EXHIBIT NO. _____ (RJH-1T)

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of Qwest Corporation to Initiate a Mass-Market Switching and Dedicated Transport Case Pursuant to the Triennial Review Order	**Docket No. UT-033044**

RESPONSE TESTIMONY OF

ROBERT J. HUBBARD

ON BEHALF OF

QWEST CORPORATION

FEBRUARY 2, 2004

I. IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, EMPLOYER AND BUSINESS ADDRESS.

A. My name is Robert J. Hubbard. I am employed by Qwest Corporation as a Director within the Technical and Regulatory Group of the Local Network Organization. My business address is 700 West Mineral Avenue, Littleton, Colorado 80120.

Q. PLEASE REVIEW YOUR WORK EXPERIENCE AND PRESENT RESPONSIBILITIES.

A. I am a Director of Technical Support in Qwest's Interconnection Strategies Group. This group is responsible for the development of strategies to implement the unbundling of Qwest's network as required by the Telecommunications Act of 1996 ("the Act"). I provide technical support regarding unbundling issues for the Qwest Network and Public Policy departments.

I have over 35 years of experience with two Regional Bell Operating Companies, Qwest, and Indiana Bell Telephone Co. (Indiana Bell), in their network departments. I worked for over 11 years at both Indiana Bell and Qwest as a cable splicer and as a cable repairman involved in all aspects of splicing and repairing copper cables. Subsequently, I moved into the engineering department at Qwest, working as an outside plant design engineer, designing copper and fiber facilities as well as analog and digital carrier systems. I then went into the Network Planning Department as an outside plant planner, where I planned for future jobs involving fiber cable placement and upgrades to the existing outside plant network. In 1997, I

moved into my present job as a Director in the Interconnection Planning Department, where I am responsible for ensuring compliance with the Telecommunications Act and federal and state regulations while continuing to maintain network integrity. My responsibilities include providing litigation support before the Federal Communications Commission ("FCC") and state commissions on issues relating to network elements and architectures for wireline networks. In addition, I represent Qwest in the Network Reliability and Interoperability Council ("NRIC"), a body created by the FCC, to address the reliability and interoperability of wireline networks, broadband, and emerging cyber-networks. I currently serve on an NRIC committee addressing issues relating to broadband within the United States.

Q. HAVE YOU PREVISIOULY FILED TESTIMONY IN THIS CASE?

A. No.

II. OVERVIEW

Q. WHAT IS THE PURPOSE OF YOUR RESPONSE TESTIMONY?

A. The purpose of my response testimony is to adopt, in its entirety, the Direct Testimony of Dennis Pappas (Exhibit No. DP-1T) and the following exhibits DP-2, DP-3, and DP-4 filed on December 22, 2003. Also, I my response testimony will address some aspects of the testimony presented by the following witnesses: Robert V. Falcone on behalf of AT&T Communications (Exhibit No. RVF-1T),

Mr. Anthony J. Giovannucci on behalf of AT&T Communications (Exhibit No. AJG-1T), and Mr. Mark L. Stacy on behalf of Worldcom, Inc (MCI) (Exhibit No. not provided).

Q. WHEN EVALUATING POTENTIAL OPERATIONAL IMPAIRMENTS, WHAT FACTORS SHOULD THE COMMISSION CONSIDER?

A. The FCC made plain that there are only three distinct areas that constitute potential operational impairments: (1) loop provisioning; (2) collocation availability; and (3) the ability to obtain CLEC to CLEC cross connects.[1] An Oregon Administrative Law Judge issued a decision making this plain: "While there are several factors to be considered within each of the potential sources of operational impairment identified by the FCC, States have not been directed to embark upon a broader inquiry into other potential operational barriers."[2]

Q. DO YOU HAVE A GENERAL STATEMENT REGARDING THE TESTIMONY FILED BY THE WITNESSES YOU HAVE IDENTIFIED?

A. Yes. AT&T and MCI's witnesses spend an inordinate amount of time focusing on how Qwest has configured its network. By providing this information, these witnesses attempt to overshadow the real reason that we are all here – for this Commission to determine if competitive LECs (CLECs) are impaired without

[1] TRO at ¶¶456, 511, n. 1573 and 47 C.F.R. § 51.319(d)(2)(iii)(B)(2).

[2] Ruling, Investigation To Determine, Pursuant to Order of the Federal Communications Commission, Whether Impairment Exists in Particular Markets If Local Circuit Switching for Mass Market Customers Is

access to Unbundled Switching (UBS). The purpose of this response testimony is to solidify that Qwest's record in providing collocation and CLEC-to-CLEC cross-connects does not create any operational impairment for CLECs. As Mr. Pappas noted in his direct testimony (Exhibit No. DP-1T), CLECs currently have 503 collocations in the state of Washington, and Qwest continues to provide CLECs with all forms of collocation throughout the state of Washington in a timely manner. The CLECs argue that collocation is costly; however, the Commission has set the rates for collocation in cost dockets and determined that Qwest's current rates are TELRIC compliant. Finally, I will also rebut the interveners' argument that Qwest should be required to deploy a GR-303 IDLC platform for ease of loop provisioning before Qwest can obtain relief from unbundled switching.

III. COLLOCATION

Q. MR. GIOVANNUCCI (PAGE 17), MR. STACY (PAGE 5), AND MR. FALCONE (PAGE 8) CONTEND THAT COLLOCATION PROBLEMS EXIST THROUGHOUT QWEST'S NETWORK. DOES QWEST OFFER MANY COLLOCATION OPTIONS TO CLECs THROUGHOUT THE STATE OF WASHINGTON, AND HAS THE COMMISSION APPROVED THESE VARIOUS OPTIONS?

No Longer Available As an Unbundled Network Element, Oregon Public Utilities Commission Docket UM 100 at 4, November 14, 2003.

A. Yes. Many of the filed interconnection agreements in Washington contain provisions concerning the many forms of collocation available to the CLECs today. Qwest's approved Statement of General Terms and Conditions ("SGAT") also contains detailed provisions around collocation detailing collocation types and the provisioning interval associated with installing each form of collocation. The SGAT provides a CLEC with many different types of collocation including but not limited to, caged physical collocation, cageless collocation, virtual collocation, shared collocation, and ICDF collocation. Based on these terms, which were negotiated and approved in the Qwest 271 process (Docket Nos. UT-003022 and UT-003040), CLECs in Washington can order and obtain the type of collocation they desire.

Q. AT PAGE 61 OF HIS TESTIMONY, MR. STACY COMPLAINS THAT COLLOCATION CREATES IMPAIRMENT SIMPLY BECAUSE MCI WILL BE REQUIRED TO OBTAIN COLLOCATION. IS THIS A VALID CONCERN?

A. MCI complains that it must collocate in several additional Central Offices in Washington in order to transition from providing UNE-P service to UNE-L service. It is true that MCI must obtain collocation to order mass quantities of unbundled loops. However, it is equally true that Qwest must invest in wire centers in order to provide service to customers. Investment does not create an impairment, it creates opportunity. As MCI's witnesses have recognized in batch

hot cut testimony, it is essential for MCI to move off of UNE-P to its own facilities to truly compete in the marketplace.

Q. AT PAGE 62 OF HIS TESTIMONY, MR. STACY COMPLAINS ABOUT HISTORIC DELAYS IN OBTAINING COLLOCATION THAT MCI EXPERIENCED YEARS AGO. PLEASE RESPOND TO THIS CONCERN.

A. MCI complains that it had difficulty obtaining collocation in the past, but offers no specifics about the difficulty or delay, or even whether Qwest was the ILEC involved in the purported delay. Unlike MCI which offers historic "references," Qwest offers current facts. In direct testimony, Qwest explained that it consistently provisions 100% of collocation and collocation feasibilities on time, indeed substantially faster than required.[3] Any argument about the distant past should not be cause for concern. Moreover, if Qwest does not provision collocation to CLECs in a manner that allows them a meaningful opportunity to compete, Qwest must pay automatic fines under the QPAP.

Q. DO THE COLLOCATIONS CONCERNS RAISED BY THE CLEC'S CREATE ANY ARGUABLE OPERATIONAL IMPAIRMENT ISSUES IN THE STATE OF WASHINGTON?

A. No. As Mr. Pappas demonstrated in his direct testimony (Exhibit No. DP-1T), Qwest has made many different collocation arrangements available to CLECs. These collocation options ensure that CLECs' business needs are met and

[3] *See* Exhibit DP-4.

available on time. Finally, Qwest's current performance in providing collocation coupled with the QPAP's assurance of future performance should allay any of the CLEC's concerns. Therefore, collocation concerns do not create any arguable operational impairment for CLECs in the state of Washington.

IV. LOOP ISSUES INCLUDING DEPLOYING ELP AND GR-303

Q. AT PAGES 38 TO 57 OF MR. STACY'S DIRECT TESTIMONY, AND AT PAGES 30 TO 34 OF MR. FALCONE'S TESTIMONY THEY ARGUE THAT IDLC CREATES A NATURAL OPERATIONAL IMPAIRMENT. CAN YOU PLEASE RESPOND TO THIS ALLEGATION?

A. Yes. Mr. Stacy and Mr. Falcone have provided their attempt at laying a foundation for what they are really after – Electronic Loop Provisioning (ELP). Mr. Pappas addresses ELP in greater detail in his testimony regarding batch hot cuts. It is important to note, however, that the FCC specifically rejected AT&T's request for ELP. The FCC found that "an ELP process, to be effective, would require significant costly upgrades to the existing local network at both the remote terminal and central office. AT&T's ELP proposal proposes to 'packetize' the entire public switched telephone network for both voice and data traffic, at a cost one party estimates to be $100 billion. . . . [W]e decline to require ELP at this time."[4] Despite this explicit rejection of ELP, AT&T has raised the issue here again, and has even gone to various state legislatures asking them to

impose ELP as a requirement. There is simply no basis for ELP.

Q. WHAT WOULD AT&T AND MCI'S PROPOSAL TO MANDATE GR-303 IN WASHINGTON COST?

A. Neither AT&T nor MCI discuss the costs of deploying GR-303, let alone provide an estimate of the costs for deploying the technology throughout Washington. Deploying GR-303 would requires significant network modifications at the remote terminals. In Washington there are approximately 2700 remote terminals with a conservative estimate of $150,000 per Remote to deploy GR 303. Deploying this technology throughout Washington would therefore cost over $400 million. In the City of Seattle alone, there are 157 remote terminals or a cost of over $23 million. This extraordinary cost is one of the principle reasons why the FCC rejected ELP in the TRO. The cost, however, is not the only concern.

Q. DOES QWEST OFFER UNBUNDLING OPTIONS FOR CIRCUITS OPERATING OVER IDLC?

A. Yes. Qwest has an obligation to provide access to loops that are working over IDLC. Mr. Pappas explains these options in greater detail in his Batch Hot Cut (BHC) direct testimony (Exhibit No. DP/LN-1T). Access may be provided

[4] TRO at ¶ 491.

through several options including: conversion of the UNE-P line to a copper loop if the facility is available; access to Universal Digital Loop Carrier (UDLC); development of an INA DiGroup; or as a last resort, by the means of "Hair-pinning." Hair-pinning is a temporary solution and will only be utilized until a Central Office Terminal ("COT") has been placed in the CO where the loop originates. All of these alternatives were addressed in the 271 proceedings and appear in the Washington SGAT. Mr. Pappas explains that Qwest has an established track record of provisioning unbundled loops formerly provisioned over IDLC in a timely manner.

Q. AT PAGES 50 AND 51 OF HIS DIRECT TESTIMONY, MR. STACY PROVIDES REFERENCES TO TECHINCAL DOCUMENTS THAT DISCUSS HOW UNBUNDLED LOOPS CAN BE PROVIDED USING GR-303 TECHNOLOGY. DOES MR. STACY TAKE INTO ACCOUNT THAT IDLC UNBUNDLING USING GR-303 REQUIRES A SINGLE DS1 HANDOFF FROM THE CENTRAL OFFICE MULTIPLEXER DIRECTLY TO THE CLEC COLLOCATION?

A. No. The purported solution touted by Mr. Stacy does not reflect the fact that GR-303 would only be an alternative for those CLECs having a "critical mass" of subscribers served by the remote terminal, i.e., 24 subscribers to a virtual interface group ("VIG"). Not all CLECs would have 24 subscribers out of a remote terminal. This is primarily why the industry has defined several configurations for loop

unbundling, including the provisioning options detailed above. Mr. Stacy's "one size fits all" suggestion is not appropriate for all CLECs.

Q. IS GR-303 TECHNOLOGY SCALABLE?

A. No. According to a white paper written by David Ehreth for Westwave:

> Specifically, this architecture is not scalable beyond certain practical limits. There are several reasons for this.
>
> First, the amount of computing resource to manage the Q.931 resource is not infinitely expandable within a given RT. The second reason is that both of the two TMCs on each interface group require a physical link to terminate the High-Level Data Link Protocol ("HDLC") used as the link-layer transport methodology. Each HDLC termination requires an allocation of physical space which reaches certain practical limits within the constraints of the RT and the COT. For example, if a COT were to service a chain of four remote terminals and each of these terminals was equipped with four interface groups, the COT would be required to manage 16 active and 16 stand-by data links to support 16 different service providers.
>
> Note, however, that if a provider had subscribers on all of the RTs (such as an incumbent carrier) it would consume four of the 16 interface groups on the COT, leaving only 12 for other providers. If a second provider (say, CLEC-A) also had subscribers on all of the RTs, it would consume four more interface groups on the COT as well. That would leave only eight interface groups. If CLEC-B and DLEC-1 have subscribers on all the RTs, these four providers would consume all 32 data links.
>
> If there were subscribers to a fifth service provide, these stranded subscribers could only be made available on a "universal interface." A universal interface has a 1:1 mapping or connection between a subscriber terminal and a trunk circuit in an "always connected" mode. This defeats the purpose of GR-303 which is to eliminate the high cost and low efficiency of the universal mode.[5]

[5] *See* Exhibit No. RJH-2.

Q. IS "GROOMING" REQUIRED TO IMPLEMENT THE GR-303 ARCHITECTURE?

A. Yes. While a product has not been defined nor priced to offer this type of unbundling, the fiber between the central office and the RT must be multiplexed from optical to electrical and then on to the DS1 level. This is ultimately the same thing as DS1 to DS0 "grooming." Both architectures require electronics to hand it off at the DS1 or DS0 level.

Q. WILL THE GR-303 ARCHITECTURE MR. STACY DISCUSSES DECREASE THE NEED FOR A CROSS-CONNECT AT THE TSI?

A. No. Just because the CLEC has a VIG assigned to it, the element management systems ("EMS") associated with these systems are not partitionable yet. In other words, the "brains" of the system are static, and as such cannot handle multiple users. There are no vendors that I am aware of that provide a multi-carrier, partitionable EMS. Therefore, even with GR-303 deployed, Qwest may still incur the labor cost and truck roll associated with making the cross-connects at the RT on the CLECs behalf.

Q. ARE THERE OTHER ISSUES ASSOCIATED WITH THE GR-303 UNBUNDLING ARCHITECTURE?

A. Yes. There are a variety of other issues, including, but not limited to, provisioning, alarm reporting, sharing of test resources, etc., that are currently being addressed by the industry.

Q. CAN YOU SUMMARIZE YOUR TESTIMONY ON THE ENGINEERING DIFFICULTIES ASSOCIATED WITH DEPLOYING GR-303?

A. Deploying GR-303 throughout Qwest's network in Washington, or any significant portion thereof, would be an enormous undertaking. There would be a myriad of technical issues, and the cost would be astronomical. It is for these reasons that the FCC specifically rejected this request when issuing the TRO. The Commission should adopt the FCC's approach and summarily reject this request.

V. CONCLUSION

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.