



0000009135

ORIGINAL

RECEIVED

BEFORE THE ARIZONA CORPORATION COMMISSION

2000 JUL 21 P 4:42

CARL J. KUNASEK  
CHAIRMAN  
JIM IRVIN  
COMMISSIONER  
WILLIAM A. MUNDELL  
COMMISSIONER

AZ CORP COMMISSION  
DOCUMENT CONTROL

Arizona Corporation Commission

DOCKETED

JUL 21 2000

DOCKETED BY	
-------------	--

IN THE MATTER OF QWEST )  
CORPORATION'S COMPLIANCE WITH )  
§ 271 OF THE TELECOMMUNICATIONS )  
ACT OF 1996 )

DOCKET NO. T-00000B-97-0238

SUPPLEMENTAL AFFIDAVIT OF

KAREN A. STEWART

QWEST CORPORATION

July 21, 2000

AFFIDAVIT INDEX

	<u>Page</u>
INDEX.....	i
<b>I. IDENTIFICATION OF AFFIANT.....</b>	<b>3</b>
<b>II. PURPOSE OF SUPPLEMENTAL AFFIDAVIT.....</b>	<b>3</b>
<b>III. EXECUTIVE SUMMARY.....</b>	<b>4</b>
<b>IV. STRUCTURE OF TESTIMONY.....</b>	<b>8</b>
<b>V. ADVANCED SERVICES WORKSHOP.....</b>	<b>9</b>
<b>LINE SHARING.....</b>	<b>9</b>
<b>DARK FIBER.....</b>	<b>33</b>
<b>PACKET SWITCHING.....</b>	<b>41</b>
<b>VI. ACCESS TO UNE COMBINATIONS, UNBUNDLED TRANSPORT AND UNBUNDLED SWITCHING WORKSHOP.....</b>	<b>43</b>
<b>CHECKLIST ITEM 2.....</b>	<b>43</b>
<b>CHECKLIST ITEM 5.....</b>	<b>61</b>
<b>CHECKLIST ITEM 6.....</b>	<b>70</b>
<b>VI. CHECKLIST ITEM 4 WORKSHOP.....</b>	<b>86</b>

**CHECKLIST ITEM 4 .....86**

**VIII. CONCLUSION OF AFFIDAVIT .....113**

1 **I. Identification of Affiant**

2 My name is Karen A. Stewart. I am a Director in the Qwest Corporation (Qwest),  
3 formerly known as U S WEST Communications, Inc. Markets-Regulatory Strategy  
4 organization.<sup>1</sup> My office is located at 421 SW Oak Street, Portland, Oregon. I filed an  
5 affidavit on March 25, 1999 providing direct testimony in this docket.

6 **II. Purpose of Supplemental Affidavit**

7 The purpose of my supplemental testimony is to provide updated information and  
8 performance results for 271 checklist items: access to unbundled network elements  
9 (checklist item 2); unbundled loops (checklist item 4); local transport unbundled from  
10 switching (checklist item 5); and local switching unbundled from transport and the local  
11 loop (checklist item 6).

12 In addition, my supplemental affidavit provides new testimony concerning  
13 advanced products and services now available to Competitive Local Exchange Carriers  
14 (CLECs) in Arizona under Qwest's revised Arizona Statement of Generally Available  
15 Terms and Conditions for Interconnection and Resale (SGAT). The access to  
16 advanced service requirements were the result of the FCC's Third Interconnection  
17 Order in CC Docket No. 96-98<sup>2</sup> and the Line Sharing Order in CC Docket Nos. 98-147

---

<sup>1</sup> Qwest Corporation is the successor to U S WEST communications, Inc. Qwest filed an Authority to Transact Business application with the Commission on July 6, 2000. That application is pending. Nevertheless, given that Qwest's principal place of business is in Colorado, and that the name change is effective there, this pleading has been filed under the name of Qwest.

<sup>2</sup> Third interconnection Order and Fourth Notice of Proposed Rulemaking, CC Docket No. 96-98, FCC 99-238, (November 5, 1999) (Third Interconnection Order or UNE Remand Order).

1 and 96-98.<sup>3</sup> The Line Sharing Order, as its name implies, added a requirement for line  
2 sharing and the Third Interconnection Order added requirements for: sub-loop  
3 unbundling, access to dark fiber, and limit access to unbundled packet switching.

4 The Third Interconnection Order also eliminated the obligation under Section 251  
5 (c)(3) of the Telecommunication Act of 1996 for ILECs such as Qwest to unbundle  
6 switching in the top 50 MSAs. The Phoenix-Mesa MSA was identified as a top 50 MSA;  
7 therefore, this supplemental testimony updates the Qwest checklist item 6 unbundled  
8 switching offering in the Phoenix-Mesa MSA.

### 9 **III. Executive Summary**

10 In this supplemental affidavit, I update four checklist items, all of which are forms  
11 of access to unbundled network elements (UNEs). Checklist Item 2 states that Qwest  
12 must offer CLECs nondiscriminatory access to UNEs of all types. Checklist Items 4, 5,  
13 and 6 (loops, transport, and switching) are each independent UNEs. Qwest meets  
14 these requirements in Arizona through its SGAT, which creates a concrete and specific  
15 legal obligation for Qwest to provide CLECs in Arizona with UNEs upon request in  
16 conformance with Sections 251 and 271 of the Act. Qwest also has processes in place  
17 to make each UNE available to CLECs upon request and has developed performance  
18 indicators (PIDs) so CLECS and the Commission can assess how well Qwest is making  
19 UNEs available.

---

<sup>3</sup> Third interconnection Order, CC Docket No. 98-147, and Fourth Report and Order, CC Docket No. 96-98, FCC 99-355 (December 9, 1999) (Line Sharing Order).

1 In addition, my supplemental affidavit provides new testimony concerning access  
2 to sub-loop unbundling, access to dark fiber, unbundled packet switching, and line  
3 sharing that has resulted from the FCC's Third Interconnection Order in CC Docket No.  
4 96-98<sup>4</sup> and the Line Sharing Order in CC Docket Nos. 98-147 and 96-98.<sup>5</sup>

5 Qwest has a concrete legal obligation to provide each checklist item, advanced  
6 service and line sharing to CLECs upon request. Contemporaneous with this 271  
7 Application, Qwest filed a revised SGAT. Through its SGAT and interconnection  
8 agreements, Qwest has a concrete legal obligation to allow competitors to access  
9 UNEs, including loops, switching and transport. The proposed SGAT also identifies  
10 several options for competitors to access and combine UNEs.

11 For example, Qwest offers CLECs access to new and preexisting combinations  
12 of UNEs. Qwest also offers a unique alternative in its SGAT – the interconnection  
13 distribution frame (ICDF) – which allows competitors to combine UNEs on an  
14 intermediate distribution frame without being required to collocate in the central office.  
15 Through these and other arrangements, Qwest delivers UNEs to CLECs in a manner  
16 that allows them to combine elements, or to access combinations of two or more  
17 network elements in provide the finished services of their choice.

18 To date, Qwest has provisioned a limited number of orders for conversions of  
19 retail/wholesale services to UNE combinations of elements. However, Qwest

---

<sup>4</sup> Third interconnection Order and Fourth Notice of Proposed Rulemaking, CC Docket No. 96-98, FCC 99-238, (November 5, 1999) (Third Interconnection Order or UNE Remand Order).

1 provisions UNE combinations using LSRs similar to resale services. Since, as outlined  
2 in the affidavit of Ms. Lori Simpson, Qwest can provision and maintain resold services, it  
3 can, by definition, provision pre-existing UNE combinations. Moreover, Qwest has  
4 agreed to test delivery of UNE new and pre-existing combinations as part of its Arizona  
5 Third Party Operation Support System (OSS) Test. By testing UNE combinations,  
6 Qwest's ability to order, provision, repair and bill unbundled switching and shared  
7 transport functionality will also be tested. This test will further verify Qwest's ability to  
8 provision combinations upon request. These facts establish that Qwest offers  
9 nondiscriminatory access to combinations of elements and, therefore, satisfies checklist  
10 item no. 2

11 Qwest has a concrete and specific legal obligation to provide line sharing in  
12 Arizona. The legal obligation comes in two forms: (1) an interim business agreement  
13 negotiated with interested CLECs<sup>6</sup> and (2) Qwest's Arizona SGAT. Specifically in  
14 Arizona, the interim business agreement commits Qwest to have line sharing  
15 equipment installed in 56 central offices in Arizona. As of June 30, 2000, Qwest had  
16 already equipped 50% percent of the prioritized central offices in Arizona. Qwest offers  
17 CLECs access to new UNEs consistent with the UNE Remand Order as well. It offers  
18 access to the subloops and dark fiber. It also has a Bona Fide Request (BFR) process  
19 in place that allows CLECs to request unbundled access to additional network  
20 elements. This adds additional evidence that Qwest meets checklist item 2.

---

<sup>5</sup> Third interconnection Order, CC Docket No. 98-147, and Fourth Report and Order, CC Docket No. 96-98, FCC 99-355 (December 9, 1999) (Line Sharing Order).

1           Regarding checklist items 5 and 6, Qwest provides unbundled dedicated and  
2 shared interoffice transport and unbundled switching. To date, there has been limited  
3 demand for unbundled dedicated transport, shared transport and unbundled switching  
4 in Arizona. Unbundled dedicated interoffice transport (UDIT), as of April 30, 2000, had  
5 generated 35 DS1 orders and 41 DS3 orders in Arizona.

6           Regarding checklist item 4, Qwest has provided unbundled analog voice-grade  
7 and digital-capable loops to support services such as ISDN, DSL, and DS1. As of April  
8 30, 2000, Qwest had installed 9,033 unbundled loops for nine CLECs in Arizona. In the  
9 first four months of the year, Qwest has consistently provisioned unbundled loops, on  
10 average, in less than 8 days in urban areas. While the wholesale unbundled loop has  
11 no retail analogue, this data compares favorably with the closest retail analogue, that of  
12 providing traditional basic exchange services requiring a technician dispatch. In urban  
13 areas, Qwest's average provisioning interval for business and residential services  
14 exceeded 8 days in every reporting period. Moreover, once the loops were  
15 provisioned, a greater percentage of CLEC's repair troubles were restored in less than  
16 24 hours, and actual mean times to restore were superior to what Qwest retail  
17 customers' experienced. This shows CLECs are provided loops of at least similar  
18 quality. These facts show that Qwest offers nondiscriminatory access to unbundled  
19 loops and, therefore, satisfies checklist item 4.

---

<sup>6</sup> Often CLECs specializing in data services are called Data Competitive Local Exchange Carriers (DLECs). In this affidavit, the generic term CLEC is used to include DLECs and traditional CLECs.

1 My affidavits, when combined with Arizona OSS testing results, checklist  
2 workshops and references to the SGAT, prove that Qwest provides access to UNEs in  
3 conformance with the Act. Ultimately, I conclude that the Arizona Corporation  
4 Commission (Commission) should confirm that Qwest satisfies checklist items 2, 4, 5  
5 and 6.

#### 6 **IV. Structure of Testimony**

7 On June 9, 2000, the Hearing Division entered a procedural order establishing  
8 workshops to address the remaining issues in Qwest's section 271 applications. The  
9 remaining issues include portions of checklist items 2, 4, 5, and 6 that are the subjects  
10 of my direct and supplemental testimony. They will be reviewed in three separate  
11 workshops:

12 1. The September 12-15 (Advanced Services) workshop will address  
13 aspects of checklist items 2, 4, 5 and 6; specifically line sharing, sub-loop unbundling,  
14 dark fiber (both loop and interoffice requirements), and limited access to packet  
15 switching.

16 2. The October 3-5 workshop will address the remaining aspects of checklist  
17 Items 2, 5, and 6; specifically, UNE-Combinations including EELs, and all transport and  
18 switching issues not already covered in the advanced services workshop.

19 3. The November 14-16 workshop (unbundled loops) will address the  
20 remaining aspects of checklist item 4. This workshop will consider unbundled loop

1 issues including analog, unloaded and digital capable loops, high capacity loops, loop  
2 conditioning and NID requirements. This workshop will also address local number  
3 portability which is the subject of Margaret Bumgarner's addidavit.

4 To simplify the review of each checklist issue, I have structured my supplemental  
5 testimony consistent with the issues to be addressed in each workshop. Therefore, the  
6 complete record for any individual checklist item may encompass material from all three  
7 workshops.

## 8 **V. Advanced Services Workshop**

### 9 **Line Sharing**

#### 10 **A. Qwest's Line Sharing Obligations**

11  
12 On December 9, 2000, the FCC released its Line Sharing Order. This order  
13 amended its unbundling rules to require ILECs to provide unbundled access to the high  
14 frequency portion of copper loops in certain situations. The unbundling of the high  
15 frequency portion of the loop enables a CLEC to offer advanced services over that  
16 portion of the loop at the same time the ILEC is using the voice frequency portion of the  
17 loop to provide analog, circuit-switched voice services. This joint use of copper loops  
18 by both CLECs and ILECs is commonly referred to as line sharing. In part, the  
19 amended FCC rules state:

20 (1) The high frequency portion of the loop network element is defined as  
21 the frequency range above the voiceband on a copper loop facility that is

1 being used to carry analog circuit-switched voiceband transmissions.

2  
3 (2) An incumbent LEC shall provide nondiscriminatory access in  
4 accordance with section 51.311 of these rules and section 251(c)(3) of the  
5 Act to the high frequency portion of a loop to any requesting  
6 telecommunications carrier for the provision of a telecommunications  
7 service conforming with section 51.230 of these rules.

8  
9 (3) An incumbent LEC shall only provide a requesting carrier with access  
10 to the high frequency portion of the loop if the incumbent LEC is providing,  
11 and continues to provide, analog circuit-switched voiceband services on  
12 the particular loop for which the requesting carrier seeks access.<sup>7</sup>

13  
14 The FCC determined that ILECs would require a period of time to implement the  
15 OSS and loop facility modifications needed to support line sharing. Specifically, the  
16 FCC concluded that ILECs should be able to make these modifications and begin  
17 providing line sharing within 180 days of the Line Sharing Order. The FCC urged ILECs  
18 to make access to the high frequency portion of loops available to requesting carriers  
19 as of June 6, 2000, 180 days after December 9, 1999.

20 **B. Qwest Offers Line Sharing in Arizona**

21 Qwest has a concrete and specific legal obligation to provide line sharing in  
22 Arizona. The legal obligation comes in two forms: (1) an interim business agreement  
23 negotiated with interested CLECs<sup>8</sup> and (2) Qwest's Arizona SGAT. As to the first, to  
24 promptly satisfy the requirements of the Line Sharing Order, Qwest and interested  
25

---

<sup>7</sup> 47 C. F. R. 51.319 (h)

1 CLECs negotiated an interim business agreement (signed on April 24, 2000), to govern  
2 the deployment of line sharing in 13 of Qwest's states, including Arizona.<sup>9</sup> The interim  
3 business agreement includes provisioning and maintenance processes and interim  
4 rates associated with the line sharing elements. KAS-1 contains a copy of the final  
5 interim business agreement that was signed originally by 13 CLECs serving a variety of  
6 Qwest states.

7 As part of the interim business agreement, Qwest allowed CLECs to prioritize  
8 which Qwest central offices would first be deployed with line sharing bays, equipment  
9 and cabling. In this regard, the CLECs developed a list of 349 central offices across the  
10 13 states covered by the interim business agreement in which Qwest agreed to install,  
11 on a staggered basis, the equipment and facilities needed to support line sharing. Per  
12 the interim business agreement, the initial groups of central offices were equipped for  
13 line sharing by May 15, 2000, and the last group of central offices is scheduled for  
14 completion on July 31, 2000.

15 Specifically in Arizona, the interim business agreement commits Qwest to have  
16 line sharing equipment installed in 56 central offices in Arizona. As of June 30, 2000,  
17 Qwest had already equipped 50% percent of the prioritized central offices in Arizona.

---

<sup>8</sup> Often CLECs specializing in data services are called Data Competitive Local Exchange Carriers (DLECs). In this affidavit, the generic term CLEC is used to include DLECs and traditional CLECs.

<sup>9</sup> Prior to the interim business agreement, Qwest and a group of CLECs negotiated a stipulation to govern line sharing deployment in the only state in Qwest's region not covered by the interim business agreement, Minnesota, on an interim basis. The stipulation was approved by the Minnesota Commission on December 1, 1999, and required Qwest to make 52 central offices in Minnesota (identified and prioritized by the CLECs) capable of supporting line sharing by March 31, 2000. This was the first such agreement of its kind in the nation, and it served as the basis for the interim business agreement for the other 13 states in Qwest's region.

1 Moreover, Qwest is on track to equip the remaining prioritized central offices in Arizona  
2 by the July 31, 2000 date set forth in the agreement. At the request of the CLECs, the  
3 list of prioritized central offices is confidential, and not available to parties outside those  
4 that have signed the interim business agreement.

5 Additionally, Qwest stands ready to accept applications from any CLEC with Line  
6 Sharing in their interconnect agreement to equip central offices not on the initial  
7 prioritization list. Applications to equip additional central offices will be processed  
8 utilizing the collocation application process.

9 In those central offices in Arizona already equipped for line sharing, Qwest is  
10 now accepting Shared Loop orders<sup>10</sup>. As of July 1, 2000, Qwest has not received any  
11 Arizona orders for Shared Loop. However, Qwest is prepared to meet the current and  
12 foreseeable demand in Arizona and is providing the Shared Loop functionality in other  
13 states.

14 Qwest provided the ACC with a copy of the interim business agreement during  
15 the week of April 24, 2000, and invited ACC staff to attend a question and answer  
16 session via a telephone conference call on April 28, 2000. The invitation to this  
17 conference is attached as Exhibit KAS-2. In addition, Qwest mailed a copy of the  
18 interim business agreement to each wireline CLEC (with which it had an interconnection  
19 agreement) in its region. This mailing included instructions on how to "opt in" to the

---

<sup>10</sup> "Shared Loop" is the name of the Qwest line sharing offering.

1 agreement by simply counter-signing the cover letter and mailing it back to Qwest.

2 Exhibit KAS-3 contains a copy of the notification and the CLEC mailing list.

3 Qwest is in the process of negotiating state-specific, CLEC-specific  
4 interconnection agreement amendments based on the terms and conditions contained  
5 in the interim business agreement. Any CLEC that is a party to the interim business  
6 agreement can continue to obtain line sharing from Qwest under that agreement until  
7 the interconnection agreement amendments have been executed.

8 Qwest's Arizona SGAT also contains explicit line sharing (i.e. "Shared Loop")  
9 language and thereby creates a binding legal obligation for Qwest to provide line  
10 sharing in Arizona<sup>11</sup>. Since Qwest filed its Arizona SGAT on April 7, 2000, Qwest has  
11 modified its SGAT language to more closely align it with the negotiated interim business  
12 agreement, and has included this updated language in its proposed SGAT filed on July  
13 21, 2000.

14 The proposed Arizona SGAT states:

15 9.4.1 Line Sharing provides CLEC with the opportunity to offer advanced  
16 data services simultaneously with an existing end user's analog voice-  
17 grade (POTS) service on a single copper loop referred to herein as the  
18 "Shared Loop" or "Line Sharing", by using the frequency range above the  
19 voice band on the copper loop. This frequency range will be referred to  
20 herein as the High Frequency Spectrum Network Element ("HUNE"). A  
21 POTS splitter separates the voice and data traffic and allows the copper  
22 loop to be used for simultaneous data transmission and POTS service.  
23 The POTS service must be provided to the end user by Qwest.

---

<sup>11</sup> SGAT at 9.4

1 Qwest further defines the specifications, interfaces and parameters associated  
2 with the Shared Loop product in Technical Reference Publications No. 77380 through  
3 77389. In addition, the Interconnect & Resale Resource Guide (IRRG) provides CLECs  
4 with product information, rates and availability. CLECs can access the IRRG at URL:  
5 [Http://www.uswest.com/wholesale/](http://www.uswest.com/wholesale/).

6 **C. Shared Loop Description and Implementation**

7

8 **1. Description**

9 In a line sharing (Shared Loop) arrangement one copper loop can carry both  
10 voice and data traffic simultaneously. Through the separation of the voice frequency  
11 from the data frequency, Qwest provides voice service to the end-user using the voice  
12 band frequencies, while the CLEC provides an approved data service on the frequency  
13 range above the voice band.

14 The FCC recognized the potential for data services to degrade existing analog  
15 voice services, and, therefore, required that ILECs only provide line sharing to the  
16 extent that the xDSL technologies deployed by the CLEC are presumed to be  
17 compatible with analog voice service.<sup>12</sup> Such presumed services currently are limited to  
18 ADSL<sup>13</sup>, RADSL and Multiple Virtual Line transmission systems. In the future, additional

---

<sup>12</sup> Line Sharing Order at para. 70

<sup>13</sup> In the Line Sharing Order, the FCC concluded that the relatively new "G.Lite" standard (a form of splitterless ADSL) may be compatible with voice services and, hence may be acceptable for line shared deployment. Line Sharing Order at para. 70, fn. 156.

1 technologies may be used by CLECs to the extent those services are deemed  
2 acceptable for line sharing deployment under applicable FCC rules.<sup>14</sup>

## 3           **2. Implementation**

4           Implementing a line sharing arrangement requires the installation of new  
5 equipment in the central office, including a “POTS splitter” that splits the voice and data  
6 traffic, sending the voice traffic to Qwest and the data traffic to the CLEC. In addition,  
7 new cross-connect systems, cabling, and terminal blocks are required in the central  
8 office to route the voice and data traffic separately.

9           Generally, in a line sharing arrangement, just as with POTS, the copper loop  
10 comes into the central office from a home or business and connects to the COSMIC or  
11 MDF. From there, however, the path the loop follows changes significantly. The loop is  
12 cross-connected and routed to an Intermediate Distribution Frame (IDF), which, in turn,  
13 is cross-connected and then routed to a “POTS splitter.” The POTS splitter literally  
14 splits the voice and data traffic into two distinct transmission paths, thereby allowing the  
15 voice traffic to be carried to the Qwest switch and the data traffic to be carried to the  
16 CLEC’s collocation space. Exhibit KAS-4 provides a diagram of a typical line sharing  
17 arrangement.

18           A POTS splitter is a passive device, meaning it does not require external power  
19 to perform its function. In the event of a power loss, the voice calls passing through  
20 the POTS splitter will remain functional, relying on central office back-up power

---

<sup>14</sup> SGAT at 9.4.2.1.3

1 systems, thus insuring critical services (such as 911 and operator services) are still  
2 available.

3 A key network architecture decision in implementing line sharing is where to  
4 place the POTS splitter in the central office. Generally, there are two alternatives: (1)  
5 placement of the POTS splitter in a common area, such as a relay rack near the IDF, or  
6 (2) placement of the POTS splitter in the CLEC's collocation space. Qwest allows  
7 CLECs to choose either alternative providing them the flexibility to meet specific  
8 business needs.<sup>15</sup> These choices are, of course, dependent upon space availability and  
9 engineering economy. For example, central offices of less than 10,000 lines may  
10 require placement of common area POTS splitters on a MDF or an existing Qwest relay  
11 rack.

12 Exhibit KAS-4 illustrates the placement of a POTS splitter in a central office  
13 common area. Using the architecture where the POTS splitter is placed in a common  
14 area, the CLEC purchases the POTS splitter, or Qwest will purchase the POTS splitter  
15 for CLEC subject to reimbursement by the LCEC, and Qwest is responsible for  
16 installing the POTS splitter in the common area.<sup>16</sup> Qwest also has responsibility for the  
17 maintenance and repair of the POTS splitter. This placement in the common area  
18 allows multiple CLECs to mount individual splitter shelves in a common bay and/or  
19 relay rack.

---

<sup>15</sup> SGAT at 9.4.2.2 and 9.4.2.3

<sup>16</sup> SGAT at 9.4.2.3.1

1 In this arrangement, two Interconnection Tie Pairs (ITPs) and four TIE Cables  
2 are needed to connect the POTS splitters to the Qwest network.<sup>17</sup> One ITP carries both  
3 voice and data traffic from the COSMIC/MDF loop termination, to an appropriate IDF.  
4 From this frame, one TIE Cable carries both voice and data traffic to the POTS splitter.  
5 The voice and data traffic are then separated at the POTS splitter, and the separated  
6 voice and data traffic are transported to the IDF via separate TIE Cables (i.e., the  
7 second and third TIE Cables). At the IDF, the data traffic is routed to the CLEC's  
8 collocation area via a fourth TIE Cable, and the voice traffic is transported to the switch  
9 port termination, via a second ITP.

10 The second alternative available to CLECs is placement of the POTS splitter in  
11 the CLEC's collocation space. Once the POTS splitter has been installed by the CLEC,  
12 two ITPs and two TIE Cables are needed to connect it to the Qwest network. One ITP  
13 carries both voice and data traffic from the COSMIC/MDF loop termination, to an  
14 appropriate IDF. From this frame, one TIE Cable carries both voice and data traffic to  
15 the POTS splitter located in the CLEC's collocation space. The voice and data traffic is  
16 separated at the POTS splitter. The data traffic is connected to the CLEC's network  
17 within its collocation area. The voice traffic is then carried to the switch port  
18 termination, via the IDF, using a second TIE Cable and a second ITP.

19 There are numerous practical reasons for placing the POTS splitter in the  
20 CLEC's collocation space. First, the CLEC has complete control over acquisition and

---

<sup>17</sup> TIE Cables frequently are referred to as DS0 terminations in many of Qwest's interconnection agreements, and ITPs frequently are referred to as Expanded Interconnection Channel

1 installation of the POTS splitters, and has responsibility for the maintenance and repair  
2 of the splitters. Second, this placement is less complicated than placing the POTS  
3 splitter in a common area of the central office, because (as identified above) it often  
4 requires placing two fewer TIE cables in the central office. Hence, it involves fewer  
5 cross-connects, and therefore, substantially less installation time. Exhibit KAS-5 for a  
6 diagram of a POTS splitter placed in a CLEC's collocation area.

7 **D. Line Sharing Provisioning Process**  
8

9 Qwest has documented methods, procedures and standards for CLECs to  
10 access Shared Loops. All Shared Loop provisioning and maintenance methods and  
11 procedures have been documented. Exhibit KAS-6 diagrams the Shared Loop  
12 provisioning process and describes the provisioning task list functions.

13 Extensive Shared Loop provisioning information is made available to CLECs on-  
14 line in Qwest's Wholesale Web site. Moreover, the initial process to access Shared  
15 Loops has been directly communicated to the CLECs who have signed the interim  
16 business agreement. Exhibit KAS-7 contains a copy of the ordering guide provided to  
17 each CLEC that elected to sign the interim business agreement.

18 Prior to the actual provisioning of a CLEC's first Shared Loop order in a central  
19 office, a POTS splitter must be installed. POTS splitter installation, cable  
20 augmentations, and other work within central offices needed to support line sharing

1 may be ordered at the same time as a new collocation space utilizing a single  
2 collocation application form.

3       Once a POTS splitter has been installed in a central office, Qwest will provision  
4 the Shared Loop arrangement within the same standard interval for the unbundled  
5 loop.<sup>18</sup> For example, the expected installation interval for a Shared Loop in a high-  
6 density area, such as Phoenix, is five days. After using the Loop Qualification tool in  
7 IMA, the CLEC will submit a Local Service Request (LSR) similar to the process used  
8 for unbundled loops.

9       Basic Installation “lift and lay” procedures will be used for all Shared Loop orders.  
10 Under this approach, a Qwest technician “lifts” the loop from its current termination in a  
11 Qwest Wire Center and “lays” it on a new termination connecting it to the CLEC’s  
12 collocated equipment in the same central. Exhibit KAS-8 contains a central office job  
13 aid that is laminated and strategically placed in each central office when a POTS splitter  
14 is installed. This job aid assists the central office technician in consistently following  
15 process guidelines when installing and repairing Shared Loop arrangements.

16       To support line sharing, Qwest’s standard unbundled loop ordering and  
17 provisioning processes have been modified to reflect the fact that both Qwest and a  
18 CLEC are now serving one end-user. The presence of two carriers for one end-user  
19 has a substantial impact on the OSS ordering and provisioning processes. Qwest must

---

<sup>18</sup> SGAT at 9.4.2.3.2.1

1 modify the systems that support these processes to allow the CLEC to pass additional  
2 pieces of data that will be used to designate:

- 3 • the CLEC's identity;
- 4 • the request is for line sharing;
- 5 • the specific loop that will be shared;
- 6 • meet points for the Shared Loop (the POTS splitter and port location); and
- 7 • the power density mask that the CLEC pre-specifies on the LSR.

8 A.

9 In addition, the ordering and provisioning systems must recognize the line  
10 sharing information and, based on that information, direct data and actions of other  
11 downstream systems. Many of these systems must now house CLEC-specific records  
12 and end-user-specific records that must be correlated. For example, such correlation of  
13 CLEC and end-user records is necessary to carry out functions relating to billing and  
14 repair. The inventory and assignment systems must also recognize the line sharing  
15 data, be able to handle additional inventory meet points from the CLEC and direct the  
16 inventory information to the appropriate systems.

17 **E. Line Sharing Maintenance Process**

18 .

19 Exhibit KAS-9 charts the Shared Loop maintenance process and describes the  
20 maintenance task list functions. In summary, Qwest will be responsible for repairing  
21 both the voice services provided over the Shared Loop and the physical line between  
22 the network interface device at the end user premise and the point of demarcation in

1 the Qwest central office. Qwest will also be responsible for inside wiring at the end user  
2 premises in accordance with the terms and conditions of inside wire maintenance  
3 agreements, if any, between Qwest and its end-users.

4 Qwest will allow the CLEC to access Shared Loops at the point where the  
5 combined voice and data loop is cross-connected to the POTS splitter. The CLEC will  
6 be responsible for repairing data services provided on Shared Loops. Qwest and the  
7 CLEC each will be responsible for maintaining its own equipment. The entity that  
8 controls the POTS splitter will be responsible for its repair and maintenance.

9 Qwest and the CLEC will have the responsibility for resolution of any service  
10 trouble report(s) initiated by their respective end-users. If an end-user complains of a  
11 voice service problem that may be related to the use of a Shared Loop for data  
12 services, Qwest and the CLEC will work together with the end-user to solve the problem  
13 to the satisfaction of the end-user. Qwest will not disconnect the data service provided  
14 to an end-user over a Shared Loop without the written permission of CLEC unless the  
15 end-user's voice service is so degraded that the end-user cannot originate or receive  
16 voice telephone calls.

17 **D. Line Sharing Performance Measurements**

18  
19 Qwest is participating in the Arizona Technical Advisory Group (TAG) to identify  
20 performance measurements for line sharing. The Arizona Third Party Operation  
21 Support System (OSS) Test and Workshops have not determined specific line sharing

1 performance measurements. However, nothing has been done to exclude the Shared  
2 Loop LSRs from the general Performance Indicator Definitions (PIDs) on an aggregated  
3 basis. For example, PO-4-LSRs Rejected would include information on Shared Loop  
4 LSRs rejected for any reason. However, as specific product volumes grow to be  
5 statistically significant, Qwest will disaggregate Shared Loop performance  
6 measurements in the PIDs. Any new measures or additional product desegregation  
7 agreed upon will be reflected in a revised SGAT.

8  
9 In addition, in the capacity test, the parties to the Arizona Third Party Operation  
10 support System (OSS) Test and Workshops and Qwest agreed to an incremental  
11 percentage increase to the test volumes for September, 2001 LSRs to account for  
12 increased order activity due to the advent of Shared Loop arrangements.

13 ***E. Line Sharing Performance Results***

14  
15 As of July 1, 2000, Qwest has not processed any Shared Loop orders in Arizona.  
16 When performance measurement results are available, I will supplement my affidavit in  
17 this proceeding.

1 **Sub-Loop**

2 **A. Qwest's Sub-Loop Obligations**

3  
4 In the UNE Remand Order, the FCC determined that ILECs must provide  
5 unbundled access to sub-loops.<sup>19</sup> Specifically, the order stated:

6 We define subloops as portions of the loop that can be accessed at  
7 terminals in the incumbent's outside plant. An accessible terminal is a point  
8 on the loop where technicians can access the wire or fiber within the cable  
9 without removing a splice case to reach the wire or fiber within. These  
10 would include a technically feasible point near the customer premises,  
11 such as the pole or pedestal., the NID or the minimum point of entry to the  
12 customer premises (MPOE). Another point of access would be the feeder  
13 distribution interface (FDI) which is where the trunk line, or "feeder,"  
14 leading back to the central office, and the "distribution" plant, branching out  
15 to the subscribers, meet, and "interface". The FDI might be located in the  
16 utility room in a multi-dwelling unit, in a remote terminal, or in a controlled  
17 environment vault (CEV). . . <sup>20</sup>

18 The requirement for ILECs to provide access to sub-loops was effective 120  
19 days after the UNE Remand Order was published in the Federal Register. Therefore,  
20 Qwest was required to provide access to unbundled sub-loops as of May 18, 2000.

21 **B. Qwest Offers Sub-Loops in Arizona**

22  
23 Well ahead of May 18, 2000, on April 7, 2000, Qwest updated its Arizona SGAT  
24 to provide access to portions of unbundled loops, (i.e. sub-loops.)

25 The effective SGAT states:

---

<sup>19</sup> Third Interconnection Order at para. 209

<sup>20</sup> Third Interconnection Order at para. 206

1 Sub-loop is defined as any portion of the loop that it is technically feasible  
2 to access in Qwest's terminals in outside plant, i.e. an accessible terminal,  
3 pole, pedestal, Feeder Distribution Interface (FDI) or Minimum Point of  
4 Entry (MPOE) including inside wire (owned by Qwest). An accessible  
5 terminal is any point on the Loop where technicians can access the wire or  
6 fiber within the cable without removing a splice case and/or digging up or  
7 trenching underground to reach the wire within.<sup>21</sup>

8 Consistent with the requirements of the UNE Remand Order, Qwest, clearly has  
9 a legally binding commitment to provide unbundled access to sub-loops. Qwest further  
10 defines the specifications, interfaces and parameters associated with sub-loops in  
11 Technical Reference Publication No. 77405. In addition, the provides CLECs with  
12 product information, rates and availability. CLECs can access the IRRG at URL:  
13 [Http://www.uswest.com/wholesale/](http://www.uswest.com/wholesale/)

14 As of July 1, 2000, Qwest has not provisioned sub-loops in Arizona. However,  
15 Qwest is in the process of installing a Field Connection Point (FCP) which is used to  
16 provision sub-loops and is discussed in more detail later in my testimony, at the request  
17 of a CLEC operating in Arizona, and anticipates the first orders for sub-loops will be  
18 submitted in the August time frame.

---

<sup>21</sup> SGAT at 9.3.1.1

1 Sub-Loop Description and Implementation

2  
3 1. Description

4 A sub-loop is defined as any portion of the loop that it is technically feasible to  
5 access at one of Qwest's terminals in its outside plant network. When a CLEC is  
6 provided access to a portion of the loop, this process is referred to as sub-loop  
7 unbundling. An accessible terminal is any point on the unbundled loop where  
8 technicians can access the wire or fiber within the cable without removing a splice case  
9 and/or digging up or trenching underground to reach the wire. Examples of where it is  
10 technically feasible to access Qwest's outside plant are: an accessible terminal; pole;  
11 pedestal; Feeder Distribution Interface (FDI); or Minimum Point Of Entry (MPOE),  
12 including inside wire (if owned by Qwest).<sup>22</sup> Exhibit KAS-10 depicts the FCD and FDI.

13 The typical loop consists of two segments or portions, the feeder segment and  
14 distribution segment. The feeder extends from the central office network interface  
15 (typically a MDF or COSMIC frame) to a FDI. The distribution segment of the loop  
16 extends from the FDI to the at the end-user location.

---

<sup>22</sup> SGAT at 9.3.1.1



1  
2

3           As shown, the two segments are cross-connected in the field at the FDI. Each  
4 portion of the loop, when unbundled into sub-loop elements, becomes an individual  
5 UNE. The Qwest sub-loop product offering identifies these two typical segments as the  
6 DS1 Capable Unbundled Feeder Sub-Loop (UFL) and the Two-Wire Unbundled  
7 Distribution Sub-Loop (UDL). Moreover, the SGAT clearly makes these two types of  
8 standard sub-loops available to CLECs in Arizona.<sup>23</sup> . **2. Implementation**

9           A CLEC can order access to specific unbundled sub-loops once a CLEC-  
10 requested has been installed at the FDI or any other technically feasible access point.  
11 The FCP provides a demarcation point for the termination of the Qwest-provided sub-  
12 loop, and the necessary cross-connections so the sub-loop may connect with the  
13 CLEC-provided facilities. Moreover, the FCP network design allows multiple CLECs to  
14 access the same FDI or other technically feasible access point.

---

<sup>23</sup> SGAT at 9.3.2 and 9.3.3

1



2

3

4

As illustrated above, the FCP is a splice point that connects Qwest's network to a CLEC's network. This is done by splicing CLEC owned cables in 100 pair increments to a Qwest cable that is, in turn, connected to terminal blocks in the FDI or other technically feasible access point. The terminal blocks in the FDI or other technically feasible access point provide CLECs with access to the UFL and UDL.

8

9

With the expected demand for sub-loop unbundling, Qwest may increase the size of existing FDIs to accommodate CLEC requests for additional cross connect blocks. Thus, if necessary, Qwest will retrofit an existing 2,700 pair FDI to an ultimate size of 5,400 pair, which will allow for a maximum of three additional 900 pair cables and cross-connect blocks to be placed in the FDI. With receipt of the first order for sub-loop unbundling, Qwest will place a 900 pair cable and accompanying cross-connect

14

1 blocks in the FDI and stub the cable to a pedestal. Placing a cable at the pedestal  
2 provides the CLEC with a splice point to attach its cable. CLECs will have access to  
3 the back side of the FDI to make their cross connects.

4 When a CLEC places an order that requires turning up service, Qwest will make  
5 the appropriate cross-connect on its side of the FDI or other appropriate cross-connect  
6 location. It then will provide the CLEC with a specifically designated cross-connect, and  
7 the CLEC can make its cross connect on its side of the FDI or other appropriate cross-  
8 connect location.

9 A standard physical demarcation process provides Qwest and CLECs with a  
10 common interface location for maintenance and repair. The FCP is not a unique  
11 architecture in that a similar function is performed by the Point of Interface (POI)  
12 manhole in central office collocation arrangements. In the collocation example, CLECs  
13 bring their own facilities to the POI manhole where Qwest splices Qwest facilities  
14 directly into the CLEC facilities. Qwest then terminates their facilities to an IDF for  
15 access to UNEs. The splice in the POI manhole also serves as a physical demarcation  
16 between Qwest facilities and CLEC facilities.

17 The splice point location is an engineering decision based upon space and right  
18 of way constraints, and local codes. Examples of possible FCP locations include a  
19 pedestal near the FDI or other technically feasible access point and the splice chamber  
20 of the FDI or other technically feasible point.

1 To the extent a CLEC wants access to unbundled sub-loops other than the two-  
2 wire Unbundled Distribution Sub-Loop or the DS1 Capable Unbundled Feeder Sub-  
3 Loop, such access is available through the bona fide request (BFR) process identified  
4 in the SGAT<sup>24</sup>. I describe the BFR process later in my affidavit in checklist item 2,  
5 access to UNE. In addition, the BFR process is also available if a CLEC desires to  
6 access sub-loops in some other manner than the use of an FCP. Qwest will continue to  
7 develop standard options as demand occurs.

8 **C. Sub-Loop Provisioning Process**

9  
10 A CLEC may submit orders for sub-loops after the FCP is in place.<sup>25</sup> To place an  
11 FCP, the CLEC will first submit a Field Connection Point Request Form to their Qwest  
12 Account Representative. Upon receipt of the Field Connection Point Request Form,  
13 Qwest will initiate a Feasibility study and an FCP quote. Within thirty (30) calendar  
14 days of receipt of a completed Field Connection Point Request Form, Qwest will notify  
15 the CLEC if a location is technically feasible and develop a quote. The Feasibility Study  
16 and quote will be valid for thirty (30) calendar days from feasibility and quote  
17 notification.

18 Qwest will develop quotes for FCPs based on the work to be performed in  
19 connection with the Field Connection Point Request Form submitted by the CLEC.  
20 Qwest will recover the cost of FCPs through individual case basis non-recurring  
21 charges. The non-recurring charges will cover the cost of augmenting the FDI location

---

<sup>24</sup> SGAT at Section 17

1 or other technically feasible access point, so that three CLECs can interconnect at that  
2 point. If the CLEC is the first provider in the FCP, it will pay the quoted price. If the  
3 CLEC is the second provider in the FCP, it will pay the initial CLEC 50% of the price  
4 quoted to that CLEC. If the CLEC is the third CLEC in the FCP, it will pay each of the  
5 original two CLECs 17% of the price quoted to those CLECs.<sup>26</sup>

6 If the CLEC accepts the feasibility study and quote, Qwest will construct the FCP  
7 within 120 calendar days of receipt of payment from the initial CLEC requesting the  
8 FCP. Activities during this 120 day period include site visits by the field engineer,  
9 application for all appropriate permits, acquisition of rights-of-way, detailed engineering  
10 design, procurement of materials, construction resource scheduling and installation.  
11 Permits, as an example, can take 90 days or more to obtain depending upon the  
12 circumstances. Exhibit KAS-11 charts the FCP provisioning process and describes the  
13 provisioning task list functions.

14 After construction is complete, the CLEC will be notified of its termination  
15 locations that can be used for ordering sub-loops. The CLEC can then use this  
16 termination information on the LSR for sub-loops. In addition, the CLEC shall identify  
17 sub-loop elements by NC/NCI codes.

18 After the construction of the FCP, Qwest will provision Two-Wire Unbundled  
19 Feeder Sub-Loops in the same standard interval as DS1 Capable Loops. Currently,

---

<sup>25</sup> SGAT at 9.3.6.1

<sup>26</sup> SGAT at 9.3.9.4

1 that installation interval is five days in high density wire centers and eight days in low  
2 density wire centers. Exhibit KAS-12 contains a flowchart that outlines the DS1  
3 Capable Unbundled Feeder Loops provisioning process and the provisioning tasks  
4 performed by Qwest personnel.

5 Qwest will provision Two-Wire Unbundled Distribution Sub-Loops in the same  
6 standard interval as 2-wire analog unbundled loops. Currently, that installation interval  
7 is five days in high density wire centers and 8 days in low density wire centers. Exhibit  
8 KAS-13 contains a flowchart that outlines the provisioning process for Two-Wire  
9 Unbundled Distribution Loops and the provisioning tasks performed by Qwest  
10 personnel.

11 Qwest is testing its provisioning process, including FCP placement, on an end to  
12 end basis with its first FCP installation and sub-loop orders submitted in Arizona. An  
13 Arizona CLEC has submitted orders for the placement of an FCP to access unbundled  
14 Feeder Sub-Loops. The CLEC has placed their own facilities in a subdivision, and will  
15 be using Qwest's unbundled Feeder Sub-Loops to reach the central office. As this  
16 installation has progressed, Qwest has made modifications to improve its  
17 documentation to incorporate the lessons learned from this first installation. In addition,  
18 Qwest plans to further test sub-loop provisioning in the Bethany West Wire Center in  
19 Arizona in the August-September time frame. Both the Two-Wire Unbundled  
20 Distribution Loop and DS1 Capable Unbundled Feeder Loop will be included in this  
21 test.

1 **D. Sub-Loop Maintenance Process**

2  
3 Qwest will maintain all the FCPs and unbundled sub-loop facilities, and the  
4 CLEC is responsible for maintaining all of its cable, connections, equipment and  
5 network elements connected to the Qwest network.

6 In summary, the repair process flow is different for the DS1 Capable Unbundled  
7 Feeder Loop and the Two-Wire Unbundled Distribution Loop. Qwest will use outside  
8 field technicians to test and repair problems in the Two-Wire Unbundled Distribution  
9 Loop. In the case of the DS1 Capable Unbundled Feeder Loop, Qwest central office  
10 technicians will determine the problem with the feeder sub-loop and make any  
11 necessary repairs. Exhibit KAS-14 contains a flowchart that outlines the unbundled  
12 sub-loop maintenance process and the maintenance tasks performed by Qwest  
13 personnel.

14 **F. Sub-Loop Performance Measurements**

15  
16 Qwest is participating in the Arizona Technical Advisory Group (TAG) to identify  
17 performance measurements for sub-loops. The Arizona Third Party Operation Support  
18 System (OSS) Test and Workshops have not determined specific sub-loop performance  
19 measurements. However, nothing has been done to exclude the Sub-loop LSRs from  
20 the general Performance Indicator Definitions (PIDs) on an aggregated basis. For  
21 example, PO-4-LSRs Rejected would include information on sub-loop LSRs rejected for  
22 any reason. However, as specific product volumes grow to be statistically significant,  
23 Qwest will disaggregate Shared Loop performance measurements in the PIDs. Any

1 new measures or additional product disaggregation agreed upon will be reflected in a  
2 revised SGAT.

3 In addition, in the capacity test, the parties to the Arizona Third Party Operation  
4 support System (OSS) Test and Workshops and Qwest agreed to an incremental  
5 percentage increase to the test volumes for September, 2001 LSRs to account for  
6 increased order activity due to the advent of sub-loop arrangements.

7 **G. Sub-Loop Performance Results**

8

9 As of the filing of this affidavit, Qwest has not processed any Shared Loop orders  
10 in Arizona. When performance measurement results are available, I will supplement  
11 my affidavit in this proceeding.

12 **Dark Fiber**

13 **A. Qwest's Unbundled Dark Fiber Obligations**

14

15 The FCC's UNE Remand Order identified dark fiber as a new UNE. The FCC  
16 required the unbundling of dark fiber both in the loop plant and interoffice facilities. The  
17 order states:

18

19

20

21

22

174. Dark Fiber. We also modify the loop definition to specify that the  
loop facility includes dark fiber. ...[We] conclude that both copper and  
fiber alike represent unused loop capacity. We find, therefore, that dark  
fiber and extra copper both fall within the loop network element's "facilities,  
functions, and capabilities."

23

24

25

325. Dark Fiber. In addition, we modify the definition of dedicated  
transport to include dark fiber. Dark Fiber is deployed, unlit fiber optic cable

1 that connects two points within the incumbent LEC's network. As  
2 discussed above, dark or "unlit" fiber, unlike "lit" fiber, does not have  
3 electronics on either end of the dark fiber segment to energize it to transmit  
4 a telecommunications service . . .<sup>27</sup>

5  
6 The requirement for ILECs to provide unbundled access to dark fiber was  
7 effective 120 days after the UNE Remand Order was published in the Federal Register.  
8 Therefore, Qwest was required to provide access to unbundled dark fiber as of May 18,  
9 2000.

10 Prior to the UNE Remand Order, Qwest had a binding obligation to provide  
11 access to dark fiber in numerous interconnection agreements. For Example, since  
12 December 1996, in Arizona AT&T has had the ability to order unbundled dark fiber<sup>28</sup>.  
13 However, there has been no demand in Arizona and very limited demand for dark fiber  
14 across the Qwest region.

15 ***B. Qwest Offers Unbundled Dark Fiber in Arizona***

16  
17 In order to comply with the dark fiber unbundling obligations of the UNE Remand  
18 Order, Qwest has modified its Arizona SGAT to include a legally-binding obligation to  
19 provide access to unbundled dark fiber.<sup>29</sup> Qwest provides CLECs with non-  
20 discriminatory access to unbundled dark fiber interoffice transport and loop facilities.  
21 Specifically, the Arizona SGAT states:

---

<sup>27</sup> Third Interconnection Order at para. 174 and 325.

<sup>28</sup> AT&T Interconnection Agreement effective December 1996

<sup>29</sup> SGAT AT 9.7.1

1 Unbundled Dark Fiber (UDF) is a deployed, unlit pair of fiber optic cable or  
2 strands that connects two points within Qwest's network. UDF is a single  
3 transmission path between two Qwest Wire Centers or between a Qwest  
4 Wire Center and an end user customer premise in the same LATA and  
5 state. UDF exists in two distinct forms: (a) UDF Interoffice Facility (UDF-  
6 IOF), which constitutes an existing route between two Qwest Wire Centers;  
7 and (b) UDF-Loop, which constitutes an existing loop between a Qwest  
8 Wire Center and either a fiber distribution panel located at an appropriate  
9 outside plant structure or an end-user customer premises.<sup>30</sup>

10

11 Consistent with the requirements of the UNE Remand Order, Qwest, clearly has  
12 a legally-binding commitment to provide unbundled access to dark fiber. Qwest further  
13 defines the specifications, interfaces and parameters associated with unbundled dark  
14 fiber in Technical Reference Publication No. 77383. In addition, the Interconnect &  
15 Resale Resource Guide (IRRG) provides CLECs with product information, rates and  
16 availability. CLECs can access the IRRG at URL: [Http://www.uswest.com/wholesale/](http://www.uswest.com/wholesale/)

17 As of July 1, 2000, Qwest has not provisioned dark fiber loops or transport in  
18 Arizona. However, Qwest has the methods, procedures and training in place to  
19 provision orders for unbundled dark fiber should a CLEC request dark fiber loops or  
20 unbundled transport.

21 ***C. Dark Fiber Description and Implementation***

22 **1. Description**

23

---

<sup>30</sup> SGAT at 9.7.1

1 Unbundled Dark Fiber is a deployed, unlit pair of fiber optic cable or strands that  
2 connects two points within the Qwest network. Qwest provides unbundled dark fiber of  
3 substantially the same quality as the fiber facilities that Qwest uses to provide service to  
4 its own end user customers and within a reasonable time frame. Qwest will provide  
5 CLECs with access to existing unbundled dark fiber facilities (used in connection with  
6 its activities as an ILEC). Unbundled dark fiber is available in two distinct  
7 configurations:

8 (a) Unbundled Dark Fiber-Interoffice Facility (UDF-IOF), which consists of  
9 an existing route between two Qwest wire centers. Exhibit KAS-15 diagrams  
10 the unbundled dark fiber interoffice (UDF-IOF) options available to a CLEC.

11 (b) Unbundled Dark Fiber-Loop (UDF-Loop), which constitutes of an  
12 existing loop between a Qwest Wire Center and either a fiber distribution  
13 panel located at an appropriate outside plant structure or an end-user  
14 customer premises. The UDF-Loop includes the terminations and cross  
15 connects at both ends. Exhibit KAS-15 diagrams the unbundled dark fiber  
16 loop (UDF-Loop) options available to a CLEC.

17 As acknowledged by the FCC in the UNE Remand Order, dark fiber does not  
18 contain the electronics necessary to transmit a telecommunications service, (i.e. the  
19 fiber is "dark" and not "lit" with the electronic equipment that is required to use the fiber

1 strands to transmit voice or data traffic).<sup>31</sup> Thus, each CLEC is responsible for obtaining  
2 and connecting electronic equipment, whether light generating or light terminating  
3 equipment, to the unbundled dark fiber.

4 Should a CLEC require access to fiber optic cable or strands that have the  
5 necessary electronics to transmit voice and data, the CLEC would not order unbundled  
6 dark fiber. Instead, the CLEC would order the appropriate high capacity OC level  
7 options that are available in the Unbundled Dedicated Interoffice Transport (UDIT)  
8 section of the SGAT.<sup>32</sup>

9 Qwest will provide the CLEC with access to existing dark fiber in its network  
10 (used in connection with its activities as an ILEC) in either single-mode or multi-mode.  
11 A single-mode fiber will carry only a single wave length. With access to multi-mode  
12 fiber, the CLEC is able to transmit multiple signals at the same time. During the inquiry  
13 process, Qwest will inform the CLEC of the availability of single-mode and multi-mode  
14 fiber. Qwest will also provide unbundled dark fiber to the CLEC in increments of two  
15 strands (by the pair), thus allowing the CLEC to have a transmit and receive path for  
16 their telecommunication services.

## 17 2. Implementation

18 Prior to implementing unbundled dark fiber, it is first necessary to determine if  
19 dark fiber is available between the requested two locations. In general, fiber facilities

---

<sup>31</sup> Third Interconnection Order at para. 325.

1 are in the Qwest interoffice network. However, Qwest has also deployed dark fiber in  
2 its loop facilities. These deployments have predominately been in high-density  
3 metropolitan areas that have a concentration of large business customers. Large  
4 business customers often have extensive communications needs that require the high-  
5 speed capacity of a fiber loop.

6 A CLEC first submits an unbundled dark fiber inquiry through their Qwest  
7 Account Manager. In certain circumstances, dark fiber may exist along the requested  
8 route, and yet be unavailable to be dedicated to the requesting CLEC. These  
9 circumstances are as follows:

10 a) Qwest will not unbundle dark fiber utilized for maintenance or reserved  
11 for maintenance spare. Qwest shall not reserve more than 5% of the fibers  
12 in a sheath for maintenance or maintenance spares.

13 b) Qwest will not unbundle dark fiber that, as of the day the CLEC submits  
14 its order for unbundled dark fiber, it has already designated for use in an  
15 approved, or pending job on behalf of Qwest or another CLEC.

16 c) Qwest will not be required to unbundle dark fiber if Qwest demonstrates  
17 to the Commission, by a preponderance of the evidence, that such  
18 unbundling would create a likely and foreseeable threat to its ability to  
19 provide its services as required by law.

20 The FCC anticipated this requirement for ILECs, such as Qwest, to need  
21 reserves of dark fiber to meet their legal obligations in a state:

22 . . . In addition, however, if incumbent LECs are able to demonstrate to a  
23 state commission that unbundling dark fiber threatens their ability to  
24 provide service as a "carrier of last resort," states have the flexibility to  
25 establish reasonable limitations and technical parameters for dark fiber

1 unbundling . . .<sup>33</sup>

2

3 Initially, the CLEC determines if the need for dark fiber is between two Qwest  
4 wire centers (IOF) or between a Qwest wire center and a customer premise or outside  
5 plant structure (loop). Once it has been determined that dark fiber is available, the  
6 CLEC may immediately order the fiber if the request is between two Qwest wire centers  
7 (IOF) or between a Qwest wire center and a customer premise. If the request is  
8 between a Qwest wire center and an outside plant structure (loop), the CLEC will first  
9 submit a field verification and quote request. Once complete and accepted, the CLEC  
10 may order unbundled dark fiber.

11 The CLEC is responsible for all permits, licenses, bonds, or other necessary  
12 legal authority and permission, at the CLEC's expense, in order to gain access to  
13 unbundled dark fiber at an outside plant structure. The CLEC shall contact all owners  
14 of public and private Rights-of-Way to obtain their permission as required to perform the  
15 necessary work to access unbundled dark fiber in a mid-point arrangement. Exhibit  
16 KAS-15 contains a network diagram that illustrates an outside structure arrangement for  
17 unbundled dark fiber.

18 ***D. Unbundled Dark Fiber Provisioning Process***

19

---

<sup>33</sup> Third Interconnection Order at para. 352

1 Qwest has the methods and procedures in place to provide a CLEC with access  
2 to dark fiber in the interoffice and in the loop portion of its network. Qwest will provision  
3 dark fiber in Arizona utilizing defined procedural flows. Exhibit KAS-16 contains a  
4 flowchart showing the tasks performed by Qwest personnel in order to process dark  
5 fiber requests.

6 Both the SGAT and IRRG, identify the steps a CLEC must take to request  
7 access to unbundled dark fiber.

8 The *first step* of the ordering process is the inquiry process. A CLEC must  
9 submit an unbundled dark fiber Availability Inquiry and Request form through their  
10 Qwest Account Manager. Exhibit KAS-17 contains a copy of the Availability Inquiry and  
11 Request form. This inquiry is used to determine the availability of unbundled dark fiber  
12 between the two requested locations, specifically, an UDF-IOF or UDF-Loop. The  
13 CLEC must specify the two Qwest central offices or the end-user premise location and  
14 the number of fibers requested. Qwest will inform the CLEC of the availability of dark  
15 fiber that will meet CLEC's request, if any, within 10 business days.

16 The *second step* of the ordering process is the Field Verification & Quote  
17 Preparation (FVQP) Process. The FVQP is only required when the request is for  
18 access to an unbundled dark fiber pair via a mid-point structure arrangement. A quote  
19 and implementation timeline will be developed and communicated to the CLEC. The  
20 established interval for a Mid-Point Structure Inquiry is 20 business days.

1           The third step of the ordering process is the provisioning phase. When step one  
2 or steps one and two above have been completed, the CLEC may choose to order  
3 unbundled dark fiber. Qwest will provision dark fiber in its interoffice or in its loop  
4 facilities within 20 business days for a wire center to wire center or a wire center to  
5 customer premise request. The provisioning interval for access at a mid-point outside  
6 structure is individual case based (ICB).

7           ***E. Unbundled Dark Fiber Maintenance Process***

8  
9           Unbundled dark fiber creates a unique maintenance challenge for Qwest and  
10 requesting CLECs. Consistently, in its high capacity interoffice network, Qwest has  
11 network monitoring equipment to alarm and pin point network failures. Such monitoring  
12 is normally performed using the electronic equipment connected to the fiber, which in  
13 this case is owned and controlled by the CLEC. Therefore, it is critical that Qwest and  
14 the CLEC perform cooperative testing and trouble isolation after the CLEC has isolated  
15 the trouble to the Qwest portion of the unbundled dark fiber to identify where trouble  
16 points may exist. However, in the case of a major cable failure (or cut) that affects the  
17 entire cable, Qwest would normally detect problems on their fibers. Qwest has a  
18 notification process in place to alert the CLEC when such major network outages occur.

19           **Packet Switching**

1 The FCC does not require ILECs, such as Qwest, to unbundle packet switching,  
2 except in extremely limited circumstances.<sup>34</sup> Section 51.319 of the FCC's rules states:

3 (B) An incumbent LEC shall be required to provide nondiscriminatory  
4 access to unbundled packet switching capability only where each of the  
5 following conditions are satisfied:

6 (i) The incumbent LEC has deployed digital loop carrier systems,  
7 including but not limited to, integrated digital loop carrier or universal  
8 digital loop carrier systems; or has deployed any other system in which  
9 fiber optic facilities replace copper facilities in the distribution section  
10 (e.g., end office to remote terminal, pedestal or environmentally  
11 controlled vault);

12 (ii) There are no spare copper loops capable of supporting the xDSL  
13 services the requesting carrier seeks to offer;

14 (iii) The incumbent LEC has not permitted a requesting carrier to deploy  
15 a Digital Subscriber Line Access Multiplexer at the remote terminal,  
16 pedestal or environmentally controlled vault or other interconnection  
17 point, nor has the requesting carrier obtained a virtual collocation  
18 arrangement at these subloop interconnection points as defined by §  
19 51.319(b); and

20 (iv) The incumbent LEC has deployed packet switching capability for its  
21 own use.

22 Qwest believes that these four conditions will not be met in Arizona for the  
23 foreseeable future. In the event that copper loops are not available, CLECs can utilize  
24 the BFR process to request an alternative arrangement that would meet their specific  
25 loop needs in that location.

---

<sup>34</sup> Third Interconnection Order at para. 306

1 **VI. Access to UNE Combinations, Unbundled Transport and Unbundled**  
2 **Switching Workshop**

3 **Checklist Item 2**

4  
5 Checklist item 2 requires that Qwest provide “[n]ondiscriminatory access to  
6 network elements in accordance with the requirements of sections 251(c)(3) and  
7 252(d)(1).”<sup>35</sup> Section 251(c)(3) requires that Qwest provide access to unbundled  
8 network elements, “at any technically feasible point,” and in a manner that “allows  
9 requesting carriers to combine such elements.”<sup>36</sup> Section 252(d)(1) establishes pricing  
10 standards for UNEs, which shall be “based on cost” plus a “reasonable profit.”<sup>37</sup>

11 Thus, checklist item 2 requires Qwest to have a binding legal obligation as well  
12 as a process for making both individual UNEs and combinations of UNEs available to  
13 CLECs at 252(d)(1) pricing. In this section of my affidavit, I describe how Qwest  
14 provides CLECs access to two unbundled network elements (transport and switching),  
15 and how CLECs may combine all unbundled network elements. I also describe how  
16 CLECs may request additional unbundled network elements or UNE combinations  
17 through the bona fide request (BFR) process.

18 An additional requirement of checklist item 2, per the FCC’s Rule 319, is access  
19 to Operational Support Systems (OSS) to support the resale and unbundling needs of  
20 CLECs. In cooperation with the ACC and other parties in this proceeding, Qwest is

---

<sup>35</sup> Telecommunications Act of 1996, Section 271(c)(2)(B)(ii).

<sup>36</sup> Telecommunications Act of 1996, Section 251(c)(3).

1 supporting a third party test of its OSS systems administered by Cap Gemini Ernst &  
2 Young (CGEY). At the conclusion of the third party test, CGEY will submit their report  
3 to the ACC for its consideration. The third party test report, in combination with my  
4 affidavit, and the checklist workshops will demonstrate that Qwest meets its obligations  
5 for checklist item 2 - access to unbundled network elements.

6 **A. Qwest's Offers Access to Unbundled Network Element**

7  
8 The Act outlines two sets of requirements as to how an incumbent Local  
9 Exchange Carrier (ILEC) such as Qwest must unbundle its network. First, Section 251  
10 of the Act delineates several requirements regarding how ILECs must provide access to  
11 Unbundled Network Elements (UNEs). Second, Section 271 outlines *separate and*  
12 *distinct* requirements regarding the network elements to which a Regional Bell  
13 Operating Company (RBOC) must provide access before it can obtain authority to  
14 provide in-region interLATA services.

15 **1. Section 251 Requirements**

16  
17 Section 251(c)(3) of the Act requires incumbent LECs to provide  
18 "nondiscriminatory access to network elements on an unbundled basis" in accordance  
19 with "the requirements of this section and Section 252."<sup>38</sup> Section 251(d)(1) of the Act  
20 requires the FCC to establish regulations to determine which network elements must be  
21 provided on an unbundled basis. Section 251(d)(2) of the Act requires the FCC, when

---

<sup>37</sup> Telecommunications Act of 1996, Section 252(d)(1).

<sup>38</sup> Telecommunications Act of 1996, Section 251(c)(3).

1 determining what network elements should be made available, to consider, at a  
2 minimum, whether “access to such network elements as are proprietary in nature is  
3 *necessary*,” and whether “the failure to provide access to such network elements  
4 would *impair* the ability of the telecommunications carrier seeking access to provide the  
5 services that it seeks to offer.”<sup>39</sup>

6 In its UNE Remand Order, the FCC applied the “necessary and impair” analysis  
7 and subsequently released its revised list of UNEs under Section 251(c)(3). The new  
8 list, set forth in Rule 51.319, includes loops, sub-loops, NIDs, local circuit switching,  
9 dedicated and shared transport, dark fiber, signaling, call-related databases, and  
10 Operations Support Systems (OSS).

11 Moreover, after applying this “necessary and impair” analysis, the FCC  
12 determined that operator services, directory assistance and unbundled switching (in  
13 limited circumstances) are not longer Section 251(c)(3) UNEs. Specifically, unbundled  
14 switching is no longer a Section 251(c)(3) UNE in the top fifty metropolitan statistical  
15 areas (MSA), in areas that are “Density Zone One,” for businesses with four lines or  
16 more, when the ILEC offers EEL.<sup>40</sup> Two central offices in the Phoenix-Mesa MSA meet  
17 this definition. As detailed latter in this affidavit, Qwest has a concrete obligation to  
18 offer EELs in the two wire centers within Density Zone One of the Phoenix-Mesa MSA,  
19 and as a result does not offer unbundled switching as a 252(d)(1) priced UNE in those  
20 offices.

---

<sup>39</sup> Telecommunications Act of 1996, Section 251(d)(2).

<sup>40</sup> Third Interconnection Order and Fourth Further Notice, Appendix C, 51.319(c)(B).

1 The SGAT provides CLECs nondiscriminatory access to unbundled network  
2 elements:

3 Qwest shall provide non-discriminatory access to unbundled network  
4 elements on rates, terms and conditions that are non-discriminatory, just  
5 and reasonable. Qwest shall provide to CLEC on a non-discriminatory  
6 basis unbundled network elements of substantially the same quality as the  
7 network facilities that Qwest uses to provide service to its own end-users  
8 within a reasonable timeframe and with a minimum of service disruption.<sup>41</sup>

9 Qwest further defines the terms and conditions, rate elements, ordering process  
10 and maintenance information for each of the revised list of FCC UNEs<sup>42</sup> in Sections 9.1  
11 to 9.18 and Sections 12 and 17 of its Arizona SGAT.

## 12 **2. Section 271 Requirements**

13 In addition to Section 251, however, Qwest must also satisfy Section 271's  
14 checklist requirements and therefore, must continue to offer unbundled switching to all  
15 competitors in all areas (including the Phoenix MSA) because access to local circuit  
16 switching is item 6 on the checklist. To meet its checklist requirements, Qwest will offer  
17 stand-alone unbundled circuit switching to CLECs (at market based rates) in areas that  
18 are "Density Zone One" for use by businesses with four lines or more<sup>43</sup>. This is fully  
19 supported by the FCC's UNE Remand Order. However, Qwest will not provide  
20 combinations of unbundled elements that include local circuit switching in these specific  
21 Phoenix-Mesa MSA central offices for business with four or more lines. The reason for  
22

---

<sup>41</sup> SGAT at 9.1.2

<sup>42</sup> Loops, sub-loops, NIDs, local circuit switching, dedicated and shared transport, dark fiber, signaling, call-related databases, and Operations Support Systems (OSS).

<sup>43</sup> SGAT at 9.11.3.1

1 the latter is that Qwest must provide access to combinations of "UNEs"; in density zone  
2 one of the Phoenix-Mesa MSA, unbundled switching is not a UNE and, therefore,  
3 combinations including switching are no longer combinations of "UNEs".

4 **B. Qwest Offers UNE Combinations**

5  
6 The Act requires Qwest to provide unbundled network elements in a manner that  
7 enables a CLEC to combine them to provide telecommunication services.<sup>44</sup> The FCC  
8 has also promulgated rules on combinations of network elements. Rule 315 contains  
9 six provisions; the most prominent of which is Rule 315(b), which requires ILECs to  
10 provide CLECs with pre-existing combinations of UNEs. Although the Eighth Circuit  
11 Court of Appeals vacated the entirety of Rule 315, the United States Supreme Court  
12 reinstated Rule 315(b). The FCC has since asked the Eighth Circuit to reinstate the  
13 remainder of Rule 315<sup>45</sup> in light of the Supreme Court decision, but recognizes that all  
14 but Rule 315(b) remain vacated until and unless the Eighth Circuit states otherwise.<sup>46</sup>

15 Despite this procedural posture, the United States Court of Appeals for the Ninth  
16 Circuit in a series of decisions has determined that Qwest must provide access to all  
17 types of combinations listed in Rule 315, in addition to pre-existing combinations of  
18 UNEs.<sup>47</sup>

19 As a result, Qwest has three combination obligations at present in Arizona. First,  
20 Qwest must provide access to pre-existing combinations of elements pursuant to Rule

---

<sup>44</sup> See Section 251(c)(3) of the Act.

<sup>45</sup> The US Court of Appeals filed July 18, 2000 its decision on Rule 315 combinations. Given the filed date was within 3 days of the filing of this affidavit, Qwest was unable to analyze order No. 96-3321 and any effect it may have on its combination policies in Arizona.

1 315(b). Second, Qwest must provide CLECs with the ability to combine individual  
2 network elements on their own. Third, in Arizona, Qwest must provide access to new  
3 combinations, whether they be UNEs Qwest ordinarily combines, UNEs Qwest does not  
4 ordinarily combine, or combinations of Qwest UNEs with CLEC UNEs. Each of these  
5 different types of combinations is offered by Qwest and will be discussed in turn.

### 6 **1. Preexisting Combinations of Elements**

7  
8 The Supreme Court decision coupled with the UNE Remand Order make plain  
9 that Qwest must provide competitors with preexisting combinations of UNEs. Qwest's  
10 SGAT provides CLECs with access to such pre-existing combinations of UNEs. The  
11 revised SGAT states:

12 Qwest shall provide CLEC with non-discriminatory access to UNE  
13 Combinations, meaning: (a) of substantially the same quality as the  
14 comparable services that Qwest provides service to its own retail end-  
15 users, (b) in substantially the same time and manner as the comparable  
16 service that Qwest provides to its own retail end-users and (c) with a  
17 minimum of service disruption.<sup>48</sup>

18 The combinations that Qwest provides includes UNE-Platform (UNE-P) and  
19 combinations of dedicated transport and unbundled loop (UNE-C). Standard UNE  
20 Combinations are generally available in five (5) categories: 1FR/1FB Plain Old  
21 Telephone Service (POTS); ISDN – either Basic Rate or Primary Rate; Digital Switched  
22 Service (DSS); PBX Trunks and Local Exchange Private Line<sup>49</sup> (UNE-C-PL).

---

<sup>46</sup> UNE Remand Order at ¶¶ 481-482.

<sup>47</sup> 193 F.3<sup>rd</sup> 112, 1121 (9<sup>th</sup> Cir. 1999)

<sup>48</sup> SGAT at 9.23.3.1

<sup>49</sup> Subject to the CLEC providing a significant amount of local exchange service.

1 With respect to each of these different types of UNE combinations, the SGAT  
2 contains a specific provision defining the each standard combination. The proposed  
3 SGAT includes:

4 **“UNE-P-POTS”**: Retail and/or Resale 1FR/1FB lines are available to CLEC as a  
5 UNE Combination. UNE-P POTS is comprised of the following unbundled network  
6 elements: Analog - 2 wire voice grade loop, Analog Line Side Port, Shared Transport  
7 and, if desired, Vertical Features. . . .<sup>50</sup> •

8 **“UNE-P-ISDN”**: Retail and/or Resale ISDN lines are available to CLEC as a  
9 UNE Combination. There are two types of UNE-P-ISDN:

10 Basic rate (UNE-P-ISDN-BRI) - UNE-P-ISDN-BRI is comprised of the following  
11 unbundled network elements: Basic ISDN Capable Loop, BRI Line Side Switch Port  
12 and Shared Transport. . . .

13 Primary rate (UNE-P-ISDN-PRI) - UNE-P-ISDN-PRI is comprised of the following  
14 unbundled network elements: DS1 Capable Loop, PRI Trunk Port and Shared  
15 Transport. . . .<sup>51</sup>

16 **“UNE-P-DSS”**: **“UNE-P-DSS”**: Retail and/or Resale Digital Switched Service  
17 (DSS) are available to CLEC as a UNE Combination. UNE-P-DSS is comprised of the

---

<sup>50</sup> SGAT at 9.23.3.2

<sup>51</sup> SGAT at 9.23.3.5

1 following unbundled network elements: DS1 Capable Loop, Basic and DID Trunks and  
2 Shared Transport. . . .<sup>52</sup>

3           **“UNE-P-PBX”**: Retail and/or Resale PBX Trunks are available to CLEC as a  
4 UNE Combination. There are two types of UNE-P-PBX: Analog Trunks and Direct  
5 Inward Dialing (DID) Trunks. UNE-P-PBX is comprised of the following unbundled  
6 network elements: 2/4 Wire Analog Loop, Analog/DID Trunks, and Shared Transport. . .  
7 .

8           **“Private Line Local Exchange UNE Combinations” (UNE-C-PL)**: Retail  
9 and/or Resale private line circuits are available to CLEC as a UNE Combination. There  
10 are many types of Private Line Local Exchange UNE Combinations. Qwest will provide  
11 access to the following as a standard offering: UNE-C-PL circuits are comprised of the  
12 following unbundled network elements: DS1/DS3 Capable Loop, DS1/DS3 Unbundled  
13 Dedicated Interoffice Transport and multiplexing. . . .<sup>53</sup>

14           With respect to UNE-C-PL, on June 2, 2000, the FCC released a supplement to  
15 its UNE Remand Order concerning the ability of carriers to utilize combinations of  
16 dedicated transport and loop in lieu of special access circuits. The FCC found that  
17 such circuits are not available for conversion into combinations of UNEs unless they are  
18 carrying a “significant amount of local exchange traffic.” The FCC defined “significant  
19 amount of local exchange traffic” as follows:

---

<sup>52</sup> SGAT at 9.23.3.4

<sup>53</sup> SGAT at 9.23.3.6

1 We find that a requesting carrier is providing a “significant amount of local  
2 exchange service” to a particular customer if it meets one of three  
3 circumstances:

4 (1) As we found in the *Supplemental Order*, the requesting carrier certifies  
5 that it is the exclusive provider of an end user’s local exchange service.<sup>54</sup> . .  
6 .

7 (2) The requesting carrier certifies that it provides local exchange and  
8 exchange access service to the end user customer’s premises and  
9 handles at least one third of the end user customer’s local traffic measured  
10 as a percent of total end user customer local dial tone lines; and for DS1  
11 circuits and above,<sup>55</sup> at least 50 percent of the activated channels on the  
12 loop portion of the loop-transport combination have at least 5 percent local  
13 voice traffic individually,<sup>56</sup> and the entire loop facility has at least 10 percent  
14 local voice traffic. When a loop-transport combination includes  
15 multiplexing (e.g., DS1 multiplexed to DS3 level),<sup>57</sup> each of the individual  
16 DS1 circuits must meet this criteria. . . .

17 (3) The requesting carrier certifies that at least 50 percent of the activated  
18 channels on a circuit are used to provide originating and terminating local  
19 dial tone service and at least 50 percent of the traffic on each of these local  
20 dial tone channels is local voice traffic, and that the entire loop facility has  
21 at least 33 percent local voice traffic. When a loop-transport combination  
22 includes multiplexing (e.g., DS1 multiplexed to DS3 level), each of the  
23 individual DS1 circuits must meet this criteria. . . .<sup>58</sup>

24 Qwest is in the process of updating its SGAT and documentation with this very  
25 recent clarification on what constitutes a significant amount of local traffic. The modified

---

<sup>54</sup> *Supplemental Order* at n.9.

<sup>55</sup> A DS1 circuit contains 24 voice-grade channels.

<sup>56</sup> Traffic is local if it is defined as such in a requesting carrier’s state-approved local exchange tariff and/or it is subject to a reciprocal compensation arrangement between the requesting carrier and the incumbent LEC. This is consistent with the Commission’s statement in the *Local Competition First Report and Order* that state commissions have the authority to determine what geographic areas should be considered “local areas” for purposes of applying reciprocal compensation arrangements, consistent with their historical practice of defining local service areas for local exchange carriers. *Local Competition First Report and Order*, 11 FCC Rcd at 16013, para. 1035.

<sup>57</sup> A DS3 circuit contains 24 DS1s. A DS1 circuit that is multiplexed to the DS3 level passes through electronic equipment that allows the signals carried on the DS1 to be consolidated on to the DS3.

<sup>58</sup> Supplemental Order Clarification FCC 00-183 at para. 22.

1 language that Qwest has drafted, and included in the revised SGAT, tracks the FCC's  
2 decision almost verbatim.<sup>59</sup>

3 In addition, Qwest will allow CLECs to self certify which of the three conditions  
4 an individual private line circuit meets for conversions to UNEs:

5 If CLEC can certify to Qwest through a certification letter that the  
6 combination of elements is carrying a "Significant Amount of Local  
7 Exchange" Traffic, then Qwest will convert the Special Access circuit to a  
8 UNE Combination.<sup>60</sup>

9 Consistent with FCC guidelines, Qwest reserves the right to audit CLEC self  
10 certifications.

11 If a CLEC desires access to a different UNE Combination, the CLEC may  
12 request access through the BFR Process set forth in SGAT Section 17. In addition, as  
13 demand materializes, Qwest will continue to expand its list of standard UNE  
14 combinations. For example, at the request of Centrex resellers, Qwest has agreed to  
15 convert existing Centrex combinations on an ICB basis until such time as a standard  
16 product can be developed.

17 Qwest provides CLECs with access to pre-existing combinations consistent with  
18 the Act and the UNE Remand Order.

19 **2. CLEC Performed Combinations of Elements**

20

---

<sup>59</sup> SGAT at 9.23.3.6.2.2

<sup>60</sup> SGAT at 9.23.3.6.2.3

1 Section 251(c)(3) of the Act expressly requires ILECs to provide UNEs "in a  
2 manner that allows requesting carriers to combine [them] . . . in order to provide such  
3 telecommunications services." Qwest satisfies this requirement through its proposed  
4 SGAT, which states:

5 9.1.5 CLEC may connect UNEs in any technically feasible manner.  
6 Qwest will provide CLEC with the same features, functions and  
7 capabilities of a particular element that Qwest provides to itself, so that  
8 CLEC can provide any Telecommunications Services that can be offered  
9 by means of the element. Qwest shall provide such unbundled network  
10 elements in a manner that allows CLEC to combine such elements in  
11 order to provide Telecommunications Service.

12 There are several options available to CLECs to combine two or more UNEs.  
13 For example, a CLEC could obtain caged-physical, cageless-physical, or virtual  
14 collocation and order various unbundled network elements from Qwest. For each  
15 element ordered, Qwest provides connections to the demarcation point through the use  
16 of Qwest cross-connect facilities called Interconnection Tie Pairs (ITP). The CLEC can  
17 combine the various elements into a telecommunication service by connecting the  
18 appropriate elements in their collocation space.<sup>61</sup> This should eliminate any security  
19 concerns that CLECs may have about combining elements on an intermediate frame.

20 A second option that enables a CLEC to combine unbundled network elements  
21 is the Interconnection Collocation Distribution Frame (ICDF). The FCC, in its rules,  
22 requires Qwest to provide the following types of connections:

- 23 · Incumbent LECs must provide cross-connect facilities, for example,  
24 between an unbundled loop and a requesting carrier's collocated  
25 equipment, in order to provide access to that loop. . . . [A]n incumbent

---

<sup>61</sup> SGAT 9.1.4

1 LEC must take the steps necessary to allow a competitor to combine its  
2 own facilities with the incumbent LEC's unbundled network elements.<sup>62</sup>

3  
4 ICDF collocation is available to those CLECs who do not wish to collocate their  
5 own electronic equipment in a Qwest central office. Under this option, Qwest delivers  
6 the CLEC's various unbundled network elements to a single intermediate distribution  
7 frame located in the central office. The ICDF is a practical method of complying with  
8 the requirement to provide nondiscriminatory access to combinations of unbundled  
9 network elements. When the CLEC chooses to utilize this option, the ICDF becomes  
10 the CLEC's demarcation point. CLEC employees access the ICDF 24 hours per day,  
11 seven days per week, unescorted, to combine two or more elements.<sup>63</sup>

12 In the past, there has been a significant amount of confusion with the ICDF. Use  
13 of an intermediate frame is not "required" in order to order UNEs or combine UNEs. It  
14 is merely an option available to CLECs that wish to use it. Moreover, some CLECs  
15 have specifically recognized the viability of such an intermediate distribution frame to  
16 provision individual UNEs.<sup>64</sup> In fact, in many cases Qwest uses the same intermediate  
17 frames to provision services using the same wiring scheme for its own retail customers.

---

<sup>62</sup> First Interconnection Order at ¶. 386.

<sup>63</sup> SGAT at 8.1.1.15

<sup>64</sup> For example, AT&T/TCG and MCI have indicated that they support an intermediate frame as a means by which to provision individual UNEs, such as the unbundled loop. AT&T has taken this position not once, but twice in various dockets. First, in a written pleading filed in the Colorado cost docket; second in the Nebraska Cost Docket AT&T's outside expert, Steven Turner, testified that an intermediate frame was an appropriate means by which to provision individual elements such as the unbundled loop:

Q. I WAS LISTENING TO YOUR . . . SUMMARY AND I THOUGHT YOU SAID SOMETHING AND I JUST WANT TO MAKE SURE THAT I HEARD YOU ACCURATELY. I THOUGHT YOU SAID THAT THE SPOT BAY IS USEFUL IF YOU WANT TO PROVISION . . . AN UNBUNDLED LOOP. . . .

A. I would think that would be very accurate is if you are connecting the CLEC's network up to an unbundled element owned by the ILEC, that the appropriate way to

1

### 3. Access to New Combinations

2

3

4

5

6

As I stated previously, a recent order of the United States Court of Appeals for the Ninth Circuit, determined that Qwest must provide access to new combinations, in addition to pre-existing combinations of UNEs.<sup>65</sup> Qwest will provide CLECs with access to new combinations, whether they be UNEs Qwest ordinarily combines, UNEs Qwest does not ordinarily combine, or combinations of Qwest UNEs with CLEC UNEs.

7

The SGAT states:

8

9

10

11

12

CLEC may request access to and, where appropriate, development of, additional UNE Combinations pursuant to the Bona Fide Request Process in CLEC's Agreement. In its BFR request, CLEC must identify the specific combination of UNEs, identifying each individual UNE by name as described in this Agreement.<sup>66</sup>

13

14

15

In other states that are not bound by the Ninth Circuit decision, Qwest states that it will provide access to "preexisting combinations of unbundled network elements."

16

17

18

19

#### **C. Qwest Provisioning Process for Combinations of Unbundled Network Elements**

20

21

To simplify the CLEC's ordering process for UNE Combinations, Qwest adopted a process similar to resale. UNE Combinations are ordered via an LSR. Rather than process conversions from retail and/or wholesale as two orders (with a disconnect of

---

interconnect those would be at some form of distribution frame such as the SPOT frame.

Transcript of Neb. Cost Docket at 1026. Thus, Qwest is not alone in its view that an intermediate distribution frame such as the SPOT frame is an appropriate means by which to make individual network elements available to competitors.

1 the finished service and a new connect of a UNE Combination arrangement), Qwest  
2 has developed a UNE Combination service order process that will use a single LSR.  
3 Qwest believes a single LSR approach will provide a simple and effective order  
4 processing for the CLEC.

5 Standard service intervals for each UNE Combination are identified in the UNE-P  
6 and UNE Combination Resource Guide, which includes the Standard Interval Guide for  
7 Interconnection and Resale Services. When the standard interval does apply, CLEC  
8 and Qwest will use the standard provisioning interval for the equivalent retail service.  
9 CLEC and Qwest can separately agree to due dates other than the standard interval.  
10 Qwest will work pro-actively with CLECs to provide project management support for  
11 processing large volumes of conversions.

12 When Qwest's end user or the end user's new service provider orders the  
13 discontinuance of the end user's existing service in anticipation of moving to another  
14 service provider, Qwest will render its closing bill to the end user effective with the  
15 disconnection. If Qwest is not the local service provider, Qwest will issue a bill to the  
16 CLEC for that portion of the service provided to the CLEC should CLEC's end user, a  
17 new service provider, or the CLEC requested service be discontinued to the end user.  
18 Qwest will notify the CLEC by Fax, OSS interface, or other agreed upon processes  
19 when an end user moves to another service provider. Qwest will not provide the CLEC  
20 with the name of the other service provider selected by the end user.

---

<sup>65</sup> 193 F.3<sup>rd</sup> 112, 1121 (9<sup>th</sup> Cir. 1999)

<sup>66</sup> SGAT at 9.23.3.8

1 In the May 2000 Interconnect Mediated Access (IMA) release, Qwest added the  
2 capability for CLECs to order the conversion of pre-existing retail/wholesale  
3 combinations, to UNEs combinations using a single LSR form. In its December 6.0  
4 release, Qwest will continue to add functionality for UNE combination arrangements by  
5 adding UNE-P ISDN and Centrex conversions, as well as additional orders types like  
6 UNE-P new. In addition, this release will provide an electronic interface for DS1 and  
7 DS3 private line conversions to UNE-C combinations. Moreover, the CGEY Arizona  
8 Third Party Operation Support System (OSS) Test well review Qwest's ability to provide  
9 CLECs with combinations of UNEs.

10 ***D. Qwest Maintenance Process for Combinations of Unbundled Network***  
11 ***Elements***

12  
13 Qwest will maintain facilities and equipment that comprise the service provided  
14 to CLEC as a UNE Combination. The SGAT makes this clear.<sup>67</sup>

15 Qwest will maintain standard UNE combinations in Arizona utilizing defined  
16 maintenance flows. Exhibit KAS-20 contains a flowchart that delineates the tasks  
17 performed by Qwest personnel in order to maintain various combinations of UNEs and  
18 a matrix that describes all of the work identified in the flow chart.

19 ***E. UNE Combinations Performance Measurements***  
20

---

<sup>67</sup> SGAT at 9.23.7

1 Qwest is participating in the Arizona Technical Advisory Group (TAG) to identify  
2 performance measurements for access to UNE combinations. When the Arizona Third  
3 Party Operation Support System (OSS) Test and Workshops have determined specific  
4 access to UNE Combination performance measurements, any agreed upon updates will  
5 be reflected in a revised SGAT. In addition, the CGEY OSS test will specifically test  
6 Qwest's ability to provide CLECs nondiscriminatory access to combinations of  
7 unbundled network elements.

8 In addition, in the capacity test, the parties to the Arizona Third Party Operation  
9 support System (OSS) Test and Workshops and Qwest agreed to an incremental  
10 percentage increase to the test volumes for September, 2001 LSRs to account for  
11 increased order activity due to access to UNE combination arrangements.

12 ***F. UNE Combinations Performance Results***

13  
14 As of July 1, 2000, Qwest has processed a limited volume of UNE combination  
15 orders in Arizona. When performance measurement results are available, I will  
16 supplement my affidavit in this proceeding.

17 ***G. BFR Requests for UNEs and UNE Combinations***

18  
19 When a CLEC desires a unique unbundled network element that is not included  
20 in its interconnection agreement or the SGAT, the CLEC can submit a bona fide

1 request (BFR) to Qwest.<sup>68</sup> For example, the SGAT outlines the typical process for

2 requesting new network elements:

3 Any request for Interconnection or access to an unbundled network  
 4 element or ancillary service that is not already available as described  
 5 herein shall be treated as a Bona Fide Request (BFR). Qwest shall use  
 6 the BFR Process to determine the terms and timetable for providing the  
 7 requested Interconnection, access to UNEs or ancillary services, if  
 8 available, and the technical feasibility of new/different points of  
 9 Interconnection. Qwest will administer the BFR Process in a non-  
 10 discriminatory manner.<sup>69</sup>

11

12 In any BFR, the CLEC specifies the additional element it wants unbundled,  
 13 including location and quantity. According to the SGAT, Qwest must provide the CLEC  
 14 with its preliminary analysis within 30 days of BFR receipt. Should Qwest determine  
 15 that the request is not technically feasible or fails to meet the standards for unbundling,  
 16 Qwest must notify the CLEC in writing within 10 business days after the initial 30  
 17 business day review period. If it is technically feasible to unbundle the element and it  
 18 meets the standards set forth in the Act, Qwest provides the CLEC with a price quote  
 19 for the requested element no later than 90 days after the request is submitted by the  
 20 CLEC.<sup>70</sup>

21 The following bona fide requests have been processed Qwest in Arizona:

22	Arizona	1999	2000
23	a) requests received:	5	1

<sup>68</sup> SGAT at Section 17.

<sup>69</sup> SGAT at 17.0

<sup>70</sup> See SGAT, Section 17, Bona Fide Request Process.

1	b) completed by response date:	4	1
2	c) requests fulfilled as requested:	4	0
3	d) denied as requested but accepted		
4	an alternative	1	1
5	e) requests denied	0	0
6	f) requests withdrawn by customer	0	0

7           Thus, Qwest has established that it can and will provision additional network  
8 elements on an unbundled basis where appropriate.

9           Moreover, if a CLEC's interconnection agreement does not contain a UNE  
10 available within the SGAT, Qwest will amend their agreement, on an expedited basis, to  
11 include the UNE without the need for the BFR process. For example, the additions of  
12 cageless collocation and DSL-capable loops have been added to agreements within  
13 two weeks. If a CLEC objects to the terms and conditions contained in the SGAT for an  
14 unbundled network element, they still have the option to negotiate unique terms and  
15 conditions.

16 ***H. Summary of Checklist Item 2***

17  
18           Qwest has demonstrated that it satisfies checklist item 2 because it  
19 makes available all of the UNEs listed in Rule 319 and fulfills requests for additional  
20 unbundled network elements through the bona fide request process. Qwest also  
21 provides three different ways CLECs can access combinations of UNEs. As a result,  
22 Qwest has demonstrated that its provision of these UNEs is nondiscriminatory and

1 allows CLECs to combine them in the provision of finished retail telecommunication  
2 services. Therefore, Qwest satisfies checklist item 2 (other than OSS which is part of  
3 the Arizona OSS test administered by CGEY).

4 **Checklist Item 5**

5  
6 In this section of my testimony, I provide clear evidence that Qwest *is currently*  
7 providing unbundled transport to CLECs in Arizona in a timely, nondiscriminatory  
8 manner. I also review language in the Qwest SGAT that demonstrates that Qwest *is*  
9 *obligated* to provide unbundled transport.

10 **A. Qwest's Unbundled Transport Obligations**

11  
12 The Act requires that Qwest provide "local transport from the trunk side of a  
13 wireline local exchange carrier switch unbundled from switching or other services."<sup>71</sup>

14 The FCC defined two general categories of local transport in its Rule 319:

- 15
- 16 • Dedicated Transport - incumbent LEC transmission facilities  
dedicated to a particular customer or carrier
  - 17 • Shared Transport - transmission facilities shared by more than one  
18 carrier, including the incumbent LEC
- 19

20 **B. Qwest Offers Unbundled Dedicated Interoffice Transport (UDIT) and Shared**  
21 **Transport**

22  
23 Qwest's SGAT specifically offers both dedicated and shared transport, which the  
24 FCC has defined as subsuming Checklist Item 5:

---

<sup>71</sup> See Section 271(c)(2)(B)(v) of the Act.

1 Unbundled Dedicated Interoffice Transport (UDIT) provides CLEC with a  
2 network element of a single transmission path between two Qwest Wire  
3 Centers in the same LATA and state. Extended Unbundled Dedicated  
4 Interoffice Transport (EUDIT) provides CLEC with a bandwidth specific  
5 transmission path between the Qwest Serving Wire Center to CLEC's Wire  
6 Center or an IXC's point of presence located within the same Qwest  
7 Serving Wire Center area.<sup>72</sup>

8 Shared Transport is defined as interoffice transmission facilities shared by  
9 more than one carrier, including Qwest, between end office switches,  
10 between end office switches and tandem switches, and between tandem  
11 switches.<sup>73</sup>

12 Consistent with FCC requirements, and effective interconnection agreements,  
13 Qwest is currently providing Unbundled Dedicated Interoffice Transport (UDITs) to six  
14 CLECs in Arizona. The unbundled transport quantities as of April 30, 2000 are as  
15 follows:

UDIT Type	Quantity
DSO	0
DSI	35
DS3	41

16  
17 Consistent with the FCC requirements, Qwest, clearly has a legally binding  
18 commitment to provide access to unbundled transport in Arizona. Specifications,  
19 interfaces and parameters are described in Technical Publication 77389.5. In addition,  
20 the Interconnect & Resale Resource Guide (IRRG) provides CLECs with product  
21 information, rates and availability. CLECs can access the IRRG at URL: **Error!**  
22 **Bookmark not defined..**

---

<sup>72</sup> SGAT at 9.6.1.1

<sup>73</sup> SGAT at 9.8.1.1

1 **D. UDIT and Shared Transport Descriptions**

2  
3 **1. UDIT**

4 Qwest provides unbundled access to dedicated transmission facilities between  
5 Qwest end offices or between Qwest end offices and CLEC end offices. Qwest  
6 provides interoffice facilities between its end offices and serving wire centers (SWC), its  
7 SWCs and IXC POPs, its tandem switches and SWCs, and between its end offices or  
8 tandems and the wire centers of Qwest and requesting carriers.<sup>74</sup> Extended Unbundled  
9 Dedicated Interoffice Transport (EUDIT) provides CLEC with a bandwidth specific  
10 transmission path between the Qwest Serving Wire Center to CLEC's Wire Center or  
11 an IXC's point of presence located within the same Qwest Serving Wire Center area.  
12 UDIT is a distance-sensitive, flat-rated bandwidth-specific interoffice transmission path  
13 designed to a DSX in each Qwest Wire Center. EUDIT is a flat-rated, bandwidth-  
14 specific interoffice transmission path. Exhibit KAS-21 provides a diagram of UDIT and  
15 EUDIT.

16 The SGAT, for example, offers unbundled dedicated interoffice transport  
17 between Qwest wire centers in the same LATA and state.<sup>75</sup> EUDITs and UDITs are  
18 available in DS1, DS3, OC-3 and OC-12 bandwidths and such higher capacities as  
19 evolve over time where facilities are available. UDIT is also available in DS0  
20 bandwidth.

---

<sup>74</sup> SGAT at 9.6.1

<sup>75</sup> SGAT at 9.6.1

1           The ACC set the rates for DS1 and DS3 UDIT contained in the SGAT in the  
2 consolidated cost docket, Decision No. 60635. However, the DS0 UDIT rate the ACC  
3 established in the cost docket did not contain the appropriate components, and  
4 therefore the SGAT provides for an ICB pricing until such time as a new cost study can  
5 be completed.

## 6           **2. Shared Transport**

7           Qwest provides shared transport in Arizona, as described in the SGAT.<sup>76</sup> Shared  
8 transport allows CLECs to share the exact interoffice transmission facilities that Qwest  
9 utilizes for itself. The shared transport facilities connect Qwest end office switches with  
10 other Qwest end office switches and/or with Qwest tandem switches for the delivery of  
11 traffic within the local calling area. A CLEC may not mix Unbundled Dedicated  
12 Interoffice Transport (UDIT) and shared transport for interoffice trunking in the same  
13 local calling area.

14           Shared transport is a product available only in conjunction with unbundled  
15 switching. The FCC in its Third Report and Order recognized this limitation:

- 16           · A requesting carrier that uses its own self-provisioned local switches,  
17 rather than unbundled local switches obtained from an incumbent LEC,  
18 to provide local exchange and exchange access services would use  
19 dedicated transport facilities to carry traffic between its network and the  
20 incumbent LEC's network. Thus, the only carrier that would need shared  
21 transport facilities would [be] one that was using an unbundled local  
22 switch.<sup>77</sup>  
23

---

<sup>76</sup> SGAT at 9.8-9.8.1

<sup>77</sup> Third Interconnection Order, footnote 127.

1 Shared transport provides CLECs who serve their customers via unbundled  
2 switching, a means of transporting traffic from their customers to distant end offices or  
3 interexchange carriers. Each CLEC call uses the same routing table as used for Qwest  
4 calls. Therefore, the CLEC call uses the identical transport facilities that are available  
5 to Qwest calls. That is, when a CLEC's customer served by unbundled switching and  
6 shared transport originates a call, the Qwest switch uses the same routing table to  
7 determine the availability of an outgoing trunk port for the CLEC's call that would be  
8 used by a Qwest call. Thus, the CLEC has access to the same routing table  
9 capabilities, the same trunk ports, and the same mix of direct and tandem-routed  
10 interoffice facilities available to Qwest end users.

11 The CLEC can also use custom routing to direct their end user's operator  
12 services and/or directory assistance (DA) calls in a different manner than Qwest routes  
13 its own operator services and directory assistance calls. For this application, the CLEC  
14 provides Qwest the information necessary for Qwest to create a custom routing table  
15 that is programmed within the Qwest central office switch.

16 The FCC defined custom routing in its First Interconnection Order:

- 17 · Customized routing will enable a competitor to direct particular classes of  
18 calls to particular outgoing trunks, which will permit a new entrant to self-  
19 provide, or select among other providers of, interoffice facilities, operator  
20 services, and directory assistance.<sup>78</sup>  
21

---

<sup>78</sup> First Interconnection Order at para. 418.

1           The Qwest SGAT provides for customized routing that enables CLECs to self  
2 provide, or select among other providers, operator and /or DA services.<sup>79</sup> This  
3 combination of shared transport for local calls on the Qwest network, and the  
4 opportunity to custom route to unique providers for DA and operator services, provides  
5 a CLEC with the additional flexibility envisioned by the FCC. Customized routing is a  
6 software function of the switch that may be ordered with unbundled switching or resale  
7 applications. Due to the complexity of developing and installing line class codes to  
8 support custom routing, the service is provided on an ICB in the SGAT.

9           Just as with Qwest's retail customers, when a CLEC customer originates a call  
10 routed to an interexchange carrier, the only portion of the Qwest interoffice network that  
11 is available via shared transport is the facility from the Qwest end office to the Qwest  
12 access tandem. Facilities dedicated to an interexchange carrier's use, such as a direct  
13 facility from the Qwest end office or tandem to the interexchange carrier's point of  
14 presence, are not part of shared transport. This is consistent with the FCC findings for  
15 shared transport:

---

<sup>79</sup> SGAT at 9.23.3.9.1

- 1           · On reconsideration, we further clarify that incumbent LECs are not  
2           required to provide shared transport between incumbent LEC switches  
3           and serving wire centers. We stated above that shared transport must  
4           be provided between incumbent LEC switches. Serving wire centers are  
5           merely points of demarcation in the incumbent LEC's network, and are  
6           not points at which traffic is switched. Traffic routed to a serving wire  
7           center is traffic dedicated to a particular carrier. We thus conclude that  
8           unbundled access to the transport links between incumbent LEC  
9           switches and serving wire centers must only be provided by incumbent  
10          LECs on a dedicated basis.<sup>80</sup>  
11

12           Shared transport is billed on a minute-of-use basis in accordance with section  
13          252(d)(1). The CLEC will receive daily usage reports to facilitate meeting the needs of  
14          its end users.

15          ***E. The Unbundled Transport Provisioning Processes***  
16

17           Qwest will provision unbundled dedicated transport in Arizona utilizing a defined  
18          order and provisioning flow. Exhibit KAS-22 contains a flowchart that delineates the  
19          tasks performed by Qwest personnel in order to provide unbundled transport. This  
20          exhibit also includes a matrix that describes each of work tasks identified in the flow  
21          chart. Qwest will follow these steps each time unbundled transport is ordered in  
22          Arizona. The same process and provisioning flows can be used for unbundled  
23          switching, in combination with shared transport, since shared transport is automatically  
24          provisioned with unbundled switching unless the CLEC specifically selects otherwise.

25           When the CLEC purchases unbundled switching and shared transport, the CLEC  
26          calls follow the same transmission path as Qwest's traffic. Thus, shared transport is the

---

<sup>80</sup> Third Interconnection Order at para. 29.

1 same service that Qwest provides to itself. Since Qwest can provide switched services  
2 over its shared network today, this provides evidence that it is able to provision shared  
3 transport to CLECs.

4 Qwest is operationally prepared to offer UDIT and shared transport. In addition  
5 to the live experience of installing UDITs in Arizona, Qwest has also conducted testing  
6 of the provisioning systems in combination with unbundled switching. Later in my  
7 affidavit, I describe in detail the bench test that demonstrates Qwest is prepared to  
8 provision CLECs nondiscriminatory access to unbundled transport.

9 ***F. Unbundled Transport Maintenance Process***

10

11 Qwest also maintains unbundled transport in Arizona utilizing defined  
12 maintenance flows. Exhibit KAS-23 contains a flowchart that delineates the tasks  
13 performed by Qwest personnel in order to maintain unbundled transport and a matrix  
14 that describes all of the work identified in the flow chart. Maintenance and repair of  
15 dedicated and shared transport facilities are the sole responsibility of Qwest.

1 **H. Unbundled Transport Performance Measurements**

2  
3 Currently, the parties to this docket have agreed that Qwest should track 10  
4 different performance measurements for dedicated unbundled transport. These  
5 measurements concern either the installation/provisioning of DS1 and above DS1  
6 UDITs or the repair/maintenance of these facilities. The agreed-upon measurements  
7 are listed in the table below.

	<b>Indicator Number</b>	<b>Checklist Item 5 Performance Indicator</b>
1	OP-3	Installation Commitments Met
2	OP-4	Installation Interval
3	OP-5	New Service Installation Without Trouble Reports for 30 Days After Installation (replaces OP-14 as of 1-1-2000)
4	OP-6	Delayed Days
7	MR-5	Out of Service Cleared within 4 Hours (designed repair process)
8	MR-6	Mean Time to Restore
9	MR-7	Repair Repeat Report Rate
10	MR-8	Trouble Rate

8  
9 **I. Unbundled Transport Performance Results**

10  
11 As of July 1, 2000, Qwest has processed 35 DS1 UDIT orders and 41 orders for  
12 DS3 UDITs in Arizona. This limited volume over two product categories and several  
13 reporting periods produced inconclusive performance results data. When  
14 comprehensive performance measurement results are available, I will supplement my  
15 affidavit in this proceeding.

16 **J. Checklist Items 5 Summary**

17  
18 Through its SGAT, Qwest provides CLECs with access to unbundled dedicated  
19 transport as well as shared transport. Qwest has successfully provisioned UDITs for six

1 CLECs in Arizona. When combined with the CGEY OSS testing, Qwest has  
2 established that it can provision, maintain and bill these checklist items upon request  
3 and in a timely manner thereby providing CLECs with a meaningful opportunity to  
4 compete. In addition, Qwest, through its Bench Test, has demonstrated in can  
5 provision, maintain and bill these checklist items in combination with unbundled local  
6 switching. Therefore, the Commission should find that Qwest satisfies checklist item 5.

7 **Checklist Item 6**

8  
9 Checklist Item 6 requires Qwest to provide “local switching unbundled from  
10 transport, local loop transmission or other services.”<sup>81</sup> However, as identified earlier in  
11 my affidavit, in its UNE Remand Order, the FCC applied the “necessary and impair”  
12 analysis and subsequently released its revised list of UNEs under Section 251(c)(3).  
13 The new list, set forth in Rule 51.319, establishes that in certain circumstances  
14 unbundled switching is not longer a Section 251(c)(3) UNE. However, Qwest, as a  
15 RBOC seeking to satisfy Section 271 checklist requirements, must continue to offer  
16 unbundled switching to all competitors in all areas (including the Phoenix MSA)  
17 because local circuit switching is still item 6 on the checklist.

18 **A. Qwest’s Unbundled Switching Obligations**

19  
20 Specifically, unbundled switching is no longer a Section 251(c)(3) UNE in the top  
21 fifty metropolitan statistical areas (MSA), in areas that are “Density Zone One,” for

1 businesses with four lines or more, when the ILEC offers EEL.<sup>82</sup> Two central offices in  
2 the Phoenix-Mesa MSA meet this definition. As detailed latter in this affidavit, Qwest  
3 has a concrete obligation to offer EELs in the two wire centers within Density Zone One  
4 of the Phoenix-Mesa MSA, and as a result does not offer unbundled switching as a  
5 TELRIC priced UNE in those offices.

6 The FCC's rules require ILECs to offer (1) line-side ports and switching, including  
7 the connection between a line equipment termination at a Main Distribution Frame  
8 (MDF) or COSMIC frame and a line card, and (2) the connection between the trunk-side  
9 of the switch (the trunk card) and a termination at the trunk main distribution frame  
10 (TMDF... a transport multiplexer cross-connect), and (3) all features, functions and  
11 capabilities of the switch.<sup>83</sup>

12 As described above, the FCC has determined that unbundled switching is not a  
13 Section 251(c)(3) UNE in the top fifty MSAs, in areas that are "Density Zone One," for  
14 businesses with four lines or more, when the ILEC offers EEL.<sup>84</sup> The FCC determined:

15 278. Despite our conclusion that, in general, requesting carriers are  
16 impaired without access to unbundled switching, we conclude that it is  
17 appropriate to establish amore narrowly tailored rule to reflect significant  
18 marketplace developments. As described more fully below, we find that  
19 requesting carriers are not impaired without access to unbundled local  
20 circuit switching when they serve customers with four or more lines in  
21 density zone 1 in the top 50 metropolitan statistical areas (MSAs), as set  
22 forth in Appendix B, where incumbent LECs have provided  
23 nondiscriminatory, cost-based access to the enhanced extended link (EEL)  
24 throughout density zone 1.

---

81 See Section 271(c)(2)(B)(vi) of the Act.

82 Third Interconnection Order and Fourth Further Notice, Appendix C, 51.319(c)(B).

83 First Interconnection Order at ¶ 410.

84 Third Interconnection Order and Fourth Further Notice, Appendix C, 51.319(c)(B).

1           However, Qwest, as a BOC seeking to satisfy Section 271 checklist  
2 requirements, must continue to offer unbundled switching to all competitors in all areas  
3 because local circuit switching is on the checklist.

4 **B.    Qwest Offers Unbundled Switching**

5  
6           Qwest offers CLECs access to unbundled switching. The Arizona SGAT states:

7           Unbundled Local Switching encompasses line-side and trunk-side facilities,  
8 plus the features, functions, and capabilities of the switch. The features,  
9 functions, and capabilities of the switch include the basic switching  
10 function, as well as the same basic capabilities that are available to  
11 Qwest's end-users. Unbundled Local Switching also includes access to all  
12 vertical features that the switch is capable of providing, as well as any  
13 technically feasible customized routing functions. . . .<sup>85</sup>

14           Qwest does offer the FCC required combination of loop and transport, i.e. "EELs"  
15 that permits Qwest to withdraw unbundled switching as a UNE in the Phoenix MSA.  
16 This limitation is identified in the SGAT:

17           9.11.2.5 Unbundled Switching (and therefore Shared Transport) does not  
18 constitute a UNE, and is therefore not available at UNE rates when the  
19 end-user to be served with Unbundled Local Switching has four access  
20 lines or more and the lines are located in density zone 1 in specified  
21 Metropolitan Statistical Areas (MSAs).<sup>86</sup>

- 22  
23           • 9.11.2.5.1           For the purposes of the above paragraph, the  
24 following Wire Centers constitute density zone 1 in each of the specified  
25 MSAs:

26  
27           • **MSA**                           **CLLI**                           **Wire Center Name**  
28           • Phoenix                       PHNXAZMA                   Phoenix Main  
29   PHNXAZNO                   Phoenix North

---

<sup>85</sup> SGAT at 9.11.1.1  
<sup>86</sup> SGAT at 9.11.2.5.1

1

2 To meet its checklist requirements, Qwest will offer stand-alone unbundled circuit  
3 switching to CLECs (at market based rates) in areas that are "Density Zone One" for  
4 use by businesses with four lines or more.<sup>87</sup>

5 As of July 1, 2000, no Arizona CLEC has ordered stand-alone unbundled  
6 switching. Qwest does not believe that there will be significant, if any, demand for  
7 stand-alone unbundled switching. CLECs can and clearly do provide their own central  
8 office switching and they do not appear to require a direct connection of their loops to a  
9 Qwest central office switch. Many CLECs have purchased switches that are identical to  
10 those used by Qwest. For example, in the Local Exchange Routing Guide, Brooks  
11 Fiber (DBA WorldCom) and e.spire identify that they have deployed 5ESS switches in  
12 Arizona.

13 In addition, by having their own central office switches, a facility-based CLEC  
14 has greater control over when and what feature enhancements are available to their  
15 end user customers. It is often the central office switch that defines the level (and  
16 sophistication) of service provided. In the future, the speed to market of new  
17 feature/functionality may play a vital role in the competitive landscape.

18 Unbundled switching has had virtually no demand as an individual stand-alone  
19 UNE across the Qwest region. CLECs are primarily interested in unbundled local circuit  
20 switching as part of a UNE combination, or UNE-P.

1 **C. Unbundled Switching Description**

2  
3 The SGAT requires Qwest to provide unbundled circuit switching that includes  
4 the line-side and trunk-side cards, plus the features, functions, and basic switching  
5 capabilities of the switch.<sup>88</sup> Unbundled switching includes access to all vertical features  
6 that the switch is capable of providing, for example, customized routing functions. A  
7 CLEC can use a combination of a trunk-side port and custom routing to direct  
8 originating traffic to a dedicated trunk group such as a directory assistance trunk group.

9 In addition, a CLEC may purchase unbundled switching in a manner that permits  
10 it to offer, and to bill for, exchange access and termination of local traffic. Specifically,  
11 the SGAT commits Qwest to provide the CLEC with analog and digital line ports that  
12 include the following attributes:

- 13
- 14 • Telephone Number
  - 15 • Directory Listing
  - 16 • Dial Tone
  - 17 • Signaling (loop or ground start)
  - 18 • On/Off Hook Detection
  - 19 • Audible and Power Ringing
  - 20 • Automatic Message Accounting (AMA) Recording
  - 21 • Access to 911, Operator Services, and Directory Assistance
  - 22 • Call Type Blocking Options (e.g. 900 services)<sup>89</sup>

23 The FCC has also determined that an ILEC must meet the following requests for  
24 vertical features:

---

<sup>87</sup> SGAT at 9.11.2.5.2

<sup>88</sup> SGAT at 9.11.1.1.

<sup>89</sup> SGAT at 9.11.1.6

- 1     · A BOC must activate any vertical feature or combination of vertical  
2     features requested by a competing carrier unless . . . (it) is not  
3     technically feasible”  
4     ·  
5     · A BOC can require a requesting carrier to submit a request for such a  
6     vertical feature through a predetermined process that gives a BOC an  
7     opportunity to ensure it is technically feasible:<sup>90</sup>

8           The Qwest SGAT provides CLECs with both of these options. First, a CLEC  
9     may order vertical features in association with unbundled switching. The SGAT  
10    provides:

11                   9.11.1.8     Vertical features are software attributes on end  
12    office switches. Vertical features for the Analog Line Side Port are available  
13    separately as follows:

- 14           • Call Hold
- 15           • Call Transfer
- 16           • Three Way Calling
- 17           • Call Pickup
- 18           • Call Waiting
- 19           • Cancel Call Waiting
- 20           • Distinctive Ringing
- 21           • Speed Call Long – Customer Changeable
- 22           • Station Dial Conferencing
- 23           • Call Forwarding Busy Line
- 24           • Call Forwarding Don't Answer
- 25           • Call Forwarding Variable
- 26           • Call Forwarding Variable Remote
- 27           • CLASS Call Waiting ID
- 28           • CLASS Calling Name & Number
- 29           • CLASS Calling Number Delivery
- 30           • CLASS Calling Number Delivery Blocking
- 31           • CLASS Continuous Redial
- 32           • CLASS Last Call Return
- 33           • CLASS Priority Calling
- 34           • CLASS Selective Call Forwarding
- 35           • CLASS Selective Call Rejection
- 36           • CLASS Anonymous Call Rejection
- 37           • Call Park (Store & Retrieve)
- 38           • Message Waiting Indication A/V

---

<sup>90</sup> BellSouth Louisiana 271 Second Order at 219-20.

1 Second, CLECs have access to all vertical features loaded in a Qwest switch,

2 not just access to the features Qwest is providing its retail customers. Specifically, the

3 proposed SGAT states:

4 9.11.2.1 CLEC may purchase all vertical features that are  
5 loaded in Qwest's end office switch. CLEC may request features  
6 that are not activated in a Qwest end office switch utilizing the BFR  
7 Process contained in Section 17 of this SGAT. If CLEC requests  
8 features that are loaded, but not activated in a Qwest end office  
9 switch, appropriate recurring and nonrecurring charges will apply.

10 Qwest's unbundled switching element also includes the option for the CLEC to  
11 order custom routing. Custom routing allows a CLEC that obtains unbundled local  
12 switching to route its customers' calls to special trunk groups designated by the CLEC.  
13 For example, custom routing allows a CLEC's 411 calls to be routed to the CLEC's  
14 directory assistance trunk group (rather than on Qwest's directory assistance trunk  
15 group). This allows CLECs to route their customers' 411 calls to the CLECs' own  
16 choice of directory assistance provider.

17 Qwest also offers CLECs unbundled tandem switching. The FCC requirement  
18 for unbundled tandem switching<sup>91</sup> is contained within the proposed SGAT:

19 9.10.1 The local tandem switching element establishes a temporary  
20 transmission path between two other switches, but does not  
21 include the transport needed to complete the call. The local  
22 tandem switching element also includes the functions that are  
23 centralized in local tandem switches rather than in separate end  
24 office switches.

25 **D. The Unbundled Switching Provisioning Process**

26  

---

<sup>91</sup> First Interconnection Order at ¶. 425.

1           Where demand for a checklist item is low, or a BOC has received no requests for  
2 a checklist item, the FCC permits the BOC to submit testing results to demonstrate that  
3 it is ready to furnish the checklist item on demand. This insures that Qwest's 271  
4 approval will not be held hostage until such time as a CLEC were to find an application  
5 for unbundled switching.

6           Since the filing of my direct testimony, Qwest has conducted a "Bench Test"  
7 which demonstrates that Qwest can, upon CLEC request, provision and maintain  
8 unbundled transport and switching<sup>92</sup> in a timely and nondiscriminatory manner.

9           Following is a general description of the study. A complete description of the  
10 1999 "bench test" study methodology and the results of the test are contained in  
11 Exhibit-24. The Bench Test tested the provision of unbundled switching orders in  
12 Arizona and Nebraska. The Bench Test also tested the transmission of a "test call"  
13 over the unbundled elements that were provisioned. For Arizona, the unbundled  
14 analog line port orders were provisioned in the Phoenix, Arizona North East #5ESS  
15 switch.

16           The 1999 Bench Test of Unbundled Elements tested the provision of:

- 17           • Unbundled Dedicated Interoffice Transport (UDIT).
- 18           • Shared Transport
- 19           • Unbundled Switching Message Trunk Port & Message Trunk Group and
- 20           Members.

---

<sup>92</sup> The test included operator services and directory assistance completion and branding.

- 1           • Unbundled Analog Line Port
- 2           • Custom Routing
- 3           • Unbundled Customer Controlled Reconfiguration Element (UCCRE)<sup>93</sup>

4  
5           The Bench Test tested (1) the provision of unbundled switching, transport and  
6 UCCRE orders in Phoenix, Arizona as well as (2) the repair and maintenance of these  
7 elements. In the Bench Test, ***actual orders were placed and completed*** for each  
8 unbundled element tested. These orders followed the order provisioning processes  
9 outlined in the provisioning flow diagrams contained in the exhibits to my testimony. An  
10 LSR and ASR were written and sent to the Service Delivery Coordinator and orders  
11 were then sent all the way through the provisioning process, using all of the appropriate  
12 Operational Support Systems (OSS). In Arizona, the physical connection was  
13 completed and for both states the billing was established. Thus, the entire process,  
14 from delivery of an ASR/LSR to billing the customer was tested.

15           The Bench Test included the transmission of “test calls” over the unbundled  
16 elements that were provisioned. The test calls generated local minutes of use which  
17 were captured by AMA equipment, allowing a summary bill to be created. After  
18 provisioning was completed, trouble reports were processed to test and validate Qwest  
19 processes and procedures for the repair/maintenance of these services.

---

<sup>93</sup> The Unbundled Customer Controlled Reconfiguration Element (UCCRE) gives a CLEC the ability to connect elements together into a network and reconfigure the network on a near-real-time basis. The software system used with the Customer Controller enables the CLEC to reconfigure groups of channels using a single command.

1 In the Phoenix, Arizona North East #5ESS switch test, unbundled analog line  
2 ports were provisioned and services were physically installed and tested, following the  
3 exact process that would be followed when service is installed for a CLEC customer.

4 The unbundled analog line ports required the establishment and deployment of a  
5 unique measured Line Class Code (LCC) with Shared Transport, blockage of 900 calls  
6 and Custom Routing to a dedicated trunk group for OS/DA traffic. A dedicated  
7 combined OS/DA trunk group with branding was established between the Phoenix  
8 North East #5ESS switch and the Toll Operator Switch (TOPS) in the Phoenix Main  
9 central office. The unbundled analog line port was terminated on a designated  
10 Interconnection Distribution Frame (ICDF).

11 UDIT orders were provisioned and physically installed between the Phoenix,  
12 Arizona North East central office and the Phoenix, Arizona Main central office. The  
13 UDIT was terminated on a designated Interconnection Distribution Frame (ICDF).  
14 Orders were also provisioned and installed to test Unbundled Customer Control  
15 Reconfiguration Element (UCCRE).

16 To make the actual test call, the unbundled analog line ports were wired to a  
17 telephone within the central office, rather than an unbundled loop. Calls involving both  
18 local originating and terminating and OS/DA traffic were successfully completed.

19 The 1999 bench test did identify provisioning issues that needed to be  
20 addressed. For example, in some cases, the initial test order "dropped out" due to an

1 input error or a missing entry in a table.<sup>94</sup> As these errors were identified, the  
2 provisioning systems were corrected. ***In all cases, after the error on the initial order***  
3 ***was corrected, the initial and all subsequent orders were successfully processed***  
4 ***through the Qwest systems.*** For example, as noted in the study documentation in  
5 Exhibit KAS-24 (see section 5.04.8) the initial Analog Line Port order erred out because  
6 SOAC USOC table field did not have the proper code for a DMS-100 switch. The  
7 SOAC tables for all DMS-100 switches were updated to include the proper code, and  
8 the order was resent through the system and processed successfully. It is important to  
9 understand that in the Bench Test, errors were corrected in a manner that would  
10 prevent the same error happening in subsequent orders.

11 The problems uncovered in the Bench Test were not significant in nature, and  
12 did not jeopardize any of the critical dates. In each case, despite the correction of  
13 problems, all critical interval dates were met, and the service was delivered on the due  
14 date. Thus, in each instance, Qwest was able to provision each item on time. Please  
15 refer to Exhibit-24 for a description of the test steps for each unbundled element, the  
16 errors encountered, and the corrective steps taken.

17 In summary, the Bench Test clearly demonstrates that the processes are in  
18 place for Qwest to successfully provision CLEC orders for unbundled transport and  
19 switching in a timely, accurate and non-discriminatory manner. The Bench Test  
20 demonstrates that Qwest is able to install, repair/maintain and bill these elements. For

---

<sup>94</sup> This is not an uncommon occurrence when testing the provision of a new service using new processes.

1 each unbundled element, the provisioning processes worked successfully—from the  
2 pre-order transactions, through the submission of an ASR/LSR, the order handling  
3 steps and the physical installation of the element, and concluding with the rendering of  
4 a bill. In addition, the testing of the repair and maintenance processes and procedures  
5 successfully demonstrated Qwest's capability to perform this function for these  
6 elements. The Bench Test proves that Qwest can provision and install, within standard  
7 installation intervals, unbundled transport and switching when requested by a CLEC.

8 Qwest will provision unbundled switching in Arizona utilizing a defined order and  
9 provisioning flow. Exhibit KAS-25 contains a flowchart that delineates the tasks  
10 performed by Qwest personnel in order to provide unbundled switching. This exhibit  
11 also includes a matrix that describes each of work tasks identified in the flow chart.  
12 Qwest followed this same provisioning flow in the Bench Test mentioned above. Qwest  
13 will follow these steps if it receives an order for stand-alone unbundled switching in  
14 Arizona.

15 ***E. Unbundled Switching Maintenance Process***

16  
17 Qwest will maintain unbundled switching in Arizona utilizing a defined process  
18 flow. Exhibit KAS-26 contains a flowchart that delineates the tasks performed by Qwest  
19 personnel in order to provide CLECs maintenance for their unbundled switching. This  
20 exhibit also includes a matrix that describes each of work tasks identified in the flow  
21 chart. Qwest followed this same repair/maintenance flow in the Bench Test mentioned

1 above. Qwest will follow these steps if it receives a repair call for stand-alone  
2 unbundled switching in Arizona.

3 **F. Unbundled Switching Performance Measurements**

4  
5 Given the limited demand for stand-alone unbundled local switching, the Arizona  
6 Technical Advisory Group (TAG) has not identified specific performance measurements  
7 for stand-alone unbundled switching. The Arizona Third Party Operation Support  
8 System (OSS) Test and Workshops have determined testing of unbundled switching as  
9 part of a UNE combination is more appropriate. Therefore, the CGEY OSS test will  
10 specifically review Qwest's ability to provide CLECs nondiscriminatory access to  
11 unbundled switching in conjunction with combinations of loop and transport unbundled  
12 network elements.

13 **EELs**

14  
15 **1. Qwest's EEL Obligations**

16 2.

17 In the FCC UNE Remand order, the FCC determined that an ILEC could limit the  
18 availability of the unbundled switching UNE only if a CLEC had access to Enhanced  
19 Extended Links (EELs). Specifically:

20 278. . . . As described more fully below, we find that requesting carriers are  
21 not impaired without access to unbundled local circuit switching when they  
22 serve customers with four or more lines in density zone 1 in the top 50  
23 metropolitan statistical areas (MSAs), as set forth in Appendix B, where  
24 incumbent LECs have provided nondiscriminatory, cost-based access to  
25 the enhanced extended link (EEL) throughout density zone 1.

1 The FCC further defined EELs as:

2 288. Need for Enhanced Extended Link. Our conclusion that competitors  
3 are not impaired in certain circumstances without access to unbundled  
4 switching in density zone 1 in the top 50 MSAs also is predicated upon the  
5 availability of the enhanced extended link (EEL). As noted in section VI(B)  
6 above, the EEL allows requesting carriers to serve a customer by  
7 extending a customer's loop from the end office serving that customer to a  
8 different end office in which the competitor is already collocated. The EEL  
9 therefore allows requesting carriers to aggregate loops at fewer collocation  
10 locations and increase their efficiencies by transporting aggregated loops  
11 over efficient-high capacity facilities to their central switching location.

## 12 2. Qwest Offers EELs

13  
14 Consistent with FCC guidelines, Qwest has elected to limit the availability of  
15 unbundled switching in the Phoenix MSA for two Density Zone One central offices for  
16 businesses with four lines or more. Thus, Qwest offers CLECs access to EELs in the  
17 Phoenix Main and Phoenix North central offices. Qwest has a concrete legal obligation  
18 to provide EELs in its effective SGAT. The SGAT states:

19 10.9.1 Definition -- Enhanced Extended Loop (EEL) is a service offered by  
20 Qwest that allows CLEC to extend loops from the end user premise to a  
21 CLEC collocation in a different Wire Center. EEL is for the purpose of  
22 connecting an end-user to a CLEC switch. EEL consists of a combination  
23 of loop and interoffice facilities and may also include multiplexing or  
24 concentration capabilities. EEL transport and loop facilities may utilize  
25 DS0, DS1 or DS3 equivalent bandwidths.

26 Qwest has developed two standard EEL offerings, i.e., a point-to-point "Two-  
27 Point EEL" and a "Multiplexed EEL configuration." The Two-Point EEL consists of an  
28 unbundled loop directly connected to unbundled dedicated interoffice transport. The  
29 multiplexed EELs offer increased flexibility for a CLEC serving multiple customers in a  
30 single Qwest wire center. It consists of central office based multiplexing equipment

1 connected to dedicated interoffice transport. With the multiplexed EEL, a CLEC would  
2 then order individual loops out to the end user premises that would be connected to  
3 Central office based-multiplexing equipment. See Exhibit KAS-27 for a diagram  
4 illustrating the two standard EEL products.

5 Like a finished private line service, Qwest is responsible for the design,  
6 connection, and maintenance of the EEL service on an end to end basis. EELs are  
7 available in a variety of bandwidths including: DS3; DS1; DSL; and DS0.  
8 Specifications, interfaces and parameters for EELs are described in Qwest's Technical  
9 Publication 77403.

10 As of July 1, 2000, Qwest has not provisioned any EELs in Arizona.

### 11 **3. The EEL Provisioning Process**

12  
13 Qwest will provision EEL service in Arizona utilizing a defined order and  
14 provisioning flow. CLECs will submit orders using the ASR process similar to how  
15 special access circuits (that terminate in collocation) are ordered today. One service  
16 order is required when CLEC orders a single bandwidth EEL from CLEC's collocation to  
17 the end user location. Exhibit KAS-28 contains a flowchart that delineates the tasks  
18 performed by Qwest personnel in order to provide EEL service. This exhibit also  
19 includes a matrix that describes each of work tasks identified in the flow chart. Qwest  
20 will follow these steps each time EEL service is ordered in Arizona.

1 Installation intervals will be equivalent to the respective Private Line Transport

2 Service on the following web-site address:

3 <http://www.uswest.com/carrier/guides/sig/index.html>.

4 **4. EEL Maintenance Process**

5  
6 Qwest also maintains EELs in Arizona utilizing defined maintenance flows.

7 Exhibit KAS-29 contains a flowchart that delineates the tasks performed by Qwest

8 personnel in order to maintain EEL service. Exhibit KAS-29 includes a matrix that

9 describes all of the work identified in the flow chart. Maintenance and repair of the

10 dedicated transport, multiplexing and loop facilities used to provide EEL service is the

11 sole responsibility of Qwest.

12 **G. Checklist Item 6 Summary**

13  
14 Through its SGAT, Qwest provides CLECs with access to unbundled switching.

15 Per FCC guidelines, Qwest has a concrete obligation to offer EELs in the two wire

16 centers within Density Zone One of the Phoenix-Mesa MSA, and as a result does not

17 offer unbundled switching as a TELRIC priced UNE in those offices.

18 CLECs have not requested unbundled switching from Qwest. However, Qwest,

19 through its Bench Test, has established that it can provision, maintain and bill

20 unbundled switching (in conjunction with dedicated transport as well as shared

21 transport) upon request, and in a timely manner, thereby providing CLECs with a

1 meaningful opportunity to compete. Therefore, the Commission should find that Qwest  
2 satisfies checklist item 6.

3 **VI. Checklist Item 4 Workshop**

4 **Checklist Item 4**

5  
6 The Act requires Qwest to provide “local loop transmission from the central office  
7 to the customer’s premises, unbundled from local switching or other services.”<sup>95</sup> In its  
8 First Interconnection Order, the FCC defined a local loop as “a transmission facility  
9 between a distribution frame (or its equivalent) in an incumbent LEC central office and  
10 an end user customer premises.”<sup>96</sup> Exhibit KAS-30 provides a diagram of an unbundled  
11 loop as defined by the FCC.

---

<sup>95</sup> Section 271(c)(2)(B)(iv) of the Act.

<sup>96</sup> 47 C.F.R. 51.319(a).

1 **B. Qwest's Unbundled Loops Obligations**

2  
3 In this section of my testimony, I provide clear evidence that Qwest *currently*  
4 provides unbundled loops to CLECs in Arizona in a timely and nondiscriminatory  
5 manner. I also review language in the Qwest SGAT which demonstrates that Qwest *is*  
6 *obligated* to provide access to analog and digital loops, conditioning of loops, access to  
7 loops provisioned using Integrated Digital Lops Carriers (IDLC), and access to loop  
8 make-up information.

9 **1. Access to Analog and Digital Loops**

10 Both the FCC's old and new Rule 319 require Qwest to make both two wire  
11 analog and four-wire analog or digital unbundled loops available. The FCC's First  
12 Report and Order stated:

13 [This] definition [of unbundled loops] includes, for example, two-wire and  
14 four-wire analog voice-grade loops, and two-wire and four-wire loops that  
15 are conditioned to transmit the digital signals needed to provide services  
16 such as ISDN, ADSL, HDSL, and DS1-level signals.

17  
18 The FCC reaffirmed this finding in the UNE Remand Order.<sup>97</sup>

19 Consistent with these requirements, Qwest, through both its SGAT, Section  
20 9.2.2, and various interconnection agreements, offers the following varieties of loops :

- 21 • Two-Wire Analog Loop - is a voice-grade facility that provides continuity from the  
22 Qwest serving Central Office Main Distributing Frame or equivalent to the end user's

---

<sup>97</sup> UNE Remand Order at ¶166.

1 Network Interface Device (NID). This loop provides a two-wire analog interface and  
2 a circuit that supports 300 to 3000 Hz analog services. The buyer specifies a  
3 signaling format.

- 4 • Four-Wire Analog Loop - is a data-grade facility that provides continuity from the  
5 Qwest serving Central Office Main Distributing Frame or equivalent to the NID. This  
6 loop provides a four-wire interface and a circuit that supports 300 to 3000 Hz analog  
7 services requiring separate send and receive transmission paths.
- 8 • Two-Wire Non-Loaded Loop - is a two-wire facility from the Qwest serving Central  
9 Office Main Distributing Frame or equivalent to the NID. It is a metallic circuit with  
10 no load coils and, depending on the service that the CLEC intends to transmit, a  
11 limited length of bridge tap. This circuit supports analog and digital services. Pre-  
12 order loop make-up information provides the CLEC with data to determine if a re-  
13 used loop needs conditioning.
- 14 • Four-Wire Non-Loaded Loop - is a four-wire facility from the Qwest serving Central  
15 Office Main Distributing Frame or equivalent to NID. It is a metallic circuit with no  
16 load coils. This circuit supports analog and digital services requiring separate send  
17 and receive transmission paths.
- 18 • Basic Rate ISDN (BRI)-Capable Loop - is a facility that provides three digital  
19 channels from the Qwest serving Central Office Main Distributing Frame (MDF) or  
20 equivalent to the NID. This loop provides a two-wire Basic Rate ISDN 144kbps  
21 customer-useable interface channelized as 2B + D. The ISDN-capable loop can  
22 support some types of xDSL service, such as IDSL. Pre-order loop make-up  
23 information provides the buyer with data to make this determination.
- 24 • DS1-Capable Loop - is a facility that provides a very high speed digital channel from  
25 the Qwest serving Central Office Main Distributing Frame (MDF) or equivalent to the  
26 NID. This loop provides a four-wire 1.544Mbps customer-useable interface that may  
27 be channelized as 24 DS-Os. The DS-1 capable loop was developed for those  
28 instances where a 4-wire non-loaded loop is not available or where a loop, due to its  
29 length, is unable to meet the parameters necessary to support HDSL service. Pre-  
30 order loop make-up information provides the buyer with data to make this  
31 determination.
- 32 • DS3- Capable Loop - is a facility that provides a transmission path between a Qwest  
33 Central Office Network Interface (DS-3) and an equivalent demarcation point at an  
34 end user location. The DS-3 Capable Loop transports bi-directional DS-3 signals  
35 with a nominal transmission rate of 44.736 MBPS that meets the design  
36 requirements specified in Technical Publications 77384 (Unbundled Loop) and  
37 77324 (DS3).
- 38 • ADSL-Qualified Loop - is a two-wire facility from the Qwest serving Central Office  
39 Main Distributing Frame or equivalent to the NID. It is a metallic circuit with no load

1 coils and, and a limited length of bridge tap. A pre-order qualification tool indicates  
2 if cable and equipment records show that facilities exist to support the ADSL  
3 qualified loop or other types of xDSL services. This OSS functionality provides  
4 CLECs with immediate access to loop make-up data, including loop length; bridge  
5 tap length; insertion loss for non-loaded loops; circuit type – copper or pair gain;  
6 number of wires; and load coil type. With this pre-order information, CLECs can  
7 determine whether they desire loop conditioning or repeaters compatible with the  
8 xDSL technology they prefer.

- 9 • xDSL-I Capable Loop - is facility that provides a transmission path between a Qwest  
10 serving wire center network Interface and the Demarcation Point located at the End  
11 User's designated premises. The XDSL-I Capable Loop transports bi-directional,  
12 two-wire, Digital Subscriber Line signals with a nominal transmission rate of 160  
13 kbit/s and will meet the performance requirements specified in Technical Publication  
14 77384. It shall permit access to 144 kbit/s, un-channelized payload, of user  
15 bandwidth for clear transport of xDSL-I Services.

16  
17 As required by the UNE remand Order, Qwest will also provide other unbundled  
18 fiber and high capacity loops to CLECs where facilities are available on an ICB basis.<sup>98</sup>

19 Section 9.2.2 of the SGAT, coupled with the 45 approved Wireline  
20 Interconnection Agreements in Arizona, clearly binds Qwest to provide CLECs with a  
21 complete range of unbundled loops identified as checklist item 4 requirements.

22 Qwest further defines the specifications, interfaces, and parameters associated  
23 with Unbundled Loops in Technical Reference Publication No. 77384 and the SGAT. To  
24 ensure that Qwest provides CLECs with the type of loop ordered, Qwest conducts basic  
25 transmission testing. A coordinated installation option provides a CLEC the ability to  
26 perform cooperative testing with Qwest and to receive immediate test results. In

---

<sup>98</sup> SGAT at 9.2.2.3.1

1 addition to standard tests and provisioning, CLECs have the option to request  
2 customized testing and after-hours conversions

3 **2. Qwest Provides Loop Conditioning**

4 The FCC also requires ILECs like Qwest to “condition” existing loops upon  
5 request:

- 6 • Our definition of loops will in some instances require the incumbent LEC  
7 to take affirmative steps to condition existing loop facilities to enable  
8 requesting carriers to provide services not currently provided over such  
9 facilities. For example, if a competitor seeks to provide a digital loop  
10 functionality, such as ADSL, and the loop is not currently conditioned to  
11 carry digital signals, but it is technically feasible to condition the facility,  
12 the incumbent LEC must condition the loop to permit the transmission of  
13 digital signals. . . .<sup>99</sup>

14 .  
15 This conditioning provision, however, is subject to a technical feasibility standard:

- 16 • Incumbent LECs are required to provide access to these transmission  
17 facilities only to the extent technically feasible. That is, if it is not  
18 technically feasible to condition a loop facility to support a particular  
19 functionality, the incumbent LEC need not provide unbundled access to  
20 that loop so conditioned. For example, a local loop that exceeds the  
21 maximum length allowable for the provision of a high-bit-rate digital  
22 service could not feasibly be conditioned for such service. . . .<sup>100</sup>

23 .  
24 Loop conditioning is the term used to describe the process of removing load coils  
25 and bridge taps from existing copper loops. In most cases, the data portion of the loop  
26 will not work correctly if there are load coils or certain amounts of bridged taps on the  
27 loop.

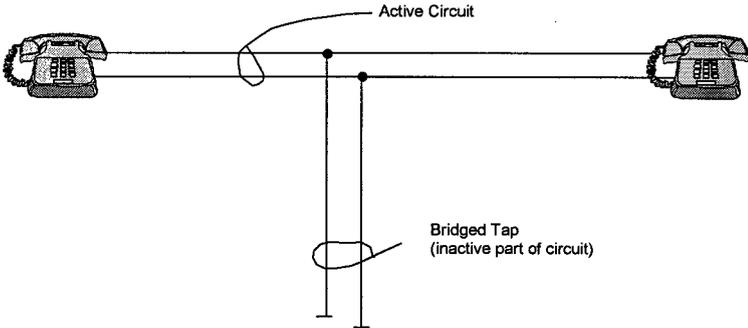
---

<sup>99</sup> First Interconnection Order at ¶. 382.

<sup>100</sup> First Interconnection Order at ¶. 381.

1 Load coils were originally used in the network to boost signals in long cooper  
2 loops. Load coils are actually coils of wire, and looks like an iron "doughnut" around  
3 which are wrapped each wire of the copper loop.

4 As Qwest began to place fiber-fed digital carrier to replace long loops in the  
5 network, long copper loops were shortened and re-used, in part, for other customers  
6 closer to the central offices. Therefore, existing copper loops, which at one time  
7 needed load coils to provide voice service over longer distances, now may be utilized  
8 closer to the central office, since load coils are not a hindrance to analog traffic.  
9 However, as previously mentioned, digital service often will not work properly with a  
10 load coil on the loop, thereby requiring it to be removed.



**Exhibit 2**

1 Bridge tap is used to provision telephone services economically, as it can assist  
2 in clearing and preventing held orders. Over a period of time, there is churn in the  
3 network. Customers come and go, but the telephone plant remains relatively constant.  
4 For example, what was once a high growth area twenty years ago may now have  
5 stagnant demand growth. Other areas where there was no growth twenty years ago  
6 may have a growing demand today (e.g., renovated residential urban areas). Given the  
7 flux in growth demands, the telephone plant that was once designed to serve one area  
8 can now be "bridged" in to serve new areas experiencing growth. (See Exhibit 2 above.)

9 As discussed above, if a loop is not being used at its intended location, and an  
10 end-user within close proximity of the spare loop location needs an additional loop,  
11 bridged tapping into the spare loop location is possible to provide telephone service to  
12 the new end-user. To take this a step further, when the new end-user no longer needs  
13 the bridged loop, work is generally not undertaken to remove the bridged tap. As a  
14 result, it is possible, over a period of time, for multiple bridged taps with varying lengths  
15 to accrue on the original cable pair.

16 Load coils, line extenders, bridge taps, and mixed copper gauges, all of which  
17 are suitable for voice services, degrade most digitized signals in the loop and, hence,  
18 have to be removed when a loop is used for a data service. Bridge tap weakens and  
19 reflects such signals (the un-terminated ends of the cable pair act as long antennas).  
20 They also put an obvious notch in the loop's attenuation at the frequency associated  
21 with the bridge tap's wavelength. Mixed gauges of copper reflect part of the digitized

1 signal. Load coils and line extenders limit the available bandwidth because the voice  
2 frequency analog loop is "tuned" to analog passband of 300-3000 Hz. Therefore, to  
3 minimize these effects, digitized loops typically are "conditioned" by removing load coils  
4 and excessive bridge taps.

5       There are several steps required to remove a load coil or bridge tap. First, an  
6 engineer must research the records to determine where the load points or bridge taps  
7 are located in the field and then write a work order to be issued to the construction  
8 forces. Next, a construction cable splicer must be dispatched to the field to perform the  
9 work involved. In most cases, the load points are located in an underground manhole.  
10 The cable splicer must pump dangerous gasses and water from the manhole and then  
11 provide ventilation into it. After pumping and ventilating, the cable splicer enters the  
12 manhole, identifies the splice case to be removed, removes the splice case, and  
13 identifies the loop to be unloaded. The loop must then be cut away from the load coil  
14 cable stub and re-spliced together. After unloading, the technician must reinstall the  
15 splice case and close the manhole. The conditioning process requires, on average,  
16 about four hours per manhole. Many unloading jobs require entering more than one  
17 manhole, meaning that the average time to complete each job is well in excess of four  
18 hours.

19       Throughout first quarter 2000, Qwest assigned the standard interval according to  
20 the Standard Interval Guide for all 2-Wire Non-Loaded Loops, regardless of the need  
21 for conditioning. If the loop required conditioning such as the removal of bridged tap or

1 load coils, the due date must be extended, and therefore is always missed while the  
2 engineering job described above is completed. Qwest is in the process of establishing  
3 a Standard Interval for Conditioning. If the loop qualification tool identifies that the loop  
4 requires conditioning, then the CLECs would be given the new standard interval. This  
5 change will be implemented in August 2000 and will provide the CLECs with a standard  
6 installation interval that mirrors the provisioning process. Qwest expects this change to  
7 provide the CLECs with a predictable due date from the pre-order point. From a  
8 performance perspective this change will increase the commitments met, shorten the  
9 interval for non-loaded loops that do not require conditioning and lessen the delay days  
10 for facility reasons.

11 Qwest understands that it has a legal obligation to provide conditioned loops.

12 The Qwest SGAT, provides for loop conditioning in several different situations:

- 13 • Qwest will "condition" the loop by removing load coils and excess  
14 bridge taps (*i.e.*, "unload" the Loop). The CLEC is charged a non-  
15 recurring charge for the cable unloading and bridge tap removal in  
16 addition to the Unbundled Loop installation nonrecurring charge.
- 17 • A CLEC may request a Basic Rate ISDN-capable loop. Qwest will  
18 review the available loops and take steps to condition, and/or place  
19 extension technology, as necessary for the CLEC to deliver Basic  
20 Rate ISDN service over the loop. Additional charges apply for  
21 conditioning and extension technology
- 22 • When a CLEC requests a DS1-capable loop, Qwest will install the  
23 electronics at both ends including any intermediate repeaters.
- 24 • When a CLEC requests an ADSL Qualified Loop, Qwest will pre-  
25 qualify the requested circuit by utilizing the existing telephone  
26 number or address to ensure it meets ADSL specifications. If a  
27 circuit qualifies for ADSL then conditioning is not required. The

1 qualification process ensures the CLEC that the circuit complies with  
2 the design requirements specified in Technical Publication 77384.<sup>101</sup>

3 As will be discussed below, Qwest has developed a loop qualification tool that  
4 allows CLECs to determine whether a loop needs conditioning in advance of ordering  
5 the loop from Qwest.

### 6 3. Qwest Offers Unbundled IDLC Loops

7 Qwest also has a contractual obligation to abide by the FCC requirement to  
8 provide unbundled loops to CLECs regardless of whether Integrated Digital Loop  
9 Carrier (IDLC) or similar technologies are utilized by Qwest to provide service to a  
10 particular address. In its First Interconnection Order, the FCC specifically addressed  
11 this issue and ordered ILECs to unbundle these loops as well:

- 12 · . . . If we did not require incumbent LECs to unbundle IDLC-delivered  
13 loops, end users served by such technologies would not have the same  
14 choice of competing providers as end users served by other loop types.  
15 Further, such an exception would encourage incumbent LECs to "hide"  
16 loops from competitors through the use of IDLC technology.
- 17 ·
- 18 · We find that it is technically feasible to unbundle IDLC-delivered loops.  
19 One way to unbundle an individual loop from an IDLC is to use a  
20 demultiplexer to separate the unbundled loop(s) prior to connecting the  
21 remaining loops to the switch. Commenters identify a number of other  
22 methods for separating out individual loops from IDLC facilities, including  
23 methods that do not require demultiplexing.
- 24 ·
- 25 · Again, the costs associated with these mechanisms will be recovered  
26 from requesting carriers.<sup>102</sup>

---

<sup>101</sup> SGAT at 9.2.2.3 to 9.2.2.5.

<sup>102</sup> First Report and Order, Paragraphs 383-384.

1 For example, when a CLEC requests a two-wire analog unbundled loop to an  
2 address where the existing loops are now IDLC, Qwest can attempt to provide the  
3 requested unbundled loop through a Universal Digital Loop Carrier System (UDLC).  
4 UDLC is a form of pair gain that is not integrated with the switch, and therefore each  
5 individual loop is de-multiplexed at the central office for potential delivery to a CLEC. If  
6 no UDLC is available, the Loop Provisioning Center (LPC) follows an eleven-step  
7 process in an attempt to locate alternate facilities that will meet the CLEC's  
8 requirements, including the potential for a Line and Station Transfer involving physical  
9 copper facilities. If no facilities are available via the LPC process, an engineer reviews  
10 the situation to determine whether some other means exists to provide a loop. If it is  
11 possible, the CLEC is notified and installation time frames and charges are negotiated.  
12 If it is not possible, the CLEC is notified and it may either withdraw the request or ask  
13 Qwest to retain the order. In that situation, Qwest will retain the order in abeyance,  
14 checking periodically for new facility availability. New facilities may become available  
15 due to service disconnects of nearby customers, proactive cable maintenance, or  
16 construction.

17 The engineer will also consider using a new generation of IDLC. New IDLC  
18 allows Qwest to groom from the high-speed channel, a single DS-1 or DS-0 channel.  
19 That channel or its analog equivalent is delivered to the CLEC at the appropriate  
20 Interconnection Distribution Frame, or its collocation space.

1 Qwest's prices for two-wire and four-wire unbundled loops in Arizona emanate  
2 from the cost docket. The rates for unbundled loops are included as Attachment A of  
3 the SGAT.

#### 4 **4. Loop Make-up Information**

5 In October 1999, Qwest released OSS version 4.2 that includes a pre-order "loop  
6 qualifying tool" that provides CLECs the loop makeup information. The tool enables the  
7 CLECs to anticipate if conditioning is required and/or to determine if a prospective loop  
8 might or might not support their xDSL service.<sup>103</sup> To determine if a prospective end  
9 user customer has a compatible loop, the CLEC submits a loop qualification pre-order  
10 transaction via IMA/EDI by entering the prospective end user's telephone number or  
11 street address. Exhibit KAS-31 is a copy of the IMA request and response screens.  
12 Specifically, as described above the IMA/EDI loop qualification tool provides  
13 competitors with the following raw, non-manipulated cable make-up data:

- 14 • Total loop length
- 15 • Bridged tap length
- 16 • Loop type copper or pair gain
- 17 • Load coil type
- 18 • Number of wires and insertion loss for non-loaded loops (in decibels)
- 19 • calculated at 196-kilohertz frequency with 135-ohm terminations.

---

<sup>103</sup> The initial loop pre-qualification tool was labeled "ADSL"; however, this is a misnomer. From the very beginning, it has been available for all types of loops.

1 This electronic pre-order loop tool was developed and deployed prior to the  
2 issuance of the FCC UNE Remand. Almost immediately after Qwest released its loop  
3 qualification tool, on November 5, 1999, Rhythms submitted a formal IMA Change  
4 Request to modify it. The Change Request, Exhibit KAS-32, requested additional loop  
5 make-up information and the ability to request bulk loop information, such as for all  
6 loops in a specified Qwest wire center. On November 11, 1999 several competitors  
7 met with Qwest to review and prioritize IMA Change Requests and ranked the Rhythms'  
8 request "medium priority," which means "Wants to Have," but not critical.<sup>104</sup> Shortly  
9 thereafter, the FCC's UNE Remand Order also contained a requirement for ILECs, like  
10 Qwest, to provide loop qualification information.<sup>105</sup> As a result, Qwest scheduled a  
11 change to its OSSs' specifically, the IMA/EDI system change is scheduled for 4Q2000.  
12 The system update will also enable CLECs to obtain raw loop data for multiple  
13 telephone numbers at one time.

14 In addition to providing the CLECs with loop make-up information on pre-order  
15 IMA/EDI basis, prior to August 2000, Qwest will introduced a mechanized bulk wire  
16 center loop make-up tool. The batch files Qwest provides to CLECs contain a list of all  
17 active telephone numbers within a particular wire center as well as detailed raw loop  
18 information for each telephone number listed. CLECs will be able to access these  
19 batch loop files through a CLEC-accessible, Qwest web site. The batch files will be  
20 refreshed on a rolling basis monthly. It is important to note that the batch loop files are  
21 not loop qualification files per se; they do not provide a CLEC with a definitive answer

---

<sup>104</sup> The Change Request Process is discussed in further detail in Ms. Notarianni's testimony.

1 as to whether a certain loop qualifies for xDSL. Instead, the batch files provide loop  
2 information from which CLECs may make their own determination as to the percentage  
3 of loops from the wire center will be is capable of supporting xDSL service and  
4 therefore whether a business case can be made to support the area with DSL service.  
5 Exhibit KAS-33 displays a copy of the wire center loop make-up information.

6 **C. Qwest Offers Unbundled Loops in Arizona**

7

8

9 There are 9 CLECs currently purchasing unbundled loops from Qwest in  
10 Arizona. As of the end of April, Qwest had 9,033 unbundled loops in service served  
11 from 46 different wire centers. Exhibit KAS-34 displays a map of Arizona where CLECs  
12 have purchased unbundled loops. The loop growth for this year is displayed in Exhibit  
13 KAS-35, the graph shows the number of analog and digital loops. These numbers  
14 alone constitute powerful evidence that Qwest is providing CLECs with  
15 nondiscriminatory access to unbundled loops in Arizona today.

15

16

17

Because of the increasing order quantity and the variety of orders, Qwest has  
gained a great deal of experience in providing unbundled loop service in Arizona since I  
filed my direct testimony in Mach of 1999.

1 ***E. The Unbundled Loops Provisioning Process***

2  
3 Qwest provisions unbundled loops in Arizona utilizing a provisioning flow as  
4 shown in Exhibit KAS-36. This flowchart delineates the tasks performed by Qwest  
5 personnel to install an unbundled loop. This exhibit also includes a matrix that  
6 describes each of the work tasks identified in the flow chart. Qwest follows these steps  
7 each time an unbundled loop is ordered.

8 A CLEC first utilizes pre-order transactions to gather information necessary for  
9 their loop order. The CLEC then orders an unbundled loop by submitting a Local  
10 Service Request (LSR) via Interconnection Mediated Access (IMA), Electronic Data  
11 Interchange (EDI), or facsimile (fax). The CLEC order is processed and entered into the  
12 Qwest service order processor (SOP) which then issues a Firm Order Confirmation  
13 (FOC) to the CLEC. All of this is the current normal ordering procedure for the CLEC.

14 From this point, the order is processed using the same downstream systems and  
15 personnel that process orders for Qwest service offerings, such as private line service  
16 or basic exchange access service. When Qwest provisions an unbundled loop, a  
17 central office technician must be dispatched to run jumpers connecting the unbundled  
18 loop to the CLEC's facilities as specified on the LSR by the CLEC.

19 From a provisioning standpoint, there is no exact retail analogue to an  
20 unbundled loop. The FCC acknowledged this point in its Order regarding the Bell  
21 South 271 petition in Louisiana. The FCC stated, "Because the provisioning of

1 unbundled local loops has no retail analogue, (the BOC) must demonstrate that it  
2 provides unbundled loops in a manner that offers an efficient carrier a meaningful  
3 opportunity to compete"<sup>106</sup>. In workshops in Arizona, it was widely acknowledged that  
4 the closest retail comparative is the provision of POTs with a dispatch. As a result, until  
5 only recently, all parties to this docket agreed that Qwest met its performance  
6 obligations for provisioning loops if it met or exceeded average commitments met and  
7 installation intervals for POTs with a dispatch. Since then, however, the parties have  
8 modified this performance benchmark. Now, Qwest must provision unbundled loops,  
9 on average, by set intervals. Qwest is committed to providing unbundled loops within  
10 the required intervals and has established performance measures and processes to  
11 ensure successful provisioning.

12 In summary, when Qwest provisions an unbundled loop, the same processes  
13 and downstream systems are used (with modifications to accommodate unique  
14 unbundling requirements, such as a designation to recognize the facility as unbundled  
15 rather than a complete service) that Qwest would normally provide for its end users.  
16 First, since the unbundled loop is a dedicated facility, it is provisioned using a circuit  
17 identifier. Second, the unbundled loop order is routed to the systems that contain  
18 inventory information about loop facilities and the order is handled by employees with  
19 experience and the specialized unbundling training to ensure that timely coordination  
20 with the CLEC is accomplished if needed. Third, the unbundled loop flow also allows  
21 Qwest to provide data regarding the design of the service to the CLEC via the Design

---

<sup>106</sup> FCC Bellsouth Louisiana II Order, October 13, 1989 ¶198.

1 Layout Report (DLR) process. This is important because an unbundled loop can be  
2 configured in different ways depending on the manner in which a CLEC chooses to  
3 interconnect with Qwest.

4 Additionally, unique coordinated installation and testing are accommodated  
5 through the unbundled loop provisioning flow. When a CLEC requests a coordinated  
6 installation, Quest will perform testing with the CLEC to ensure connectivity between a  
7 CLEC's collocated equipment and its network demarcation point. Quest also ensures  
8 that a customer is only out of service for a short period of time as the coordinated  
9 cutover is completed. Further explanation of this is in my testimony below.

## 10 **2. Standard Service Provisioning Intervals**

11 The installation interval for unbundled loops varies based the type of loop, the  
12 number of loops being installed in one location, and the city. Cities grouped into two  
13 categories high and low density areas. Phoenix, Tucson and Flagstaff are the only  
14 Arizona cities classified as high density. Qwest provides the CLECs with a complete list  
15 of all the standard intervals in the SGAT and the Interconnection Service Interval Guide,  
16 located at <http://www.uswest.com/wholesale/guides/sig/resale/index.html>. For high  
17 density areas, the following standard intervals apply:

- 18 • 2 and 4 Wire Analog Loops, 2 and 4 Wire Non-Loaded Loops, ISDN  
19 Capable, ADSL Qualified, and DS1 up to 8 loops will be installed in 5  
20 business days.

- 1 • DS3 Capable up to 3 loops will be installed in 7 business days.
- 2 • XDSL-I up to 8 loops will be installed in 10 business days.

### 3. Coordinated Installation

5 There is one other indicator that concerns unbundled loop provisioning and an  
6 efficient CLEC's meaningful opportunity to compete. Every time unbundled loop  
7 provisioning involves re-use of facilities (a change of local service providers), the loop  
8 must be disconnected from Qwest's switch and re-connected to the CLEC's switch.  
9 When this occurs, the customer is briefly without service. The proposed Qwest SGAT  
10 contains four options for installing unbundled loops.<sup>107</sup> These options include:

- 11 • Basic Installation (Existing Service),
- 12 • Basic Installation with Performance Testing (New Service),
- 13 • Coordinated Installation With Cooperative Testing, and
- 14 • Coordinated Installation Without Testing (Existing Service).

15 The coordinated installation options allow the CLEC to designate a specific  
16 appointment time when Qwest will deliver the requested unbundled loop. CLECs most  
17 often request a coordinated installation to coordinate work between Qwest and CLEC in  
18 order to keep their new customers out of service for as brief a time as possible. When  
19 such a request is made, Qwest utilizes a detailed provisioning process. On the order  
20 due date at the pre-arranged time, a Qwest employee in the designed services delivery  
21 center coordinates activities between the CLEC and Qwest technicians. A call is placed

---

107 SGAT at 9.2.2.9.1 to 9.2.2.9.4.

1 to the CLEC in order to determine if it is ready for the service to be transferred. If the  
2 CLEC indicates that it is ready, Qwest central office and field work is performed. If the  
3 CLEC indicates that it is not ready, a new appointment is scheduled.

4 Coordinated installation provides the CLEC with the ability to establish a specific  
5 service installation time for its customer, allowing both the CLEC and their end user to  
6 pre-plan for minimal service interruption. This installation option establishes a critical  
7 link between Qwest and the CLEC to ensure that the work activities are performed at  
8 the same time to minimize the impact to the CLEC's customer. When the coordinated  
9 installation involves an existing customer they are often referred to as "Hot Cuts". Of  
10 the 7,601 coordinated installations that were performed in June approximately 80%  
11 were "Hot Cuts". Exhibit KAS-36 displays the process flow of due date activities for  
12 "Hot Cuts". Page two of the Exhibit defines the tasks and page three is a sample of the  
13 data collected by Qwest implementor.

14 The remaining 20% of the coordinated installations were for customers not  
15 previously served by Qwest, or "new loops". Exhibit KAS-37 displays the process flow  
16 for new loops and page 2 of the exhibit defines the tasks.

17 **F. Unbundled Loop Maintenance and Repair Process**

18  
19 Qwest maintains unbundled loops in Arizona utilizing a defined maintenance and  
20 repair flow. Exhibit KAS-38 contains a flowchart that delineates the tasks performed by  
21 Qwest personnel to maintain unbundled loops. This exhibit also includes a matrix that

1 describes each of the work tasks identified in the flow chart. Qwest follows these steps  
2 each time Qwest receives a trouble report in Arizona.

3 In summary, a CLEC can report repair problems by issuing repair tickets using  
4 Electronic Bonding-Trouble Administration (EB-TA) or by calling Qwest's repair center.  
5 Qwest accepts trouble reports only from the CLEC—not the CLECs customer. A  
6 trouble ticket is created and is processed using the same systems and personnel as  
7 trouble tickets for Qwest retail services. The trouble ticket is passed to the appropriate  
8 groups to analyze, test and fix any Qwest problems that are identified. The repair  
9 technician closes the ticket when the CLEC is notified that the trouble is resolved.<sup>108</sup>

10 **G. Unbundled Loop Performance Measurements**

11  
12 The FCC stated, "Because the provisioning of unbundled local loops has no  
13 retail analogue, (the BOC) must demonstrate that it provides unbundled loops in a  
14 manner that offers an efficient carrier a meaningful opportunity to compete."<sup>109</sup> To  
15 ensure its compliance with this requirement, Qwest along with the Arizona Commission  
16 Staff and the CLECs have developed extensive performance measurements in order to  
17 monitor its performance in providing unbundled loops to CLECs.

18 As part of the Arizona Third Party OSS Test, the following provisioning and  
19 repair measures have been established for unbundled loops. The Arizona SGAT will

---

<sup>108</sup> Qwest will also advise the CLEC if no trouble is found, or if the problem is not in the Qwest network.

<sup>109</sup> FCC Bellsouth Louisiana II Order, October 13, 1989 ¶198.

1 be revised to include performance measures when they are finalized in the Third Party  
2 OSS Test and Workshop process in Arizona.<sup>110</sup> The following performance measures  
3 apply to the provision or repair of unbundled loops.

## 4 **1. Provisioning Measures**

5 As stated before, there is no direct retail comparative for the ordering and  
6 provisioning of unbundled loops. As a result, for each of the following performance  
7 measures, the parties to this docket have agreed upon set benchmarks that, when met,  
8 will establish unequivocal evidence that Qwest meets this checklist item.

9 OP-3 - Installation Commitments Met – evaluates the extent to which Qwest  
10 installs service by the scheduled due date.

11 OP-4 – Installation Interval – focuses on the average time to install service.

12 OP-5 – New Service Installation Quality – evaluates the number of new orders  
13 that are trouble free for 30 days following installation. Additionally it focuses on  
14 the percentage of new service installations that experienced a trouble report  
15 during the period from the installation date to the date the order is posted  
16 complete

17 OP-6 – Delay Days – evaluates the average number of days that late orders are  
18 completed beyond the due date.

19 OP-7 – Coordinated “Hot Cut” Intervals – focuses on the time involved to  
20 disconnect a customer from the Qwest network and connect it to the CLEC.

21 OP-13 – Coordinated Cuts On Time – evaluates the timeliness of coordinated  
22 installations and the percent of orders started prior to the scheduled time without  
23 the CLECs approval.

---

<sup>110</sup> The Arizona SGAT, Section 20, as revised on 4-7-2000, includes an incorrect reference to development of performance measurements as part of the “Regional Oversight Committee” process; QWEST is filing a correction to the SGAT to refer to development of performance measurements as part of the “Arizona Third Party OSS Test and Workshops.”

1 **2. Maintenance and Repair Measures**

2 Unlike loop provisioning, there is a retail analogue for the repair and  
3 maintenance of unbundled loops. Qwest is merely repairing a loop, much as it would  
4 for POTs service. As a result, for each of the following performance measures, the  
5 parties to this docket have agreed upon that Qwest unequivocally meets this checklist  
6 item if it provides repair in substantially the same time and manner as it does for retail  
7 POTs lines.

8 MR-3 – Out of Service Cleared within 24 Hours – evaluates the timeliness of out  
9 service repair for 2 /4-wire analog loops, 2-wire non-loaded loops and ADSL  
10 qualified loops.

11 MR-4 – All Troubles Cleared within 48 Hours – evaluates the repair timeliness of  
12 all types of trouble cases for 2 /4-wire analog loops, 2-wire non-loaded loops and  
13 ADSL qualified loops.

14 MR-5 – All Troubles Cleared within 4 Hours – evaluates the timeliness of repair  
15 for 4-wire non-loaded loops, ISDN capable DS1 capable, and DS3 capable  
16 loops.

17 MR-6 – Mean Time to Restore – focuses on how long it takes to restore service.

18 MR-7 – Repair Repeat Report Rate – focuses on the number of repeated trouble  
19 reports for the same loop received within 30 days.

20 MR-8 – Trouble Rate – evaluates the number of troubles as a percentage of the  
21 total number of loops in service.

22 MR-9 – Repair Appointment Met – evaluates the extent to which repairs service  
23 by the appointment date and time.

24 **H. Unbundled Loop Performance Measurements Results**

25 The performance results for each measure are disaggregated by specific loop  
26 type and high and low density areas. Qwest, the Arizona Commission staff, and the

1 CLECs reviewed each measure in great detail and established the benchmark  
2 performance requirements. Exhibit KAS-39 displays the actual first quarter 2000  
3 performance results. OP-7 and OP-13 results are not yet available and will be  
4 supplemented before the scheduled loop workshop. The following discussion highlights  
5 some of the analog installation and repair measures.

### 6 **OP-3 - Analog Installation Commitments Met**

7 As mentioned above this measurement reflects the percentage of orders  
8 completed by the due date. In October of 1999, the TAG established the Analog Loop  
9 Installation Commitments Met benchmark as parity with retail residence and business  
10 service that required a dispatch. In July 2000 the TAG established a new benchmark of  
11 90% Commitments Met. Proprietary Exhibit KAS-40 displays for the first quarter 2000,  
12 analog loops results, in high density areas, and a comparison against dispatched retail  
13 residence and business lines within the MSA. Additionally, the graph displays the  
14 benchmark. For the first quarter 2000, the percent of commitments met for analog  
15 loops exceeded the retail results and exceeded the new benchmark for three months.

### 16 **OP-4 - Analog Installation Interval**

17 This performance measure indicates the average number of days required to  
18 actually install the service. Until July of 2000, the benchmark for installation intervals  
19 was a comparison of parity with retail residence and business services requests that  
20 require a dispatch. Again in July 2000 this benchmark measure the installation interval  
21 changed to 6 days in high density areas and 7 days in low density areas. Proprietary

1 Exhibit KAS-41 displays the first quarter 2000 results, for analog loops in high density  
2 areas, against dispatched retail residence and business lines within the MSA.

3 In the urban areas, Qwest provisioned analog loops in less time than it installed  
4 residence and business services with a dispatch. However, the new benchmark was  
5 not achieved in the first quarter. Qwest is actively working on process improvements  
6 that include more efficient use of mechanization and installation technician resources to  
7 reduce the installation interval for analog loops to meet the new benchmark.

#### 8 **Repair Results**

9 Proprietary Exhibit KAS-42 displays, for period January through April, that almost  
10 all repair benchmarks were reached for analog loops.

11 1. The first measurement, "**Trouble Rate**," (MR-8), measures the percentage of  
12 lines in service that experience trouble in any one month compared to the total number  
13 of lines in service. As shown in KAS-42, Qwest reports performance results separately  
14 for "Trouble Rate" for analog unbundled loops versus QWEST retail end users for  
15 residential and business services. The performance results demonstrate that CLECs  
16 consistently experience a lower trouble report rate for analog loops, as compared to  
17 Qwest's retail residential customers.

18 However, the results for analog loops versus retail business services show  
19 performance for CLECs that falls below retail in the four months reported. There was  
20 less than a percent difference in the trouble report rates between the business service

1 and analog unbundled loops. Although the range of performance is comparatively  
2 similar, this statistical disparity requires a closer look at the data and what it means.  
3 Qwest is reviewing the underlying data and will provide additional information when  
4 updated performance results are provided prior to the loop workshop.

5 2. The measurement "**Out-of-Service Cleared within 24 Hours,**" (MR-3),  
6 measures the percentage of time that Qwest clears an out-of service situation within 24  
7 hours of receipt of notification. Qwest reports "**Out-of-Service Cleared within 24 Hours**"  
8 performance for analog unbundled loops versus Qwest retail residential and business  
9 end users. The performance results provided in Exhibit KAS-42 demonstrate that  
10 Qwest consistently clears out of service troubles within 24 hours for CLECs at rates that  
11 are nondiscriminatory as compared to Qwest's retail end users.

12 3. The next measurement, "**All Troubles Cleared within 48 Hours,**" (MR-4),  
13 measures the percentage of time that Qwest clears all trouble reports, whether it be  
14 out-of-service or otherwise, on nondesigned services within 48 hours from notification.  
15 Qwest reports "All Troubles Cleared within 48 Hours" performance results for analog  
16 unbundled loops versus Qwest retail residential and business end users. The  
17 performance results provided in Exhibit KAS-42, demonstrate that Qwest consistently  
18 clears trouble within 48 hours for CLECs at rates that are nondiscriminatory, and in fact  
19 superior, as compared to Qwest's retail results.

20 4. The next measurement, "**Mean Time to Restore,**" (MR-6), measures the  
21 average time Qwest takes to resolve repair requests. Qwest reports performance

1 results for "Mean Time to Restore" for analog unbundled loops verses Qwest retail  
2 business and residential end users. In all months of the reporting period, Qwest  
3 provided superior performance results for CLECs who purchased analog unbundled  
4 loops.

5 5. The last measurement, "**Repair Repeat Report Rate**," (MR-7), measures the  
6 percentage of repair reports that are reported again within 30 days of the first report.  
7 Qwest reports performance results for "Repair Repeat Report Rate" for analog loops as  
8 compared to Qwest retail residential and business customers. The performance results  
9 indicate that Qwest is generally repairing trouble effectively and in a nondiscriminatory  
10 manner. In the four month reporting period, Qwest Repair Repeat Report Rate was  
11 better for three of the four months for analog unbundled loops.

12 In summary, when the results are viewed as a whole, Qwest is providing CLECs  
13 with nondiscriminatory repair of trouble for analog unbundled loops.

14 ***NIDs***

15  
16 The Network Interface Device (NID) is located at the customer's premises and  
17 represents the juncture of an exchange carrier's loop and an end user's inside wiring.  
18 The NID serves as both a demarcation point and as protection against voltage surges  
19 caused by lightning and inadvertent contact between commercial power cable and  
20 telephone cable.

1 The FCC requires ILECs, such as Qwest, to provide access to the NID:

- 2 · We require incumbent LECs to offer unbundled access to the network  
3 interface device (NID), as a network element, as described below. When  
4 a competitor deploys its own loops, the competitor must be able to  
5 connect its loops to customers' inside wiring in order to provide competing  
6 service, especially in multi-tenant buildings. In many cases, inside wiring  
7 is connected to the incumbent LEC's loop plant at the NID. In order to  
8 provide service, a competitor must have access to this facility. Therefore,  
9 we conclude that a requesting carrier is entitled to connect its loops, via its  
10 own NID, to the incumbent LEC's NID.<sup>111</sup>

11 Qwest provides unbundled access to the NID. Qwest allows competitors to  
12 connect their loops to a retail customer's inside wiring either via their own NID or the  
13 Qwest NID. CLECs can terminate their loop in the Qwest NID so long as there is space  
14 for the connection.<sup>112</sup> The SGAT at Section 9.5 also gives the CLEC the option to order  
15 a modular NID to replace an existing non-modular NID for ease in testing or to  
16 cooperate in reconfiguration necessary to create a Single Point of Interface.<sup>113</sup>

17 Qwest has a concrete legal obligation to make NIDs available to CLECs upon  
18 request. The evidence is indisputable that Qwest makes NIDs available at an  
19 acceptable level of quality. As of April 31, 2000, Qwest had provisioned 9,033  
20 unbundled loops in Arizona, each with a NID. In each instance, competitors did not get  
21 a NID of similar quality, but the exact same NID. Qwest, therefore, makes NIDs  
22 available to CLECs as required by the Act.

---

<sup>111</sup> First Interconnection Order at ¶. 392.

<sup>112</sup> Third Interconnection Order and Fourth Further Notice of Proposed Rulemaking at ¶. 237.

<sup>113</sup> Third Interconnection Order and Fourth Further Notice of Proposed Rulemaking at ¶. 226.

1 **I. Checklist Item 4 Summary**

2  
3 Based on the evidence presented, Qwest is currently provisioning and  
4 maintaining over 9,000 unbundled loops in Arizona of which over 16% are digital. The  
5 digital unbundled loops have increased over 200% since the beginning of the year.  
6 Additionally, the installation and repair intervals are for the most part faster than what  
7 Qwest provides to its own retail customers. This demonstrates that per FCC guidelines,  
8 CLECs using Qwest unbundled loops have a meaningful opportunity to compete.  
9 Qwest is complying with the UNE Remand in providing CLECs with conditioned  
10 unbundled loops, access to loops via IDCL, and loop make-up information. Therefore,  
11 the ACC should find that Qwest has satisfied the requirements for checklist item  
12 number 4 (when combined with CGEY OSS test results).

13 **VIII. Conclusion of Affidavit**

14 Qwest has satisfied the requirements of the Act for access to unbundled network  
15 elements, including unbundled loops, unbundled switching and unbundled transport,  
16 checklist items 2, 4,5 and 6 and advanced services identified in the UNE Remand  
17 Order. Qwest has a legal obligation to provide these items through both existing  
18 interconnection agreements and the proposed SGAT.

19 Qwest is currently providing access to the UNEs in Arizona. At least nine CLECs  
20 in Arizona are successfully accessing over 9,033 unbundled loops to create  
21 telecommunications services for end users. CLECs have access to loops of all types.  
22 These CLECs are obtaining these loops more quickly than Qwest's retail services with

1 a dispatch, thereby providing them a meaningful opportunity to compete and are having  
2 these loops repaired in substantially the same time and manner than Qwest's retail  
3 customers.

4 Similarly, CLECs have access to unbundled switching and both dedicated and  
5 shared transport in Arizona through the SGAT. Although CLECs have not ordered  
6 significant quantities of these offerings, they are available to them. Qwest performed a  
7 Bench Test to demonstrate that it could, upon CLEC request, provision, repair and bill  
8 these elements in a timely way.

9 Finally, Qwest makes additional network elements as required available to  
10 CLECs. Qwest provides CLECs with access to all of these UNEs such that the CLEC  
11 can combine them into finished telecommunications services. Qwest will provide  
12 CLECs with access to new combinations, whether they be UNEs Qwest ordinarily  
13 combines, UNEs Qwest does not ordinarily combine, or combinations of Qwest UNEs  
14 with CLEC UNEs.

15 As a result, this affidavit demonstrates that Qwest has satisfied the requirements  
16 for the following checklist items listed in Section 271 of the Telecommunications Act of  
17 1996:

18 Checklist item 2 - access to unbundled network elements and ancillary  
19 services (except OSS),

20 Checklist item 4 - unbundled loops,

21 Checklist item 5 - local transport unbundled from switching, and

1 Checklist item 6 - local switching unbundled from transport and the local  
2 loop.

3 This concludes my affidavit.

