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August 30, 2002

TN REGULATORY AUTHORITY
DOCKET ROOM

Honorable Sara Kyle
Chairman
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37243-0505

Re: Generic Docket to Consider Technology Advances
Docket No. 02-00434

Dear Chairman Kyle:

Please find enclosed the original and fourteen copies of the Supplemental Comments of Covad Communications Company filed in the above-captioned proceeding.

Very truly yours,

BOULT, CUMMINGS, CONNERS & BERRY, PLC

Henry Walker

By: Henry Walker

HW/nl
Enclosure

v
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8/30/2002

BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

IN RE: GENERIC DOCKET TO CONSIDER TECHNOLOGY ADVANCES	)	**Docket No. 02-00434**

COVAD'S SUPPLEMENTAL COMMENTS

I. INTRODUCTION

DIECA Communications, Inc. d/b/a Covad Communications Company ("Covad") hereby files these additional comments to describe the need for the Tennessee Regulatory Authority ("TRA" or "Authority") to set initial rates for a new UNE that would allow CLECs to provision xDSL services through Tennessee Remote Terminals ("RTs") that BellSouth has equipped with various advanced technologies. The scope of this docket should include the proposed new UNE because developing technologies being deployed by BellSouth at its RTs in Tennessee are having a significant impact on the nature of competition in the state and are leading toward the gradual remonopolization of data services by the BellSouth. If the Authority does not monitor these developments closely and take appropriate steps to deal with them on behalf of Tennessee consumers, these technology advancements could lead to the destruction of the nascent competitive marketplace for data services in Tennessee.

In an April 26, 2002 Notice of Filing, the Pre-Hearing Officer directed the parties to file comments which, among other things, included "a list of UNEs for which an initial rate is needed as a result of technology advances." As we will show below, technology advances already deployed by BellSouth have had a dramatic negative impact on the

ability of CLECs to provide data services via xDSL technology to Tennessee consumers, and this slow destruction of competition in the xDSL market is growing worse by the day. The time as arrived for the Authority to take the steps necessary to preserve competition in high speed internet access via xDSL technology so that Tennessee consumers and businesses remain able to reap the many benefits that flow from such competition.

II. HOW DSL TECHNOLOGY WORKS

In order to understand how technology advances are affecting the provisioning of broadband digital information services to Tennessee consumers and businesses, it is first necessary to have a basic understanding of the telecommunications network over which voice services are provided. In the past, telephone service was provided exclusively over lines (or "loops") that were made entirely of copper. Typically these loops ran from a customer's home or place of business to a Remote Terminal located nearby. At this RT the loops of several hundred customers would be collected into larger cables which would connect the loops to a BellSouth Central Office ("CO") where switches to properly route telephone calls were—and still are—located.

The telephone voice services provided over BellSouth's loops are, for the most part, transmitted with analog technology, but copper wires are also capable of providing data services via "packetized" digital signals utilizing a technology known at Digital Subscriber Line ("DSL") technology. Because of the speed at which DSL can transmit data, it is often referred to as a "broadband" technology, and this speed allows residential end users the ability access information on the internet at data rates ranging from four times the speed of a fast dial-up internet connection up to speeds many hundreds of times

faster than dial-up. For business users, these data rates allow many employees to share a single internet connection without any degradation in the speed of the service for an individual user.

In order to provision a DSL-capable loop it is necessary to place a piece of equipment known as a Digital Subscriber Line Access Multiplexer or "DSLAM" at the BellSouth-end of the copper loop. With the passage of the Telecommunications Act of 1996, CLECs such as Covad began to compete with BellSouth and other Incumbent Local Exchange Providers ("ILECs") for data customers. In order to do this, the CLECs placed their own DSLAMs in spaced leased from BellSouth in its various Central Offices. Then, using loops purchased as Unbundled Network Elements ("UNEs"), these CLECs began providing DSL services to businesses and residential customers by connecting these loops to their own DSLAMs in the Central Offices. It is at the DSLAM where all the data from the customers served by a given CO is collected and sent out onto the CLEC's own high-speed data network.

More recently, CLECs also began to compete with BellSouth using "line shared" DSL technology. Line sharing refers to the situation in which BellSouth provides an end-user with traditional, analog voice services while a CLEC uses a different frequency traveling over the same loop to provide DSL services to what is typically—though by no means exclusively—a residential user. Using the combination of DSL services provided over stand-alone loops together with line sharing technology, both residential and business customers in Tennessee have begun to enjoy the benefits of vigorous

competition in the DSL market.[1] Today, however, technology advances have gradually begun to erode this competitive landscape, and the many thousands of Tennessee consumers who already receive the benefits of competition for broadband DSL internet connections are finding that their choices are dwindling.

This erosion of competition is happening because BellSouth's aggressive deployment of fiber-optic technologies is gradually removing customers from the reach of competitive providers of DSL services. In fact, today in Tennessee more than 50% of BellSouth's RTs have been equipped with technology that prevents the end users connected to those Remote Terminals from being able to order DSL services from any provider other than BellSouth. This deployment of fiber-based telecommunications technology thus amounts to a gradual remonopolization of the local loop, and it is time for the Authority to take the steps necessary to provide the benefits of competition to all of Tennessee's consumers and businesses. It is time for a Broadband Unbundled Network Element.

III. NEW UNE REQUIRED BY ADVANCES IN TECHNOLOGY

As described fully in the Direct Testimony of Terry R. Murray filed by Covad on July 12, 2002 in Docket Number 97-00309 (the docket considering BellSouth's request to enter into the Tennessee long distance market pursuant to Section 271 of the Telecommunications Act of 1996) and attached hereto as Exhibit 1, BellSouth has, over the past several years, begun an aggressive deployment of fiber-optic technology in Tennessee. Typically, fiber-optic cable is used to replace the copper cables that, in the

[1] As an example, without buying additional services from BellSouth, a customer seeking to order a line-shared DSL connection cannot get a permanent monthly rate from BellSouth of less than $49.95. Covad, on the other hand, offers line shared DSL services for permanent rates beginning at $39.95 per month.

past, connected the BellSouth Remote Terminals to its Central Offices. The copper wires connecting the RTs to Tennessee end-users have, for the most part, remained exclusively copper. Thus, BellSouth's modern network includes many loops that combine an initial (feeder) segment that is fiber optic cable with a copper (distribution) cable that completes the loop connection to individual homes and businesses. When fiber optic cable is deployed as part of the loop, electronics systems, commonly referred to as Digital Loop Carrier ("DLC"), are deployed at both ends of the fiber cable. This DLC equipment is placed in the RT at the interface between the fiber and copper cable. Certain modern DLC equipment allows the provisioning of DSL services to customers served by that RT.

As noted above, CLECs provide DSL services over all-copper loops in one of two basic ways: (1) they can use a loop that is dedicated to providing DSL (a "stand-alone loop"), or (2) they can provide DSL over a loop over the high-frequency portion of a loop that also provides basic voice services ("line sharing"). In both configurations, the CLEC provides DSL over a copper pair that runs all the way from the customer premises back to the BellSouth Central Office where it is connected to a collocated DSLAM. In this way, the information coming from all of a given CLEC's customers served from a single CO is collected and connected to its high-speed network.

The situation is somewhat different when loops have fiber feeder. In order to provide a Tennessee consumer or small business with DSL services under these circumstances, a CLEC must place the DSLAM functionality out in the field, so that it can interface directly with the copper cable. The remotely located DSLAM functionality collects all of DSL signals from the end users served by that RT and sends this

information back to the central office over fiber. There are two ways in which this is being done today.

First, a CLEC can install a DSLAM at the RT to perform precisely the same function as the DSLAM that previously would have been located in the central office. This option effectively requires each competitor to create a collocation-type arrangement at each RT (*i.e.*, in the middle of each separate loop facility route) and to obtain transport facilities from its remote DSLAM to the central office. BellSouth has 6318 such RT structures in Tennessee alone.[2] As is described fully in Exhibit 1, this option is not economically feasible for any CLEC,[3] a point that the Authority itself has already alluded to in a recent order. [4]

There is, however, another alternative. Certain modern DLC systems can support the provisioning of DSL service if they are equipped with suitable line cards, which are different from the line cards that are used for basic voice-only service. With a suitable array of line cards, currently available DLC systems can accommodate voice, ISDN, and

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[2] BellSouth Response to Data Request 83, June 11, 2002, Docket Number 97-00309 (BellSouth 271 Docket).

[3] Collocation of DSLAMs at Tennessee's 6318 RTs would require thousands of additional collocations, on a route-by-route basis, in each central office area merely to achieve or maintain the ability to provide broadband service at parity with BellSouth. Excluding the costs of construction, equipment, loops, etc., the total application fees alone for these new collocations would amount to millions of dollars for each CLEC attempting to provide such services. See, e.g., Covad's Interconnection Agreement with BellSouth, Attachment 4, Exhibit D. The application fee alone that Covad would have to pay to BellSouth for each remote terminal collocation site would be $872.95, *bringing the total cost to Covad of doing nothing more than applying for remote terminal collocation at all locations to $5,515,298.10.*

[4] Order on Petition for Stay and Requests for Clarification, June 27, 2002, Docket Number 00-00544, p. 6-7 ("Even though collocation of DSLAMs at remote terminals offers an alternative to CLECs, this alternative is more costly and will not be available in every remote terminal.") (citing, In re: Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 16 F.C.C.R. 2102, para. 13 (Jan. 19, 2001) (Third Report and Order on Reconsideration).

a wide variety of DSL-based services such as ADSL, HDSL and SDSL.[5] Further, BellSouth admits that it is already using this type of technology to provide DSL services to 15,438 customers in Tennessee through remote DSLAMs collocated at the RT, a number representing approximately 30% of BellSouth's total DSL customer base in Tennessee.[6] BellSouth also admits that it is at least testing the option of providing DSL using "dual purpose line cards" to provide broadband services through its Tennessee RTs using modern DSL-capable DLC technology.[7]

The Authority has already recognized the competitive disadvantage to which competitors are subjected when BellSouth moves central office functionality out to RTs. To address this problem, the Authority has ordered BellSouth "to install, for the CLECs' use, dual-purpose line cards in the fiber-fed Next Generation DLC equipment in the remote terminal."[8] This is an extraordinarily important first step to bring the benefits of DSL competition to all Tennessee consumers, but the aggressive deployment of new technology by BellSouth demands that additional steps be taken: the Authority should mandate the creation of an end-to-end Broadband UNE.

An end-to-end Broadband UNE is a UNE from the customer's premises to BellSouth's Central Office that allows competitors to provide DSL services to any customer regardless of the technology that BellSouth deploys at a given RT. In other words, this UNE would be provisioned over whatever technology existed to serve a

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[5] The DSL and voice signals may, or may not, travel on physically separate fiber strands in this arrangement.
[6] BellSouth Response to Data Request 86 and 87, June 11, 2002, Docket Number 97-00309 (BellSouth 271 Docket).
[7] Affidavit of William J. McNamara, III attached to BellSouth's Petition for Stay (April 10, 2002) in TRA Docket No. 00-00544.
[8] April 3, 2002 Order in Docket No. 00-0054 ("Generic Docket to Establish UNE Prices for Line Sharing," etc.) (hereafter, "TRA Line Sharing Order") at 43.

CLEC's target customer. This is the approach that the Wisconsin PSC adopted in its recent Order addressing ways in which to combat the remonopolization of the local loop.[9] In that Order, the Wisconsin PSC ordered Ameritech to provide competitors with a "Broadband end-to-end UNE" in part because, without it, "CLECs will incur higher costs, experience lower or less consistent levels of quality, have less ubiquitous access to similar facilities, and encounter more troublesome operational issues."[10]

The time has arrived for Tennessee to do the same thing. When the Telecommunications Act of 1996 was passed, it seemed as if competition in the DSL market would be possible for facilities-based carriers who collocated their DSLAMs in ILEC Central Offices, and, indeed, this was the case. Now, however, the advance of technology has allowed BellSouth to remonopolize nearly 50% of the DSL market in Tennessee, a development that is bad for Tennessee consumers and businesses. Accordingly, the TRA should exercise its authority under both the 1996 Act and under T.C.A. § 65-4-124[11] to order the creation of a Broadband UNE and to set prices for that UNE. Only with this new UNE can BellSouth be stopped from choking off competition in the DSL market by its aggressive technology deployment into Tennessee's remote terminals.

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[9] Final Decision of the Wisconsin Public Service Commission in Docket No. 6720-TI-161, Investigation Into Ameritech Wisconsin's Unbundled Network Elements, March 21, 2002, (hereafter, "Wisconsin Order") at 12, ¶ 69.

[10] *Id.* at 11, ¶ 66.

[11] This statute gives the Authority the power to order the creation of a Broadband UNE wholly apart from the power granted to it by the 1996 Act.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been forwarded via fax or hand delivery and U.S. mail to the following on this the 30th day of August, 2002.

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