BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

IN THE MATTER OF	
INVESTIGATION INTO U S WEST COMMUNICATIONS, INC.'S COMPLIANCE WITH SECTION 271 OF THE TELECOMMUNICATIONS ACT OF 1996	DOCKET NO. UT-003022
U S WEST COMMUNICATIONS, INC.'S STATEMENT OF GENERALLY AVAILABLE TERMS PURSUANT TO SECTION 252(F) OF THE TELECOMMUNICATIONS ACT OF 1996	DOCKET NO. UT-003040

DECLARATION OF DAVID REILLY

ON BEHALF OF

RHYTHMS LINKS INC.

JUNE 7, 2001

DAVID REILLY, under penalty of perjury under the laws of the State of Washington, states and declares as follows:

1. My name is David Reilly. I am employed with Rhythms Links, Inc., ("Rhythms") as a Network Engineer. My business address is 7337 South Revere Parkway, Englewood, CO 80112.

2. I am responsible for layer 1 design rules and loop qualification used by Rhythms for deploying DSL services. I am also responsible for representing Rhythms at T1E1.4 and NRIC 5 FG 3. I have fifteen years of wireless and broadband engineering experience. On February 08, 1999, I began working for Rhythms. My qualifications and prior business experiences include:

1998:	Director of Technology, UltimateCom Wireless ISP, Denver, CO;
1996 - 1998:	Senior System Engineer, Motorola Multimedia Group, Englewood, CO;
1993 - 1996:	Engineering Manager, California Microwave, Bloomingdale, IL;
1990 - 1993:	System Engineer, TeleSciences Transmission Systems, Bloomingdale, IL;
1988 - 1990:	System Engineer, Motorola Inc., Englewood, CO;
1984 - 1988:	Communications Engineer, Western Area Power Administration, Huron, SD;
1988:	BSEE, South Dakota School of Mines & Technology, Rapid City, SD.

3. I graduated from South Dakota School of Mines & Technology, Rapid City, SD., in 1988 , with a BS degree in Electrical Engineering.

4. The purpose of this declaration is to address spectrum compatibility in loop provisioning. Spectrum compatibility generally refers to the ability of carriers to transmit signals across a cable without causing unacceptable degradation to the signals of other carriers residing in the same cable. *3d Advanced Services Order*, ¶178.[1] The spectrum compatibility issue is particularly acute in the local loop because older, disruptive services such as analog T1 have the ability to interfere with and thus hinder the deployment of innovative advanced services. *Id.* ¶ 179. While this may have been acceptable when there was a monopoly in the provisioning of local telecommunications services, in a multi-carrier environment spectrum compatibility is a necessary condition for competition in the local exchange.

5. In this testimony on behalf of Rhythms, I propose a solution by which all carriers can co-exist in the loop plant without causing interference to each other. That proposal is attached to my testimony as DR-2.

A. QWEST'S DEPLOYMENT OF INTERFERING SERVICES.

6. Rhythms proposal is designed to address two situations where Qwest's deployment of services cause spectral interference to CLEC services and create a barrier to competitive entry.

1. Analog T1s.

7. The FCC recognized that the continued deployment of analog T1 services in the local loop plant is a serious hinderance to the deployment of advanced services. Analog T1 is an older technology by which Qwest provides high-speed data services to end users. Because ILECs like Qwest have deployed analog T1s for many years, they can be found throughout the telephone network, but especially in denser, urban areas where businesses typically are located. Analog T1 is an extremely disruptive technology, both to the ILEC's own advanced services and CLEC services. T1s, by their nature, make it impossible to offer some advanced services over adjacent binders in a cable. Depending on the way an ILEC deploys T1s in the cable, the T1s could exclude up to 70% of the binders in the cable. DR-3 to my testimony is an illustration of how incumbent LECs might deploy T1s in a cable so as to interfere with the majority of the remaining binders in the cable. The problem gets more severe as the T1 reaches deeper into the network, because the distribution cables that carry one hundred binders

[1] *In re Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 98-147 (3d Report & Order), 96-98 (4th Report & Order), FCC 99-355, ¶ 178 (December 9, 1999) ("*3d*

feed smaller cables of only 25 to 50 binder groups. At the feeder cable level, the risk of spectrum interference by an adjacent T1 becomes multiplied, and entire neighborhoods served by that feeder cable will not be able to obtain advanced services like ADSL. Qwest will simply tell a CLEC requesting an unbundled xDSL capable loop that no facilities are available, because all the available binders are interfered with by analog T1s.

8. Because of these facts, the FCC designated T1s as a "known disturber" and, under that designation, required state commissions to treat them differently. This treatment is two tiered: First, ILECs may segregate known disturbers—and only known disturbers—into separate binder groups in cables to minimize disruption. *3d Advanced Services Order* ¶ 213. Second, the FCC empowered State commissions to determine how to dispose of the existing known disturbers in the network. *Id.* ¶ 218. This recognized that a binder management approach was only an interim measure, since allowing the ILEC to "manage" spectrum is a license to discriminate against competitors and squelch innovation.

9. Qwest's spectrum management proposal will not allow CLECs to obtain loops in a spectrally compatible, competitively neutral manner. There are several important deficiencies in the Qwest SGAT § 9.2.6.4 proposal to deal with analog T1s. First, the Qwest provision does not state at all how Qwest will address disruptive T1s. Qwest does not have any written spectrum policy. The absence of a concrete, legal obligation to address disruptive analog T1s is fatal.

Advanced Services Order").

10. Second, under Qwest's current practice, Qwest simply informs CLECs that facilities are not available when a T1 interferes with adjacent binders. The FCC prohibits this kind of spectrum management. The FCC ordered that in these situations, where "known disturbers" like analog T1s interfere with newly deployed advanced services, the known disturber "shall not prevail against the newly deployed technology." ¶208. The SGAT must obligate Qwest to follow this rule.

11. Third, Qwest's spectrum management proposal fails to address the second tier of the regulation of known disturbers. That is, how it intends to eliminate the deployment of future T1s and to transition the existing T1s to less disruptive technologies. Without some solution to this problem, the T1 disturber problem becomes an intractable one. Qwest must obligate itself to sunset disturbing T1s or to transition to compatible technologies so that advanced services may continue to be deployed in the network. The FCC suggests that state commissions do have the authority to and should act to sunset existing deployed T1s or to block new deployments. *Id.*

12. The Rhythms proposal contained in DR-2 is consistent with the FCC order, and, in fact, offers a solution that would have less impact on Qwest: Qwest can continue to deploy and leave in place existing T1s, so long as they are not disrupting other carriers' services. When an existing or newly deployed T1 causes disruption, Qwest must bring the facility into immediate compatibility by transitioning to another technology, such as a non-interfering flavor of HDSL. The Rhythms proposal also further clarifies that Qwest may not simply

transition analog T1 to any other technology it wants to; it must follow the T1.417 standard in transitioning to a less interfering technology. HDSL (flavor 1), which is Qwest's first alternative to analog T1, may be as disruptive to other carriers' services as T1, especially if it has repeaters. The Rhythms proposal in DR-2 simply clarifies that if Qwest is going to go through the trouble of transitioning to a new technology, it might as well transition to the technology that is spectrally compatible and consistent with industry standards.

2. Intermediate Devices and Remote Deployments.

13. The spectrum compatibility issue also directly affects the deployment of advanced services in the field, even when it is not a T1. Spectral disruption can especially occur in the instance where a carrier places a repeater on a technology that should not have repeaters. A carrier may do this, for example, in the case where Qwest may want to deploy HDSL to a customer beyond the 10 kilofeet distance limitation of the HDSL standard. Rather than deploy a spectrally compatible HDSL2 (up to 10.5 kft.) or HDSL4 (no distance limit) technology, the carrier may simply put a repeater on the circuit or turn up the power. In both cases, the effect is to overpower (i.e., disrupt) the signal of other carriers in the same cable. The same disruption occurs where Qwest deploys ADSL or VDSL at a remote terminal while at the same time a carrier like Rhythms serves customers from its collocation at the central office. In those cases where Rhythms and Qwest both serve customers in the same area, as Rhythms Exhibit DR-4 illustrates, the Qwest signal would be 100,000 times stronger than the

attenuated Rhythms ADSL signal from a central office based collocation, and it would wipe out whatever service Rhythms was providing. Qwest has testified that it has plans to deploy, and is in fact deploying, ADSL and VDSL terminals in remote premises throughout Washington. As this remote deployment becomes more widespread, whole neighborhoods will be cut off from being able to obtain advanced services from competitive providers. Qwest's expert witness on spectrum issues, Mr. Boudhaouia admitted as much in another jurisdiction:

> "As we – as an industry – start marketing [advanced] services to the customer and especially going to the remote DSL deployment, the probability of interfering . . . with the services is going to go a lot higher."

Transcript of Proceedings in 7-State 271 Workshops, at 291 (Mr.Boudhaouia, Qwest) (May 1, 2001). As DR-4 illustrates, once Qwest deploys DSL at a remote terminal, all customers behind that terminal would not be able to receive central office-based DSL from a new entrant like Rhythms, and the sole option for advanced services would be for the customer to purchase from Qwest.

14. These are not theoretical problems. They happen today. Rhythms often has an RADSL customer who suddenly loses service. When Rhythms traces the problem to its root cause, it may find that Qwest has recently deployed a T1 service to a customer. Sometimes, Rhythms will never find out what caused the disruption; at other times, it may trace identify the disruptor but will lose the customer nonetheless. For businesses and residences, the weeks it may take to trace the problem and solve it, during which the customer is out of service,

is too much, and they simply abandon Rhythms as their provider.

15. Rhythms acknowledges that in these two circumstances - deployment of intermediate devices such as repeaters and remote deployment of xDSL - there are currently no standards adopted by the standard-setting body T1E1 that would bind Qwest to deploy in a spectrally compatible manner. The working group T1E1.4 has established the following: "T1.417 Issue-1-based methods, including Annex A and Annex L, are sufficient conditions for spectral compatibility, but not necessarily necessary conditions for repeatered and remotely deployed systems with CO-based systems." Qwest mistakenly believes that in the absence of a binding standard, it may continue to deploy intermediate devices and remote ADSL that will disrupt other carrier services. These problems will be compounded many times over when Qwest begins to deploy remote DSL ubiquitously across its region. Given that a standard may be many years from adoption, if one is ever adopted, Rhythms believes that a solution has to be found now to protect competitive entry from Qwest's continued deployment of interfering technologies.

16. There are standards-based approaches that can be employed now to insure all carriers can co-exist in the loop plant. For example, there is the T1.417 standard itself, which informs *how* a carrier would deploy intermediate devices and remote xDSL in a spectrally compatible manner. It is clear, for example, that under T1.417, the HDSL, HDSL2, and HDSL4 technologies can deployed by any carrier without spectrally disrupting other carriers.

They simply have to take care to deploy each within the distance limitation guidelines set forth in T1.417.

17. Exhibit DR-2 to my testimony codifies Rhythms proposal on implementing the T1.417 standard for intermediate and remote devices. In another jurisdictionx, Qwest conceded that under the Rhythms proposal, there is always a spectrally compatible alternative to a spectrally incompatible deployment. See Transcript of 7-State 271 Workshop, at 258 (Mr. Boudhaouia, Qwest) (May 1, 2001) ("If the disturber is changed to a compatible spectrum management class, yes, . . . you would be . . . able to put services that were not compatible [with the disturber] . . . that would be compatible with the new technology.) Similarly, for remote deployment of ADSL, ILEC representatives and their vendors have presented papers confirming that it is technically feasible for remote deployments of ADSL and VDSL to remain spectrally compatible with central office based advanced services. These papers were presented in T1E1, the industry standard-setting body of which Qwest is a member. These papers are cited in Exhibit DR-4 attached to my testimony.

18. The Rhythms approach also has minimal economic impact on Qwest. Requiring Qwest to deploy services in a spectrally compatible manner often does not require it to discard existing equipment, and may be as simple as switching out or reprogramming a card in the Qwest equipment. Existing inventories of cards will not go unused by Qwest. In fact, under the Rhythms proposal, Qwest can continue to deploy its services in any manner it wishes, so long as it is not causing a disruption in their deployment. In contrast, under the

current situation, the CLEC bears all the costs when Qwest deploys its services in a spectrally incompatible manner: by having service knocked down by Qwest, by having to switch customers to platforms which are not interfered with by the Qwest service (if such an alternative is even available), and by not being able to provide service to customers in the first place. Given that it is technically feasible and has virtually no economic impact on Qwest, Rhythms proposal in Exhibit DR-2 should be adopted. There is no excuse for Qwest to continue on its course of deploying intermediate devices and remote ADSL and VDSL that will assuredly wipe out central office-based CLEC services.

B. SPECTRUM COMPATIBILITY DISPUTES.

19. Qwest SGAT 6.2.4 contains provisions to the require CLECs to use NC/NCI codes for carriers to disclose to each other the spectral masks their services employ. This provision is unreasonable, anti-competitive, and discriminatory.

20. Spectral mask information is highly proprietary, competitively sensitive information that is not needed to resolve spectrum disputes, and should not be reported as a routine matter to Qwest on every single order through an NC/NCI code. First, spectral mask data is proprietary because it reveals exactly what kind of service a carrier is providing a particular locale and particular end-users. Qwest is a direct competitor to DSL providers like Rhythms, and it would be unreasonable to require CLECs to disclose their competitive strategy on a daily basis to their competitor. Qwest could use the information to determine where to focus the marketing of its services to undermine competitive entry by CLECs.

21. Second, the logistical burden in recording these NC/NCI codes would be daunting for both CLECs and Qwest. It would require expensive OSS changes and would impact employee training. Qwest has not even begun to consider how it will make these database changes and the cost of this. The burden of reporting NC/NCI codes clearly outweighs any benefit from obtaining these data.

22. Third, spectral mask data is also highly unreliable. Even if a CLEC diligently reported spectral mask data, Qwest is making changes to its network every day that would affect spectral masks without the CLEC's knowledge. For example, when Qwest changes the feeder cable of the local loop from a 24-gauge to 26-gauge copper as matter of routine maintenance, the spectral mask data that the CLEC had been diligently reporting to Qwest for that location becomes meaningless. Very quickly, the spectral mask information in this database would become polluted, dated, and, thus, useless. In Rhythms experience, spectral incompatibility problems typically occur at the time a new service is deployed into a cable, and the service deployer is invariably Qwest. In that case, it is highly unlikely NC/NCI code information is going to help identify the source of the interference because the data are not going to be updated in the Qwest database in time to provide useful information. In fact, it is quite likely that the NC/NCI information would hinder the resolution of the spectral incompatibility issue, because it would mislead the complaining carrier into believing that there was no spectral issue. In Rhythms' experience, the vast majority of, if not all, spectrum incompatibility problems can be traced to Qwest itself and can be resolved by identifying the

most recently deployed service by Qwest in that cable. The compilation of NC/NCI information of CLECs would largely be a useless exercise.

23. Fourth, the NC/NCI code reporting requirement is discriminatory. In the First Order on Advanced Services,[2] the FCC issued a policy requiring *ILECs* to report spectral mask information to CLECs, and, in the Third Order, it considered and determined that CLECs should report such data on a reciprocal basis to ILECs. Qwest has *never* reported spectral mask information to Rhythms or any other CLEC, and its current proposed SGAT does not contain any reciprocal provision to require it to provide such data to CLECs. The NC/NCI requirement that Qwest intends to require of CLECs is discriminatory.

24. Fifth, spectral mask information is completely unnecessary to resolving disputes under the Rhythms T1.471-standard-based approach (contained in Exhibit DR-2), since each carrier would operate under the *assumption* that there is a potential spectral conflict in the binder and would not deploy in a manner that interfered with any other service. T1E1.4 adopted a standard--T1.417—that did away with NC/NCI codes for spectrum management purposes. Indeed the NRIC group that is drafting recommendations to the FCC based on T1.417 has drafted language that proposes eliminating the reporting of spectral mask information as unnecessary and will ask that the FCC clarify that any such rule be rescinded. Qwest participates in this working group and should be aware of this change. The prophylactic

[2] *In re Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No. 98-147, FCC 99-48, ¶ 72-73 (Mar. 31, 1999) (First Report & Order) ("*1st Advanced Services Order*").

solution contained in T1.417 is far more efficient to achieve spectral compatibility. Rhythms has voluntarily imposed the T1.417 standard on its own deployment of DSL equipment throughout Qwest's region and nationwide, and it has never had a single complaint that it has caused a spectral disturbance with another carrier.

25. In the de minimis number of cases where there continue to be spectrum compatibility disputes, the Rhythms proposal in Exhibit DR-2 allows for carriers to exchange spectral mask information with each carrier in the binder group to determine which carrier has deployed interfering services. This information is usually more than enough to resolve a dispute. In fact, as I stated before, the vast majority of instances of spectral incompatibility Rhythms has ever encountered were with Qwest, not with any other carrier. So a spectrum compatibility "dispute" would begin and end by contacting Qwest on the telephone and finding out what T1 or other interfering device *Qwest* recently deployed in that particular cable.

C. CONCLUSION

26. Qwest has not satisfied the requirements of the 1996 Act for non-discriminatory access to unbundled loops and thus should not be given approval under section 271(c) of the Telecommunications Act of 1996.

I DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF WASHINGTON THAT THE FOREGOING STATEMENTS ARE TRUE AND CORRECT.

EXECUTED on this _____ day of June 2001, at Denver, Colorado.

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David Reilly