Exhibit ____ BJB-T9

**BEFORE THE WASHINGTON**
**UTILITIES AND TRANSPORTATION COMMISSION**

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| IN THE MATTER OF THE CONTINUED COSTING AND PRICING OF UNBUNDLED ELEMENTS, TRANSPORT AND TERMINATION, AND RESALE [FOR U S WEST COMMUNICATIONS, INC. | ) ) ) ) ) | Docket No. UT-003013 |

# SUPPLEMENTAL DIRECT TESTIMONY

**OF**

**BARBARA J. BROHL**

**May 19, 2000**

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## I.IDENTIFICATION OF WITNESS

**Q1PLEASE STATE YOUR NAME, EMPLOYER, POSITION, AND BUSINESS ADDRESS.**

A1 My name is Barbara J. Brohl. I am employed by U S WEST Communications, Inc. (U S WEST) as a Director in the Information Technologies Wholesale Systems Regulatory Support Group. My business address is 1999 Broadway, 10th Floor, Denver, Colorado 80202.

## II.INTRODUCTION

**A. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A1 The purpose of my testimony is to describe the modifications to the OSSs that U S WEST must perform to permit CLECs to use line sharing. Specifically, I will provide: 1) background information regarding OSSs and electronic interfaces; 2) a description of what has been ordered relating to line sharing and OSSs; 3) a description of the extensive efforts U S WEST and CLECs have engaged in to determine the changes to OSSs that are needed to support line sharing; 4) a description of the actual modifications to OSSs that are needed to support line sharing; and 5) an explanation of the costs U S WEST will incur to make those modifications.

## III.OPERATIONAL SUPPORT SYSTEMS BACKGROUND

### A. WHAT ARE OPERATIONAL SUPPORT SYSTEMS?

A1 To understand and evaluate the OSS issues relating to line sharing, it is necessary to provide an overview of the functions that operational support systems perform. An operational support system is a computer system that does not directly provide telecommunications service to customers, but supports employees in performing operational duties. These duties include, for example, issuing service orders, testing trunks, and maintaining switching systems. These operational support systems are specialized; each system provides different functionality. Some OSSs are used to process orders for products and services, while other OSSs record and process trouble tickets and thereby support repair services. These are just some of the critical functions that OSSs serve. Because of the broad range of demands that OSSs address, these systems are extremely complex and sophisticated. The OSSs that are used by U S WEST are customized to support the telecommunications industry and tend to be unique in design for each operational need.

### Q1WHAT PURPOSE DO OPERATIONAL SUPPORT SYSTEMS SERVE IN CONNECTION WITH CLEC ORDERS FOR LINE SHARING?

A1 OSSs are important to the ability of CLECs to obtain line sharing from U S WEST and other incumbent local exchange carriers (ILECs). Most important, OSSs are used

to process orders that CLECs submit for line sharing. CLECs typically submit these orders in the form of local service requests (LSRs) that enter U S WEST's OSSs, are converted into service orders, and are processed through downstream systems. These downstream systems use the information on the service orders to perform the provisioning, billing and repair functions needed to support line sharing.

**Q1WHAT IS MEANT BY OPERATIONAL SUPPORT SYSTEMS ELECTRONIC INTERFACES?**

A1 Electronic interfaces facilitate the exchange of information between the OSSs of a CLEC and those of U S WEST. An interface allows a CLEC to submit pre-order and order transactions to U S WEST electronically. The interface also permits the electronic exchange of other information between CLECs and U S WEST, including information about products and services, installation timelines, the characteristics of facilities, and the completion of orders. There are two primary methods for exchanging this type of information - batch transfers and real-time transactions. A batch transfer electronic interface processes large amounts of information and transmits the information from one computer system to another. This type of data processing accumulates large amounts of information, groups related transactions together, and transmits them on a scheduled basis, generally once a day. Batch transfers enable a large amount of information to be transmitted efficiently between computers. For example, although switches can record call detail messages as they

are made, U S WEST's Customer Record Information System (CRIS) Billing System processes the call details on a scheduled daily basis.

A real-time electronic interface, on the other hand, processes data and/or transactions in an interactive mode, similar to a conversation. A transaction or query is sent from one computer system to another and a response is sent back without waiting for a scheduled transfer time. For example, if a CLEC's computer system submits a request for information about the availability and characteristics of an unbundled loop, U S WEST's OSSs will receive the request through the interface, conduct a query of its data-bases, and transmit the responsive information back to the CLEC's computer system. Unlike batch transmissions, real-time transactions are executed in direct response to a request. These transactions are real-time in the sense that the time needed to handle a specific request is the only time that elapses between receipt of a request and sending a response. U S WEST's computer system answers the CLEC's computer as soon as it has the information the CLEC requested. Generally, a real-time electronic interface is necessary whenever the information requested is needed to influence the next step of an ongoing process.

**A. PLEASE DESCRIBE THE TYPES OF INFORMATION THAT U S WEST AND CLECS ARE LIKELY TO EXCHANGE THROUGH INTERFACES TO FACILITATE LINE SHARING.**

A1 In addition to the general information that CLECs must provide when they send an LSR for line sharing, CLECs must show that the order is for a shared line, provide information identifying the specific customer for whom line sharing is sought, and supply information about the appropriate meet point where the CLEC's equipment will connect with U S WEST's equipment.

**Q1IS IT NECESSARY FOR U S WEST AND CLECS TO EXCHANGE INFORMATION FOR LINE SHARING THROUGH ELECTRONIC INTERFACES?**

A1 No. A CLEC can exchange information with U S WEST through manual means – faxes and phone calls, for example. OSSs are expensive. Some CLECs have chosen not to invest in them, and, instead use manual methods for exchanging information with U S WEST. For example, a CLEC using manual processes to place an order for line sharing would fill out the appropriate Local Service Ordering Guideline (LSOG) forms as defined by the Ordering and Billing Forum (OBF) and transmit them by facsimile to U S WEST. The manually submitted Local Service Request (LSR) is captured by U S WEST via a fax imaging system. The LSR then drops out for manual translation into the data fields and formats required by its internal service

order systems to process the order request. The order is then transmitted electronically through the downstream systems just as orders submitted via the electronic interfaces are transmitted. U S WEST would then return the appropriate ordering and installation information to the CLEC via facsimile.

**Q1FOR CLECS THAT DESIRE TO EXCHANGE INFORMATION WITH U S WEST ELECTRONICALLY, WHAT ELECTRONIC INTERFACES DOES U S WEST HAVE?**

A1 U S WEST offers two electronic interfaces for the exchange of information relating to pre-ordering, ordering, and provisioning of resale and unbundled network elements. U S WEST has built and offers a human-to-computer real-time electronic interface, IMA-GUI (Interconnect Mediated Access – Graphical User Interface), and a computer-to-computer electronic interface, IMA-EDI (Electronic Data Interchange), for pre-ordering, ordering, and provisioning of resale and line-side unbundled network elements (UNEs). See System Descriptions of IMA-GUI and IMA-EDI, Exhibit No. BJB-14, for IMA-GUI and IMA-EDI system descriptions. For repair capabilities, U S WEST also offers two types of electronic interfaces to CLECs. The IMA-GUI provides real-time repair functionality through a human-to-computer electronic interface, while EB-TA (Electronic Bonding – Trouble Administration) provides those capabilities through a real-time computer-to-computer electronic interface. Each of these interfaces allows the CLEC to submit pre-order, order, and

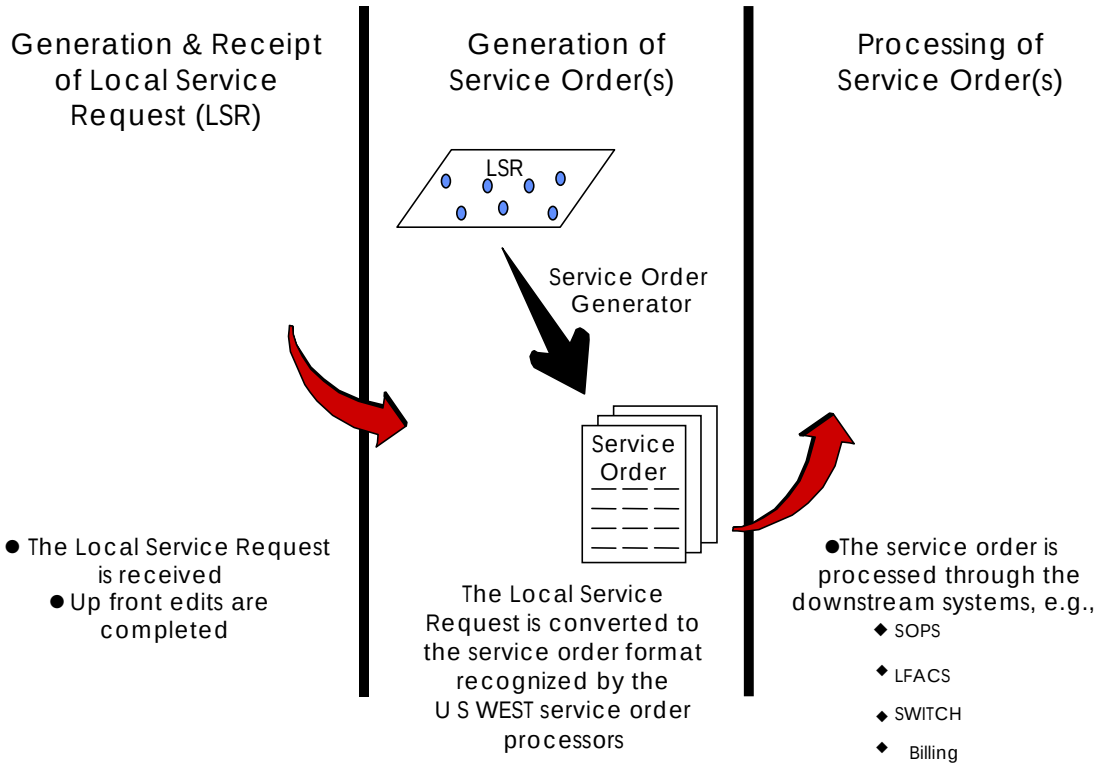
repair transactions electronically and allows U S WEST to send confirming information to the CLEC electronically.

**Q1WILL CLECS USE LSRS TO SUBMIT ORDERS FOR LINE SHARING?**

A1 Yes.

**Q1PLEASE DESCRIBE HOW LSRS ARE PROCESSED.**

A1 When a CLEC submits an LSR for line sharing, U S WEST must process the LSR through all of the systems necessary to deliver a service to a customer. The service ordering process is the component that takes the CLEC's LSR and converts it to the service order format required to process the request through U S WEST's service order systems. The ordering process is comprised of three major functions depicted in the following picture and explained below.


Generation & Receipt of Local Service Request (LSR)
Generation of Service Order(s)
Processing of Service Order(s)
LSR
Service Order Generator
Service Order
● The Local Service Request is received
● Up front edits are completed
The Local Service Request is converted to the service order format recognized by the U S WEST service order processors
●The service order is processed through the downstream systems, e.g.,
◆ SOPS
◆ LFACS
◆ SWITCH
◆ Billing

**1**

1) Local Service Request Generation and Receipt. A CLEC generates an LSR, as defined by the OBF (Ordering and Billing Forum), and transmits it to U S WEST either via an electronic interface or facsimile.

2) Service Order Generation. U S WEST must take the information from the LSR and create one or more service orders. A service order contains product codes (USOCs - Universal Service Order Codes) and Field Identifiers (FIDs - additional information required to provide the product). U S WEST's OSSs only understand information contained on service orders, not LSRs.

3) Service Order Processing. Service orders are processed by many downstream systems until service is provisioned, equipment is inventoried, and customer accounts are updated.

**Q1ARE U S WEST'S OPERATIONAL SUPPORT SYSTEMS FULLY OPERATIONAL TO HANDLE LSRS?**

A. Many of the processes are in the development or testing phases. The benefits of these new processes have not yet been fully realized.

**A. ARE U S WEST'S OPERATIONAL SUPPORT SYSTEMS CURRENTLY EQUIPPED TO HANDLE LSRs FOR LINE SHARING?**

A. U S WEST's Operational Support Systems are not completely ready to support line sharing. In order to support line sharing in a reasonable and timely manner,

U S WEST developed interim solutions in addition to long-term solutions. The interim line sharing solutions, designed to enable U S WEST to support line sharing prior to the implementation of the long-term, permanent solutions, have been delivered. The costs associated with the implementation of the interim line sharing solutions that U S WEST incurred are not included in this testimony. As I explain in detail later in this testimony, U S WEST, in order to implement the long-term solutions described above, must make substantial modifications to its OSSs to handle orders for line sharing. The long-term solutions are identified in the Gaps Matrix (Exhibit No. BJB-10) which is described in further detail in Section V of this testimony. The modifications that are needed relate not only to processing LSRs, but also to providing the provisioning (assignment and inventory), repair, and billing functionality needed to support all aspects of line sharing. The majority of these long-term solution modifications are targeted to be implemented by December 2000; the costs for these modifications are included in this testimony and are explained in detail in Section VI of this testimony.

## IV.LEGAL PRONOUNCEMENTS RELATING TO OPERATIONAL SUPPORT SYSTEMS AND LINE SHARING

**A. ARE THERE RELEVANT LEGAL PRONOUNCEMENTS THAT RECOGNIZE THE RELATIONSHIP BETWEEN OPERATIONAL SUPPORT SYSTEMS AND LINE SHARING?**

A1 Yes. Last fall, the Minnesota Public Utilities Commission (MNPUC) and the Federal Communications Commission (FCC) issued orders that recognize this relationship and that require actions by ILECs (U S WEST) and CLECs. The OSS modifications that U S WEST is performing for line sharing are driven by these orders.

**Q1WHAT DID THE MINNESOTA PUBLIC UTILITIES COMMISSION (MNPUC) ORDER RELATING TO LINE SHARING AND OPERATIONAL SUPPORT SYSTEMS?**

A1 On October 8, 1999, the Minnesota Public Utilities Commission (MNPUC) ordered U S WEST and any interested data CLECs to "work together . . . to develop the terms and conditions under which U S WEST would provide line sharing to data CLECS . . .." In parallel, the MNPUC also ordered U S WEST and any interested data CLECs to "participate in good faith in a technical trial . . . for the purpose of confirming which (if any) of the interested data CLECs' equipment does not interfere with USWC's voice grade network."

By focusing on the "terms and conditions" relating to line sharing, the MNPUC's order clearly implicates OSSs, since OSSs are important to line sharing.

Accordingly, in compliance with the MNPUC's order, U S WEST has been working closely with CLECs to develop OSSs that properly support line sharing.

**Q1DESCRIBE THE FCC'S PRONOUNCEMENT RELATING TO LINE SHARING AND OPERATIONAL SUPPORT SYSTEMS.**

A1 The FCC recognized that the ILECs must modify their systems to support line sharing and that they will incur costs to do so.[1] The FCC found that the ILECs should recover "reasonable incremental costs of OSS modification that are caused by the obligation to provide line sharing as an unbundled element."[2]

## V.THE JOINT U S WEST/CLEC OPERATIONAL REVIEW RELATING TO OPERATIONAL SUPPORT SYSTEMS

**A. DO THE MODIFICATIONS OF U S WEST'S OPERATIONAL SUPPORT SYSTEMS TO ACCOMMODATE LINE SHARING REQUIRE COORDINATION WITH THE CLECS?**

A1 Yes. U S WEST is the first ILEC in the country to implement line sharing. Line sharing is a very complex unbundled network element. Unlike other UNEs that are provided to and used by a single LEC, the line sharing UNE is shared by two LECs - U S WEST and the CLEC. As a result, it is essential that U S WEST and the CLECs

[1] Line Sharing Order, ¶142.
[2] Line Sharing Order, ¶144.

work closely together. The need for cooperation is particularly important in the area of OSSs. To modify its OSSs to support line sharing, U S WEST must understand the CLECs' OSS needs. To do so, it is essential that the CLECs make their needs known. For this reason, U S WEST has been working closely with the CLECs to define the OSS modifications that are needed.

**Q1DID U S WEST AND THE CLECS WORK TOGETHER TO CONDUCT AN OPERATIONAL IMPACT REVIEW AS DIRECTED BY THE MINNESOTA PUBLIC UTILITIES COMMISSION (MNPUC)?**

A1 Yes. During most of October and November 1999, the line sharing OSS group met every Friday at U S WEST headquarters in Denver from 9:00 a.m. to 1 p.m. Many U S WEST and CLEC individuals participated either in person or via telephone. The CLECs that signed the line sharing stipulation approved by the MNPUC were represented in these review sessions. At these meetings, the group developed the high level processes for line sharing and identified issues to be resolved related to those processes. The group assigned the task of resolving those issues to various individuals and/or sub-groups that worked on the issue during the week and reported back to the OSS group at the following meeting. The sub-groups addressed 1) the repair and maintenance flow; 2) the pre-qualification of loops for ADSL compatibility using U S WEST's pre-ordering system (IMA 4.2), design layout records (DLRs) and /or the results of mechanized loop tests; and 3) the technical configuration for

deploying CLEC splitters in U S WEST central offices.

**Q1IS THE OPERATIONAL IMPACT REVIEW ORDERED BY THE MNPUC AND CONDUCTED BY U S WEST AND CLECS RELEVANT TO PROVIDING LINE SHARING IN WASHINGTON?**

A1 Yes. U S WEST and CLECs negotiated the business and technical OSS requirements for line sharing following the Operational Impact Review in Minnesota. U S WEST's Operational Support Systems are deployed throughout its entire 14-state region. Therefore, the business and technical OSS requirements for line sharing that were negotiated as a result of the Operational Impact Review in Minnesota will drive the deployment of line sharing throughout U S WEST's entire 14-state region.

**Q1WAS THIS OPERATIONAL IMPACT REVIEW A MAJOR UNDERTAKING?**

A1 Yes. Discussions and negotiations surrounding line sharing were in their infancy. As a matter of fact, U S WEST was the first ILEC to work with the CLECs to review the operational impacts of line sharing. This was brand-new territory; no one had dealt with these implementation issues before. As a result, U S WEST and the CLECs had to spend substantial amounts of time evaluating the types of OSS changes that are needed to support this new UNE. U S WEST's primary interest in these discussions was to develop a full and detailed level of understanding of the OSS support CLECs

will need for line sharing. U S WEST must have this type of knowledge to implement the OSS changes that are necessary and to ensure that it provides the level of investment that is needed to support line sharing. Accordingly, throughout this process, U S WEST emphasized collaboration with the CLECs, which fostered an atmosphere in which U S WEST and the CLECs were working jointly and cooperatively toward a common goal.

**Q1DESCRIBE THE HIGH-LEVEL PROCESS USED BY U S WEST AND THE CLECS TO REVIEW THE OPERATIONAL IMPACTS OF LINE SHARING**

A1 Over a period of one and a half months, the U S WEST/CLEC line sharing OSS group met weekly to resolve the operational issues related to line sharing. The group considered five general categories of OSS issues: 1) pre-ordering (e.g., pre-qualification of loops for ADSL compatibility); 2) ordering; 3) provisioning; 4) billing and 5) repair and maintenance. When necessary, the group relied on sub-groups to address specific issues.

The group based its work on a set of agreed-upon assumptions regarding how line sharing will work during its initial deployment. The group also agreed that OSS implementation should be divided initially into the following phases:

- Phase I implementation issues are those necessary to make basic line sharing work in the first instance.

- Phase II implementation issues are less important and therefore can wait to be resolved until after Phase I implementation is complete.
- Phase III implementation issues are those issues, such as how to change a customer from one DSL provider to another, that need to be resolved but are not critical to deployment.

**Q1SPECIFICALLY, WHAT TASKS DID THE PARTIES PERFORM?**

A1 The first step was to identify requirements. The joint team spent a great deal of time identifying the data needs of the CLECs. U S WEST and the participating CLECs discussed the needs for pre-ordering, ordering, provisioning, repairing, and billing functionality. The requirements that were agreed to are documented in the Operational Impact Team minutes that were submitted as part of the stipulation that was entered into on November 22, 1999. The second step was to turn those business requirements into systems impacts. As shown in the attached GAP Matrix, Exhibit BJB-10, the team identified eight broad areas for modification of U S WEST's OSSs. These areas are referred to as "gaps" in the attached GAP matrix. The Team developed long-term solutions and deployment timeframes (when known) for each of those gaps. In those cases where the CLECs desired a more immediate solution, the parties negotiated interim solutions and timeframes.

**Q1WHAT ADDITIONAL ACTIVITIES DID THE JOINT TEAM ACCOMPLISH?**

A1 In addition to identifying the OSS impacts, the team defined the provisioning and repair processes. Because there is such a close nexus between the OSS impacts, the process, and the network architecture, the team also defined a network architecture. In general, the team determined that the CLECs would have to provide additional line sharing information that, among other things, would designate the end-user customer, and the meet points where the CLECs' equipment and U S WEST's equipment will connect. The team also agreed that the POTS provisioning and repair flows would be used. To ensure that the end-user customer would not be negatively impacted, the team also agreed to develop a joint repair process.

**Q1WERE THE PARTIES ABLE TO COME TO AN AGREEMENT ON THE OSS IMPACTS?**

A1 Yes. The Operational Impact Team agreed that U S WEST's systems could be modified to support line sharing. In addition, the Team agreed that initial deployment would be based on a combination of automated and manual work steps, with full mechanization not occurring until delivery of the long-term solution. The Team developed a decision point list (DPL) that was also a part of the stipulation and was used to display joint positions when the parties reached full agreement on an issue and to display divergent positions when there was either no agreement or partial

agreement. The DPL shows full agreement on all of the OSS issues. In fact, issue number 13 of the DPL, which addresses deployment timeframe, states:

> U S WEST and the CLECs agree that issues identified in the Gaps Matrix (OSS-2) can be addressed by either an interim or long term solution (where applicable) by 1Q2000, with the exception of Gap 6 regarding billing. The parties agree that it is not necessary to implement an immediate solution to Gap 6 to begin line sharing. Instead, the parties have agreed that upon the availability of a billing solution to Gap 6 in 2Q2000, back billing will rendered to true up accounts from the start of service.

As this statement shows, U S WEST agreed to provide as much functionality as possible within as quick a time frame as possible. The only item that did not result in a 1Q2000 interim solution was billing the CLECs for charges associated with line sharing. U S WEST offered to delay issuing its wholesale bills for line sharing until the second quarter of 2000, instead of delaying the initial deployment.

**Q1AFTER REACHING AGREEMENT WITH THE CLECS ON THE ISSUES RELATING TO OPERATIONAL SUPPORT SYSTEMS, WHAT STEPS DID U S WEST TAKE TO BEGIN IMPLEMENTING THE MODIFICATIONS?**

A1 The extensive exchange of information between U S WEST and the CLECs allowed U S WEST to prepare a statement of work describing in detail the OSS modifications that are needed for line sharing. That statement of work is attached to my testimony as Confidential Exhibit BJB-13. U S WEST provided the statement to an outside contractor, Telcordia, for preparation of a plan for implementation and a cost

estimate. In addition, the agreements between U S WEST and the CLECs on OSS modifications permitted U S WEST to identify and begin planning the OSS changes that it will implement in-house without and outside contractor.

**Q1ARE U S WEST AND THE CLECS CONTINUING TO WORK TOGETHER TO DEPLOY LINE SHARING?**

A1 Yes. U S WEST and CLECs have been continually working together to achieve line sharing throughout U S WEST's 14-state region. U S WEST, CLECs, and the Minnesota Public Utilities Commission (MNPUC) met on March 21, 2000 to discuss the status of line sharing in the state of Minnesota. The primary purpose of this status meeting was for U S WEST and the CLECs to each provide an update the MNPUC on the deployment of line sharing. Both parties' reports were positive. Both parties reported that the deployment of line sharing was on time and going as planned; each party also reported that the other was fulfilling its commitments as agreed upon.

In addition to the ongoing work in Minnesota, U S WEST and CLECs have been continuing to work together towards the deployment of line sharing in the other 13 states throughout U S WEST's region including Washington. Over the past few months U S WEST and CLECs successfully negotiated and signed an interim business agreement with each other for the deployment of line sharing throughout the remaining 13 states within U S WEST's region (an agreement in Minnesota had

previously been reached). The 13-state agreement, signed April 24, 2000, is attached to this testimony as Exhibit No. BJB-15. Please refer to the Interim Line Sharing Agreement, Exhibit No. BJB-15, for additional information regarding this agreement.

Due to the fact that the negotiations leading up to the 13-state interim agreement required special attention and a significant amount of time both from the CLECs and from U S WEST alike, the weekly OSS meetings mentioned under Section V of this testimony were placed on hold so that U S WEST and the CLECs could use the meeting time to work on the 13-state agreement.

Line sharing implementation planning meetings are, however, scheduled to resume by the end of May 2000. The frequencies and times of these meetings have not yet been established. Among the issues to be discussed at these meetings are general OSS issues, permanent loop rates, repair processes, SOP requirements.

As it can be observed, U S WEST and the CLECs have continued to work very collaboratively together to address all line sharing issues as they arise. For example, U S WEST agreed to remove the Phase differentiation that was originally agreed to and came to an agreement with the CLECs on establishing dates by which specific functionalities would be in place.

## VI.DESCRIPTION OF THE MODIFICATIONS NECESSARY TO SUPPORT LINE SHARING

**Q1PLEASE DESCRIBE THE ELECTRONIC INTERFACES AND OPERATIONAL SUPPORT SYSTEMS THAT U S WEST USES TO PROVIDE CLECS ACCESS TO PRE-ORDERING, ORDERING, AND PROVISIONING FUNCTIONS.**

A1 In pre-ordering, ordering, and provisioning, U S WEST exchanges information with CLECs about products and services, including unbundled network elements. As described earlier, U S WEST provides CLEC access to two electronic interfaces for the pre-ordering, ordering, and provisioning of resale and unbundled network elements: Interconnect Mediated Access – Graphical User Interface (IMA-GUI) and Interconnect Mediated Access – Electronic Data Interchange (IMA-EDI).

The CLECs' customer service representatives can perform real-time inquiry and selection functions and electronically transmit LSRs to U S WEST for processing. For more information on the pre-order and order transactions that are supported by the electronic interfaces please refer to the Systems Descriptions of IMA-GUI and IMA-EDI, Exhibit BJB-14.

After an LSR is submitted to U S WEST, it is processed through the IMA gateway. The SOPs, and other downstream installation OSSs, are critical components of the

process that play a role after pre-ordering/ordering and provisioning functions, and before the later activities of maintenance and repair, and billing. While the SOPs vary somewhat by region within U S WEST's 14-state territory, in each region, they are the common points through which orders pass for most product types. For Washington, which is in the western region, the SOP is known as the Regional Service Order Logistics and Reference (RSOLAR). RSOLAR receives U S WEST service orders from several sources and, in turn, communicates with the Service Order Activation and Control System (SOAC) that manages the service order process with respect to the specialized systems that design and activate network-based services, assign facilities, maintain central office inventory, and manage customer account information. In doing so, SOAC directs each service order through all steps necessary to complete the order.

See Exhibit BJB-11, U S WEST Systems Descriptions, for a brief description of the above-mentioned U S WEST systems.

**Q1PLEASE DESCRIBE THE MODIFICATIONS THAT MUST BE MADE TO THE PRE-ORDERING, ORDERING, AND PROVISIONING SYSTEMS TO SUPPORT LINE SHARING.**

A1 First, the CLECs agreed that the pre-order loop information provided by the IMA GUI/EDI 4.2 release is sufficient to begin line sharing. As a result, no pre-order

modifications are necessary at this time. However, to further support line sharing, particularly in regards to CLECs' acquisition of customer loop information, U S WEST, beginning mid year 2000, will provide CLECs with electronic batch files containing loop information on a per wire center basis. The batch files U S WEST will provide to CLECs will contain a list of all active telephone numbers within a particular wire center as well as additional loop information for each telephone number listed. CLECs will be able to access these batch loop files through a CLEC-accessible, U S WEST web site. The batch files will be refreshed on a rolling basis monthly. It is important to note that the batch loop files are not loop qualification files per se; they do not provide a CLEC with a definitive answer as to whether a certain loop qualifies for xDSL. Instead, the batch files provide loop information from which CLECs may make their own determination as to whether the loop is capable of supporting xDSL service.

To support line sharing, the ordering and provisioning processes must be modified to reflect the fact that two local service providers will now serve one end-user customer. The presence of two providers for one customer has a substantial impact on the OSS ordering and provisioning processes. U S WEST must modify the systems that support these processes to allow the CLEC to pass additional pieces of data (new FIDs) that will be used to designate:

- the CLEC's identity;
- that this is a request for line sharing;
- the line that will be shared;
- meet points for the service (the splitter and port location);
- the indication whether the meet points are in the central office or in the field; and
- the power density mask that the CLEC pre-specifies on the LSR.

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

**A. ARE THERE DOCUMENTS THAT PROVIDE DETAILED DESCRIPTIONS OF THE MODIFICATIONS TO U S WEST'S OPERATIONAL SUPPORT SYSTEMS THAT ARE NECESSARY?**

A1 Yes. Because the descriptions of the modifications and the work needed to complete them are very detailed, I will not attempt to provide that information in the body of this testimony. However, two exhibits to my testimony, Exhibit BJB-12, Descriptions of Modifications, and Confidential Exhibit BJB-13, Statement of Work, describe in full the modifications and the steps needed to implement them. Please refer to those descriptions.

**Q1PLEASE DESCRIBE THE ELECTRONIC INTERFACES AND OPERATIONAL SUPPORT SYSTEMS THAT U S WEST USES TO PROVIDE CLECS ACCESS TO REPAIR FUNCTIONS.**

A1 To communicate with U S WEST relating to issues involving repairs, CLECs can use U S WEST's electronic interfaces for maintenance and repair. U S WEST provides CLEC access to two electronic interfaces for the repair of resale and unbundled network elements: Interconnect Mediated Access – Graphical User Interface (IMA-GUI) and Electronic Bonding – Trouble Administration (EB-TA).

A CLEC's customer service representative can use the electronic interfaces to: 1) create trouble reports; 2) modify trouble reports; 3) receive proactive status

notifications; 4) cancel trouble reports; 5) close trouble reports; 6) obtain trouble history; and 7) submit MLT (mechanized loop testing).

After a trouble report is submitted to U S WEST, it must be converted into a trouble ticket. U S WEST converts trouble reports into trouble tickets electronically, and the trouble tickets are recognized by LMOS (loop maintenance operations system), NSDB (network and services and database), or WFA (work force administration).

See Exhibit BJB-11, U S WEST Systems Descriptions, for a brief description of the above-mentioned U S WEST systems.

**A. PLEASE DESCRIBE THE MODIFICATIONS TO ITS REPAIR SYSTEMS THAT U S WEST MUST IMPLEMENT TO SUPPORT LINE SHARING.**

A1 As with the changes needed for ordering and provisioning, the modifications that U S WEST must implement for its repair systems are driven primarily by the fact that with line sharing, two local service providers will serve one end-user customer. As a result, there will be two line records, one for the voice portion of the line and one for the data portion of the line. For repair, U S WEST will remain responsible for voice service and physical line problems between the network interface device (NID) at the end-user customer premises and the point of demarcation in the central office. The CLECs will be responsible for data service problems. The voice response units that precede the repair systems must be able to "walk" the end-user customer through a

series of questions and answers to determine if the repair problem can be isolated to either the voice or the data service. If it is a data service, there must be a "soft" referral to the CLEC.

Please see the attached Exhibit BJB-12, Description of Modifications, for a complete description of the modifications needed to support line sharing and diagrams of the systems flows.

**Q1PLEASE DESCRIBE THE ELECTRONIC INTERFACES AND OPERATIONAL SUPPORT SYSTEMS THAT U S WEST USES TO PROVIDE CLECS ACCESS TO BILLING FUNCTIONS.**

A1 U S WEST provides a monthly wholesale bill to a CLEC as a means of collecting wholesale charges. Depending on the products that a CLEC has ordered to offer service to its end-users, a CLEC could receive a summary bill from either the CRIS (Customer Records Information System) system or from IABS (Interexchange Access Billing System). The wholesale bill contains both usage and local service charges. For most resale and unbundled products, the billing system is CRIS. CRIS enables wholesale billing functions for resold recurring/non-recurring charges, and usage services such as intraLATA toll calls. CRIS produces the monthly bill and provides it to the CLEC using the industry-standard Electronic Data Interface (EDI) transaction set number 811. To prepare this bill for a CLEC, U S WEST applies wholesale prices

appropriate for the CLEC and runs CRIS bill-cycle processing. U S WEST bills the CLEC at a summary account level. The bill information provided to the CLEC includes charges and account balances. Charges are broken down into categories, such as recurring charges, usage and taxes. As with retail bills, billing of recurring charges start and stop effective with the completion date of the related service orders.

See Exhibit BJB-11, U S WEST Systems Descriptions, for a brief description of the above-mentioned U S WEST systems.

**Q1PLEASE DESCRIBE THE MODIFICATIONS TO ITS BILLING SYSTEMS THAT U S WEST MUST IMPLEMENT TO ADAPT ITS BILLING SYSTEMS FOR LINE SHARING.**

A1 Currently, the account structure in CRIS is set up to allow for one customer and one provider. However, line sharing requires billing for two customers: 1) the end-user customer for the voice portion of the line; and 2) the CLEC as the customer for the upper spectrum of the line. As a result, two customer records must be modified/created each time a line sharing order is processed. In addition, the two customer records must be correlated to ensure that subsequent order activity is performed accurately. The need to bill two customers for a single line gives rise to the need for significant modifications to U S WEST's billing systems.

Please see the attached Exhibit BJB-12, Description of Modifications, for a complete

description of the modifications needed to support line sharing and diagrams of the systems flows.

**Q1U S WEST IS CURRENTLY PROVIDING MEGABIT SERVICES (DSL) TO SOME OF ITS CUSTOMERS OVER THOSE CUSTOMERS' VOICE LINES. WHY ARE ADDITIONAL OSS MODIFICATIONS REQUIRED TO SUPPORT LINE SHARING WITH CLECS?**

A1 First, it must be understood that U S WEST does not line share with itself. As the FCC stated in the Line Sharing Order, paragraph 4, line sharing is "[t]he provision of xDSL service by a competitive LEC and voiceband service by an incumbent LEC on the same loop." Therefore, line sharing can only occur where two different local service providers are providing different products to the same customer on the same loop.

In the case of line sharing, there are now two local service providers for the same end-user, U S WEST and the CLEC. There are also two customers for the same product, the end-user and the CLEC. U S WEST's systems were not built to accommodate multiple local service providers for the same end-user. It is necessary to ensure that both local service providers are maintained on all of the end-user's records, for proper billing, repairing, and subsequent ordering functions.

As a result, to support line sharing, the ordering and provisioning processes must be

modified to reflect the fact that two local service providers will now serve one end-user customer. The presence of two providers for one customer has a substantial impact on the OSS ordering and provisioning processes. In addition, U S WEST must modify the systems that support these processes to allow the CLEC to pass additional pieces of new data (new FIDs) that will be used to designate:

- the CLEC's identity;
- that this is a request for line sharing;
- the line that will be shared;
- meet points for the service (the splitter and the port location);
- the indication whether the meet points are in the central office or in the field; and
- the power density mask that the CLEC pre-specifies on the LSR

The ordering and provisioning systems must recognize the line sharing information and, based on that information, direct data and behaviors to other downstream systems. Many of these systems must now house CLEC-specific records and end-user specific records that must be correlated.

The inventory systems must be modified to recognize that this is a line shared order

and identify both the CLEC and the splitter location for that CLEC (as each CLEC will have its own splitter). This requires two meet point locations, where in the current environment, CLECs only provide U S WEST with one. All of the systems and records that support line sharing must be modified to account for the additional meet point locations.

As with the changes needed for ordering and provisioning, the modifications that U S WEST must implement for its repair systems are driven primarily by the fact that with line sharing, two local service providers will serve one end-user customer. As a result there will be two line records, one for the voice portion of the line and one for the data portion of the line. For repair, U S WEST will remain responsible for voice service and physical line problems between the network interface device (NID) at the end-user customer premises and the point of demarcation in the central office. The CLECs will be responsible for data service problems. The voice response units that precede the repair systems must be able to "walk" the end-user customer through a series of questions and answers to determine if the repair problems can be isolated to either the voice or the data service. If it is a data service problem, there must be a "soft" referral to the CLEC.

With respect to billing, the account structure in CRIS is set up to allow to allow for one provider per customer. However, line sharing requires billing for two customers:

1) the end-user customer for the voice portion of the line; and 2) the CLEC as a customer for the higher frequency portion of the line. As a result, two customer records must be modified / created each time a line sharing order is processed. In addition, the two customer records must be correlated to ensure that subsequent order activity is performed accurately. The need to bill two customers for a single line gives rise to the need for significant modifications to U S WEST's billing systems.

In conclusion, the complexity does not arise out of placing two different products on one line - voice and data. The complexity arises out of placing two different local service providers on one line- U S WEST and the CLEC.

## VII.THE COST OF THE MODIFICATIONS TO U S WEST'S OPERATIONAL SUPPORT SYSTEMS

**Q1AFTER U S WEST AND THE CLECS AGREED ON THE OSS MODIFICATIONS THAT WERE NECESSARY TO SUPPORT LINE SHARING, DID U S WEST DEVELOP TECHNICAL REQUIREMENTS?**

A. Yes. After U S WEST and the CLECs developed the business requirements, U S WEST converted them into technical requirements that technicians can rely upon to develop high-level designs with associated time and cost estimates. U S WEST provided the technical requirements to its internal technical staffs and to Telcordia for use in developing a price for the modifications necessary to support

line sharing. These technical requirements are described in the attached Statement of Work, Confidential Exhibit BJB-13.

**A. WHY DID U S WEST SUBMIT A STATEMENT OF WORK TO TELCORDIA?**

A. The majority of the systems that were impacted by the line sharing requirements agreed to between U S WEST and the CLECs are owned by Telcordia and licensed to U S WEST. Accordingly, Telcordia is the appropriate party to carry out most of the OSS modifications that are needed to support line sharing. After U S WEST submitted the statement of work to Telcordia, Telcordia produced an estimate of the price of its software modifications.

**Q1DO THE CLECS BENEFIT FROM THE ENHANCEMENTS TO OPERATIONAL SUPPORT SYSTEMS YOU HAVE DESCRIBED?**

A1 Yes. The modifications described above and in Exhibit BJB-12, Description of Modifications, are important to U S WEST's ability to support line sharing. As I have explained, the foundation for these modifications was established in the exchange of information and discussions between U S WEST and the CLECs that occurred over a period of one and a half months. The modifications represent U S WEST's response to what it learned in those discussions about the OSS support CLECs will require.

**Q1IN ADDITION TO THE WORK THAT TELCORDIA WILL PERFORM, ARE THERE ADDITIONAL MODIFICATIONS TO OPERATIONAL SUPPORT SYSTEMS THAT U S WEST MUST PERFORM TO ACCOMMODATE THE LINE SHARING MODIFICATIONS?**

A1 Yes. In fact, U S WEST has already purchased two additional solutions for other unbundled network elements that must be installed before the modifications provided by Telcordia can be implemented. The Constrained Loop package cost U S WEST $1.9 million and allows for a sub-set definition of the loop, which allows a meet point at a place other than the traditional end points of the loop, i.e. the middle of the loop. The xDSL Solution cost U S WEST $17 million and includes functionality that allows for DSL services to be provisioned in the POTS flow rather than the designed flow. This reduces manual work. Although both of these solutions must be in place before the other systems modifications can be deployed by Telcordia and do support line sharing to some extent, U S WEST is not asking for cost recovery for either of these solutions.

**Q1DOES U S WEST BENEFIT FROM THESE LINE SHARING ENHANCEMENTS?**

A1 Not from the modifications that U S WEST is doing internally. All of those modifications are being completed solely for line sharing. However, a small percentage of the modifications being delivered by Telcordia in the line sharing

solution also support additional unbundled network elements. Fifteen percent of the Telcordia modifications have application to other UNEs, but eighty-five percent are solely attributable to the line sharing requirements.agreed to between U S WEST and the CLECs. The eighty-five percent share represents Telcordia's estimate of the percent of their total estimated costs that can be attributed solely to line sharing. This percentage is not based on the functions that Telcordia must perform. It is based on the share of the cost that Telcordia associated with work that represents system changes required for line sharing. It is important to note that the OSS modifications that Telcordia will be implementing will be deployed throughout all of U S WEST's 14-state region.

**Q1WHAT OPERATIONAL SUPPORT SYSTEMS COSTS DOES U S WEST SEEK TO RECOVER IN THIS PROCEEDING?**

A1 U S WEST is requesting cost recovery for those modifications that are solely attributable to line sharing and that but for line sharing, would not be necessary. These costs include $870,720 for modifications to internal systems maintained by U S WEST and $11,956,000 in direct expense that U S WEST will incur. Telcordia's estimate for delivery of the long-term solution to support line sharing is $11.9 million.[3] Telcordia developed its estimate based on the statement of work that is

[3] The total estimate for the Telcordia solution is $14 million - 85% of that is $11.9 million.

attached as Confidential Exhibit BJB-13. The direct expense that U S WEST will incur also includes $56,000 for project management functions provided by another company.

**Q1WITH RESPECT TO THE $870,720 U S WEST WILL INCUR FOR IN-HOUSE OSS MODIFICATIONS, PLEASE DESCRIBE THE PROCESS U S WEST USES TO DETERMINE IMPACTS TO ITS OPERATIONAL SUPPORT SYSTEMS AND DEVELOP COST ESTIMATES.**

A1 U S WEST uses a standard systems development lifecycle process. The first step is to determine the business requirements. The business requirements are then converted into technical requirements, which are more detailed and more system-oriented. The internal technical staffs use the technical requirements to drive high-level systems designs. Using their previous experience with other projects with substantially the same magnitude, the technical staffs can take the high-level systems designs and develop a high-level estimate of the costs to develop, and deploy the modifications necessary to support the original business requirements.

**Q1HOW DOES U S WEST PROPOSE TO RECOVER THE COSTS OUTLINED IN THIS TESTIMONY?**

A1 The per order charges outlined in the testimony of Jerrold L. Thompson represent the method U S WEST proposes for recovering these one-time costs. The costs presented in this testimony are not transaction costs and are not dependent on how a CLEC

places its orders. They do not represent the cost of placing an order. These costs are the one-time costs incurred by U S WEST to modify its OSSs to make line sharing possible.

## VIII.CONCLUSION

**Q1PLEASE SUMMARIZE YOUR TESTIMONY.**

A1 Recovery of OSS costs is provided by the Federal Telecommunications Act of 1996.[4] In addition, in its Line Sharing Order, the FCC specifically permitted recovery of "reasonable incremental costs of OSS modification[s] that are caused by the obligation to provide line sharing as an unbundled element."[5]

U S WEST has worked diligently and in good faith with the CLECs to identify their requirements for line sharing. In numerous sessions, U S WEST and the CLECs worked together to define data needs, process needs, and systems needs so that the CLECs could enjoy line sharing. To provide that functionality requires extensive systems modifications. However, to accommodate the CLECs' need for market entry, U S WEST identified and negotiated interim solutions that met the CLECs' timeframes. These interim solutions were based on a combination of automation and

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[4] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, *codified at* 47 U.S.C. §§ 151 *et seq*. (*Telecom Act*), §251.

[5] Line Sharing Order, ¶144.

manual work steps.

Telcordia has ownership of the majority of the systems that need modification to support the long-term solution and allow for volume. The majority of the cost of implementing line sharing is a direct expense to U S WEST. In addition, U S WEST must install two additional software solutions as pre-requisites to the deployment of the line sharing solution totaling $18.9 million, for which U S WEST is not requesting any cost recovery because those packages also benefit U S WEST. The only costs for which U S WEST is requesting recovery are those that are solely attributable to line sharing, and are solely caused by the obligation to provide line sharing as an unbundled element."[6] Therefore, U S WEST is entitled to recover the OSS costs associated with line sharing.

**Q1DOES THIS CONCLUDE YOUR TESTIMONY?**

A1 Yes, it does.

[6] Line Sharing Order, ¶144.