or indirectly) with the same frequency of update?
- Are the wholesale responses returned in accordance with benchmarks set?
- Are any differences in the sub-processes or remedial options available in the retail loop qualification process versus the wholesale process?

12.8 POP Manual Order Processing Evaluation

12.8.1 Description

The POP Manual Order Processing Evaluation is a comprehensive review of the methods and procedures used to handle orders that have been manually submitted or require manual intervention by Qwest during order processing. Operational analysis techniques will be used to conduct this test. This test will include a review of the procedures in place to plan for and manage projected growth in order processing.

12.8.2 Objective

The objective of this test is to validate the processes and procedures used to support manual submission of orders for service and to ensure that these procedures are being uniformly followed by Qwest's personnel across the three regions.

12.8.3 Entrance Criteria

Table 12.8.3.1 Manual Order Process Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist.	*ROC, Qwest*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
HP is operationally ready	*HP*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Manual orders procedures and documentation are available	*Qwest*
Interview guide, questionnaire and process review checklist developed	*KPMG Consulting*
Interviewees identified and schedule developed.	*Qwest, KPMG Consulting*

12.8.4 Test Scope

Table 12.8.4.1 Manual Order Processes

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Receive Orders for Manual Processing	Order Receipt and Logging	Completeness and consistency of process	Inspection Document review	Qualitative
Process Orders Manually	Entry of Order into SOP	Completeness and consistency of process	Inspection	Qualitative
Send Order Response	Delivery of error messages and queries	Completeness and consistency of reporting process	Inspection Document Review	Qualitative
	Delivery of confirmations, completions and acknowledgements.	Completeness and consistency of reporting process	Inspection Document Review	Qualitative
Status Tracking and Reporting	Status tracking and reporting	Completeness and consistency of reporting process	Inspection Document review	Qualitative
Problem Escalation	User-initiated escalation	Completeness and consistency of process	Inspection Document review	Qualitative
Process Management	General management practices	Adequacy and completeness of processing management practices	Inspection Document review	Qualitative
	Performance measurement process	Adequacy and completeness of and adherence to manual order processing performance management practices	Inspection	Qualitative

Table 12.8.4.1 Manual Order Processes

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Capacity Management	Capacity management processes and procedures	Adequacy and completeness of capacity management process	Inspection Document review Interview	Qualitative

12.8.5 Inputs

1. Order handling procedures
2. System technical documentation
3. Interview checklist
4. Process review checklist
5. Personnel to conduct interviews

12.8.6 Activities

1. Review procedure documents
2. Interview Qwest personnel
3. Complete process reviews
4. Create evaluation summary

12.8.7 Outputs

1. Completed process review checklists
2. Completed interview checklists
3. Evaluation summary

12.9 Exit Criteria

Table 12.9.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

13. Order Flow Through Evaluation

13.1 Description

The Order Flow Through Evaluation tests the Qwest systems capability to flow orders through from the CLEC through the application-to-application interface into the backend Qwest service ordering processing systems without any human intervention. Orders that qualify as flow

13.6 Test Approach

13.6.1 Inputs

1. Test cases and expected results
2. Validated test bed
3. Test case execution schedule
4. Interfaces built and certified
5. Failure reasons
6. Trained personnel to execute test cases

13.6.2 Activities

1. Submit order transactions via computer-to-computer and the GUI interface. Log external date, time and appropriate transaction information.
2. Receive transaction responses. Log receipt date, time, response transaction type, and response condition (valid vs. reject).
3. Verify transaction response contains expected data and flags unplanned errors.
4. Identify orders that had manual handling. Identify reason for manual handling. Record manual handling and order attributes.
5. If there was an error that caused the order not to flow through, identify error source (HP or Qwest). Identify and log reason for the error. Qwest errors will not be corrected.
6. Correct any HP errors and re-submit. Verify whether order flows through or not based on Qwest systems processing.
7. Verify that all orders submitted are accounted for. Log any orders that are submitted but do not appear as processed or erred by Qwest.
8. Generate reports based on Qwest manual handling report and KPMG Consulting data.

13.6.3 Outputs

1. Percentage and number of orders that flowed through by order type, product family, etc.
2. Percentage and number of orders that did not flow through by order type, product family, etc.
3. Variance between actual performance and the standards of performance defined in the PID.
4. Report of expected results versus actual results by reason code.
5. Observation and Exception reports
6. Final report

13.7 Exit Criteria

Table 13.7.1 Exit Criteria

Criteria	Responsible Party
Global exit criteria satisfied	[illegible]

14. Provisioning Evaluation

14.1 Description

The Provisioning Evaluation test is a comprehensive review of Qwest's ability to accurately and expeditiously complete the provisioning of CLEC orders. This test will be conducted as a part of the POP functional testing (See Section 12). It will incorporate orders submitted by both the computer-to-computer and GUI interfaces, and manually where appropriate. While most types of orders will be included, the test will concentrate on those orders that require physical provisioning and/or switch software changes.

This test will involve verifying that orders submitted have been properly provisioned and that the provisioning has been completed on time. Included in the test will be orders that have been supplemented and canceled, as well as those submitted with anticipated errors, to test the impact on provisioning.

For some orders, particularly the more complex ones, the involvement of CLECs operating in the thirteen participating ROC states will be solicited to volunteer use of their facilities to enhance the real world nature of the test and to test those transactions that cannot be accomplished in a test environment without access to actual network facilities (e.g. LNP, Line splitting).

14.2 Objective

The objective of this test is to evaluate the ability of Qwest to accurately provision orders submitted by CLECs and to do so on time.

14.3 Entrance Criteria

Table 14.3.1 Provisioning Entrance Criteria

Criteria	Responsible Party
All Section 12 entrance criteria satisfied	See Section 12.3
Test scenarios selected	KPMG Consulting
Specific test cases developed	KPMG Consulting
CLEC volunteers identified	KPMG Consulting
Provisioning log and activity checklists created	KPMG Consulting

14.4 Test Scope

The scope for this test includes the following processes:

1. UNE-Platform and Resale and associated feature provisioning
2. Loop Hot Cuts and Loop Conversions without LNP
3. New unbundled loop installations
4. Local Number Portability provisioning
5. Enhanced Extended Loops (EELs) Installation
6. xDSL Installations
7. Directory Listings provisioning

Table 14.4.1 Provisioning Functional Evaluation

Process	Sub-process	Evaluation measure
Provisioning functional evaluation	Directory Listing Provisioning	Timeliness, accuracy and completeness of provisioning
	Switch Feature Provisioning	Timeliness, accuracy and completeness of provisioning and timeliness of notifications
	Loop hot-cuts	Timeliness of provisioning and notifications. Accuracy and completeness of provisioning.
	New service adds	Timeliness, accuracy and completeness of provisioning and notifications.
	Local Number Portability	Timeliness, accuracy and completeness of provisioning and notifications
	Inter-office facilities provisioning	Timeliness, accuracy and completeness of provisioning and notifications
	Provisioning completion notices	Timeliness, accuracy and completeness of notices.

14.5 Test Scenarios

The specific scenarios to be used in this test will be chosen from those that can be found in Appendix D.

14.6 Test Approach

14.6.1 Inputs

1. Test cases and expected results
2. Provisioning documentation
3. Provisioning log and activity checklists
4. Participation from CLECs through voluntary, coordinated testing

14.6.2 Activities

1. Use test cases to develop transactions and transaction content based upon instructions provided in the appropriate documentation.
2. Submit computer-to-computer transactions.
3. Submit GUI and manual transactions.
4. Receive confirmations of transactions.
5. Log notification of provisioning jeopardies and delays.
6. Perform joint provisioning activities and record provisioning interactions.
7. Perform testing on provisioned services.
8. Test completion of orders. Record results in appropriate provisioning log and activity checklist.
9. Obtain from Qwest measurement reports for HP, aggregate CLEC's and Qwest retail for the test date range.
10. Compare KPMG Consulting-produced HP measures with Qwest-produced HP measures.
11. Measure parity performance between retail and wholesale.

14.6.3 Outputs

1. Reports that provide the measurements to support standards of performance listed in Appendix C.
2. Variance between actual performance and standards of performance listed in Appendix C
3. Report of expected results versus actual test case results.
4. Completed provisioning logs and checklists.
5. Provisioning accuracy and timeliness report.
6. Report CLEC aggregate measures as a data point to check for consistency.
7. KPMG Consulting-produced HP data to Qwest-HP performance results data comparison
8. Qwest-produced HP data to Qwest retail or benchmark data comparison.
9. Measure of parity performance between Qwest retail and CLEC aggregate results.
10. Observation and Exception reports

14.7 Provisioning Process Parity Evaluation

The evaluation measures for the provisioning processes are [illegible] as compared to retail. The provisioning processes will be [illegible]

14.7.1 Description

The Provisioning Process Parity Evaluation is a review of the [illegible] that provide provisioning for CLEC and Reseller orders compared to the [illegible] processes. The review will focus on these areas:

- Order interfaces
- Workflow definitions
- Workforce scheduling
- Memory administration
- Service activation
- Test and acceptance
- Exception handling
- Completion notices
- Jeopardy notifications
- Capacity management

The focus of the evaluation will be "[illegible]" [illegible] gateway systems that serves as the [illegible]

As appropriate, provisioning processes for different products and services will be evaluated separately. This will be required in those cases where the process and/or systems used for provisioning are different by product.

14.7.2 Objective

The objective of this evaluation is to [illegible] environment supporting CLEC orders is at parity with [illegible] retail customers.

14.7.3 Entrance Criteria

Table 14.7.3.1 Provisioning Process Parity Evaluation Entrance Criteria

Criteria	*Responsible Party*
All Section 12 entrance criteria satisfied	*See Section 12.0*
Detailed Provisioning Process Parity Evaluation Checklist developed	*KPMG Consulting*
Required system documentation available	*CLECs*

Criteria	*Responsible Party*
Provisioning process documentation available	*Qwest*
Interview guide/questionnaire developed	*KPMG Consulting*
Interviewees identified and schedule developed	*Qwest, KPMG Consulting*

14.7.4 Test Scope

The table below outlines the processes and sub-processes involved in evaluating the level of parity provided by the Qwest provisioning systems and processes to the CLECs.

Table 14.7.4.1 Provisioning Process Parity

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Provisioning Process Parity	Workflow management	Consistency and repeatability as compared to Retail	Inspection	Parity
	Workforce management	Consistency and repeatability as compared to Retail	Inspection	Parity
	Jeopardy notification	Consistency and repeatability as compared to Retail	Inspection	Parity
	Service activation process	Consistency and repeatability as compared to Retail	Inspection	Parity
	Service design process	Consistency and repeatability as compared to Retail	Inspection	Parity
	Assignment process	Consistency and repeatability as compared to Retail	Inspection	Parity
	Capacity management	Consistency and repeatability as compared to Retail	Inspection	Parity

14.7.5 Test Scenarios

Not applicable.

14.7.6 Test Approach

14.7.6.1 Inputs

1. Product and Service Process Flow Understanding (provides for understanding of complex versus simple services but does not conflict with traditional Qwest definition of products and services)
2. Applicable Qwest provisioning process documentation
3. Interview guide/questionnaire
4. Interviewees (per process area)

- Provisioning process owners
- Provisioning process staff
- User requirements project leader

5 Interview schedule

6 Detailed Provisioning Process Parity Evaluation Checklist

7 Appropriate System Documentation

8 Appropriate Methods and Procedures (determined via interviews)

14.7.6.2 Activities

1 Identify all process documentation needed for review

2 Identify relevant systems and interfaces

3 Identify all system documentation available for review

4 Conduct structured review of documentation using Provisioning Process Parity Evaluation Checklist

5 Conduct interviews using the interview guides and questionnaires

6 Inspect physical systems and communications environments

7 Document findings

14.7.6.3 Outputs

1 Completed Provisioning Process Parity Evaluation Checklist

2 Completed interview questionnaires

3 Interview Summaries

4 Summary Findings, Conclusions

14.8 Provisioning Coordination Process

14.8.1 Description

The POP Provisioning Coordination Process Evaluation is a review of the procedures, processes and operational environment used to support coordinated provisioning with CLECs.

The evaluation will address products and situations that require coordinated provisioning to minimize customer disruption. The requirement for coordination may come from either Qwest policy or a CLEC request. An operational analysis test approach supplemented by case studies will be used to evaluate Qwest 's Provisioning Coordination Processes.

14.8.2 Objectives

The objectives of this evaluation are to:

- Determine completeness and consistency of provisioning coordination processes
- Determine whether the provisioning coordination processes are correctly documented, maintained and published

- Determine the accuracy, completeness and functionality of procedures for measuring, tracking, projecting and maintaining provisioning coordination processes performance
- Ensure the provisioning coordination processes have effective management oversight and Qwest's personnel is adhering to the documented process
- Ensure responsibilities for provisioning coordination processes performance improvement are defined and assigned

14.8.3 Entrance Criteria

Table 14.8.3.1 Provisioning Coordination Process Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*Qwest, ROC*
Pass/fail criteria have been identified	*ROC, KPMG Consulting*
CLEC Case Study Request completed	*KPMG Consulting*
CLEC Case Study Monitoring Form completed	*KPMG Consulting*
Detailed Provisioning Coordination Process Checklist developed	*KPMG Consulting*
Interview guide questionnaire developed	*KPMG Consulting*
Interviewees identified and schedule developed	*Qwest, KPMG Consulting*

14.8.4 Test Scope

The table below outlines the tests to evaluate the procedures and processes in place to support for post provisioning of services by the CLEC and Qwest.

Table 14.8.4.1 Provisioning Coordination Process

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Detailed Provisioning Coordination Process	Provision orders requiring coordination with CLECs	Availability of personnel, procedures and methods	Document Review	Existence
		Completeness and consistency of processes	Document Review, Inspection	Qualitative
	Request coordination	Completeness and consistency of processes	Document Review, Inspection	Qualitative
	Notification of provisioning schedule	Completeness and consistency of processes	Document Review, Inspection	Qualitative
		Timeliness of notification	Document Review, Inspection	Quantitative
	Jeopardy notification	Completeness and consistency of processes	Document Review, Inspection	Qualitative
		Timeliness of notification	Document Review, Inspection	Quantitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Coordinate provisioning	Completeness and consistency of operating management practice	Inspection	Qualitative
		Controllability, efficiency and reliability of process	Inspection	Qualitative
		Completeness of process improvement practices	Inspection	Qualitative
		Compliance with documented practices	Inspection	Qualitative

14.5.3 Test Scenarios

Not applicable

14.5.4 Test Approach

14.5.4.1 Inputs

1. CLEC Case Study Request
2. CLEC Case Study Monitoring Form
3. Provisioning Coordination Process Checklist
4. Interview Guide/Questionnaire

14.5.4.2 Activities

1. Send CLEC Case Study Requests to CLECs
2. Receive and compile CLEC case study input suggestions
3. Select and record case studies to monitor
4. Monitor case studies and record results on monitoring form
5. Conduct structured review of documentation using provisioning Coordination Process Checklist
6. Conduct interviews with key process personnel using interview guide and questionnaire
7. Review coordinated provisioning case studies
8. Document findings

14.8.6.3 Outputs

1. CLEC Case Study submission and selection matrix
2. Completed CLEC Case Study Monitoring Forms
3. Completed Provisioning Coordination Process Checklist
4. Completed Interview Questionnaires
5. Interview Summaries
6. Summary Findings, Conclusions

14.9 Exit Criteria

Table 14.9.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

15. POP Volume Performance Test

15.1 Description

The Volume Performance Test will identify the capacity and potential choke points, at projected future transaction volumes, of the Qwest GUI and computer-to-computer interfaces and Qwest front end systems made available to HP at the time of the test. The Volume Performance Test will evaluate the processing of pre-ordering queries and flow through orders. The test will consist of three parts: (1) a "normal volume" test using anticipated transaction volumes during the life cycle of the system interfaces tested, (2) a "peak" test using volumes at 150% of the normal volume test, and (3) a "stress" test using volumes at 250% of the normal volume test. (Note: Per the July MTP Design Workshop, the TAG will collaborate to finalize the normal volumes, percentages and time horizons to be used for the volume test. KPMG Consulting will provide different volume projections based on Qwest and CLEC forecasts.)

The Volume Performance Test will examine the performance of Qwest's production pre-ordering and ordering systems and processes from the submission of queries to the creation of internal service orders and the return of an order confirmation. The orders submitted in the Volume Performance Test will not be physically provisioned. Transactions will be submitted via both the GUI and computer-to-computer interfaces.

The test will include a mix of stand alone pre-ordering and ordering transactions. The mix will include planned business rule errors and flow through orders. The vast majority of transactions submitted to Qwest as part of this test will be designed to flow through; those that fall out to the workcenter will be identified to KPMG Consulting by Qwest but do not need to be worked by a representative in the workcenter.

Volume testing will be conducted on certain days during the POP Functional Evaluation testing period. There will be two 24 hour normal volume tests, one 24 hour peak test and one 4 hour ~~off-hours~~non-busy, production hours stress test. The stress test will be run during ~~off-hours~~non-busy, production hours.

busy production hours to limit the test's impact on real customers. The attributes and activities that apply to the POP Functional Evaluation (see Section 12) for pre-ordering and ordering also apply to this test. The dates of volume testing will be withheld from CLECs and Qwest to promote blindness. The ROC Project Manager and KPMG Consulting will consider the need for additional volume days if Qwest executes major system software changes during the course of the test.

15.2 Objective

The objective of the Volume Performance Test is to measure Qwest's capability and identify potential choke points of the GUI and computer-to-computer interfaces and systems made available to HP to access pre-ordering information and submit orders to Qwest at projected future volumes. The success criteria for normal volumes will be determined by the appropriate PID.

15.3 Entrance Criteria

Table 15.3.1 Entrance Criteria

Criteria	*Responsible Party*
All Section 12 entrance criteria satisfied	*See Section 12.3*
Agreement on volumes and distribution by scenario and entry mode	*ROC, KPMG Consulting*
Test scenarios selected	*KPMG Consulting*
Specific test cases developed	*KPMG Consulting*
Performance standards for peak/stress tests developed	*TAG*

15.4 Test Scope

The scope for this test includes the following test processes:

1. Pre-ordering
2. Order processing

15.5 Test Scenarios

The specific scenarios to be used in this test will be chosen from those found in Appendix D.

15.6 Test Approach

15.6.1 Inputs

1. Test cases
2. Documentation (all ordering documentation, pre-ordering/ordering business rules, etc.)
3. Validated test bed
4. Personnel to execute test cases

5. Certified interfaces

15.6.2 Activities

1. Use test cases to develop transactions and transaction content based upon instructions provided in the appropriate handbook(s).
2. Submit GUI and computer-to-computer transactions. Submittal date, time and appropriate transaction information are logged.
3. Receive transaction responses. Receipt date, time, response transaction type, and response condition (valid vs. reject) are logged.
4. Match transaction response to original transaction. Verify matching transaction can be found and record mismatches.
5. Verify transaction response contains expected data and flag unplanned errors.
6. Manually review unplanned errors. Identify error source (HP or Qwest). Identify and log reason for the error. Determine if test should be discontinued.
7. Identify transactions for which responses have not been received. Where multiple responses are expected for the same request, the receipt of each response will be monitored. Record missing responses.
8. Identify transactions for which duplicate or multiple responses were received in error.
9. Review status of pending orders. Verify and record accuracy of response.
10. Generate HP reports.
11. Report CLEC aggregate measures as a data point to check for consistency.

15.6.3 Outputs

1. Reports that provide performance measurements
2. Variance between actual performance and standards of performance
3. Report of expected results versus actual results
4. Unplanned error count by type and percentage of total
5. Report of unplanned errors as the result of documentation problems
6. Transaction counts, error ratio, response time, etc. by transaction type, product family and delivery method
7. Minimum, maximum, mean, average, and aggregate response time/interval per transaction set
8. Transaction counts per response time/interval range per transaction set
9. Observation and Exception reports
10. Final report

15.7 Exit Criteria

Table 15.7.1 Exit Criteria

Criteria	*Responsible Party*
All activities completed	*KPMG Consulting*
Checklists and reports completed	*KPMG Consulting*
Global exit criteria satisfied	*See Section 7*

16. ~~IMA GUI M&R~~CEMR Functional Evaluation

16.1 Description

The ~~IMA GUI M&R~~Customer Electronic Maintenance and Repair (CEMR) functional evaluation is a comprehensive review of the trouble administration functional elements of the IMA GUI, their conformance to documented specifications, and an analysis of its functionality in comparison to Qwest's Retail front end systems for trouble management. The test has three major phases, Phase 1 — a basic functional evaluation, Phase 2 — a comparative functional evaluation, Phase 3 — a performance evaluation. The performance evaluation is a transaction driven test designed to evaluate the ~~IMA GUI~~ CEMR system used for M&R under load conditions. Transaction sets will be based on the level of demand projections that are reasonably foreseeable during the life cycle of the system being tested.

16.2 Objective

The objective of this test is to validate the existence and behavior of ~~IMA GUI~~ CEMR functional elements as documented in ~~IMA GUI~~ CEMR Training Guides and other applicable documents, and to evaluate, based on both quantitative and qualitative approaches, the equivalence of ~~IMA GUI~~ CEMR functionality to Qwest's Retail front end systems for trouble management. The behavior of ~~IMA GUI~~ CEMR will be evaluated under load conditions to determine system performance in terms of response time and operability, and to identify potential future performance bottlenecks and whether that performance is consistent with specifications.

16.3 Entrance Criteria

Table 16.3.1 Basic Functional (Phases 1 & 2) Evaluation Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interfaces are operationally ready	*Qwest*
HP is operationally ready	*HP*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*

Criteria	*Responsible Party*
Detailed test plan completed	*KPMG Consulting*
Test scenarios selected	*KPMG Consulting*
Documentation provided	*Qwest*
Interview guides created	*KPMG Consulting*
Specific test cases and transaction sets developed	*KPMG Consulting*
Product descriptions and business rules for all transactions to be tested are available.	*Qwest*
Basic documentation review completed	*KPMG Consulting*
Detailed functional checklist created	*KPMG Consulting*
Test bed provisioned and validated	*Qwest, KPMG Consulting*
Specific evaluation techniques developed	*KPMG Consulting*
Physical access to the ~~IMA GUI~~ CEMR established	*Qwest*
Security access to ~~IMA GUI~~ CEMR established	*Qwest*
Evaluation criteria defined and approved	*ROC*

Table 16.3.2 ~~IMA GUI~~ CEMR Performance Evaluation (Phase 3) Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interfaces are operationally ready	*Qwest*
HP is operationally ready	*HP*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Test transaction sets have been built and validated	*KPMG Consulting*
Product descriptions and business rules for all transactions to be tested are available.	*Qwest*
Test bed provisioned and validated	*Qwest, KPMG Consulting*
~~IMA GUI~~ CEMR test coordination details have been worked out	*KPMG Consulting*

16.4 Test Scope

~~IMA GUI~~ CEMR functionality will be reviewed within the context of specific documentation addressing its use and in comparison to Qwest's Retail front-end systems for trouble management. The following table contains the processes, sub-processes, and methods for evaluating the functionality of Qwest's IMA GUI.

Table 16.4.1 Test Scope: M&R ~~IMA GUI~~ CEMR Functional Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Trouble Reporting	Create Enter Trouble Report (TR)	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Modify TR	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Close Cancel TR	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Retrieve TR Status	Functionality exists as documented	Inspection	Existence Qualitative Parity
Trouble History Access	Retrieve Trouble History	Functionality exists as documented	Inspection	Existence Qualitative Parity
Access To Test Capabilities	Initiate MLT Test	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Receive MLT Test Results	*Functionality exists as documented*	*Inspection*	*Existence Qualitative Parity*

16.5 Test Scenarios

A subset of the Appendix D Table D5 scenarios will be used in this test. Scenarios selected for trouble reporting will include both post provisioning activity and trouble reports on existing HP service.

16.6 Test Approach

This test is broken down into three phases:

- **Phase 1** involves the use of test cases created for this test and observation of processes to evaluate ~~IMA GUI~~ CEMR functionality and to determine if the system behaves as documented.
- **Phase 2** involves observation of similar retail transactions and interviews of Retail Maintenance Administrators (MA) processing trouble calls and entering trouble reports into Qwest's Retail front end systems to assess functionality in comparison to IMA GUI.
- **Phase 3** involves load testing of ~~IMA GUI~~ CEMR by sending transaction sets structured to provide a transaction mix consistent with current system usage, projected normal volumes and stress/load volumes. Included in this mix will be planned errors. The quantity of transactions will be known as the "normal volume". A second execution known as "peak" will use a multiple of 125-150% the "normal" volumes. Finally, the

"stress" execution will use transaction volumes that are 150-250% the volumes used for the "normal" test.

The number of observations and period of time over which the observations are taken for both wholesale and retail processes will be sufficient to provide a statistically valid basis for evaluation.

16.6.1 Inputs

1. Test cases
2. Documentation (~~IMA GUI~~ CEMR Learning Guide, etc.)
3. Functionality checklists
4. Interview guide
5. ~~IMA GUI~~ CEMR systems and validated test bed
6. Personnel to interview Wholesale user and Retail Maintenance Administrators and observe their use of ~~IMA GUI~~ CEMR and retail front-end systems for Trouble Management, respectively.

16.6.2 Activities – Phase I

1. Use test cases created for this test and appropriate Qwest documentation to perform each of the functions listed on the checklist provided via the ~~IMA GUI~~ CEMR interface. Observe and interview HP as they execute the test cases to determine usability.
2. Verify that each system function behaves as documented.
3. Note any anomalies in the space provided on the checklist.
4. Note any discrepancies between ~~IMA GUI~~ CEMR documentation and behavior.
5. Ensure that all trouble reports entered in IMA have been canceled.

16.6.3 Activities – Phase II

1. Use the checklist and interview guide to conduct interviews with MA's selected from the Residence and Business M&R work centers.
2. Observe MA trouble report activities similar to those test cases used in Phase I as identified on the checklist provided.
3. Note the presence and behavior of functions identified on the checklist.
4. Identify any anomalies relative to the functions being observed.
5. Note any additional relevant information from the MA interview (e.g., additional capabilities, performance, etc.).
6. Determine and document any M&R functions that can be performed from a Retail trouble management workstation that are not available in ~~IMA GUI~~ CEMR and vice versa.
7. Perform a detailed evaluation of relative functionality and capabilities between ~~IMA GUI~~ CEMR and retail front-end systems for trouble management.

16.6.4 Activities – Phase III

1. Feed transaction sets to IMA GUI.
2. Periodically exercise ~~IMA GUI~~ CEMR functionality manually during test execution.
3. Observe and capture observations from (2) above in terms of performance and operability.
4. Capture transaction performance statistics via data test generator. (automatic)
5. Capture transaction performance statistics via IMA GUI. (automatic)
6. Monitor ~~IMA GUI~~ CEMR system interfaces to identify any bottleneck conditions. (Qwest personnel)
7. Ensure all generated trouble reports have been canceled/closed.
8. Reset test bed for next test (if required) or clean up production databases. (Qwest)
9. Execute test once with normal, projected transaction volumes and once with peak/stress volumes.
10. Analyze performance reports.
11. Review execution and observation reports.
12. Compare HP vs. performance metric results.

16.6.5 Activities – Common

Document the results and findings from the activities conducted in Phases 1, 2 and 3.

16.6.6 Outputs

1. Completed checklists from Phases 1, 2 and 3 activities
2. Completed interview summaries
3. Summary reports of findings from each phase, including a discussion of anomalies and relevant observations relating to usability and timeliness of each system interface
4. Reports that provide the measurements to support the standards of performance defined in Appendix C
5. Variance between actual performance and the standards of performance defined in Appendix C
6. Test execution and observation reports
7. HP performance reports
8. ~~IMA GUI~~ CEMR performance reports
9. A Summary report comparing relative functionality in ~~IMA GUI~~ CEMR and Retail front end systems for Trouble Management highlighting differences and contrasting ease of use of the two systems in performing the functions observed
10. Observation and Exception reports

16.7 Exit Criteria

Table 16.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*
All activities completed	*KPMG Consulting*
Checklists and reports completed by personnel participating in the test	*KPMG Consulting*

17. MEDIACC (EB-TA) M&R Trouble Functional ~~& Performance~~ Evaluation

17.1 Description

The Electronic Bonding Trouble Administration (MEDIACC EB-TA) Functional Evaluation is a comprehensive review of all of the functional elements of the MEDIACC EB-TA System and their conformance to documented interface specifications.

17.2 Objective

The objective of this test is to validate the existence and behavior of MEDIACC EB-TA functional elements as documented for CLEC trouble entry and other applicable documents.

17.3 Entrance Criteria

Table 17.3.1 Entrance Criteria

Criteria	Responsible Party
No legally effective orders or injunctions preventing the test exist	ROC, Qwest
The ROC has verified measurements to be used in the test.	ROC, Liberty Consulting
All required Qwest interfaces are operationally ready	Qwest
Pass/retest criteria have been identified	ROC, KPMG Consulting
Detailed Test Plan completed	KPMG Consulting
Test Scenarios selected	KPMG Consulting
Specific Test Cases and Transaction Sets developed	KPMG Consulting
Product descriptions and business rules for all transactions to be tested are available	Qwest
Basic documentation review completed	KPMG Consulting
Detailed Functional Checklist created	KPMG Consulting
Test bed provisioned and validated	Qwest, KPMG Consulting
Specific Evaluation techniques developed	KPMG Consulting
Physical access to Qwest Trouble entry site established	Qwest
Security access to MEDIACC EB-TA established	Qwest
Evaluation Criteria defined and approved	ROC
Checklists ~~and Interview Guides~~ created	KPMG Consulting

17.4 Test Scope

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Trouble Reporting	Create/Enter Trouble Report (TR)	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity
	Add TR	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity
	Modify TR	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity
	Close/Cancel TR	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity
	Request TR Status	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
	MLT Functionality	Functionality exists as documented	Transaction Generation Documentation Review	Existence Qualitative Parity

17.4.5 Test Scenarios

A subset of the Appendix D Table D5 scenarios will be used in this test. Scenarios selected for trouble reporting will include both post provisioning activity and trouble reports on existing HP service.

17.5.6 Test Approach

This test will use test cases specifically created for this test to evaluate MEDIACC EB-TA functionality and to determine if the system behaves as documented.

17.56.1 Inputs

1. Test cases
2. Documentation
3. Functionality checklists
4. Validated test bed

17.56.2 Activities

1. Use test cases created for this test and appropriate Qwest documentation to perform each of the functions listed on the checklist provided via the MEDIACC EB-TA interface.
2. Verify that each system function behaves as documented.
3. Note any anomalies in the space provided on the checklist.
4. Note any discrepancies between M&R Trouble Entry documentation and behavior of the MEDIACC EB-TA interface.
5. Ensure that all trouble reports entered via the MEDIACC EB-TA interface have been canceled.

17.56.3 Outputs

1. Completed checklists from activities
2. Summary reports of findings including a discussion of anomalies relating to usability and timeliness of each system function.
3. Observation and Exception reports

17.6.7 Exit Criteria

Table 17.67.1 Exit Criteria

Criteria	*Responsible Party*
All global exit criteria satisfied	*See Section 7*
All activities completed	*KPMG Consulting*
Checklists and reports completed by personnel participating in the test.	*KPMG Consulting*

18. M&R End to End Trouble Report Processing

18.1 Description

This test involves the execution of selected M&R test scenarios to evaluate Qwest's performance in making repairs under the conditions of various wholesale maintenance scenarios.

18.2 Objective

The objective of this test is to evaluate Qwest's performance in making repairs under the conditions of various wholesale maintenance scenarios. The quality of the repair process is to be assessed, and compared with retail operations where the data is available.

18.3 Entrance Criteria

Table 18.3.1 Entrance Criteria

Criteria	Responsible Party
No legally effective orders or injunctions preventing the test exist	ROC, Qwest
The ROC has verified measurements to be used in the test	ROC, Liberty Consulting
All required Qwest interfaces are operationally ready	Qwest
HP is operationally ready	HP
The statistical plan is in place	TAG, KPMG Consulting
Pass/reject criteria have been identified	ROC, KPMG Consulting
Test scenarios selected	KPMG Consulting
Product descriptions and business rules for all transactions to be tested are available.	Qwest
Techniques & instrumentation available	Qwest, KPMG Consulting
Test bed circuits provisioned and validated	Qwest, KPMG Consulting
Faults inserted into test-bed circuits as required by the test scenarios	Qwest, KPMG Consulting

18.4 Test Scope

Selected M&R test scenarios will be executed to evaluate Qwest's performance in making repairs under the conditions of various wholesale maintenance scenarios. The following chart contains the processes, sub-processes, and methods for evaluating the End-to-End Trouble Report Processing test:

Table 18.4.1 Test Target: Execution of M&R Test Scenarios

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
End-to-End Trouble Report Processing - Resale	M&R Test Scenarios	Accuracy Timeliness	Inspection	Quantitative
End-to-End Trouble Report Processing - UNE/UNE Combinations	M&R Test Scenarios	Accuracy Timeliness	Inspection	Quantitative

18.5 Test Scenarios

This test involves the execution of selected M&R test scenarios.

[illegible]

[illegible]

1 Test bed circuits with embedded faults

[illegible]

1 Conduct normal test if applicable for each test scenario.

2 Note test results.

3 Create and submit trouble ticket via IMA.

4 Periodically monitor each trouble report throughout its life using trouble report status summaries in IMA

5 Note significant events in the trouble report life cycle (error occurrences, corrections, trouble ticket submission time, time cleared, etc.).

6 Calculate time to repair measurements for each test scenario fault repaired.

7 Document observations

[illegible]

1 Reports that provide performance measurements

2 A time to repair measurement for each fault repaired

3 Summary report of observations

4 Observation and Exception reports

5 Variance between actual performance and standards of performance

18.7 *M&R Work Center Support Process Evaluation* ~~*End to end M&R Process Evaluation*~~

18.7.1 Description

The M&R work center support evaluation is an operational analysis of the work center/help desk processes developed by Qwest to provide support to CLECs with questions, problems and issues related to wholesale trouble reporting and repair operations.

18.7.2 Objectives

The objective of this test is to evaluate the effectiveness of M&R work center support operations and adherence to common support center/help desk procedures. An additional objective is to analyze the nature and frequency of problems referred to the work center to determine if they indicate potential problems in other M&R Domain.

Specifically, this evaluation is designed to:

- Determine completeness and consistency of work center/help desk processes and procedures

- Determine whether exception and escalation procedures are correctly documented and work effectively
- Provide evidence of reasonable security measures to ensure integrity of work center/help desk data and the ability to restrict access to parties with specific access permissions
- Determine the usefulness and accuracy in identifying and resolving problems
- Determine the existence and functionality of procedures for measuring, tracking, reporting and maintaining work center/help desk performance
- Determine the existence of a capacity management process which addresses Qwest's ability to scale up for future growth
- Determine the existence of Maintenance and Repair coordination processes and procedures, and other operational elements associated with M&R coordination activities between Qwest and CLEC operations organizations.

18.7.3 Entrance Criteria

Table 18.7.3.1 Work Center Support M&R Process Evaluation Entrance Criteria

Criteria	*Responsible Party*
Detailed test plan completed	*KPMG Consulting*
Interfaces and scenarios developed and approved	*KPMG Consulting and Qwest*
Process Evaluation Tool Kits	*KPMG Consulting*
Resources ready	*KPMG Consulting*
Required data and documentation provided	*Qwest*

18.7.4 Test Scope

Table 18.7.4.1 Work Center Support M&R Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Work Processing	Work Assist	Timeliness	Inspections Logging Interviews	Qualitative
	Work Logging	Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Prioritization	Existence Effectiveness	Inspections Logging Interviews	Qualitative
Problem Tracking and Resolution	Documentation	Clarity Accuracy	Document Review Interviews	Qualitative

Table 8.7.4.1 Work Center Support M&R Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Records and Reporting	Timeliness Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Work Package	Evidence Accuracy	Inspections Logging Interviews	Qualitative
	Log Books and Files	Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Work Center Support	Timeliness	Inspections Logging Interviews	Qualitative
Supply Expediting Receiving	Documentation	Evidence Clarity Accuracy	Document Review Interviews	Qualitative
	Job Order	Accessibility Timeliness	Inspections Logging Interviews	Qualitative
	Expediting Logging	Accuracy	Inspections Logging Interviews	Qualitative
	Records and Reports	Timeliness	Inspections Logging Interviews	Qualitative
	Log Books and Files	Accuracy	Inspections Logging Interviews	Qualitative
	Work Center	Timeliness	Inspections Logging Interviews	Qualitative
Work Center Receipts		Accuracy Completeness	Inspections Logging Interviews	Qualitative
Work Unit Completion	Process Documentation	Accuracy Completeness	Interviews Document Review	Qualitative
	Notification Procedure	Timeliness Accuracy	Interviews	Qualitative
Maintenance Closing	Process Documentation	Accuracy Completeness	Interviews Document Review	Qualitative
	Notification Procedure	Timeliness Accuracy	Interviews	Qualitative

Table 18.7.4.1 Work Center Support ~~M&R~~ Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Manual Handling – Resale		Accuracy Timeliness Consistency	Observation Logging Interviews	Qualitative
Manual Handling – UNE/UNE-P		Accuracy Timeliness Consistency	Observation Logging Interviews	Qualitative
Capacity Management	Capacity management processes and procedures	Adequacy and completeness of and adherence to capacity management process	Inspection Document review Interview	Qualitative

18.7.5 Test Scenarios

Not applicable.

18.7.6 Test Approach

18.7.6.1 Inputs

1. Interview guides
2. Observation checklists
3. Work center/help desk evaluation checklists
4. Work center contact logs
5. Process and procedure documentation
6. Qwest notification procedures for coordinated meets and coordinated testing

18.7.6.2 Test Activities

1. Conduct Maintenance and Repair center visits
2. Conduct work center/help desk evaluations
3. Establish work center contact logs
4. Analyze and collate contacts by type
5. Report negative observations via the Observation/Exception process as appropriate~~Report negative observations to Help Desk~~

18.7.6.3 Outputs

1. Completed checklists from the work center/help desk evaluations
2. Summary report
3. Contact analysis results report
4. Observation and Exception reports

18.8 End-to-End Maintenance and Repair (M&R) Process Evaluation

18.8.1 Description

The End-to-End M&R Process Evaluation test evaluates the functional equivalence of Qwest's End-to-End M&R Process for retail and wholesale trouble reports. The test encompasses all activities from the moment a trouble ticket is captured in Qwest's systems until the same trouble ticket is closed and the customer is notified of the resolution.

18.8.2 Objectives

The objectives of this test are to evaluate Qwest's wholesale M&R trouble reporting process and the equivalence of Qwest's end-to-end processes for trouble reporting and repair of retail and wholesale services.

Additional objectives are to (1) evaluate the comparability of M&R retail and wholesale work center support operations and adherence to common work center procedures, and (2) analyze the nature and frequency of problems referred to the work centers to assess the level of parity between retail and wholesale trouble reporting activities.

18.8.3 Entrance Criteria

Table 18.8.3.1 M&R Process Evaluation Entrance Criteria

Criteria	Responsible Party
Detailed test plan completed	KPMG Consulting
Techniques and instrumentation developed and approved	KPMG Consulting and Qwest
Process Evaluation Checklist	KPMG Consulting
Interview Guides	KPMG Consulting
Required data and documentation provided	Qwest

18.8.4 Test Scope

Table 18.8.4.1 M&R Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
End-to-End M&R Process: Resale and UNE/UNE-P	Process flow	Comparison with retail Completeness, consistency, and timeliness of the trouble reporting process	Interview Inspection Document review	Parity Compliance
Document Management	Document management processes	Completeness of document management process	Interview Inspection Document review	Parity Compliance

Table 18.8.4.1 M&R Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Capacity Management	Capacity management processes and procedures	Adequacy and completeness of capacity management process	Inspection Document review Interview	Parity Qualitative

18.8.5 Test Scenarios

Not applicable.

18.8.6 Test Approach

18.8.6.1 Inputs

1. Retail and wholesale M&R process flow documentation
2. Other procedural documentation
3. Evaluation checklists
4. Interview Guides
5. Retail analogs (as applicable)

18.8.6.2 Test Activities

1. Conduct M&R center visits
2. Review and compare wholesale and retail process flows
3. Identify differences between the two processes
4. Analyze process
5. Assess the potential impact of each difference (as applicable)
6. Document process flow analysis results

18.8.6.3 Outputs

1. Completed checklists and interview summaries
2. Summary report
3. Contact analysis results report
4. Observation and Exception reports (as applicable)

18.8.9 Exit Criteria

Table 18.89.1 Exit Criteria

Criteria	*Responsible Party*
All global exit criteria satisfied	*See Section 7*
Time to repair measurements for repaired faults	*KPMG Consulting*
Summary report of observations	*KPMG Consulting*

19. Billing Usage Functional Evaluation

19.1 Description

The Functional Usage Evaluation is an analysis of Qwest's daily message processing to ensure usage record types including access records (when appropriate), rated records, un-rated records and credit records appear accurately on the Daily Usage Feed (DUF) according to the defined schedule.

19.2 Objective

The objective of this test is to evaluate the following:

- Accuracy and completeness of all usage record types on the DUF including access records that should appear, not receiving records that should not appear, and not receiving empty set files
- Timeliness of the DUF and access records delivery

19.3 Entrance Criteria

Table 19.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interfaces are operationally ready	*Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Test bed provisioned and validated	*Qwest, KPMG Consulting*
Product descriptions and business rules for all transactions to be tested are available.	*Qwest*
Techniques and instrumentation developed	*KPMG Consulting*
Qwest resources are available to participate in the test	*Qwest*
Detailed Test Plan completed	*KPMG Consulting*
All call scripts that reflect the types, durations, terminating numbers, etc. of call that test callers are to make are provided	*KPMG Consulting*

19.4 Test Scenarios

Test calling is dependent on the provisioning process, which is dependent on scenarios. Test calls and service changes will occur simultaneously.

A subset of the Appendix D scenarios will be used in this test.

19.5 Test Approach

This test will use operational analysis to evaluate the accuracy and completeness of records contained in the DUF. This analysis will also examine the age of calls on the DUF. The evaluations will be accomplished by dispatching testers to various locations within the states participating in the test. These testers will place test calls and will record information about these calls including the "call from" number, "call to" number, "bill to" number, call time and duration. The data contained in these Daily Usage Feeds will then be compared to the call logs and relevant billing media. The Test Team will also record information about the contents of DUFs received by KPMG Consulting.

Test calls will be made using some customer accounts that will migrate during the test period. Migration refers to the conversion of account ownership from one LEC to another. Test calls will be made from migrating accounts before and after the migration date to ensure accurate guiding of data in the Daily Usage Feed.

For example, a Qwest retail customer migrates to a CLEC during the test. Calls made by the customer prior to migration should be guided to Qwest. Calls made by the customer after migration should be guided to the new CLEC.

Test calls should be placed from within the Qwest calling region. Test calls will be made throughout the workday. Test calls will include a variety of call types with the exception of 911, and will be placed from various locations in order to test various switch technologies. Local and toll test calls terminating on the test lines will also be made. These calls will be subject to evaluation.

19.5.1 Inputs

1. Detailed Test Plan
2. Validated test bed, including lines, telephones and facilities

19.5.2 Activities

1. Test Team will develop Test Call Matrices, which include test call logs for each location, on each day, for each originating phone number.
2. Test Team will assemble tester resources, provide instructions and dispatch testers to calling locations.
3. Testers will complete calls and log results.
4. HP will receive DUF files from Qwest and provide to Test Team.
5. Test Team will verify that appropriate data is on the DUF.
6. Test Team will verify that calls that do not belong on the DUF are not on the DUF.
7. Test Team will verify that appropriate calls present in the DUF match the testers call log.
8. Test Team will identify DUF files that contain no billable records.
9. Using records received in the DUF files, Test Team will validate the age of calls by determining the number of business days between the call date and the day the DUF file was created.

10. Test Team will compile results.

19.5.3 Outputs

1. Call Logs Report - A report of the testers logs.
2. DUF Accuracy and Completeness Report – A report showing the validation of calls made during the test.
3. Empty DUF Files Report – A Report showing the number of empty DUF files sent by Qwest
4. Observation and Exception reports
5. Final report

19.6 Daily Usage Feed Returns, Production and Distribution Processes Evaluation

19.6.1 Description

The Daily Usage Feed Returns, Production and Distribution Process Evaluation is an operational analysis of the processes and related documentation used by Qwest to create, transmit and investigate, where necessary, to correct Daily Usage Feed (DUF) return requests from CLECs by issuing adjustments and/or credits. This test also includes an evaluation of Qwest's capacity management process.

The test may also include soliciting CLEC participation to gather data to help with the evaluation of the usage return process. The tester will observe the interactions of Qwest and CLECs submitting returns to verify that the procedures described by Qwest during the process evaluation are followed in practice. Inclusion of this segment of the test will be dependent on the availability of relevant CLEC data and examples.

19.6.2 Objective

The objective of this test is to determine the accuracy, completeness and timeliness of processes used to produce and distribute the DUF and to process and respond to Daily Usage Feed Return requests.

19.6.3 Entrance Criteria

Table 19.6.3.1 DUF Returns, Production and Distribution Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
All required Qwest interfaces are operationally ready	*Qwest*
HP is operationally ready	*HP*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Documentation on DUF Returns, Production and Distribution processes available	*Qwest*
Interview and walk-through arrangements finalized	*Qwest*

19.6.4 Test Scope

The scope of this test includes the processes, sub-processes and measurements listed in the Table 19.6.4.1 below.

Table 19.6.4.1 Daily Usage Production and Distribution Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Produce Daily Usage File	Production of DUF files	Completeness and timeliness	Inspection	Qualitative
	Balancing and reconciliation of Daily Usage feed	Completeness of balancing and reconciliation procedures	Inspection	Qualitative
	Route Daily Usage	Controllability of usage	Inspection	Qualitative
Transmit Daily Usage File	Data transmission and/or cartridge tape delivery to CLEC	Completeness, consistency and timeliness of the process	Inspection	Qualitative Quantitative
Maintain and Re-transmit Usage History	Create Daily Usage backup	Reliability of repeatable process	Inspection	Qualitative
	Retrieve and re-transmit Daily Usage backup data	Availability and timeliness of prior period usage data to CLEC	Inspection	Qualitative Quantitative
Capacity Management	Capacity management process	Adequacy, completeness of, and adherence of the capacity management process	Inspection Document review Interview	Qualitative

19.6.5 Test Scenarios

Not applicable.

19.6.6 Test Approach

19.6.6.1 Inputs

1. Detailed operational test plan
2. Qwest personnel to review procedures, systems and tools
3. Process documentation
4. Availability of HP DUF re-transmissions

19.6.6.2 Activities

1 Develop Daily Usage Production and Distribution Process Evaluation checklist
2 Prepare CLEC assistance solicitation materials
3 Select CLEC participants and arrange for observation
4 Observe DUF Returns process from CLEC perspective
5 Conduct process walk-throughs and interviews
6 Compile findings

19.6.6.3 Outputs

1. Completed test package for the Daily Usage Feed Returns, Production and Distribution Processes
2. Observation and Exception reports
3. Completed final report from the Daily Usage Feed Returns, Production and Distribution Processes Evaluation

19.7 Exit Criteria

Table 19.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	[illegible]

20. Carrier Bill Functional Evaluation

20.1 Description

The Carrier Bill Functional Evaluation is an analysis of Qwest's ability to accurately bill usage plus monthly recurring charges (MRC), fractional MRC's, and non-recurring charges (NRC) on the appropriate type of bill. An accurately billed item will contain the correct price and correct supporting information, such as start/end dates, duration, credited amounts, and discount amounts. This test will also evaluate the timeliness of bill delivery to the CLEC's.

Monthly charges will be examined for both Resale and UNE billing on Integrated Access Billing System (IABS), Billing and Receivable Tracking System (BART), and Customer Record

Information System (CRIS) bills. The verification of prices will consider prices charged based on Qwest tariffs, Qwest-CLEC Interconnection Agreements and Statements of Generally Available Terms and Conditions (SGATs), as appropriate. End user bills will be produced by Qwest's systems and validated by KPMG Consulting in this test. Validation of a sample of the end user bills will help verify that double billing of the end user (by Qwest and CLEC) does not occur. Table 20.1 reflects a number of key characteristics of Resale and UNE billing information that will be used in the design of test cases. Information includes the various charge components and their destination bill.

Table 20.1.1 Key Characteristics of Billing Information for Resale and UNE Customers

	Billing Component	*Rating*	*Usage*	*Billing*
Resale	*Usage*	*CRIS*	*DUF*	*CRIS*
Resale	*MRC NRC*	*CRIS*	*N/A*	*CRIS*
UNE loop	*MRC NRC*	*CRIS*	*N/A*	*CRIS*
UNE-P	*MRC NRC; usage*	*CRIS*	*DUF*	*CRIS*
UNE DET	*MRC NRC*	*IABS*	*N/A*	*IABS*
Directory Listings	*MRC NRC*	*CRIS*	*N/A*	*CRIS*
Line Sharing	*NRC*	*CRIS*	*N/A*	*IABS*
Line Sharing	*MRC*	*CRIS*	*N/A*	*CRIS*
Line Splitting	*NRC*	*CRIS*	*N/A*	*IABS*
Line Splitting	*MRC*	*CRIS*	*N/A*	*CRIS*
Dark Fiber	*NRC MRC*	*BARTS*	*N/A*	*BARTS*

20.2 Objectives

This test evaluates the timely delivery of the bill and the accurate and timely appearance of charges on the appropriate bill. Appearance of charges will depend on the type of products ordered and/or class of service changes for resale and UNE. Details to be evaluated include:

- Fractional charges are accurate.
- Recurring and non-recurring charges are accurate.
- Discounts are applied correctly.
- Totals are accurate.
- Late charges are applied correctly.
- Service establishment dates are accurate.
- Adjustments appear on the bill.
- Bills are delivered to HP in a timely manner.

- All usage charges are billed accurately.

20.3 Entrance Criteria

Table 20.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
The ROC has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interfaces are operationally ready	*Qwest*
HP is operationally ready	*HP*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
All CRIS and IABS baseline bills produced from the initial test bed	*Qwest*
Techniques and instrumentation developed	*KPMG Consulting*
Product descriptions and business rules for all transactions to be tested are available	*Qwest*
Pricing sections of Qwest tariffs, Qwest-CLEC Interconnection Agreements and SGATs are provided	*Qwest*
Test bed provisioned and validated	*Qwest, KPMG Consulting*
Calls made during Functional Usage Evaluation processed through to the DUF and available for billing	*Qwest*
Availability of Qwest resources to test and produce CRIS and IABS bills	*Qwest*

20.4 Test Scope

Table 20.4.1 Test Scope for Carrier Bill Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Techniques	Criteria Type
Maintain Bill Balance	Carry balance forward	Accuracy of bill balance	Inspection	Quantitative
Verify Billing Accounts	Verify Billing Accounts	Completeness and accuracy of data	Inspection	Quantitative
Bills and Delivery	Verify recurring charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify non-recurring charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify fractional charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify Usage Charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify discounts	Completeness and accuracy of data	Inspection	Quantitative
	Verify adjustments (debits and credits)	Completeness and accuracy of data	Inspection	Quantitative
	Verify late charges	Completeness and accuracy of data	Inspection	Quantitative
	Receive bill copy	Timeliness of media delivery	Logging	Quantitative

As part of this test, a variety of products and services will be ordered. This may result in many variations in billing presentation from the ~~two primary~~Qwest billing systems (CRIS, BARTS, and IABS). Relevant bill types will be selected for review based upon the product mix and anticipated charges as defined in the expected test results.

20.5 Scenarios

A subset of the Appendix D scenarios will be utilized for billing and usage testing purposes. The set selected will include:

- Test cases for 'migration/conversion' of customers
- Test cases for disconnects, new service (add/delete), and partial disconnects
- Test cases for changes to services (modify)
- Test cases for changes to service delivery method
- All migration situations should be adequately represented, including:
  - Qwest to CLEC
  - CLEC to Qwest
  - CLEC to CLEC

The scenarios utilized for billing and usage testing will be applied across all service delivery methods available in Qwest at the time of the test(s).

20.6 Test Approach

This test will use systems and operational analysis to evaluate the completeness and accuracy of charges that should appear on the bill based on usage information from the Functional Usage Evaluation and selected scenarios. Expected results will be defined for each test case.

Three bill periods will be processed for the same set of customers.

The first bill period consists of the baseline bills where customers created for this test are billed for the first time directly from the initial test bed. These bills are produced prior to the execution of any transaction scenarios that affect selected customers.

The second and third bill periods consist of bills produced after selected scenarios have been executed. This second set of bills will include items such as prorates, disconnects, migrations, adjustments, etc. Some customers will be created during the test execution, and will only receive second or third period bills.

The following list shows inputs, activities and outputs of the process needed to validate the full range of test cases.

20.6.1 Inputs

1. Detailed Test Plan
2. Verified Baseline Bills and CSRs
3. Selected usage from the Billing Functional Usage Evaluation
4. CSRs and completions from relevant orders

20.6.2 Activities

1. Begin first bill period by receiving baseline bills
2. Record invoice bill date and actual date received
3. Develop expected results for each test case
4. Validate test results for each applicable test case
5. Identify and resolve discrepancies on baseline bills
6. Process service order changes
7. Receive CSRs for second bill cycle
8. Receive bills for second bill period
9. Record invoice bill date and actual date received
10. Develop expected results for test cases
11. Validate test results for each applicable test case
12. Identify discrepancies

13. Complete second bill period
14. Repeat 7-12 until third bill period is complete
15. Compile results

20.6.3 Outputs

1. An analysis of discrepancies to be included in the Final Report
2. Apply applicable performance measures to test data
3. Observation and Exception reports
4. Final report

20.7 Bill Production and Distribution Process Evaluation

20.7.1 Description

The Bill Production Process Evaluation is an operational analysis of the processes employed by Qwest to produce and distribute carrier bills.

This test will use operational analysis techniques. It will rely on the development of various evaluation checklists to facilitate a structured walk-through of the bill production and delivery processes

20.7.2 Objectives

The objective of this test is to determine whether the processes employed by Qwest to produce and distribute carrier bills result in bills that are accurate and are distributed to CLECs on a timely basis. The processes that enable a CLEC to request and obtain copies of previously received bills are also reviewed.

20.7.3 Entrance Criteria

Table 20.7.3.1 Bill Production and Distribution Process Evaluation Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Wholesale billing process flow documentation available	*Qwest*
Process Evaluation Checklist developed	*KPMG Consulting*
Interview Guides/questionnaire developed	*KPMG Consulting*
Interviewees identified and scheduled	*Qwest, KPMG Consulting*

20.7.4 Test Scope

Table 20.7.4.1 Bill Production and Distribution – Process Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Balance Cycle	Define balancing and reconciliation procedures	Completeness and effectiveness of bill balancing and reconciliation procedures	Inspection	Qualitative
	Produce Control Reports	Completeness and accuracy in generation of control elements	Inspection	Qualitative
	Release cycle	Compliance to balancing and reconciliation procedures	Inspection	Qualitative
Deliver Bill	Delivery of bill media	Timeliness and controls of media delivery	Inspection	Qualitative
Maintain Bill History	Maintain billing information	Timeliness and controllability of billing information	Inspection	Qualitative
	Access billing information	Accessibility and availability of billing information	Inspection	Qualitative
Request Re-send		Timeliness and accuracy of the delivery	Inspection	Qualitative Quantitative

20.7.5 Test Scenarios

Not applicable.

20.7.6 Test Approach

20.7.6.1 Inputs

1. Detailed operational test plan
2. Qwest personnel to review procedures, systems and tools
3. Process documentation

20.7.6.2 Activities

1. Develop Bill Production and Distribution Process Evaluation checklist
2. Conduct process walk-throughs and interviews
3. Compile findings

20.7.6.3 Outputs

1. Completed test package for the Bill Production and Distribution Process Evaluation
2. Observation and Exception reports
3. Completed final report from the Bill Production and Distribution Process Evaluation

20.8 Exit Criteria

Table 20.8.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

21. Scalability Test

Per agreement reached during the July 18-20 MTP Design Workshop in Salt Lake City, this section has been removed. This test's objective will be covered within the other functional test areas.

22. CLEC Network Provisioning Test

22.1 NDR

22.1.1 Description

Part of the evaluation of the interaction between Qwest and a CLEC will include a review of the processes for fulfilling network design requests (NDRs). This test evaluates Qwest's methods and procedures and practices for network design requests related to establishing and maintaining a CLEC's ability to access unbundled network elements, including customized routing to Directory Assistance and Operator Services.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and Qwest parties. A key element of this test will be observing and evaluating ongoing, in production NDR processes.

22.1.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information, documentation, and technical support from Qwest to adequately prepare for and implement network designs, including those required for customized routing for Directory Assistance and Operator Services
- Determine whether network design processes are well-structured and managed to produce the intended results and to evaluate Qwest's compliance with those processes
- Evaluate the usability and completeness of NDR forecast forms and procedures
- Assess the quality of the NDR business process

22.1.3 Entrance Criteria

Table 22.1.3.1Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

22.1.4 Test Scope

The evaluation will examine the following ~~issues~~ with respect to network design request-related processes:

Process Area	**Sub Process**	**Evaluation Measure**	**Evaluation Technique**	**Criteria Type**
Network Design Requests	Network Design Planning Process	Adequacy and completeness of the process. Adherence to the planning process	Inspection Document review Report review Interview	Qualitative
	Network Design Request Testing Process	Adequacy and completeness of the process. Adherence to the testing process	Inspection Document review Report review Interview	Qualitative
	Procedures for handling CLEC Network Design Confidential Information	Adequacy and completeness of the process. Adherence to the established process	Document review Report Review Interview	Qualitative
	NDR Provisioning & notification Process	Adequacy and completeness of the process. Adherence to the communications and notification process	Document review Inspection Interview	Qualitative

- ~~The adequacy and completeness of and adherence to the network design planning process~~
- ~~The adequacy and completeness of and adherence to the network design request testing process~~
- ~~The adequacy and completeness of and adherence to the procedures for ensuring confidentiality of CLEC provided network design information~~
- ~~Adequacy and completeness of and adherence to methods employed by Qwest to communicate with the CLEC regarding the NDR provisioning process~~

22.1.5 Test Scenarios

This test does not rely upon scenarios.

22.1.6 Test Approach

22.1.6.1 Inputs

1. Procedural and technical documentation
2. Qwest instructions to CLECs for planning and implementing network designs, including those required for customized routing for Directory Assistance and Operator Services
3. Evaluation checklists
4. Interview guides
5. CLEC data

22.1.6.2 Activities

1. Gather information
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

22.1.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

22.1.7 Exit Criteria

Table 22.1.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

22.2 Collocation

22.2.1 Description

Part of the evaluation of the interaction between Qwest and a CLEC will include a review of the processes for fulfilling collocation requests. This test evaluates Qwest's methods and procedures and practices for collocation-related requests for establishing and maintaining a CLEC's ability to access unbundled network elements.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and Qwest parties.

A key element of this test will be to observe and to evaluate ongoing, in production, collocation processes.

22.2.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information and technical support from Qwest to adequately prepare for and implement collocation facilities
- Determine whether collocation processes are well-structured and managed to produce the intended results and to evaluate Qwest's compliance with those processes
- Evaluate the usability and completeness of collocation forecast forms and procedures
- Assess the quality of the collocation business process

22.2.3 Entrance Criteria

Table 22.2.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/reject criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

22.2.4 Test Scope

The evaluation will examine the following ~~issues~~ with respect to collocation-related processes:

Process Area	Sub Process	Evaluation Measure	Evaluation Technique	Criteria Type
Collocation	Collocation Planning Process	Adequacy and completeness of the process. Adherence to the planning process	Inspection Document review Report review Interview	Qualitative
	Collocation Project Management Procedures	Adequacy and completeness of the process. Adherence to the project optimization, schedule, cost and authorization procedure and process	Document review Report Review Interview	Qualitative
	Procedures for handling CLEC Collocation Confidential Information	Adequacy and completeness of the process. Adherence to the established process	Document review Report Review Interview	Qualitative

Process Area	Sub Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Collocation project activities technical support	Adequacy and completeness of the process. Adherence to the established procedures and process	Document review Report Review Interview	Qualitative
	Collocation Testing	Adequacy and completeness of the process. Adherence to the established test structures and action steps	Document review Report Review Interview	Qualitative
	Collocation Provisioning & notification Process	Adequacy and completeness of the process. Adherence to the communications and notification process	Document review Inspection Interview	Qualitative

- ~~The adequacy and completeness of and adherence to the collocation planning process~~
- ~~The adequacy and completeness of and adherence to the collocation project management procedures including the processes that deal with the provision of time and cost estimates relative to construction or space conditioning and the timely provision of requests for CLEC authorization of work under those estimates~~
- ~~The adequacy and completeness of and adherence to the procedures for ensuring confidentiality of CLEC provided collocation information~~
- ~~The availability and adequacy of resources and qualified technical support to facilitate collocation activities~~
- ~~The adequacy and completeness of and adherence to the collocation testing process~~
- ~~Adequacy and completeness of and adherence to methods employed by Qwest to communicate with the CLEC regarding the collocation provisioning process~~

22.2.5 Test Scenarios

This test does not rely upon scenarios.

22.2.6 Test Approach

22.2.6.1 Inputs

1. Procedural and technical documentation
2. Qwest instructions to CLECs for planning and implementing collocations
3. Evaluation checklists

4. Interview guides
5. CLEC data

22.2.6.2 Activities

1. Gather information
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings
5. Review production collocation performance data

22.2.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

22.2.7 Exit Criteria

Table 22.2.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

22.3 Interconnection Trunks

22.3.1 Description

Part of the evaluation of the interaction between Qwest and a CLEC will include a review of the processes for providing interconnection trunks. This test evaluates Qwest's methods and procedures and practices for the provision of interconnection trunks related to establishing and maintaining a CLEC's ability to access unbundled network elements.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and Qwest parties. (This test is not intended to examine interconnection for other purposes, such as inter-exchange carrier's network to network interconnection.)

22.3.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information and technical support from Qwest to adequately prepare for and implement interconnection trunks.
- Determine whether interconnection processes are well-structured and managed to produce the intended results and to evaluate Qwest's compliance with those processes

- Determine the existence and functionality of procedures for developing, publicizing, conducting, and monitoring trunk forecasting efforts with CLECs
- Verify the integration of trunk forecasting procedures with Qwest's facilities planning procedures
- Ensure the trunk forecasting effort has effective management oversight
- Assess the quality of the interconnection trunk forecasting process

22.3.3 Entrance Criteria

Table 22.3.3.1 Entrance Criteria

Criteria	*Responsible Party*
No known obstacles or impediments preventing the test exist	*ROC, Qwest*
Pre-BTA has verified measurements to be used in the test	*ROC, Liberty Consulting*
All required Qwest interfaces are operationally ready	*Qwest*
Pass/fail criteria have been identified	*ROC, KPMG Consulting*
Process evaluation tool kits developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

22.3.4 Test Scope

The evaluation will examine the following ~~issues~~ with respect to interconnection trunk-related processes:

Process Area	Sub Process	Evaluation Measure	Evaluation Technique	Criteria Type
Interconnection Trunks	Trunk Forecasting Procedures	Adequacy and completeness of the process. Adherence to the trunk forecasting process	Document review Report Review Interview	Existence
	Procedures for handling CLEC Trunk Forecast Confidential Information	Adequacy and completeness of the process. Adherence to the established process	Document review Report Review Interview	Qualitative
	Integration of Trunk forecasts in facility planning process	Existence of standard planning process Adherence to the established planning procedures and process	Document review Interview Inspection	Qualitative

Process Area	Sub Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Interconnection Trunk Provisioning & Notification Process	Adequacy and completeness of the process. Adherence to the communications and notification process	Document review Interview Inspection	Qualitative
	Process for managing & addressing trunk order due date issues	Adequacy and completeness of the process. Existence of escalation process Adherence to the communications and notification process	Document review Report Review Interview	Qualitative

- ~~The adequacy and completeness of and adherence to the trunk forecasting procedures~~
- ~~The adequacy and completeness of and adherence to the procedures for ensuring confidentiality of CLEC-provided forecast information~~
- ~~The availability and integration of published interconnection trunk forecasts in Qwest's facilities planning process~~
- ~~Adequacy and completeness of and adherence to methods employed by Qwest to communicate with the CLEC regarding the interconnection trunk provisioning process~~
- ~~Timeliness of methods employed by Qwest to process ASRs that order LIS trunks in order to determine the extent to which due dates are impacted, if at all~~

22.3.5 Test Scenarios

This test does not rely upon scenarios.

22.3.6 Test Approach

22.3.6.1 Inputs

1. Procedural and technical documentation
2. Qwest instructions to CLECs for forecasting, planning and implementing interconnection trunks
3. Evaluation checklists
4. Interview guides
5. CLEC data

22.3.6.2 Activities

1. Gather information

2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

22.3.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

22.3.7 Exit Criteria

Table 22.3.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

23. Change Management Test

23.1 Description

This test evaluates Qwest's methods and procedures for managing changes to and change requests for OSS interfaces and business processes utilized by CLECs. This test will review Qwest's co-provided industry change management process (CICMP). The test will rely on inspection and review of Qwest documentation and on CLEC interviews.

23.2 Objective

The objective of this test is to determine the adequacy and completeness of procedures for developing, publicizing, conducting, and monitoring change management.

23.3 Entrance Criteria

Table 23.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

23.4 Test Scope

Table 23.4.1 Change Management Evaluation Scope

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Change Management	Change Request Implementation	Completeness and consistency of change request process	Inspection Document review Report review Interview	Qualitative
	Prioritization and Escalation Process	Completeness and consistency of prioritization and escalation guidelines and process	Inspection Document review Report review Interview	Qualitative
	Developing Change Proposals	Completeness and consistency of change development process	Inspection Document review Report review Interview	Qualitative
	Evaluating Change Proposals	Completeness and consistency of change evaluation process	Inspection Document review Report review Interview	Qualitative
	Severity levels	Completeness and reasonableness of levels and process	Inspection Document review Report review	Qualitative
	Notification Schedules	Reasonableness of notification schedules and completeness of process	Inspection Document review Report review Interview	Qualitative
	Implementing Change	Completeness and consistency of change implementation process	Inspection Document review Report review Interview	Qualitative
	Intervals	Reasonableness of change interval	Inspection Document review Report review Interview	Qualitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Documentation	Timeliness of documentation and notification updates	Inspection Document review Report review Interview	Qualitative
	Tracking Change Proposals	Adequacy and completeness of change management tracking process	Inspection Document review Report review Interview	Qualitative

23.5 Scenarios

This test does not rely on scenarios.

23.6 Test Approach

23.6.1 Inputs

1. Qwest change management process documentation
2. Other procedural and technical documentation
3. Qwest instructions to CLECs for interacting with change management functions and interpreting change management activities
4. One significant software release that has been recently implemented
5. Evaluation checklists
6. Interview guides
7. CLEC data
8. Change management process artifacts, such as notifications and updated specifications

23.6.2 Activities

1. Gather documentation and other relevant data
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

23.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

23.7 Exit Criteria

Table 23.7.1 Exit Criteria

Criteria	Responsible Party
Global exit criteria satisfied	*See Section 7*

24. Qwest CLEC Support Processes and Procedures Review

24.1 Description

These tests are designed to evaluate the systems, processes and documentation provided by Qwest for the establishment and maintenance of business relationships with the CLECs. Areas to be evaluated include a determination of whether Qwest is adequately assisting CLECs to understand how to implement and use all of the OSS functions available to them.

24.2 Objectives

The processes and procedures review includes evaluation of the following areas of support provided by Qwest to CLECs in the establishment and on-going maintenance of their wholesale services business relationship:

- Account Establishment & Management
- CLEC Forecasting
- CLEC Training
- Interface Development
- OSS Interface (IMA) Help Desk Support
- Interconnect Service Center Support
- Account Maintenance Support Center (M&R)
- Network Surveillance and Outage Notification

24.3 Account Establishment & Management Review

24.3.1 Description

This test evaluates Qwest's methods and procedures, processes and practices for establishing and managing CLEC account relationships.

24.3.2 Objectives

The objectives of this test are to determine the adequacy, completeness, and compliance with procedures for developing, publicizing, conducting, and monitoring account management.

24.3.3 Entrance Criteria

Table 24.3.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/reject criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*
Provision of relevant historical data	*Qwest*
Access to CLEC account management calls	*CLEC*

24.3.4 Test Scope

Table 24.3.4.1 Account Establishment & Management Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Establishing an Account Relationship	Staffing	Appropriate roles and responsibilities	Inspection Document review	Qualitative
		Capacity, coverage, and account allocation	Inspection Document review	Qualitative
Maintaining an Account Relationship	Customer contact	Adequacy and completeness of procedures for responding to customer requests	Interviews Logging Report Review	Quantitative
	Escalation	Adequacy and completeness of escalation procedures	Inspection Document review Interviews	Qualitative
	Routine and urgent customer communications	Adequacy and completeness of communication and notification procedures	Inspection Document review Interviews	Qualitative
	Customer documentation	Adequacy and completeness of procedures for developing, distributing, and maintaining customer documentation	Inspection Document review Interviews	Qualitative

24.3.5 Scenarios

This test does not rely on scenarios.

24.3.6 Test Approach

24.3.6.1 Inputs

1. Qwest account management procedural documentation

2. Qwest instructions to CLEC's for interacting with account managers
3. Other procedural, technical, and customer documentation
4. Evaluation checklists
5. Interview guides
6. CLEC data

24.3.6.2 Activities

1. Gather documentation and other relevant data
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

24.3.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

24.3.7 Exit Criteria

Table 24.3.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

24.4 CLEC Forecasting Review

24.4.1 Description

This test evaluates Qwest's methods and procedures, processes and practices for requesting and managing CLEC facility and service forecasts for wholesale services.

24.4.2 Objective

The objective of this test is to determine the adequacy, completeness, and compliance with procedures for requesting, receiving, refining and utilizing forecasts from CLECs. The utilization portion of this test will include an assessment of Qwest's capacity management process for scaling the growth of its systems and staff based on projected demand.

24.4.3 Entrance Criteria

Table 24.4.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing	*ROC, Qwest*

Criteria	*Responsible Party*
Hit test exist	
Pass retest criteria have been identified	*ROC, KPMG Consulting*
Forecast process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*
Provision of relevant historical data	*Qwest*
Access to CLEC account management calls	*CLEC*

24.4.4 Test Scope

Table 24.4.4.1 Forecasting Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Forecast Procedures	Request process	Existence Completeness	Inspection	Existence Qualitative
	Receipt and Refinement	Existence Completeness	Inspection	Existence Qualitative
Forecast Utilization	Process Documentation	Existence Completeness	Inspection	Existence Qualitative
	Compliance	Timeliness Accuracy	Inspection	Qualitative

24.4.5 Scenarios

This test does not rely on scenarios.

24.4.6 Test Approach

24.4.6.1 Inputs

1. Qwest forecasting procedural documentation
2. Qwest instructions to CLECs for providing forecasts
3. Other procedural, technical, and customer documentation
4. Evaluation checklists
5. Interview guides
6. CLEC forecast data

24.4.6.2 Activities

1. Gather information
2. Perform interviews and documentation review
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

24.4.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

24.4.7 Exit Criteria

Table 24.4.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

24.5 CLEC Training

24.5.1 Description

This test evaluates Qwest's training documentation and practices for CLEC representatives engaged in the establishment and maintenance of the Qwest -CLEC business relationship.

24.5.2 Objective

The objective of this test is to determine the existence and adequacy of procedures for developing, announcing, conducting, and monitoring Qwest training for CLECs.

24.5.3 Entrance Criteria

Table 24.5.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/reject criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

24.5.4 Test Scope

Table 24.5.4.1 CLEC Training Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Training Program Development	Develop curriculum	Completeness of training curriculum and forums	Document review Inspection	Qualitative
		Adequacy of procedures to respond to information about training quality and utilization	Document review Inspection	Qualitative
		Adequacy of procedures to accept CLEC input regarding training curriculum	Document review Inspection	Qualitative
	Publicize training opportunities	Availability of information about training opportunities	Document review Inspection	Qualitative
Training Program Quality Assurance	Attendance and utilization tracking	Adequacy of process to track utilization and attendance of various training tools and forums	Document review Inspection	Qualitative
	Survey effectiveness of training	Adequacy of process to survey training recipients on effectiveness of training	Document review Inspection	Qualitative
	Monitor instructor performance	Adequacy of procedures to monitor instructor performance	Document review Inspection	Qualitative
Process Management	Performance measurement process	Controllability, efficiency and reliability of process	Inspection Document review	Qualitative
	Process improvement	Completeness of process improvement practices	Inspection Document review	Qualitative

24.5.5 Scenarios

This test does not rely on scenarios.

24.5.6 Test Approach

24.5.6.1 Inputs

1. Qwest training procedural documentation
2. Qwest instructions to CLECs for participating in training
3. Training material – manuals and handouts
4. Evaluation checklists
5. Interview guides

24.5.6.2 Activities

1. Gather information

1 Perform interviews and documentation review

2 Complete evaluation checklists and interview summaries

3 Develop and document findings

24.5.6.3 Outputs

1 Completed evaluation checklists and interview summaries

2 Observation and Exception reports

3 Final report

24.5.7 Exit Criteria

Table 24.5.7.1 Exit Criteria

Criteria	Responsible Party
Global exit criteria satisfied	See Section 7

24.6 OSS Interface Development Review

24.6.1 Description

This test evaluates Qwest's documentation, specifications and support provided to CLECs in developing, providing, and maintaining OSS interfaces for pre-ordering, ordering, 911 database updates, billing and maintenance & repair. This test also includes an assessment of Qwest's capacity management and growth planning processes.

24.6.2 Objective

The objective of this test is to determine the adequacy, consistency and completeness of Qwest's specifications, documentation and technical assistance provided to the CLECs for developing, testing and operating OSS interfaces for pre-ordering, ordering, 911 database updates, billing and maintenance and repair.

24.6.3 Entrance Criteria

Table 24.6.3.1 Entrance Criteria

Criteria	Responsible Party
No legally effective orders or injunctions preventing the test exist	ROC, Qwest
Pass/exit criteria have been identified	ROC, KPMG Consulting
Process evaluation checklist developed	KPMG Consulting
Interview guides developed	KPMG Consulting

24.6.4 Test Target

Table 24.6.4.1 OSS Interface Development Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Developing interface	Interface development methodology	Adequacy and completeness of interface development methodology	Inspection Document review Report review	Qualitative
	Documentation maintenance, distribution and retrieval documentation	Adequacy and completeness of interface documentation distribution procedures	Inspection Document review Report review	Qualitative
Enabling and testing interface	Interface enabling and testing methodology	Adequacy and completeness of carrier-to-carrier interface enabling and testing procedures	Inspection Document review Report review	Qualitative
	Availability of test environments and levels of support to CLECs	Availability and adequacy of functioning test environments, testing protocols, production cutover protocols and technical support for all supported interfaces	Inspection Document review Report review	Qualitative
	Interface enabling and testing support	Adequacy and completeness of interface enabling and testing procedural documentation	Inspection Document review Report review	Qualitative
Maintaining interface	Release management	Adequacy and completeness of interface enhancement software release management and regression testing protocols	Inspection Document review Report review	Qualitative
	Capacity management	Adequacy and completeness of capacity and growth planning process	Inspection Document review	Qualitative

24.6.5 Exceptions

This test does not rely on scenarios.

24.6.6 Test Approach

24.6.6.1 Inputs

1. Procedural and technical documentation
2. Query interactions to CLECs for enabling, testing, and maintaining compatibility with interface

- [illegible]
- [illegible]
- [illegible]

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

Table 24.6.7.1 Exit Criteria

[illegible]	*Responsible Party*
[illegible]	*See Section 7*

[illegible] *Help Desk Review*

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

- Determine whether IMA help desk procedures are followed as a matter of routine by Qwest personnel
- Determine whether IMA help desk procedures are subject to periodic review and amendment to assure currency and consistency with product and service deployments and changes in the IMA capabilities

24.7.3 Entrance Criteria

Table 24.7.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass retest criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
Interview guides developed	*KPMG Consulting*

24.7.4 Test Scope

Figure 24.7.4.1 ~~OSS Interface (IMA)~~Wholesale Systems Help Desk Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Process IMA Help Desk Call	Resolution of user question, problem or issue	Completeness and consistency of process	Inspection Document review	Qualitative
Close IMA Help Desk Call	Closure posting	Completeness and consistency of process	Inspection Document review	Qualitative
Status Tracking and Reporting	Status tracking and reporting	Completeness and consistency of reporting process	Inspection Document review	Qualitative
Problem Escalation	User and Qwest initiated escalation	Completeness and consistency of process	Inspection Document review	Qualitative
Capacity Management	Capacity planning process	Completeness and consistency of and adherence to process	Inspection Document review	Qualitative
Security and Integrity	Data access controls	Security of process	Inspection Document review	Qualitative
Process Management	General management practices	Completeness and consistency of operating management practices	Inspection Document review	Qualitative
	Performance measurement process	Controllability, efficiency and reliability of process	Inspection Document review	Qualitative
	Process improvement	Completeness of process improvement practices	Inspection Document review	Qualitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Capacity Management	Capacity management processes and procedures	Adequacy and completeness of and adherence to capacity management process	Inspection Document Review Interview	Qualitative

24.7.5 Scenarios

This test does not rely on scenarios.

24.7.6 Test Approach

24.7.6.1 Inputs

1. Procedural documentation such as internal help desk procedure manuals
2. Qwest instructions to CLECs for interacting with help desk functions
3. Evaluation checklists
4. Interview guides
5. CLEC data

24.7.6.2 Activities

1. Gather information
2. Perform walk-throughs, observations and documentation reviews
3. Complete evaluation checklists
4. Develop and document findings

24.7.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

24.7.7 Exit Criteria

Table 24.7.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

24.8 Interconnect Service Center (ISC) Support Review

24.8.1 Description

The Interconnect Service Center (ISC) Support Review is a comprehensive operational analysis of the service center processes developed by Qwest to support Resellers and CLECs with OSS questions, escalations, problems, and issues related to pre-ordering, ordering, provisioning and

billing of its wholesale services. Basic functionality, performance and escalation procedures will be evaluated.

24.8.2 Objectives

The objectives of this review are to:

- Determine completeness and consistency of ISC processes and responses
- Determine whether the escalation procedure is documented and known to ISC representatives and management
- Determine the accuracy and completeness of procedures for measuring ISC performance

24.8.3 Entrance Criteria

Table 24.8.3.1 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*
CLEC problem feedback survey completed	*KPMG Consulting*
ISC problem response standard survey completed	*KPMG Consulting*

24.8.4 Test Scope

Table 24.8.4.1 ISC Support Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Respond to ISC Call	Answer call	Completeness and consistency of process Timeliness of answer	Inspection Performance	Qualitative Quantitative
	Interface with user	Availability of user interface	Inspection	Qualitative
	Response to call	Completeness and accuracy of response	Inspection	Qualitative
	Log call	Completeness of logged information Log is kept in appropriate media for appropriate interval	Document Review Inspection	Qualitative
Process ISC Call	Access to systems to observe user problems	Ability to access user records and transactions	Inspection	Qualitative
	Resolve user question, problem or issue	Completeness and consistency of process	Documentation Review	Qualitative
Close ISC Call	Log closure information	Completeness, consistency, and timeliness of process	Inspection	Qualitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Trouble Ticket	Track status	Accuracy and completeness of status tracking capability Availability of jeopardy notification	Inspection Document Review	Qualitative
	Report status	Completeness and consistency of reporting process Accessibility of status report	Inspection Document Review	Qualitative
Support Escalation	Manage escalations	Consistency and completeness of procedure	Document Review Inspection	Qualitative
Manage the ISC Process	Provide management oversight	Completeness and consistency of operating management practices	Inspection	Qualitative
Capacity Management	Capacity management processes and procedures	Adequacy and completeness of and adherence to capacity management process for OSS gateways and interfaces	Inspection Document review Interview	Qualitative

24.8.5 Scenarios

This test does not rely on scenarios.

24.8.6 Test Approach

24.8.6.1 Inputs

1. ISC Evaluation Checklist
2. ISC procedural documentation

24.8.6.2 Activities

1. Gather information
2. Perform ISC walk-throughs, observations and documentation reviews
3. Complete evaluation checklists
4. Develop and document findings

24.8.6.3 Outputs

1. Completed ISC evaluation checklists and interview summaries
2. Observation and Exception reports
3. Final report

24.8.7 Exit Criteria

Table 24.8.7.1 Exit Criteria

Criteria	Responsible Party
Global exit criteria satisfied	See Section 7

24.9 Network Surveillance & Outage Support Review

24.9.1 Description

The network surveillance and outage support evaluation is a review ~~evaluates~~ of the processes, procedures, and other operational elements associated with Qwest's network surveillance as it relates to wholesale and retail operations. Additionally, this evaluation will review Qwest's ~~and~~ network outage notification processes and procedures as they relate to wholesale service operations. ~~It also involves a review of the procedures followed by the Network Management Center (NMC) and/or Network Operations Center (NOC) which are related to C.L.E.C. operations.~~

24.9.2 Objectives

The objective of this test is to ~~determine the functionality of network surveillance and network outage notification procedures and to assess the performance capabilities of network outage notification procedures for wholesale operations~~assess the functionality of Qwest's network surveillance activities and its application to the wholesale and retail customers they support. Test targets for the evaluation include the network surveillance systems and processes employed by the following Qwest operations centers: 1) Network Management Center (NMC), and 2) Network Operations Center (NOC). In addition, a review of the network blockage and outage notification procedures used by Qwest to alert affected wholesale customers of alarms and outage events will be conducted.

24.9.3 Entrance Criteria

Table 24.9.3.1 Entrance Criteria

Criteria	Responsible Party
No legally effective orders or injunctions preventing the test exist	*ROC, Qwest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Network surveillance and outage evaluation checklist developed	*KPMG Consulting*
NMC/NOC interview guide developed	*KPMG Consulting*

24.9.4 Test Scope

Table 24.9.4 Network Surveillance & Outage Support Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Network Surveillance	Inter Office Facility (IOF) Surveillance ~~Blocking Resolution~~	Existence ~~Reliability~~Completeness	Interview Inspection Document Review	Existence Qualitative
	~~SS7~~ Advanced Intelligent Network (AIN) Interconnect Surveillance	Existence ~~Reliability~~Completeness	Interview Inspection Document Review~~Inspection~~	Existence Qualitative
Outage Notification	Process Documentation	Accuracy Completeness	Interview Inspection Document Review	Existence Qualitative
	Notification Procedures	Timeliness Accuracy Completeness	Interview Inspection Document Review~~Inspection~~	Existence Qualitative
	Notification Observations	Accuracy Completeness	Interview Inspection Document Review~~Inspection~~	Existence Qualitative

24.9.5 Scenarios

This test does not rely on scenarios.

24.9.6 Test Approach

24.9.6.1 Inputs

1. Network surveillance operational analysis plan and task checklist
2. Network outage operational analysis plan and task checklist
3. Evaluation guides
4. Interview Guides
5. Documentation of all network surveillance ~~and outage notification procedures~~ for wholesale and retail operations
6. Documentation of outage notification procedures for wholesale operations
7. Designated NMC/NOC personnel for interviews

~~7.~~8. Observation schedule

24.9.6.2 Activities

1. Using the operational analysis plan, conduct process analysis at the NMC and NOC
2. Conduct documentation review
3. Conduct procedure interviews
4. Conduct notification observations
5. Develop and document findings

24.9.6.3 Outputs

1. Completed network surveillance and outage evaluation checklists and interview/observation summaries
2. Observation and Exception reports
3. Final report

24.9.7 Exit Criteria

Table 24.9.7.1 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria satisfied	*See Section 7*

24.10 Test 24.10: ISC/Billing and Collection Center Support Review

24.10.1 Description

The ISC/Billing and Collection Center Support Review is an operational analysis of the processes and documentation developed by Qwest to provide support to Resellers and CLECs with usage (Daily Usage Feed) and/or billing related claims, questions, problems and issues. Basic functionality, performance, escalation procedures, and security will be evaluated.

24.10.2 Objectives

The objectives of this evaluation are to:

- Determine completeness of the Billing Center processes, documentation and responses.
- Determine whether the escalation procedure is documented, maintained, published and followed.
- Determine the completeness, and functionality of procedures for measuring and tracking the Billing Center performance.
- Determine the existence and functionality of procedures for projecting resource needs.
- Determine the existence of reasonable security measures to ensure integrity of the Reseller and CLEC data and the ability to restrict access to parties with specific access permissions.

- Determine the level of management oversight to ensure adequacy of performance results.

24.10.3 Entrance Criteria

Criteria	*Responsible Party*
No legally effective orders or injunctions preventing the test exist	*ROC Owest*
Pass/retest criteria have been identified	*ROC, KPMG Consulting*
Process evaluation checklist developed	*KPMG Consulting*

24.10.4 Test Scope

Table 24.10.4.1: ISC/Billing and Collection Center Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Respond to Billing Center Call	Interface with user	Availability of user interface	Inspection	Qualitative
	Log call	Existence of call logs to track call statistics such as call volume, average handling time, speed of answer.	Document Review Inspection	Existence
Process Billing Center Calls	Accessibility of information	Ability to access Reseller and CLEC records and transactions	Inspection	Qualitative
	Resolve user question, problem or issue	Completeness and consistency of process	Inspection	Qualitative
Claims	Resolve claim	Completeness and consistency of process	Document Review	Qualitative
Monitor Status	Track Status	Existence of status tracking capability	Inspection Document Review	Existence
	Report Status	Consistency and accessibility of status reporting	Inspection Document Review	Qualitative
Manage the Billing Center Process	Provide management oversight	Consistency of operating management practices.	Inspection	Qualitative
	Provide security measures to ensure integrity of the Reseller and CLEC data	Existence of security measures to restrict access to Reseller and CLEC data	Inspection	Existence
Capacity Management	Work Force Planning	Existence of work force staffing model	Inspection Document Review Interview	Qualitative

24.10.5 Scenarios

Scenarios are not applicable to this test.

24.10.6 Test Approach

24.10.6.1 Inputs

1. Evaluation Checklist
2. Applicable documentation
3. Interview guides
4. Data from Test 20 (this data will be the source for the Billing Center calls)

24.10.6.2 Activities

1. Gather information
2. Perform walk-through, observations and documentation reviews
3. Place and log Billing Center calls
4. Complete evaluation checklists and interview summaries
5. Develop and document findings

24.10.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Summary report

24.10.7 Exit Criteria

Criteria	Responsible Party
All Global Exit Criteria satisfied	See Section 5

25. Interim and Final Reports

25.1 Interim Report

KPMG Consulting will develop and submit to the ROC at least one interim report at approximately the mid-point of the test process, and possibly others. This report(s) will describe the test for each major test. Draft interim report(s) will be provided to the TAG for review. The resulting comments will be taken into consideration by KPMG Consulting, HP and ROC in preparing final versions of the report(s).

25.2 Final Report

KPMG Consulting will develop and submit to the ROC a final report at the completion of testing. The final report will be released in draft form to the TAG for review and comment. Changes recommended by the TAG will be reviewed by KPMG Consulting and the ROC Steering Committee prior to submittal of a final report to the ROC Executive Committee.

26. Test Wrap Up

At the conclusion of the test HP shall dismantle all datastores created for the test, return any telephone numbers used, decommission physical facilities used for establishing connectivity, and return CIC and other industry-standard codes used in the establishment of HP

KPMG Consulting will be responsible for responding to inquiries about the final test report and, possibly, providing testimony or support for testimony in various venues.

Appendix A: Version Control

Version	Date	Reason	Distribution
TRD 1.0	January 21, 2000	Initial TRD Draft Release	TAG and web site
TRD 1.1	January 27, 2000	Added Appendix A, D and F Added Section 6.7 Edits and cosmetic changes	TAG and web site
TRD 2.0	February 28, 2000	Name change from MTP to TRD Integrated changes from TAG comments and 2.9-2.11 workshop	TAG and web site
TRD 3.0	March 9, 2000	Integrated changes from TAG comments on V 2.0, added appendices E and G	Attachment 1 to RFP TAG and web site
MTP 1.0	July 27, 2000	Initial Draft Release	TAG and web site
MTP 2.0	August 25, 2000	Second Draft Release	TAG and web site
MTP 3.0	October 25, 2000	Draft Final Release	TAG and web site
MTP 3.1	November 17, 2000	Final Release	TAG and web site
MTP 4.0	October 3, 2001	Revised Release	TAG and web site

Appendix B: Qwest Service Performance Indicator Definitions (PID) ROC 271 Working PID v 2.0 dated 9/13/00

Available at www.nrri.ohio-state.edu/oss

Appendix C: Performance Measures

Placeholder

Appendix D: Scenarios

Table D1 – Stand alone Pre-order

Basic Scenario		Residence/ Business
A	Obtain CSRs	X
B	Validate customer address	X
C	Reserve telephone numbers	X
D	Determine Product and Feature Availability	X
E	Facility check	X
F	Schedule appointment	X
G	Loop qualification information	X
H	CFA Validation	X
I	Obtain directory listings information for an existing UNE-L customer	X

Note: All sub-functions of the above-listed preorder basic scenarios will be included in the test.

CONTINUATION

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Table D2 – UNE

	Basic Scenario	2-wire. Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DS1 Capable Loop	Stand-Alone LNP	UDIT	EEL (see notes)	Dark Fiber	Sub Loop	Line Sharing	Stand-Alone DL
A	Migrate lines from Qwest without LNP	X	X	X	X	X			X			X	
B	Migrate lines from Qwest with LNP	X		X	X	X			X				
C	Migrate from CLEC to CLEC	X	X	X	X								
D	Purchase lines for a new customer	X	X	X	X	X			X				
E	Add new lines to existing customer	X	X	X	X	X			X				
F	Add new microffice DS1/DS1 facilities							X		X			
G	Convert from Resale to UNE loop without LNP	X	X	X	X								
H	Convert from Resale to UNE loop with LNP	X			X								
I	Convert from UNE-P to UNE loop without LNP	X		X	X								
J	Convert from UNE-P to UNE loop with LNP	X			X								
K	Move (outside)	X		X	X								
L	Disconnect (full)	X		X	X	X			X				
M	Add a new customer listing on existing account												X
N	Convert from line sharing arrangement to UNE loop		X	X									
O	Move loop distribution at NID										X		
P	Port number from Qwest to UNE without facilities						X						

Note 1: For selected test instances, post order LSR status and DLR queries will be conducted.

Note 2: All directory listing offerings will be tested, including complex listings.

Note 3: Currently, Qwest does not have a business process for coordinating EEL migrations with number portability.

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Table D3 – Resale

Basic Scenario		Res. POTS	Bus. POTS	ISDN PRI only	Centrex* & Centrex Plus	Private Line	PBX
A	Migration from Qwest "as is"	X	X	X	X	X	X
B	Migration from Qwest "as specified"	X	X		X		
C	CLEC to CLEC migration	X	X	X	X		
D	New customer	X	X	X	X	X	
E	Add lines (L)/trunks (T)/ circuits (C)	X L	X L	X L	X	X	X
F	Feature changes to existing customer	X	X		X		
G	Telephone number change	X	X		X		
H	Directory change	X	X	X	X		
I	Migrate customer with voice mail	X	X				
J	Moves	X	X		X		
K	Suspend/restore service	X	X				
L	Disconnect (full and partial)	X	X	X	X	X	X
M	PIC/LPIC changes	X	X		X		X

* Includes 1) Centrex 21 and 2) Centrex as used by McLeod USA (observation)

Note 1: For selected test instances, post order LSR status and DLR queries will be conducted.

Note 2: All directory listing offerings will be tested, including complex listings.

Table D4 – UNE – P

	Basic Scenario	Res. POTS	Bus. POTS	ISDN PRI only
~~A~~	~~Migration from Qwest "as-is"~~	X	X	X
BA	Migration from Qwest "as specified"	X	X	X
~~C~~B	Migrate from CLEC to CLEC	X	X	
~~D~~C	New customer	X	X	X
~~E~~D	Add lines (L)/trunks (T) circuits (C)	X (L)	X (L)	X (L)
~~F~~E	Feature changes to existing customer	X	X	
~~G~~F	Telephone number change	X	X	
~~H~~G	Directory change	X	X	
~~I~~H	Full and partial migration with DL changes	X	X	
~~J~~I	Convert from Resale products to UNE-P products	X	X	X
~~K~~J	Migrate an account with Qwest initiated blocking	X	X	
~~L~~K	Migrate an account with pending service order	X	X	
~~M~~L	Establish new user with vanity TN	X	X	
~~N~~M	Moves	X	X	
~~O~~N	Suspend/restore service	X	X	
~~P~~O	Disconnect (full and partial)	X	X	
~~Q~~P	Change PIC/LPIC	X	X	
Q	Migrate service to a line splitting arrangement	X	X	
R	Line splitting customer disconnects high speed data but maintains voice service	X	X	

Note 1: For selected test instances, post-order LSR status and DLR queries will be conducted.

Note 2: All directory listing offerings will be tested, including complex listings.

Table D5 – Maintenance and Repair

	Conditions to be Tested Across Basic Scenario	Res. Lines	Bus. Lines	UNE loops	Centrex*	Private Line	PBX
A	Short on outside plant facility	X	X	X	X	X	X
B	Open on outside plant facility	X	X	X	X	X	X
C	Short on the line within the central office	X	X	X	X	X	
D	Open on the line within the central office	X	X	X	X	X	X
E	Noise on line	X	X	X			
F	Echo on line	X	X				
G	Customer w/ LNP not receiving incoming calls	X	X				
H	Customer receiving incoming calls intended for another customer's number	X					
I	Call waiting not working	X	X				
J	Repeat dialing not working	X					
K	Customer cannot call 900 numbers	X					
L	Calls do not roll-over for customer w/ multiline hunt group		X		X		
M	Call forwarding not working	X	X				
N	Caller ID not working	X	X				
O	No dial tone on multiple lines				X		
P	DS1 loop MUXed to DS3 IOF not functioning			X			
Q	Submit trouble ticket against new loop	X	X				
R	Conduct MLT on new CLEC service	X	X				

*Includes Centrex 21 only.

Appendix E: Acronyms and Glossary

271 Application		An RBOC's application to offer long distance services submitted to a state or federal regulatory agency. In order to grant the application, the agency must find the applicant is in compliance with the 14 point competitive checklist described in the 1996 Telecommunications Act.
ALI	Automatic Line Information (for 911/E911 systems)	
ASR	Access Service Request	Form used to order interoffice facilities such as dedicated trunk ports
BAN	Billing Account Number	
Benchmark		A benchmark is established for a performance measure to serve as a standard when there is no appropriate retail analog.
Billing Domain		Tests related to creation of correct carrier bills.
BRI	Basic Rate Interface	A type of ISDN service
Capacity Testing		Look for evidence that sound management practices are in place to monitor performance and manage the capacity associated with a resource or pool thereof.
CARE	Customer Account Record Exchange	Industry standard for formatting exchange of subscription information.
Centrex		A business telephone service offered from a local CO that offers PBX-like functionality to the end user without the end user having to purchase CPE.
Change Management		The process by which changes are introduced at Qwest. Important steps include: 1) Advance notification that a change will occur, 2) CLEC input is considered when making changes, and 3) Smooth roll-out of the change.
CLEC	Competitive Local Exchange Carrier	A communications company which delivers sells communication services in direct competition with the Incumbent Local Exchange Carrier (ILEC)
CLEC Live Data		Production data delivered through interfaces that are already operational for real CLEC customers.

CLLI	Common Language Location Identifier	An 8 to 11 digit alphanumeric code used as a method of identifying physical locations and equipment.
CO	Central Office	Facility where subscribers' lines connect to switching equipment
Completion Notice		A notification the ILEC provides to the CLEC to inform the CLEC that the requested service activity is complete.
CPE	Customer Premise Equipment	Customer-owned equipment
CSR	Customer Service Record	A record of customer specific information such as name, address, telephone number, telecommunications services subscribed to and certain other data relating to the services provided. The CSR also details a customer's fixed monthly charges billed by the local telephone company.
Coordinated customer conversion		Orders that have a due date negotiated between the ILEC, the CLEC, and the customer so that work activities can be performed on a coordinated basis under the direction of the receiving carrier.
DA	Directory Assistance	
DOJ	Department of Justice	
DUF	Daily Usage Feed	A daily download of usage data from the switch which is delivered to Qwest's message processing system and directly to the CLEC
EB-TA	Electronic Bonding – Trouble Administration	
EDI	Electronic Data Interchange	Interface protocol that provides for mechanized order processing. Both the CLECs and Qwest will have systems (EDI Interface) to support the EDI functionality
End-to-End Testing		For the purposes of this test, end-to-end is defined as testing which demonstrates that the pre-order, order, provisioning, billing and M&R life cycle can be executed for a single customer.
Entrance and Exit Criteria		The necessary conditions for starting or completing individual tests described in the Test Plan.
EXACT/TELUS		Interface used by CLECs to order wholesale services requiring Access Service Requests (ASRs).

Existence Criteria Type		These are criteria where only two possible test results can exist (e.g., true false, presence absence), such as whether a document exists or does not exist
FCC	Federal Communications Commission	
FID	Field Identifier	A code used when administering usage limits on residence and business end users. Also refers to fields of information used in the service order
Flow through		The term used to describe whether an LSR is passed electronically from the OSS interface to the ILEC legacy system to automatically create a service order. LSRs that do not flow through require manual intervention for the service order to be created in the ILEC legacy system.
FOC	Firm Order Confirmation	Notice the ILEC sends the CLEC to notify the CLEC that it has received the CLEC service order, created a service request, and assigned it a due date.
Functional Testing	Functionality Test	A documented set of instructions designed to test and/or validate specific functions of a process or system.
GUI	Graphical User Interface	A simplified method of accessing programs within a computer by using a mouse to point to icons, which in turn cause the programs to perform a specific function.
IABS	Interconnect Access Billing System	
ILEC	Incumbent Local Exchange Carrier	
IMA	Interconnect Mediated Access	
ISDN	Integrated Services Digital Network	Digital services designed for use with desktop applications, telephone switches, computer telephony and voice processing systems
Jeopardy		With regard to provisioning, a condition experienced in the service provisioning process which results potentially in the inability of a carrier to meet the committed due date on a service order. With regard to the OSS test, a notice that is issued whenever a key project milestone and/or commitment is at risk according to the MTP.

LERG	Local Exchange Routing Guide	
LIDB	Line Information Data Base	Database used primarily for residential customers.
LIS	Local Interconnection Service Trunks	
LNP	Local Number Portability	
Loop		A transmission path that connects an end-user's premises to a Qwest Central Office
LSR	Local Service Request	A form prepared by the CLEC to request Qwest to provide the services as specified in the specific tariffs contracts agreements. Information required for administration, billing and contact details is provided for in the various fields within the LSR.
M&R	Maintenance and Repair	Ability to provide for requests, status and resolution of potential troubles
M&R Domain		Tests related to processing and management of trouble-related reports.
MDF	Main Distribution Frame	The primary point at which outside plant facilities terminate within a Wire Center for interconnection to other telecommunications facilities within the Wire Center
Migration		Refers to "conversion as is" or "conversion as specified."
MLT	Mechanized Loop Test	A mechanized test used to determine loop situations
MTP	Master Test Plan	
OBF/TCIF	Ordering and Billing Forum/ Telecommunications Interface Forum	Industry Standards Organizations dedicated to resolving critical issues such as billing format issues between competing local exchange carriers, etc.
OCN	Operating Company Number	A four-digit number assigned to uniquely identify CLECs.
Operational Analysis		Operational analysis focuses on the form, structure, and content of the business process under study. This method is used to evaluate day-to-day operations and operational management practices.
OSS	Operations Support Systems	For purposes of this test OSS refers to systems that provide for processing orders, maintenance and repair activities, and billing activities

Parity Criteria Type		These are criteria that require two measurements to be developed and compared, such as whether external response time is at least as good as internal response time.
Parity measures		Parity measures are compared to analogous wholesale performance measures to determine if there is nondiscriminatory treatment of wholesale services.
PBX	Private Branch Exchange	
Physical Resources		Test bed accounts that have a physical appearance in the central office. These resources are used for unbundled loop test activities.
PIC	Primary Inter-exchange Carrier	Primary inter-exchange carrier selected by end-user.
PID	Performance Indicator Definitions	
PM	Performance Measures	
POTS	Plain Old Telephone Service	
POP	Pre-Ordering, Ordering, and Provisioning Domain	Tests related to CLEC's acquisition of customer information, placing orders, and ensuring correct and timely provision and notification of order status.
Qualitative Criteria Type		These criteria set a threshold for performance where a range of quality values is possible, such as level of customer satisfaction
RMI	Relationship Management and Infrastructure Domain	Tests relating to activities, processes and documents that are focused on the establishment and maintenance of the CLEC/ILEC relationship.
Resale		Service that allows a CLEC to purchase ILEC retail services in order to resell these services to their own end-user.
Scenario		A unique business use of the system, e.g. migrate as-is of single line residential POTS account
SOP	Service Order Processor	

Standard Interval		The interval that the ILEC publishes as a guideline for establishing due dates for provisioning a service request. Typically, due dates will not be assigned with intervals shorter that the standard. These intervals are specified by service type and type of service modification requested. ILEC's publish these standard intervals in documents used by their own service representatives as well as ordering instructions provided to CLEC's in the Qwest Standard Interval Guidelines
SUPP	Supplement	A change to an order taken after the original order was submitted, but before the order has been executed, such as a date change.
Test Bed		A set of fictitious customer accounts that are designed to assist with testing. The test bed consists of working lines and provisioned products, although the owning customer is fictitious.
Test Call Matrix		A list of call types and the quantity of calls for each type that should be included in a particular test
Test Case		Variation of a Scenario, e.g. migrate as specified with a different feature set
Test Domain		A specific testing area with defined targets, measures, scenarios, evaluation methods, and test processes.
Test Instance		Executing a specific Test Case using the information for a specific customer in the Test Bed
Test Scenario		A specifically defined request and activity as it relates to 3rd Party Testing. These Test Scenarios include both Functionality Testing and Capacity Testing.
TN	Telephone Number	A number associated with a telephone service
Transaction-Driven System Analysis		Transaction driven system analysis relies upon initiation of transactions, tracking of transaction progress, and analysis of transaction completion results to evaluate the automated system under test.
Transaction Generation		Transaction generation is the use of live, historical, and/or generated data and data processing capability to evaluate an automated and/or manual system under test

TRD	Test Requirements Document	
UDIT	Unbundled Dedicated Interoffice Transport	
UNE	Unbundled Network Elements	
UNE-C	UNE-Combination	A pre-existing combination of loop, hardware and effective UNEs
UNE-L	UNE Loop	A transmission path that connects an end-user's premises to a Qwest Central Office
UNE-P	UNE-Platform	UNE Platforms are available as for existing POTS, PBX trunks and ISDN service
USOC	Universal Service Order Codes	
Verification and Validation		Methods used in the evaluation of activities and processes not amenable to transaction-driven testing, but which require verification and validation.
Virtual Resources		Test bed accounts that have no physical appearance. These accounts are used for Resale and UNE-P test activities where provisioning verification can be checking translations in the switch.
Volume Test		Test ability of system to support expected future workloads.
Working Resources		Test bed accounts that have an appearance outside the central office. These accounts have dial tone and are used for billing usage testing, M&R testing and some provisioning tests.
xDSL	"x" Digital Subscriber Line	A general name for an evolving high speed transmission technology which uses existing copper wire from the telephone company central office to the subscriber's premises and has electronic equipment at the central office and at the subscriber's premises, and transmits and receives high speed digital signals.

Appendix F: Qwest OSS System Architecture Overview

1. Interfaces

Qwest provides four uniform interfaces to CLEC's for their use in pre-ordering, ordering and maintaining/repairing wholesale services. Other interfaces are provided for billing of wholesale services. A brief description of each follows.
1.1 IMA-GUI

The Interconnect Mediated Access–Graphical User Interface (IMA-GUI) is used by CLEC's to perform pre-order inquiries, place orders, report troubles and obtain status via a workstation to Qwest's IMA Gateway. This human-to-computer IMA-GUI is used across all states in Qwest's territory.

1.2 IMA-EDI

The Interconnect Mediated Access – Electronic Data Interchange (IMA-EDI) is used by CLEC's to perform pre-order inquiries, place orders and obtain status via a computer-to-computer interface that extends from the CLECs OSS application to the Qwest IMA-EDI Gateway. This IMA-EDI is used across all states in Qwest's territory.

1.3 MEDIACC (or EB-TA)

The Mediated Access (MEDIACC) interface is Qwest's implementation of an Electronic Bonding for Trouble Administration (EB-TA) interface for CLEC's to use in maintenance and repair activities for Qwest's wholesale services. It is a computer-to-computer interface that supports trouble ticket administration and status, line record information viewing and mechanized loop testing results viewing. The MEDIACC interface is used across all states in Qwest's territory.

1.4 EXACT

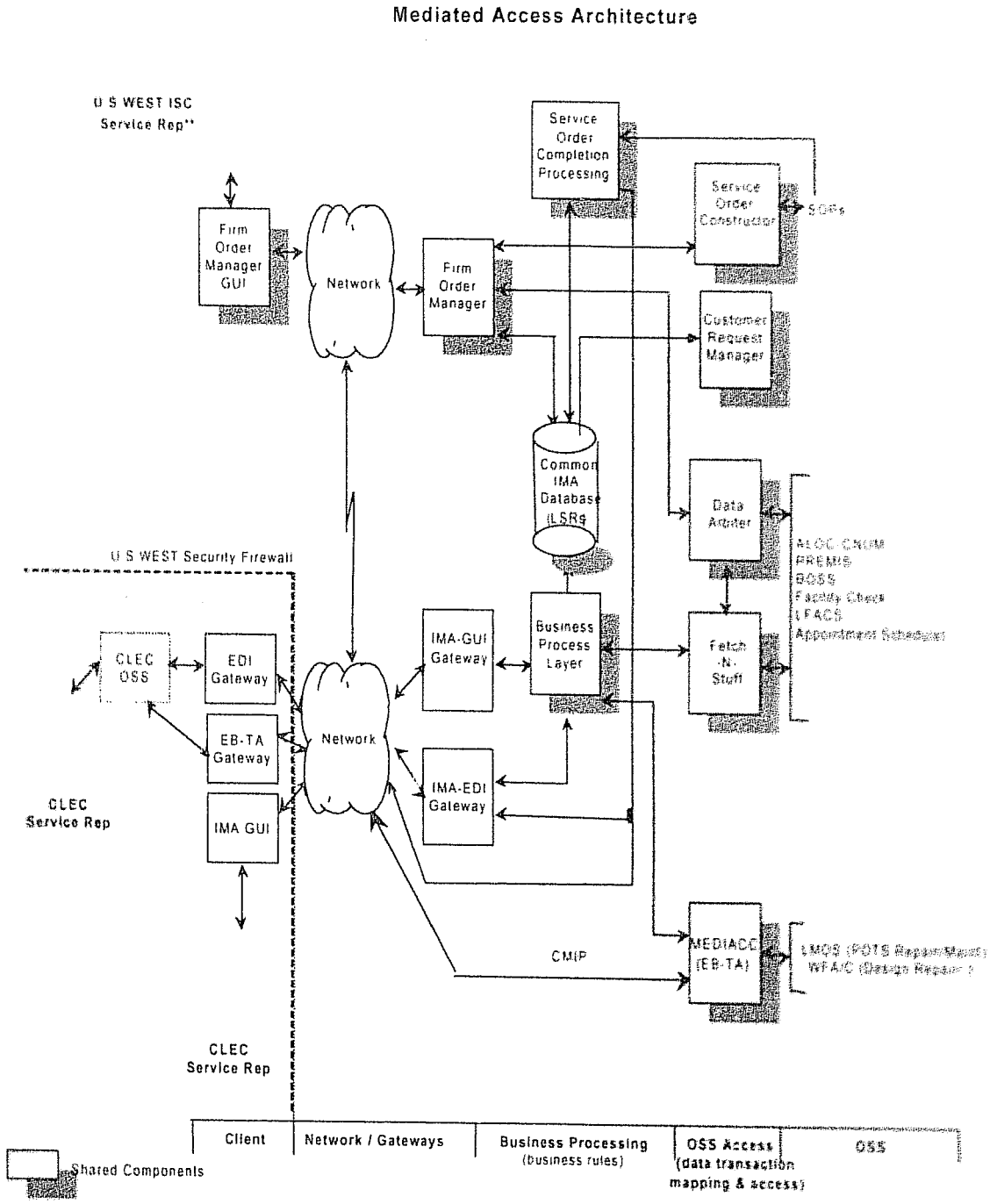
The EXACT interface is used by CLECs to order wholesale services requiring Access Service Requests (ASRs).

1.5 IIS

The Interconnect Image System (IIS) interface is a facsimile receipt and distribution system that facilitates the handling of orders and other transactions faxed from CLEC's to Qwest. These faxed, or manual transactions, must be input to Qwest's OSS by personnel at the Interconnect Service Center.

Please refer to Figure F1 for an overview of the Mediated Access Architecture.

Figure F1 Mediated Access Architecture



2. Initial Transaction Processing

2.1 Pre-Ordering and Ordering

Once the transaction is received by the Qwest gateway, a set of business rules is applied to determine how to process the request. To obtain information from Qwest's OSS or pass information to them, the OSS Access Layer (Data Arbiter, Fetch and Stuff, and MEDIACC) communicates with the downstream OSSs to send or retrieve the data. Regardless of whether a transaction is received by the Qwest gateway through the IMA GUI or EDI, it will be processed through the same set of business rules and travel through the same OSS Access Layer to reach the downstream OSSs.

If the transaction is the submission of an LSR, the LSR is placed in the Common IMA database regardless of whether the LSR is transmitted through the IMA or the EDI gateway. This database is updated with LSR status as the Interconnect Service Center processes the request.

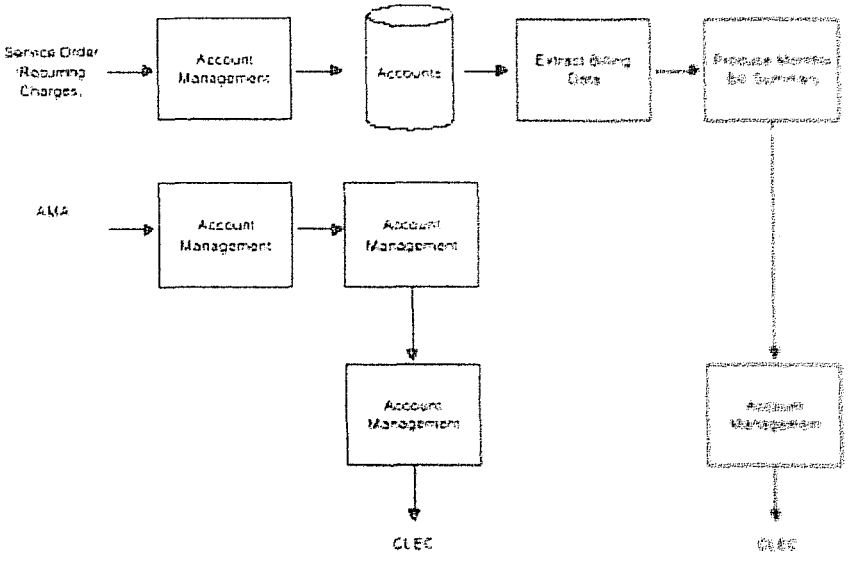
2.2 Maintenance and Repair

Maintenance and repair transactions are processed through IMA and MEDIACC and routed to the appropriate downstream repair OSS.

2.3 Billing

When an end-user customer's account is resold to a CLEC, the resulting service order updates the account to reflect that change. As the end-user customer generates toll usage, it is sent from the AMA system into the CRIS billing system, where it is associated with the CLEC's account. The toll usage is then forwarded to the CLEC in a daily usage feed file. Qwest produces a billing summary file with all recurring and non-recurring charges and sends it to the CLEC on a monthly basis. Figure F2 describes the billing components that produce daily usage and monthly bill information.

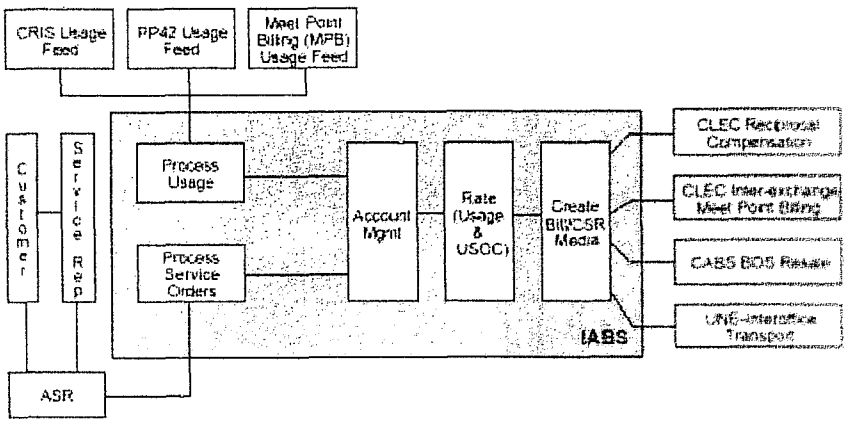
Figure F2 Billing Architecture



2.4 IABS

There are three usage feeds to the usage-processing module. Another entry point is the ASR submitted by the customer service representative. These ASRs go to the service order-processing module. Both usage and service orders are sent to the account management module to associate the usage and service order detail to accounts. After usage and service order details are associated to accounts, the accounts are rated, and bills and CSRs are produced. Outputs for reciprocal compensation, inter-exchange meet point billing, resale and UNEs are then provided to the CLECs. Figure F3 provides an overview of the billing for trunk-side UNEs and interconnection services using IABS.

Figure F3 IABS Billing Architecture



3. Systems

Qwest's downstream OSS can be categorized into four types of systems as follows:

- One OSS that is functionally and physically the same is used across all 14 states such as IMA GUI and Integrated Access Billing Systems (IABS)
- One OSS application that is used across all 14 states via multiple instances of the same application, such as Facilities Assignment and Control System (FACS)
- An OSS with the same name and basic origin that has been implemented differently across different states – for example Customer Records Information System (CRIS) East, West, and Central are all called CRIS but are actually different applications functionally
- Different applications with different names and similar functionality that are used in different states. The service order processors (SOPs) are an example of this type – SOPAD, SOLAR and R-SOLAR in Central, East and West respectively.

Figure F4 provides a summary of the systems and their usage across states.

CONTINUATION

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System	AZ	CO	IA	ID	MN	MT	ND	NE	SM	OR	SD	UT	WA	WY
IMA GUI GW	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1	IMA-1
IMA EDI GW	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1	EDI-1
MediAcc EB-TA	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1	EB-TA1
BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1	BPL-1
IMA LSR DB	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1	IMA LSRDB-1
FOM	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1	FOM-1
ICADS	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1	ICADS-1
Data Arbiter	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1	Data Arbiter-1
Fetch-N-Stuff	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1	Fetch-N-Stuff-1
SOP	SOPAD (SLC)	SOPAD (Denver)	SOLAR (Omaha)	SOPAD (SLC)	SOLAR (Omaha)	SOPAD (SLC)	SOLAR (Omaha)	SOLAR (Omaha)	SOPAD (SLC)	R-SOLAR Bellevue	SOLAR (Omaha)	SOPAD (SLC)	R-SOLAR (Bellevue)	SOPAD (Denver)
CSR Retrieval	BOSS-C (SLC)	BOSS-C (Denver)	BOSS-E (Omaha)	BOSS-C (SLC)	BOSS-E (Omaha)	BOSS-C (SLC)	BOSS-E (Omaha)	BOSS-E (Omaha)	BOSS-C (SLC)	CARS Bellevue	BOSS-E (Omaha)	BOSS-C (SLC)	CARS (Bellevue)	BOSS-C (Denver)
SOAC	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1	SOAC-1
Premis	Premis-1 (ALB)	Premis-1 (ALB)	Premis-1 (Omaha)	Premis-1 (ALB)	Premis-1 (Omaha)	Premis-1 (ALB)	Premis-1 (Omaha)	Premis-1 (Omaha)	Premis-1 (ALB)	Premis-1 (ALB)	Premis-1 (Omaha)	Premis-1 (ALB)	Premis-1 (ALB)	Premis-1 (ALB)
FACS	FACS-1 (SLC)	FACS-1 (SLC)	FACS-1 (Omaha)	FACS-1 (SLC)	FACS-1 (Omaha)	FACS-1 (SLC)	FACS-1 (Omaha)	FACS-1 (Omaha)	FACS-1 (SLC)	FACS-1 (Omaha)	FACS-1 (Omaha)	FACS-1 (SLC)	FACS-1 (Omaha)	FACS-1 (SLC)
LMOS	LMOS-1 (SLC)	LMOS-1 (SLC)	LMOS-1 (Omaha)	LMOS-1 (SLC)	LMOS-1 (Omaha)	LMOS-1 (SLC)	LMOS-1 (Omaha)	LMOS-1 (Omaha)	LMOS-1 (SLC)	LMOS-1 Bellevue	LMOS-1 (Omaha)	LMOS-1 (SLC)	LMOS-1 (Bellevue)	LMOS-1 (SLC)
WFA	WFA-1 (SLC)	WFA-1 (SLC)	WFA-1 (Omaha)	WFA-1 (SLC)	WFA-1 (Omaha)	WFA-1 (SLC)	WFA-1 (Omaha)	WFA-1 (Omaha)	WFA-1 (SLC)	WFA-1 Bellevue	WFA-1 (Omaha)	WFA-1 (SLC)	WFA-1 (Bellevue)	WFA-1 (SLC)
Billing	CRIS-C	CRIS-C	CRIS-E	CRIS-C	CRIS-E	CRIS-C	CRIS-E	CRIS-E	CRIS-C	CRIS-W	CRIS-E	CRIS-C	CRIS-W	CRIS-C
IABS	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1	IABS-1
TIRKS	TIRKS-1 (SLC)	TIRKS-1 (SLC)	TIRKS-1 (Omaha)	TIRKS-1 (SLC)	TIRKS-1 (Omaha	TIRKS-1 (SLC)	TIRKS-1 (Omaha)	TIRKS-1 (Omaha)	TIRKS-1 (SLC)	TIRKS-1 (Bellevue)	TIRKS-1 (Omaha)	TIRKS-1 (SLC)	TIRKS-1 (Bellevue)	TIRKS-1 (SLC)
Facility	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1	FC-1

Systems	AZ	CO	IA	ID	MN	MT	ND	NE	NM	OR	SD	UT	WA	WY
Check *	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)	(SLC, DNVR, Omaha)
Appt. Scheduler	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1	Appt Sched-1

* Facility Check is not differentiated geographically – i.e., even though it is run in 2 data centers, each server accesses the same data & can fulfill requests throughout Qwest

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F4.1 Table F4 Interpretation Notes

1. When an OSS has a –1 suffix it means there is only one version of that application. For example, IMA GUI is the same application across all states.
2. There may be multiple instances of an application that are all identical. For example three instances of FACS serve three different regions but are all the same application.
3. There may be applications of the same name that have different functionality – i.e. CRIS – C (Central), CRIS – E (EAST) and CRIS – W (West)
4. Multiple copies of the same application can be run at different data centers (shown in parentheses in the matrix) to serve different areas that may or may not coincide with a region – i.e. An identical application of BOSS-C is run at 2 data centers to handle the total Central Region.

F4.2 Table F4 List of Abbreviations

IMA GUI – Interconnect Mediated Access Graphical User Interface Gateway
IMA EDI – IMA Electronic Data Interchange
EB-TA – Electronic bonding for Trouble Administration – Qwest's version is MEDIACC, it interacts with LMOS for POTS repair & WFA/C for Designed services repair
BPL-i – Business Process Layer does edits against State tarriffed products and services
IMA LSR DB – Common IMA database for Local Service Requests
FOM – Firm Order Manager
ICADS – Service order constructor that translates order information to the specific service order processor
Data Arbiter – Data access layer application between IMA gateway and downstream OSS
Fetch-N-Stuff – Data access layer application between IMA gateway and downstream OSS
CSR Retrieval – Customer Service Record retrieval
Service Order Processor – Directs/processes service orders
SOAC – Service Order Analysis and Control
Premis – Premises Information System
FACS – Facility Assignment and Control System
LMOS – Loop Maintenance Operations Systems
WFA – Work Force Administration
CRIS – Customer Record Information System
CABS – Carrier Access Billing System
IABS – Integrated Access Billing System

F4.3 Table F4 Data Center Locations

ALB – Albuquerque, NM
BLV – Bellevue, WA
DVR – Denver, CO
OMA – Omaha, NE
SLC – Salt Lake City, UT

4. Regional Differences

Qwest's current operating territory, and therefore much if its OSS legacy architecture, is the result of the merging of three predecessor Bell Operating Companies into the Qwest Regional Bell Operating Company RBOC, including:

- Pacific Northwest Bell (PNB) covering Washington and Oregon, now referred to as the Western Region
- Mountain Bell (MB) covering Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming, now Central Region
- Northwestern Bell (NWB) covering Iowa, Minnesota, Nebraska, North Dakota, and South Dakota, now Eastern Region

As Table F4 indicates, all CLEC-facing interfaces and most downstream OSSs are the same across the three sub-regions. The three major areas of difference are:

1. Different service order processors are used in each region with SOLAR in the East, R-SOLAR in the West and SOPAD in Central.
2. Customer Service Record (CSR) retrieval is handled by BOSS in East and Central regions and by CARS in Western region.
3. Billing systems across the regions are different. Despite the fact that the three systems are all named CRIS and perform similar processes, they differ functionally.

5. State Differences

State level differences in downstream OSS are generally confined to the use of different instances of the same applications housed at different data center locations. Please see Figure F4.

6. Product Differences

In general, Qwest offers the same products across its 14 state operating area. However, there are a few variations resulting from various factors such as state regulatory requirements. Table F5 provides a high-level overview of these differences. These differences were further investigated by KPMG Consulting with the assistance of the TAG and reflected appropriately in the test scenarios and testing mix. KPMG Consulting issued a Regional Differences Assessment Report summarizing the results of their investigation.

Table F5 Wholesale Products by State

Product	AZ	CO	IA	ID	MN	MT	ND	NE	NM	OR	SD	UT	WA	WY
Residence	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Business	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Features	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
MTS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PLT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CTX	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
ACS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DA/OPS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
LST	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
OCP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VM	NA	NA	Y	NA	Y	Y	Y	NA	NA	Y	NA	NA	NA	NA
WIRE	NA	NA	NA	NA	Y	NA	NA	NA	NA	Y	NA	NA	NA	NA
Lifeline	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA
ISDN	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA
UNE-P* POTS PBX ISDN BRI ISDN PRI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
UNE-C PrivateLine	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
UNE-C PrivateLine	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

*Existing combinations only (i.e. not new)

In states where Centrex is grandfathered, conversion to resale is only allowed for existing Centrex Customers.

The following provides additional definition for the products shown in the table.

Residence – basic residential line including 911/E911 service and special needs service
Business – Basic business line including 911/E911 service
Features – Central office features such as custom calling, CLASS, etc
MTS – Intra-LATA toll (message toll service)
PLT – Private line, DS1, DS3
CTX – Centrex, which includes Centrex 21, Centrex Plus, Centrex Prime
ACS – Advanced Communications Services which includes Frame Relay, ATM Cell Relay, LAN Switching Service
DA/OPS – Directory Assistance/Operator Services
Listings – Directory Listing, Joint User Listings
OCP – Optional Calling Plans

PAL - Public Access Lines
VM - Voice Messaging, Enhanced Service
Wire - Inside Wire and Wire Maintenance Plan
Lifeline - Services such as Link-up, Telephone Assistance Plan (TAP)
ISDN - Integrated Switched Digital Network – basic and primary
UNE-P - Unbundled Network Elements – Platform
UNE-C - Unbundled Network Elements - Combinations
NA - Not available
Y - Yes

Appendix G: Statistical Approach

1. Introduction and purpose

This appendix describes the statistical approach for designing, implementing and evaluating the ROC transaction test. The statistical analyses described in this appendix assume a set of performance standards, upon which the test will be evaluated. The assumption is also that the test will be a military style test. As such, Qwest failures will be addressed by re-testing until the standards are met or the ROC declares that no further testing is necessary.

There are two types of performance standards which will be used to evaluate the performance of the P-CLEC in the ROC test:

- Parity standards
- Benchmark standards

Parity standards are used where there is a Qwest retail analog to the particular wholesale OSS process being considered. The idea of a parity standard is that the wholesale process should be completed in an equivalent fashion to a retail analog (e.g., in the same amount of time or with the same level of accuracy as the retail analog). A benchmark standard is used when no comparable Qwest retail analog exists. The benchmark is an absolute standard, determined by the ROC, that must be achieved during the test.

The next section describes ROC's policy for defining the sample sizes and evaluating test results. These statistical methods and standards will govern the design and conduct of the test, including establishing a stopping point for the test, and facilitate evaluation of the results. However, states are free to depart from the critical values or benchmarks adopted for the test when they evaluate test results submitted by Qwest as part of state Section 271 applications.

2. Statistical Policy

2.1 The null and alternative hypotheses

In statistical testing it is often convenient to set up two mutually exclusive hypotheses representing possible test outcomes. In the context of the dual null hypothesis testing that will be employed, the hypotheses and related actions will be as follows:

First Test:

- Null Hypothesis: The P-CLEC mean minus the Qwest mean is less than or equal to zero.
- Alternative Hypothesis: The P-CLEC mean minus the Qwest mean is greater than zero.

Second Test:

- Dual Null Hypothesis: The P-CLEC mean minus the Qwest mean, is greater than or equal to a material difference factor of 0.28 Qwest standard deviations.

- Dual Alternative Hypothesis: The P-CLEC mean minus the Qwest mean, is less than a material difference factor of 0.28 Qwest standard deviations.

Table G1 Possible Outcomes and Actions from Dual Testing

		First Test (Null Hypothesis is Parity or better)	
	Outcomes	**Fail to Reject**	**Reject**
Second (Dual) Test (Dual Null Hypothesis is Disparity ≥ 0.28 Qwest Standard Deviations)	**Fail to Reject**	Qwest passes the test conditionally, but the issue is referred to the TAG for final determination.[3]	Qwest fails the test and the issue is referred to the TAG for resolution.
	Reject	Qwest passes the test unconditionally.	Significance levels are reduced until the test results move to the cell immediately above or to the left.

2.2 *Level of Significance and Error Levels*

In making the test comparisons involving parity tests, there are two possible types of error:

- Difference in service quality is detected where none exists (Type I error)
- Difference in service quality exists but is not detected (Type II error)
-

The level of significance is typically defined as the probability of rejecting the null hypothesis, conditioned on the assumption that it is true. It is often called the Type I error level or "α" in statistics. The level of significance is generally set at $\alpha = 0.05$ for the ROC test, and assumes the null hypothesis above.

A Type II error is the chance of failing to reject the null hypothesis when in fact it should be rejected. It is typically referred to as "β." We use the Type II error to determine sample sizes, as described below. In addition, we test the alternative hypothesis at a 5% significance level, rather than calculate the Type II error after the test.

2.3 *Statistical Evaluation Method*

In order to evaluate benchmark standards, a "stare and compare" method will be used. This means that if the test result exceeds the standard, Qwest passes. If it does not exceed the standard Qwest fails. No statistical analysis is involved for this evaluation method.

[3] The determination will be based on further analysis of the power of the test of the null hypothesis at various levels of material difference and an analysis of the reasonableness of the material difference used for the alternative hypothesis.

In order to evaluate parity standards, permutation tests will be used. In the permutation test, the test P-CLEC average will be compared to all possible averages (permuted means) of the same size, using both Qwest and test P-CLEC data.[4] The first null hypothesis is rejected if the P-CLEC mean is greater than at least 95% of the permuted means. For the second null hypothesis, the P-CLEC is first transformed using a scale parameter (which will be less than 1) such that, assuming the second null hypothesis is true, the Qwest and P-CLEC data could be considered drawn from the same distribution. Then, the second null hypothesis is rejected if the transformed P-CLEC mean is less than at least 95% of the permuted means.

2.4 How to account for non-normal distribution

Since permutation tests will be used, and the permutation test does not require an assumption of a normal distribution for the data, non-normal distributions are less of a concern. Instead, the permutation test assumes that, for the first null hypothesis, labeling of the CLEC and Qwest observations can be considered random. In other words, the time to complete an order, for example, gives no information about whether an order is a Qwest retail order or a P-CLEC wholesale order. Implicitly, the null hypothesis in the permutation test assumes no differences in variability between Qwest and P-CLEC orders. While the permutation test described above has some ability to detect greater variability in the P-CLEC orders, the test is not particularly useful for testing variability differences.[5]

2.5 Sample size determination

Sample size is determined using the following proposal by Qwest, given at the ROC Statistical Workshop:

- The sample size for each product/disaggregation level specified in the table below will be 140, on average, for a total sample volume of 1,820 for the test (per 13 product/disaggregation levels shown in the table).[6] The total sample size will be adjusted proportionately upward or downward if the parties agree to additional or fewer levels, respectively.
- KPMG Consulting will allocate the total sample volume to the individual product/disaggregation levels in a manner that optimizes the "power" of the test. In the context of numerous possible materiality assumptions, the parties have agreed that the following assumptions will be used for this purpose:
    1. Type I error (alpha) and Type II error (Beta) each will be kept at .05 or less.
    2. The materiality assumption applied to each product/disaggregation level will use the greater of the following:
        a. A "twice as bad" rule calibrated at the 90 percent retail performance level (using the "arc sine square root" transformation) applied to proportions (results reported as percentages); or

[4] Because of practical considerations, this is done through simulations.
[5] A separate permutation test could easily be done to test variability, but the parties have agreed this is not necessary.
[6] For practical reasons, and because the table has changed since the Statistical workshop, the table is not included here.

- A "2 standard deviations" rule applied to means (results reported as intervals or numbers)

- If KPMG Consulting finds that more than the total sample volume defined above is exceeded to implement materiality assumptions, it will bring the issue before the TAG

This approach is adopted for the purpose of setting sample sizes. It sets no requirement for, nor constrains on, the analytical approach applied to the data.

The parties have basically agreed upon the determination of sample size, as described above. Except some question about the precise wording remains. The null hypothesis used for this purpose is the one above. For the purposes of determining sample sizes for benchmark estimates, the exact binomial distribution will be used, and a 90% retail performance level will be assumed.[1] For the purposes of determining sample size for interval estimates, a modified Z test will be used. This avoids the difficulties of determining the sample size for a permutation test, with little or no relevant data available. Further clarification is needed as to what assumptions should be made for the case of percentage or proportion metrics with parity standards.

For α=β=5% for benchmark measures, with the standard at 90% and the alternative at 80% (this is the same as had standard above), the sample cell size is 134. The sample cell size for interval estimates, calculated based on assumptions above, is $138n_{ILEC}/(n_{ILEC}-138)$ where n_{ILEC} is the number observations in the ILEC. This means that the sample size is about 140, when ILEC observations are 10,000. It is 138 when ILEC observations are 100,000. For ILEC observations at 1000 and below, the sample cell size grows considerably. When the ILEC observations dip below 138, Qwest's proposal cannot be implemented at any sample size. Below is a table showing sample cell size as a function of ILEC observations:

ILEC Size	Cell Size
150	1,725
200	445
400	211
600	179
800	167
1,200	156
2,000	148
10,000	140

Below are the technical calculations involved in determining these sample sizes. They provide the mathematical support for the numbers given above.

Sample sizes for benchmark standards. Sample sizes for benchmark standards can be identified using standard software, without any formal derivations needed. First consider the case of

[1] In this case, when an exact test can be done, there is no need for any variance stabilizing transformation.

$\beta=\alpha=5\%$. We assume the benchmark standard is 90% on-time and the alternative hypothesis is 80% on-time. A sample size of 134 would allow for a test at this level (it should be noted, however, that the benchmark tests are subject to stare and compare only, so that actual type I error depends on the Null hypothesis, and for a Null hypothesis of 90%, it would be close to 50%).

Sample Size calculations for interval standards. As described above, we assume $\beta=\alpha=5\%$. We assume the null hypothesis described above. For this scenario, we use the modified Z, assume normality, and calculate β at .28 standard deviations from the ILEC mean. The modified Z test statistic is defined as

$$z = \frac{\overline{X}_{CLEC} - \overline{X}_{ILEC}}{\sqrt{\sigma^2_{ILEC}\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}}$$

In a one-sided test with $\alpha=5\%$, we reject when $z>1.645$ and accept the Null when $z<=1.645$. Since we want to find the sample size where $\beta=5\%$, this translates to finding the sample size where the $P(z<=1.645)=.05$.
Thus, we have

$$P_{(\mu_{CLEC}-\mu_{ILEC}-.28\sigma=0)}\left(\frac{\overline{X}_{CLEC} - \overline{X}_{ILEC}}{\sqrt{\sigma^2_{ILEC}\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}} < 1.645\right) = .05$$, where the subscript to the P

indicates the conditioning. Adding and subtracting a term, we get

$$P_{(\mu_{CLEC}-\mu_{ILEC}-.28\sigma_{ILEC}=0)}\left(\frac{\overline{X}_{CLEC} - \overline{X}_{ILEC} - .28\sigma_{ILEC}}{\sqrt{\sigma^2_{ILEC}\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}} + \frac{.28\sigma_{ILEC}}{\sqrt{\sigma^2_{ILEC}\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}} < 1.645\right) = .05$$

Now, the first term is a standard Normal variable, because we have assumed Normality of the data, the Alternative hypothesis, and that the variance is the ILEC variance. Thus, substituting Z for a N(0,1) variable, we get

$$P\left(Z+\frac{.28\sigma_{ILEC}}{\sqrt{\sigma_{ILEC}^2\left[\frac{1}{n_{CLEC}}+\frac{1}{n_{ILEC}}\right]}}<1.645\right)=.05 \qquad (1)$$

- More algebra gives us

$$P\left(Z<1.645-\frac{.28\sigma_{ILEC}}{\sqrt{\sigma_{ILEC}^2\left[\frac{1}{n_{CLEC}}+\frac{1}{n_{ILEC}}\right]}}\right)=.05 \qquad (2)$$

Now we know (from a standard Normal distribution) that P(Z<-1.645)=.05, so we can set the right hand side of the equation equal to –1.645 and solve. The equation becomes

$$3.290=\frac{.28\sigma_{ILEC}}{\sqrt{\sigma_{ILEC}^2\left[\frac{1}{n_{CLEC}}+\frac{1}{n_{ILEC}}\right]}}\Rightarrow \qquad (3)$$

$$10.8241\left(\frac{1}{n_{CLEC}}+\frac{1}{n_{ILEC}}\right)=.0784\Rightarrow$$

$$138=\frac{n_{ILEC}n_{CLEC}}{n_{ILEC}+n_{CLEC}}\Rightarrow$$

$$n_{CLEC}=\frac{138n_{ILEC}}{n_{ILEC}-138} \qquad (4)$$

Next, consider the case where β=50% and• α=5%. The calculations are the same as above, except that the right hand side is .5. Since P(Z<0)=.5, equation (3) becomes

$$1.645=\frac{.28\sigma_{ILEC}}{\sqrt{\sigma_{ILEC}^2\left[\frac{1}{n_{CLEC}}+\frac{1}{n_{ILEC}}\right]}}$$

After some algebra, we get

$$n_{CLEC}=\frac{35n_{ILEC}}{n_{ILEC}-35}$$

2.6 Other Statistical Issues

Based on a number of factors, including KPMG Consulting's regional differences analysis and decisions made by the Steering Committee, the products reflected on Appendix K will have 160 instances either at a regional level or at a 13 state level. This breakdown is reflected in a document titled "ROC Production Bed Test Mix." The test cases and test bed will be designed based on this document which was the result of direct Steering Committee input.

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Appendix H: Test Overview Matrix

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Appendix I

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Appendix J: Mapping of MTP Tests to PID

MTP Section	Test Description	Relevant Service Performance Indicator	
		Release from Audit Required Before Testing Begins	Release from Audit NOT Required Before Testing Begins
12 & 14	Evaluation of POP Functionality and Performance Versus Parity Standards and Benchmarks Versus Parity Standards and Benchmark	GA-1, GA-2, PO-1, PO-3 , PO-5, PO-8, PO-9, OP-3, OP-4, OP-5, OP-6, OP-7, OP-8, OP-13,	PO-4, PO-6, PO-7, PO-10, PO-15, OP-15
13	Order Flow Through Evaluation	PO-2	
15	POP Volume Performance Test	PO-1, PO-5	
16	~~IMA GUI M&R~~CEMR Functional Evaluation	GA-1	
17	MEDIACC (EB-TA) M&R Trouble Functional and Performance Evaluation	GA-3	
18	M&R End to End Trouble Report Processing	MR-2, MR-3, MR-4, MR-5, MR-6, MR-7, MR-8, MR-9	
19	Billing Usage Functional Evaluation	BI-1	
20	Carrier Bill Functional Evaluation	BI-2, BI-3, BI-4A	
22	CLEC Network Provisioning Test	NI-1	
23	Change Management Test	OP-4	
24	Qwest CLEC Support Process and Procedures Review	OP-2	

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3. There may be applications of the same name that have different functionality i.e. CRIS C (Central), CRIS E (EAST) and CRIS W (West)
4. Multiple copies of the same application can be run at different data centers (shown in parentheses in the matrix) to serve different areas that may or may not coincide with a region i.e. An identical application of BOSS-C is run at 2 data centers to handle the total Central Region.

List of Abbreviations

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EB-TA Electronic bonding for Trouble Administration U S WEST s version is MEDIACC, it interacts with LMOS for POTS repair & WFA/C for Designed services repair

BPL-1 Business Process Layer does edits against State tarriffed products and services

IMA LSR DB Common IMA database for Local Service Requests

FOM Firm Order Manager

ICADS Service order constructor that translates order information to the specific service order processor

Data Arbiter Data access layer application between IMA gateway and downstream OSS

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CSR Retrieval Customer Service Record retrieval

Service Order Processor Directs/processes service orders

SOAC Service Order Analysis and Control

Premis Premises Information System

FACS Facility Assignment and Control System

LMOS Loop Maintenance Operations Systems

WFA Work Force Administration

CRIS Customer Record Information System

CABS Carrier Access Billing System

IABS Integrated Access Billing System

Data Center Locations

ALB Albuquerque, NM

BLV Bellevue, WA

DVR Denver, CO

OMA Omaha, NE

SLC Salt Lake City, UT

6.5 Regional Differences

U S WEST s current operating territory, and therefore much of its OSS legacy architecture, is the result of the merging of three predecessor Bell Operating Companies into the U S WEST Regional Bell Operating Company RBOC, including:

- Pacific Northwest Bell (PNB) covering Washington and Oregon now referred to as the Western Region
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2. Customer Service Record (CSR) retrieval is handled by BOSS in East and Central regions and by CARS in Western region.

3. Billing systems across the regions are different. Despite the fact that the three systems are all named CRIS and perform similar processes, they differ functionally.

6.6 State Differences

State level differences in downstream OSS are generally confined to the use of different instances of the same applications housed at different data center locations. Please see Figure 6.4.

6.7 Product Differences

In general, U S WEST offers the same products across its 14 state operating area. However, there are a few variations resulting from various factors such as state regulatory requirements, market conditions and conditions. Table 6.7 provides a high-level overview of these differences.

These differences will be further investigated by the Test Administrator with the assistance of the TAG and reflected appropriately in the test scenarios and testing mix.

Table 6.7 Wholesale Products by State

Product	AZ	CO	IA	ID	MN	MT	ND	NE	NM	OR	SD	UT	WA	WY
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Business	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Features	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
MTS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PLT	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CTX[2]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
ACS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
DA/OPS	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
LST	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
OCP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VM	NA	NA	Y	NA	Y	Y	Y	NA	NA	Y	NA	NA	NA	NA
WIRE	NA	NA	NA	NA	Y	NA	NA	NA	NA	Y	NA	NA	NA	NA
Lifeline	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA
ISDN	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA
UNE-P* POTS PBX ISDN BRI ISDN PRI	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
UNE-C PrivateLine	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

* Existing combinations only (i.e. not new)

The following provides additional definition for the products shown in the table.

Residence basic residential line including 911/E911 service and special needs service

Business Basic business line including 911/E911 service

Features Central office features such as custom calling, CLASS, etc

MTS Intra-LATA toll (message toll service)

PLT Private line, DS1, DS3

CTX Centrex, which includes Centrex 21, Centrex Plus, Centrex Prime

ACS Advanced Communications Services which includes Frame Relay, ATM Cell Relay, LAN Switching Service

DA/OPS Directory Assistance/Operator Services

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[2] *In states where Centrex is grandfathered, conversion to resale is only allowed for existing Centrex Customers.*

Listings Directory Listing, Joint User Listings

OCP Optional Calling Plans

PAL Public Access Lines

VM Voice Messaging, Enhanced Service

Wire Inside Wire and Wire Maintenance Plan

Lifeline Services such as Link-up, Telephone Assistance Plan (TAP)

ISDN Integrated Switched Digital Network basic and primary

UNE-P Unbundled Network Elements Platform

UNE-C Unbundled Network Elements - Combinations

NA Not available ***Y*** - Yes

6.8 Impact of Differences

The ROC initially views the potential impact of these regional and state differences on the testing process to be minimal. Because the CLEC-facing interfaces are stated by U S WEST to be uniform across states and the IMA-GUI and IMA-EDI gateways are designed to mitigate downstream OSS differences, ROC does not believe that direct testing of downstream OSS is required for a comprehensive test. Instead, the test transaction mix that will be determined by the Test Administrator with input from the TAG should reflect the expected mix across states and products to validate this view.

The state and regional differences will be further investigated by the TA with the assistance of the TAG to validate the ROC s initial view. Differences identified as impacting test results will be reflected appropriately in the test scenarios and testing mix.

7. Global Entrance and Exit Criteria

7.1 Entrance Criteria

Entrance criteria are those requirements that must be met before individual tests can commence. Global entrance criteria, which apply to every individual test except where noted otherwise, include the following:

1. ***The Test Plan has been approved.***

   The Test Plan must be approved by the ROC.

2. ***There should be no legally effective orders or injunctions that prevent the commencement of testing or that materially impact the ability to perform the test.***

3. ***The ROC has verified measurements to be used in the test.***

   The metrics to be used in the test must be agreed to and fully defined. In addition they must be available and validated. No testing or evaluation will proceed for a function, interface or service unless the associated performance measurement and success criteria are developed, implemented and validated for that function, interface or service. Performance measure validation will be accomplished by the Performance Measures Auditor (PMA) as part of the audit once a minimum of 2 months of results are available. Testing may begin for those test scenarios for which performance measurements are available and validated.

4. ***All required U S WEST interface capabilities must be operationally ready.***

   Electronic interfaces to be used in testing the OSS access functions of Pre-Ordering, Ordering, Provisioning, Maintenance and Repair, and Billing must be fully tested and operational. All GUI interface capabilities to be tested must be operational. This should be done in line with existing routine practices that U S WEST typically uses internally or to certify CLECs and CLEC-used interfaces for use.

5. ***For transaction tests to begin, the P-CLEC must be operationally ready.***

   The P-CLEC is to be developed through cooperation between the P-CLEC organization and the Test Administrator based on specifications, documentation and technical assistance provided by U S WEST. The successful operation of the P-CLEC will demonstrate the feasibility of developing, testing, and operating the CLEC side of the OSS interface based upon documentation supplied by U S WEST.

6. ***The statistical plan will be in place.***

   The statistical plan will be developed collaboratively by the ROC, TA, and TAG. See Appendix G for additional information on the planned statistical approach.

7. ***The pass and retest criteria have been identified.***

8. ***The Test Administrator will review relevant source documentation from other Third Party Testing efforts***

   The TA will review interview reports, summaries, and walkthrough reports from other tests where appropriate. This step will provide testers with background information on business functions and testing approaches.

In addition to these global entrance criteria, test-specific entrance criteria, where applicable, are defined within each test.

Table 7.1 Global Entrance Criteria

Criteria	Responsible Party
The Test Plan has been approved.	ROC
No legally effective orders or injunctions preventing the test exist	U S WEST, ROC
ROC TAG has completed the definition of metrics to be used across the thirteen states and the ROC has verified all relevant measurements to be used in the test.	ROC, PMA
All interfaces required for testing have been tested and certified using existing practices.	U S WEST, P-CLEC, CLECs
The P-CLEC must be operationally ready.	P-CLEC, TA
Statistical Plan in place	ROC, TA and TAG
Pass and retest criteria have been identified	ROC and TA
Test Administrator has reviewed relevant source documentation from other tests.	TA

7.2 Exit Criteria

Exit criteria are the requirements that must be met before the tests defined in the Test Plan can be concluded.

1. ***All required test activities must be completed.***

   For each test, all fact finding and analysis activities must be completed. All results and test methodologies have been documented.

2. ***Military testing has been successfully completed.***

   Tests have met success criteria. Tests not meeting success criteria have been retested as deemed appropriate by the TA. Tests or retests that have not met success criteria and are deemed not appropriate for further retesting by the TA have been documented.

3. ***All change control, verification, and confirmation steps have been completed.***

   The results of test activities must be documented and reviewed for accuracy. Any results that require clarification or follow-up are confirmed.

4. ***All specific test issues are closed/resolved or declared at impasse for referral to the ROC.***

   Issues that have been recorded and tracked throughout the conduct of a specific test must be closed or resolved with sufficient documentation that describes the means employed to close or resolve each issue. Any issues that are identified as being at impasse between the parties will be referred to the ROC by the TA.

In addition to these global exit criteria, test-specific exit criteria, where applicable, are define within each test.

Table 7.2 Exit Criteria

Criteria	***Responsible Party***
All required test activities must be completed.	*TA*
Military testing has been completed.	*TA*
All change control, verification, and confirmation steps have been completed.	*TA*
All specific test issues are closed/resolved or declared at impasse.	*TA*

Participants may elect to escalate test issues declared at impasse to the ROC issues resolution process described in Section 4.7.

8. Evaluation of U S WEST Wholesale Performance Measurement Processes

8.1 Description

Performance measures are the yardsticks or standards to which U S WEST OSS *performance measurements* are compared. There are two primary types of quantitative performance measures:

- Parity standards
- Benchmarks

A parity standard is a yardstick that is calculated through measurement of a particular aspect of access to, functionality and performance of U S WEST s OSS in support of its retail operations. Where analogous processes exist between U S WEST s retail operations and their wholesale CLEC operations the two processes can be evaluated for parity of treatment between the two. A typical example where parity measurements are possible is the comparison of performance between U S WEST s installation of a new retail customer and U S WEST s installation of a CLEC s resale customer. The calculation of par ity standards is accomplished through a formalized and controlled process (See Section 9).

There are instances where there are no analogous operations that can be compared between US WEST s retail and wholesale operations. For example, there is currently no identifiable retail analog for the Firm Order Commitment (FOC) interval measure. In these cases, a quantitative benchmark is used to set a threshold for performance where a numerical range of values is possible.

Quantitative performance measures, both parity standards and fixed benchmarks, to be used in the 3rd party OSS test are being collaboratively developed. The process began with a straw-man proposal provided to the TAG for comment in December. The comments were discussed in the ROC s Performance Measures Workshop held in Salt Lake City, UT on January 19-21, 2000. Issue resolution activities resulting from the workshop along with amendments, additions and deletions to the performance measure plan continue in subsequent collaborative forums. The primary document that describes quantitative performance measures, the retail analog (for parity standards), the numeric value (for fixed benchmarks), the calculation method, scope, restrictions, etc. is the ROC OSS Test Performance Indicator Descriptions (PID). (See Appendix B.)

Once quantitative performance measures have been agreed upon via the collaborative process referenced above and the quantitative performance measurement process has been validated, the measures are used to judge the measurements resulting from the conduct of the various

tests. Quantitative performance measures are used predominantly, but not exclusively, in judging the results of transaction driven tests. The U S WEST systems and processes comprising the validated process will be identified by release and version.

While fixed benchmarks and parity standards both have the same basic function they are yardsticks to measure the performance of U S WEST OSS during the test they are calculated differently. Fixed benchmarks are determined and are, in principle, static throughout the test. Parity standards measure retail operations performance. In order to provide a valid yardstick for the wholesale operations performance that they are to measure, they must be derived contemporaneously.

Qualitative benchmarks set a threshold for performance where a range of qualitative values is possible. For example, an evaluation of the scalability of a system or evaluation of a support organization is qualitative by nature and an evaluation would be based on the experience of the Test Administrator and industry best practices.

Existence criteria are those where only two possible test results exist. For example documentation defining daily billing feeds either exists or does not exist.

8.2 Objective

Rigorous, scientific measurement of any process, quantity, etc. requires that the measurement processes, standards and yardsticks themselves be validated in a rigorous, scientific manner. The objective of this test is:

- To validate that all aspects of U S WEST s processes, procedures, business rules, calculation methods, etc. used in measuring wholesale operations processes are valid.
- To provide a qualitative assessment of the retail operations process for comparison with the wholesale operation
- To provide a verification that certain performance measures are at parity due to the design of the data or traffic delivery process including DB-1, DB-2, DA-1, DA-2, OS-1, OS-2, PO-1 and others as identified in the final PID agreed upon for use in testing

8.3 Entrance Criteria

Table 8.3 Entrance Criteria

Criteria	*Responsible Party*
All global entrance criteria	*See Section 7*
Performance measures / PID have been agreed upon	*Test Manager, ROC*
Performance measurement documentation is approved	*Test Manager, ROC*
U S WEST wholesale performance measure processes, systems and software are complete and available for inspection and testing	*Test Administrator, ROC*
Product descriptions and business rules for all performance measures to be evaluated are available	*Test Administrator, U S WEST*
Interview guides are available	*Test Administrator*
U S WEST subject matter experts to be interviewed are projected to be available	*Test Administrator, U S WEST*

8.4 Test Scope

All aspects of the wholesale performance measurement process and all of the performance measures described in the PID are within the scope of this test.

8.5 Test Scenarios

None

8.6 Test Approach

8.6.1 Inputs

1. Performance measures / PID
2. Product descriptions and business rules for all performance measures to be evaluated
3. Description of wholesale performance measurement architecture, processes, systems, reports, etc.
4. Interview Guides

8.6.2 Activities

1. Prepare performance measurement process and system evaluation framework and plan
2. Validate framework and plan with TAG

3. Identify subject matter experts and schedule interviews
4. Conduct interviews
5. Evaluate the process design for measures identified as parity by process design
6. Conduct the Evaluation, to include:
   - Assess data collection process and system architecture
   - Evaluate data collection operations
   - Review of the calculation of performance measurements
   - Independent calculation of results, using data provided by U S WEST
   - Analyze interview results
   - Independent calculation of the appropriate statistics for performance measurement evaluation
   - Comparison with the same statistics as computed by U S WEST
   - Interpret statistics
7. Identify exceptions
8. Recommend approach to clearing exceptions
9. Verify that exceptions are cleared
10. Define monitoring plan
11. Write final report

8.6.3 Outputs

1. Performance measurement evaluation framework and plan
2. Exception report
3. Documentation of any identified material defects in US WEST s systems, operations or documentation
4. Monitoring plan
5. Final report

8.7 Exit Criteria

Table 8.7 Exit Criteria

Criteria	Responsible Party
All exceptions are cleared	Test Administrator, TAG
Monitoring plan is complete	Test Administrator, TAG
Final report is complete	Test Administrator, TAG

9. Evaluation of U S WEST s Parity Standards Calculation Process

9.1 Description

A parity measure is a yardstick or standard that is calculated through measurement of a particular aspect of access to, functionality and performance of U S WEST s OSS in support of its retail operations. Where analogous processes exist between U S WEST s retail operations and their wholesale CLEC operations the two processes can be evaluated for parity of treatment between the two. A typical example where parity measurements are possible is the comparison of performance between U S WEST s installation of a new retail customer and U S WEST s installation of a CLEC s resal e customer.

Unlike fixed benchmarks, which are numerical values that are set by collaborative agreement, parity standards are derived through U S WEST s measurement of its own retail processes. This section describes a process whereby the Test Administrator verifies that parity standards do, in fact, represent the actual access, functionality and performance characteristics of U S WEST s OSS in support of its own retail operation.

9.2 Objective

Parity standards are measures or yardsticks that are established through U S WEST s measurement of its own retail processes. The objective of this test is:

- To validate that all aspects of U S WEST s process procedures, business rules, calculation methods, etc. used to establish the numerical values of parity standards are valid
- Assess retail operations for comparison with wholesale operations

9.3 Entrance Criteria

Table 9.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
Performance measures / PID have been agreed upon	Test Manager, ROC
Performance measurement documentation is approved	Test Manager, ROC
U S WEST retail performance measure processes, systems and software are complete and available for inspection and testing	Test Administrator, ROC
Product descriptions and business rules for all retail measures to be evaluated are available	Test Administrator, U S WEST
Interview Guides Available	Test Administrator
U S WEST subject matter experts to be interviewed are projected to be available	Test Administrator, U S WEST

9.4 Test Scope

All aspects of the retail performance measurement process and all of the parity standards described in the PID are within the scope of this test.

9.5 Scenarios

None.

9.6 Test Approach

9.6.1 *Inputs*

1. Performance measures / PID and associated documents
2. Product descriptions and business rules for all parity standards to be evaluated
3. Description of retail performance measurement architecture, processes, systems, reports, etc.
4. Interview Guides

9.6.2 *Activities*

1. Prepare parity standards calculation process and system evaluation framework and plan
2. Validate framework and plan with TAG

3. Identify subject matter experts and schedule interviews
4. Conduct interviews
5. Conduct the Evaluation, to include:
   - Assess data collection process and system architecture
   - Evaluate data collection operations
   - Review of the calculation of performance measures
   - Validate that consistency exists between the business rules for calculation and the actual processes the systems use to perform the calculations
   - Analyze interview results
   - Independent calculation of results, using data provided by U S WEST
   - Independent calculation of the appropriate statistics for parity standards evaluation
   - Comparison with the same statistics as computed by U S WEST
   - Interpret statistics
6. Identify exceptions
7. Recommend approach to clearing exceptions
8. Verify that exceptions are cleared
9. Define monitoring plan
10. Write final report

9.6.3 *Outputs*

1. Parity measure evaluation framework and plan
2. Exception Report
3. Monitoring Plan
4. Documentation of any identified material defects in US WEST s systems, operations or documentation
5. Final Report

9.7 Exit Criteria

Table 9.7 Exit Criteria

Criteria	Responsible Party
All exceptions are cleared	Test Administrator, TAG
Monitoring plan is complete	Test Administrator, TAG
Final report is complete	Test Administrator, TAG

10. Evaluation of U S WEST Order and Transaction Creation Documentation

10.1 Description

The evaluation is designed to evaluate the documentation available to the CLEC community to instruct them on how to prepare the necessary forms and other documents to submit orders and other transactions to U S WEST s OSSs. Principles 8 and 12 will be applied in the evaluation of documentation available to CLECs for the creation of orders and transactions.

10.2 Objective

The objective of this test is:

To verify that all orders and transactions to be submitted to U S WEST via GUI and EDI interfaces and those capabilities provided via manual interfaces rather than electronically can be created using documentation and assistance provided by U S WEST.

10.3 Entrance Criteria

Table 10.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
Order and transaction documentation available	U S WEST
Change management procedure documentation available	U S WEST
Regression validation checklist is available	Test Administrator
Interface guides are available	Test Administrator
Interfaces are available and scheduled	Test Administrator, U S WEST

10.4 Approach

This test will be a qualitative test of policies, practices, procedures, and documentation available to CLECs to develop orders and transactions to be sent to U S WEST s OSS across GUI, EDI, EB-TA, and other interfaces.

10.4.1 Inputs

1. U S WEST Order and transaction documentation
2. U S WEST change management documentation
3. Industry standards documentation
4. Other procedural and technical documentation
5. Regression checklists
6. Interface development documentation resulting from change management efforts
7. Interview guides
8. US WEST interface development methodology documentation
9. Relevant and useful data acquired from the AZ test

10.4.2 Activities

1. Determine areas that require validation or retest
2. Gather information

3. Review interface, order, and transaction development processes to assess whether their successful completions were performed as anticipated by the timelines in U S WEST s documentation
4. Perform interviews and documentation reviews as required for validation or retest
5. Complete evaluation checklists and interview summaries
6. Develop and document findings

10.4.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Comparison of actual versus expected results for order and transaction creation deliverables
3. Documentation of any identified material defects in US WEST s systems, operations or documentation
4. Exception report
5. Summary report

10.5 Exit Criteria

- Exceptions cleared
- Final summary report complete

11. TRANSACTION PROCESSING TEST DATA

Test data provides the input or stimuli to systems and processes so that functionality and performance can be observed by means of transaction driven system analysis.

Principle # 11, 13 and 14 apply to test data.

11.1 Purpose

The purpose of this section is to describe test data is described in terms of:

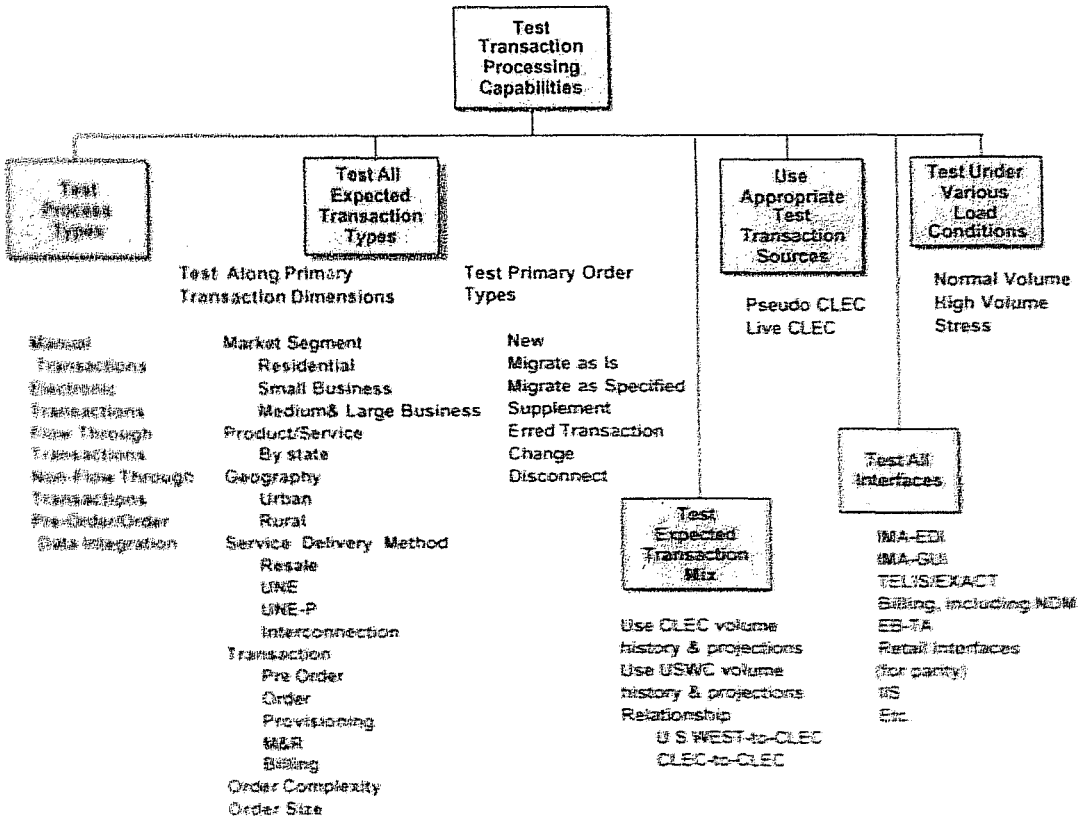
- Test Data Dimensions
- Test Scenarios

- Test Cases
- Test Transaction Instances
- Test Data Definition
- Test Data Sources

11.2 Test Data Dimensions

Figure 11.2 reflects a testing framework agreed to at the St. Paul workshop that describes the major dimensions and attributes to be incorporated in test data transactions.

Figure 11.2 Test Data Dimensions



11.3 Scenarios

Based on MTG's industry experience, the knowledge gained from the New York Public Service Commission Test, a review of other OSS tests, as well as a review of the available offerings in thirteen western states, MTG developed a representative set of test scenarios. At the TRD workshop in Denver, the TAG refined the draft scenarios into a potential set of scenarios reflected in Appendix D that will used to create the transaction mix. Each test scenario describes a real-world situation that will be used to create realistic test cases in which CLECs purchase wholesale services and network elements from U S WEST to be resold or repackaged to the CLEC's end-user customer on a retail basis.

Scenarios serve several key purposes. Scenarios help define the products, services, and transactions that should be included for testing. In this regard, test scenarios provide the guidance and framework for developing real world test cases to simulate live production in a controlled test environment. The test cases provide the actual detailed instructions required to build individual transaction test instances.

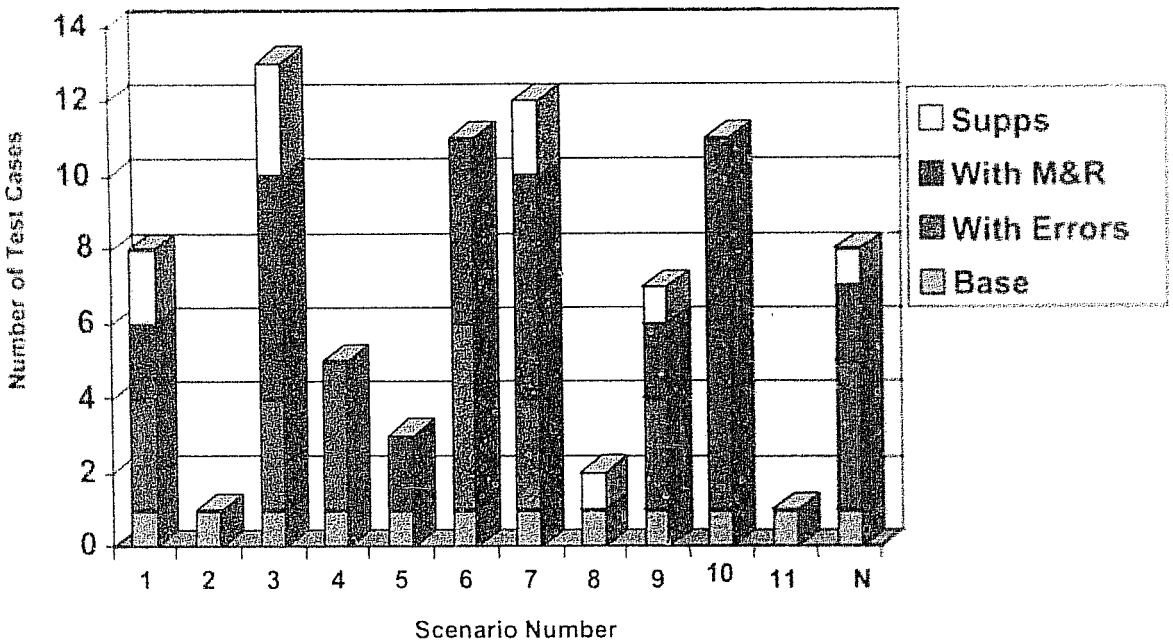
These scenarios will be used to test functionality, performance, and other attributes associated with the ability of CLECs to access information from U S WEST business processes and associated systems. Scenarios provide a way to bridge across test domains and families, thereby facilitating both point-specific and end-to-end testing of various systems and processes and providing the breadth and depth of coverage of products and services to be tested.

11.4 Test Cases

Variables will be introduced into the scenarios to create a number of test cases. Types of variables include errors such as invalid USOCs, order entries that violate U S WEST's business rules (which is a higher class of error than a typographical error), supplements (changes to an order), expedites (end user requested due dates earlier than the standard interval) and Maintenance and Repair (M&R) test situations. Test cases may also vary by the type of features that are requested and the characteristics of the customer. For example, one test case may specify call waiting as a feature but another may use caller ID instead of call waiting. Similarly, for the same scenario, one test case may specify a single-line residence customer and another may specify a five-line business customer. The test cases may also vary the timing and sequence of the transactions.

The following chart depicts several possible variations of test cases for each scenario. In this example, the variables include supplements, M&R, and errors.

Figure 11.4: Scenarios and Test Cases



11.5 Detailed Test Instances

Detailed test instances will be generated from these test cases. Test instances represent a set of transactions described by a test case for a specific customer account. For example, a test case might specify migrate a two-line business customer from U S WEST to a CLEC and add call waiting on the primary line. A test instance would perform the necessary pre-ordering inquiries and send an order to accomplish this activity for a specific two-line business customer account.

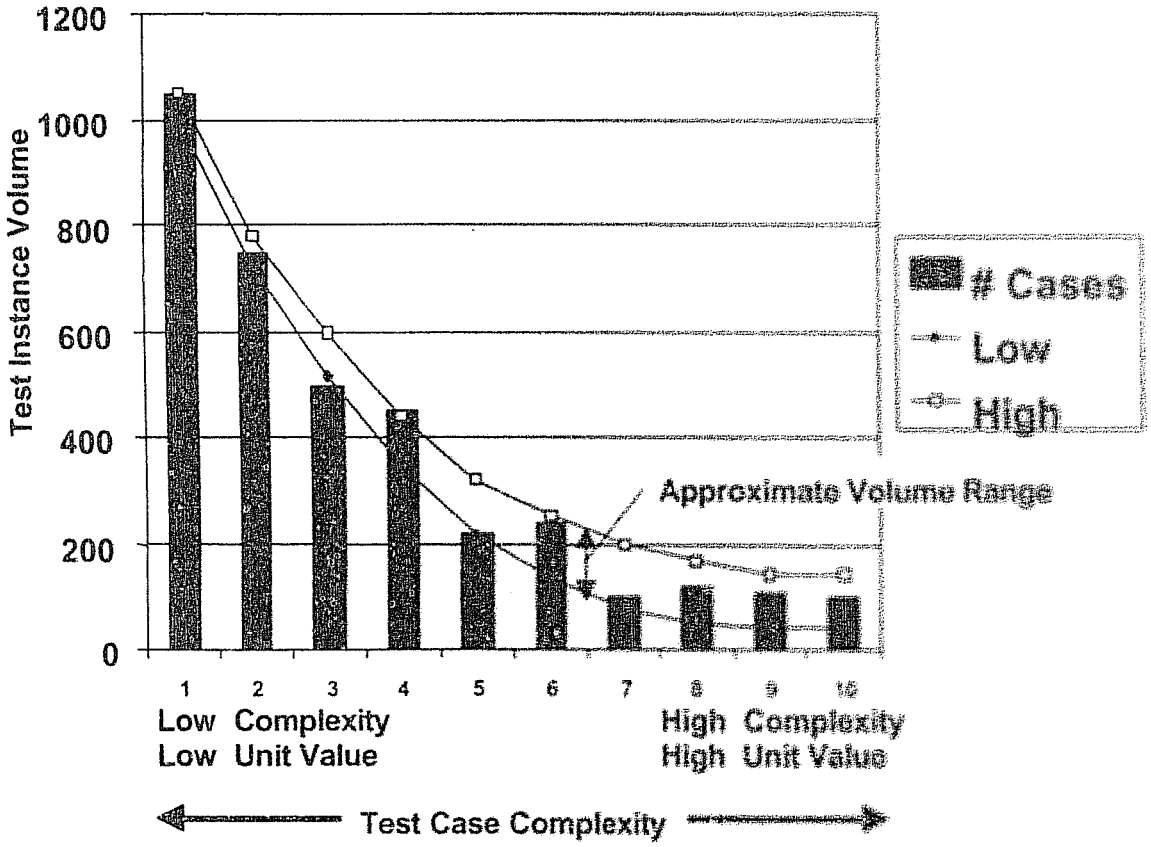
In a manner similar to the creation of multiple test cases from each scenario by varying order dimensions and attributes, multiple test instances can be created from each test case by varying order dimensions and attributes.

11.6 Replicate Mix of Scenarios, Test Cases, and Test Instances

Relative volumes of test cases must be assigned to each scenario, and volumes of test instances must be assigned to each of the test cases based on complexity and expected real world production. This assignment of relative volumes to test scenarios, test cases and test instances results in a mix of test data that takes into account the expected future situation of the real world. While more complex scenarios are expected to occur with less frequency, test instance generation must ensure that the more complex and high value cases do occur in sufficient numbers to obtain adequate coverage. The following chart conceptually depicts the

methodology in determining the appropriate distribution of transactions with simpler transactions occurring more frequently than complex transactions.

Figure 11.6: Volume Distribution by Complexity

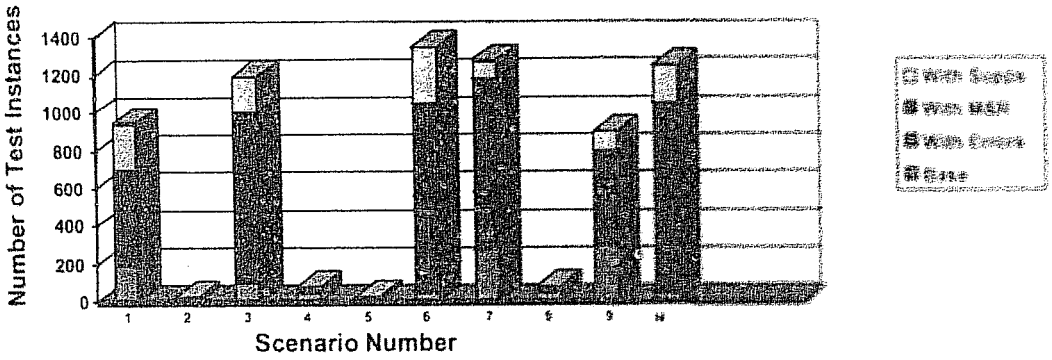


The replicate transaction mix will also include consideration of LIDB (Line Information Data Base) orders (for example, PIC or LPIC changes), 9-1-1 and Directory database updates, 900/976 calling and blocking as appropriate across the various scenarios.

11.7 Reasonably Expected Volumes

After determining the appropriate distribution, statistical techniques will be used to determine the actual number of test instances to be assigned to each of the test cases. Individual test instances that match the test cases will be generated based on the volume that has been assigned. These projected test volumes will be used to measure U S WEST's ability to meet prescribed functionality and measures of service in this timeframe.

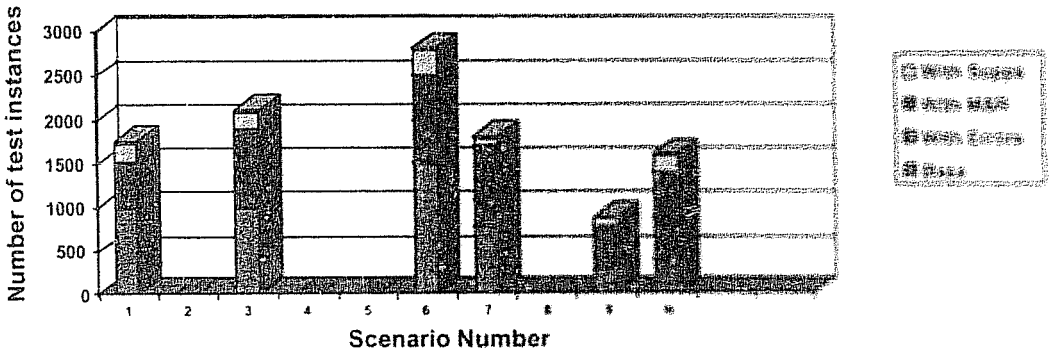
Figure 11.7: Reasonably Expected Volumes



11.8 Stress Volumes

In addition, a stress volume test will be conducted to test the capacity and identify potential choke points of the interfaces. Stress volumes will be assigned to a subset of the test case types based on some multiplier of the normal expected volumes.

Figure 11.8: Stress Volumes



Note: The numerical data used in Figures 11.4, 11.6, 11.7 and 11.8 are for demonstration purposes only and is not intended to represent the testing that will be conducted on this test.

11.9 Testing Hours

OSS functionality testing should be scheduled to take place across the hours of the day that the specific interface being tested is available for CLEC use in a manner that approximates the typical distribution of production transactions. This will increase the likelihood that the P-CLEC experience closely resembles live CLEC experience while also promoting blackbox U S

WEST will provide information on typical transaction distribution by interface to the TA for use in test scheduling.

OSS capacity testing should also be scheduled to take place across the hours of the day that the specific interface being tested is available for CLEC use. The TA, in consultation with the ROC and the TAG, will determine the most appropriate schedule for capacity testing balancing the need for a realistic and rigorous capacity test with protecting the on-going production systems. The TA will determine procedures, and conditions under which the procedures will be used, to abort capacity testing as deemed necessary.

11.10 Specification of Test Data through the Collaborative Process

11.10.1Description

This section describes the collaborative process whereby the test data requirements defined in this document will be extended to provide a test data specification.

11.10.2Objective

The objective of the process described in this section is to design test data that provides an agreed-to replicate mix of transactions that represents a reasonably expected transaction mix and reasonably expected transaction volumes.

11.10.3Entrance Criteria

Because design of test data will take place well before actual testing begins, global entrance criteria, which apply to actual testing processes, need not be met prior to design of test data. Test data design entrance criteria are limited to those listed in the following:

Table 11.10.3 Entrance Criteria

Criteria	Responsible Party
Test Plan is complete	ROC
Scenarios have been defined and approved	ROC
Test Administrator has been selected	ROC, U S WEST
Statistics plan is in place	ROC, TA and TAG

11.10.4Test Data Specification Creation Approach

11.10.4.1 Inputs

1. Scenarios and cases
2. U S West historical data on aggregate CLEC volumes
3. Draft CLEC Test Data Input Matrix based on Data Dimensions and Scenarios

11.10.4.2 Activities

1. Revise CLEC Test Data Input Matrix
2. Establish consensus on matrix using the St. Paul model

- Establish confidentiality policies and guidelines
- Issue RFC to CLECs regarding CLEC Test Data Input Matrix
- Summarize Comments
- Resolve Issues
- Finalize Matrix

3. Obtain input from CLECs in form of filled out CLEC Test Data Input Matrix
4. Analyze and consolidate CLEC input and create test data

11.10.4.3 Outputs

1. Test data reflecting replicate mix of scenarios, test cases and test instances.
2. Test Overview Matrix as shown in Appendix H sample.

11.10.5Exit Criteria

Table 11.10.5 **Exit Criteria**

Criteria	*Responsible Party*
TAG Consensus	*ROC, TAG*
ROC Approval	*ROC*

12. Evaluation of POP Functionality and Performance versus Parity Standards and Benchmarks

12.1 Description

The POP Functional Evaluation is a comprehensive review of all of the functional elements of Pre-Ordering, Ordering, Provisioning, Pre-Order/Order Data Integration; the achievement of the prescribed measures; and an analysis of performance in comparison to U S WEST's Retail systems.

The test will consist of live transactions submitted over the U S WEST supported interfaces, both interactively via a graphical user interface (IMA GUI) and computer-computer interfaces. Current plans call for testing the following U S WEST interfaces: IMA GUI, and IMA EDI for LSRs, and TELUS and EXACT for ASRs. The following table depicts the functionality with which each interface will be tested:

Table 12.1 Functionality and Interfaces

Functionality	*IMA GUI*	*IMA EDI*	*EXACT*	*TELUS*
Pre-Order	X	X		
Order	X	X	X	X
Pre-Order/Order Data Integration	X	X		

The master interface list will be finalized during the actual testing to allow for any corrections/additions to be made as actual testing nears.

The computer-computer interfaces will be tested using interfaces established or built by the P-CLEC for the Test Administrator according to specifications and processes provided to CLECs by U S WEST. The GUI will be tested through transactions entered directly into the appropriate GUI interface. Where appropriate, manual transactions will be submitted as well.

Data on all of the POP processes will be collected and analyzed and used to produce the output reports. The POP functional and performance evaluation will look at an end-to-end view of the pre-ordering through provisioning process. It will include a mix of stand-alone pre-ordering and ordering transactions, along with pre-order transactions followed by orders, supplements, and cancels. The Test Administrator will collect data on transaction submissions and responses, and on provisioning activities. Where possible and appropriate, this information will be collected and maintained electronically. Both ASR and LSR orders will be tested. Fatal as well as error free transactions will be tested. Not all orders will go through the physical provisioning process. Some will be future dated, and others will be canceled before provisioning activities commence. The verification and validation of the provisioning activities will be performed in Section 14.

As part of the POP Functional Evaluation, the Test Administrator will also seek qualitative input and quantitative data on the real world experience of CLECs operating in the thirteen BOC states. CLECs willing to participate in this test will be interviewed and their experiences will be incorporated into the test results after validation by the Test Administrator. In addition, for some types of transactions, involvement will be sought from willing CLECs to participate in some aspects of the live transaction testing. This will be done for two principal purposes.

First, CLEC participation will be important for complex orders that cannot be simulated adequately in the test environment. Examples include complex facilities-based orders and orders, like those for unbundled loops with LNP, which require an actual CLEC switch to fully complete. Second, it is important to attempt to incorporate information to help control for experiment bias of the results. Therefore, the Test Administrator will ask CLECs for data that can be validated on live orders that replicate those sent over the test system. As appropriate, some test orders may be sent over CLEC systems.

Of course, successful completion of all of these aspects of the test requires active participation of one or more CLECs. However, CLEC participation is voluntary and the scope of that participation is up to each individual CLEC.

12.2 Objective

The objective of this test is to validate the existence, functionality, and behavior of the interfaces and processes required by U S WEST for pre-ordering, ordering, and provisioning transaction requests and responses. The POP functions tested will also be validated against the U S WEST documentation that specifies which functions are and are not available within the U S WEST OSS.

12.3 Entrance Criteria

Table 12.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
Interfaces are built and tested	Test Administrator
Interfaces are certified by U S WEST	U S WEST
Inventory documented of all U S WEST relevant (company-wide and regional) systems and interfaces identifying release number and version	TA, U S WEST
Wholesale and retail measurement processes evaluated	Test Administrator, ROC
Measurement collection process is defined	Test Administrator
Dial-up connectivity to GUI interface established	Test Administrator, U S WEST
Business rules for all transactions to be tested are available.	U S WEST
Test bed databases and facilities in place	U S WEST
CLEC test volunteers identified	Test Administrator
Test Scenarios developed	Test Administrator
Test Cases developed	Test Administrator
Specific Test Cases to test in conjunction with CLEC volunteers identified	Test Administrator
Specific Evaluation techniques developed	Test Administrator
Evaluation Criteria defined and approved	Test Administrator
Detailed Go/No Go checklist created	Test Administrator
Help Desk log and contact checklists created	Test Administrator

12.4 Test Scope

Ordering transactions consists of three distinct, but related, processes:

- Pre-Order Processing – submission of requests for information required to complete orders;
- Order Processing – submission of orders required to establish/change a customer's service; and
- Provisioning – physical work performed by U S WEST as a result of the submitted orders.

The Ordering Transactions test suite will be comprised of real-life, end-to-end test cases that cover the entire spectrum of pre-order, order, and provisioning. The following order types will be tested:

- Migrate as is
- Migrate as is with changes
- Migrate as specified
- New customer
- Feature Change
- Directory Change
- Number Change
- Add lines
- Suspend/Restore
- Disconnect (full/partial)
- Move (inside/outside)
- Number Portability (LNP/INP)
- Change to New Local Service Provider
- UNE Loop Cut Over

The order types identified above will be ordered using the available and applicable U S WEST service delivery methods. The following service delivery methods will be tested:

- Resale
- Unbundled Loops
- UNE Platforms, residential and business
- Other UNE Combinations such as EELs
- Other Unbundled Network Elements such as UDIT
- Any other service delivery methods that may become available at the time of the test

The orders will be placed using U S WEST s existing interfaces: GUI, computer-computer, and manual. The following assumptions pertain to ordering interfaces:

- U S WEST interfaces, GUI and computer-computer , will be tested, including during the Volume Performance Test,
- Orders will be issued using both ASR and LSR forms, as appropriate,
- The GUI will be tested from multiple terminals at the same time,
- If a scenario calls for an order type that can not be submitted electronically, the request will be submitted manually.

Other important aspects of ordering will be tested:

- Flow through order types, as stated and agreed -to by U S WEST, will be tested to ensure that they do not require manual handling (the complete set of identified flow-through order types will be evaluated to ensure that they actually do flow-through.),
- Integration of pre-order and order data functionality which integrates values from pre-order processes into ordering documents, as desired by the CLEC
- Supplemental orders (changes to orders in process), including cancels, will be tested,
- Multiple products and features will be tested; the tests will cover a broad range of the options available to CLECs and resellers,
- Multiple switch-types, end-offices, states and cities will be included in the test,
- A portion of the orders sent will be physically provisioned. Some orders will be future dated, allowing them to be canceled prior to work scheduling and provisioning.
- CLEC's will be solicited for involvement in some aspects of the test, especially for assistance in the testing of complex services and services with long lead times, and
- As indicated by testing principle #13, similar test cases may be run by both the P-CLEC and a production CLEC that has completed interface verification with U S WEST in order to validate the processes under the oversight of the TA. This validation process is not intended to double-test every scenario by both the P-CLEC and a production CLEC and will include no more iterations than are required for validation.

In addition to normal orders, orders with planned errors will be sent to U S WEST to check the accuracy of its system edits and service representatives.

Service locations supported by different U S WEST ordering, provisioning, and CO switching and transmission configurations will be tested.

The test will be conducted using the most current release of the U S WEST business rules at the time of the test.

The P-CLEC will build a pre-order EDI interface using U S WEST specifications and evaluate the results for adequacy. The data from this pre-order interface will be integrated with the LSR for ordering on a real time or near real time basis to ensure that the two interfaces are fully integratable.

The following chart contains the processes and sub-processes that will be used in evaluating U S WEST's pre-ordering, ordering, and provisioning functionality and performance:

Table 12.4-1

Process Area	Sub-Process
Pre-ordering	Retrieve customer CSR
	Validate Customer Address
	Perform Loop Qualification
	Perform Facility Check
	Reserve and release telephone numbers
	Request information about services, features, facilities, and PIC/LPIC choices available to customers
	Determine due date/appointment availability
Ordering	Submit order for migration of a customer from U S WEST to a CLEC as is
	Submit order for migration of a customer from U S WEST to a customer as specified
	Submit order for partial migration of a customer from U S WEST to a CLEC
	Submit order for establishing service for a new customer of a CLEC
	Submit order for feature changes to an existing CLEC customer
	Submit order for adding lines/circuits to an existing CLEC customer.
	Submit order for a telephone number change for an existing CLEC customer
	Submit order for a directory change for an existing CLEC customer
	Submit order for the outside move of an existing CLEC customer
	Submit order for suspending service of an existing CLEC customer
	Submit order for restoring service to an existing CLEC customer
	Submit order for disconnecting service from an existing CLEC customer
	Submit order for disconnecting some lines/circuits for an existing CLEC customer
	Submit order for migration of a customer from another CLEC
	Change service delivery method for an existing CLEC customer
	Order interoffice facilities
	Receive order confirmation
Provisioning	Receive notification of jeopardy or delay
	Receive completion notification

The following table contains the evaluation measures that will be used in evaluating U S WEST s pre-ordering functionality and performance:

Table 12.4-2 POP Evaluation Measures

Evaluation Measure	Evaluation Technique	Criteria Type
Clarity, accuracy and completeness of documentation	Document Review, Transaction Generation	Qualitative Quantitative
Accessibility of GUI (excluding Interoffice facilities)	Transaction Generation	Quantitative
Accessibility of computer-computer interface (excluding Interoffice Facilities)	Transaction Generation	Quantitative
Accuracy and completeness of functionality	Transaction Generation	Quantitative
Timeliness of response	Logging	Quantitative
Completeness of response	Transaction Generation, Inspection	Qualitative Quantitative
Clarity and accuracy of error messages	Transaction Generation, Inspection, Document Review	Qualitative
Accuracy, responsiveness, and completeness of Help Desk support	Transaction Generation, Logging	Qualitative Quantitative
Usability of information	Transaction Generation, Inspection	Qualitative Quantitative
Consistency with retail capability	Inspection	Qualitative Quantitative

The Provisioning process has different measures:

Table 12.4-3 Provisioning Evaluation Measures

Evaluation Measure	Evaluation Technique	Criteria Type
Timeliness of provisioning	Transaction Generation, Inspection, Logging	Quantitative Qualitative
Frequency of delay or rescheduling of provisioning	Transaction Generation, Inspection, Logging	Quantitative Qualitative
Accuracy and completeness of provisioning	Transaction Generation, Inspection, Logging	Quantitative Qualitative

12.5 Scenarios

The specific scenarios to be used in this test can be found in Appendix D.

12.6 Test Approach

12.6.1 Inputs

1. Test scenarios and cases
2. Test case execution schedule
3. Certified interfaces
4. Documentation (Ordering guides, order/pre-order business rules, etc.)
5. Trained personnel to execute test cases
6. Test Go/No Go checklist
7. Help Desk log and contact checklists

12.6.2 Activities

1. Use test cases to develop transactions and transaction content based upon instructions provided in the appropriate handbook(s).
2. Interview CLEC volunteers and coordinate joint testing activities.
3. Submit transactions. Submittal date and time and appropriate transaction information logged.
4. Receive transaction responses. Receipt date, time, response transaction type, and response condition (valid vs. reject) logged.
5. Match transaction response to original transaction.
6. Verify transaction response contains expected data and flags unplanned errors.
7. Verify that pre-order data is integrated into ordering documents/processes as appropriate.
8. Manually review unexpected errors. Identify error source (the Test Administrator, or U S WEST). Identify and log reason for the error. Determine if test should be discontinued.
9. Contact help desk for support as indicated in test cases and for unexpected errors following the appropriate resolution procedures. Log response time, availability, and other behavior of functions as identified on the help desk checklist.
10. Correct expected errors and resubmit. Re-submittal date, time, and appropriate information logged.

11. Identify transactions for which responses have not been received. Where multiple responses are expected for the same request, the receipt of each response will be monitored.
12. Identify transactions for which duplicate or multiple responses were received in error.
13. Record missing responses.
14. Review status of pending orders. Verify and record accuracy of response.
15. Generate P-CLEC reports.
16. Generate U S WEST metrics report for test date range.
17. Compare P-CLEC metrics to U S WEST retail metrics.
18. Assess quality of business processes and compare, where information is available, with equivalent retail processes.

12.6.3 Outputs

1. Reports that provide the metrics to support the standards of performance defined in Appendix C
2. Variance between actual performance and the standards of performance defined in Appendix C
3. Report of expected results versus actual test case results
4. Unplanned error count by type and percentage of total
5. Report of unplanned errors as the result of documentation problems
6. Rejects received after confirmation notification and percentage of total
7. Transaction counts, error ratio, response time, etc., by transaction type, product family, and delivery method
8. Minimum, maximum, mean, average, and aggregate response time/interval per transaction set
9. Transaction counts per response time/interval range per transaction set
10. Orders erred after initial confirmation
11. Flow through orders by order type, product family, etc.
12. Completed help desk logs and checklists
13. Help desk accuracy and timeliness report
14. Perform P-CLEC to other CLEC comparison
15. P-CLEC measurement reports

- Measure of parity performance between retail and wholesale
- Documentation on any identified material defects in US WEST s systems, operations or documentation

12.7 Loop Qualification Process Parity by Design Evaluation

In addition to the above elements of this POP Functionality test, the TA will perform an evaluation of the Loop Qualification process U S WEST provides to wholesale customers compared to the Loop Qualification process it provides to its own retail customers to determine if parity exists in the design, implementation and use. This evaluation should examine the wholesale and retail end-to-end processes, the results of the same queries made to the two processes, and all additional avenues of follow-up or recourse available to either wholesale or retail operations or both. This evaluation should answer the following questions:

- Does a wholesale loop qualification transaction result in the same information as a retail transaction for the same loop?
- Does the loop qualification information come from the same database (directly or indirectly) with the same frequency of update?
- Are the wholesale responses returned in approximately the same timeframe as the retail response?
- Are any additional sub-processes or remedial options available in the retail loop qualification process that are not in the wholesale process?

12.8 Exit Criteria

Table 12.7 Exit Criteria

Criteria	*Responsible Party*
All global exit criteria	*See Section 7*

13. ORDER FLOW THROUGH EVALUATION

13.1 Description

The Order Flow Through Evaluation tests the ability of orders to flow through from the CLEC through the interface into the U S WEST ordering system without any human intervention.

Prior to specifying the Flow Through test in detail, the BA-NY experience and FCC filings on testing flow through will be assessed. Useful lessons learned and other precedents will be adopted by the ROC as appropriate, and through the customary collaborative process.

Only orders that qualify as flow through, orders not needing manual action, will be tested. The list of flow through types will be updated during the testing period. Additions and deletions to the list will be incorporated into the test.

Flow through orders will be submitted th rough both the GUI and the computer-computer interfaces. Any supplements and cancels that are considered to be flow through will also be submitted. The order transactions will be monitored to verify that they do not fall out for manual handling in the U S WEST Interconnect Service Center (ISC) and are accepted by U S WEST s Service Order Processor (SOP) without manual intervention. The test will also ensure that all order acknowledgements, rejects, jeopardies, and other notices are issued electronically without manual intervention and that all supplemental orders to these initial orders actually flow through, as appropriate.

This test will be conducted as a part of the POP functional and normal volume testing.

13.2 Objective

The objective of the Order Flow Through Test is to verify the ability of U S WEST to flow through their front end systems, without manual intervention, all order types that at the time the transactions are submitted are designated by U S WEST or otherwise considered to be flow through.

13.3 Entrance Criteria

Table 13.3 Entrance Criteria

Criteria	*Responsible Party*
All global entrance criteria	*See Section 7*
All Section 12 Entrance Criteria	*See Section 12.3*
Documentation available specifying which orders are expected to flow through by service delivery type and product including any specific parameters that cause an order to not flow through that should otherwise flow through	*U S WEST*
Test Scenarios selected	*Test Administrator*
Specific Test Cases developed	*Test Administrator*
Test Case execution schedule developed	*Test Administrator*

13.4 Test Scope

The scope for this test includes the following test processes:

1. Pre-ordering
2. Ordering

13.5 Test Scenarios

The specific scenarios to be used in this test will be chosen from those that can be found in Appendix D.

13.6 Test Approach

13.6.1 Inputs

1. Test Cases and expected results
2. Test case execution schedule
3. Interview guides
4. Interfaces built and certified
5. Transaction mix
6. Failure reason codes
7. Trained personnel to execute test cases

8. Test Go/No Go checklist

13.6.2 Activities

1. Submit order transactions via computer-computer and the GUI. Log submittal date, time and appropriate transaction information.
2. Receive transaction responses. Log receipt date, time, response transaction type, and response condition (valid vs. reject).
3. Verify transaction response contains expected data and flags unplanned errors.
4. Identify orders that had manual handling. Identify reason for manual handling. Record manual handling and order attributes.
5. If there was an error that caused the order not to flow through, identify error source (Test Administrator or U S WEST). Identify and log reason for the error. U S WEST errors will not be corrected.
6. Correct any Test Administrator errors and re-submit. Verify orders now flow through.
7. Verify that all orders submitted are accounted for. Log any orders that are submitted but do not appear as processed or erred by U S WEST.
8. Generate U S WEST manual handling report.

13.6.3 Outputs

1. Percentage and number of orders that flowed through by order type, product family, etc.
2. Percentage and number of orders that did not flow through by order type, product family, etc.
3. Orders that did not flow through by reason code
6. Variance between actual performance and the standards of performance defined in various arbitrated agreements
4. Report of expected results versus actual results
5. Report of orders not processed
6. U S WEST manual handling report
7. Summary Report
8. Documentation on any identified material defects in US WEST s systems, operations or documentation

13.7 Exit Criteria

Table 13.7 Exit Criteria

Criteria	Responsible Party
All global exit criteria	See Section 7

14. PROVISIONING EVALUATION

14.1 Description

The Provisioning Evaluation test is a comprehensive review of U S WEST s ability to complete accurately and expeditiously the provisioning of CLEC orders. This test will be conducted as a part of the POP functional testing. It will incorporate orders submitted by both the computer-computer and GUI interfaces, and manually where appropriate. While most kinds of orders will be included, the test will concentrate on those types of orders that require physical provisioning.

This test will involve verifying that orders submitted have been properly provisioned and that the provisioning has been completed on time. Included in the test will be orders that have been supplemented and canceled, as well as those submitted with anticipated errors, to test the impact on provisioning.

For some orders, particularly the more complex ones, the involvement of CLECs operating in thirteen western states will be solicited to volunteer use of their facilities to enhance the real world nature of the test. The CLECs will also be asked to provide data on their experiences with provisioning, after verification and validation by Test Administrator.

14.2 Objective

The objective of this test is to evaluate the ability of U S WEST to accurately provision orders submitted by CLECs and to do so on time.

14.3 Entrance Criteria

Table 14.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
All Section 12 entrance criteria	See Section 12.3
Test Scenarios selected	Test Administrator
Specific Test Cases developed	Test Administrator
CLEC volunteers identified	Test Administrator
Provisioning log and activity checklists created	Test Administrator
Test case execution schedule developed	Test Administrator

14.4 Test Scope

The scope for this test includes the following processes:

1. Pre-Ordering
2. Order Processing
3. Provisioning

14.5 Test Scenarios

The specific scenarios to be used in this test will be chosen from those that can be found in Appendix D.

14.6 Test Approach

14.6.1 Inputs

1. Test Cases and expected results
2. Test case execution schedule
3. Provisioning documentation
4. Provisioning log and activity checklists
5. Trained personnel to execute test cases
6. Test Go/No Go checklist

14.6.3 Activities

1. Log test cases to develop transactions and transaction content based upon instructions provided in the appropriate documentation
2. Select computer-computer transactions.
3. Select GUI and manual transactions.
4. Receive confirmation of transactions.
5. Log notification of provisioning jeopardies and delays.
6. Perform post provisioning activities and record provisioning interactions.
7. Perform testing on provisioned services.
8. Log completion of orders. Record results in appropriate provisioning log and activity checklist.
9. Compare P-CLEC metrics with U S WEST retail and other CLECs.
10. Measure parity performance between retail and wholesale

14.6.4 Outputs

1. Reports that provide the metrics to support standards of performance listed in Appendix C.
2. Variance between actual performance and standards of performance listed in Appendix C.
3. Report of expected results versus actual test case results.
4. Completed provisioning logs and checklists
5. Help desk accuracy and timeliness report
6. Provisioning accuracy and timeliness report
7. Perform P-CLEC to other CLEC comparison
8. Measure of parity performance between retail and wholesale
9. Documentation on any identified material defects in US WEST s systems, operations or documentation

14.7 Exit Criteria

Table 14.7 Exit Criteria

Criteria	Responsible Party
As given on criteria	See Section 7

15.1 Description

The Volume Performance Test will identify the capacity and potential choke points, at projected future transaction volumes, of the U S WEST GUI and computer-computer interfaces and U S WEST systems and processes for responding to pre-ordering queries and for initial processing of orders. There will be three parts to the test: 1) a normal volume test using anticipated transaction volumes for the December 2001 time frame, 2) a peak test using volumes at 150% of the normal volume test, and 3) a stress test using volumes at 250% of the normal volume test. (Note that the ROC Project Manager, Test Administrator and TAG will collaborate to finalize the normal volumes, percentages and time horizons in the preceding.)

The Volume Performance Test will look at the performance of U S WEST s pre-ordering and ordering systems and processes from the submission of queries to the creation of internal service orders and the return of an order confirmation. The orders submitted in the Volume Performance Test will not go through the physical provisioning process. The test will include a mix of stand-alone pre-ordering and ordering transactions. Transactions will be submitted using both the GUI and computer-computer interfaces.

While transactions will be submitted throughout the entire transaction test period as part of the POP Functional Evaluation, the volume tests will only run on certain days during the testing period. There will be two 24-hour normal volume days of testing. There will be one 24 -hour peak test. There will be one 4 -hour, off-peak stress test. The stress test will be run off -peak to limit the impact of the test on real customers. All the attributes and activities that apply to the POP Functional Evaluation for pre-ordering and ordering also apply to this test. Insofar as possible U S WEST will not be told the exact dates of these tests.

15.2 Objective

The objective of the Volume Performance Test is to measure U S WEST s capability and identify potential choke points of the GUI and computer-computer interfaces and systems put in place to access pre-ordering information and submit orders to U S WEST at projected future volumes.

15.3 Entrance Criteria

Table 15.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
All Section 12 entrance criteria	See Section 12.3
Agreement on volumes and distribution by scenario and entry mode	Test Administrator, ROC
Test Scenarios selected	Test Administrator
Specific Test Cases developed	Test Administrator
Test Case execution schedule developed	Test Administrator

15.4 Test Scope

The scope for this test includes the following test processes:

1. Pre-Ordering
2. Order Processing

15.5 Test Scenarios

The specific scenarios to be used in this test will be chosen from those found in Appendix D.

15.6 Test Approach

15.6.1 Inputs

1. Test cases
2. Test case execution schedule
3. Documentation (all ordering documentation, pre-ordering/ordering business rules, etc.)
4. Personnel to execute test cases
5. Test Go/No Go Checklist
6. Help Desk log and contact checklists
7. Certified interfaces

15.6.2 Activities

1. Use test cases to develop transactions and transaction content based upon instructions provided in the appropriate handbook(s).
2. Submit GUI and computer-computer transactions. Submittal date, time and appropriate transaction information are logged.
3. Receive transaction responses. Receipt date, time, response transaction type, and response condition (valid vs. reject) are logged.
4. Match transaction response to original transaction. Verify matching transaction can be found and record mismatches.
5. Verify transaction response contains expected data and flag unplanned errors.
6. Manually review unplanned errors. Identify error source (Test Administrator or U S WEST). Identify and log reason for the error. Determine if test should be discontinued.
7. Contact help desk for support as indicated in test cases and for unexpected errors following the appropriate resolution procedures. Log response time, availability, and other behavior of functions as identified on the help desk checklist.
8. Identify transactions for which responses have not been received. Where multiple responses are expected for the same request, the receipt of each response will be monitored. Record missing responses.
9. Identify transactions for which duplicate or multiple responses were received in error.
10. Review status of pending orders. Verify and record accuracy of response.
11. Generate P-CLEC reports.
12. Compare P-CLEC metrics to U S WEST retail metrics.
13. Compare P-CLEC to CLEC aggregate. Identify variance in service levels between P-CLEC and live CLEC support.

15.6.3 Outputs

1. Reports that provide performance metrics
2. Variance between actual performance and standards of performance
3. Report of expected results versus actual results
4. Unplanned error count by type and percentage of total
5. Report of Unplanned errors as the result of documentation problems
6. Transaction counts, error ratio, response time, etc. by transaction type, product family and delivery method

7. Minimum, maximum, mean, average, and aggregate response time/interval per transaction set
8. Transaction counts per response time/interval range per transaction set
9. Orders erred after initial confirmation
10. Completed help desk logs and checklists
11. Help desk accuracy and timeliness report
12. P-CLEC to other CLEC comparison
13. Measure of parity performance between retail and wholesale
14. Summary Report
15. Documentation on any identified material defects in US WEST s systems, operations or documentation

15.7 Exit Criteria

Table 15.7 Exit Criteria

Criteria	Responsible Party
All activities completed	*Test Administrator*
Checklists and reports completed	*Test Administrator*
All global exit criteria	*See Section 7*

16. IMA GUI M&R Functional Evaluation

16.1 Description

The IMA GUI M&R functional evaluation is a comprehensive review of the trouble administration functional elements of the IMA GUI, their conformance to documented specifications, and an analysis of its functionality in comparison to U S WEST s Retail front end systems for trouble management. The test has two major phases, Phase 1 a basic functional evaluation, and Phase 2 a comparative functional evaluation.

16.2 Objective

The objective of this test is to validate the existence and behavior of IMA GUI functional elements as documented in IMA GUI Training Guides and other applicable documents, and to

evaluate, based on both quantitative and qualitative approaches, the equivalence of IMA GUI functionality to U S WEST s Retail front end systems for trouble management.

16.3 Entrance Criteria

Table 16.3 Entrance Criteria

Criteria	Responsible Party
Global Entrance Criteria have been satisfied	See Section 7
Detailed Test Plan completed	Test Administrator
Test Scenarios selected	Test Administrator
Documentation provided	U S WEST
Interview Guides Available	Test Administrator
Specific Test Cases and Transaction Sets developed	Test Administrator
Product descriptions and business rules for all transactions to be tested are available	U S WEST
Base documentation review completed	Test Administrator
Detailed Functional Checklist created	Test Administrator
Test bed of working services selected and/or established	U S WEST
Specific Evaluation techniques developed	Test Administrator
Physical access to U S WEST Web site established	U S WEST
Security access to IMA GUI established	U S WEST
Evaluation Criteria defined and approved	ROC
Checklists and Interview Guides created	Test Administrator

16.4 Test Scope

IMA GUI functionality will be reviewed within the context of specific documentation addressing its use and in comparison to U S WEST s Retail front end systems for trouble management. The following chart contains the processes, sub-processes, and methods for evaluating the functionality of U S WEST s IMA GUI:

Table 16.4 Test Scope: M&R IMA GUI Functional Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Trouble Reporting	Create/Enter Trouble Report (TR)	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Modify TR	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Close/Cancel TR	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Retrieve TR Status	Functionality exists as documented	Inspection	Existence Qualitative Parity
Trouble History Access	Retrieve Trouble History	Functionality exists as documented	Inspection	Existence Qualitative Parity
Access To Test Capability	Initiate MLT Test	Functionality exists as documented	Inspection	Existence Qualitative Parity
	Receive MLT Test Results	Functionality exists as documented	Inspection	Existence Qualitative Parity

16.5 Test Scenarios

A subset of the Appendix D scenarios will be used in this test.

16.6 Test Approach

This test is broken down into two phases:

- **Phase 1** involves the use of test cases created for this test and observation of processes to evaluate IMA GUI functionality and to determine if the system behaves as documented.
- **Phase 2** involves observation of similar retail transactions and interviews of Retail Maintenance Administrators (MA) processing trouble calls and entering trouble reports into U S West s Retail front end systems to assess functionality in comparison to IMA GUI.

The number of observations and period of time over which the observations are taken for both wholesale and retail processes will be sufficient to provide a statistically valid basis for evaluation.

16.6.1 Inputs

1. Test cases
2. Documentation (IMA GUI Learning Guide, etc.)
3. Functionality checklists
4. Interview guide
5. Personnel to execute test cases
6. Personnel to interview Wholesale user and Retail Maintenance Administrators and observe their use of IMA GUI and retail front end systems for Trouble Management, respectively.

16.6.2 Activities Phase I

1. Use test cases created for this test and appropriate U S WEST documentation to perform each of the functions listed on the checklist provided via the IMA GUI interface. Observe and interview the P-CLEC or CLEC wholesale user as they execute the test cases to determine usability.
2. Verify that each system function behaves as documented.
3. Note any anomalies in the space provided on the checklist.
4. Note any discrepancies between IMA GUI documentation and behavior.
5. Ensure that all trouble reports entered in IMA have been canceled.

16.6.3 Activities Phase II

1. Use the checklist and interview guide to conduct interviews with MA s selected from the Residence and Business M&R work centers.
2. Observe MA trouble report activities similar to those test cases used in Phase I as identified on the checklist provided.
3. Note the presence and behavior of functions identified on the checklist.
4. Identify any anomalies relative to the functions being observed.
5. Note any additional relevant information from the MA interview (e.g., additional capabilities, performance, etc.).
6. Determine and document any M&R functions that can be performed from a Retail trouble management Workstation that are not available in IMA GUI.
7. Perform a detailed evaluation of relative functionality and capabilities between IMA GUI and retail front end systems for trouble management.

16.6.4 Activities Common

Document the results and findings from the activities conducted in Phases 1 and 2.

16.6.5 Outputs

1. Completed checklists from Phases 1 and 2 activities
2. Completed interview summaries
3. Summary reports of findings from each phase, including a discussion of anomalies and relevant observations relating to usability and timeliness of each system interface
4. A Summary report comparing relative functionality in IMA GUI and Retail front end systems for Trouble Management highlighting differences and contrasting ease of use of the two systems in performing the functions observed
5. Documentation on any identified material defects in US WEST s systems, operations or documentation

16.7 Exit Criteria

Table 16.7 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria have been satisfied	*See Section 7*
All activities completed	*Test Administrator*
Checklists and reports completed by personnel participating in the test.	*Test Administrator*

17. MEDIACC (EB-TA) M&R TROUBLE FUNCTIONAL & PERFORMANCE EVALUATION

17.1 Description

The Electronic Bonding Trouble Administration (MEDIACC EB-TA) Functional Evaluation is a comprehensive review of all of the functional elements of the MEDIACC EB-TA System and their conformance to documented interface specifications.

17.2 Objective

The objective of this test is to validate the existence and behavior of MEDIACC EB-TA functional elements as documented for CLEC trouble entry and other applicable documents.

17.3 Entrance Criteria

Table 17.3 Entrance Criteria

Criteria	*Responsible Party*
Global Entrance Criteria have been satisfied	*See Section 7*
Detailed Test Plan completed	*Test Administrator*
Test Scenarios selected	*Test Administrator*
Specific Test Cases and Transaction Sets developed	*Test Administrator*
Product descriptions and business rules for all transactions to be tested are available.	*U S WEST*
Basic documentation review completed	*Test Administrator*
Detailed Functional Checklist created	*Test Administrator*
Test bed of working services selected and/or established	*U S WEST*
Specific Evaluation techniques developed	*Test Administrator*
Physical access to U S WEST Trouble entry site established	*U S WEST*
Security access to MEDIACC EB-TA established	*U S WEST*
Evaluation Criteria defined and approved	*ROC*
Checklists and Interview Guides created	*Test Administrator*

17.4 Test Scenarios

A subset of the Appendix D scenarios will be used in this test.

17.5 Test Approach

This test will use test cases specifically created for this test to evaluate MEDIACC EB-TA functionality and to determine if the system behaves as documented.

17.5.1 Inputs

1. Test cases

2. Documentation
3. Functionality checklists
4. Personnel to execute test cases

17.5.2 Activities

1. Use test cases created for this test and appropriate U S WEST documentation to perform each of the functions listed on the checklist provided via the MEDIACC EB-TA interface.
2. Verify that each system function behaves as documented.
3. Note any anomalies in the space provided on the checklist.
4. Note any discrepancies between M&R Trouble Entry documentation and behavior of the MEDIACC EB-TA interface.
5. Ensure that all trouble reports entered via the MEDIACC EB-TA interface have been canceled.

17.5.3 Outputs

1. Completed checklists from activities
2. Summary reports of findings including a discussion of anomalies relating to usability and timeliness of each system function.
3. Documentation on any identified material defects in US WEST's systems, operations or documentation

17.6 Exit Criteria

Table 17.6 Exit Criteria

Criteria	*Responsible Party*
Global exit criteria have been satisfied	*See Section 7*
All activities completed	*Test Administrator*
Checklists and reports completed by personnel participating in the test.	*Test Administrator*

18. M&R End to End Trouble Report Processing

18.1 Description

This test involves the execution of selected M&R test scenarios to evaluate U S WEST's performance in making repairs under the conditions of various wholesale maintenance scenarios.

18.2 Objective

The objective of this test is to evaluate U S WEST's performance in making repairs under the conditions of various wholesale maintenance scenarios. The quality of the repair process is to be assessed, and compared with retail operations where the data is available.

18.3 Entrance Criteria

Table 18.3 Entrance Criteria

Criteria	Responsible Party
Global entrance criteria have been satisfied	See Section 7
Test scenarios selected	Test Administrator
Product descriptions and business rules for all transactions to be tested are available.	U S WEST
Techniques & instrumentation available	U S WEST, Test Administrator
Test-bed circuits provisioned	U S WEST
Faults inserted into test-bed circuits as required by the test scenarios	Test Administrator

18.4 Test Scope

Selected M&R test scenarios will be executed to evaluate U S WEST's performance in making repairs under the conditions of various wholesale maintenance scenarios. The following chart contains the processes, sub-processes, and methods for evaluating the End-to-End Trouble Report Processing test:

Table 18.4 Test Target: Execution of M&R Test Scenarios

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
End-to-End Trouble Report Processing Resale	M&R Test Scenarios	Accuracy Timeliness	Inspection	Quantitative
End-to-End Trouble Report Processing UNE/UNE Combinations	M&R Test Scenarios	Accuracy Timeliness	Inspection	Quantitative

18.5 Test Scenarios

A subset of the Appendix D scenarios will be used in this test.

18.6 Test Approach

This test involves the execution of selected M&R test scenarios.

18.6.1 Inputs

1. Test-bed circuits with embedded faults
2. Personnel to create trouble tickets and track the trouble ticket status for each scenario

18.6.2 Activities

1. Conduct circuit test if applicable for each test scenario.
2. Note test results.
3. Create and submit trouble ticket via IMA.
4. Periodically monitor each trouble report throughout its life using trouble report status transactions in IMA.
5. Note significant events in the trouble report life cycle (error occurrences, corrections, trouble ticket submission time, time cleared, etc.).
6. Calculate time to repair measurements for each test scenario fault repaired.
7. Document observations.

18.6.3 Outputs

1. A time to repair measurement for each fault repaired.
2. Summary report of observations.

3. Documentation on any identified material defects in US WEST's systems, operations or documentation

18.7 Exit Criteria

Table 18.7 Exit Criteria

Criteria	Responsible Party
Global exit criteria have been satisfied	See Section 7
Time to repair measurements for repaired faults	Test Administrator
Summary report of observations	Test Administrator

19. Billing Usage Functional Evaluation

19.1 Description

The Functional Usage Evaluation is an analysis of U S WEST's daily message processing to ensure usage record types including Access records, Rated records, Unrated records and Credit records appear accurately on the Daily Usage Feed (DUF) according to the defined schedule.

19.2 Objective

The objective of this test is to evaluate the following:

- Accuracy and completeness of all usage record types on the DUF including access records that should appear, not receiving records that should not appear, and not receiving empty set files.
- Timeliness of the DUF and access records delivery
- Assess the over-all quality of the process and compare to equivalent retail processes where the data is available.

19.3 Entrance Criteria

Table 19.3 Entrance Criteria

Criteria	Responsible Party
All Global Entrance Criteria satisfied	See Section 7
Test bed completed and ready	U S WEST
Product descriptions and business rules for all transactions to be tested are available.	U S WEST
Techniques and instrumentation developed and approved	Test Administrator
U S WEST resources are available to participate in the test	U S WEST
Detailed Test Plan completed and approved	Test Administrator
All call scripts that reflect the types, durations, terminating numbers, etc of call that test callers are to make are provided	Test Administrator

19.4 Test Scenarios

Test calling is dependent on the provisioning process, which is dependent on scenarios. Some customers are subject to service changes (e.g. migrations from U S WEST retail to a CLEC, feature changes, etc.). Test calls and service changes will occur simultaneously.

A subset of the Appendix D scenarios will be used in this test.

19.5 Test Approach

This test will use operational analysis to evaluate the accuracy and completeness of records contained in the DUF. This analysis will also examine the age of calls on the DUF. The evaluations will be accomplished by dispatching testers to various locations within thirteen western states. These testers will place test calls and will record information about these calls including the call from number, call to number, bill to number, c all time and duration. The data contained in these Daily Usage Feeds will then be compared to the call logs and relevant billing media. The Test Team will also record information about the contents of DUFs received by Test Administrator.

Test calls will be made using some customer accounts that will migrate during the test period. Migration refers to the conversion of account ownership from one LEC to another. Test calls will be made from migrating accounts before and after the migration date to ensure accurate guiding of data in the Daily Usage Feed.

For example, a U S WEST retail customer migrates to a CLEC during the test. Calls made by the customer prior to migration should be guided to U S WEST. Calls made by the customer after migration should be guided to the new CLEC.

Test calls should be placed from around the U S WEST calling region. Test calls will be made throughout the workday. Test calls will include a variety of call types with the exception of 911, and will be placed from various locations where in order to test various switch types. Local and toll test calls terminating on the test lines will also be made. These calls will be subject to evaluation.

19.5.1 Inputs

1. Detailed Test Plan
2. Test bed, including lines, telephones and facilities
3. Testers and other personnel

19.5.2 Activities

1. Test Team will develop Test Call Matrices, which include test call logs for each location, on each day, for each originating phone number.
2. Test Team will assemble tester resources, provide instructions and dispatch testers to calling locations.
3. Testers will complete calls and log results.
4. P-CLEC will receive DUF files from U S WEST and provide to Test Team.
5. Test Team will verify that appropriate data is on the DUF.
6. Test Team will verify that calls that do not belong on the DUF are not on the DUF.
7. Test Team will verify that appropriate calls present in the DUF match the testers call log.
8. Test Team will identify DUF files that contain no billable records.
9. Using records received in the DUF files, Test Team will validate the age of calls by determining the number of business days between the call date and the day the DUF file was created.
10. Test Team will compile results.

19.5.3 Outputs

1. Call Logs Report A report of the testers logs.
2. DUF Accuracy and Completeness Report A report showing the validation of calls made during the test.

3. Empty DUF Files Report A Report showing the number of empty DUF files sent by U S WEST.
4. Final report.
5. Documentation on any identified material defects in US WEST s systems, operations or documentation

19.6 Exit Criteria

Table 19.6 Exit Criteria

Criteria	*Responsible Party*
All Global Exit Criteria satisfied	*See Section 7*

20. CARRIER BILL FUNCTIONAL EVALUATION

20.1 Description

The Carrier Bill Functional Evaluation is an analysis of U S WEST s ability to accurately bill usage plus monthly recurring charges (MRC), fractional MRCs, and non-recurring charges (NRC) on the appropriate type of bill. An accurately billed item will contain the correct price and correct supporting information, such as start/end dates, duration, standard amounts, and discount amounts. This test will also evaluate the timeliness of bill delivery to the CLECs.

U S WEST will need to run a bill cycle from the initial test bed prior to any POP tests to use as a baseline set of bills.

Monthly charges will be examined for both Resale and UNE billing on IABS and CRIS bills. The verification of prices will consider prices charged based on U S WEST tariffs, U S WEST-CLEC Interconnection Agreements and SGATs. End user bills will be produced by U S WEST s systems and validated by the Test Administrator in this test. Validation of the end user bills will help verify that double billing of the end user (by U S WEST and CLEC) does not occur. Table 20.1 reflects a number of key characteristics of Retail and UNE billing information that will be used in the design of test cases. Information includes the various charge components and their destination bill.

Table 20.1 Key Characteristics of Billing Information for Resale and UNE Customers

	Billing Component	Rating	Usage	Billing
Resale	Usage	CRIS	DUF	CRIS
Resale	MRC/NRC	CRIS	N/A	CRIS
UNE	UNE loops, usage, MRC/NRC, and Combinations	CRIS	DUF	CRIS
UNE-Other	IOF, collocation	CRIS	DUF	CRIS
UNE-Other	High Cap Loops (DS1/3) MRC/NRC	IABS	N/A	IABS
Other	Directory Listings	CRIS	N/A	CRIS
Retail	Non-unbundled Services MRC/NRC (Ancillary services)	CRIS	N/A	CRIS

20.2 Objective

This test evaluates the timely delivery of the bill and the accurate and timely appearance of charges on the appropriate bill. Appearance of charges will depend on the type of products ordered and/or class of service changes for resale and UNE. Details to be evaluated include:

- Appropriate prorating of charges for new and/or disconnected service.
- Charges are accurate (order matches billing).
- Totals are accurate.
- New/disconnected products appear (or do not appear) on the bill.
- Bill dates are correct and match appropriate date from provisioning process.
- Adjustments appear on the bill.
- Bills are delivered to CLECs and Resellers in a timely manner.
- UNEs billed on a usage basis are billed correctly.

20.3 Entrance Criteria

Table 20.3 Entrance Criteria

Criteria	Responsible Party
All Global Entrance Criteria satisfied	See Section 7
All CRIS and IABS baseline bills produced from the initial test bed	U S WEST
Test bed matches requirements.	U S WEST
Techniques and instrumentation developed and approved	Test Administrator
Product descriptions and business rules for all transactions to be tested are available.	U S WEST
Pricing sections of U S WEST tariffs, U S WEST-CLEC Interconnection Agreements and SGATs are provided	U S WEST
Test bed completed and ready	U S WEST
Calls made during Functional Usage Evaluation processed through to the DUF and available for billing.	U S WEST
Availability of U S WEST resources to test and produce CRIS and IABS bills	U S WEST
Method for viewing bills implemented	U S WEST, Test Administrator

20.4 Test Scope

Table 20-2 Test Scope for Carrier Bill Evaluation

Process Area	Sub Process	Evaluation Measure	Evaluation Techniques	Criteria Type
Maintain Bill Balance	Carry balance forward	Accuracy of bill balance	Inspection	Quantitative
Verify Billing Accounts	Verify Billing Accounts	Completeness and accuracy of extraction	Inspection	Quantitative
Bills and Delivery	Verify normal recurring charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify one-time charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify prorated recurring charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify Usage Charges	Completeness and accuracy of data	Inspection	Quantitative
	Verify discounts	Completeness and accuracy of data	Inspection	Quantitative
	Verify adjustments (debits and credits)	Completeness and accuracy of data	Inspection	Quantitative
	Verify late charges	Completeness and accuracy of data	Inspection	Quantitative
	Receive bill copy	Timeliness of media delivery	Logging	Quantitative

As part of this test, a variety of products and services will be ordered. This may result in many variations in billing presentation from the two primary billing systems (CRIS and IABS). Relevant bill types will be selected for review based upon the product mix and assigned charges as defined in the expected test results.

20.5 Scenarios

A subset of the Appendix D scenarios will be utilized for billing and usage testing purposes. The set selected will include:

- Test cases for migration/conversion of customers
- Test cases for disconnects, new service (add/delete)
- Test cases for changes to services (modify)

All migration situations should be adequately represented:

- U S WEST to a CLEC
- CLEC to U S WEST
- CLEC to CLEC

The scenarios utilized for billing and usage testing will apply to all service delivery methods (SDM) available in U S WEST at the time of the test(s).

20.6 Test Approach

This test will use systems and operational analysis to evaluate the completeness and accuracy of charges that should appear on the bill based on usage information from the Functional Usage Evaluation and selected scenarios. Expected results will be defined for each test case.

Three bill periods will be processed for the same set of customers.

The first bill period consists of the baseline bills where customers created for this test are billed for the first time directly from the initial test bed. These bills are produced prior to the execution of any transaction scenarios that affect selected customers.

The second and third bill periods consist of bills produced after selected scenarios have been executed. This second set of bills will include items such as prorates, disconnects, migrations, adjustments, etc. Some customers will be created during the test execution, and will only receive second period bills.

The following list shows inputs, activities and outputs of the process needed to validate the full range of test cases.

20.6.1 Inputs

1. Detailed Test Plan
2. Verified Baseline Bills and CSRs
3. Selected usage from the Billing Functional Usage Evaluation
4. CSRs and completions from relevant POP orders

20.6.2 Activities

1. Process service order changes
2. Develop expected results for each test case
3. Begin first bill period by receiving baseline bills

4. Record invoice bill date and actual date received
5. Validate test results for each applicable test case
6. Identify discrepancies
7. Receive Bills for next bill period
8. Receive CSRs for all cycles
9. Record invoice bill date and actual date received
10. Validate test results for each applicable test case
11. Identify discrepancies.
12. Complete second bill period. Repeat 7-11 until third bill period is complete
13. Compile results

20.6.3 Outputs

1. A report showing each test case, expected results, and discrepancies
2. A report showing U S WEST bill delivery dates compared to the expected delivery dates based on the bill cycle date
3. Final report
4. Documentation on any identified material defects in US WEST's systems, operations or documentation

20.7 Exit Criteria

Table 20.7 Exit Criteria

Criteria	*Responsible Party*
All Global Exit Criteria satisfied	*See Section 7*

21. SCALABILITY TEST

21.1 Description

The testing described in the POP Volume and Performance Test will test systems and processes at reasonably expected commercial volumes. While it would be desirable to test systems and processes at even higher volumes, such testing could be disruptive to on-going wholesale and retail operations. In addition, scaling up of some elements of processes and

systems, e.g., personnel, is not seen to be feasible for the short time period envisioned. The Scalability Test, which will use operations analysis and will build upon the results of transaction driven tests, will provide an estimate of process and system performance at volumes greater than planned for the POP Volume and Performance Test.

21.2 Objective

The objectives of the Scalability Tests are to:

- Provide an estimate of the scalability of OSS processes and systems beyond the transaction volumes planned for the POP Volume Performance Test
- Identify potential bottlenecks and choke points

21.3 Entrance Criteria

Table 21.3 Entrance Criteria

Criteria	*Responsible Party*
Transaction driven testing reasonably complete	*ROC*
Documentation available	*U S WEST*
Relevant test results available	*Test Administrator*

21.4 Test Scope

The Scalability Test will estimate the scalability of all processes and systems in the domains that were tested by Transaction Driven Testing:

- Pre Order, Order and Provisioning
- Maintenance & Repair
- Billing

21.5 Test Scenarios

None

21.6 Test Approach

21.6.1 Inputs

1. Documentation of U S WEST OSS business processes, system and application architecture, and system and interface configuration
2. Test results from transaction driven tests that are relevant to volume carrying capacity

21.6.2 Activities

1. Define Scalability Test analysis framework
2. Validate Scalability Test analysis framework with TAG
3. Analyze business process and systems based upon the analysis framework
4. Identify potential choke points and bottlenecks
5. Revise and refine analysis as necessary based upon final or revised results from transaction driven testing
6. Report findings

21.6.3 Outputs

1. Report on scalability of OSS processes and systems
2. Documentation on any identified material defects in US WEST's systems, operations or documentation

21.7 Exit Criteria

Table 21.7 Exit Criteria

Criteria	*Responsible Party*
Validated by TAG	*TAG*
Approved by ROC	*ROC*
All Global Exit Criteria satisfied	*See Section 7*

22. CLEC NETWORK PROVISIONING TEST

22.1 NDR

22.1.1 Description

Part of the evaluation of the interaction between U S WEST and a CLEC will include a review of the processes for fulfilling network design requests (NDRs). This test evaluates U S WEST s policies, practices, and procedures for network design requests related to establishing and maintaining a CLEC s ability to access unbundled network elements, including collocation, interconnection and customized routing to Directory Assistance and Operator Services.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and U S WEST parties. A key element of this test will be observing and evaluating ongoing, in production NDR processes.

22.1.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information, documentation, and technical support from U S WEST to adequately prepare for and implement network designs, including those required for customized routing for Directory Assistance and Operator Services
- Determine whether network design processes are well-structured and managed to produce the intended results
- Evaluate the usability and completeness of NDR forecast forms and procedures
- Assess the quality of the NDR business process

Table 22.1.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	See Section 7
Process evaluation checklist	Test Administrator
Interview guides	Test Administrator

22.1.3 Test Scope

The evaluation will examine the following issues with respect to network design request-related processes:

- The adequacy and completeness of the network design planning process
- The adequacy and completeness of the network design request testing process
- The adequacy and completeness of the procedures for ensuring confidentiality of CLEC provided network design information
- Adequacy and completeness of methods employed by U S WEST to communicate with the CLEC regarding the NDR provisioning process

22.1.4 Test Approach

22.1.4.1 Inputs

1. Procedural and technical documentation
2. U S WEST instructions to CLECs for planning and implementing network designs, including those required for customized routing for Directory Assistance and Operator Services
3. Evaluation checklists
4. Interview guides
5. CLEC data

22.1.4.2 Activities

1. Gather information
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

22.1.4.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Summary report
3. Documentation on any identified material defects in US WEST s systems, operations or documentation

22.1.5 Exit Criteria

Table 22.1.5 Exit Criteria

Criteria	Responsible Party
All global exit criteria	See Section 7

22.2 Collocation

22.2.1 Description

Part of the evaluation of the interaction between U S WEST and a CLEC will include a review of the processes for fulfilling collocation requests. This test evaluates U S WEST s policies, practices, and procedures for collocation-related requests for establishing and maintaining a CLEC s ability to access unbundled network elements.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and U S WEST parties. A key element of this test will be observing and evaluating ongoing, in production COLO processes.

22.2.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information and technical support from U S WEST to adequately prepare for and implement collocation facilities
- Determine whether collocation processes are well-structured and managed to produce the intended results
- Evaluate the usability and completeness of collocation forecast forms and procedures
- Assess the quality of the COLO business process

22.2.3 Entrance Criteria

Table 22.2.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	*See Section 7*
Process evaluation checklist	*Test Administrator*
Interview guides	*Test Administrator*

22.2.4 Test Scope

The evaluation will examine the following issues with respect to collocation related processes:

- The adequacy and completeness of the collocation planning process
- The adequacy and completeness of the collocation project management procedures
- The adequacy and completeness of the procedures for ensuring confidentiality of CLEC-provided collocation information
- The availability and adequacy of resources and qualified technical support to facilitate collocation activities
- The adequacy and completeness of the collocation testing process
- Adequacy and completeness of methods employed by U S WEST to communicate with the CLEC regarding the collocation provisioning process

22.2.5 Test Approach

22.2.5.1 Inputs

1. Procedural and technical documentation
2. U S WEST instructions to CLECs for planning and implementing collocation
3. Evaluation checklists
4. Interview guides
5. CLEC data

22.2.5.2 Activities

1. Gather information

2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings
5. Review production collocation performance data

22.2.5.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Summary report
3. Documentation on any identified material defects in US WEST s systems, operations or documentation

22.2.6 Exit Criteria

Table 22.2.6 Exit Criteria

Criteria	Responsible Party
All global exit criteria	See Section 7

22.3 Interconnection Trunks

22.3.1 Description

Part of the evaluation of the interaction between U S WEST and a CLEC will include a review of the processes for providing interconnection trunks. This test evaluates U S WEST s policies, practices, and procedures for the provision of interconnection trunks related to establishing and maintaining a CLEC s ability to access unbundled network elements.

This test will not require test scenarios, data generation, or volume testing. This test will rely on, among other things, checklists, interviews, and inspections with both CLEC and U S WEST parties.

22.3.2 Objectives

The objectives of this qualitative test are to:

- Determine whether CLECs have sufficient information and technical support from U S WEST to adequately prepare for and implement interconnection trunks.
- Determine whether interconnection processes are well-structured and managed to produce the intended results

- Determine the existence and functionality of procedures for developing, publicizing, conducting, and monitoring trunk forecasting efforts with CLECs
- Verify the integration of trunk forecasting procedures with U S WEST s facilities planning procedures
- Ensure the trunk forecasting effort has effective management oversight
- Assess the quality of the interconnection trunk forecasting process

22.3.3 Entrance Criteria

Table 22.3.3 Entrance Criteria

Criteria	Responsible Party
All global entrance criteria	*See Section 7*
Process evaluation checklist	*Test Administrator*
Interview guides	*Test Administrator*

22.3.4 Test Scope

The evaluation will examine the following issues with respect to interconnection trunk-related processes:

- The adequacy and completeness of the trunk forecasting procedures
- The adequacy and completeness of the procedures for ensuring confidentiality of CLEC-provided forecast information
- The availability and integration of published interconnection trunk forecasts in U S WEST s facilities planning process
- Adequacy and completeness of methods employed by U S WEST to communicate with the CLEC regarding the interconnection trunk provisioning process

22.3.5 Test Approach

22.3.5.1 Inputs

1. Procedural and technical documentation
2. USWC instructions to CLECs for forecasting, planning and implementing interconnection trunks

3. Evaluation checklists
4. Interview guides
5. CLEC data

22.3.5.2 Activities

1. Gather information
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

22.3.5.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Summary report
3. Documentation on any identified material defects in US WEST s systems, operations or documentation

22.3.6 Exit Criteria

Table 22.3.6 Exit Criteria

Criteria	*Responsible Party*
All global exit criteria	*See Section 7*

23. CHANGE MANAGEMENT TEST

23.1 Description

This test evaluates U S WEST s policies and procedures for managing changes to and change requests for OSS interfaces and business processes utilized by CLECs.

23.2 Objectives

The objectives of this test are to determine the adequacy and completeness of procedures for developing, publicizing, conducting, and monitoring change management.

23.3 Entrance Criteria

Table 23.3 Entrance Criteria

Criteria	Responsible Party
Global Entrance Criteria requirements	See Table Section 7
Process evaluation checklist	Test Administrator
Interview guides	Test Administrator

23.4 Test Scope

Table 23.4 Change Management Evaluation Scope

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
Change Management	Change Request Implementation	Completeness and consistency of change request process	Inspection Document review Report review	Qualitative
	Prioritization and Escalation Process	Completeness and consistency of prioritization and escalation guidelines and process	Inspection Document review Report review	Qualitative
	Developing Change Proposals	Completeness and consistency of change development process	Inspection Document review Report review	Qualitative
	Evaluating Change Proposals	Completeness and consistency of change evaluation process	Inspection Document review Report review	Qualitative
	Severity levels	Completeness and reasonableness of levels and process	Inspection Document review Report review	Qualitative
	Notification Schedules	Reasonableness of notification schedules and completeness of process	Inspection Document review Report review	Qualitative
	Implementing Change	Completeness and consistency of change implementation process	Inspection Document review Report review	Qualitative
	Intervals	Reasonableness of change interval	Inspection Document review Report review	Qualitative
	Documentation	Timeliness of documentation and notification updates	Inspection Document review Report review	Qualitative

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
	Tracking Change Proposals	Adequacy and completeness of change management tracking process	Inspection Document review Report review	Qualitative

23.5 Scenarios

This test does not rely on scenarios.

23.6 Test Approach

23.6.1 Inputs

1. U S WEST change management process documentation
2. Other procedural and technical documentation
3. U S WEST instructions to CLECs for interacting with change management functions and interpreting change management activities
4. Evaluation checklists
5. Interview guides
6. CLEC data
7. Change management process artifacts, such as notifications and updated specifications

23.6.2 Activities

1. Gather documentation and other relevant data
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

23.6.3 Outputs

1. Completed evaluation checklists and interview summaries
2. Summary Report
3. Documentation on any identified material defects in US WEST s systems, operations or documentation

Table 23.6.3.1 Exit Criteria

Criteria	Responsible Party
Limited to Global Exit Criteria requirements	See Section 7

24. U S WEST CLEC Support Processes and Procedures Review

24.1 Purpose

The purpose of this section is to define the specific tests to be undertaken in evaluating the systems, processes and documentation provided by U S WEST for the establishment and maintenance of business relationships with the CLECs. Areas to be evaluated include the provisioning of on-going operational support to CLECs in a manner both adequate to CLEC business needs and comparable to that provided to U S WEST Retail Operations.

24.2 Scope

The processes and procedures review includes evaluation of the following areas of support provided by U S WEST to CLECs in the establishment and on-going maintenance of their wholesale services business relationship:

- Account Establishment & Management
- CLEC Forecasting
- CLEC Training
- Interface Development
- OSS Interface (IMA) Help Desk Support
- Interconnect Service Center Support
- Account Maintenance Support Center (M&R)
- Network Surveillance and Outage Notification

24.3 Account Establishment & Management Review

24.3.1 Description

This test evaluates U S WEST s policies, processes and practices for establishing and managing CLEC account relationships.

24.3.2 Objectives

The objectives of this test are to determine the adequacy, completeness, and compliance with procedures for developing, publicizing, conducting, and monitoring account management.

24.3.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- U S WEST account management procedural documentation
- U S WEST instructions to CLECs for interacting with account managers
- Other procedural, technical, and customer documentation
- Evaluation checklists
- Interview guides
- CLEC data

3. The following outputs will result

- Completed evaluation checklists and interview summaries
- Summary report
- Documentation on any identified material defects in US WEST s systems, operations or documentation

24.3.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 7

- Process evaluation checklist is developed
- Interview guides are developed

24.3.5 Review Scope

Table 24.3.5 Account Establishment & Management Review

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
Establishing an Account Relationship	Staffing	Appropriate roles and responsibilities	Inspection Document review	Qualitative
		Capacity, coverage, and account allocation	Inspection Document review	Qualitative
Maintaining an Account Relationship	Customer contact	Adequacy and completeness of procedures for responding to customer requests	Interviews Logging Report Review	Quantitative
	Escalation	Adequacy and completeness of escalation procedures	Inspection Document review Interviews	Qualitative
	Routine and urgent customer communications	Adequacy and completeness of communication and notification procedures	Inspection Document review Interviews	Qualitative
	Customer documentation	Adequacy and completeness of procedures for developing, distributing, and maintaining customer documentation	Inspection Document review Interviews	Qualitative

24.3.6 Review Activities

1. Gather documentation and other relevant data
2. Perform interviews and documentation reviews
3. Complete evaluation checklists and interview summaries

4 Develop and document findings

24.3.* Exit Criteria

* All required review activities must be completed
* All change control, verification and confirmation steps have been completed

24.4 CLEC Forecasting Review

24.4.1 Description

This review evaluates U S WEST s policies, processes and practices for requesting and managing CLEC facility and service forecasts for wholesale services.

24.4.2 Objectives

The objectives of this review are to determine the adequacy, completeness, and compliance with procedures for requesting, receiving, refining and utilizing forecasts from CLECs.

24.4.3 Assumptions

1 Preparation and conduct of this review assumes:

2 No test scenarios are applicable

3 The following inputs will be utilized

* U S WEST forecasting procedural documentation
* U S WEST instructions to CLECs for providing forecasts
* Other procedural, technical, and customer documentation
* Evaluation checklists
* Interview guides
* CLEC forecast data

4 The following outputs will result

* Completed evaluation checklists and interview summaries
* Summary report
* Documentation on any identified material defects in US WEST s systems, operations or documentation

24.4.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 2.6
- Forecast process evaluation checklist is developed
- Interview guides are developed

24.4.5 Review Scope

Table 24.4.5 Forecasting Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Forecast Procedures	Request process	Existence Completeness	Inspection	Existence Qualitative
	Receipt and Refinement	Existence Completeness	Inspection	Existence Qualitative
Forecast Utilization	Process Documentation	Existence Completeness	Inspection	Existence Qualitative
	Compliance	Timeliness Accuracy	Inspection	Qualitative

24.4.6 Review Activities

1. Gather information
2. Perform interviews and documentation review
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

24.4.7 Exit Criteria

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.5 CLEC Training

24.5.1 Description

This test evaluates U S WEST s training documentation and practices for CLEC representatives engaged in the establishment and maintenance of the U S WEST-CLEC business relationship.

24.5.2 Objectives

The objectives of this test are to determine the existence and adequacy of procedures for developing, announcing, conducting, and monitoring U S WEST training for CLECs.

24.5.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- U S WEST training procedural documentation
- U S WEST instructions to CLECs for participating in training
- Training material manuals and handouts
- Evaluation checklists
- Interview guides

3. The following outputs will result

- Completed evaluation checklists and interview summaries
- Summary report
- Documentation on any identified material defects in US WEST s systems, operations or documentation

24.5.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 2.6
- Process evaluation checklist is developed
- Interview guides are developed

24.5.5 Review Scope

Table 24.5.5 CLEC Training Review

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
Training Program Development	Develop curriculum	Completeness of training curriculum and forums	Document review Inspection	Qualitative
		Adequacy of procedures to respond to information about training quality and utilization	Document review Inspection	Qualitative
		Adequacy of procedures to accept CLEC input regarding training curriculum	Document review Inspection	Qualitative
	Publicize training opportunities	Availability of information about training opportunities	Document review Inspection	Qualitative
Training Program Quality Assurance	Attendance/ utilization tracking	Adequacy of process to track utilization and attendance of various training tools and forums	Document review Inspection	Qualitative
	Session effectiveness tracking	Adequacy of process to survey training recipients on effectiveness of training	Document review Inspection	Qualitative
	Instructor oversight	Adequacy of procedures to monitor instructor performance	Document review Inspection	Qualitative
Process Management	Performance measurement process	Controllability, efficiency and reliability of process	Inspection Document review	Qualitative
	Process improvement	Completeness of process improvement practices	Inspection Document review	Qualitative

24.5.6 Review Activities

1. Gather information
2. Perform interviews and documentation review
3. Complete evaluation checklists and interview summaries

4. Develop and document findings

24.5.7 Exit Criteria

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.6 OSS Interface Development Review

24.6.1 Description

This test evaluates U S WEST s methods and procedures for developing, providing, and maintaining OSS interfaces for pre-ordering, ordering, and maintenance & repair.

24.6.2 Objectives

The objectives of this test are to determine the adequacy, consistency and completeness of U S WEST s methods and procedures for developing, providing and maintaining OSS interfaces.

24.6.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized
   - Procedural and technical documentation
   - U S WEST instructions to CLECs for enabling, testing, and maintaining compatibility with interfaces
   - Evaluation checklists
   - Interview guides
   - CLEC data
3. The following outputs will result
   - Completed evaluation checklists and interview summaries
   - Summary report
   - P-CLEC comments on its interface development process
   - Documentation on any identified material defects in US WEST s systems, operations or documentation

24.6.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 7
- Process evaluation checklist is developed
- Interview guides are developed

24.6.5 Review Scope

Table 24.6.5 OSS Interface Development Review

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
Developing Interfaces	Interface development methodology	Adequacy and completeness of interface development methodology	Inspection Document review Report review	Qualitative
	Provision of interface specifications and related documentation	Adequacy and completeness of interface documentation distribution procedures	Inspection Document review Report review	Qualitative
Enabling and Testing Interfaces	Interface enabling and testing methodology	Adequacy and completeness of carrier-to-carrier interface enabling and testing procedures	Inspection Document review Report review	Qualitative
	Availability of test environments and technical support to CLECs	Availability and adequacy of functioning test environments, testing protocols, production cutover protocols and technical support for all supported interfaces	Inspection Document review Report review	Qualitative
	Interface enabling and testing support	Adequacy and completeness of interface enabling and testing procedural documentation	Inspection Document review Report review	Qualitative
Maintaining Interfaces	Release management	Adequacy and completeness of interface enhancement and software release management protocols	Inspection Document review Report review	Qualitative

24.6.6 Review Activities

1. Gather information
2. Perform interviews and documentation review
3. Complete evaluation checklists and interview summaries
4. Develop and document findings

24.6.7 Exit Criteria

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.7 OSS Interface (IMA) Help Desk Review

24.7.1 Description

This review is an evaluation of U S WEST's IMA help desk functions that provide technical support for its OSS interfaces.

24.7.2 Objectives

The objectives of this review are to:

- Determine adequacy, completeness and accuracy of IMA help desk processes
- Ensure IMA help desk functions have effective management oversight
- Determine whether IMA help desk escalation procedures are properly maintained, documented and published
- Determine the existence and functionality of procedures for measuring, tracking, reporting and maintaining IMA help desk performance
- Ensure existence of reasonable security measures to assure integrity of IMA help desk data and the ability to restrict access to parties with specific access permissions

24.7.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- Procedural documentation such as internal help desk procedure manuals

- U S WEST instructions to CLECs for interacting with help desk functions
- Evaluation checklists
- Interview guides
- CLEC data

3. The following outputs will result

- Completed evaluation checklists and interview summaries
- Summary report
- Documentation on any identified material defects in US WEST's systems, operations or documentation

24.7.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 7
- Process evaluation checklist is developed
- Interview guides are developed

24.7.5 Review Scope

Figure 24.5 OSS Interface (IMA) Help Desk Review

Process Area	Sub Process/ Attribute	Evaluation Measure	Evaluation Technique	Criteria Type
Process IMA Help Desk Call	Resolution of user question, problem or issue	Completeness and consistency of process	Inspection Document review	Qualitative
Close IMA Help Desk Call	Closure posting	Completeness and consistency of process	Inspection Document review	Qualitative
Status Tracking and Reporting	Status tracking and reporting	Completeness and consistency of reporting process	Inspection Document review	Qualitative
Problem Escalation	User and U S WEST initiated escalation	Completeness and consistency of process	Inspection Document review	Qualitative
Capacity Management	Capacity planning process	Completeness and consistency of process	Inspection Document review	Qualitative
Security and Integrity	Data access controls	Security of process	Inspection Document review	Qualitative
Process Management	General management practices	Completeness and consistency of operating management practices	Inspection Document review	Qualitative
	Performance measurement process	Consistency, efficiency and reliability of process	Inspection Document review	Qualitative
	Process improvement	Completeness of process improvement practices	Inspection Document review	Qualitative

24.7.6 Review Activities

1. Gather information
2. Perform walk-throughs, observations and documentation review
3. Complete evaluation checklists

4. Develop and document findings

24.7.7 Exit Criteria

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.8 Interconnect Service Center (ISC) Support Review

24.8.1 Description

The Interconnect Service Center (ISC) Support Review is a comprehensive operational analysis of the service center processes developed by U S WEST to support Resellers and CLECs with OSS questions, escalations, problems, and issues related to pre-ordering, ordering, provisioning and billing of its wholesale services. Basic functionality, performance and escalation procedures will be evaluated.

24.8.2 Objectives

The objectives of this review are to:

- Determine completeness and consistency of ISC processes and responses
- Determine whether the escalation procedure is documented and known to ISC representatives and management
- Determine the accuracy and completeness of procedures for measuring ISC performance

24.8.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- ISC Evaluation Checklist
- ISC procedural documentation

3. *The following outputs will result*

- Completed ISC evaluation checklists and interview summaries
- Summary report

- Documentation on any identified material defects in US WEST s systems, operations or documentation

24.8.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 27
- ISC evaluation checklist developed
- CLEC problem feedback survey completed
- ISC problem response standard survey completed

24.8.5 Review Scope

Table 24.8.5 ISC Support Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Respond to ISC Call	Answer call	Completeness and consistency of process Timeliness of answer	Inspection Performance Measure OS-2	Qualitative Quantitative
	Interface with user	Availability of user interface	Inspection	Qualitative
	Response to call	Completeness and accuracy of response	Inspection	Qualitative
	Log call	Completeness of logged information Log is kept in appropriate media for appropriate interval	Document Review Inspection	Qualitative
Process ISC Call	Access to systems to observe user problems	Ability to access user records and transactions	Inspection	Qualitative
	Resolve user question, problem or issue	Completeness and consistency of process	Documentation Review	Qualitative
Close ISC Call	Log closure information	Completeness, consistency, and timeliness of process	Inspection	Qualitative
Monitor Status	Track status	Accuracy and completeness of status tracking capability Availability of jeopardy notification	Inspection Document Review	Qualitative
	Report status	Completeness and consistency of reporting process Accessibility of status report	Inspection Document Review	Qualitative
Request Escalation	Manage escalations	Consistency and completeness of procedure	Document Review Inspection	Qualitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Manage the ISC Process	Provide management oversight	Completeness and consistency of operating management practices	Inspection	Qualitative

24.8.6 Review Activities

1. Gather information
2. Perform ISC walk-throughs, observations and documentation reviews
3. Complete evaluation checklists
4. Develop and document findings

24.8.7 Exit Criteria

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.9 M&R Support Center Review

24.9.1 Description

The M&R support center evaluation is an operational analysis of the maintenance and repair (M&R) processes developed by U S WEST to provide support to CLECs with questions, problems, and issues related to wholesale trouble reporting and repair operations. This review includes both the Account Maintenance Support Centers (AMSCs) for designed services and the Repair Call Handling Centers (RCHCs) for non-designed services.

24.9.2 Objectives

The objective of this test is to evaluate the effectiveness of M&R support center operations and adherence to common support center procedures. An additional objective is to analyze the nature and frequency of problems referred to the AMSC/RCHC to determine if they indicate potential problems in other M&R areas. Specifically, this evaluation is designed to:

- Determine completeness and consistency of AMSC/RCHC desk processes and procedures
- Determine whether expedite and escalation procedures are correctly documented and work effectively

- Ensure existence of reasonable security measures to ensure integrity of work AMSC/RCHC data and the ability to restrict access to parties with specific access permissions
- Determine the timeliness and accuracy in identifying and resolving problems
- Determine the existence and functionality of procedures for measuring, tracking, projecting and maintaining AMSC/RCHC performance
- Determine the existence of Maintenance and Repair coordination processes and procedures, and other operational elements associated with M&R coordination activities between U S WEST and CLEC operations organizations

24.9.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- Interview guides
- Observation checklists
- AMSC/RCHC evaluation checklists
- AMSC/RCHC center contact logs
- Process and procedure documentation
- U S WEST notification procedures for coordinated meets and coordinated testing

3. *The following outputs will result*

- Completed AMSC/RCHC evaluation checklists and interview summaries
- Summary report
- Contact analysis results report
- Documentation on any identified material defects in US WEST s systems, operations or documentation

24.9.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 7
- AMSC/RCHC evaluation checklist developed
- AMSC/RCHC interview guides developed
- Required documentation provided

24.9.5 Review Scope

Table 24.9.5 M&R Support Center Evaluation

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Call Processing	Call Answer	Completeness of process Timeliness	Inspections Logging Interviews PM MR-2	Qualitative Quantitative
	Response to call	Completeness and accuracy of response	Inspections Documentation Review	Qualitative
	Call Logging	Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Prioritization	Existence Effectiveness	Inspections Logging Interviews	Qualitative
Problem Tracking and Resolution	Documentation	Clarity Accuracy	Document Review Interviews	Qualitative
	Identify and Resolve	Timeliness Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Track Problem	Existence Accuracy	Inspections Logging Interviews	Qualitative
	Log Status and Close	Accuracy Completeness Consistency	Inspections Logging Interviews	Qualitative
	Notify Customer	Timeliness	Inspections Logging Interviews	Qualitative
Expedite/ Escalation Procedures	Documentation	Existence Adequacy Accuracy	Document Review Interviews	Qualitative
	Call Answer	Accessability Timeliness	Inspections Logging Interviews	Qualitative
	Escalation Logging	Accuracy	Inspections Logging Interviews	Qualitative

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
	Identify and Resolve	Timeliness	Inspections Logging Interviews	Qualitative
	Log Status and Close	Accuracy	Inspections Logging Interviews	Qualitative
	Notify Customer	Timeliness	Inspections Logging Interviews	Qualitative
AMSC/RCHC Center Procedures		Accuracy Completeness	Inspections Logging Interviews	Qualitative
Joint Mod Procedures	Process Documentation	Accuracy Completeness	Interviews Document Review	Qualitative
	Notification Procedures	Timeliness Accuracy	Interviews	Qualitative
Coordinated Testing	Process Documentation	Accuracy Completeness	Interviews Document Review	Qualitative
	Notification Procedures	Timeliness Accuracy	Interviews	Qualitative
Manual Handling Escalation		Accuracy Timeliness Consistency	Observation Logging Interviews	Qualitative
Manual Handling UNE/UNE Combinations		Accuracy Timeliness Consistency	Observation Logging Interviews	Qualitative

34.9.6 *Review Activities*

1. Conduct AMSC/RCHC visits and observations
2. Complete AMSC/RCHC evaluation checklists
3. Complete documentation review
4. Develop and document findings

34.9.7 *Exit Criteria*

- All required review activities must be completed
- All change control, verification and confirmation steps have been completed

24.10 Network Surveillance & Outage Support Review

24.10.1 Description

The network surveillance support review evaluates the processes and other operational elements associated with U S WEST are network surveillance and network outage notification processes and procedures as they relate to wholesale services. It also involves a review of the procedures followed by the Network Management Center (NMC) and/or Network Operations Center (NOC) which are related to CLEC operations.

24.10.2Objectives

The objective of this test is to determine the functionality of network surveillance and network outage notification procedures and to assess the performance capabilities of network outage notification procedures for wholesale operations.

24.10.3 Assumptions

Preparation and conduct of this review assumes:

1. No test scenarios are applicable
2. The following inputs will be utilized

- Network surveillance operational analysis plan and task checklist
- Network outage operational analysis plan and task checklist
- Evaluation guides
- Interview Guides
- Documentation of all network surveillance and outage notification procedures for wholesale
- Designated NMC/NOC personnel for interviews
- Observation schedule

3. *The following outputs will result*

- Completed network surveillance and outage evaluation checklists and interview/observation summaries
- Summary report
- Documentation on any identified material defects in US WEST s systems, operations or documentation

24.10.4 Entrance Criteria

The following criteria must be met before the review can commence

- Global entrance criteria requirements are met per Section 2.6
- Network surveillance and outage evaluation checklist developed
- NMC/NOC documentation available

24.10.5 Review Scope

Table 24.10.5 Network Surveillance & Outage Support Review

Process Area	Sub-Process	Evaluation Measure	Evaluation Technique	Criteria Type
Network Surveillance	IOF Surveillance	Existence Reliability	Inspection	Existence Qualitative
	SS7/AIN Interconnect Surveillance	Existence Reliability	Inspection	Existence Qualitative
Outage Notification	Process Documentation	Accuracy Completeness	Inspection	Qualitative
	Notification Procedures	Timeliness Accuracy Completeness	Inspection	Qualitative
	Notification Observations	Accuracy Completeness	Inspection	Qualitative

24.10.6 Review Activities

1. Using the operational analysis plan, conduct process analysis at the NMC and NOC
2. Conduct documentation review
3. Conduct procedure interviews
4. Conduct notification observations
5. Develop and document findings

24.10.7 Exit Criteria

- All required review activities must be completed

- All change control, verification and confirmation steps have been completed

25. Interim and Final Reports

25.1 Interim Report

The TA will develop and submit to the ROC at least one interim report at approximately the mid-point of the test process, and possibly others. This report(s) will describe the test results and recommendation for each major test type. Draft interim report(s) will be provided to the TAG for review and comments and the resulting comments will be taken into consideration by the TA, P-CLEC and ROC in preparing final versions of the report(s).

25.2 Final Report

The TA will develop and submit to the ROC a final report at the completion of testing. The final report will be released in draft form to the TAG for review and comment. Changes recommended by the TAG will be reviewed by the TA and the ROC Steering Committee prior to submittal of a final report to the ROC Executive Committee.

26. Test Wrap Up

At the conclusion of the test the P-CLEC shall dismantle all datastores created for the test, return any telephone numbers used, decommission physical facilities used for establishing connectivity, and return CIC and other industry-standard codes used in the establishment of the P-CLEC.

The TA shall be responsible for responding to inquiries about the final test report and, possibly, providing testimony or support for testimony in various venues.

27. Proposed Schedule and Timeline

27.1 Purpose

This section provides a schedule for the overall planning, execution and evaluation of the ROC s collaborative 3rd Party Test of U S WEST OSS. Once the Test Administrator is selected and

begin work, it will develop a detailed internal work plan that supports the major milestones outlined in Figure 37.1. All direct participants in the testing effort will also have their own internal work plans that directly support the Test Administrator's detailed schedule and thereby indirectly supports the ROC's schedule shown below.

37.2 Schedule

The milestones in the following schedule focus on the early activities required by the ROC to organize the testing project, specify the scope and select the 3rd party testing vendors. Once the TA has started on the project, the ROC will work with the TA and the TAG to identify additional milestones and target start and complete dates required between vendor selection and test completion. These milestones will be incorporated in the work plan that the TA will build and execute.

Table 27.2 Schedule

Major Milestone	Responsible Party	Start Date	Target Complete Date
1 Develop ROC testing principles and scope	TAG		12/9/99
2 Develop first draft of ROC TRD	ROC/MTG		1/21/00
3 Submit comments on draft TRD to ROC	TAG		2/3/00
4 Issue notice of upcoming RFP to potential vendors	ROC/MTG		2/4/00
5 Develop first draft of RFP	ROC/MTG		2/24/00
6 Conduct workshop to refine TRD	TAG		2/9 to 2/11/00
7 Revise TRD based on workshop results	ROC/MTG		2/28/00
8 Distribute revised TRD to TAG for comment	ROC/MTG		2/29/00
9 Submit comments on revised TRD/RFP	TAG		2/25/00
10 Conduct contingency workshop if required	TAG		3/14 to 3/16/00
11 Revise TRD/RFP per contingency workshop	ROC/MTG		3/6/00
12 Issue RFP with TRD and model contract to vendors	ROC/MTG		3/7/00
13 Responses from vendors due to ROC	Vendors		3/28/00
14 Complete vendor (s) selection	ROC/TAG		4/18/00
15 Sign MOU(s) in lieu of contract (s)	ROC/U S WEST/Vendor(s)		4/25/00
16 Plan, execute and evaluate test	All parties		4th Qtr 2000*
17 Submit final report to ROC	Test Administrator		4th Qtr 2000*

* For planning purposes, the ROC OSS test execution and evaluation process is currently expected to complete in the 4th quarter of 2000. However, the actual completion date is critically dependent on the completion of military testing and all exit criteria. The concurrent consideration of 271 related matters in the U S WEST region may also impact the ability to meet this target date.

27.3 Schedule Maintenance

The above schedule will be maintained by MTG on ROC s behalf and may be changed as required to support a comprehensive, rigorous and fair test of U S WEST s OSS. All proposed changes will be presented to the ROC for review and approval and communicated to the TAG and all other interested parties in a timely fashion. All direct test participants are responsible for maintaining their own internal schedules required to support the ROC s timeline.

Appendix A: Version Control

Version	Date	Reason	Distribution
1.0	January 21, 2000	Initial Draft Release	TAG and web-site
1.1	January 27, 2000	Added Appendix A, D and F Added Section 6.7 Edits and cosmetic changes	TAG and web-site
2.0	February 28, 2000	Name changefrom MTP to TRD Integrated changes from TAG comments and 2/9-2/11 workshop	TAG and web-site
3.0	March 9, 2000	Integrated changes from TAG comments on V 2.0, added appendices E and G	Attachment 1 to RFP TAG and web-site

Appendix B: ROC OSS Performance Indicator Descriptions (PID) v1.0 dated 2/16/00

Available at www.rap.ucar.edu/oss/newdocs/pidv1.pdf

Appendix C: Performance Measures

This appendix consists of a summary matrix identifying all ROC performance measures and sub-measures and the current status of all issues, availability and applicability to the test. It is undergoing revision associated with on-going resolution of performance measure issues and the workshop scheduled for March 14 to16. Appendix C will be provided after the workshop. In the meantime, Appendix B is the most current description of the ROC performance measures.

Appendix D: Scenarios

Table 01 Stand alone Preorder

Stand-alone Preorder

	Basic Scenario	Residence	Business
A	Obtain CSRs	X	X
B	Validate customer address	X	X
C	Reserve telephone numbers	X	X
D	Determine Product Availability	X	X
E	Facility check	X	X
F	Schedule appointment	X	X
G	Loop qualification information	X	X
H	Directory listing inquiry	X	X

Table 02 UNE

UNE

	Basic Scenario	2-wire. Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DS1 Loop	Stand Alone LNP	Inter-office Facility
A	Migrate lines from U S WEST w/o number port	X	X	X	X	X		
B	Migrate lines from U S WEST with LNP	X		X	X	X	X	
C	Migrate from CLEC to CLEC	X	X	X	X			
D	Purchase lines for a new customer	X	X	X	X	X		
E	Add new lines to existing customer	X	X	X	X	X		
F	Add new interface DS1/DS3 facilities					X		X
G	Convert from Resale to UNE loop	X	X	X	X			
H	Convert from UNE combinations to UNE loop	X		X	X			
I	Move inside and outside	X		X	X			
J	Disconnect (full and partial)	X		X	X	X	X	
K	Add a new directory listing on existing account	X	X	X	X	X		
L	Add new DID service	X	X	X	X	X		

To include Centrex as used by McLeodUSA

Appendix D: Scenarios

Table D1 Stand alone Preorder

Stand-alone Preorder

	Basic Scenario	Residence	Business
A	Obtain CSRs	X	X
B	Validate customer address	X	X
C	Reserve telephone numbers	X	X
D	Determine Product Availability	X	X
E	Facility check	X	X
F	Schedule appointment	X	X
G	Loop qualification information	X	X
H	Directory listing inquiry	X	X

Table D2 UNE

UNE

	Basic Scenario	2-wire. Analog Loop	ADSL Qualified Loop	2-wire non-loaded Loop	ISDN Capable Loop	DS1 Loop	Stand Alone LNP	Inter-office Facility
A	Migrate lines from U S WEST with number port	X	X	X	X	X		
B	Migrate lines from U S WEST with LNP	X		X	X	X	X	
C	Migrate from CLEC to CLEC	X	X	X	X			
D	Purchase lines for a new customer	X	X	X	X	X		
E	Add new lines to existing customer	X	X	X	X	X		
F	Add new interoffice [illegible] facilities					X		X
G	Convert from Resale to UNE loop	X	X	X	X			
H	Convert from UNE combinations to UNE loop	X		X	X			
I	Move private and [illegible]	X		X	X			
J	Disconnect (full and partial)	X		X	X	X	X	
K	Add a new directory listing on existing account	X	X	X	X	X		
L	Add new DID service	X	X	X	X	X		

To include Centrex as used by McLeodUSA

Table D3 Resale

Resale

	Basic Scenario	Res. POTS	Res. ISDN	Bus. POTS	Bus. ISDN	Centrex*	Private Line	PBX
A	Migration from U S WEST "as is"	X	X	X	X	X		X
B	Migration from U S WEST "as specified"	X	X	X	X	X		
C	CLEC to CLEC migration	X	X	X	X			
D	New customer	X	X	X	X	X	X	
E	Add lines (L)/trunks (T)/ circuits (C)	X L	X L	X L	X L	X L	X C	X T
F	Feature changes to existing customer	X		X		X		
G	Telephone number change	X	X	X	X			
H	Directory change	X	X	X	X	X		
I	Convert line to ISDN	X		X				
J	Migrate customer with voice mail	X	X	X	X			
K	Moves (Abeyed)							
L	Suspend/restore service	X	X	X	X			
M	Disconnect (full and partial)	X	X	X	X	X	X	X
N	PIC/LPIC changes	X	X	X	X	X		X

* To include Centrex as used by McLeodUSA, see Table D6

Table D5 Maintenance and Repair

Maintenance & Repair*

	Conditions to be Tested Across Basic Scenario	Res. Lines	Res. ISDN	Bus. Lines	Bus. ISDN	Centrex	Private Line	PBX
A	Short on outside plant facility	X	X	X	X	X	X	X
B	Open on outside plant facility	X	X	X	X	X	X	X
C	Short on the line within the central office	X		X		X	X	
D	Open on the line within the central office	X	X	X	X	X	X	X
E	Noise on line	X		X	X			
F	Echo on line	X		X				
G	Customer w/ LNP not receiving incoming calls	X		X				
H	Customer receiving incoming calls intended for another customer's number	X						
I	Call waiting not working	X		X				
J	Repeat dialing not working	X						
K	Customer cannot call 900 numbers	X						
L	Calls do not roll-over for customer w/ multiline hunt group			X		X		
M	Call forwarding not working	X		X				
N	Caller id not working	X		X				
O	Pick-up group order for large centrex customer not functioning properly					X		
P	DS1 loop MUXed to DS3 IOF not functioning							X
Q	Submit electronic TT against new loop. How long before can run MLT?**	X	X	X	X			

* See TRD Section 16.4 for an overview of the trouble management process that will be addressed including: Create a trouble report, Modify a trouble report, cancel a trouble report, Retrieve status on a trouble report, Initiate an MLT, Receive MLT test results.

** MLT does not apply to stand alone loops.

Table D6 Centrex

	Basic Scenario	Resale Centrex	Comments
A.	Migration from U S WEST as is	X	
B	Migration from U S WEST as specified	X	
C	CLEC to CLEC migration	X	
D	Migrate from CLEC to U S WEST		Not supported. The CLEC can issue a LSR to disconnect, but the retail side would issue the recompet.
E	New Customer	X	This is done as a change order to existing common block. We don t support the install of a new common block.
F	Add lines/trunks/circuits	X	
G	Feature changes to existing customer	X	
H	Telephone number change	X	
I	Directory change	X	
J	Convert line to ISDN	X	
K	Moves (inside and outside)	X	US WEST supports outside moves only.
L	Suspend/restore service		Do not support
M	Disconnect (full and partial)	X	

In addition, US WEST supports conversion from Centrex to an unbundled loop.

Table D7 - Placeholder until approach determined.

Emerging Services

Basic Scenario / UNE	Residence	Business
Extended End Link	X	X

Dark Fiber		X
Line Sharing	X	X
Sub Loop Unbundling		X
UNE-P DSS		

APPENDIX E ACRONYMS AND GLOSSARY

271 Application		An application to offer long distance services from an RBOC to a state or federal regulatory agency. In order to grant this application, the agency must find the applicant is in compliance with the 14 point competitive checklist described in the 1996 Telecommunications Act.
ACD	Automatic Call Distributor	
ALI	Automatic Line Information (for 911/E911 systems)	
ASR	Access Service Request..	Form used to order interoffice facilities such as dedicated trunk ports
BAN	Billing Account Number	
Benchmark		A benchmark is established for a performance measure to serve as a standard when there is no appropriate retail analog.
Billing Domain		Tests related to creation of correct carrier bills.
BRI	Basic Rate Interface (type of ISDN service)	
Capacity Testing	Capacity Test	Test ability of new mechanized systems to support expected future workloads.
CARE	Customer Account Record Exchange	Industry standard for formatting exchange of subscription information.
Centrex		A business telephone service offered from a local CO that offers PBX-like functionality to the end user without the end user having to purchase CPE.

Change Management		*The process by which changes are introduced at U S WEST. Important steps include: 1) Advance notification that a change will occur; 2) CLEC input is considered when making changes; and 3) Smooth roll-out of the change.*
CLEC	*Competitive Local Exchange Carrier*	*A communications company which sells/re-sells communications services in direct competition with the Incumbent Local Exchange Carrier (ILEC)*
CLEC Live Data		*Production data delivered through interfaces that are already operational for real CLEC customers.*
CLLI	*Common Language Location Identifier*	*An 11 digit alphanumeric code used as a method of identifying physical locations and equipment i.e., central offices relay racks etc*
CO	*Central Office*	*Facility where subscribers lines connect to switching equipment*
Completion Notice		*A notification the ILEC provides to the CLEC to inform the CLEC that the requested service activity is complete.*
CPE	*Customer Premise Equipment*	*Customer-owned equipment*
CSR	*Customer Service Record*	*A record of customer specific information such as name, address, telephone number, telecommunication services subscribed to and certain other data relating to the services provided. The CSR details a customer s fixed monthly charges billed by the local telephone company*
Coordinated customer conversion		*Orders that have a due date negotiated between the ILEC, the CLEC, and the customer so that work activities can be performed on a coordinated basis under the direction of the receiving carrier.*
DA	*Directory Assistance*	
DOJ	*Department of Justice*	

DUF	*Daily Usage Feed*	*A daily download of usage data from the switch which is delivered to U S WEST's message processing system and directly to the CLEC*
EB-TA	*Electronic Bonding Trouble Administration*	
EDI	*Electronic Data Interchange*	*Interface protocol that provides for mechanized order processing. Both the CLEC's and U S WEST will have systems (EDI Interface) to support the EDI functionality*
End-to-End Testing		*For the purposes of this testing end-to-end is defined as testing to demonstrate the flow-through capability of providing local service requests to the CLECs in parity to existing retail.*
Entrance and Exit Criteria		*The necessary conditions for starting or completing individual tests described in the Test Plan.*
Existence Criteria Type		*These are criteria where only two possible test results can exist (e.g., true/false, presence/absence), such as whether a document exists or does not exist*
FCC	*Federal Communications Commission*	
FID	*Field Identifier*	*A code used when administering usage limits on residence and business end users. Also refers to fields of information used in the service order*
Flow-through		*The term used to describe whether an LSR is passed electronically from the OSS interface to the ILEC legacy system to automatically create a service order. LSRs that do not flow through require manual intervention for the service order to be created in the ILEC legacy system.*
FOC	*Firm Order Confirmation*	*Notice the ILEC sends the CLEC to notify the CLEC that it has received the CLEC service order, created a service request, and assigned it a due date.*

Functional Testing	*Functionality Test*	*A documented set of instructions designed to test and/or validate specific functions of a process or system.*
GUI	*Graphical User Interface*	*A simplified method of accessing programs within a computer by using a mouse to point to icons, which in turn cause the programs to perform a specific function.*
IABS	*Interconnect Access Billing System*	
ILEC	*Incumbent Local Exchange Carrier*	
IMA	*Interconnect Mediated Access*	
Instantiation		*To represent an abstraction or universal by a concrete instance.*
ISDN	*Integrated Services Digital Network*	*Digital services designed for use with desktop applications, telephone switches, computer telephony and voice processing systems.*
Jeopardy		*With regard to provisioning, a condition experienced in the service provisioning process which results potentially in the inability of a carrier to meet the committed due date on a service order. With regard to the OSS test, a notice that is issued whenever a key project milestone and/or commitment is at risk according to the Master Test Plan.*
LERG	*Local Exchange Routing Guide*	
LIDB	*Line Information Data Base*	*Database used primarily for residential customers.*
LIS	*Local Interconnection Service Trunks*	
LNP	*Local Number Portability*	
	Loop	*A transmission path that connects an end-user's premises to a U S WEST Central Office.*

LSR	*Local Service Request*	*A form prepared by the CLEC to request U S WEST to provide the services as specified in the specific tariffs/contracts agreements. Information required for administration, billing and contact details is provided for in the various fields within the LSR.*
M&R	*Maintenance and Repair*	*Ability to provide for requests, status and resolution of potential troubles*
M&R Domain		*Tests related to processing and management of trouble-related reports.*
MDF	*Main Distribution Frame*	*The primary point at which outside plant facilities terminate within a Wire Center for interconnection to other telecommunications facilities within the Wire Center*
Migration		*Refers to conversion as is or conversion as specified.*
MLT	*Mechanized Loop Test*	*A mechanized test used to determine loop situations*
MTP	*Master Test Plan*	
OBF/TCIF	*Ordering and Billing Forum/ Telecommunications Interface Forum*	*Industry Standards Organizations dedicated to resolving critical issues such as billing format issues between competing local exchange carriers, etc.*
OCN	*Operating Company Number*	*A four-digit number assigned to uniquely identify CLECs.*
Operational Analysis		*Operational analysis focuses on the form, structure, and content of the business process under study. This method is used to evaluate day-to-day operations and operational management practices.*
OSS	*Operations Support Systems*	*For purposes of this test OSS refers to systems that provide for processing orders, maintenance and repair activities, and billing activities*
Parity Criteria Type		*These are criteria that require two measurements to be developed and compared, such as whether external response time is at least as good as internal response time.*

Parity measures		*Parity measures are compared to analogous wholesale performance measures to determine if there is non-discriminatory treatment of wholesale services.*
PBX	*Private Branch Exchange*	
PIC	*Primary Inter-exchange Carrier*	*Primary interexchange carrier selected by end-user.*
PM	*Performance Measures*	
POTS	*Plain Old Telephone Service*	
Pre-Ordering, Ordering, and Provisioning Domain		*Tests related to CLEC s acquisition of customer information, placing orders, and ensuring correct and timely provision and notification of order status.*
Qualitative Criteria Type		*These criteria set a threshold for performance where a range of quality values is possible, such as level of customer satisfaction*
Relationship Management and Infrastructure Domain		*Tests relating to activities, processes and documents that are focused on the establishment and maintenance of the CLEC/ILEC relationship.*
RFP	*Request For Proposal*	
Resale		*Service that allows a CLEC to purchase ILEC retail services in order to resell these services to their own end-user.*
Scalability		*The degree to which an application can be scaled to accommodate order of magnitude increases in transaction volumes and users*
SOP	*Service Order Processor*	

Standard Interval		*The interval that the ILEC publishes as a guideline for establishing due dates for provisioning a service request. Typically, due dates will not be assigned with intervals shorter that the standard. These intervals are specified by service type and type of service modification requested. ILECs publish these standard intervals in documents used by their own service representatives as well as ordering instructions provided to CLECs in the U S WEST Standard Interval Guidelines*
Supplement		*A change to an order taken after the original order was submitted, but before the order has been executed, such as a due date change*
Test Bed		*A set of hardware emulators that are designed to assist with testing. The test bed consists of working lines and provisioned products, although the exact content is dynamic.*
Test Call Matrix		*A list of call types and the quantity of calls for each type that should be included in a particular test*
Test Case		*Test Cases are composed of Test Scenarios duplicated with different Test Data sets to make up the required number of test cases as they relate to 3rd Party Testing*
Test Domain		*A specific testing area with defined target measures, scenarios, evaluation methods, and test processes*
Test Scenario		*A specifically defined request and actions as it relates to 3rd Party Testing. These Test Scenarios include both Functionality Testing and Capacity Testing*
TN	*Telephone Number*	*A number associated with a telephone service*
Transaction-Driven System Analysis		*Transaction driven system analysis relies upon initiation of transactions, tracking of transaction progress, and analysis of transaction completion results to evaluate the automated system under test.*

Transaction Generation		*Transaction generation is the use of live, historical, and or generated data and data processing capability to evaluate an automated and or manual system under test*
TRD	*Test Requirements Document*	
UDIT	*Unbundled Dedicated Interoffice Transport*	
UNE	*Unbundled Network Elements*	
UNE-C	*UNE-Combination*	*A preexisting combination of legally binding and effective UNEs.*
	UNE Loop	*A transmission path that connects an end-user s premises to a U S WEST Central Office*
UNE-P	*UNE-Platform*	*UNE Platforms are available as for existing POTS, PBX trunks and ISDN service*
USOC	*Universal Service Order Codes*	
Verification and Validation		*Methods used in the evaluation of activities and processes not amenable to transaction-driven testing, but which require verification and validation.*
xDSL	*x Digital Subscriber Line*	*A general name for an evolving high speed transmission technology which uses existing copper wire from the telephone company central office to the subscriber s premise and has electronic equipment at the central office and at the subscriber s premises, and transmits and receives high speed digital signals*

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Appendix F: US West Transaction Distribution Among States

Total CLEC to US WEST Order Transactions

1/99-10/99	AZ	CO	IA	ID	MN	MT	ND	NE	NM	OR	SD	UAK	UT	WA	WY	Total
	64389	39111	10461	1533	56531	6382	3253	23977	4400	19968	8274	122	8971	26544	1661	275577
Distr	0.2337	0.1419	0.038	0.0056	0.2051	0.0232	0.0118	0.087	0.016	0.0725	0.03	0.0004	0.0326	0.0963	0.006	1
State %	23%	14%	4%	1%	21%	2%	1%	9%	2%	7%	3%	0%	3%	10%	1%	100%
Fax distribution																
IIS-Cmplx		8	25		6		4		1	1						45
IIS-INP	179	715	1208	165	353	114	3	245	59	34	8	0	181	541	0	3805
IIS-LNP	5749	3030	3928	52	2381	13	67	8974	763	934	31	53	1254	2844	1	30074
IIS-PAL	5238	3881	1565	922	4589	736	343	680	1575	2224	600	47	1671	3223	640	27934
IIS-Resale	10866	2850	1075	204	1133	792	110	1243	144	6620	694	4	3544	6959	30	36268
IIS-UBL	1953	1124	107	9	6093	220	87	3120	884	243	20	2	1462	1602	0	16926
Total Fax	23985	11600	7883	1352	14549	1875	610	14262	3425	10055	1353	106	8112	15169	671	115007
State %	21%	10%	7%	1%	13%	2%	1%	12%	3%	9%	1%	0%	7%	13%	1%	100%
Electronic (IMA GUI & EDI - but very little or no EDI so far) Distribution																
IMA-INP	7	11	35	75	419	403	15	5	1	7	117	0	12	55	0	1162
IMA-LNP	4804	1317	118	64	1123	17	17	4323	149	573	7	4	301	1039	0	13856
IMA-PAL	86	19	6	0	19	8	1	3	3	7	1	0	2	15	2	172
IMA-Resale	31459	22539	1660	41	31810	3613	1549	5296	596	6214	6785	3	183	3975	969	116692
IMA -UBL	4048	3617	734	1	8605	466	1057	88	225	3111	11	9	361	6291	19	28643
Total Elec	40404	27503	2553	181	41976	4507	2639	9715	974	9912	6921	16	859	11375	990	160525
State %	25%	17%	2%	0%	26%	3%	2%	6%	1%	6%	4%	0%	1%	7%	1%	100%
Fax versus Electronic By State																
Total	64389	39111	10461	1533	56531	6382	3253	23977	4400	19968	8274	122	8971	26544	1661	275577
Fax	23985	11600	7883	1352	14549	1875	610	14262	3425	10055	1353	106	8112	15169	671	115007
Electronic	40404	27503	2553	181	41976	4507	2639	9715	974	9912	6921	16	859	11375	990	160525
% Fax	37%	30%	75%	88%	26%	29%	19%	59%	78%	50%	16%	87%	90%	57%	40%	42%
% Electronic	63%	70%	24%	12%	74%	71%	81%	41%	22%	50%	84%	13%	10%	43%	60%	58%

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Appendix G Statistical Approach

1. INTRODUCTION AND PURPOSE

There are two types of performance standards in the ROC test:

- Parity standards
- Benchmark standards

Parity standards are used where there is a U S WEST retail analog to the particular wholesale OSS process being considered. In order to compare U S WEST wholesale performance to a parity standard, a set of performance observations of a wholesale process is compared to a set of performance observations of the analogous retail process. These two sets of observations are compared to one another in order to evaluate whether observed differences between U S WEST s performance toward itself and U S WEST s performance toward CLECs are significant to a specified degree of confidence.

For benchmark testing the ROC must decide whether test evaluation is to be based on simply meeting or not meeting the benchmark, or whether statistical methods (similar to those used for parity testing) are to be used. In the BANY test evaluation, the former approach was taken.

As random variations exist in any type of repeated performance, the purpose of statistical methods is to provide a way to distinguish between differences that may be due to such random variations and differences that may be due to other factors

In comparing two populations by comparing samples drawn from the two it is possible to draw a conclusion in error. In parity testing, there are two possible types of error:

- Difference in service quality is detected where none exists
- Difference in service quality exists but is not detected

Statistical methods provide a means to limit the risk of making these kinds of errors. Additionally, statistical methods provide a framework and language for describing the tests (e.g. confidence level) and test results that are widely accepted and understood among the parties to the test.

Once the acceptable level of risk of making errors is decided, statistical methods can be used to assist in designing the test, analyzing the results (i.e. comparing wholesale and retail samples), and describing the approach and results in commonly understood terms.

The ROC must formulate a position regarding the acceptable level of risk in making the errors described above. A framework for defining the acceptable level of risk of drawing an incorrect conclusion is described in Section 2 in terms of six specific questions. Section 3 describes the process whereby the answers to the six questions will be made definitive for the ROC test.

The adoption by the ROC of particular statistical methods and standards are not binding on individual states for the purpose of evaluating test results. The statistical methods and standards will govern the design and conduct of the test, including establishing a stopping point for the test, and facilitate evaluation of the results. However, states are free to depart from the critical values or benchmarks adopted for the test when they evaluate test results submitted by U S West as part of state Section 271 applications.

2. Statistical Policy Questions

2.1 What are the null and alternative hypotheses?

In statistical testing it is often convenient to set up two mutually exclusive hypotheses representing possible test outcomes:

- Null hypothesis: The null hypothesis stands unless rejected by the test
- Alternative Hypothesis: The alternative hypothesis stands if the null hypothesis is rejected

The logical purpose of the test is to evaluate whether the null hypothesis stands

For the ROC test, there are two possible choices for the Null Hypothesis:

- Differences in service quality do not exist
- Differences in service quality exist

2.2 What is the desired Confidence Level / Level of Significance?

The level of significance defines the magnitude of performance differences (cutoff point or critical Z value) greater than which differences are considered statistically significant. Its

confidence is identified as α in statistics (i.e., confidence level equals one minus α). Also, α represents the probability of a Type I error, or the chance of incorrectly finding that the alternative hypothesis is true. The significance level that is chosen determines the critical Z value. For the BOC OSS Collaborative the critical Z value will be applied to one-tailed tests. In the BANY '97 application, the level of significance was $\alpha = 0.05$.

2.3 Use Z or Modified Z?

The Z value is determined by a mathematical expression that incorporates the means being compared, the sample size (n) for each population of service provided, and the dispersion of the populations. The dispersion is called the standard deviation, and also is calculated using a universally recognized mathematical expression. The BANY test used a Modified Z in place of the regular Z familiar to statisticians. The Modified Z uses only the standard deviation from the population of service U S West provides to itself instead of including as well the standard deviation for the population for service provided to CLECs. The motive for this modification is to remove the temptation for a BOC to manipulate service to CLECs to produce an advantageous Z value.

2.4 What is the target Type II error level?

A Type II error is the chance of failing to reject the null hypothesis when in fact it should be rejected. It is typically referred to as β. In the case where the null hypothesis is that *differences in service quality do not exist*, the probability of Type II error may be estimated using an assumption about the true mean of the CLEC population. In the case where the null hypothesis is that *differences in service quality exist*, the probability of a Type II error may be estimated using an assumption about the true mean of the U S WEST population. Then a sample size that produces that Type II error level is determined.

2.5 How to account for non-normal distribution?

The preceding tests and values assume a normal population distribution. The underlying distribution in OSS Performance Measures may not be normal. For example, the distribution of values for some interval tests may have a steep leading edge and a long tail. This type of measure may conform more closely to a κ^2 (Chi-Squared) distribution than to a normal distribution. Other measure may conform more closely to a bi-modal distribution (or yet another distribution) than to a normal distribution. Statistical methods, equivalent to the calculation of the Modified Z for a normal distribution, exist for other distributions. Where the

when the distribution of test values is in question, the TA will test the population to determine the underlying distribution. Under the guidance of the ROC, the TA will chose the correct diagnostic tool for testing the null hypothesis.

2.6 How should sample size (n) be determined for each test?

Once the choices described in 2.2, 2.3, and 2.4 are made, the sample size can be selected if the distribution is assumed to be normal. If it is not, then distribution may have to be taken into account as well, or non-parametric statistical methods (e.g., permutation testing) could be used.

3. PROCESS FOR ANSWERING THE STATISTICAL POLICY QUESTIONS

It will be the responsibility of the TA to design and implement the statistical approach, based on the ROC's answers to the statistical policy questions. This section outlines the steps in a collaborative process that will assist the ROC in making those decisions.

During the March 14 workshop there will be a presentation and discussion of statistical methods. The presentation will be a continuation of the presentation given during the February 9 workshop, and will focus on factors that affect the Type II error and considerations in choosing sample size.

Subsequent to the March 14 workshop, a Request for Comment regarding the statistical approach will be issued. Comments will be received and summarized in the customary manner, and will form the basis for an initial workshop on the statistical approach. This workshop will be conducted shortly after the selection of the TA.

The workshop will provide the ROC with the detailed information and reasoning required in order to make the six required statistical policy decisions. Once that statistical workshop(s) is completed, and the policy decisions have been made, the TA will provide a design of the statistical methodology. The design will be reviewed by the TAG, approved by the ROC and included in the Master Test Plan.

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Appendix H: Test Overview Matrix

Test Name	Scenarios Used	Data Source	Interface Used	Process Area	PM Number	Performance Measure Name	Basis for Functional Test	Evaluate for Functional Test	Basis for Functional Test	Evaluate for Functional Test
			IMA-GUI	Gateway Availability	GA-1	Gateway Availability IMA GUI	Y	Y	Y	Y
			IMA-EDI	Gateway Availability	GA-2	Gateway Availability IMA EDI				
		Live CLEC	EB-TA	Gateway Availability	GA-3	Gateway Availability EBTA				
		Live CLEC	EXACT	Gateway Availability	GA-4	Gateway Availability EXACT				
POP Pre-Order Section 12		P-CLEC	IMA-GUI IMA-EDI Retail	Pre-Order	PO-1	Pre-Order/Order Response Times				
Flow-Through Section 13		P-CLEC		Pre-Order	PO-2	Electronic Flow-through				
Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.

The TA will collaboratively build this matrix with input from the TAG and the ROC.

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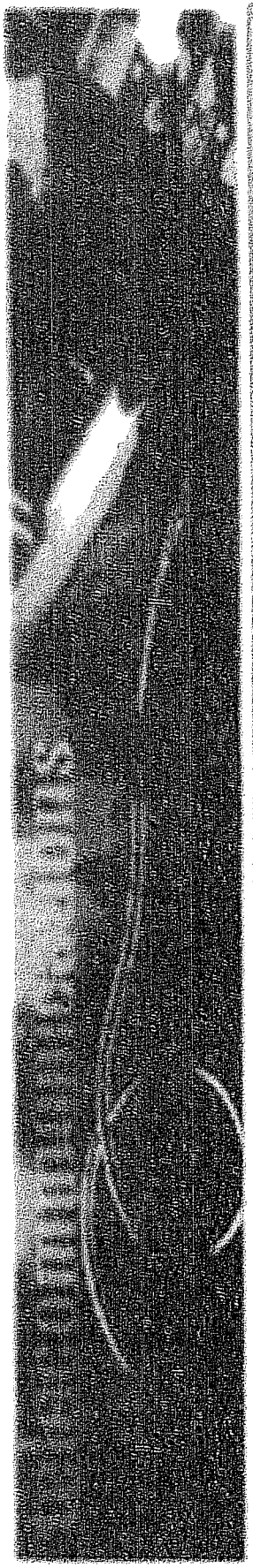
Docket No. TC01-___
Qwest Corporation
Exhibits to the Affidavit of Lynn M. V. Notarianni
Checklist Item 2 - OSS
Exhibit LVN-OSS-4
October 24, 2001

Regional Differences Assessment



KPMG Consulting

Qwest Corporation Regional Differences Assessment

October 5, 2000 - REISSUE

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1 Executive Summary

1.1 Introduction

1.1.1 Background

As a preamble to the third party test of Qwest s Operational Support Systems (OSS), the Regional Oversight Committee (ROC) developed the Test Requirements Document (TRD). Section 6 of the TRD provides an overview of the Qwest OSS architecture used to provide wholesale services to the CLECs and notes any system differences or variations that exist among the states and regions of the Qwest operating territory. Subsections 6.7 and 6.8 of the TRD instruct the Test Administrator (TA) to further investigate these differences and factor their impact, if any, into the development of the test scenarios and test mix.

During the Master Test Plan (MTP) Design Workshop held on July 18-20, 2000, in Salt Lake City, KPMG Consulting (in its role as TA) sought input from the ROC Technical Advisory Group (TAG) regarding this further investigation of Qwest system differences. Based on discussions and feedback received during the MTP Design Workshop, KPMG Consulting developed a regional differences assessment plan proposal that was distributed to the ROC TAG for review and subsequent approval.

1.1.2 Objective and Scope

The Qwest Regional Differences Assessment was conducted to investigate any differences in systems and processes throughout the Qwest territory. KPMG Consulting assumed the following as the null hypothesis of the assessment:

> *The impact of differences in wholesale systems and processes across the Qwest operating regions is insufficient to materially impact a substantial fraction of the transactions that the CLECs are likely to generate with Qwest before the end of 2001.*

KPMG Consulting conducted interviews with Qwest and CLEC personnel, analyzed Qwest and CLEC provided documentation, and performed basic statistical analysis of a few key Qwest service performance indicators to potentially gather sufficient evidence to reject the null hypothesis.

The results are summarized below by domain.

High Level Results

1.1.3 General

This section broadly summarizes the results for each of the functional domains included in the Regional Differences Assessment. The interviews and document reviews conducted by KPMG Consulting focus on identifying regional and state differences. Assessment criteria were developed for this portion of the project by KPMG Consulting, and the information gathered was analyzed in reference to these assessment criteria; however, no actual testing was performed. Qwest practices and transactions will be evaluated as part of the process and transaction tests, and thus were not covered by this assessment.

As stated in Section 1.1.2, KPMG Consulting started with the following null hypothesis:

> *The impact of differences in wholesale systems and processes across the Qwest operating region is insufficient to materially impact a substantial fraction of the transactions that the CLECs are likely to generate with Qwest before the end of 2001.*

The sections below highlight the results of the individual assessments. For assessment criteria, detailed analysis and results, refer to the appropriate sub-section later in this document. Once the test preparation and execution are underway, further differences may be identified. These will be addressed on a case by case base to determine if there needs to be any modification to the test design or test mix.

1.1.4 Order Management

Qwest s CLEC documentation for order and pre-order transactions, and order flow-through eligibility, is consistent across the three regions. The internal documentation Qwest representatives use in support non-flow-through is also consistent across the three regions. Although there are differences evident in flow-through capability across the regions, they are not material enough to warrant rejecting the null hypothesis.

The existence of different Service Order Processor (SOP), Billing, and CSR Retrieval systems creates potential regional inconsistencies in the systems supporting pre-order and order transactions. There are differences in the end-to-end process ISC Help Desk representatives use to handle non-flow-through orders. Additionally, the majority of Qwest organizations administering non-flow-through orders are inconsistent across the three regions.

Minor regional differences have been identified in the pre-order and ordering business rules, the method in which PREMIS manages telephone number reservations, and Interconnect Mediated Access (IMA) edits. In addition, the impact of regional telephone numbers for the facsimile supporting Centers Resale is undetermined.

1.1.5 Provisioning

Qwest s processes, systems and organizations for Provisioning Infrastructure, Provisioning Coordination and Network Design/Collocation are materially consistent across the three regions.

Qwest s Transaction Provisioning processes vary from region to region.

Qwest s provisioning infrastructure was inconclusive since there are multiple platforms that function independently in some cases.

1.1.6 Maintenance and Repair (M&R)

Qwest s processes, systems, organizations and documentation for M&R Processing, M&R Support Center Review, M&R Infrastructure, M&R Documentation, Capacity Management, and Network Surveillance are materially consistent across the three regions.

For M&R Coordination, Qwest is redesigning the process; consequently, information about these processes is not available. As a result, the assessment criteria for M&R Coordination received ratings of Inconclusive.

1.1.7 Billing

Qwest s billing systems for the bill production and distribution and Daily Usage Feed (DUF) processes are maintained and operated on a regional basis. Although these systems are different, Qwest has standardized most of its processes across the regions. Thus, most of the differences that have been identified are now at a level where they are not critical to the general billing process. Given that regional differences do exist, the related assessment criteria for these systems returned a result of No. However, this result does not imply materially impacting regional differences.

Qwest s Customer Record Information Systems (CRIS) and Message Processing Systems are different across each of the three regions. These different systems represent a potential risk of regional inconsistencies in usage processing and bill content and format.

Qwest Usage processes for Resale and UNE and Carrier Bill processes for CRIS and IABS are materially consistent across the three regions. In addition, Qwest s IABS Billing System is materially consistent across the three regions.

1.1.8 CLEC Relationship Management and Infrastructure

Qwest s processes, systems, organizations and documentation for Account Management, Change Management, CLEC Training, Interface Development, and IMA Help Desk are materially consistent across the Qwest footprint.

Because of the potential differences in the regional Resale Centrex Help Desks, KPMG Consulting cannot conclude that the processes and procedures surrounding the ISC Help Desk are consistent or the same across regions. Without further information, the results of this assessment are inconclusive.

1.1.9 Statistical Analysis

Qwest s timeliness of Firm Order Completions (PO-5), Installation Commitments Met (OP-3), and Installation Intervals (OP-4) is not consistent across regions.

Qwest performance on Business, Centrex 21, Centrex, DS0, DS1 and Residential Repairs (MR-6) is not consistent across regions for high density and metropolitan service areas. In low density and No dispatched areas, Qwest performance was inconsistent for ISDN and Centrex Repairs (MR-6) respectively.

Statistical analyses of the Billing metrics (BI-1) could not be performed and therefore, there is no basis to draw a conclusion.

2 Results Summary Analysis

2.1 Order Management (OM)

2.1.1 Description

The Order Management (OM) domain is composed of the systems, processes, and other operational elements used to support CLEC pre-ordering and ordering activities. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operating area to parallel systems and processes in other jurisdictions and regions in Qwest's territory.

KPMG Consulting reviewed and analyzed Qwest documentation related to pre-ordering and ordering systems and activities and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.1.2 Methodology

This section provides a business process description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.1.2.1 Business Process Description

CLECs can submit transactions to Qwest that establish or change services via an electronic interface called Interconnect Mediated Access (IMA) and a manual interface, Interconnection Imaging System (IIS). The environments are described in more detail below.

IMA allows CLECs to process the following pre-order transaction queries to Qwest's OSS:

- Customer Service Record Inquiry
- Telephone Number Reservation
- Address Validation
- Facility Check
- Appointment Availability
- Service/Feature Availability
- Validate Connecting Facility Assignment (CFA)
- View Design Layout Record (DLR)

IMA and IIS allow CLECs to process the following ordering transactions with Qwest's OSS:

- Submit Local Service Requests (LSRs)
- Receive Functional Acknowledgements (FA)
- Receive Firm Order Confirmations (FOCs)[1]
- Receive Completion Notices (CNs)
- Receive Rejects, Clarifications and Service Jeopardies

[1] FOCs are not currently returned via IMA-GUI; they are emailed or faxed to the CLEC. FOCs will be returned via IMA-GUI in IMA Version 6.0.

Interconnect Mediated Access (IMA)

Pre-order queries and orders can be submitted electronically to Qwest through the IMA, using a Graphical User Interface (GUI) or Electronic Data Interchange (EDI) interface. IMA allows for bi-directional flow of information between Qwest s OSS and CLECs. CLECs can access IMA -GUI via a secure dial-up or dedicated circuit.

IMA-EDI is designed to allow Qwest s Operations Support Systems (OSS) to exchange batch files with CLEC OSSs in a standard machine-to-machine format. Qwest defines the information that is needed to successfully submit pre-order and order transactions in business rules format. This information is encoded to fit the standard EDI transaction set for data transmission. EDI is an industry standard for transactions that defines the format and the data content of each business transaction. Qwest determines how and when each data element is transferred (or mapped) into a Qwest pre-order query or service order. The result is then published in the business rules[2] for use by CLECs.

Interconnect Imaging System (IIS)

IIS is designed to allow CLECs to submit Local Service Requests (LSRs) via facsimile in a standard format. Qwest defines the information that is needed to successfully submit each order type. CLECs submit single or multiple LSRs to a Qwest fax server. Once Qwest receives the LSRs they are electronically logged and distributed to the appropriate Interconnect Service Center (ISC) for input into the regional Service Order Processor (SOP) system. Responses (e.g., clarifications, confirmations) are transmitted from Qwest s OSS to the CLECs via the IIS fax servers.

Pre-ordering Process Flow

After receipt of a pre-order query from a CLEC, the IMA system validates the pre-order query for format and to ensure the required fields are populated. An invalid transaction will receive a standard error message. A valid transaction will be forwarded to Qwest middleware applications to provide or retrieve the requested data from Qwest s OSS. Certain pre-order queries require the submission of multiple transactions, in sequence, to obtain the desired data (e.g., Appointment Availability and Telephone Number Reservations).

Ordering Process Flow

When Qwest receives an Local Service Request (LSR) via IMA, an FA is automatically returned to the CLEC, confirming that the file has been successfully received. As the LSR passes through the Qwest back-end OSS systems, Qwest systems or representatives perform validations to determine if the CLEC s service request is properly formatted, complete, and accurate. In response to an LSR with errors, Qwest transmits an error message.

To successfully process the order, the CLEC must either re-submit the original LSR, correcting any errors, or submit a supplemental service request (Sup) that modifies the original order. The decision to resubmit the original LSR or submit a supplement is dependent on at what stage in the process the error was identified.

Once an LSR passes through the ordering validation process, Qwest service orders are created in one of Qwest s three regional SOP systems. These systems coordinate downstream provisioning activity and monitor the status of the order. The SOP systems trigger IMA to generate a FOC response to the CLEC. This FOC confirms that Qwest has validated the LSR and provides a Due Date (DD) on which Qwest commits to provision the requested service.

[2] See http://www.uswest.com/wholesale/ima/ima_icharts.html

2.1.2.2 *Data Sources*

The data collection performed in this assessment was based on interviews with Qwest and CLEC representatives and reviews of documents supplied by Qwest and the CLECs. The interviews and documents are itemized in the tables below.

Table 2.1.2.2.1: Qwest Interviews for Order Management Assessment

Document Number	Document Name	File Name	Source
Q-1	Capacity Management	IMA_Cap_Man.doc	KPMG Consulting
Q-2	Order Transaction Process	Order_Transaction.doc	KPMG Consulting
Q-3	Pre-order Transaction Process	Order_Transaction.doc	KPMG Consulting
Q-4	Products	Products.doc	KPMG Consulting
Q-5	Ordering System and Infrastructure	Order_Sys_Infrastructure.doc	KPMG Consulting
Q-6	Loop Qualification	Loop_Qual.doc	KPMG Consulting
Q-7	Help Desk ISC	Help_Desk_ISC.doc	KPMG Consulting
Q-8	Fax (IIS) Order Process	Fax_Order_Process.doc	KPMG Consulting
Q-9	Flow-through	Flow_Through.doc	KPMG Consulting
Q-10	IMA Help Desk	IMA_Help_Desk.doc	KPMG Consulting

Table 2.1.2.2.2: Qwest Data Sources for Order Management Assessment

Document Number	Document	File Name	Source
E-1	Qwest Flow-through eligibility (OM-13)	FT_Matrix_Ver1.1.xls	Qwest
E-2	IMA_User_Guide (OM-22)	IMA_User_Guide.zip	Qwest
E-3	EDI-Implementation Guideline (OM-22)	EDI-Implementation Guideline.zip	Qwest
E-4	IMA User's Guide, Release 5.01	IMA_User's_Guide.zip	Qwest
E-5	IMA Learning Guide – Class Companion	IMA_Learning.zip	Qwest
E-6	Facility-Based Directory Listings Guide	Fac_Based_DL_Gde.zip	Qwest
E-7	Pre-Order IMA I-Charts 5.0	Pre-Order IMA I-Charts 5.0.zip	Qwest
E-8	Order IMA I-Charts 5.0	Order IMA I-Charts 5.0.zip	Qwest
I-1	CLEC pre-order training material (OM-1)	KPMG0007.pdf	Qwest
I-2	Pre-ordering business rules (OM-2)	KPMG0007.pdf	Qwest
I-3	Response to data dictionary request (OM-3)	KPMG0007.pdf	Qwest
I-4	CLEC ordering (manual and electronic) training material (OM-4)	KPMG0007.pdf	Qwest
I-5	Ordering business rules (OM-5)	KPMG0007.pdf	Qwest

Document Number	Document	File Name	Source
I-6	Product Training Guides (OM-6)	KPMG0007.pdf	Qwest
I-7	Service provisioning intervals (OM-7)	KPMG0007.pdf	Qwest
I-8	Pre-ordering error resolution guide (OM-8)	KPMG Set 62 001200.pdf	Qwest
I-9	Ordering error resolution guide (OM-9)	KPMG Set 62 001200.pdf	Qwest
I-10	List of available USOCS (OM-10)	KPMG 62-208 ATT A XLS UDIT Class of Service and USOCs.xls	Qwest
I-11	Scheduled hours of operation (OM-11)	KPMG Set 62 001200.pdf	Qwest
I-12	Description of EDI batching requirements (OM-12)	KPMG Set 62 001200.pdf	Qwest
I-13	ISC representative manual order training/job aids (OM-14)	KPMG 62-212.msg	Qwest
I-14	ISC organization charts (OM-15)	KPMG 62-211.msg	Qwest
I-15	Response to xDSL training request (OM-16)	KPMG0007.pdf	Qwest
I-16	UNE-P.C Presentation (OM-17)	KPMG 72-251.msg	Qwest
I-17	CENTREX availability matrix (OM-18)	KPMG 72-254.msg	Qwest
I-18	Manual Order Routing Matrix (OM-19)	KPMG Set 77.msg	Qwest
I-19	IMA Business Requirements for Misc. Edits (OM-20)	KPMG Set 77.msg	Qwest
I-20	ISC representatives Methods and Procedures and Job Aids (OM-21)	OM21 - KPMG 77-251.msg	Qwest
I-21	Qwest server mainframe overview (OM-23)	Main frame system OM23.vis	Qwest
I-22	IMA Middleware Legacy System overview (OM-24)	KPMG 84-278.msg	Qwest
I-23	Methods and Procedures and Job Aids for the handling of IIS LSRs (OM-25)	KPMG 101-117.msg	Qwest
I-24	Bulk correspondence	OM 6 correspondence.zip	Qwest

Table 2.1.2.2.3: CLEC Interviews for Order Management Assessment

Document Number	Document	File Name	Source
C-1	McLeodUSA IFB Products (9-7)	McLeodUSA IFB Products.doc	KPMG Consulting
C-2	McLeodUSA Centrex Resale Products (9-7)	McLeodUSA Centrex Resale Products.doc	KPMG Consulting

Table 2.1.2.2.4: CLEC Data Sources for Order Management Assessment

Document Number	Document	File Name	Source
CD-1	IFB Conversion Problems per State	IFB Conversion Problems per State.msg	McLeodUSA

2.1.3 Assessment Method

Interviews were conducted in Denver, Colorado with Qwest personnel and included a telephone bridge for offsite participants. Additionally, interviews were conducted with McLeodUSA via conference calls regarding Qwest pre-order and order processes, systems and documentation. Further data was gathered through reviews of information provided by Qwest on its pre-order and order processes, systems and documentation.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews was analyzed in reference to the assessment criteria.

2.1.3 Results

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.1.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1.0 Pre-ordering			
1.1	The end-to-end processes for pre-order transactions are consistent across all jurisdictions and regions.	No	Based on information provided in interviews and data requests, the majority of the end-to-end processes to access pre-order information is similar, but there are some differences. Minor regional differences were identified based on a review of the pre-order *I-Charts Ver. 5*. There are currently differences in the valid entries for at least one field in three of the eight pre-order queries. These differences include: 1) range of values per region, 2) type of information required by each region. Additional regional difference will emerge in data provided in response to a Customer Service Record (CSR) query. In the scheduled release of IMA 7.0 USOC descriptions will be returned in the Eastern region.
1.2	The systems deployed for pre-order transactions are consistent across all jurisdictions and regions.	No	Based on information provided in interviews and data requests, the majority of systems deployed in supporting pre-order transactions is similar with the exception of the differences outlined in the *Test Requirements Document (TRD)*. These significant differences include the billing systems

Assessment Number	Assessment Criteria	Result	Comments
			used to support CSR retrieval. Each of the three regions has a unique application: BOSS-C, BOSS-E, and CARS. An additional minor regional difference was identified in the method PREMIS uses to manage TN Reservations (Eastern and Central Regions via NPANXX, Western Region via CLLI).
1.3	The publicly available documentation used by CLECs to complete pre-order transactions is consistent across all jurisdictions and regions.	Yes	Based on information provided in interviews and data requests, CLECs can use information provided in IMA training classes and I-Charts to complete pre-order transactions. As represented by Qwest, this documentation appears to be consistent across all regions and jurisdictions. Specific regional differences are identified in the common documentation.
2.0 Ordering			
2.1	The end-to-end processes for order transactions are consistent across all jurisdictions and regions.	No	Based on information provided in interviews and data requests, the majority of the end-to-end processes to order wholesale services is similar. However, potential minor regional differences were identified based on a review of the order *I-Charts Ver. 5* and information provided in interviews with Qwest. Minor differences include: 1) business rule differences in the range of valid entries for Hunting Sequence 2) business rule differences in the valid entries due to jurisdictional USOC or product differences, 3) the BAN field in the Eastern Region is not validated by up-front edits for accuracy, and 4) unique fax numbers are used by region for Centrex Resale orders that may indicate some differences in process.[3]
2.2	The systems deployed for order transactions are consistent across all jurisdictions and regions.	No	Based on information provided in interviews and data requests, the majority of the systems deployed to order wholesale services is similar aside from the differences outlined in the *Test Requirements Document (TRD)* Significant differences include: 1) Billing systems, 2) CSR Retrieval systems, 3) Service Order Processors
2.3	The publicly available documentation used by CLECs to complete order transactions is consistent across all jurisdictions and regions.	Yes	Based on information provided in interviews and data requests, CLECs can use information provided in IMA training classes and I-Charts to complete order transactions. As represented by Qwest, this documentation appears to be consistent across all regions and jurisdictions. Specific regional differences are identified in the common documentation.
3.0 Flow-through			
3.1	The flow-through capabilities of the Qwest systems are consistent across all jurisdictions and regions.	No	Based on a review of *ROC 271 Working PID Version 1.4* and Qwest interviews the majority of Qwest's flow-through capabilities is similar. Differences are primarily related to orders for number changes, suspensions, or restoral of service.

[3] See http://www.uswest.com/wholesale/productsServices/irrg/CNTRS1-3.html

Assessment Number	Assessment Criteria	Result	Comments
3.2	The publicly available documentation used by CLECs to determine the flow-through eligibility of transactions is consistent across all jurisdictions and regions.	Yes	Based on a review of *ROC 271 Working PID Version 1.4* interviews, Qwest's publicly available documentation to determine the flow-through eligibility of transactions is consistent across all jurisdictions and regions. Specific regional differences are identified in the common documentation.
4.0 Manual Order Process			
4.1	The Qwest processes and systems for administering non-flow-through orders submitted manually or electronically are consistent across all jurisdictions and regions.	No	Based on information provided in interviews and data requests, the majority of the Qwest processes and systems for administering non-flow-through orders submitted manually or electronically is similar across all jurisdictions and regions. The majority of the CLEC-facing processes and systems is similar across regions. However, a significant regional difference exist such that LSRs submitted via IIS or IMA that fall out for manual handling are input into different SOP systems to generate the Qwest internal service orders. Unique fax numbers are used by region for Centrex Resale orders, which may indicate some differences in process and/or load balancing.
4.2	The Qwest organizations administering non-flow-through orders submitted manually or electronically are consistent across all jurisdictions and regions	Inconclusive	Based on information provided in interviews and data requests, the majority of the Qwest organizations administering non-flow-through orders submitted manually or electronically is similar across all jurisdictions and regions. The majority of Qwest ISC is organized by product type with each center typically having a primary and secondary specialty. Some ISCs are further organized by CLEC and process transactions regardless of region or jurisdiction. However, unique fax numbers are used by region for Centrex Resale orders which may indicate some differences in organizational structure.
4.3	The internal documentation that Qwest representatives use to support non-flow-through orders submitted manually or electronically is consistent across all jurisdictions and regions	Yes	Based on information provided in interviews and data requests, the training material and documentation available to Qwest ISC representatives are consistent across regions and jurisdictions. Specific regional differences are identified within the material to address the ISC representative's need to interact with different regional systems (e.g., Billing and SOP system).

2.1.4 Results Summary

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.1.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Documentation provided to CLECs to prepare pre-ordering, ordering transactions	X					X
Documentation provided to CLECs regarding the flow-through eligibility of transactions.	X					X
Pre-order and order business rules. (See Pre-order and order processes evaluation criteria).	X*					X
Qwest s internal ISC documentation to support non-flow-through transactions.	X					X
Systems that support pre-order and order transactions.		X		X		
Flow-through capabilities of the Qwest systems	X*					X
Qwest processes for handling non-flow-through orders.		X				X
Qwest s organizations supporting non-flow-through orders.			X			X

*Minor differences identified, but not material enough to reject hypothesis.

2.2 *Provisioning*

2.2.1 *Description*

The Provisioning domain is composed of the systems, processes, and other operational elements associated with Qwest s support for provisioning activities for wholesale services and unbundled network elements (UNEs). This assessment was designed to compare the functionality and performance of parallel systems and processes supporting Provisioning across the various state jurisdictions and operating regions in Qwest s territory.

KPMG Consulting reviewed and analyzed documentation provided by Qwest related to provisioning activities, and conducted interviews with key Qwest and CLEC representatives in order obtain the data necessary to conduct the assessment.

2.2.2 *Methodology*

This section provides a business process description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.2.2.1 *Business Process Description*

Network Design and Collocation

A CLEC initiates the network design/collocation process by submitting a collocation application, is available on the Qwest website: http:www.uswest.com/wholesale/guide.html. Three Qwest groups work together to provision these services: the Collocation Project Management Center (CPMC), the Engineering Central Office, and the Technical Selection Group. The CPMC, located in Littleton, Colorado, receives the application and conducts a collocation feasibility study. The study carries an internally mandated 10-day deadline and results in a quote provided directly to the CLEC. The CPMC interfaces with the Engineering Central Office, which manages the installation and construction phase. The build stage lasts between 45-90 days, depending on the contract between Qwest and the CLEC, in all states except Utah. In Utah, the state PSC mandates a 45-day period. The Technical Selection Group maintains a list of approved products and decides if the CLEC s office equipment meets NEBS (Network Equipment Building System) requirements.

Infrastructure

DS1/3 loops for customers are ordered by CLECs via a Local Service Request (LSR), unless they are UDIT (Unbundled Digital Interoffice Transport) or EEL (Extended Enhanced Loop), which are then ordered via Access Service Request (ASR). A CLEC orders switched trunks and interoffice facilities via the ASR process throughout the Qwest footprint. The CLEC sends an ASR via TELIS or NDM (Network Data Manager) to EXACT, a system located in Omaha, to process the request. EXACT transmits them to one of three business offices (Des Moines, Salt Lake City, Minneapolis), depending on the CLEC.

The CLEC can also fax requests to one of three Business Offices (Des Moines, Salt Lake City, Minneapolis), dependent upon which customer submits the request. The OSS application software platforms used for provisioning in each of the three regions include:

[illegible]

- FACS (Facility Assignment and Control System)
- LMOS (Loop Management and Operations System)
- WFA (Work Force Administration)
- TIRKS (Trunk Inventory Record Keeping System)
- Facility Check
- PREMIS [4] (Premises Information System) software

FACS is located in Omaha for the East region and in Salt Lake City for the West and Central region. LMOS, WFA and TIRKS are located in Omaha for the East region, Salt Lake City for the Central region, and Bellevue for the West region. Facility Check is located in Omaha, Denver and Salt Lake City with each location serving all regions. The PREMIS system, the TN database, is located in Omaha for the East region and Albuquerque for the West and Central regions. This will continue after PREMIS transitions to the new Customer Number system (CNUM).

Wholesale Provisioning

To submit an order, a CLEC generates a service order activation (SOA) through the facilities portion of Qwest s Interconnect Mediated Access system (IMA/FTS) or the ISC (Interconnect Service Center). The order is subsequently processed through one of three Service Order Processor (SOP) systems, depending on which region the CLEC s customer is located: the East region uses SOLAR, the Central uses SOPAD, and the West uses RSOLAR. The three SOPs package data in a consistent manner so that product requests appear similarly across the Qwest footprint. These requests are distributed to Service Order Analysis Centers depending on the product to be provisioned. Requests that require design services go to SOAC-C (Service Order Analysis Center-Controller), POTS (plain old telephone service) requests go to SOAC-A (assigner), and other product requests go to the appropriate systems (e.g., voicemail request goes to VENUS). There are five Design Service Centers (DSCs). The one in Des Moines supports UNE-Loop provisioning activities. This DSC and four other DSCs (located in Minneapolis, Littleton, Salt Lake City, and Seattle), also support resale and UNE-P. They all perform similar functions.

2.2.2.2 Data Sources

The data collection performed for this assessment relied on interviews with Qwest and CLEC representatives and reviews of documents supplied by Qwest. The interviews and documents are itemized in the tables below.

[4] PREMIS (Premises Information System), which will be replaced by CNUM (Customer Number), is the telephone number (TN) and address database.

Table 2.2.2.2.1: Qwest Interviews for Provisioning Assessment

Document Number	Document Name	File Name	Source
Q-1	Provisioning Transaction Processing and Coordination	Provisioning Transaction Processing and Coordination.doc	KPMG Consulting
Q-2	Network Design-Collocation	Network Design-Collocation.doc	KPMG Consulting
Q-3	Provisioning Process Parity	Provisioning Process Parity.doc	KPMG Consulting
Q-4	Provisioning Infrastructure	Provisioning Infrastructure.doc	KPMG Consulting
Q-5	Switched Trunks, Interoffice Facilities and ASRs	ASR&IOF&ST.doc	KPMG Consulting

Table 2.2.2.2.2: Qwest Data Sources for Provisioning Assessment

Document Number	Document	File Name	Source
E-1	Interconnection Unbundled Loop (R27)	hard copy	Qwest
E-2	Interconnection and Collocation for Transport and Switched Unbundled Network Elements and Finished Services (R27)	hard copy	Qwest
I-1	Unbundled Loop for OPE (R8)	hard copy	Qwest
I-2	Unbundled Loop CCT MT Job Aid (R21)	hard copy	Qwest
I-3	Unbundled Loop COT Job Aid (R10)	hard copy	Qwest
I-4	Unbundled Loop DS I&M Technician Job Aid (R11)	hard copy	Qwest
I-5	Unbundled Loop M&Ps(R7)	hard copy	Qwest
I-6	72-Hour Pre-Survey (R7)	hard copy	Qwest
I-7	OP-13 Coordinated Cuts on Time (R7)	hard copy	Qwest
I-8	Unbundled Loop CCT D Job Aid (R7)	hard copy	Qwest
I-9	Unbundled Switch Elements (R17)	hard copy	Qwest
I-10	Unbundled Dedicated Interoffice Transport-Technical Publication (R17)	hard copy	Qwest
I-11	Unbundled Dark Fiber (R17)	hard copy	Qwest
I-12	Line Sharing All States Network (R27)	hard copy	Qwest
I-13	Line Sharing for OPE M&Ps (R27)	hard copy	Qwest
I-14	Shared Loop M&Ps (R27)	hard copy	Qwest
I-15	Local Number Portability (R7)	hard copy	Qwest

Document Number	Document	File Name	Source
I-16	LNP Port-In Held Order Process (R7)	hard copy	Qwest
I-17	LNP All States Network (R7)	hard copy	Qwest
I-18	LRAC Two-Wire Analog Unbundled Loop Process (R11)	hard copy	Qwest
I-19	Two-Wire Analog Unbundled Loop Provisioning & Repair (R11)	hard copy	Qwest

Table 2.2.2.2.3: CLEC Interviews for Provisioning Assessment

Document Number	Document	File Name	Source
C-1	McLeodUSA Communications	McLeod Provisioning Interview Summary.doc	KPMG Consulting

There were no CLEC data sources provided for the Provisioning assessment.

2.2.2.3 Assessment Method

Interviews with Qwest personnel were conducted in Denver, Colorado, and included a telephone bridge for offsite participants. An interview was also conducted with McLeodUSA via conference bridge to discuss regional differences in the Qwest provisioning process from a CLEC's perspective. Additional data was gathered through reviews of documentation provided by Qwest on the regional assessment interview topics.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.2.3 Results

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.2.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1.0 Provisioning Transaction Processing			
1.1	The end-to-end process for provisioning transactions is consistent across all jurisdictions and regions.	No	Based on interviews, while the provisioning processes vary by product and are processed in three different SOPs, Qwest processes for those products are consistent across the Qwest footprint. The AIN (Advanced Intelligent Network) Lab is responsible for the creation, release and reconciliation of all NPAC subscription records. Hot cut intervals are not consistent across the Qwest footprint. All states now have LNP, but Oregon and Idaho have a limited number of switches that are not LNP capable and must use INP.
1.2	The systems used for provisioning transactions are consistent across all jurisdictions and regions.	No	As stated in the TRD, Section 6, the three regions use different SOPs. Internal service orders distributed from each SOP are consistent across the three regions according to the product request being processed. Error messages produced by the three SOPs, however, are not consistent. There are several systems used for provisioning: FACS, LMOS, WFA, TIRKS, and Facility Check. Each of these applications function independently in each region. In part of southwestern Washington, Qwest uses WFA-DI instead of WFA-DO to convey orders for DS1/3 High-Capacity Circuits to outside plant field forces.
1.3	Internal documentation used to complete provisioning transactions is consistent across all jurisdictions and regions.	Yes	Per Qwest interviews and document reviews of material listed in Table 2.2.2.2.2 (Qwest Data Sources for Provisioning Assessment), Qwest documentation is consistent across the Qwest footprint.
1.4	Documentation publicly available to the CLECs used to complete provisioning transactions is consistent across all jurisdictions and regions.	Yes	Based on interviews and documents publicly available to the CLECs at http://www.uswest.com/wholesale/guide.html, CLEC provisioning documentation is consistent across the Qwest footprint.
2.0 Provisioning Infrastructure			
2.1	Provisioning system architecture is consistent across all jurisdictions and regions.	Inconclusive	Based on interviews, provisioning varies depending on the product. Additionally, in some cases there are variances within a product. One example is the ordering of switched trunks and interoffice facilities which can be ordered via fax, TELIS or NDM. Another example is the ordering of DS1/3 loops which are ordered with an LSR, unless they are UDIT or EEL, which are ordered using an ASR. The LSS[5] (Listing Service System) software platform for the three regions are identical, but function independently within each region. This will continue after Qwest completes their migration to a new OSS application system called Customer Listing Data Service. The PREMIS software platforms for the three regions

[5] LSS (Listing Service System), which will be replaced by CLDS (Customer Listing Data Service), is the database used for both directory listing (DL) and directory assistance (DA).

Assessment Number	Assessment Criteria	Result	Comments
			are identical, but the East region functions independently of the West and Central regions. This situation will continue after Qwest completes their migration to a new OSS application system called CNUM.
3.3	Organizations supporting Provisioning activities are consistent across all jurisdictions and regions.	Yes	One DSC (Design Service Center) in Des Moines, supports UNE-Loop provisioning activities. This DSC and four separate DSCs (located in Minneapolis, Littleton, Salt Lake City, and Seattle) also support resale and UNE-P and perform consistent processes. Workload for non-UNE Loop is assigned to the DSCs primarily according to geography, with certain exceptions. IOF requests are handled in all five DSCs.
3.0 Provisioning Coordination			
3.1	The end-to-end processes for coordinated provisioning installations are consistent across all jurisdictions and regions.	Yes	One DSC, located in Des Moines, handles all coordinated provisioning installations for UNE-Loop transactions.
3.2	Testing equipment used for coordinated provisioning installations is consistent across all jurisdictions and regions.	Yes	Per Qwest documentation, specific equipment is used consistently across regions for groups of products: For UNE services on copper wires: the 965 DSP is the latest Qwest footprint-wide issued testing equipment. For dark fiber: the TTC 310 package 1, Wandel & Goltermann MK-4 for the Central Office, and the Siecor field fiber test set for outside fiber technicians.
3.3	Internal documentation used to complete coordinated provisioning installations is consistent across all jurisdictions and regions.	Yes	Based on interviews and document reviews of material listed in Table 2.2.2.2.2 (Qwest Data Sources for Provisioning Assessment), Qwest internal documentation for coordinated provisioning installations is consistent across the Qwest footprint.
3.4	Documentation publicly available to the CLECs used to complete coordinated provisioning installations is consistent across all jurisdictions and regions.	Yes	Based on interviews and document reviews of documents available to CLECs at http://www.uswest.com/wholesale/guide.html, Qwest CLEC provisioning documentation for coordinated provisioning installations is consistent across the Qwest footprint.
4.0 Network Design/Collocation			
4.1	The end-to-end processes for provisioning CLEC network design/collocation requests are consistent across all jurisdictions and regions.	Yes	Per Qwest interviews, each of the three groups involved in network design/collocation process performs their respective activities in consistent manner across the Qwest footprint. The three groups are the CPMC, the Engineering group and the Technical Selection Group.
4.2	The systems deployed for provisioning CLEC network design/collocation requests are consistent across all jurisdictions and regions.	Yes	Each of the three groups in network design/collocation use a different system. However, these systems are used consistently across the entire Qwest footprint.
4.3	Internal documentation used to complete provisioning for CLEC network design/ collocation requests is consistent across all jurisdictions and regions.	Yes	Based on interviews and document reviews of material listed in Table 2.2.2.2.2 Qwest Data Sources for Provisioning Assessment, Qwest internal documentation for network design/collocation is consistent across the Qwest footprint.

Assessment Number	Assessment Criteria	Result	Comments
3.4	Documentation publicly available to the CLECs used to complete provisioning for CLEC network design collocation requests is consistent across all jurisdictions and regions.	Yes	Based on interviews and document reviews of documents available to CLECs at http://www.uswest.com/wholesale/guide.html, Qwest CLEC network design/collocation documentation is consistent across the Qwest footprint.

2.2.4 *Results Summary*

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.2.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Provisioning Transaction Processing		X		X		
Provisioning Infrastructure Organization	X			X		
Provisioning Coordination	X					X
Network Design/Collocation	X					X
Provisioning Infrastructure Architecture			X	X		

3.0 Overview and Scope

3.1 Purpose

The purpose of this section is to provide a description of the review process, and other activities associated with Qwest's support of Unbundled Network Element (UNE) and Resale customers and CLECs. The purpose of the overview is to review functionality and activities of the systems that are supporting the operational gaps in parallel systems and processes in the wholesale environment.

Qwest is sending out and will provide additional documentation related to functionality gaps and related processes with Qwest and CLEC representatives in order to close the gaps in order for the processes

3.2 Methodology

The methodology section provides information on the source of data used in the assessment and evaluation of overall findings

3.2.1 Systems Gap Description

The type of calls that a CLEC customer or CLEC in the Qwest footprint. There are two interfaces to CLEC's that Qwest provides today. The first interface is the Interconnect Mediated Access (IMA) and is called Customer Local Exchange Interface. CLEC's also have the option of using Qwest to provide Wireless Dealer Portable Administration interface. Both of these interfaces connect to provide WIMA (Wireless Access System), the engine that generates the trouble tickets in the Qwest Wireless Operating System and WFA/C (Work Force Administration – Dispatch) that is used by Qwest's Wireless Technicians. Both WIMA and WFA/C processes problems with Qwest's

When a CLEC customer has issues with Qwest personnel, they can call a toll free number for the Qwest Wholesale Service Center. The center serves all of Qwest's 13 states. The AMSC representatives begin to begin their process with the creation of non-designed loop trouble tickets. The tickets are then forwarded out to the LMOS front end. A parallel interface, called the Qwest designed loop trouble ticket that are sent to the WFA/C front end. These types of tickets are the most complex and number of calls from CLEC's regarding these are the tickets with the vast majority of CLEC wholesale trouble calls are made into the center

The AMSC center also receives calls from Qwest personnel. Qwest has two internal systems that are used to create trouble tickets and records and one system for document notification and Qwest Dex's maintenance. The Wholesale Service Delivery Process Toolkit (Process Toolkit) is a Qwest process system and guidelines for publication of all documents for non-[illegible] and is the system that users to create tickets to begin service. The MCC is the system that Qwest uses to change to the documentation and ensures that the necessary updates are made. Qwest's Service Center and maintenance centers, known as Center [illegible] are followed to ensure that the methods and procedures practiced adhere to those set forth in the process

The repair ticket flow from the CLEC to the Qwest legacy systems is depicted in the following chart

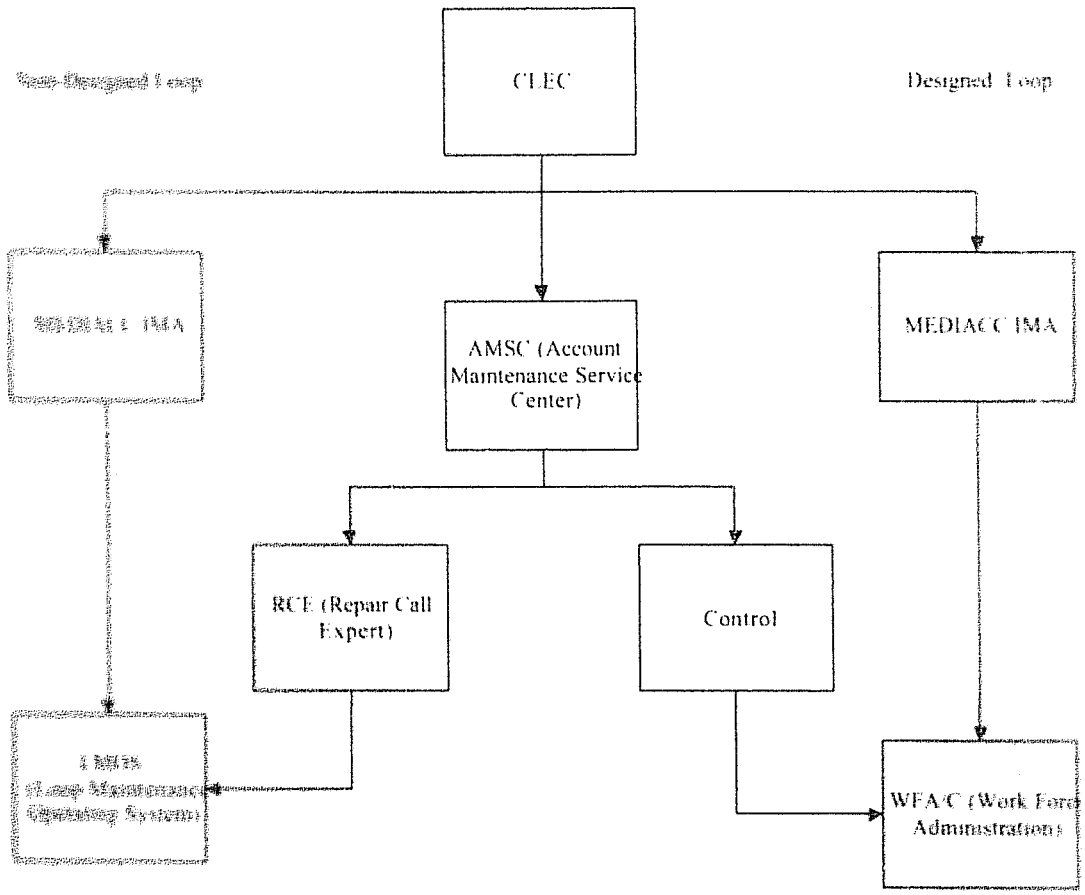

Chart 2.3.2.1.1. Qwest Legacy System Process Flow

2.3.2.2 Data Sources

The data collection performed for this assessment relied on interviews with Qwest and CLEC representatives and reviews of documents supplied by Qwest. The interviews and documents are detailed in the tables below.

Table 2.3.2.2.1: Qwest Interviews for Maintenance and Repair Assessment

Document Number	Document Name	File Name	Source
[illegible]	Qwest M&R Capacity Management Interview Summary	Final M&R Capacity Management Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Coordination Interview Summary	Final M&R Coordination Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Documentation Interview Summary	Final M&R Documentation Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Network Surveillance Interview Summary	Final M&R Network Surveillance Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Processing Interview Summary	Final M&R Processing Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Support Center Review Interview Summary	Final M&R Support Center Interview Summary.doc	KPMG Consulting
[illegible]	Qwest M&R Infrastructure Interview Summary	Final Provisioning and M&R Infrastructure Interview Summary.doc	KPMG Consulting

Table 2.3.2.2.2.: Qwest Data Sources for Maintenance and Repair Assessment

Document Number	Document	File Name	Source
[illegible]	Repair Ticket Flow	hard copy	Qwest
[illegible]	Joint Meet Process Description/ Flow	hard copy	Qwest
[illegible]	Maintenance & Repair: External Documentation Available for use by CLECs	hard copy	Qwest
[illegible]	Unbundled Loop Maintenance Flow	hard copy	Qwest
[illegible]	Multi Channel Communicator Problem or Error	hard copy	Qwest
[illegible]	IMA User s Guide	hard copy	Qwest

Table 2.3.2.2.3: CLEC Interviews for Maintenance and Repair Assessment

Document Number	Document	File Name	Source
[illegible]	Qwest McLeod Interview Summary	Qwest McLeod Interview Summary.doc	KPMG Consulting

There were no CLEC data sources provided for the M&R assessment.

2.3.2.3 Assessment Method

Interviews with Qwest personnel were conducted in Denver, Colorado and included a conference bridge for offsite participants. In addition, KPMG Consulting conducted an interview with McLeodUSA. The goal of this interview was to gather information on Qwest s M&R networks, systems, and methods to determine if they were consistent throughout the operating footprint. Additional data was gathered through reviews of documentation provided by Qwest on M&R Capacity Management, M&R

Coordination, M&R Documentation, M&R Network Surveillance, M&R Processing, M&R Support Center Review, and M&R Infrastructure.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.3.3 Results

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.3.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1.0 Maintenance and Repair Processing			
1.1	The end-to-end CLEC trouble ticket process is consistent across all jurisdictions and regions.	Yes	Interviews with Qwest personnel and document reviews revealed that trouble tickets are processed in a consistent manner across the Qwest footprint. This includes collection of trouble reports from CLECs via IMA or EB-TA, and the creation and processing of trouble tickets within Qwest (via LMOS for non-designed and or WFA/C for designed loops).
1.2	The systems deployed for supporting CLEC M&R processes are consistent across all jurisdictions and regions.	Yes	Although CLECs have a choice between IMA and EB-TA for entering trouble tickets, each of these systems is consistent throughout the Qwest footprint.
1.3	Internal documentation used to complete CLEC M&R processes is consistent across all jurisdictions and regions.	Yes	Per Qwest interviews, Qwest described the standard processes and systems for creating and distributing documentation across the Qwest footprint (InfoBuddy, Canyon6 and MCC). These systems are used for all internal documentation, including their internal web.
1.4	Documentation publicly available to CLECs for M&R processes is consistent across all jurisdictions and regions.	Yes	Based on interviews, document reviews, and documentation for CLECs regarding the use of the wholesale trouble reporting systems is consistent across the Qwest footprint. CLECs access Qwest Wholesale Markets web site (www.uswest.com/wholesale/guide.html) on policies, procedures, systems, and emergency procedures. Additional data on training, use, and access to these systems can be found on a checklist provided to all CLECs. This website covers the entire Qwest footprint.
2.0 Maintenance and Repair Support Center Review			

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Assessment Number	Assessment Criteria	Result	Comments
2.1	M&R CLEC Help Desk resource management is consistent across all jurisdictions and regions.	No	M&R Help Desk resource management is not administered consistently throughout the Qwest footprint. The Account Maintenance Service Center (AMSC) located in Denver is the primary support center available to CLECs throughout the 13 Qwest states. The Repair Call Help Center (RCHC) accepts a small volume of calls from CLECs for Resale IFR and IFB services only. The RCHC role is being transitioned to the AMSC in a phased approach, but no target date for completion was given.
2.2	M&R CLEC Help Desk processes are consistent across all jurisdictions and regions.	Yes	During interviews with Qwest personnel, Qwest representatives identified that Repair Service Technicians are trained to handle both wholesale and resale customer troubles. CLEC calls are delivered to the first available repair service technician for processing.
2.5	Internal Method and Procedure documentation used by M&R Help Desk personnel is consistent across all jurisdictions and regions	Yes	Qwest representatives stated during interviews that their internal documentation is web-based and can be found in InfoBuddy. InfoBuddy contains templates and requirements found in the Wholesale Service Delivery Process Toolkit (Process Toolkit). Canyon6 is the parallel system for design services documentation. The Multi-Channel Communicator (MCC) is used to inform personnel of changes to the documentation and ensure that the necessary updates are made electronically. One centralized staff group controls document content and electronic posting and updates.
2.6	Documentation publicly available to CLECs interfacing with M&R Help Desks is consistent across all jurisdictions and regions.	Yes	Qwest representatives stated during interviews that their external documentation is web-based. Information on training or the use of systems is available electronically through a Wholesale Markets web-site (www.uswest.com/wholesale/guide.html). This site also contains information on policies, products, systems, and emergencies. In addition, there is a checklist provided to all new CLECs with consistent information. The Account Managers are responsible for training the CLECs on the use of IMA and MEDIACC, as well as providing contact information for the AMSC and doing some root cause analysis on troubles.
3.0 Maintenance and Repair Infrastructure			
3.1	M&R system architecture is consistent across all jurisdictions and regions.	Yes	Review of Qwest documentation and interviews with Qwest personnel revealed that there are two interfaces for CLECs to create their own trouble tickets. These are the Interconnect Mediated Access (IMA) and the EB-TA (Electronic Bonding Trouble Administration). MEDIACC (Mediated Access System) is the engine that generates tickets through LMOS (Loop Maintenance Operating System) and WFA/C (Work Force Administration/Control).
3.3	Organizations supporting M&R activities are consistent across all jurisdictions and regions.	No	The AMSC in Denver is the primary center in the Qwest region for CLEC wholesale or resale trouble resolution. Qwest indicated through the interview process that the RCHC also handles a small volume of calls for IFR/IFB Resale. The RCHC s involvement with the trouble administration reporting for IFR/IFB Resale is not handled consistently across the footprint. Qwest is currently transitioning these responsibilities to the AMSC, but no completion date was given.

Assessment Number	Assessment Criteria	Result	Comments
			Qwest also has five Design Service Centers (DSCs) that handle design services within the footprint. All of these centers are subject to consistent methods and procedures, which can be found in Canyon6
4.0 Maintenance and Repair Documentation			
4.1	M&R document development, publication and distribution of materials made publicly available to CLECs is consistent across all jurisdictions and regions	Yes	Each specialization group creates their own documentation based on templates and guidelines found in the Wholesale Service Delivery Process Toolkit (Process Toolkit), in InfoBuddy, or the Canyon6 toolkit, for design services. Information on policies, products, systems and emergencies is available to CLECs on the Qwest Wholesale Markets (www.uswest.com/wholesale/guide.html) website
4.2	M&R document development, publication and distribution of materials for Qwest internal documents is consistent across all jurisdictions and regions.	Yes	The Process Toolkit in InfoBuddy ensures uniformity of documentation through publication rules and templates. The MCC electronically notifies the appropriate personnel of changes and updates the information found on Qwest's web site. There is only one web site for the entire region.
5.0 Capacity Management			
5.1	The end-to-end process for M&R work center capacity management is consistent across all jurisdictions and regions.	Yes	The M&R work center end-to-end capacity management process is administered consistently throughout Qwest's footprint by both the AMSC and RCHC centers
5.2	The systems deployed for supporting M&R work center capacity management are consistent across all jurisdictions and regions.	Yes	The tools used to ensure proper use of resources within the AMSC and RCHC are the Management Information System (MIS), for queue management and notification of a call backlog, and an Automatic Call Distributor (ACD) for call answering.
5.3	Internal documentation used to complete M&R work center capacity management processes is consistent across all jurisdictions and regions.	Yes	Internal documentation utilized by both the AMSC and RCHC to complete M&R work center capacity management is consistent throughout Qwest's footprint
6.0 Network Surveillance			
6.0	The end-to-end process for M&R work center network surveillance is consistent across all jurisdictions and regions.	Yes	Qwest depends on its five Design Service Centers (DSCs) to conduct network surveillance. The five DSC's also adhere to consistent internal Method and Procedure documents found in Canyon6. All personnel in the DSC's attend consistent new employee training courses
6.1	The systems deployed for supporting M&R work center network surveillance is consistent across all jurisdictions and regions.	Yes	Qwest representatives identified during interviews that there is a single application to provide surveillance of the designed transport products: Network Manager Access (NMA).
6.3	Internal documentation used to complete M&R work center network surveillance is consistent across all jurisdictions and regions	Yes	There is only one set of web-based documents across the Qwest footprint. Internal documentation can be found in InfoBuddy, which also provides the documentation templates. The MCC electronically updates the documentation to ensure that it is consistent across the operating region

Assessment Number	Assessment Criteria	Result	Comments
6.4	M&R work center disaster planning is consistent across all jurisdictions and regions.	Yes	There is only one disaster plan for the entire Qwest footprint. It can be found on Qwest's Disaster Preparedness & National Security Home Page (http://saw31.NROC.DR) and the center can be reached via a single toll-free number (1-800-[illegible]).
7.0 M&R Coordination			
7.1	The end-to-end process for M&R wholesale coordinated/joint meetings (vendor meet) is consistent across all jurisdictions and regions.	Inconclusive	During interviews, Qwest representatives stated that the methods and procedures for coordinated joint meets (for both designed and non-designed loops) are being gathered to create a standard set of processes for interaction with CLECs.
7.2	The systems deployed for supporting M&R wholesale coordinated/joint meetings (vendor meet) are consistent across all jurisdictions and regions.	Inconclusive	During interviews, Qwest representatives stated that the methods and procedures for coordinated joint meets (for both designed and non-designed) are being redesigned. Therefore, no standard systems are defined.
7.3	Internal documentation used to address procedures for wholesale coordinated/joint meetings (vendor meet) are consistent across all jurisdictions and regions.	Inconclusive	During interviews, Qwest representatives stated that the methods and procedures for coordinated joint meets (for both designed and non-designed) are being redesigned, so no standard set of Qwest internal documentation exists.
7.4	Documentation publicly available to CLECs detailing procedures for wholesale coordinated/joint meetings (vendor meets) is consistent across all jurisdictions and regions.	Inconclusive	During interviews, Qwest representatives stated that the methods and procedures for coordinated joint meets (for both designed and non-designed) are being redesigned, so no standard set of Qwest wide documentation exists.

2.3.4 *Results Summary*

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.3.4.1: Results Summary Table

	Hypothesis			*TRD, Section 4*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Maintenance and Repair Processing	X			X		
Maintenance and Repair Support Center Review	X					X
Maintenance and Repair Infrastructure*	X			X		
Maintenance and Repair Documentation*	X					X
Capacity Management	X					X
Network Surveillance	X					X
M&R Coordination			X			X

*Due to the small volume of CLEC calls addressed by the RCHC, and the fact that Qwest has plans to close the LHC, combined with the fact, KMPG Consulting did not reject the null hypothesis

2.4 Billing

2.4.1 Description

The Billing domain is comprised of the systems, processes and other operational elements associated with Qwest s support for Wholesale billing. The purpose of the assessment was to assess functionality and performance in order to provide a basis for comparing the operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC provided documentation related to billing activities and conducted interviews with key Qwest and participating CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.4.2 Methodology

This section provides a business process description, lists the source of data used in the evaluation, and summarizes the assessment methodology.

2.4.2.1 Business Process Description

One of the remaining legacies of the original merger that created U S WEST is the continuing use of three Customer Record Information Systems (CRIS). These billing systems, which are used for billing retail, resale, and in the Qwest territory, most of the UNE products, are customized and operated separately in the Western, Central and Eastern regions.

The Integrated Access Billing System (IABS) is another billing system used in the billing of some products. It was developed after the merger and is standard across all states.

CRIS Billing Systems

The CRIS systems receive the Service Order information from Service Order Processing Systems (SOPs). Once this information is available, the Universal Service Order Code (USOC) is rated and the customer account is updated. An updated Customer Service Record (CSR) is issued and made available to the CLEC. This CSR summarizes all services, equipment and features ordered by an end user.

The usage events are first collected at the switch in Automatic Message Accounting (AMA) format and sent to the Message Processing System. The messages are identified, formatted, rated and stored by Billing Telephone Number (BTN) until the bill period ends.

Daily Usage Feeds (DUFs) are produced out of the Message Processing System and sent to the CLEC daily as requested.

Bill calculations are performed in the CRIS system, including monthly recurring charges, usage charges, pro-rations, taxes, balance carry-forwards, and payment applications. The bill is then sent out in summary by media type (such as paper or CDROM).

IABS Billing System

The IABS system is used to bill specific interconnect, collocation, unbundled products and resale frame relay products. Service order processing, unlike the CRIS process, is initiated with an Access Service Request (ASR). In CRIS, the service order process is initiated with a Local Service Request (LSR).

The IABS system receives service order information daily. This information is used to update the customer account and to ensure usage is accurately guided. The CSR is updated in a Billing CSR and the USOC's are rated on the bill date.

Usage events are collected through the CRIS systems using a similar process, then forwarded to the IABS system for editing, formatting, and storage until the bill period ends.

On the bill date, IABS performs the bill calculations which include calculating charges, taxes (or tax exemptions), adjustments, payments, and credits. The file, along with the Billing CSR, is formatted and sent to the CLEC in the requested medium.

2.4.2.2 Data Sources

The data collection performed for this assessment relied on interviews with Qwest and participating CLEC representatives and reviews of documents supplied by Qwest and the CLECs. The interviews and documents are itemized in the tables below.

Table 2.4.2.2.1: Qwest Interviews for Billing Assessment

Document Number	Document Name	File Name	Source
Q-1	Carrier Bill Processing	8-22 Carrier Bill Interview Summary_Final.doc 8-22 Carrier Bill Interview Summary comments.doc	KPMG Consulting
Q-2	Daily Usage Feed (DUF)	8-22 DUF Interview Summary_Final.doc 8-22 DUF Interview Summary comments.doc	KPMG Consulting

Table 2.4.2.2.2: Qwest Data Sources for Billing Assessment

Document Number	Document	File Name	Source
Q-4	Carrier Bill Processing Business Rules	e-mail	Qwest
Q-5	Usage Processing Business Rules	e-mail	Qwest
Q-7	Qwest internal training material for billing (including DUF)	CD-ROM	Qwest
Q-8	CLEC Training Material for Billing (including DUF)	CLEC Billing and Usage Guide http://www.uswest.com/wholesale/productServices/irrg/TABL1-0.html	Qwest

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Document Number	Document	File Name	Source
[illegible]	Qwest Internal Procedures for Usage Processing, carrier Bill Processing, Billing Change Management, and systems and infrastructure	Summary Bill Trouble Shooting Procedures CRIS-IABS Wholesale Summary Billing validation (Resale) Wholesale Usage Production Support Process Wholesale (hard copy)	Qwest
[illegible]	Examples of bills from different states regions	two Adobe portable documents	Qwest
[illegible]	Examples of DUF files from different states regions	hard copy	Qwest
[illegible]	EMI Specification versions used by different states regions	e-mail attachment	Qwest
[illegible]	Business rules for automated recycling of usage due to errors	e-mail attachment	Qwest
[illegible]	Business rules for aging records	Central MCR c990908-06	Qwest
[illegible]	Usage return process rules	Co-Carrier Usage Return	Qwest
[illegible]	Examples of completion notices from the three regions	http://uswest.com:80/wholesale/productsServices/irrg/billUsage.html	Qwest

Table 2.4.2.2.3: CLEC Interviews for Billing Assessment

Document Number	Document	File Name	Source
[illegible]	McLeodUSA Interview	9-08 McLeodUSA Billing Interview Summary_Final.doc	KPMG Consulting
[illegible]	WorldCom difference assessment e-mail	RE: CLEC Interview Topics (E-mail)	WorldCom

Table 2.4.2.2.4: CLEC Data Sources for Billing Assessment

Document Number	Document	File Name	Source
[illegible]	Examples of CSRs from the three regions	hard copy	McLeod USA
[illegible]	Examples of invoices from the three regions	hard copy	McLeod USA

2.4.2.3 Assessment Method

Qwest interviews were conducted in Denver, Colorado and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on usage processing, carrier bill processing, billing change management, and systems and infrastructure. Further data was gathered through reviews of documentation provided by Qwest. In addition, an interview was conducted with McLeodUSA via a conference bridge. The purpose of this interview was to obtain information on a CLEC's perceptions of the differences that might exist in the billing systems and processes between

[illegible] Qwest Corporation and the Regional Oversight Committee

Qwest's three regions. Further data was gathered through reviews of documentation provided by the CLEC.

In addition, Arbinet participated in the assessment through a written report.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.4.3 Results

The section describes the assessment criteria and the results. Each assessment criterion is given one of the three following results.

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.4.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
2.4	Usage Processing (Resale and UNE-P)		
1	The DUF production and distribution Process is consistent across regions	No	According to the information provided during the DUF Interview as well as the process descriptions available in the CLEC Billing and Usage Documentation, usage events are produced by each switch, collected by the message processing systems (one per region), rated then formatted in each CRIS system (one per region). Therefore, even though the process is similar across regions, the actual production of DUF may vary from region to region because of the different systems used.
2	The message processing systems are consistent across regions.	No	According to the information provided during the DUF Interview, there are three distinct message processing systems in each region. AMDOCS (PP42) is the standard message processing front-end deployed in each region. The systems are maintained by three different groups.
3	Exchange Message Interface (EMI) specifications and Qwest variations are consistent across regions	No	According to the information provided during the DUF Interview, EMI translation is done in each region, and the processes are maintained separately. EMI standards are consistent across the Western and Central regions but not in the Eastern Region. The example that was given during the DUF interview is the following: all five states in the Eastern Region send two records for operator handled local measured calls and Directory Assistance (100132 and 100131 records sent) due to the tariffs. The other regions only send one.

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Assessment Number	Assessment Criteria	Result	Comments
[illegible]	DUF-specific business rules are consistent across regions	Yes	Rated and unrated rules are consistent throughout all regions; there is no user specificity involved. As mentioned during the DUF interview, usage ownership issues are materially similar across all three regions. DUF transmissions are similar across all regions. Qwest believes that no usage files are sent unless there was usage on that day. KPMG Consulting was not able to verify this information during the timeframe of the assessment.
[illegible]	Similar Qwest organizations are involved in the process across regions	Yes	According to the DUF Interview, similar organizations with central management are involved in the DUF process. Usage return process rules are consistent across the three regions. The DUF file must be returned via NDM in the EMI format with an EMI return reason code. Billed usage disputes are also handled in writing via e-mail or fax. Usage returns and disputes are similar across regions.
[illegible]	The operator services switch variations are consistent across regions.	Inconclusive	According to the information provided during the DUF Interview, both Traffic Operator Position System (TOPS) and Operator Service Position System (OSPS) operator switches are used across all regions. Qwest believes the DUFs for operator-handled calls are consistent between the two switches. KPMG Consulting was not able to verify this information during the timeframe of the assessment, and therefore it was not possible to draw a conclusion.
2.0	**Carrier Bill Processing**		
[illegible]	The bill production business rules are consistent across regions.	Inconclusive	Based on both Qwest and CLEC interviews, bill calculations are consistent across the Qwest territory. On the other hand, discounts (both rates and discountable charges) are state-specific, and bill formats will vary from one region to another (possibly by state). As a result it was not possible for KPMG Consulting to draw a conclusion as to the consistency of bill production business rules across regions.
[illegible]	The process for establishing rates is consistent across each state.	No	Local regulatory requirements create differences between states and/or regions. In addition, based on the information provided during the Bill Validation interview, rates for resale services are established through tariffs. For UNE products, some states have published tariffs, while most require interconnection agreements.
[illegible]	Resale and UNE bills provide consistent content across regions.	No	Rates are state specific and driven by individual tariffs and/or interconnection agreements. In addition, business rules on rate applications are jurisdictionally driven. While according to the Bill Validation Interview, the three CRIS systems have been standardized to fit company-wide requirements, systems specifications and rate table maintenance may vary from region to region.

Assessment Number	Assessment Criteria	Result	Comments
3.4	The bill production process is consistent across regions.	No	Based on information provided during the interviews, IABS is a consistent system across all regions and therefore, the IABS bill production process is consistent across regions. The three CRIS systems follow similar business rules and the process steps are standard across the Qwest territory. On the other hand, the three CRIS systems initial programs were different as they pertained to three different companies. These differences are the basis for potential regional inconsistencies.
3.5	Training materials (internal and CLEC) are consistent across regions.	Yes	Interviews support that the company is organized by product line, media and systems rather than by regions. As a result, training materials are similar across regions. Potential regional differences are highlighted in the course of training.
4.0 Billing Change Management (for DUF, CRIS, IABS)			
4.2	The process for introducing a new product is consis tent across regions	Inconc lusive	According to the Qwest Interviews, time constraints and state-specific requirements impact the process and can differ across regions. Qwest believes procedures for introducing a new product are materially similar across the three regions, however, KPMG consulting was not able to draw a conclusion as to the consistency of the process to introduce a new product across regions.
4.3	The process for updating rates and tariffs is consistent across region.	No	According to the Qwest interviews, tariff updates are made through table releases, unless hard-coding is required. Although the process is similar across the three regions, the rates are updated in three different CRIS systems, which may induce regional differences. In addition to this systems difference, state disparities also introduce a level of inconsistencies as some states have tariffs while others require interconnection agreements.
4.5	The switch translation process is consistent across regions.	Yes	According to the information provided during the DUF Interview, the switch translation process (using AMDOCS(PP42) as a front-end) is similar across the three regions.
4.6	The management tools used to monitor the change management process are consistent across regions.	Inconc lusive	According to the Qwest interviews, most tools are system driven, and therefore vary by region. For those that impact the structure of the Billing Domain, the organizations are centralized around products rather than geographical criteria and therefore procedures are similar across the regions. Based on the above, KPMG Consulting was not able to draw a conclusion as to the consistency of the management tools across the regions.
4.0 Systems and Infrastructure (for Resale and UNE)			
4.1	The inputs and outputs of each system (CRIS, IABS, DUF) are consistent across regions.	No	Inputs and Outputs for CRIS, IABS and DUF are materially similar to the extent of the exceptions noted above. However, these exceptions provide a degree of inconsistency across regions.

Assessment Number	Assessment Criteria	Result	Comments
[illegible]	The exit point of the DUF from the Qwest system is consistent across regions.	Yes	CLEC ownership is determined for each record. CLEC-owned usage records are converted from an internal format to EMI and distributed on the DUF. According to the DUF Interview, this process is consistent across all three regions.
[illegible]	The CRIS systems upgrades and their functional impacts are consistent across regions.	Inconclusive	According to the Qwest interviews, the Company s policy is to release usage process upgrades and production fixes across the footprint on consistent day. If this is not possible, then all states in consistent region have consistent release day. Both the CRIS systems and the Message Processing Systems are different between regions. The releases and upgrades, which are system specific, are tailored to each system and therefore may vary from one region to the next, although the functionalities implemented will be similar.
[illegible]	The Bill Processing centers (systems and operational processes) are consistent across regions.	Yes	According to the information provided during the Qwest interviews, all three regions have consistent type of centers. Bill production is organized by media type, and bills for all regions are produced in one location. Customer Care is organized by customer accounts, for example, each CLEC has only one contact, regardless of its presence across multiple regions. Payment centers are organized by State, but can be centralized in order to meet the CLEC s payment process needs.
[illegible]	The products and media options are consistent across regions.	Inconclusive	It was not possible to draw a conclusion based on the interviews nor the documentation provided during the assessment process. DUF files are sent to the CLEC via NDM, FTP, Web access, tape, or cartridge. This is similar across the three regions. On the other hand, the network facilities and regulatory requirements have created State differences in some of the products offered through the Qwest territory.

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2.4.4 Results Summary

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.4.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Usage Processes (Resale and UNE) [1]	X					X
Service Bill Processes (CRIS and IABS)	X					X
CRIS Billing Systems		X		X		
IABS Billing Systems	X			X		
Usage Processing Systems [2]		X		X		

1 Qwest's BIN billing systems, which include both the bill production and distribution process and the Daily Usage Feed (DUF) process, are maintained and operated on a regional basis. These regional differences are the source of the inconsistencies and inconclusive statements identified through the analysis performed by KPMG Consulting.

Although these systems are different, Qwest has been streamlining and standardizing most of its processes across the regions, and most of the more significant differences that have been identified are now at a level where they are not critical to the general billing process. As a result, most of the processes identified above, although they are not consistent across regions, are considered materially similar across the footprint and the impact of the differences is insufficient to materially impact the running of the test. As a result, they are not material to warrant rejecting the null hypotheses.

2 Usage Processing System is a part of the CRIS systems, but is identified here for purposes of matching with the MTP sections and criteria sections above.

2.5 CLEC Relationship Management and Infrastructure

This section includes the following subtopics:

- Interface Development
- Account Management
- Change Management
- CLEC Training
- ISC Help Desk
- IMA Help Desk

2.5.1 Interface Development

2.5.1.1 Description

The Interface Development domain is comprised of the systems, processes, and other operational elements associated with Qwest s support for developing, publicizing, conducting, managing, and monitoring interface development or interface development support for CLECs. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC-provided documentation related to interface development and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.5.1.2 Methodology

This section provides a business process description, lists the sources of data used in the assessment, and summarizes the assessment methodology.

2.5.1.2.1 Business Process Description

Competitive Local Exchange Carriers (CLECs) may access Qwest s systems for Order, Pre-Order, Maintenance & Repair, and other services using the Qwest Intermediated Access (IMA) system. This system includes Electronic Data Interchange (EDI) interface and a Web Graphical User Interface (GUI). Maintenance & Repair can also be accessed through IMA or an Electronic Bonding Interface (EB-TA) developed by the CLEC. CLECs that intend to build an interface with Qwest are instructed to initiate their efforts through their Qwest Account Manager.

For EDI, a new entrant testing process is required of each CLEC who wishes to connect to Qwest via IMA-EDI for the first time. As part of this process, the CLEC develops and builds its interface based on Qwest s specifications. The new entrant CLEC will interface to the production environment in a testing mode.

When a CLEC wants to access the Qwest Web GUI, Qwest s initial preparation steps include providing access to training and documentation, as well as providing necessary security hardware and passwords.

CLEC's can also access the Maintenance and Trouble Administration functions through an Electronic Bonding Interface (EB-TA). EB-TA requires a CLEC interface process similar to the one for EDI including consistent steps.

2.5.1.2.2 *Data Sources*

The data collection performed for this assessment relied on interviews with Qwest and CLEC representatives and reviews of documents supplied by Qwest and the CLEC's. The interviews and documents are itemized in the tables below.

Table 2.5.1.2.2.1: Qwest Interviews for Interface Development Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Questions for Regional Assessment Test Interface	Interface Dev RDA.doc	KPMG Consulting
Q-2	Interview Summary for Interface EB-TA for Qwest	Interview Summary Qwest EB-TA.doc	KPMG Consulting
Q-3	Interview Summary for Interface EDI for Qwest	Interview Summary Qwest EDI. Doc	KPMG Consulting
Q-4	Interview Summary for Interface GUI for Qwest	Interview Summary Qwest GUI.doc	KPMG Consulting
Q-5	Interview Summary for Interface GUI Middleware	Interview Summary Qwest Middleware.doc	KPMG Consulting
Q-6	Interview Summary for Interface MEDIACC for Qwest	Interview Summary Qwest MEDIACC.doc	KPMG Consulting

Table 2.5.1.2.2.2: Qwest Data Sources for Interface Development Assessment

Document Number	Document Name	File Name	Source
E-1	Comments on Interview Summary for Interface EXACT	EXACT Interface Summary Qwest comments.doc	Qwest
E-2	Comments on Interview Summary for Interface MEDIACC	MEDIACC Interview Summary Qwest comments.doc	Qwest
E-3	Comments on Interview Summary for Interface EDI	EDI Interview Summary Qwest comments.doc	Qwest
E-4	Comments on EDI Interview Summary Qwest	EB-TA Interview Summary Qwest comments.doc	Qwest
E-5	Comments on GUI Interview Summary Qwest	GUI Training Qwest comments.doc	Qwest
I-1	Qwest House of Operation for Interface Testing	KPMG 62-209	Qwest
I-2	IMA Organizational Chart	Interconnect COE Organizational Chart.ppc	Qwest
I-3	IMA Middleware Legacy System Overview	Systems Diagram1.doc	Qwest
I-4	CLEC Facing Forecasting Documentation	KPMG 62-197 and 0900 Form Directions.xls	Qwest

There were no CLEC interviews or data sources provided for the Interface Development assessment.

2.5.1.2.3 Assessment Method

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on Qwest s interface development systems and processes. In addition, a CLEC interview was conducted via a conference bridge to gain a CLEC s perspective on perceived regional differences in Qwest s interface development systems and processes. Further data was gathered through reviews of documentation provided by Qwest.

Assessment criteria were established by KMPG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.1.3 Results

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.1.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	Qwest has a software/interface development methodology that addresses requirements and specifications definition, design, development, testing, and implementation, which is consistent across all Qwest Regions.	Yes	CLECs connect through the IMA interface for Pre-Order, Order, and Provisioning. A single methodology is used to connect to IMA, regardless of a CLEC's location or areas served. CLECs can use the IMA-GUI to connect to the Qwest Trouble Administration (TA) system or a CLEC can build its own Electronic Bonding interface to MEDIACC
2	Interface specifications, which define applicable business rules, data formats and definitions, and transmission protocols are made available to customers and are similar across the Qwest footprint.	Yes	IMA access information and Business Rules (Change) is not region specific and is available on the Qwest website. Data formats and transmission protocols are made available through the account establishment team after a CLEC has selected an interface method.
3	Responsibilities and procedures for developing and updating interface specification document(s) are defined and shared consistently across the Qwest footprint.	Yes	IMA information is not region specific. All information is updated by the internal Qwest IMA team

2.5.1.4 Results Summary

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table2.5.1.4: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Interface Development Process	X					X

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2.5.2 Account Management

2.5.2.1 Description

The Account Establishment and Management domain is comprised of the systems, processes, and other operational elements associated with Qwest s support for establishing and managing account relationships with CLECs who order Unbundled Network Elements (UNE) and Combinations and Resale services. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC-provided documentation related to account establishment and management and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.5.2.2 Methodology

This section provides a business description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.5.2.2.1 Business Process Description

The Qwest Account Management teams serve as the primary points of contact within Qwest for wholesale customers. Their responsibilities include introducing new CLECs to Qwest products and services, distributing appropriate documentation and contact lists, communicating routine notifications to customers, scheduling and leading network planning meetings, and interfacing with other Qwest units.

2.5.2.2.2 Data Sources

The data collection performed for this assessment relied on interviews and reviews of documents supplied by Qwest at the assessment manager s request. The interviews and documents are itemized in the tables below.

Table 2.5.2.2.2.1: Qwest Interviews for Account Management Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Summary for Qwest	Interview Summary Qwest Account Management.doc	KPMG Consulting

Table 2.5.2.2.2.2: Qwest Data Sources for Account Management Assessment

Document Number	Document Name	File Name	Source
E-1	Loss & Completion Report Samples and Report Delivery Options	KPMG 52-103 Sup 1 Att D.doc	Qwest
E-2	NDM Connectivity and Application DSNs	KPMG 52-103 Sup 1 Att E.doc	Qwest
E-3	Letter from Qwest to Trading Partner	KPMG 52-103 Sup 1 Att A.doc	Qwest
E-4	New Customer Questionnaire	Version 12 questionnaire.doc	Qwest

Document Number	Document Name	File Name	Source
I-1	Usage Feed Record Matrix	KPMG 52-103 Sup 1 Att B.doc	KPMG Consulting
I-2	Co-Carrier Usage Return	KPMG 52-103 Sup 1 Att C.doc	Qwest
I-3	Email regarding CLEC and Qwest disputes	Qwest/CLEC TUG-O-WAR round 1	Qwest
I-4	Account Establishment Job Descriptions	Version 12 questionnaire.doc	Qwest

Table 2.5.2.2.3: CLEC Interviews for Account Management Assessment

Document Number	Document	Document Name	Source
C-1	Interview Summary for McLeod	Interview Summary McLeod Acct.Mgmt..doc	KPMG

There were no CLEC data sources provided for the Account Management assessment.

2.5.2.2.3 *Assessment Method*

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on Qwest s account establishment and management systems, processes, and procedures. In addition, a CLEC interview was conducted via a conference bridge to gain a CLEC s perspective on perceived regional differences in Qwest s account establishment and management systems, processes, and procedures. Further data was gathered through reviews of documentation provided by Qwest.

Assessment criteria were established by KMPG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.2.3 *Results*

This section identifies the assessment criteria and results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.2.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	Account establishment and management responsibilities and activities are consistent across the entire Qwest footprint.	Yes	CLECs can access the Interconnect Resale and Resource Guide (IRRG) through the Qwest website. This guide provides A checklist of all steps the CLEC needs to Take to establish a relationship with Qwest. There are no differences in the account establishment process across the Qwest footprint. Account Management teams are divided into two type types of personnel: Account Managers who are responsible for maintaining every aspect of the CLEC relationship, and Service Managers who provide technical support to Account Managers. In the central region, Account Managers play both roles. In addition, some Account Managers specialize in specific products and are subject matter experts in that area. According to the Qwest personnel interviewed, account managers are regionally based. The information they provide is applicable across the Qwest footprint. Each Account Manager provides consistent type and standard of information to CLECs.
2	Procedures for receiving, managing and resolving customer inquiries are consistent across the entire Qwest footprint.	Yes	Per the interview, account managers are regionally based, but the processes and information they provide is applicable footprint wide.

2.5.2.4 Results Summary

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.5.2.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Account Management Process	X					X

2.5.3 Change Management

2.5.3.1 Description

Qwest s Co-Provider Industry Change Management Process (CICMP) is comprised of the systems, processes, and other operational elements associated with Qwest s support for managing changes to and change requests for OSS interfaces and business processes utilized by CLECs. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC-provided documentation related to change management and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.5.3.2 Methodology

This section provides a business description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.5.3.2.1 Business Process Description

The change management process provides the framework by which interested parties can communicate their desired changes, and through which Qwest is able to communicate subsequent alterations to its systems and processes. Change management policies assign changes into categories or types. The change management process governs all aspects of the CLEC/Qwest relationship. All changes to documentation, interfaces, business rules, and other functions are subject to time frames, tracking, logging and coding managed via the change management process.

2.5.3.2.2 Data Sources

The data collection performed for this assessment relied on interviews and reviews of documents supplied by Qwest at the assessment manager s request. The interviews and documents are itemized in the tables below.

Table 2.5.3.2.2.1: Qwest Interviews for Change Management Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Questions for Regional Assessment Test-Change Management	Change Mgt RDA.doc	KPMG Consulting
Q-2	Interview Summary for Qwest	Interview Summary Qwest Change Mgmt(bulleted).doc	KPMG Consulting

Table 2.5.3.2.2.2: Qwest Data Sources for Change Management Assessment

Document Number	Document	File Name	Source
E-1	Comments on Interview Summary for Change Management	Change Management Qwest comments.doc	Qwest
E-2	Qwest/ROC Letters	Qwest/ROC Letters enclosed	Qwest
E-3	Re: Feedback from CLEC Forum Regarding CICMP	AUGltr.doc	Qwest
E-4	Change Management Escalation Process	hard copy	Qwest
E-5	Change Management Process Documented	hard copy	Qwest
E-6	How to Create a Change Request Document	hard copy	Qwest
E-7	Change Request Form	hard copy	Qwest
E-8	CR Form Instructions	hard copy	Qwest
E-9	CLEC Change Request Log	hard copy	Qwest
E-10	Team Meeting Documentation	hard copy	Qwest
E-11	Release Notification Documentation	hard copy	Qwest
E-12	Release Notification Form	hard copy	Qwest
E-13	Release Notification Form Instructions	hard copy	Qwest
E-14	Release Notifications Log	hard copy	Qwest
I-1	Re: CLEC Industry Change Management Process	ROCltr.doc	Qwest
I-1	Comments from Qwest on Change Management Interview Summary	FW: interview comments Change Management	Qwest

Table 2.5.3.2.2.3: CLEC Interviews for Change Management Assessment

Document Number	Document	File Name	Source
C-1	Interview Summary for McLeod	Interview Summary McLeod Change Mgmt. doc	KPMG Consulting

There were no CLEC data sources provided for the Change Management assessment.

2.5.3.2.3 Assessment Method

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on the Qwest CICMP. In addition, a CLEC interview was conducted via a conference bridge to gain a CLEC's perspective on perceived regional differences in Qwest's CICMP. Further data was gathered through reviews of documentation provided by Qwest.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.3.3 *Results*

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.3.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	Change management process responsibilities and activities are consistent across the Qwest footprint.	Yes	The Change Management responsibilities and activities are defined in documents available on the Qwest wholesale web site.
2	The change management process is in place and is consistent across the Qwest footprint.	Yes	Per the interview, the Change Management process has been in place since September 1999. Qwest has internal process documentation.
3	Change management process has a framework to evaluate, categorize, and prioritize proposed changes and is consistent across the Qwest footprint	Yes	Qwest s framework provides information to CLEC's via documentation available on the Qwest web site.

2.5.3.4 *Results Summary*

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.5.3.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
Change Management Process	X					X

2.5.4 CLEC Training

2.5.4.1 Description

Qwest s CLEC Training domain is comprised of the systems, processes and other operational elements associated with Qwest s support for developing, publicizing, conducting, managing and monitoring CLEC training. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC-provided documentation related to CLEC training and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.5.4.2 Methodology

This section provides a business description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.5.4.2.1 Business Process Description

The CLEC training program offers training courses in various products and services available to CLECs. CLECs can request on-site and customized training of Qwest. Qwest s CLEC training function is responsible for providing information across the Qwest footprint.

2.5.4.2.2 Data Sources

The data collection performed for this assessment relied on interviews and reviews of documents supplied by Qwest at the assessment manager s request. The interviews and documents are itemized in the tables below.

Table 2.5.4.2.2.1: Qwest Interviews for CLEC Training Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Summary for Qwest	Interview Summary Qwest Account Management.doc	KPMG Consulting

Table 2.5.4.2.2.2: Qwest Data Sources for CLEC Training Assessment

Document Number	Document Name	File Name	Source
E-1	List of Qwest s Students involved with CLEC Training	Student Spreadsheet.xls	Qwest
E-2	Comments on Interview Summary for CLEC Training	CLEC Training Qwest comments.doc	Qwest
E-3	IMA Training Documentation	hard copy	Qwest

There were no CLEC interviews or data sources provided for the CLEC Training assessment.

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2.5.4.2.3 Assessment Method

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on Qwest s CLEC Training systems, processes and procedures. Further data was gathered through reviews of documentation provided by Qwest.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.4.3 Results

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.4.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	Training process responsibilities and activities are consistent across the Qwest footprint.	Yes	Several different groups (IMA training, Wholesale services, and training consultants) provide training at Qwest, depending on the type of training requested. Qwest also provides multiple forms of training; web-based, computerized training, instructor lead courses, and individual training. Training may be different based on product and system (IMA-EDI or IMA-GUI). Training methods employed are consistent across the Qwest footprint.
2	Scope and objectives of training process are documented and are consistent across the entire Qwest footprint.	Yes	Training is broken out by product and system. Per the interviews, there are no differences in training methods by region.
3	Published information about training opportunities is consistent across the entire Qwest footprint.	Yes	Instructor lead training schedules are available on the Qwest website. In addition, there are web-based and downloadable training courses available on the website.

2.5.4.4 *Results Summary*

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.5.4.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
CLEC Training Process	X					X

2.5.5 ISC Help Desk

2.5.5.1 Description

Qwest s Interconnection Service Center (ISC) Help Desk is available to CLECs with OSS questions, escalations, problems and issues related to pre-ordering, ordering and provisioning. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting conducted interviews with key Qwest representatives in order to obtain the data necessary to conduct the assessment.

2.5.5.2 Methodology

This section provides a business description, lists the sources of data used in the assessment, and summarizes the assessment methodology.

2.5.5.2.1 Business Process Description

The Qwest ISC Help Desk records and responds to CLEC questions or problems regarding pre-order, provisioning, and ordering transactions through the CLEC s interface with Qwest. The Qwest ISC Help Desk is the primary point of contact for CLECs experiencing transaction difficulties. Each call generates a unique trouble ticket number in a database. The date the call was received, the time the ticket was opened, along with relevant customer information and description of the problem and its resolution, are logged.

2.5.5.2.2 Data Sources

The data collection performed for this assessment relied on interviews and reviews of documents supplied by Qwest at the assessment manager s request. The interviews and documents are itemized in the tables below.

Table 2.5.5.2.2.1: Qwest Interviews for ISC Help Desk Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Summary for Help Desk ISC for Qwest	Interview Summary Qwest Help Desk ISC.doc	KPMG Consulting

There were no Qwest data sources or CLEC interviews or data sources provided for the ISC Help Desk assessment.

2.5.5.2.3 Assessment Method

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on Qwest s ISC Help Desk systems, processes and procedures.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.5.3 *Results*

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.5.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	ISC responsibilities and activities are documented and consistent across entire Qwest footprint.	Inconclusive	Because of potential differences in the Regional Resale Centrex Help Desks, KPMG can not conclude that the processes and procedures that surround the ISC help desk are consistent or the same across regions. Until further information gathering can be done the results of this assessment are inconclusive.
2	The process includes consistent procedures for status tracking and management reporting that is consistent across the entire Qwest footprint	Inconclusive	Because of potential differences in the Regional Resale Centrex Help Desks, KPMG can not conclude that the processes and procedures that surround the ISC help desk are consistent or the same across regions. Until further information gathering can be done the results of this assessment are inconclusive

2.5.5.4 *Results Summary*

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.5.5.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
ISC Help Desk Process			X			X

2.5.6 IMA Help Desk

2.5.6.1 Description

Qwest s Intermediated Access (IMA) System Administration Help Desk is available to CLECs with questions or problems regarding connectivity and administration of their interface with Qwest. The purpose of the assessment was to review functionality and performance in order to provide a basis for comparing this operational area to parallel systems and processes in other jurisdictions and regions in Qwest s territory.

KPMG Consulting reviewed and analyzed Qwest and CLEC-provided documentation related t the IMA Help Desk and conducted interviews with key Qwest and CLEC representatives in order to obtain the data necessary to conduct the assessment.

2.5.6.2 Methodology

This section provides a business description, lists the sources of data used in the assessment and summarizes the assessment methodology.

2.5.6.2.1 Business Process Description

The Qwest IMA Help Desk records and responds to CLEC questions or problems regarding connectivity and administration of their interface with Qwest. The Qwest IMA Help Desk is the primary point of contact for CLEC s experiencing system access difficulties. Each call generates a unique trouble ticket number in a database. The date the call was received, time the ticket was opened, relevant customer information, description of the problem and its resolution are logged.

2.5.6.2.2 Data Sources

The data collection performed for this assessment relied on interviews and reviews of documents supplied by Qwest at the assessment manager s request. The interviews are itemized in the tables below.

Table 2.5.6.2.2.1: Qwest Interviews for IMA Help Desk Assessment

Document Number	Document Name	File Name	Source
Q-1	Interview Summary for Help Desk IMA for Qwest	Interview Summary Qwest Help Desk IMA.doc	KPMG Consulting

Table 2.5.6.2.2.2: Qwest Data Sources for IMA Help Desk Assessment

Document Number	Document Name	File Name	Source
E-1	Comments on Interview Summary for Help Desk IMA	Help Desk IMA Qwest comments.doc	KPMG Consulting
E-2	Comments from Qwest on IMA Help Desk Interview Summary	FW: interview comments Help Desk IMA	KPMG Consulting

There were no CLEC interviews or data sources provided for the RMI IMA Help Desk assessment.

2.5.6.2.3 *Assessment Method*

Interviews were conducted with Qwest personnel in Denver, Colorado, and included a conference bridge for offsite participants. The purpose of these interviews was to obtain information on Qwest s IMA Help Desk systems, processes, and procedures. Further data was gathered through reviews of documentation provided by Qwest.

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. The data collected from the interviews and documentation reviews were analyzed in reference to the assessment criteria.

2.5.6.3 *Results*

This section identifies the assessment criteria and the results. Each assessment criterion is given one of the three following results:

- Yes - Based on interviews conducted and the documentation reviewed, there is no evidence that the systems, practices and procedures are not consistent across states and regions.
- No - Based on interviews conducted and the documentation reviewed, there are differences in systems, practices and procedures across states and regions.
- Inconclusive - Based on the interviews conducted and the documentation reviewed, there was insufficient evidence to conclude whether or not there are differences in systems, practices, and procedures across states and regions.

Table 2.5.6.3.1: Assessment Criteria and Results

Assessment Number	Assessment Criteria	Result	Comments
1	IMA Help Desk responsibilities and activities are consistent across the Qwest Footprint.	Yes	The IMA help desk is responsible for answering questions and resolving problems concerning connectivity to Qwest IMA network and systems. The defined responsibilities of the IMA Help Desk were provided during the course of the interviews. The IMA help desk is located in Denver, Colorado and is responsible for the entire Qwest footprint.
2	The processes and procedures for status tracking and management reporting are consistent across the Qwest Footprint	Yes	The IMA call center has software which tracks when all calls are received, wait times, call end times and other information. This information is used by management for capacity planning and quality assurance. A separate system is used by help desk personnel to collect and track detailed information about specific problems called in by CLECs.

2.5.6.4.4 Results Summary

Results are functionally grouped in the table below with an indication of whether or not they match the TRD. Each functional group may relate to multiple assessment criteria.

Table 2.5.6.4.1: Results Summary Table

	Hypothesis			*TRD, Section 6*		
	Failed to Reject	**Reject**	**Inconclusive**	**Matches**	**Does Not Match**	**Not Addressed**
ISSA Help Desk Process	X					X

2.6 Statistical Analysis

2.6.1 Background

KPMG Consulting evaluated the following activities for the purpose of identifying regional and state-within-region variation of CLEC performance:

- Pre-Ordering and Ordering confirmations (PO-5),
- Provisioning installations (OP-3 and OP-4),
- Maintenance and Repair tickets (MR-6), and
- Billing invoices (BI-1).

The evaluation employed statistical analyses using standard methods and controlling for differences in metric performance resulting from month to month variation.[6] In the results below, we considered differences among regions and states within region statistically significant if the results indicated performance differences with at least 95% confidence.[7] We used standard statistical tests, described in the Assessment Methods section, to determine these differences.

2.6.2 Methodology

The test methodology used to conduct the Regional Difference Assessment for performance metrics was to obtain performance data from Qwest for the months of January through April 2000 and to perform standard statistical analysis as outlined in each of the following sections.

2.6.2.1 Data Sources

The data collection preformed for this assessment relied on metric performance data supplied by Qwest at our request. These included the following:

Table 2.6.2.1.1: Data Sources for Metrics Assessment

Document Number	Document	File Name	Source
1-1	U S WEST Performance Results: Colorado	Colorado_271_Exhibit.pdf	Qwest
1-2	U S WEST Performance Results: South Dakota	SD_271_Exhibit.pdf	Qwest
1-3	U S WEST Performance Results: Oregon	OR_271_Exhibit.pdf	Qwest
1-4	U S WEST Performance Results: New Mexico	NM_271_Exhibit.pdf	Qwest
1-5	U S WEST Performance Results: Nebraska	NE_271_Exhibit.pdf	Qwest
1-6	U S WEST Performance Results: North Dakota	ND_271_Exhibit.pdf	Qwest
1-7	U S WEST Performance Results: Montana	MO_271_Exhibit.pdf	Qwest

[6] Standard methods of logistic regression were used for the statistical analysis of the PO-5 metric

[7] This criterion corresponds to a standard statistical hypothesis test at the 0.05 level of significance (α=0.05)

Document Number	Document	File Name	Source
1-8	U S WEST Performance Results: Minnesota	MN_271_Exhibit.pdf	Qwest
1-9	U S WEST Performance Results: Idaho	ID_271_Exhibit.pdf	Qwest
1-10	U S WEST Performance Results: Iowa	IA_271_Exhibit.pdf	Qwest
1-11	U S WEST Performance Results: Utah	UT_271_Exhibit.pdf	Qwest
1-12	U S WEST Performance Results: Washington	WA_271_Exhibit.pdf	Qwest
1-13	U S WEST Performance Results: Wyoming	WY_271_Exhibit.pdf	Qwest

2.6.2.2 *Assessment Methods*

Assessment criteria were established by KPMG Consulting to provide a framework and basis for the assessment. All evaluations were based on statistical methods when the data provided by Qwest provided sufficient information to do so. However, because transaction level data was not provided with the data, not all assumptions of the tests could be verified. Specifically, we were unable to verify that factors not contained in the Qwest data could have caused the regional variation of some performance metrics. Also, we could not examine the distribution of the data to verify that it met the assumptions of the tests. Lastly, accuracy of the tests relied on the correctness of the calculations performed by Qwest, which we could not verify.

2.6.2.3 *Pre-Ordering and Ordering*

KPMG Consulting investigated regional and state-within-region performance variation of Firm Order Confirmations (FOCs) On Time (percent) based on CLEC PO-5 state metric performance data provided by Qwest. A standard method of statistical analyses, logistic regression, was applied to the percentage data using common statistical packages to ascertain hypothesis test results. The following two separate hypotheses were considered for this test:

- Timeliness of FOCs is consistent across Qwest regions.
- Within Qwest regions, timeliness of FOCs is consistent across Qwest states.

The statistical tests were designed to allow for no more than a 5% error rate when declaring a statistically significant difference.[8] The month-to-month variations in PO-5 performance were controlled for before the statistical tests.[9] One state, New Mexico, was not included in the analyses because no FOCs were processed during the study period.

2.6.2.4 *Provisioning*

KPMG Consulting investigated regional and state-within-region CLEC performance variation of Installation Commitments Met (percent) and Installation Intervals (average) based on CLEC OP-3 and OP-4 state metric performance data provided by Qwest. Standard methods of statistical analyses, logistic

[8] All hypothesis test were designed to have a 0.05 probability of a Type I error (α=0.05).

[9] Standard methods of logistic regression were used to control for the possibly confounding effect of month.

[illegible]

regression and ANOVA, were applied to the metrics. For each type of installation metric and density, the following two separate hypotheses were considered for this test:

- Installation commitments met and installation intervals are consistent across Qwest regions.
- Within Qwest regions, installation commitments met and installation intervals are consistent across Qwest states.

The month-to-month variations in OP-3 performance were controlled for before the statistical tests.[10] Analyses of the OP-4 family of metrics could not be controlled for the varying effect of month due to the high level of aggregation present in the data provided by Qwest.[11] Some hypotheses tests were not performed due to a lack of provisions in the particular strata or the level of aggregation present in the data provided by Qwest.

2.6.2.5 Maintenance and Repair

KPMG Consulting investigated regional and state-within-region CLEC performance variation of repairs based on MR-6 state metric performance data provided by Qwest. Standard methods of statistical analyses, ANOVA, were applied to the metrics data. For each type of installation metric and density, the following two separate hypotheses were considered for this test:

- Mean time to restore is consistent across Qwest regions.
- Within Qwest regions, mean time to restore is consistent across Qwest states.

The statistical tests were designed to allow for no more than a 5% error rate when declaring a statistically significant difference[12]. Analyses of the Maintenance and Repair metrics could not be controlled for the varying effect of month due to the high level of aggregation present in the data provided by Qwest.[13] Some hypotheses tests were not performed due to a lack of repairs in the particular strata.

2.6.2.6 Billing

KPMG Consulting was not able to conduct a statistical evaluation of Qwest performance variation regarding the provisioning of Recorded Usage Records (average days) to CLECs because of the high level of aggregation in the BI-1 data provided by Qwest.

[10] Standard methods of logistic regression were used to control for the possibly confounding effect of month.

[11] State metric data provided by Qwest for the Metric PMA did not contain transaction level data.

[12] All hypothesis test were designed to have a 0.05 probability of a Type I error (α=0.05).

[13] State metric data provided by Qwest for the Metric PMA did not contain transaction level data.

2.6.4 Results Summary

For the statistical analysis section, the default of yes, no, and inconclusive have been modified to t he following:

- Yes - Based on the metric performance data received from Qwest, there is no evidence that the metrics are not the same across states and regions.
- No - Based on the metric performance data received from Qwest, there are differences in the metrics across states and regions.
- Inconclusive - The metric performance data received from Qwest was insufficient to conduct a statistical test of whether or not there are differences in the metrics across states and regions.

2.6.4.1 *Pre-Ordering and Ordering Regional and State Analyses Evaluation Criteria and Results*

PO-5 Regional and State Results

KPMG Consulting evaluated the PO-5 family of metrics for regional performance differences and state performance differences within regions. The average percent FOCs to CLECs on time for the three Qwest regions is presented in the following table.

Table 2.6.4.1.1: Regional Difference for PO-5

Description	Average (%)			Number of Confirmations to CLECs		
	Central	East	West	Central	East	West
Firm Order Confirmations On Time	71	80	69	400	250	261

Tests for the significance of these observed regional differences and state-within-region differences are presented in the following table. A small p-value indicates that there was evidence of a performance difference that could not be accounted for by random variation in the data. The conclusion from both hypotheses tests is that aggregate timeliness of FOCs was not consistent across regions and or between states within regions since both p-values were less than 0.05. Since transaction level data was not provided to KPMG Consulting, it was not possible to determine whether these differences are attributable to differences in systems and processes across the regions and states or whether they result from variations in the mix of transactions or other systematic differences among the regions and states.

Table 2.6.4.1.2: PO-5 Regional Analyses

Checklist	Description	Number of CLEC Confirmations	Is there a statistically significant difference among regions? (p-value,df[14])	Within regions, is there a statistically significant difference among states? (p-value,df[15])
2	Firm Order Confirmations - LIS	911	Yes ($p < 0.001$, df=2)	Yes ($P = 0.004$, df=8)

2.6.4.2 *Pre-Ordering and Ordering Evaluation Results*

KPMG Consulting statistical tests rejected the hypothesized assumption of equality across regions of aggregate timeliness of FOC's, as measured by PO-5, based on analysis of PO-5 performance data from January through April 2000. It is not possible to determine based on this analysis alone whether the differences observed are due to differences in Qwest systems and processes or whether they are due to variations in order mix or other systematic differences among the regions.

KPMG Consulting statistical tests rejected the hypothesized assumption of equality across states within regions of aggregate timeliness of FOCs, as measured by PO-5, based upon performance data from January through April 2000. It is not possible to determine based on this analysis alone whether the differences observed are due to differences in Qwest systems and processes or whether they are due to variations in order mix or other systematic differences among the states.

2.6.4.3 *Provisioning Regional and State Analyses Evaluation Criteria and Results*

OP-3 Regional and State Analyses

KPMG Consulting evaluated the OP-3 family of metrics for regional performance differences and state performance differences with regions. The average percent of Installation Commitments Met to CLECs are presented in the following table.

Table 2.6.4.3.1: Regional Difference for OP-3

Description	Average (%)			Number of CLEC Installations		
	Central	East	West	Central	East	West
Checklist 4 Non-Loaded (2-Wire) Installation						
High Density	85	75	83	2268	1244	2040
Low Density	83	91	84	292	237	263
Checklist 4 Unbundled Loop Non-Loaded (4-Wire) Installation						
High Density	69	NA	93	45	0	58
Low Density	100	83	NA	2	6	0

[14] Degrees of freedom (df) reflect the number of regions available for comparison. In certain cases, one of the regions did not have any data, and so that region could not be used in the analysis. The number of regions with testable data equals the degrees of freedom plus 1. Thus, when all 3 regions were tested, the degrees of freedom were 2.

[15] Degrees of freedom (df) reflect the number of states available for comparison. In some cases, certain states had no available data, and thus those states could not be used in the analysis. The number of states tested is equal to the degrees of freedom plus the degrees of freedom for the regional test, plus 1. Thus, for this test, 11 states were tested.

Description	Average (%)			Number of CLEC Installations		
	Central	East	West	Central	East	West
Checklist 4 Unbundled Loop Analog Installation						
High Density	92	87	94	3189	7498	5267
Low Density	85	85	99	272	3426	89
Checklist 14 Resale Business Installation						
Not Dispatched	94	96	95	2092	4520	796
Outside MSAs	88	85	92	42	502	59
Within MSAs	76	85	79	391	584	247
Checklist 14 Resale Centrex Installation						
Not Dispatched	98	99	100	4071	10724	1973
Outside MSAs	89	87	86	70	774	132
Within MSAs	81	86	100	727	2013	879
Checklist 14 Resale Centrex 21 Installation						
Not Dispatched	1.00	0.98	0.99	410	955	136
Outside MSAs	1.00	0.95	1.00	4	62	1
Within MSAs	0.81	0.86	1.00	48	130	56
Checklist 4 Unbundled Loop DS1 Capable Installation						
High Density	NA	57	94	0	7	127
Low Density	NA	75	NA	0	4	0
Checklist [illegible] 911 911 trunk Installation						
High Density	6	40	54	17	10	46
Low Density	NA	67	64	0	12	11
Checklist 4 Unbundled Loop ISDN Capable Installation						
High Density	70	54	60	550	581	613
Low Density	78	100	56	76	12	59
Checklist 4 Unbundled Loop ADSL Qualified Installation						
High Density	NA	100	89	0	5	98
Low Density	NA	100	100	0	1	4
Checklist 1 Local Interconnection LIS Installation						
High Density	73	80	58	204	98	139
Low Density	78	84	87	59	62	15
Checklist 14 Resale ADSL Installation						
Not Dispatched	NA	NA	100	0	0	1
Outside MSAs	NA	NA	NA	0	0	0
Within MSAs	NA	NA	100	0	0	1
Checklist 14 Resale Basic ISDN Installation						
Not Dispatched	100	100	NA	1	1	0
Outside MSAs	NA	100	100	0	1	1
Within MSAs	100	NA	100	1	0	1
Checklist 14 Resale DS0 Installation						
High Density	91	96	100	22	28	5
Low Density	83	83	83	18	102	18
Checklist 14 Resale DS1 Installation						
High Density	NA	100	50	0	4	2

Description	Average (%)			Number of CLEC Installations		
	Central	East	West	Central	East	West
Low Density	0	86	100	1	7	11
Checklist 14 Resale Installation for DS3 and Higher						
High Density	NA	NA	NA	0	0	0
Low Density	NA	NA	NA	0	0	0
Checklist 14 - Resale PBX Installation						
Not Dispatched	97	98	100	37	257	32
Outside MSAs	NA	82	0	0	11	2
Within MSAs	75	85	86	4	13	14
Checklist 14 - Resale Primary ISDN Installation						
High Density	NA	2	NA	0	2	0
Low Density	NA	2	1	0	2	1
Checklist 14 Residence Installation						
Not Dispatched	95	98	95	9720	7160	5245
Outside MSAs	84	84	82	183	443	119
Within MSAs	84	88	83	1339	684	738
Checklist 5 UDIT Installation						
High Density	81	80	75	31	15	28
Low Density	95	100	100	20	2	4

Tests for the significance of these observed regional and state-within-region differences are presented in the following table. A small p-value indicates that there was evidence of a performance difference that could not be accounted for by random variation in the data. A shaded box indicates strata for which hypothesis test could not be performed due to lack of sufficient installations to perform valid statistical tests. Since transaction level data was not provided to KPMG Consulting, it was not possible to determine whether these differences are attributable to differences in systems and processes across the regions and states or whether they result from variations in the mix of transactions or other systematic differences among the regions and states.

Table 2.6.4.3.2: OP-3 Regional Analyses

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[16])	Within regions, is there a statistically significant difference among states? (p-value,df[17])
4	Non-Loaded (2-Wire) Installation High Density	5552	Yes ($p < 0.001$,df=2)	Yes ($p < 0.001$,df=4)
4	Non-Loaded (2-Wire) Installation Low Density	792	Yes ($p = 0.025$,df=2)	No ($p = 0.087$,df=6)
4	Unbundled Loop Non-Loaded (4-Wire) Installation High Density	103	Yes ($p = 0.005$,df=1)	

[16] Degrees of freedom (df) reflect the number of comparisons made among the regions. Metrics that were present in three regions were tested with two degrees of freedom.

[17] Degrees of freedom (df) reflect the number of comparisons made among states. Metrics that were present in all states were tested with ten degrees of freedom.

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[16])	Within regions, is there a statistically significant difference among states? (p-value,df[17])
4	Unbundled Loop Non-Loaded (4-Wire) Installation Low Density	8		
4	Unbundled Loop Analog Installation High Density	15594	Yes (p < 0.001,df=2)	Yes (p < 0.001,df=5)
4	Unbundled Loop Analog Installation Low Density	3787	Yes (p < 0.001,df=2)	Yes (p < 0.001,df=7)
14	Resale Business Installation Not Dispatched	7408	Yes (p < 0.001,df=2)	No (p = 0.075,df=9)
14	Resale - Business Installation Outside MSAs	603	No (p < 0.368,df=2)	No (p = 0.095,df=8)
14	Resale Business Installation Within MSAs	1222	Yes (p = 0.001,df=2)	Yes (p < 0.001,df=8)
14	Resale Centrex 21 Installation Not Dispatched	1501	No (p = 0.265,df=2)	No (p = 0.252,df=2)
14	Resale Centrex 21 Installation Outside MSAs	67		
14	Resale Centrex 21 Installation Within MSAs	234	Yes (p < 0.001,df=1)	No (p = 0.415,df=3)
14	Resale Centrex Installation Not Dispatched	16768	Yes (p < 0.001,df=2)	Yes (p = 0.001,df=5)
14	Resale Centrex Installation Outside MSAs	976	No (p = 0.821,df=2)	No (p = 0.130,df=3)
14	Resale - Centrex Installation Within MSAs	3619	Yes (p < 0.001,df=2)	No (p = 0.878,df=5)
4	Unbundled Loop DS1 Capable Installation High Density	134		
4	Unbundled Loop DS1 Capable Installation Low Density	4		
7	E911 911 trunk Installation High Density	73	No (p = 0.252,df=2)	
7	E911 911 trunk Installation Low Density	23		
4	Unbundled Loop ISDN Capable Installation High Density	1744	Yes (p < 0.001,df=2)	No (p = 0.280,df=5)
4	Unbundled Loop ISDN Capable Installation Low Density	147	Yes (p < 0.001,df=1)	No (p = 0.623,df=3)
4	Unbundled Loop ADSL Qualified Installation High Density	103		
4	Unbundled Loop ADSL Qualified Installation Low Density	5		
11	Local Interconnection LIS Installation High Density	441	Yes (p = 0.001,df=2)	Yes (p = 0.008,df=3)

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[16])	Within regions, is there a statistically significant difference among states? (p-value,df[17])
1	Local Interconnection LIS Installation Low Density	136	No (p = 0.552,df=2)	Yes (p < 0.001,df=3)
14	Resale ADSL Installation Not Dispatched	1		
14	Resale ADSL Installation Outside MSAs	0		
14	Resale ADSL Installation Within MSAs	1		
14	Resale Basic ISDN Installation Not Dispatched	2		
14	Resale Basic ISDN Installation Outside MSAs	2		
14	Resale Basic ISDN Installation Within MSAs	2		
14	Resale DS0 Installation High Density	55		
14	Resale DS0 Installation Low Density	138	No (p=0.995,df=2)	Yes (p < 0.001,df=2)
14	Resale DS1 Installation High Density	6		
14	Resale DS1 Installation Low Density	19		
14	Resale Installation for DS3 and Higher High Density	0		
14	Resale Installation for DS3 and Higher Low Density	0		
14	Resale PBX Installation Not Dispatched	326	No (p = 0.187,df=1)	
14	Resale PBX Installation Outside MSAs	13		
14	Resale PBX Installation Within MSAs	31		
14	Resale Primary ISDN Installation High Density	2		
14	Resale Primary ISDN Installation Low Density	3		
14	Residence Installation Not Dispatched	22125	Yes (p < 0.001,df=2)	Yes (p < 0.001,df=8)
14	Residence Installation Outside MSAs	745	No (p = 0.735,df=2)	No (p = 0.189,df=8)
14	Residence Installation Within MSAs	2761	No (p = 0.275,df=2)	Yes (p < 0.001,df=8)
5	UDIT Installation High Density	74		

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[16])	Within regions, is there a statistically significant difference among states? (p-value,df[17])
5	UDIT Installation Low Density	26		

OP-4 Regional and State Analyses

KPMG Consulting evaluated the OP-4 family of metrics for regional performance differences and state performance differences with regions. The average Installation Interval to CLECs for the three Qwest regions is presented in the following table.

Table 2.6.4.3.3: Regional Difference for OP-4

Description	Average (Days)			Number of CLEC Installations		
	Central	East	West	Central	East	West
Checklist 4 (2-Wire) Installation						
High Density	8.31	9.56	10.33	1253	480	668
Low Density	9.47	7.06	7.95	219	131	203
Checklist 4 (4-Wire) Installation						
High Density	5.74	NA	5.44	43	0	54
Low Density	5.00	10.50	NA	1	4	0
Checklist 4 Analog Installation						
High Density	8.40	7.88	6.86	1192	2801	2686
Low Density	9.49	8.45	5.78	164	1592	65
Checklist 14 Business Installation						
Not Dispatched	3.10	2.99	2.29	2092	4520	796
Outside MSAs	6.35	5.43	3.55	42	502	59
Within MSAs	7.93	6.55	6.56	391	584	247
Checklist 14 Centrex 21 Installation						
Not Dispatched	2.26	3.56	1.72	410	955	136
Outside MSAs	5.00	5.28	4.00	4	62	1
Within MSAs	4.79	6.39	2.92	48	130	56
Checklist 14 Centrex Installation						
Not Dispatched	3.93	4.83	1.21	4071	10724	1973

Description	Average (Days)			Number of CLEC Installations		
	Central	East	West	Central	East	West
Outside MSAs	8.48	7.38	2.73	70	774	112
Within MSAs	6.38	6.38	2.59	727	2013	879
Checklist 4 DS1 Capable Installation						
High Density	NA	19.6	25.24	0	4	91
Low Density	NA	7.66	NA	0	3	0
Checklist 7 E911/911 Trunk Installation						
High Density	40.12	11.80	48.19	17	30	46
Low Density	NA	21.75	61.45	0	12	11
Checklist 4 ISDN Capable Installation						
High Density	12.75	18.71	19.21	290	302	281
Low Density	9.70	7.25	17.21	51	4	28
Checklist 4 Unbundled Loop ADSL Qualified Installation						
High Density	NA	5.00	5.48	0	5	66
Low Density	NA	5.00	6.66	0	1	9
Checklist 1 LIS Installation						
High Density	18.29	20.67	22.31	204	98	119
Low Density	17.74	16.46	17.66	59	62	55
Checklist 14 Resale - ADSL Installation						
Not Dispatched	NA	NA	1.00	0	0	1
Outside MSAs	NA	NA	NA	0	0	0
Within MSAs	NA	NA	10	0	0	1
Checklist 14 Resale Basic ISDN Installation						
Not Dispatched	4.00	1.81	NA	1	11	0
Outside MSAs	NA	13.00	3	0	1	1
Within MSAs	14.00	NA	4	1	0	1
Checklist 14 Resale DS0 Installation						

Description	Average (Days)			Number of CLEC Installations		
	Central	East	West	Central	East	West
High Density	5.85	5.60	2.00	21	28	6
Low Density	14.58	13.85	10.94	17	100	18
Checklist 14 Resale DS1 Installation						
High Density	NA	14.5	10.50	0	4	2
Low Density	82.00	7.71	3.00	1	7	11
Checklist 14 Resale PBX Installation						
Not Dispatched	6.13	3.33	1.71	37	257	35
Outside MSAs	NA	4.18	7.50	0	11	2
Within MSAs	6.25	6.30	7.42	4	13	14
Checklist 14 Resale Primary ISDN Installation						
High Density	NA	5.00	NA	0	2	0
Low Density	NA	4.50	36.00	0	2	1
Checklist 14 Residence Installation						
Not Dispatched	2.19	2.19	1.97	9720	7160	3545
Outside MSAs	5.32	5.05	2.92	183	443	149
Within MSAs	5.52	4.64	3.71	1339	684	338
Checklist 5 UDIT Installation						
High Density	12.38	16.33	7.28	31	15	28
Low Density	8.44	6.00	8.50	20	2	4

Tests for the significance of these observed regional performance differences and state-within-region differences are presented in the following table. A small p-value indicates that there was evidence of a difference that could not be accounted for by random variation in the data. A shaded box indicates results for which hypothesis test could not be performed due to the level of aggregation present in the data provided by Qwest. Since transaction level data was not provided to KPMG Consulting, it was not possible to determine whether these differences are attributable to differences in systems and processes across the regions and states or whether they result from variations in the mix of transactions or other systematic differences among the regions and states.

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Table 2.6.4.3.4: OP-4 Regional Analyses

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[18])	Within regions, is there a statistically significant difference among states? (p-value,df[19])
4	(2-Wire) Installation High Density	2401		
4	(2-Wire) Installation Low Density	553		
4	(4-Wire) Installation High Density	97		
4	(4-Wire) Installation Low Density	5		
4	Unbundled Loop Analog Installation High Density	6679		
4	Unbundled Loop Analog Installation Low Density	1821		
14	Resale Business Installation Not Dispatched	7408	Yes (p = 0.000, 2)	
14	Resale Business Installation Outside MSAs	607	Yes (p = 0.045, 2)	
14	Resale Business Installation Within MSAs	1222	Yes (p = 0.181, 2)	
14	Centrex 21 Installation Not Dispatched	1501	No (p = 0.095, 2)	
14	Centrex 21 Installation Outside MSAs	67	No (p = 0.79, 2)	
14	Centrex 21 Installation Within MSAs	234	No (p = 1.000, 2)	
14	Centrex Installation Not Dispatched	16768	Yes (p = 0.001, 2)	
14	Centrex Installation Outside MSAs	976	Yes (p = 0.001, 2)	
14	Centrex Installation Within MSAs	3619	Yes (p = 0.001, 2)	
4	DS1 Capable Installation High Density	96		
4	DS1 Capable Installation - LowDensity	1	No (p = 0.998, 2)	

[18] Degrees of freedom (df) reflect the number of comparisons made among the regions. Where only two groups of data regions were tested with two degrees of freedom

[19] Degrees of freedom (df) reflect the number of comparisons made among states. Where the data groups of all states were tested with ten degrees of freedom.

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[1])	Within regions, is there a statistically significant difference among areas? (p-value,df[2])
7	E911/911 Trunk Installation High Density	73	Yes (p < 0.001, 2)	
7	E911/911 Trunk Installation Low Density	23		
4	ISDN Capable Installation High Density	773	Yes (p = 0.001, 2)	
4	ISDN Capable Installation Low Density	93	Yes (p = 0.029, 2)	
4	Unbundled Loop ADSL Qualified Installation High Density	61		
4	Unbundled Loop ADSL Qualified Installation Low Density	4		
1	LIS Installation High Density	441	Yes (p = 0.005, 2)	
1	LIS Installation Low Density	136	No (p = 1.000, 2)	
14	Resale ADSL Installation Not Dispatched	1		
14	Resale ADSL Installation Outside MSAs	0		
14	Resale ADSL Installation Within MSAs	1		
14	Resale Basic ISDN Installation Not Dispatched	12		
14	Resale Basic ISDN Installation Outside MSAs	2		
14	Resale Basic ISDN Installation Within MSAs	2		
14	Resale DS0 Installation High Density	54	No (p = 0.074, 2)	
14	Resale DS0 Installation Low Density	135	No (p = 0.999, 2)	
14	Resale DS1 Installation High Density	6		
14	Resale DS1 Installation Low Density	19	No (p = 0.999, 2)	
14	Resale PBX Installation Not Dispatched	326	Yes (p = 0.001, 2)	
14	Resale PBX Installation Outside MSAs	13		
14	Resale PBX Installation Within MSAs	31	No (p 0.999, 2)	

Checklist	Description	Number of CLEC Installations	Is there a statistically significant difference among regions? (p-value,df[13])	Within regions, is there a statistically significant difference among states? (p-value,df[13])
14	Resale Primary ISDN Installation High Density	2		
14	Resale Primary ISDN Installation Low Density	3		
14	Residence Installation Not Dispatched	22125	Yes (p < 0.001, 2)	
14	Residence Installation Outside MSAs	745	Yes (p = 0.003, 2)	
14	Residence Installation Within MSAs	2761	No (p = 0.994, 2)	
5	UDIT Installation High Density	74	No (p = 0.061, 2)	
5	UDIT Installation Low Density	26	No (p = 0.905, 2)	

2.6.3.4 Provisioning Regional and State Evaluation Results

KPMG Consulting statistical tests rejected the hypothesized assumption of consistency across regions for 13 out of the 43 metrics tested in the OP-3 family of metrics, and 12 out of 43 metrics tested in the OP-4 family of metrics, based on analysis of metric performance data from January through April 2000. It is not possible to determine based on this analysis alone whether the differences observed are due to differences in Qwest systems and processes, or whether they are due to variations in transaction mix or other systematic differences among the regions.

KPMG Consulting statistical tests rejected the hypothesized assumption of consistency within Qwest regions for 10 out of the 43 metrics tested in the OP-3 family of metrics based on analyses of metric performance data from January through April 2000. It is not possible to determine based on this analyses alone whether the differences observed are due to differences in Qwest systems and processes, or whether they are due to variations in transaction mix or other systematic differences among the regions.

For the OP-4 family of metrics, KPMG Consulting was not able to perform statistical tests of the hypothesized assumption of consistency within Qwest regions due to the level of aggregation present in the data provided by Qwest.

2.6.3.5 Maintenance and Repair State Analyses Evaluation Criteria and Results

MR-6 Regional and State Analyses

KPMG Consulting evaluated the MR-6 family of metrics for regional performance differences and state performance differences with regions. Results of the analyses are presented in the following table.

Table 2.6.4.5.1: Regional Difference for MR-6

Description	Average (Hours:Minutes)			Number of CLEC Repairs		
	Central	East	West	Central	East	West
[illegible] Analog Repair						
[illegible]	9:45	12:09	10:45	669	615	529
[illegible]	10:39	10:46	7:31	41	462	5
[illegible] ISDN Capable Repair						
[illegible]	16:02	26:19	17:11	544	256	271
[illegible]	8:25	5:04	11:55	50	12	45
[illegible] E911 911 Trunk Repair						
[illegible]	2:43	2:41	4:44	20	11	5
[illegible]	1:54	0:51	3:20	27	30	22
[illegible] UE Repair						
[illegible]	4:41	3:60	7:07	198	87	191
[illegible]	5:50	4:04	7:04	259	115	204
[illegible]	9:34	4:18	6:17	61	28	13
[illegible] Resale Business Repair						
[illegible]	7:26	8:20	10:13	1019	1034	479
[illegible]	24:39	20:39	22:33	340	535	229
[illegible]	29:55	26:22	22:46	970	730	554
[illegible] Resale Centrex 21 Repair						
[illegible]	8:29	9:07	12:10	396	408	96
[illegible]	20:19	26:51	23:29	266	123	102
[illegible]	23:02	24:58	21:59	603	433	94
[illegible] Resale Centrex Repair						
[illegible]	11:48	13:16	19:03	1173	2512	902
[illegible]	23:55	27:20	29:41	286	1473	86
[illegible]	24:09	28:35	25:33	1465	3501	1048
[illegible] Resale DS0 Repair						

[illegible]	Average (Hours:Minutes)			Number of CLEC Repairs		
	Central	East	West	Central	East	West
[illegible]	4:25	3:21	2:26	1198	1211	987
[illegible]	3:28	3:38	3:18	944	1003	528
[illegible] Resale DS1 Capable Repair						
[illegible]	2:51	1:50	4:35	508	283	415
[illegible]	3:08	2:34	3:47	383	243	340
[illegible] Resale PBX Repair						
[illegible]	10:54	7:28	5:47	142	117	113
[illegible]	25:44	29:31	30:04	22	27	1
[illegible]	25:52	29:38	27:52	80	55	18
[illegible] Resale Repair for DS3 and Higher						
[illegible]	2:42	2:05	2:26	124	49	59
[illegible]	4:10	2:13	2:07	49	16	8
[illegible] Resale Residence Repair						
[illegible]	6:41	5:21	6:20	885	943	466
[illegible]	17:49	21:11	21:27	1088	677	56
[illegible]	20:57	25:03	19:55	4235	998	461

Tests for the significance of these observed regional performance differences and state-within-region performance differences are presented in the following table. A small p-value indicates that there was evidence of a difference that could not be accounted for by random variation in the data. A shaded box indicates areas for which hypothesis test could not be performed due to the level of aggregation present in the data provided by Qwest. Since transaction level data was not provided to KPMG Consulting, it was not possible to determine whether these differences are attributable to differences in systems and processes across the regions and states or whether they result from variations in the mix of transactions or other systematic differences among the regions and states.

Table 2.6.4.5.2: MR-6 Regional Analyses

Sub-Metric	Description	Number of CLEC Repairs	Is there a statistically significant difference among regions? (p-value,df[20])	Within Regions, Is there a statistically significant difference among States? (p-value,df[21])
	2 Wire Unbundled Loop Analog Repair High Density	1813		
	2 Wire Unbundled Loop Analog Repair Low Density	508		
	Non-Dispatchable Repair High Density	1071	No (p = 0.325, 2)	
	Non-Dispatchable Repair Low Density	107	Yes (p = 0.040, 2)	
	Non-911 Trunk Repair High Density	36		
	Non-911 Trunk Repair Low Density	79		
	911 Repair High	476	No (p = 0.093, 2)	
	911 Repair High and Low Density	578	No (p = 0.182, 2)	
	911 Repair Low Density	102	No (p = 0.379, 2)	
	Resale Business Repair Not Dispatched	2532	No (p = 0.054, 2)	
	Resale Business Repair Outside MSAs	1104	No (p = 0.134, 2)	
	Resale Business Repair Within MSAs	2254	Yes (p < 0.001, 2)	

[20] Degrees of freedom (df) reflect the number of comparisons made among the regions. Metrics that were present in three regions were tested with two degrees of freedom

[21] Degrees of freedom (df) reflect the number of comparisons made among states. Metrics that were present in all states were tested with ten degrees of freedom

Checklist	Description	Number of CLEC Repairs	Is there a statistically significant difference among regions? (p-value,df[20])	Within Regions, Is there a statistically significant difference among States? (p-value,df[21])
14	Centrex 21 Repair Not Dispatched	900	No (p = 0.823, 2)	
14	Centrex 21 Repair Outside MSAs	491	No (p = 0.184, 2)	
14	Centrex 21 Repair Within MSAs	1130	Yes (p = 0.025, 2)	
14	Centrex Repair Not Dispatched	4587	Yes (p < 0.001, 2)	
14	Centrex Repair Outside MSAs	1845	No (p = 0.105, 2)	
14	Centrex Repair Within MSAs	6014	Yes (p < 0.001, 2)	
14	DS0 Repair High Density	3396	Yes (p < 0.001, 2)	
14	DS0 Repair Low Density	2475	No (p = 0.744, 2)	
14	DS1 Capable Repair High Density	1206	Yes (p < 0.001, 2)	
14	DS1 Capable Repair Low Density	966	No (p = 0.315, 2)	
14	Resale PBX Repair Not Dispatched	372	No (p = 0.555, 2)	
14	Resale PBX Repair Outside MSAs	50	No (p = 0.291, 2)	
14	Resale PBX Repair Within MSAs	153	No (p = 0.331, 2)	
14	Resale Repair for DS3 and Higher High Density	232	No (p = 0.101, 2)	
14	Resale Repair for DS3 and Higher Low Density	73		
14	Residence Repair Not Dispatched	2294	No (p = 0.148, 2)	
14	Residence Repair Outside MSAs	1821	No (p = 0.922, 2)	
14	Residence Repair Within MSAs	5694	Yes (p < 0.001, 2)	

2.6.3.6 *Maintenance and Repair State Evaluation Results*

KPMG Consulting statistical tests of metric performance data from January through April 2000 rejected the hypothesized assumption of consistency across regions for the following metrics tested in the MR-6 family of metrics:

Qwest's MSAs and high density areas, repairs for

Business

- Centrex 21
- Centrex
- DSO
- DS1

Residential service

- For low density areas ISDN
- For out dispatched areas Centrex

It is not possible to determine based on this analysis alone whether the differences observed are due to differences in Qwest systems and processes, or whether they are due to variations in transaction mix or other systematic differences among the regions.

KPMG Consulting statistical tests of metric performance data from January through April 2000 failed to reject the hypothesized assumption of consistency across regions for the other types of metrics tested in the MR-6 family of metrics.

Statistical analyses of state differences within Qwest regions could not be performed for the MR-6 family of metrics due to the level of aggregation present in the data provided by Qwest for the period from January through April 2000.

3.6.17 *Billing State Analyses Evaluation Criteria and Results*

BI-1 Regional and State Analyses

KPMG Consulting was unable to evaluate the BI-1 metric for regional performance differences and state performance differences within regions using standard statistical methods. The level of aggregation present in the data provided by Qwest lacked the information necessary to carry out the tests.

3.6.18 *Billing Regional and State Evaluation Results*

Not applicable.

2.6.4 Results

These results are shown in the table below with an indication of whether or not they match the TRD.

Table 2.6.5.1: Statistical Analysis Summary

	Hypothesis		
	Failed to reject	**Reject**	**Inconclusive**
Aggregate timeliness of FOCs as measured by PO-5 is the same across Qwest regions		X	
Within Qwest regions, aggregate timeliness of FOCs as measured by PO-5 is the same across Qwest states.		X	
Installation commitments met and installation intervals are the same across Qwest regions		X	
Within Qwest regions, installation commitments met and installation intervals are the same across Qwest states.		X	
Timeliness of repairs as measured by MR-6 is the same across regions		X	
Within Qwest regions, timeliness of repairs as measured by MR-6 is the same across states.			X
Mean time to provide recorded usage Records is the same across regions			X
Within Qwest regions, mean time to provide recorded usage records is the same across Qwest states.			X

KPMG Assessment of Test Impacts

The ROC TAG requested that KPMG Consulting summarize the impacts of the Qwest Regional Differences Assessment (the Assessment) on the ROC OSS Test. Based on the results of the assessment, KPMG Consulting believes a Qwest-wide test is still appropriate for many aspects of the test. However, KPMG Consulting also believes that, due to the differences in systems and processes highlighted in the TRD and the Assessment, the MTP test approach should explicitly recognize, and give effect to, the differences between and among said systems and processes.

KPMG Consulting proposes that the test be conducted using the production test bed quantities shown in Table 1.

Table 1: Proposed Account Volume to be Distributed Equally Across the Regions

Product/resource type	Number of Accounts
Analog loops	140
Working lines:	
Business POTS accounts	140
Residential POTS accounts	140
UNE-P accounts	280
Resale Centrex accounts	70
Total working lines	630
Virtual lines:	
Business POTS	140
Residential POTS	140
UNE-P	140
Centrex resale	70
Total virtual lines	490
DS1 loops	280
Non-loaded 2W loops	280
Loops w/number portability	140
Total accounts requiring statistically significant samples (X in App. K)	1,960
Accounts required for non-statistically significant samples	500
Total order account requirements	2,460
M&R and Billing accounts	400
Total accounts	2,860

KPMG Consulting also recommends that, because regional differences appear to exist in the various regional systems and procedures for pre-ordering, ordering, provisioning and billing, the account volumes from Table 1 be distributed evenly across each of the three regions as reflected in Table 2.

Table 2: Proposed Volume for Each Region

Product/resource type	Number of Accounts
Analog loops	47
Working lines	
Business POTS accounts	47
Residential POTS accounts	47
UNE-P accounts	93
Resale Centrex accounts	23
Total working lines	210
Virtual lines	
Business POTS	47
Residential POTS	47
UNE-P	47
Centrex resale	23
Total virtual lines	164
DS1 loops	93
Non-loaded 2W loops	93
Loops w/number portability	47
Total accounts requiring statistically significant samples	654
Accounts required for non-statistically significant samples	166
Total order account requirements	820
M&R and Billing accounts	135
Total accounts	955

Tables 1 and 2 do not reflect KPMG Consulting s recommendations in the areas of total number of working lines and DS1 loops. To date, this issue has not been resolved.

Appendices G and K were silent on the issue of whether or not the ROC sampling principles should apply to any test of regional differences. If the test to examine the impact (if any) of regional differences were to include the principles of Appendices G and K, then the test bed size would effectively be three times the quantities shown in Table 1. We have reflected these multiplied quantities in Table 3.

Table 3: Volumes When Applying Appendices G and K to Each Region

Product/resource type	Number of Accounts
Analog loops	420
Working lines:	
Business POTS accounts	420
Residential POTS accounts	420
UNE-P accounts	840
Resale Centrex accounts	210
Total working lines	1,890
Virtual lines:	
Business POTS	420
Residential POTS	420
UNE-P	420
Centrex resale	210
Total virtual lines	1,470
DS1 loops	840
Non-loaded 2W loops	840
Loops w/number portability	420
Total accounts requiring statistically significant samples	5,880
Accounts required for non-statistically significant samples	1,500
Total order account requirements	7,380
M&R and Billing accounts	1,200
Total accounts	8,580

Adopting the numbers in Table 3 would further exacerbate the working line and DS1 loop problem. The DS1s and working lines become more problematic not only by increasing the numbers to 1,890 working lines for the production test and 840 DS1 loops, but by requiring that the additional quantities be provisioned in a smaller geographic area. For example, in the Western Region, Qwest would be required to provision 630 working lines and 280 DS1 loops for the test in just two states, Washington and Oregon.

In our opinion, distributing the test bed across the three regions as shown in Table 2 retains the statistical sample principles outlined in Appendices G & K, and still assures a reasonable sample from each of the regions to test for regional differences.

Order Management

Pre-order

KPMG Consulting proposes to process a minimum of 140 of the following standalone pre-order inquiries across the three Qwest regions:

- Customer Service Record Inquiry
- Telephone Number Reservation
- Address Validation
- Facility Check
- Appointment Availability
- Service/Feature Availability
- Validate Connecting Facility Assignment
- View Design Layout Record

In addition to the standalone pre-order activity shown above, several additional inquiries will be processed in conjunction with order transactions.

Ordering

KPMG Consulting proposes to conduct Ordering testing using the volumes shown in Table 2.

Provisioning

KPMG Consulting proposes to validate provisioning of completed orders on a regional basis based on a subset of the quantities of transactions reflected in Table 2.

Maintenance and Repair

The ROC TAG has previously agreed to a sampling plan for Maintenance and Repair transactions that does not depend on the product breakdown of Appendix K. This sample (140 dispatch trouble tickets and 140 non-dispatch trouble tickets) will also be spread evenly across the three regions.

Billing

KPMG Consulting proposes to conduct regional billing tests based on a equal spread of the billing accounts across the regions.

CLEC Relationship Management and Infrastructure

KPMG Consulting proposes to conduct a Qwest-wide test of the processes encompassed within the CLEC relationship management and infrastructure domain.

Questions

1. It is important to note that a number of PIDs depend on imperfections in Qwest's systems to generate data. For example, unless there are late orders, OP-6 (Delayed Days) will not be populated. Aside from the Maintenance and Repair domain, test transactions can only produce the potential for problems to occur and not the certainty of such problems. Therefore, for PIDs outside of the Maintenance and Repair domain that depend on Qwest imperfections in order to be populated, it will not be possible to assure a sample size consistent with the principles of Appendix G, unless one makes some assumption about the rate of imperfection before the test begins. Furthermore, if the imperfection rate is small (which is to be hoped), then the number of transactions required to generate a sample size consistent with Appendix G will be extremely large. For example, if the fraction of late orders is 1%, then 14,000 orders will need to be transmitted in order to target a sample of 140 for OP-6. Even then the exact sample will depend critically on the actual imperfection rate at the time of the transactions.

   Given these considerations, is KPMG Consulting correct in assuming that the sampling principles included in Appendices G and K do not apply to PIDs outside of the Maintenance and Repair domain for which the sample size depends on Qwest imperfections?

2. Since separate wholesale bills and DUF tapes are not generated by product type and, indeed, the Billing PIDs require, at most, high-level aggregate product reporting, the product breakdown considerations in Appendix K should not apply. Furthermore, since for many of the Billing PIDs the bill reporting period is the unit of sampling, the principles stated in Appendix G would seem to imply that a large number (around 140) of reporting periods would be needed to meet the sampling criteria. Assuming a single billing cycle per month, this would require a wholesale billing test lasting about 12 years. With accounts assigned to several billing cycles per month, this length of time could be reduced, but would still be quite long. In addition, these considerations ignore the inherent problem of trying to combine data taken over long periods of time, given the potentiality of systematic changes that could be taking place over that time.

   Is KPMG Consulting correct in assuming that the sampling principles included in Appendices G and K do not apply to the Billing tests? As a point of comparison, the TAG has already agreed to a sampling plan for Maintenance and Repair transactions that does not depend on the product breakdown of Appendix K. Thus, if the answer to this question is yes, then the detailed sampling requirements in Appendices G and K will only apply to the Pre-ordering, Ordering, and Provisioning tests.

3 Historically, KPMG Consulting has not validated provisioning on 100% of the completed orders. Is KPMG Consulting correct in assuming that Appendix K should not be applied to provisioning validation of completed orders?