BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON EXCHANGE CARRIER ASSOCIATION, et al., Complainants, v. LOCALDIAL CORPORATION, an Oregon Corporation, Respondents.	DOCKET NO. UT-031472 SUPPLEMENTAL DECLARATION OF ROBERT WILLIAMSON IN SUPPORT OF STAFF'S MOTION FOR SUMMARY DETERMINATION

I, Robert Williamson, declare under penalty of perjury that:

1. I am over the age of 18, am competent to testify in the matters set forth below and I have personal knowledge of those matters.

2. I submitted Direct Testimony in this proceeding on February 27, 2004 and Response Testimony in this proceeding on March 29, 2004, on behalf of the Washington Utilities and Transportation Commission Staff in my capacity as a Telecommunications Engineer.

3. After Staff filed its Motion for Summary Determination, the Federal Communications Commission (FCC) released an order determining that the IP-in-the-middle phone-to-phone VoIP service offered by AT&T is a telecommunications

service. This purpose of this declaration is to respond to Mr. Montgomery's supplemental declaration dated May 3, 2004, which concerns the FCC's declaratory order regarding AT&T's VoIP service.

4. LocalDial attempts to build a case that its long distance IP-in-the-middle service is an "Information Service" rather than a "Telecommunications Service" based on *how* the International Telecommunications Union (ITU) G.723 technology performs signal compression and suppression functions, detects and corrects errors, or performs protocol functions. They state that because it "actually involves complex, mathematical, real-time computations that act on the pitch and other characteristics of the human voice"[1] the LocalDial IP-in-the-middle long distance service somehow differs from similar functions that are commonly provided in the Public Switched Telephone Network (PSTN). They erroneously posit that the ITU G.723.1 technology operates to satisfy all three clauses of the existing enhanced services rule, 47 CFR §64.702(a).

5. The information that is transmitted by the LocalDial service is simply the called and calling parties' digitized voice. Virtually all PSTN services digitize, mathematically create filters (such as echo cancellation via ITU G.711), and use complex real-time computing processes in both transmission and switching equipment that effect the perception of the speaker's individual voice. The business

of telecommunications is to provide intelligible voice communication to both parties. Yet LocalDial claims that because the G.723.1 technology makes the human voice signal intelligible to the listener, it somehow provides "*additional, different, or restructured information.*" If somehow the provision of intelligible voice through the use of computer processing was considered an "information service," then virtually all PSTN voice services would have to be reclassified as "information services."

6. The International Telecommunications Union (ITU)[2] has standardized a number of voice coding techniques in its G series.[3] The G.723.1 document describes a technique that compresses speech or audio signal components at a low bit rate. Compression simply reduces the bandwidth or number of bits needed to encode a signal, typically by eliminating long strings of identical bits or bits that do not change in successive sampling intervals, thereby saving transmission time or capacity. The G.723.1 technique reduces the required bandwidth by removing silent periods between speech patterns. The reduction of bandwidth and subsequent re-processing that makes the voice signal intelligible again, does not provide the *user* with an

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[1] Montgomery Direct Testimony, p. 36

[2] International Telecommunications Union is a United Nations organization based in Geneva that sets international telecommunications standards. ITU-T is one of the four organs of the ITU and deals with telecommunications standards.

[3] The G series are ITU-T standards dealing with transmission facilities and includes: G.703-T1/E1, G.711- a 64Kbit high bit rate technique used by the PSTN and PBXs, G.821- ISDN, G804- ATM cell mapping, and G.990- transmission over xDSL, as well as others.

enhanced service; rather it reconstitutes the voice and the silent periods that the carrier's compression technique had removed.

7. The International Multimedia Teleconferencing Consortium (IMTC)[4] approved the G.723.1 standard as the low bit-rate speech coder for Internet Telephony applications in 1997.[5] A coder is an anolog-to-digital converter (a microprocessor chip) that changes analog voice signals to their digital equivalents. The G.723.1 coders are one of the most common coders used in Internet Protocol (IP) telephony today. Because the compression techniques used by the IP community remove periods when no one is speaking (whether a G.723.1 coder is used or not), there is no background noise transmitted to the distant end as there is in the PSTN. As a hardware option, the G.723.1[6] coders allow "comfort noise" (CN) to be created and used to replace background noise during quiet periods. CN does not recreate the actual background noise that would be heard at the speaker's location,[7] but instead uses a type of "white noise" so that the listener is comfortable that a connection is still in place. The same technology is used in some cellular networks and is available,

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[4] The International Multimedia Teleconferencing Consortium is a non-profit corporation, which facilitates the development of interoperable solutions based on open international standards. The IMTC has a membership of over 140 companies from various industries targeting interoperability among multiple vendors.

[5] www.dspg.com/technology/g7231_faq.html The DSP Group provides one version of software for the G723.1, G.726, and G.729 codecs, and refers to that licensed proprietary software as "TrueSpeech".

[6] The G.711, G.726, G.727, G.728 and G.722 codecs don't offer a hardware option for CN but can use the payload software method discussed in the Internet Engineering Task Force (IETF) standard RFC 3389 .

[7] No detective in an English mystery novel will be able to hear Big Ben behind the caller and know

via hardware or software options, in all IP telecommunications networks. As mentioned before, the data that the user receives is the reconstituted voice of the other party, not the acquisition, storage, transformation, processing, retrieval, or utilization of information as required for it to be an "information service." The user does not interact with stored information nor receive an "enhanced functionality." The user receives the other party's speech just like with any other telecommunications voice service.

8. Mr. Montgomery states that "… the VOIP gateway software retrieves data previously stored from the packet stream and/or creates new data that does not exist in the original signal as an *error control process*."[8] It is of interest to note that nowhere in the AudioCodes documentation[9] or the "Voice Over Packet" white paper[10] prepared by Texas Instruments and referred to by Mr. Montgomery, does it mention that the retrieval of stored information is an *error correction technique.* The storage that Mr. Montgomery refers to is purely a byproduct of any digitalization, compression and packetization of voice. The storage is measured in milliseconds and used to fill packets. The user does not interface with stored data as one would with voice mail or in any other way. The delay that would be required to do error

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where and when the mystery call was made.

[8] Local Dial's Response To Commission Staff's Motion For Summary Determination And Memorandum In Support, Docket No. UT-031472, service date May 3, 2004, Page 9, footnote 38.

[9] www.audiocodes.com

detection and correction is unacceptable to any real-time communication like voice or video. To transport voice or video packets, IP relies on a different internal protocol, called Real Time Protocol (RTP), than it does to transport other types of data. Unlike other methods of data transport in IP, RTP does *no* error detection. It is purely a case of "what you see is what you get" (or in our case "what you hear is what you get"). Because of delay restraints, there can be no retransmission of missing or incorrect packets just as in transport on the PSTN. As packet loss or error becomes larger, voice degrades until it is unintelligible.

9. The FCC has long been aware that computer processing is involved in the routing and transmission of telecommunications. At least six times in the last twenty years, it has consistently held that where there is no *net* conversion in the protocol of a communication from *end to end* – that is, where a transmission originates and terminates to the end users in the same format, with no change in content – any conversions that occur along the way are irrelevant, and that communication still constitutes a "telecommunications service." The FCC established the distinction between "basic" and "enhanced" services (changed in the Act to "telecommunications services" and "information services") in its Computer Proceedings. In 1984 the FCC recognized that those conversions that take place solely within a network that result in *no net* conversion *between users* are treated as

[10] Direct Testimony of William Page Montgomery, Page 38, footnote 29

basic services.[11] In 1987 the FCC re-examined the issue and held again that merely converting a call to a different format or protocol for some part of its transmission path does not change that call from a "basic" telecommunications service to an "enhanced" information service. The FCC held that so-called "internetworking" protocol conversions, those which occur when traffic is handed off between networks employing different transmission protocols that do not perform "*net user-to-user protocol conversion,"* are "basic" telecommunications services and not "enhanced" information services.[12] One year later in 1988, the FCC reaffirmed the no net protocol rule.[13] In 1990 the FCC again confirmed that "data can be transmitted through the network as part of a basic service in any protocol so long as the *entry and exit protocols are the same* (emphasis added)."[14] In the 1998 Steven's Report to Congress the FCC again noted that "[t]he protocol processing that takes place incident to phone-to-phone IP Telephony does not affect the service's classification, under the Commission's current approach because it results in no protocol conversion to the

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[11] Memorandum Opinion and Order, *Petitions for Waver of Section 64.702 of the Commission's Rules and Regulations to Provide Certain Types of Protocol Conversion Within Their Basic Network,* ENF-94-15, FCC 84-561 (rel. Nov. 28, 1984)

[12] *Computer III Order,* ¶ 71.

[13] Memorandum Opinion and Order on Reconsideration, *Amendment to Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry),* 3 FCC Rcd 1150, ¶¶ 4, 53-57 (1988)

[14] Memorandum Opinion and Order, *Southwestern Bell Telephone Company Petition for Waiver of Section 64.702 of the Commission Rules and Regulations to Provide and Market Asynchronous Protocol Conversion on an Unseparated Basis,* 5 FCC Rcd 161, ¶ 13 (1990)

end user."[15] The Stevens Report continued to say that certain protocol processing services that result in no net protocol conversion to the end user are deemed telecommunications services.[16] Finally in the AT&T phone-to-phone ruling in April of this year (FCC Docket 04-97) the FCC solidified its past positions, "to the extent that protocol conversions associated with AT&T's specific service take place within its network, they appear to be "internetworking" conversions, which the Commission has found to be telecommunications services."[17] The protocol conversions that exists in the LocalDial service are internal to its network, are "internetworking" conversions and as such are not enhanced services.

10. The portion of the Computer III Phase II Order that LocalDial quotes in its Response to Staff's Motion for Summary Determination is entirely consistent with this. It addresses a situation where an end user places a call to an information service provider where the terminating telecommunications provider also provides a net protocol conversion. The information service provider thus receives the call in a different protocol than the one it was originated in. That net change in protocol

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[15] In the Matter of Federal-State Joint Board on Universal Service cc Docket No. 9645, 13 FCC RD 11501, release Number 98-67 released April 10, 1998, Para. 52.

[16] *Id*. Para. 39

[17] *Non-Accounting Safeguards Order,* 11 FCC Rcd at 21957-58, para. 106; This determination is consistent with the Commissions tentative conclusion in the *Stevens Report* that phone-to-phone IP telephony bears the characteristics of telecommunications service. *Stevens Report,* 13 FCC Rcd at 11544, para. 89. AT&T and LocalDial's, specific services meet the four conditions that the Commission stated "it tentatively intend[ed] to refer to" as phone-to-phone IP telephony. *Stevens Report,* 13 FCC at 11543-44, para. 88. See *Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services are Exempt*

between the end users—that is, the caller and the information service provider—is treated as an enhanced service.

11. As I stated in my rebuttal testimony,[18] "… [T]he FCC takes a functional approach by looking at what the user receives when deciding whether a service provides Telecommunications or Information Services. 'This functional approach is consistent with Congress' direction that the classification of a provider should not depend on the type of facilities used. A telecommunications service is a telecommunications service regardless of whether it is provided using wireless, cable, satellite, or some other infrastructure. *Its classification depends on the nature of the service being offered to customers* [emphasis added].'"

SIGNED and DATED this _____ day of May, 2004, at _____.

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ROBERT WILLIAMSON

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from Access Charges, WC Docket 02-361, April 21 , 2004, footnote 54.

[18] Response Testimony of Robert Williamson, page 12, lines 8-15, quoting *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 9645, 13 FCC RD 11501, release Number 98-67 released April 10, 1998, ¶ 59.