BEFORE THE TENNESSEE REGULATORY AUTHORITY

NASHVILLE, TENNESSEE

In re:	)	
Generic Docket To Establish UNE Prices	)	
for Line Sharing Per FCC 99-355, and	)	Docket No. 00-00544
Riser Cable and Terminating Wire as	)	
Ordered in Authority Docket 98-00123	)	

POST-HEARING BRIEF OF THE DATA COALITION

Eric J. Branfman
Thomas R. Lotterman
Joshua M. Bobeck
Swidler Berlin Shereff Friedman, LLP
3000 K Street, NW, Suite 300
Washington, DC 20007-5116
Telephone (202) 424-7500
Facsimile: (202) 424-7645

Attorneys For Broadslate Networks of Tennessee, Inc.

Catherine F. Boone
Covad Communications Company
10 Glenlake Parkway
Suite 350
Atlanta, GA 30328
Telephone: (678) 579-8388
Facsimile: (678) 320-9433

Attorney for Dieca Communications, Inc. d/b/a Covad Communications Company

John Kerkorian
Mpower Communications Company, Inc.
5607 Glenridge Drive
Suite 300
Atlanta, GA 30342
Telephone: (404) 554-1217
Facsimile: (404)-554-2427

Attorney for MGC Communications, Inc., d/b/a Mpower Communications, Inc.

Henry Walker
Boult Cummings Conners & Berry, PLC
4141 Union Street, Suite 1600
Post Office Box 198062
Nashville, TN 37219
Telephone: (615)-244-2582
Facsimile: (615)-252-2380

Attorney for the Data Coalition

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The Data Coalition,[1] by undersigned counsel, respectfully submits its Post-Hearing Brief in the above-captioned proceeding. This brief addresses the establishment of rates, terms and conditions for the ADSL, HDSL and UCL loops, the High Frequency Spectrum of the Loop (also known as Line Sharing), loop conditioning, access to loop makeup, access to network terminating wire, and dark fiber.

INTRODUCTION

In this proceeding, the Tennessee Regulatory Authority ("Authority" or "TRA") will establish the terms of nondiscriminatory access to and permanent rates CLECs pay for UNEs from both Sprint and BellSouth in Tennessee. This proceeding has a significant impact on the climate for local telecommunications competition in Tennessee, particularly in the nascent market for DSL services. By making the proper choices in this proceeding, the Authority can take a significant step towards ensuring that Tennessee consumers will have access to competitive DSL services. The wrong choices could, however, perpetuate the existing ILEC monopolies, allowing the ILECs to leverage their existing monopolies to thwart competition in the embryonic market for DSL services.

The ILECs, for practical and legal reasons, bear the burden of demonstrating that their proposals satisfy the statutory standard that each UNE and interconnection price is just, reasonable, cost-based and forward-looking as required by Section 252(d) of the 1996 Act.[2] The Data Coalition introduced evidence into this record that proves that the rates, terms, and conditions proposed by the ILECS are not in fact cost based rates. Moreover, the Data Coalition presented evidence demonstrating what reasonable forward-looking cost based rates for these UNEs should be. In contrast to the ILECs, the Data Coalition properly applied the FCC's TELRIC pricing methodology that this

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[1] Broadslate Networks, Inc., Covad Communications Company, and Mpower Communications, Corp.

[2] 47 C.F.R. 51.505(e).

Authority uses to determine the rates for UNEs.[3] This methodology requires a "forward looking economic cost methodology based on the most efficient technology deployed in the incumbent LEC's current wire center locations."[4]

In evaluating the rates, terms, and conditions the ILECs propose for competitive access to DSL services, the TRA has broad authority to prescribe conditions that will foster the maximum level of competition in the deployment of DSL services. Without a concerted effort at the federal and state levels, competition in the market for these services is likely to be subjected to unnecessary delays, frustrating consumer demand and permanently hobbling competition.[5]

The Data Coalition opposes many of the ILECs' proposals and rates for access to DSL UNEs. In order to compete in the Tennessee DSL market, CLECs need access to voice grade copper loops. CLECs need nondiscriminatory access to the ILECs' databases in order to determine for themselves whether the makeup of the loop, its physical characteristics, will support the particular DSL services the CLEC intends to offer. Further, CLECs need the ability to have the ILEC condition the loop (remove load coils, repeaters, and excessive bridged tap that would impede the delivery of DSL services) at forward looking rates. To meaningfully compete in the DSL services market to all Tennessee consumers, CLECs further require access to the high frequency portion of the loop through line sharing. CLECs need access to line sharing whether the customer is served by a copper facility or a combination of fiber and copper through a Next Generation Digital Loop Carrier ("NGDLC") architecture. Without nondiscriminatory access and forward looking rates for these elements, CLECs will be unable to compete meaningfully in the Tennessee DSL market, and Tennessee consumers will be denied the competition they expect and deserve.

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[3] *In Re Petition To Convene A Contested Case Proceeding To Establish Permanent Prices For Interconnection And Unbundled Network Elements*, Docket 97-01262, *Interim Order On Phase I Of Proceeding To Establish Prices For Interconnection And Unbundled Network Elements*, Tenn. Reg. Auth., January 25, 1999, p. 8.

[4] *Local Competition Order* at ¶ 685.

[5] *Id.* at ¶ 225 (emphasis added).

I. XDSL CAPABLE LOOPS

Establishing forward looking, cost-based, nonrecurring and recurring rates for Unbundled Network Elements ("UNEs") is critical to promoting competition for xDSL service in Tennessee. The most critical UNE for CLECs that provide xDSL services is the stand alone xDSL loop. xDSL[6] capable loops are any loops that CLECs qualify for themselves as being capable of supporting xDSL services. BellSouth greatly and unnecessarily complicates the simple xDSL loop offering and ordering procedure DSL providers need.[7] First, BellSouth has contrived an array of xDSL loop types that complicate the ordering process and restrict CLEC access to the most economical loops available, SL1 voice grade loops. Second, BellSouth has designed loop makeup systems that preclude Data Coalition from qualifying a particular loop and then ordering that loop as an SL1 voice grade loop. Finally, BellSouth refuses to mark loops qualified and ordered by CLECs to prevent those copper loops from being rolled to fiber.

The evidence in this case demonstrates the following:

- CLECs need only a plain copper, voice grade loop to provide DSL service.
- There is no distinction between the SL1 loop and the ADSL, HDSL, UCL loops, except that BellSouth requires CLECs to buy loops labeled "DSL."[8] BellSouth will not allow CLECs to qualify and order a SL1 loop for DSL electronically. Even if a CLEC orders an SL1 loop manually, BellSouth refuses to mark that loop so that it is not rolled to fiber, destroying the DSL connection.
- BellSouth has the highest rates for DSL loops in the country because it has chosen to provision all DSL loops (ADSL, HDSL, UCL) through the "designed loop" process, which provides no benefits to CLECs but greatly increases the cost of the loop.
- Data Coalition expert witness Mr. Fassett has described reasonable tasks and task time necessary for provisioning an xDSL loop that should be adopted by this Authority.

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[6] The "x" in xDSL is a placeholder for a variety of types of DSL including HDSL, ADSL and SDSL.

[7] BellSouth offers five xDSL capable loops: the ADSL-capable, the HDSL-capable, the UCL-short, the UCL-long, and the IDSL-capable loop.

[8] As is explained in detail below, BellSouth allows CLECs to buy SL1 loops. However, at any time and without warning, BellSouth may roll those loops from copper to fiber, thereby destroying the DSL connection. Because BellSouth refuses to mark those loops as being used for DSL, CLECs are forced to buy the same loop facility (labeled ADSL, HDSL or UCL), at much higher rates.

- BellSouth's cost proposals are riddled with unnecessary work groups and activities, overstated task times, and undocumented and unsupportable assumptions.

Each of these points will be discussed below.

A. The Simple xDSL Capable Loop (ADSL, HDSL, UCL)

What CLECs need is very simple. First, CLECs need a voice grade copper loop, unencumbered by load coils, excessive bridged tap, and other interferors. Since xDSL services were created to work on existing voice grade copper loops, CLECs do not need and should not be required to pay for anything more than a voice grade loop.[9] CLECs need to be able to find and reserve, using BellSouth's loop makeup data, loops that meet their individual technical specifications. CLECs then need the ability to order the loop they choose, without having to wade through the confusing array of BellSouth loop "products" that are nothing more than labels placed on loops for BellSouth's purposes of radically changing the cost to a CLEC.

As the Data Coalition's expert witness Mr. Starkey explained, length limitations of xDSL capable loops are artificial.[10] BellSouth should offer a single type of two-wire xDSL capable loop without any of these artificial limitations on loop length, just as Sprint offers in this state. Furthermore, the Data Coalition's outside plant engineering expert, Mr. Fassett, testified that in a forward looking network, the facilities used to provide xDSL services are identical or nearly identical to those used to provide voice-grade services.[11] The evidence demonstrates that irrespective of the labels BellSouth places on the loops, xDSL loops are simple voice grade loops.

Yet, BellSouth has proposed rates for five different 2-wire xDSL capable loops in this proceeding: the ADSL, HDSL, UCL- short, UCL-long, and IDSL/UDC (which is the ISDN loop for IDSL service) loops. Interestingly, although it offers this wide variety of loop "products" based on its own technical specifications, BellSouth does not guarantee that any of its xDSL capable loops

[9] Fassett Pre-Filed Rebuttal, p. 18-19.

[10] Starkey Pre-Filed Rebuttal, p. 12.

"products" (ADSL, HDSL, UCL short or long and IDSL) will support any particular type of xDSL service.[12] In fact, BellSouth specifically disclaims that the loop will support any particular service whatsoever. That is why the loops are called "ADSL-capable" and "HDSL-capable."

With the exception of the IDSL loop that BellSouth will provision over fiber, all of BellSouth's xDSL capable loops are defined by BellSouth as all-copper and are distinguished – unlike the same loop used for voice – according to loop length. Essentially, these loop "products" are labels for how long the customer's existing copper loop is. The HDSL loop is limited to 12,000 feet. The ADSL loop is limited to 18,000 (including 2,500 feet of bridged tap), and the UCL-short can be 18,000 feet and can have an additional 6,000 feet of bridged tap.[13] The UCL-Long is a copper loop longer than 18,000 feet.[14] BellSouth does not alter the length of loops, except by removing excessive bridged tap upon request. The loop going to a particular customer's premise is however long it is no matter the label BellSouth uses for that loop. If the customer happens to have a loop 10,000 feet long, BellSouth could label that loop SL1, HDSL, ADSL, or UCL without any impact on how well the loop would support of a CLEC's xDSL service. If that same customer is 15,000 feet from the central office, BellSouth will not sell, and CLECs cannot buy, an HDSL loop to that customer. Nonetheless, the 15,000 foot loop could be labeled SL1, ADSL, or UCL and could support xDSL services. In essence, BellSouth inappropriately and uniquely seeks to limit what services a CLEC can provide over the customer's existing loop through its xDSL loop definitions. It also seeks to recover from the CLEC, and thus ultimately from the end user, a much higher price for the existing loop.

Simply put, BellSouth is the only party concerned with whether the loop is labeled as an SL1, UCL, ADSL or HDSL loop. When BellSouth labels the loop an xDSL capable loop, its nonrecurring charge skyrockets. When that identical loop is labeled an SL1, the substantially lower voice grade

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[11] Fassett Pre-Filed Rebuttal, p. 18.

[12] Tr. Vol. VC, Greer Cross, p. 212-213.

[13] Milner Pre-Filed Direct, p. 10-11.

loop rate applies. For example, if the CLEC used BellSouth's loop makeup data to determine that a loop 10,000 feet long could be reserved to service a given customer, depending upon whether the CLEC ordered (or was required to order) the loop as an SL1, UCL, ADSL, or HDSL loop, the nonrecurring charge imposed by BellSouth would vary from $31.00 (SL1), $199.70 (UCL-short), $187.34 (UCL-long), $198.59 (ADSL), or $201.24 (HDSL). The fundamental question then becomes, what are CLECs getting for all of this additional money they are being asked to pay? The answer: Nothing.

Numerous BellSouth witnesses testified that CLECs were free to order an SL1 loop and place any type of service they wanted on that loop.[15] In reality, however, BellSouth has designed systems that severely limit a CLEC's ability to do so. As previously discussed, a CLEC wishing to provide xDSL service needs to be able to look at the loop makeup information on a particular loop. Once the CLEC determines from that information, that the specific loop is suitable for its purposes, that CLEC needs to be able to order that exact loop. It is at this point that BellSouth's artificial loop labels and rate distinctions between voice grade loops and the various xDSL capable loops are the most absurd.

BellSouth's OSS witness Pate admitted that the loop information database, Loop Facilities Assignment Control System ("LFACS"), does not distinguish, identify or label loops as ADSL, HDSL, UCL, or SL1.[16] LFACS simply inventories segments of loops and the physical characteristics of those segments (length, fiber or copper, etc.). Once a CLEC accesses LFACS and identifies the loop it wants to obtain, the CLEC then needs to reserve that loop for its use. BellSouth might label that loop as a UCL or an ADSL, but the CLEC would want to order it as a simple voice grade SL1 loop.[17] **BellSouth's ordering system will not allow CLECs to do that.** When Director Malone inquired why the system was designed initially with those limitations, BellSouth's witness Pate was unable to supply

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[14] Milner Pre-Filed Direct at 11.

[15] *See, e.g.* Tr. Vol. VD, Latham Testimony, p.237.

[16] Tr. Vol. IIIA, Pate Cross, p. 64.

any meaningful answer.[18] Through this design restriction, BellSouth precludes CLECs from using the electronic loop makeup and ordering process to identify, select, reserve, and order a SL1 voice grade loop that the CLEC understands will serve its needs. Instead, BellSouth has chosen to lock CLECs into BellSouth's byzantine designed loop structure, which unnecessarily inflates the costs of a simple voice grade loop.

If CLECs were permitted to use loop makeup information to select and order a loop of their choosing, the only thing needed to distinguish between a voice loop and an xDSL loop would be some sort of identifier in the BellSouth records that indicates that the loop is supporting an xDSL service. That way, xDSL providers and their customers will not be inadvertently rolled from a loop that supports xDSL (all copper) to a loop that does not support xDSL (copper and fiber). BellSouth already employs this type of identification of loops used for xDSL services, since the IDSL/UDC loop is nothing more than an ISDN loop specifically identified as being used to provide xDSL services.[19] There is no additional cost whatsoever for identifying an ISDN loop as a IDSL/UDC loop.[20] Just as the identification of a loop as supporting IDSL insures that the loop will be properly provisioned for IDSL services, the identification of a loop as supporting xDSL will prevent that loop from being rolled to fiber. BellSouth has offered no evidence showing that this cannot or should not be done. In fact, to the contrary, BellSouth is already making this type of identification of the IDSL loop. Thus, just as BellSouth identifies IDSL loops as distinct from ISDN loops without a cost difference, so should BellSouth identify xDSL capable loops as distinct from SL1 loops without a cost difference.

BellSouth has refused to allow CLECs to order SL1's electronically. Further, BellSouth refuses to label these loops so they will not be rolled to fiber, destroying the DSL connection. Therefore, CLECs must buy loops labeled ADSL, HDSL, or UCL. The Authority should set rates for

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[17] *Id.* at 65-66.

[18] Tr. Vol. IIIA, Pate Cross, p.58-60.

[19] Tr. Vol. VD, Latham Testimony, p. 228-229.

those loops at the rates recommended by Mr. Fassett or, in the alternative, at a rate no higher than the SL1 rate.

B. BellSouth Failed to Distinguish an SL1 from a UCL, ADSL or HDSL Loop, Because there is No Difference Other Than Price

To comprehend BellSouth's rationale for establishing its mystifying array of loops, the TRA staff asked a series of questions about the difference between a copper, voice grade SL1 loop and one of BellSouth's xDSL loops, the UCL. One difference, the nonrecurring rate, is obvious. The difference, however, in nonrecurring charges all relate to the designed loop provisioning process BellSouth requires for xDSL loops. The central question is why does BellSouth require this expensive and time consuming process. The TRA staff provided BellSouth with an opportunity to explain to the Authority the actual differences between a UCL loop (which has a proposed $199.70 nonrecurring charge) and the SL1 loop (which has a $31.99 nonrecurring charge).[21] BellSouth failed to explain the differences. In fact, BellSouth admitted that the physical loop facilities themselves are exactly the same.

> BellSouth does not disagree with the CLECs that the physical copper loop that you may have ordered up as an SL1 may still be the same identical loop that we would provide you for a UCL.[22]

There is no argument that the facility that BellSouth delivers to the CLEC who orders a UCL is any different than the facility that BellSouth delivers to a CLEC ordering an SL1. Moreover, BellSouth witness Milner testified that all of BellSouth's loops are qualified as SL1 loops. ADSL, HDSL, and UCL loops are merely subsets of the large group of SL1 loops. There is no ADSL, HDSL

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[20] *See* Ruscilli Pre-Filed Direct Testimony, Ex. JAR-1.

[21] Tr. Vol. VC, Greer Cross, p. 214-216.

[22] Tr. Vol. VC, Greer Cross, p.215.

or UCL loop that cannot not also be classified as a SL1 loop. Again, the underlying plant facilities are the same.[23]

Acknowledging that the underlying physical facility is the same, BellSouth attempted to justify its use of the design process arguing it was necessary "for us [BellSouth] to assure you [CLEC] that we maintain that loop . . . so that you will be assured that your service will continue to work [sic] you need the UCL."[24] The irony of that position, however, is that BellSouth specifically disclaims that any of its xDSL loops (the ADSL, UCL-S, or UCL-L) will support any service or any particular bit rate. In fact the TRA staff questioned BellSouth witness Greer on that very subject:

> Q: Does BellSouth guarantee a data transmission rate or data performance on xDSL designated loops or ADSL loops?
>
> A: For their unbundled xDSL loops, no we do not guarantee a speed of any sort.
>
> Q: Does BellSouth guarantee a data transmission rate or data performance on unbundled copper loops.
>
> A: No, sir, on none of those four. HDSL, ADSL, UCL. . . . None of those are there any guarantees as far as a performance of the data.
>
> Q: Does BellSouth guarantee a data transmission rate or performance on SL1 loops?
>
> A: Absolutely not.[25]

When these three excerpts from BellSouth's testimony are considered together, several points become clear. First, the UCL, ADSL and HDSL loops are the exact same copper facility as the voice grade SL1 loop. Second, BellSouth does not guarantee that any DSL service will work on any xDSL loop (ADSL, HDSL, UCL) or on the SL1. Since the same physical loop can be an SL1 or a UCL, the

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[23] Tr. Vol. IIB, Milner Cross, p. 70. See also, p. 78 ("Q: But we've agreed that the exact same loop could either be called an SL1 loop or an ADSL loop by BellSouth? A: We have.").

[24] Tr. Vol. VC, Greer Cross, p. 215.

[25] Tr. Vol. VC, Greer Cross, p.212-213; see also BellSouth's Response to Broadslate's Revised First Interrogatories, Item No. 33 (admitted as Exhibit 14).

only possible distinction between an SL1 loop and the UCL (and ADSL, HDSL) are xDSL specifications to which BellSouth commits to maintain the loop.

BellSouth witness Milner testified that BellSouth engineers and maintains xDSL loops to set engineering criteria. Specifically, BellSouth's technical specifications for its xDSL loop product offerings are set forth in BellSouth Technical Reference 73600.[26] However, that document and those technical specifications are developed exclusively by BellSouth. Mr. Milner stated, ". . . the document itself is a BellSouth document. And the offerings [the various xDSL loop types and their specifications] themselves, are BellSouth offerings, so I think no one else could prepare that document other than BellSouth."[27] Thus, BellSouth alone decides to what criteria DSL loops must be designed and established. As Mr. Milner admitted, "to make it [the xDSL loop] meet a certain set of criteria, there is a design process that's got to be gone through."[28]

BellSouth's argument supporting the designed loop process is circular. BellSouth created xDSL loop product offerings. BellSouth then established technical criteria for those xDSL loop product offerings. CLECs are required to order those specific xDSL loop products. BellSouth must then deliver the loops, matching the criteria set forth in the BellSouth developed technical requirements document. To ensure that it does so, BellSouth implements the designed loop process. Thus, why do xDSL loops have to be provisioned using the designed loop process? According to BellSouth, the answer is that BellSouth must ensure xDSL loops meet the technical specifications for xDSL loops. And where do those specifications come from? BellSouth developed and implemented them. Did CLECs request this designed process? No.[29] Is this process necessary to deliver loops for DSL service? No.[30]

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[26] Tr. Vol. IIB, Milner Cross, p. 80-82.

[27] *Id.*

[28] *Id.*

[29] Tr. Vol. IIB, Milner Cross, p. 81.

[30] Fassett Pre-Filed Rebuttal, p. 18.

BellSouth's witness, Mr. Greer, best summarizes the real reason BellSouth requires the designed loop process::

> The bottom line is, the network is geared for POTS service, telephone service. That is still predominant use of our network is message, POTS, plain old telephone services, 1FRs and 1FBs, dial tone.
>
> Yes, data is growing, but the network has been geared toward this primary service. **Anything that is different from that needs to be treated with a different way of handling it.** And we've been doing this for years and years. . . [31]

Even though BellSouth admits that the exact same facilities can be used for plain old telephone service and for DSL, BellSouth still requires this antiquated, designed loop process because DSL is "different." As Director Greer noted in questing BellSouth witness Mr. Greer, at least part of the reason BellSouth seems to require the designed loop process for xDSL loops is because BellSouth has always done it that way.[32] Given the legal requirement that nonrecurring charges be based upon forward-looking costs,[33] that backward-looking explanation does not justify forcing CLECs to pay $150 to $250 more in nonrecurring charges for each DSL loop they purchase.

C. BellSouth's xDSL Loop Rates are Among the Highest in the Country Because of BellSouth's Required Designed Loop Process

BellSouth's unwarranted assumption that it must provision xDSL capable loops via the expensive and time consuming "designed loop process" results in "nonrecurring charges far in excess of the nonrecurring charges adopted by other state commissions for xDSL capable loops."[34] For example, in Washington, Texas, Missouri, Oklahoma, Illinois, and Michigan, CLECs can buy an xDSL loop for less than $40.00 nonrecurring. In the BellSouth region, however, the designed loop process

[31] Tr. Vol. VB, Greer Cross, p. 122 (emphasis added).

[32] Tr. Vol. VC, Greer Cross, p. 172.

[33] 47 C.F.R. §51.507(e).

[34] Starkey Pre-Filed Rebuttal at 23. Mr. Starkey testified that BellSouth's NRC's for xDSL loops were between 285-1329 percent more expensive than other state commission ordered Bell Company xDSL loop rates. *Id.* at 24.

drives nonrecurring charges into the $180-$300 (or more) range. If such rates are adopted in Tennessee, consumers will suffer as a result of higher prices and less competition.[35]

One particularly expensive aspect of the designed loop process is BellSouth's assumption that 100% of xDSL loops require dispatch. Although BellSouth offered no support for that assumption (either in testimony or cost study documentation), Data Coalition witness Mr. Starkey noted numerous instances in which a potential xDSL loop would already be supporting a DSL service, when the CLEC orders it. For example, if Covad wins a business ADSL customer from BellSouth, then Covad would obviously prefer to use the loop already existing and provisioned to that customer for Covad's xDSL service. Presumably, this would save both Covad and its new customer (the former BellSouth customer) a high nonrecurring charge for provisioning a loop.[36]

Director Malone asked a series of questions of Mr. Greer that illustrates BellSouth's refusal to allow CLECs to make efficient use of existing facilities and required the "design" process for every loop, including those already in place. "it goes back to just because an ADSL technology presently working, that is no guarantee that it will support another ADSL technology.[37]

In ten pages of questions and answers on this subject, BellSouth witness Greer was unable to explain why a designed process is necessary in that scenario. Witness Greer repeatedly referenced BellSouth's concern that just because a loop is supporting BellSouth's ADSL service, "that doesn't mean that that same loop will support another DSL technology by another manufacturer of equipment at the same speed."[38] Presumably, BellSouth needed the designed process to insure that. Of course, as discussed

[35] *Id.*

[36] Starkey Pre-Filed Rebuttal, p. 18-20.

[37] Tr. Vol. VC, Greer Cross, p. 155.

[38] Tr. Vol. VC, Greer Cross, p. 165.

above, BellSouth does not guarantee that any xDSL loops will support any xDSL service at all, nor does it guarantee performance or transmission speeds.

The design process is not necessary to deliver loops that support DSL. BellSouth itself has proven this. In Tennessee, BellSouth has over 9,200 industrial class ADSL customers.[39] These are customers for whom BellSouth was first providing voice service and then BellSouth began to offer ADSL service on their existing phone lines (i.e. line sharing). BellSouth admits that it does not dispatch a truck to provision Line Shared lines. BellSouth admits that its ADSL industrial class ADSL lines are not provisioned using the complicated designed loop process. These lines were simple voice grade SL1-type loops, that BellSouth qualified by reviewing loop makeup data, and provisioned without a truck roll to the customer premise. That is exactly the process that CLECs advocate for all xDSL loops (ADSL, HDSL, UCL). CLECs want to review the loop makeup information on plain copper voice grade loops, select a loop that their engineers believe is capable of supporting their services, reserve and order it. BellSouth's own 9,200 ADSL customers prove this is the efficient way to deliver DSL service, while the designed loop process is anything but efficient.

D. Required Activities And Task Times For xDSL Loops

BellSouth loads its provisioning of xDSL loops with unnecessary tasks and work groups, resulting in enormous nonrecurring charges. As Mr. Fassett testified, the only activities required to process an order for an individual xDSL capable loop are the following: (1) processing and reviewing the CLEC service order; (2) placing the required jumper to connect the loop appearance in the central office to the pre-wired collocation cross connection; and (3) reporting back to the OSS that the work is completed.[40] These are the same steps required for a basic, voice-grade unbundled loop. There is no reason whatsoever that the nonrecurring work times or costs for xDSL capable loops should be higher

[39] BellSouth's Response to Covad First Set of Interrogatories, No. 8.

[40] Fassett Pre-Filed Rebuttal, p. 20-23.

than for a basic, non-designed loop. Using an average labor rate, the Data Coalition has proposed the reasonable, nonrecurring rates for xDSL loops in Tennessee.

In his direct testimony, Mr. Fassett provides a thorough discussion of how long it takes to process a CLEC order and to place the necessary jumpers to provision the loops. Given his thirty years of experience actually performing and supervising this work, his testimony provides reliable guidance about how this work is really done. BellSouth on the other hand, has proposed task times for provisioning xDSL loops in a very unrealistic manner, since time for each task is assigned to each loop. Mr. Fassett further explains that in the real world, central office work is generally done in batches.[41] A technician downloads multiple work orders at a time and performs them to maximize efficient use of his or her time. With an automated system, all work orders for the day are produced electronically for a technician. Even in a worst case manual environment, the technician would pull multiple orders at one time, organize them, and locate where the work needs to be performed. This works takes no more than 2.5 minutes per order to pull and analyze the order to connect the xDSL capable loop.

The next necessary provisioning step is to place the jumper connection that completes the xDSL loop itself. Placing a jumper to connect the loop appearance to the appearance of a cross connection to collocation space should take no more than a few minutes, even allowing for walking time.[42] A technician will know the frame well and the process of attaching a jumper to the frame is so routine as to be almost automatic.[43] Despite BellSouth's burden of proof in this case, there is no evidence in the record to contradict Mr. Fassett's express conclusion that it should take no more than a few minutes. BellSouth's witness Greer admitted that he had never provisioned xDSL loops and never

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[41] *Id.* at 21.

[42] Fassett Pre-Filed Rebuttal, p. 22.

[43] *Id.*

supervised those who did this provisioning work.[44] His testimony failed to justify any of the specific task times set forth in the BellSouth cost study. Thus, the only affirmative evidence the Authority has to consider is the expert opinion of Mr. Fassett.

The final step necessary to provision an xDSL loop is to close the order in the OSS, so that the CLEC knows its order has been completed. Since no analysis is required, closing an order should take less time that opening an order.[45] An efficient technician will do this work in batches, several orders at a time. This saves unnecessary time and effort that seems to be built into every BellSouth assumption. On average, it should take about 1.5 minutes to report work complete for each line on an order.

Finally, for the very small percentage of times that an order cannot flow through the system without manual intervention (a percentage which should be no more than 2% in a forward looking OSS,)[46] it should take an average of 15 minutes to correct errors in facility assignment or work assignments. This assumption regarding the correction of errors in the ordering process would legitimately take an additional 0.3 minutes on a per-line basis. These tasks and task times are more fully detailed in Mr. Fassett's testimony.

In conclusion, CLECs in Tennessee need only a plain copper voice grade loop to deliver DSL service. There is no difference between the facility used for an SL1 and a facility provisioned as an ADSL, HDSL or UCL loop. Since CLECs do not seek and BellSouth does not offer guarantees about what services these loops will provide, there is no difference between an SL1 and an xDSL loop (ADSL, HDSL, UCL). Therefore, there should be no difference in the nonrecurring charges among these loops.

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[44] Tr. Vol. V, Greer cross at 126-128.

[45] Fassett Pre-Filed Rebuttal, p. 23.

[46] Fassett Pre-Filed Rebuttal, p. 23.

E. BellSouth's Cost Study for Its Designed Loop Process Includes Numerous Tasks That Are Unnecessary, Greatly Overstated, Or Redundant

Even if the Authority forces CLECs to endure BellSouth's cumbersome, expensive "design process" to obtain a simple loop, BellSouth should only be permitted to recover costs based on efficient task times appropriate in a forward-looking network. BellSouth's nonrecurring cost studies do not comply with the foundational requirement of a forward-looking cost analysis because they were not based on work flows, task times or probability factors considering a forward-looking network design. Instead, BellSouth derived its nonrecurring cost study inputs based on "processes that have been in place for many years."[47] BellSouth considers minor modifications to its embedded or "current state" by considering process modifications that are planned only in the immediate future, not the long-run. Thus, the BellSouth cost studies fail to meet federal pricing rules.

In support of the task times in its cost study and other assumptions, BellSouth offered the testimony of Mr. Greer.[48] By his own admission, his job was to "validate" the task times in the BellSouth cost study. Also by his own admission, Mr. Greer had never placed jumpers, supervised those who did, or performed central office technician work. He was not an outside plant engineer, nor had he ever been employed to supervise their work. In short, he had no direct experience in provisioning xDSL loops. Nonetheless, he offered the tepid testimony that BellSouth's cost study estimates were "reasonable."[49] Mr. Greer testified,

> No - I do not agree that they're unreasonable [task times for xDSL loop provisioning]. As I've said, these are processes that have been in place for many years . . . I'm one of those people who can say -- some people say, been there, done that. Well, been around, I haven't done it, but I've associated with many people. So these times are what it takes to get the job done.[50]

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[47] Tr. Vol. VB, Greer Rebuttal Testimony, p. 123.

[48] Vol. VB, Greer Rebuttal Testimony, p. 126-127.

[49] *Id.*

[50] Vol. VB, Greer Rebuttal Testimony, p. 126-128.

In contrast, the Data Coalition's expert engineering witness, Mr. Fassett has over 30 years experience in outside plant engineering.[51] Mr. Fassett testified that he had designed and deployed all types of outside plant facilities (DLC, copper and fiber feeder and distribution cable), managed massive engineering design upgrade projects, managed enormous outside plant engineering record conversions, and been responsible for operations and engineering aspects of both small and large ILECs.[52] The Data Coalition has provided specific expert testimony, presenting realistic task times and activities for which DSL providers should be charged.[53] These task times should be adopted.

Furthermore, the evidence shows that BellSouth greatly inflated the task times for multiple aspects of provisioning, including, among others, the following:

- First among BellSouth's erroneous assumptions about provisioning xDSL loops are the task times associated with engineering. The BellSouth study assumes that it will take a skilled Outside Plant Engineer almost 1 hour to conduct a manual loop makeup inquiry on every xDSL loops. Yet, BellSouth admitted that LFACS (its loop assignment system) contains some information about every loop in the BellSouth system.[54] Additional detailed information will be available electronically in LFACS on 80% of the loops in metropolitan areas such Nashville or Memphis. Thus, 80% of the time in areas where BellSouth experiences high DSL order volumes, BellSouth's outside plant engineers will need to spend only a few minutes gathering loop makeup information from LFACS and returning it to CLECs.[55] When deposed about these proposed task times during the Florida UNE pricing case, the BellSouth subject matter expert on Outside Plant Engineering admitted that generating loop make up information from LFACS took less than 5 minutes.[56]

  When an Outside Plant Engineer needs more information that what is in LFACS, the engineer must consult paper plat records (since BellSouth has chosen not to upgrade its Tennessee plats electronically on MapViewer, as it has in other states). BellSouth offered no information in the record about how long it took to perform a search of either the plats or to research jobs.[57] Nonetheless, at 1 hour per loop BellSouth has assumed that a BellSouth engineer, working with plant records for a central office with which he is familiar, would only be able to perform 7-8 loop makeup inquiries per day.[58] A more reasonable time for this task is a few minutes for a loop for which information is available electronically (essentially 80% of the time), and no more than an

[51] Fassett Pre-Filed Rebuttal, p. 5.

[52] Fassett Pre-Filed Rebuttal, p. 5.

[53] Fassett Pre-Filed Rebuttal, p. 20-25.

[54] Pate Pre-Filed Direct, p. 7.

[55] Fassett Pre-Filed rebuttal, p. 33.

[56] Fassett Pre-Filed rebuttal, p. 33.

[57] *Id.*

[58] Fassett Pre-filed rebuttal at 33.

hour when the engineer must consult paper records.[59] A reasonable cost study, on average, should not assume more than 30 minutes for this entire group's work.[60] The record contains no support for BellSouth's proposed 113 minutes for their group's work.

- BellSouth assumes 20 minutes of work for wiring a circuit at a collocation site by its Central Office I&M personnel. As Mr. Fassett explains, this is work that should take no more than 11 minutes.[61] Mr. Fassett explained that his 11 minute estimate was required if, and only if, the Authority accepted BellSouth's designed loop process and required the use of test points.[62] After all, the main task involved is quite simple: running jumpers. Every central office technician has surely mastered an efficient manner of provisioning jumpers. Likewise, that technician will be familiar with where the termination points are located so that he can group several orders together, and perform the work in less time. The record contains no support for BellSouth's inflated task time.

- BellSouth assumes 194 minutes of outside plant or field work plus 20 minutes of travel time for every ADSL loop order. Mr. Fassett testified that this work, however, should not be included in a forward-looking analysis of nonrecurring costs because it is already captured in the recurring cost analysis.[63] Furthermore, xDSL loops will not require dispatch of outside plant technicians "any more often than is required for a basic voice grade loop, which BellSouth assumes will be required for only 20% of the loops."[64] Moreover, all of the tasks can be performed by a qualified, efficient technician in 50 minutes total. The record contains no support for BellSouth's 194 minute assumption for this work.

- BellSouth assumes 100% dispatch rates for xDSL loops. That means that BellSouth will never be able to provision an xDSL loop without dispatching a truck to the customer premise. Mr. Fassett and Mr. Starkey directly rebut this assumption. First, ILECs design their plant to eliminate, to the fullest extent possible, the expense of dispatching a technician to provision an order.[65] Second, there are numerous provisioning scenarios that would not require a dispatch.[66] The record contains no support for BellSouth's 100% dispatch assumption.

- BellSouth assumes 255.11 minutes for essentially coordinating and testing loops, work that CLECs do not need.[67] No time is required for this activity in a forward-looking network because these functions will not be performed manually (if at all). BellSouth assumes that it will take its Unbundled Network Element Center ("UNEC") work group 54 minutes to simply test continuity on xDSL loops.[68] This assumption is absurd. Continuity testing is "one of the most routine, simple and rapid activities in central office operations."[69] On the rare occasion that such testing is necessary, it is typically performed "at the same time a connection is made and involves little more

[59] *Id.*

[60] *Id.*

[61] Fassett Pre-Filed Rebuttal, p. 40.

[62] *Id.*

[63] Starkey Pre-Filed Rebuttal, p. 17-20.

[64] Starkey Pre-Filed Rebuttal, p. 17-20.

[65] Fassett Pre-Filed Rebuttal, p. 14.

[66] Starkey Pre-Filed Rebuttal, p. 17-20.

[67] Fassett Pre-Filed Rebuttal, p. 36.

[68] *Id.*

[69] *Id.* at 37.

than clipping standard test apparatus onto the newly completed connection."[70] This test simply double checks that BellSouth has done its job: provisioned a loop that is properly cross connected all the way from the central office to the customer premise.[71] The test itself takes no more than a minute and should be conducted only once.[72] Altogether, the efficient equivalent of these tasks should requires no more than five minutes.[73] The record contains no support for BellSouth's 255.11 minutes for those tasks.

In addition to the inflated task times assumed in the BellSouth studies, there are also numerous duplicative processes in BellSouth's design process that an efficient provider would eliminate. Examples of these duplicative processes abound; the following are a few examples of unnecessary and costly duplicative BellSouth processes:

- BellSouth assumes that the Complex Resale Service Group ("CRSG") spends 50 minutes on all orders with a service inquiry to do the following: "receive[s] firm order SI from CLEC and screens documents; CRSG prepares/sends transmittals to OSPE for verification of facility availability. Upon completion of the job, CRSG informs CLEC facilities are available."[74] Essentially, this group receives an order and translates that order into a different format for Outside Plant Engineering ("OSPE") and, at the end of the process, sends notice back to the CLEC that the service inquiry is complete. A mechanized OSS performs these functions automatically. It follows that a forward-looking cost study should allow no time for performing those tasks manually.

- BellSouth claims that its LCSC group takes 45 minutes to screen and process orders, tasks that electronic OSS systems would process automatically. Essentially, the LCSC "screens" the same order previously "screened" by the CRSG. BellSouth neither explained why this task would ever be done more than once per loop order nor provided any work papers in the cost study to explain how it developed the 45 minute assumption. In the absence of such explanation, the record contains no support for BellSouth's claim that 45 minutes of work is performed by the LCSC.

- BellSouth claims that part of the time spent by the UNEC (255.11 minutes total) in the provisioning process is spent "ensuring dispatch," meaning that a BellSouth employee is manually checking to make sure that a dispatch has been properly scheduled by the BellSouth mechanized system.[75] The dispatch should simply be scheduled properly. If BellSouth needs to take manual steps to ensure that its mechanized systems are functioning properly, CLECs should not be required to pay for such steps.

- Likewise, BellSouth assumes that the Work Management Center ("WMC") takes 15 minutes on every loop to "coordinate dispatched technicians." BellSouth fails to provide a word of explanation regarding how this time was developed or what exactly is supposed to take place for

[70] *Id.*

[71] Fassett Pre-Filed Rebuttal, p. 37

[72] *Id.*

[73] *Id.*

[74] Fassett Pre-Filed Rebuttal, p. 31.

[75] Fassett Pre-Filed Testimony, p. 38.

the reported 15 minutes. BellSouth's alleged need for yet another layer of manual coordination is contrary to efficient engineering practices using forward-looking OSS.[76]

These are only a few examples of the unnecessary, duplicative or inflated work activities and work times included in BellSouth's cost studies. These examples demonstrate, however, that BellSouth's studies cannot withstand close scrutiny. Moreover, they illustrate that BellSouth has assumed the worst kind of backward-looking and inefficient processes and procedures to provision xDSL loops. BellSouth has made no attempt to model streamlined work activities to more efficiently provision their products. In fact, many work groups seem to be present in the process only to double check mechanized system work or work supposedly done by other work groups at BellSouth. The proper assumptions for work activities and task times are provided in Mr. Fassett's testimony and that testimony compromises the only evidence before the Authority supporting TELRIC based forward looking costs for providing xDSL loops in Tennessee. Consequently, the Authority should rely upon the task times proposed in witness Fassett's testimony and should reject the analogous times proposed by BellSouth.[77]

II. LINE SHARING

As previously noted, DSL was developed to expand the utility of the existing voice grade telephony infrastructure. Some types of DSL require a separate stand alone loop (see supra), but one of the most popular varieties of DSL -- ADSL (which is the most popular type of DSL for consumers/home users) -- can be placed on the exact same facilities as voice service, since data transmissions travel on the high frequency of the local loop while voice service travels on the lower frequencies. A single voice grade loop can and does support both voice service and DSL in a process called Line Sharing. BellSouth, like other incumbent carriers, has taken advantage of this technology and its monopoly control of the telephone network to provide DSL service to tens of thousands of its

[76] Fassett Pre-Filed Testimony, p.39.

voice customers region wide, at little or no additional cost to BellSouth. By denying CLECs the opportunity to line share, BellSouth and Sprint acted in their own self-interest and leveraged their control of access to end users into dominance of emerging markets for new telecommunications services such as DSL-based services. Thus, while competitors were forced to purchase a separate, stand-alone loop to provide DSL, BellSouth and Sprint were aggressively promoting their consumer DSL offering that is provided over a single loop, shared with the voice traffic, at very little incremental cost to the incumbent. In Tennessee alone, BellSouth has over 9,200 ADSL customers.[78]

In November 1999, the FCC recognized that the ILEC's refusal to allow competitors to buy just the high frequency portion of a voice grade loop impaired competitor's ability to compete.[79] As a result, the FCC ordered that ILECs unbundle the high frequency portion of the local loop as a separate UNE (also known as "Line Sharing"). Until the FCC ordered otherwise, incumbents reserved for themselves (or their data affiliates) the opportunity to provide DSL-based services over the same lines that they use to provide voice services. In establishing the high frequency portion of the loop as a UNE, the FCC also set out specific rules addressing the technical limitations of Line Sharing, operational and ownership issues concerning the line splitter, and pricing of Line Sharing.[80]

Consumers obtain significant benefits from Line Sharing arrangements, because all voice and data needs can be met using a single loop. First, Line Sharing reduces the cost and time required to install or activate additional services into a consumer's location. Second, Line Sharing conserves limited outside plant resources because consumers will not require a second loop to provide full-time

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[77] Fassett Pre-Filed Rebuttal, p. 43 (providing a chart of reasonable task times in a forward looking network both with a designed loop process and without a designed loop process).

[78] BellSouth's Response to Covad's 1st Set of Interrogatories, Item No. 8. (Admitted as Exhibit 14).

[79] *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Dkt 98-147, *Third Report and Order, In the Matter of Implementation of the Local Competition Provisions of the 1996 Act*, CC Dkt 96-98, rel. Dec. 1999, at ¶ 29 (*"Line Sharing Order"*).

[80] *Id.*

data service.[81] In addition, CLECs will not be prevented from serving consumer data transmission needs due to lack of facilities, since an existing voice circuit can be used for xDSL in addition to basic voice service. Third, if the incumbent carriers properly cost and price those network elements that CLECs need for Line Sharing, consumers will get the benefit of lower pricing and a competitive market for broadband services. This is true because consumers will no longer pay for separate physical loops to meet their voice and data transmission needs. Rather, they need only pay for a single loop to meet both needs. Fourth, assuming that the Line Sharing network elements are properly priced, CLECs will enjoy the same competitive advantages as ILECs by being able to offer xDSL service over an existing plain old telephone or "POTS" lines. This will ensure true competition and it is that competition that continues to drive prices for consumers downward.

A. The Authority Must Set Reasonable Nonrecurring and Recurring Rates For Line Sharing

There are essentially four categories of costs for which forward looking rates must be set by the Authority: (1) nonrecurring charges for ILEC owned splitters, (2) nonrecurring charges for installing the line shared loop, (3) recurring charges for the splitter and related materials, and (4) recurring charges for the line shared loop. The evidence relating to each of these components will be discussed below.

1. BellSouth's Nonrecurring Charge for ILEC Owned Splitters Is Greatly Inflated (J.4.1, J.4.2)

- Inventorying splitters should be performed electronically, or in the alternative, in the reasonable times reported by the Data Coalition's engineering expert
- Any charges associated with this work should be capitalized and recovered as part of the recurring cost of the splitter

[81] For example, if a residential customer, the most likely consumer of ADSL service, has a POTS line, that customer can receive high-speed data over the same line through line sharing.

A splitter is the passive, non-electrical device that literally splits the voice traffic on a loop from the data traffic on that same loop. Located in the central office, the splitter is a simple piece of equipment that takes minutes to install. As the Data Coalition's witness Mr. Zulevic testified, there are four screws necessary to install the splitter.[82] Although BellSouth provides no specific information about how long BellSouth believes it takes to install a splitter, there are numerous unexplained costs in its recurring cost study indicating that BellSouth is assuming excessive work times and costs for splitter installation on a recurring basis.

Although the actual installation work is recovered in the recurring charge, BellSouth proposes a $371.63 nonrecurring charge every time a CLEC orders splitter capacity. This same charge applies irrespective of whether a CLEC orders 24 ports on a splitter or the entire 96 ports on one splitter. Although there is no written explanation for these charges, BellSouth's cost study reveals that it assumes it will take 4.0 hours for its network group and 4.41 hours for the engineering group to inventory the splitter circuit assignments.[83] This results in the high proposed nonrecurring charge. First, it makes no sense that CLECs must pay the same amount for work whether they buy 24 ports or 96 ports. In BellSouth's view, this inventorying work will either cost $15.48 per port or it will cost $3.87 per port. BellSouth cannot and does not explain how these work times are supportable. Second, the Data Coalition's expert Mr. Fassett testified that "the network aspect of this function is merely a matter of building the pertinent information into a standard database,"[84] the same activities that are performed mechanically for every cable in BellSouth's system. This 4.0 hour network function should be mechanical. Even if it were performed manually, it should take no longer than 30 minutes for 96 ports and less for 24 ports Likewise, no engineering work should be required to ready a splitter for use. Even if engineering were required, a point BellSouth has failed to prove, Mr. Fassett estimated that it

[82] Tr. Vol. IA, Zulevic Cross, p. 55-56.

[83] Fassett Pre-Filed Rebuttal, p. 48.

[84] *Id.*

would take no more than 30 minutes of engineering time for any splitter order. .Finally, as Mr. Starkey's testimony explains, all of the equipment in BellSouth's network used to support unbundled network elements must originally be installed and prepared for purposes of being used. In a properly constructed forward looking study, expenses associated with installing and preparing network facilities (including splitters) are added to the direct cost of the equipment (i.e., "material cost") so as to arrive at a "Total Installed Cost" (or a TIC). These TIC costs are then recovered from all carriers over the life of the equipment consistent with the amount of that equipment they use.[85] This makes sense for two key reasons. First, capitalizing all splitter costs insures that huge economic barriers to entry are not being created for a CLEC seeking to enter the market by using Line Sharing. Second, this method allows a CLEC to pay only for the amount of the splitter capacity it actually uses.[86]

In conclusion, the Authority should reduce the proposed nonrecurring charges for ILEC owned splitters to reflect the task times supported by Mr. Fassett's testimony. Those charges should then be added to the material price (discussed) below and recovered over the life of the splitter through recurring charges.

2. BellSouth's Proposed Nonrecurring Charge for the Line Shared Loop is Overstated (J.4.3)

- Manual pre-ordering and ordering functions should be accomplished electronically in a forward looking OSS
- Data Coalition's Line Sharing expert explained that less than 10 minutes of work in the central office is necessary to provision a Line Shared loop

BellSouth calls its installation charge for the Line Shared loop a "per Line Activation in the Central Office." (Element J.4.3) This nonrecurring charge of $39.39 purportedly seeks to recover costs incurred to actually process an order and to make the few cross connects in the central office required to provision a splitter. The evidence shows that this charge is overstated. First, as Mr. Fassett

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[85] Starkey Pre-Filed Rebuttal, p. 91.

[86] *Id.*

describes in detail in his testimony, a forward looking OSS would not require the manual handling of orders, manual review of existing electronic processes, or excessive time for work tasks.[87] All of the work times for the LCSC and the CRSG should be eliminated from these costs because those manual order processing groups would not exist in a forward looking OSS.

Furthermore, Mr. Zulevic explained in detail the relatively minor central office work required to provision a Line Shared loop. The only physical work required for the provisioning of a Line Shared loop is wiring the splitter configuration into the existing service, which involves removing one cross-connect on the MDF or COSMIC frame and replacing it with two new cross-connects. This process should easily be accomplished in less than 10 minutes. No additional time or work is necessary. Line Sharing does not require any work to be performed outside of the central office and the existing customer telephone number and cable pair are both reused.[88]

In conclusion, the Authority should eliminate task times for the LCSC and the CRGS and adjust the installation times to those recommended by Mr. Zulevic.

3. BellSouth's Recurring Charges for Splitter Are Unreasonable and Unsupported (J.4.1, J.4.2)

- BellSouth's proposed costs for the splitter are not supported by the evidence, so the material prices recommended by the Data Coalition must be adopted
- CLECs do not want and should not have to pay $1,676 for the Bantam Test Jack
- Inefficient placement of the splitter unnecessarily increases the cost of cabling for the splitter

BellSouth proposes a recurring cost for the ILEC owned splitter of $183.79 a month for 96 ports and $45.95 for 24 ports on a splitter. This charge apparently is intended to recover BellSouth

[87] Fassett Pre-Filed Rebuttal, p. 49.

[88] Zulevic Pre-Filed Rebuttal, p. 17.

material price of the splitter, installation of the splitter, including cabling and associated engineering.[89] The evidence produced at the hearing showed that BellSouth could not identify exactly what amounts this charge included for each. BellSouth's cost witness, Ms. Caldwell, was unable to explain the difference between *****BST PROPRIETARY** [redacted] **END PROPRIETARY*****.[90] In fact, Ms. Caldwell identified one of the primary problems with the cost study noting that, "I looked at the cost study and there's not any additional detail in there in terms of the exact number."[91] As a result, Ms. Caldwell admitted that the material price would have to be *****BST PROPRIETARY** [redacted] **END PROPRIETARY***** because that was "the only evidence I have right now with me."[92]

The Data Coalition introduced evidence proving that the material price for splitters should be further reduced. Attached as Exhibit 4 to Mr. Starkey's Pre-Filed testimony is a copy of an invoice from U.S. West to Covad for the exact Siecor 96 port splitter BellSouth uses for Line Sharing. Even though it is a smaller company than BellSouth, U.S. West has apparently used its enormous bargaining power with its vendor Siecor to obtain splitters for $2,784.00, a substantial reduction from the amount BellSouth indicates that it pays. This significant savings could be the result of BellSouth failing to negotiate the price of splitters aggressively, since this price would be passed on directly to CLECs, or it could result from the fact that that splitter equipment costs have fallen since BellSouth originally produced its splitter cost study. Either way, the splitter costs should be decreased to the $2,784 supported by the evidence in the record.

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[89] Tr. Vol. IB, Caldwell Rebuttal, p. 88 ("The actual investment for the test jacks and test shelf and equipment is in the recurring . . .").

[90] Tr. Vol. IC, Caldwell Cross, p. 144.

[91] *Id.* at 144-145.

[92] *Id.*

BellSouth's excessive material price is not the only error in its recurring splitter cost study. First, BellSouth's proposed recurring splitter cost study includes money for purchasing and installing a bantam test jack. Second, the BellSouth proposal includes unnecessary costs for additional cabling as a result of BellSouth's inefficient placement of the splitter 150 feet from the Main Distribution Frame.

The bantam test jack was a testing mechanism proposed by BellSouth for Line Sharing. Although it is not clear from the cost study, Ms. Caldwell testified that there is about $1670 of charges associated with the bantam test jack.[93] As Mr. Zulevic testified, this test jack was not requested by CLECs and is not used by any other ILEC in the country. Furthermore, Mr. Zulevic testified that "the bantam test jack is of very little, if any, use to a DLEC."[94] The bantam test jack allows a CLEC to test only from the splitter to the outside plant. It does not allow testing of the data line from the splitter back to the collocation area. Because of the way BellSouth has placed splitters, a data only line may travel from the splitter through several frames before it gets to the CLECs collocation space. As a result, BellSouth's errors in installation of those connections may cause the data line to fail, and the bantam test jack will not enable CLECs to isolate those problems. CLECs want full test access to all points of interconnection of the loop and do not need, and thus should not be required to pay, $1670 for the bantam test jack on each splitter which really provides no benefit to them.

Second, BellSouth's recurring costs are unnecessarily inflated by assuming that three cables of 150 feet each are necessary for each splitter installation.[95] As the Data Coalition's Line Sharing expert Zulevic testified, efficient use of central office space requires ILECs to place splitters on or near the Main Distribution Frame. As a result of such placement, cable costs for splitters would be greatly reduced. For example, U.S. West engineers install and fully equip the Siecor 96 port splitter in its

[93] Tr. Vol. IC, Caldwell Cross, p. 152; Starkey Pre-Filed Rebuttal, p. 94.

[94] Tr. Vol. IA, Zulevic Cross, p.46-47.

[95] BellSouth's Response to Covad's First Interrogatories, Item 15. (Admitted as Exhibit 14).

central office at a price of $291.48.[96] This includes placing and cabling to the splitter. This reasonable rate should be used by the Authority for all installation and cabling charges for splitters, rather than BellSouth's inflated and unsupported charges.

In conclusion, the Authority should reduce the splitter material price to $2,784.00, a reasonable cost obtained by U.S. West. Second, the Authority should remove all costs for the bantam test jack, $1,670.00. Finally, since BellSouth has failed to provide evidence supporting its installation charges, the Authority should only allow BellSouth to recover $291.48 for all tasks associated with engineering and installation of the ILEC-owed splitter.

4. BellSouth's Enormous recurring charge for the Line Shared Loop is Unsupported by the Evidence In the Record

- The Authority must reject BellSouth's $8.70 monthly charge since it is wholly unsupported by evidence in the record

BellSouth proposes an enormous charge of $8.70 monthly, purported to recover for Operation Support System ("OSS") upgrades solely for Line Sharing. The charge amounts to some *****BST PROPRIETARY** [redacted] **END PROPRIETARY***** in hardware and software expenses, which are totally unsupported by the record in this case. For explanation and clarification of this enormous proposed charge, there are essentially three places to look in the record: (1) the testimony (pre-filed and live) of cost expert Ms. Caldwell; (2) the testimony (pre-filed and live) of OSS expert Mr. Pate; and (3) any documents introduced by BellSouth supporting this charge. The failure of BellSouth to support its proposal through any of these three avenues will be discussed in reverse order.

First, it must be noted that the Data Coalition issued five different discovery requests seeking any and all documents supporting, planning for, discussing, analyzing or any way related to BellSouth's proposed OSS upgrades for Line Sharing and its enormous *****BST PROPRIETARY** [redacted] **END PROPRIETARY***** charge.[97] The Data Coalition likewise sought to depose

[96] Starkey Pre-Filed Rebuttal, Exhibit 4.

[97] See Covad's First Interrogatories to BellSouth, Items 21-26. (Admitted as Exhibit 14).

BellSouth's Line Sharing OSS expert, a request that was denied by the Authority on the grounds that BellSouth promised to have a witness testify at the hearing who could answer the Data Coalition's questions. In response to these requests, BellSouth produced six pages of spreadsheets purported supporting the ***BST PROPRIETARY [redacted] ***END PROPRIETARY monthly maintenance expenses for the OSS upgrade and the final 64 page Telcordia contract for the software work. Despite testimony that planning documents, budgets, business analysis, progress reports, and project plans existed, BellSouth produced none of those to the Data Coalition.[98] Furthermore, although it was free to do so, BellSouth refused to introduce the Telcordia contract into the record. Thus, for evidentiary purposes, it cannot be used by BellSouth to support or explain its OSS upgrade charges. The only documents in the record in support of that enormous ***BST PROPRIETARY [redacted] END PROPRIETARY*** charge are the cost study itself with the raw numbers and six pages on spreadsheets produced in response to Covad's First Interrogatories to BellSouth, Item No.22.[99]

An expenditure of that magnitude cannot be supported and explained by six pages of spreadsheets. BellSouth had an obligation to provide all information on this expense both to the Authority and to competitive carriers. Without documentation, competitors and their experts are unable to unravel the mystery of these charges and cannot determine whether they are appropriate. The FCC further explained that because ILECs were using Line Sharing to serve retail customers, the burden of providing OSS functionality for CLECs' Line Sharing was reasonable. The FCC reasoned that:

> the record indicates that incumbent LECs have already modified their OSS systems to accommodate their own xDSL products, and that those modifications and those required for line sharing are substantially similar. . . . The record also indicates that incumbent LECs can perform the incremental modifications to the existing ordering processes required to provide competitive LECs with access to

[98] Tr. Vol. IIIB, Pate Cross, pp. 118, 122, 128, 130.

[99] Introduced into evidence by BellSouth as Exhibit 14.

> the high frequency portion of the loop in an expedient manner and at modest expense.[100]

The Authority should therefore closely scrutinize BellSouth's cost studies that purport to show large expenditures allegedly necessary to support unbundled access to Line Sharing. Upon scrutiny, the Authority should reject the charges, such as the Line Sharing recurring charge imposed by BellSouth, that are not adequately supported.

BellSouth witnesses Caldwell and Pate likewise failed to offer sufficient support for these charges. Witness Caldwell testified only to the raw numbers in the cost study and refused to provide any information about the underlying validity of those numbers. In fact, BellSouth's own cost expert could not explain to the Authority how she came up with the $8.70 charge per month. She testified that the OSS charges are multiplied by a demand assumption and that is how the $8.70 is derived.[101] Nonetheless, she could not reconstruct those calculations on the stand from the information provided in the cost study. Likewise, she could not fully explain why the cost study filed by BellSouth on Line Sharing in June 2000 sought recovery of a monthly charge of $3.47.[102] As Director Malone noted, "[a] lot of this information is based on projections, estimates. What happens if the estimates and projections are off?"[103] Ms. Caldwell responded that BellSouth believed it was entirely up to BellSouth to decide if there was an error and to decide if that error warranted a revised rate.[104] Ms. Caldwell testified that BellSouth may, at its sole discretion, decide to offer a competitor a lower price, although she could offer no examples of when BellSouth had done so.[105]

Essentially, the Authority is being asked to take BellSouth's word for its assumptions about OSS upgrades and to allow BellSouth to be the sole proprietor of all information that might decrease

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[100] *Line Sharing Order* at 128.

[101] Tr. Vol. IC, Caldwell Cross, p. 165.

[102] Tr. Vol. IC, Caldwell Cross, p. 166-167.

[103] Tr. Vol. IC, Caldwell Cross, p. 170.

[104] *Id.*

the charge for Line Sharing OSS upgrades. As several Directors noted during the hearing, the Authority has the responsibility for accepting or rejecting assumptions made by BellSouth.[106] The Authority is being asked to "take a step of faith to just blindly accept the assumptions" made by BellSouth.[107] Moreover, competitors are being ask to suffer to effects of these baseless assumptions, through unreasonable and unlawful OSS upgrade charges for Line Sharing.

The final witness offered by BellSouth to support the enormous OSS upgrade charges was the OSS expert, Mr. Pate. His testimony confuses the issues more than it clarifies them. At any rate, his testimony does not and cannot support the dollar figures in the cost study for OSS upgrades. First, Mr. Pate's pre-filed testimony allocates a single paragraph to the discussion of the cost of the OSS upgrades for Line Sharing.[108] His written testimony says that ***BST PROPRIETARY [redacted] END PROPRIETARY*** will be spent by BellSouth for OSS upgrades. At the hearing, Mr. Pate acknowledged that the cost numbers in his testimony did not match the numbers in the cost study.[109] In his testimony at the hearing, Mr. Pate confirmed that the total amount BellSouth was in fact seeking to recover was that ***BST PROPRIETARY [redacted] END PROPRIETARY***.[110] Mr. Pate testified that his testimony focused on amounts set forth in the software development contract between BellSouth and Telcordia. He did not attempt to actually explain or support the final cost numbers in the BellSouth cost study.[111] His pre-filed testimony does not even mention the ***BST PROPRIETARY [redacted] END PROPRIETARY*** for maintenance of the OSS upgrades.[112] Ultimately, there is insufficient evidence in the record

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[105] *Id.* at 170-173.

[106] Tr. Vol. IC, Caldwell Cross, p. 131.

[107] *Id.* at 130.

[108] Pate Pre-Filed Direct, p. 17.

[109] Tr. Vol. IIIB, Pate Cross, p. 130.

[110] Tr. Vol. IIIB, p.99.

[111] *Id.* at 103.

[112] *Id.*

supporting any of these OSS upgrade charges. In summary, the following is an evaluation of the evidence in the record on these charges.

*****BST PROPRIETARY**

[redacted]

END BST PROPRIETARY ***

BellSouth has deprived the Authority and CLECs of the ability to evaluate these enormous charges. To accept them, the Authority must make a huge leap of faith that is unsupported by the evidence in the record. The evidence in the record shows that other ILECs such as SWBT Texas are authorized to recover OSS upgrade charges of 61 cents per line, while BellSouth seeks an enormous

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[113] Tr. Vol. IIIB, Pate Cross, p. 120-121.

[114] *Id.*

[115] Tr. Vol. IIIB, Pate Cross, p. 130.

[116] *Id.* at 110.

[117] *Id.* at 131-140.

[118] *Id.* at 135.

[119] *Id.*

[120] *Id.* at 117.

[121] *Id.* at 118.

$8.70.[122] To justify this exorbitant price, BellSouth has offered no credible evidence into the record. As a result, the recurring per line activation charge, J.4.3, must be rejected.

B. Equally as Important as Pricing, the Terms and Conditions Governing Line Sharing Will Determine Whether Competition in Tennessee Flourishes

The evidence shows that there are several critical terms and conditions that should be implemented in Tennessee to speed competitive services over Line Shared lines, including the following:

- ILECs should be required to offer three splitter ownership options: ILEC owned/ILEC maintained; CLEC owned/ILEC maintained; and CLEC owned/CLEC maintained
- Short intervals for provisioning Line Shared loops will drive ILEC performance
- Full test access to all points of interconnection is required
- ILEC-owned splitters should be placed on or near the Main Distribution Frame
- ILEC-owned splitters should be provisioned a port at a time and in bulks of 24 and 96 ports.

1. Splitter Ownership Options

CLECs need to be given a flexible menu of configurations for the location of the splitter equipment. Specifically, ILECs should be required to offer the following options: (1) an ILEC-owned splitter located on the main distribution frame ("MDF") or within 25 feet of the MDF; (2) a CLEC-owned/ILEC maintained "virtual" splitter located as close to or on the MDF; (3) a CLEC-owned splitter in the CLEC's physical collocation arrangement. As Mr. Zulevic noted, "DSL technology is advancing rapidly and maintaining all three options of splitter ownership in Tennessee will ensure that CLECs can adjust their splitter ownership choices to incorporate new developments. Locking CLECs into a single choice essentially denies them the ability to incorporate advancing technology into their business plans in Tennessee."

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[122] Starkey Pre-Filed Rebuttal, p. 102.

BellSouth has recognized that it is necessary for the ILEC to own the splitter to enable it to provide solely the high frequency portion of the loop to CLECs. BellSouth is the only ILEC that has embraced provisioning the splitters in all three ways: ILEC owned/ILEC maintained, CLEC owned/ILEC maintained, and CLEC owned/CLEC maintained. Sprint must be required to do so as well. CLECs need the flexibility to address the different central office configurations and space constraints unique not only to each ILEC but also to each central office. Each splitter ownership arrangement offers various advantages depending on the service the CLEC intends to deploy and its own needs, as well as the needs of the ILEC and its central office or remote terminal.

2. Short Intervals For Provisioning Line Shared Loops Will Drive ILEC Performance

Once the splitter is installed in a central office, the work required to provision Line Sharing is minimal. First, because the loop is being used to provide voice service, both the ILEC and the CLEC know that the loop is fully and properly provisioned to the customer premise. "[L]ine sharing does not require any work to be performed outside of the central office and the existing customer telephone number and cable pair are both reused."[123] Given that fact, the only additional work is routine placement of cross connections in the central office. As Mr. Zulevic noted, once the CLEC places an order for a Line Shared loop, the ILEC must make three cross connections in the central office. This work takes less than 10 minutes. Thus, it is reasonable for the Commission to establish short intervals for Line Sharing. Recognizing the additional work required to condition a Line Shared loop, the Data Coalition proposes the Authority adopt two Line Sharing provisioning intervals, one for loops requiring no conditioning and one for loops that require conditioning. To encourage ILECs to develop efficient practices, the Commission should establish intervals for ILEC provisioning of Line Shared loops that encourage process improvements. For loops requiring no conditioning, at the conclusion of a one hundred and eighty (180) day transition period from the Authority's order in this case, the interval should not exceed 24 hours. This interval is reasonable, if not generous, considering it should take an ILEC no more than 10 minutes physically to provision a Line Shared loop. For loops requiring conditioning, the Data Coalition proposes a five-business day interval.

Other state commissions have agreed with this analysis. As the New York Public Service Commission recently noted that a Line Shared loop should be delivered in less time than a standard loop[124]

The Illinois Commerce Commission has adopted the staggered 3-2-1 Line Sharing interval Data Coalition proposes. The Illinois Commission determined that since Line Sharing uses a working loop, which the ILEC has already provisioned to the customer's premises, it is reasonable that with experience accrued over time, the ILEC can provision Line Sharing to CLECs in one business day. [125] The Illinois Commission further recognized that the interval it adopted will promote advanced services deployment since "consumers would reasonably anticipate that data service, provided over an already existing line to his or her home, would be provisioned more quickly than if an entirely new line had to be installed."[126]

Given the huge demand for xDSL service, and the fact that the customer's choice of carrier will be framed by the length of time it will take to receive this service, it is vital that the Authority establish stringent provisioning intervals, especially when such an interval is well within reach. Moreover, with BellSouth's announced plans to provision 400,000 loops for its own retail DSL service in 2001,

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[123] Zulevic Pre-Filed Rebuttal, at 17.

[124] *Proceeding on Motion of the Commission to Examine Issues Concerning the Provision of Digital Subscriber Line Services*, Case No. 00-C-0127, Opinion and Order Concerning Verizon's Wholesale Provision of DSL Capabilities, Op. No. 00-12, at 5 (N.Y. P.S.C. Oct. 31, 2000)("*NY Line Sharing Order*").

[125] *Covad Communications Company and Rhythms Links Inc., Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone d/b/a Ameritech Illinois and for an Expedited Arbitration Award on Certain Core Issues*, Dkt. 00-312, 00-313, *Arbitration Decision*, Illinois P.S.C. August 17, 2000 at 26 ('*Illinois Line Sharing Order*').

[126] *Id.*

BellSouth has certainly developed the processes necessary to provision Line Shared loops. Since ILECs should be able to achieve even further shortening of the interval as it gains more experience and OSS upgrades are fully implemented, the Data Coalition's staggered interval process is reasonable.[127]

In order to phase in the intervals in a reasonable manner, the Data Coalition suggests that the Authority impose a transition process to drive the interval to the 24-hour mark 180 days after issuing its order.[128] Under this proposal, for the first 90 days after the Commission's order, the Line Sharing interval for loops that do not require conditioning would be three days. In the following 90-day period the interval would be 2 days. At the conclusion of the 180 day period, the permanent 24-hour interval would take effect for all ILECs in Tennessee.

3. Full Test Access to All Points of Interconnection Is Required

It is essential that the Authority require BellSouth to provide competitors access to the shared physical loop for testing purposes. Where a competitor owns the splitter and installs it in its collocation arrangement, clearly the competitor is entitled to unencumbered access to that splitter to perform any necessary testing.[129] However, competitors must have direct, physical access to *any* loop containing a high-bandwidth network element at the point where the combined voice and data loop leaves the central office for purposes of conducting testing associated with maintenance and repair. In order to have such access, competitors must be able to attach test equipment to the Line Shared loop's termination on BellSouth's MDF.[130]

BellSouth has agreed in its Line Sharing Interconnection Agreements with Covad to give test access only to the splitters themselves. The members of the Data Coalition need direct physical access to the loop at all cross-connect points of the splitter at the MDF or the IDF for testing its data services.

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[127] Zulevic Pre-Filed Rebuttal, pp. 17-18.

[128] The Data Coalition proposes intervals for loops requiring conditioning and loops that don't require conditioning, identical to those the Illinois Commission adopted in the *Illinois Line Sharing Order*.

[129] Zulevic Pre-Filed Rebuttal, p. 21.

This level of access is required so that CLECs can isolate troubles on the loop to identify what elements of the DSL or voice network, if any, need repair. With test access at this point, CLECs would be able to insure that they are working on the correct customer's line by using the automatic number identification ("ANI") feature. The CLEC would also be able to verify that the proper cross connect has been made for the customer's service. ILECs utilize this same test access to isolate trouble for their own customers. CLECs should be afforded the same opportunity to test for their customers.[131] Because BellSouth has offered no evidence disputing the need for full test access, the Authority should grant the CLECs the access requested.

4. ILEC owned splitters should be placed on or near the Main Distribution Frame

When an ILEC owns and maintains the splitter, the Authority should require that ILECs place the splitters they own or maintain for Line Sharing with CLECs on the Main Distribution Frame ("MDF") at the request of the Line Sharing CLEC. Such an approach not only reflects an efficient and cost-minimizing configuration that harmonizes with the FCC's pricing policies, but also is justified by evidence in the record.

As Mr. Zulevic explained, locating the splitters at or near the ILEC's MDF is both feasible and the most efficient configuration.[132] Placing the splitter at or near the MDF is the most efficient because it avoids long cable runs thus minimizing the expenses associated with the cable, including the labor to place the cable.[133] The inefficient configurations, like those proposed by BellSouth, also heighten the risk of service failures attendant with use of excessive tie cables and cross-connects.[134] Finally, the inefficient ILEC configurations increase the length of cable that carries the DSL signal from a customer's premises to a CLEC's DSLAM. In certain multi-storied central offices, the splitter

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[130] *Id.*

[131] *Id.*

[132] Zulevic Pre-Filed Rebuttal, pp. 11-13.

[133] *Id.*

configuration could add as much as 500 to 1,000 feet to the overall length of the cable, CLECs may be limited in their ability to offer xDSL service to some customers served by that central office, since DSL is a distance sensitive technology.[135]

Any time the ILEC chooses to place the splitter anywhere other than on the Main Distribution Frame or very near the MDF, such as BellSouth's assumption that the splitter will be located 150 feet from the MDF,[136] the ILEC should be deemed to be the "cost causer" of the increased number of tie cables and jumpers, and resulting increase in cost to provision Line Sharing. Therefore, if an ILEC chooses an inefficient location for equipment used by competitors, then CLECs should not have to bear cost of such inefficient and discretionary engineering practices. Rather, the ILEC should bear the extra costs caused by its inefficient practices .

5. ILEC owned splitters should be provisioned a port at a time and in bulks of 24 and 96 ports

When the CLEC owns the splitter, it should be required to provide splitter functionality to CLECs either a port-at-a-time or on a dedicated splitter shelf at-a-time basis. Failure to provide both of these options would deprive CLECs of the flexibility they need to accommodate the varying conditions they may confront. For example, shelf-at-a-time splitters (24) allow a CLEC to reap the benefits of plugging a cross connection/tie cable into a splitter shelf for express routing directly to its collocation arrangement. This avoids an unnecessary cross connection that would be required if, for example port one would be assigned to CLEC "A", port two to CLEC "B", etc. On the other hand, as a CLEC grows it might require slightly more capacity than a shelf, but not need more than a few additional ports. Only a choice between port-at-a-time and shelf-at-a-time purchasing will ensure that CLECs will not face the added costs that a less flexible offering would impose. The Illinois

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[134] *Id.*

[135] *Id.* .

Commission recognized the pro-competitive benefits of requiring both line-at-a-time and shelf-at-a-time provisioning of splitters and has required Ameritech Illinois to provide both options to requesting carriers.[137] Furthermore, from a cost perspective, Mr. Starkey explained that BellSouth could achieve a much higher use rate - or fill factor - by providing splitters a port-at-a-time.[138]

In contrast to the evidence in the record from the Data Coalition, BellSouth offered no explanation of why it limits its offering to purchasing either 24 or 96 ports at a time. Thus, the evidence in the record clearly supports the Data Coalition's position that ILEC owned splitter capacity should be provisioned a port-at-a-time as well as in bulks of 24 and 96.

III. BELLSOUTH PROPOSES UNWARRANTED AND EXCESSIVE CHARGES FOR LOOP CONDITIONING

Voice grade loops maintained to engineering standards in place for more than twenty years are sufficient to support DSL services. Nonetheless, loops not properly upgraded may be encumbered with load coils, excessive bridged tap, and other devices that interfere with data transmissions. To enable those voice grade loops to support DSL (either on a stand alone loop basis or through Line Sharing), DSL providers in Tennessee need the incumbent LECs to remove those interfering load coils or excessive bridged tap, a process called loop conditioning. The ILECs routinely perform conditioning activities for their own retail services and the *UNE Remand Order* requires ILECs to likewise perform this work for competitors at rates consistent with the FCC's pricing rules.[139]

BellSouth appears to have done exactly what the FCC feared in proposing its costs for conditioning. The FCC cautioned specifically against allowing overcharges for loop conditioning costs, stating that: "the charges incumbent LECs impose to condition loops represent sunk costs to the competitive LEC, and . . . may constitute a barrier to offering xDSL services. . . . incumbent LECs may

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[136] BellSouth's Response to Covad's First Interrogatories, Item 15. (Admitted as Exhibit 14).

[137] Illinois Commerce Commission, Arbitration Decision, Dockets 00-0312 and 00-0313, August 17, 2000, at 18.

[138] Starkey Pre-Filed Rebuttal, p. 89.

have an incentive to inflate the charge for line conditioning by including additional common and overhead costs, as well as profits."[140] Without reasonable costs for conditioning, huge numbers of Tennessee consumers may find themselves without access to competitive DSL services, since competitive carriers will not be willing or able to pay enormous nonrecurring charges to condition loops to serve those customers.

In addition, any loop conditioning charge the Authority allows the ILECs to impose upon CLECs would constitute a windfall since the ILECs already recover the cost of conditioning in their recurring loop rates. For example, BellSouth documents provided in discovery show that BellSouth does not charge retail customers for conditioning loops for ISDN, T-1 or DS-1 loops used for digital services because these facilities can be reused and will serve additional subscribers over the facilities' lifetime.[141] BellSouth witnesses Caldwell and Latham confirmed that BellSouth's retail digital services customers do not pay a separate charge for loop conditioning.[142] Indeed, BellSouth's cost model which the Authority approved in the *Permanent Pricing Proceeding* assume forward-looking networks that are already prepared for digital services.[143] These networks, constructed with a copper/fiber crossover point of 12,000 feet, should not have load coils or excessive bridged tap.[144] Yet, the ILECs expect the Authority to sanction a windfall of charges for removing such devices. The Authority must ensure that the ILECs' nonrecurring cost methodologies remain consistent with their recurring methodology in order to prevent the ILECs from double recovering their network costs. Such consistency is required to remain in compliance with TELRIC pricing principles.

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139 *UNE Remand Order* at ¶ 194.

140 *Id.*

141 *See* Starkey Pre-Filed rebuttal at 54-55.

142 Tr. V. 1, Caldwell cross, p. 203-204; Tr. Vol. V, Latham cross at 281.

143 *See First Interim Order* at 22.

144 *See* Fassett Pre-Filed rebuttal at 54.

A. The Forward Looking Cost for Loop Conditioning is $0

There are three principles that support a zero nonrecurring charge for conditioning. First, a forward looking network designed to engineering guidelines in place since the early 1980's does not contain load coils or excessive bridged tap. Since those impediments are not found in a forward-looking network, there can be no charge for removing them from BellSouth's embedded network. Second, BellSouth's recurring cost model (already approved in Docket No, 97-01262)[145] is based on a forward looking network architecture that **does not** contain load coils or excessive bridged tap. By introducing nonrecurring costs based on a network architecture that **does** include load coils and excessive bridged tap, BellSouth has violated the FCC's TELRIC rules. These rules and common sense dictate that a single network architecture must be used to construct both recurring and nonrecurring charges. Third, evidence in the record establishes that BellSouth considers conditioning for its retail services as part of routine maintenance and therefore does not charge its retail customers for performing this work. As a result, BellSouth's proposed nonrecurring charges for competitors discriminates against competitors. Each of these principles will be discussed below.

1. A Forward Looking Network Does Not Require Conditioning

The Data Coalition's engineering expert, Mr. Fassett, explained that a 1983 directive from AT&T to all of its regions expressly prohibited the placement of load coils or excessive bridge tap on loops shorter than 18,000.[146] Although those devices had some usefulness in supporting voice service in the more antiquated loop plants, AT&T clearly signaled that it was developing outside plant capable of supporting both voice and the emerging data services. As a result, whenever outside plant engineers performed work after that point, they were obligated by the Directive to ensure that the loop plant was up to modern engineering standards. Failure to ensure that outside plant met these standards resulted

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[145] *See First Interim Order* at 22.

[146] *See* BellSouth Response to Covad's 1st Request for Production. October 4, 2000, Item No. 1 (Admitted as Exhibit 14).

in the outside plant being in violation of that directive. The record is clear that a forward-looking network is built without load coils or excessive bridged tap.

BellSouth witnesses freely acknowledge that load coils and other impediments that obstruct DSL service would not exist in a forward looking network.[147] Indeed, Mr. Fassett testified that there is no need at all for load coils on loops shorter than 18,000 feet.[148] Thus, allowing the ILECs to impose a separate nonrecurring charge for loop conditioning is inconsistent with a forward-looking network. A forward looking network has no need for load coils, bridged tap, repeaters or other devices that interfere with xDSL service, so it unreasonable to allow the ILECs to charge CLECs for costs they would not incur with a forward looking network, consistent with the FCC's and this Authority's rules.

2. BellSouth Must Use A Single Network Architecture for Both Recurring and Nonrecurring Costs

BellSouth proposed *nonrecurring* rates for loop conditioning predicated upon network assumptions that are inconsistent with the assumptions underlying their *recurring* rates for those same loops. This inconsistency, if permitted by the Authority, would lead to a double recovery that is inconsistent with both the FCC's Rules and good public policy. For the purpose of setting recurring costs, BellSouth assumes that longer loops will be provisioned over NGDLC. Nonetheless, for the purpose of setting nonrecurring costs, BellSouth assumes an entirely different network configuration . BellSouth admits that a forward looking network architecture does not include load coils or excessive bridged tap. In fact, on the recurring cost side, BellSouth's fiber fed loop would not have such interferors in place. Nonetheless, BellSouth in calculating nonrecurring charges proposes costs for removing bridged tap and load coils. Use of a single network architecture ensures that CLECs do not pay higher recurring charges for loops deployed in a forward looking network (i.e., fiber fed loops

[147] *See* Tr. V. I, Caldwell cross at 105; Tr. Vol. I, Milner, direct at 4 ("Carrier Serving Area (CSA) design provides the rules for provisioning the cable plant extending from the NGDLC to the customer location"). *See also* Fassett Pre-Filed Rebuttal at 66, *citing* Bellcore, *Bellcore Notes on the Networks - Issue 3*, December 1997, p. 12-5, ("All CSA loops must be unloaded").

traversing NGDLC) [149] and then pay high nonrecurring charges for backward looking network assumptions (that loops contain load coils and excessive bridged tap). Under the FCC's pricing rules, the sum of the recurring and the nonrecurring rates for an xDSL capable loop may not exceed the total forward-looking economic cost of this loop.[150] Unless the same network design is used to set recurring and nonrecurring rates, it will be impossible for the Authority to ensure, or even to determine, if the rates the it ultimately establishes comply with this rule. If the Authority permits different network designs, then essentially a CLEC would be paying for one type of xDSL capable loop with the recurring charge, and a different type of xDSL capable loop with the nonrecurring charge.

Several state commissions – including those in Massachusetts, California, Minnesota and Utah – have recognized the need to base rates on a single forward looking network architecture.[151] Indeed, the Massachusetts DTE recently rejected a similar attempt by Verizon to recover for conditioning of loops, and set a rate of zero. The DTE reasoned that:

> It would be inappropriate and inconsistent for the Department to allow Verizon to base its loop rates on the costs of a fiber feeder, which may be greater than the costs of copper feeder in that context, while it bases its line sharing rates on the costs of a copper feeder, which are greater than the costs of fiber in the context of line sharing. If the FCC in fact were to require the Department to assume the use of copper feeder for calculating TELRIC for line sharing, we would allow Verizon to charge for both loop qualification and loop conditioning, but we also would have to direct Verizon to recalculate its loop costs in order to maintain consistency among our various TELRIC analyses. Otherwise, Verizon would be able to tack back and forth between different network assumptions based solely

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[148] Fassett Pre-Filed Rebuttal at 54.

[149] "NGDLC describes a version of digital loop carrier equipment that provides many enhanced services and cost-reducing features that are not available on the older DLC systems."

[150] 47 C.F.R. § 51.507(e).

[151] *Consolidated Petitions of New England Telephone and Telegraph, et al.*, DPU/DTE 96-73/74, Phase 4-L (October 14, 1999) at 19-21; *see also* Public Utility Commission of Texas, *Arbitration Award*, Dockets Nos. 20226 and 20272, November 30, 1999 ("network design inconsistencies in the recurring and non-recurring cost studies do not result in correct xDSL costs and rates and consequently render the proposed charges invalid") ("*Texas Arbitration Award*"); California Public Utilities Authority, *Decision 98-12-079* at 34 ("it makes little sense to model one type of network for unbundled elements and then assume a different network exists for ordering and provisioning the same unbundled elements."); Utah Public Service Commission Phase III Part C Report and Order in Docket No. 94-999-01, issued June 2, 1999.

on whether the network assumption produced higher rates for Verizon in each instance.[152]

In Texas, the arbitrators also faced a similar situation. The cost studies for the recurring loop charges were based on forward-looking principles and used a network model that did not contemplate use of load coils and repeaters. SWBT's proposed xDSL non-recurring cost studies for conditioning were based on loops containing such equipment.[153] The arbitrators found that "network design inconsistencies in the recurring and non-recurring cost studies do not result in correct xDSL costs and rates and consequently render the proposed charges invalid."[154] The Utah Public Service Commission reached a similar decision.[155]

Nor are loop "conditioning" charges justified by the FCC's *UNE Remand Order*. While in Paragraph 193 of the Order the FCC indicated that it could be possible for incumbents to recover the costs of loop conditioning, such recovery must comply with all other FCC pricing rules. Rejecting a similar argument made by Verizon, the Massachusetts DTE found that "the FCC's directives related to recovery of loop qualification and conditioning costs are only relevant to states that have assumed copper feeder for purposes of calculating TELRIC."[156] The DTE reasoned "that the FCC has not directed states to assume copper feeder in calculating TELRIC, and, without such a directive, it would be illogical for the FCC to mandate the recovery of costs that are relevant only to a network assumption that may not have been approved in a particular state.[157] Where ILECs have based recurring rates on fiber feeder, (as BellSouth has) no conditioning

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[152] *Id.*

[153] *TX Arbitration Award* at 96.

[154] *Id.*

[155] Utah Public Service Commission Phase III Part C Report and Order in Docket No. 94-999-01, issued June 2, 1999 at 9. ("TELRIC model (or a forward-looking, efficient provider) would not design a network that required loops to be conditioned or groomed before services today's customers expect could be provided. It follows, and we so conclude, that the buyer of an unbundled loop should not have to pay for any such upgrading: the price of the loop presupposes sufficient quality, by which is meant a loop capable of meeting not just current demands but demands for advanced services as well. Accordingly, we disallow charges for line conditioning or grooming.")

[156] Massachusetts DTE *Phase III Order* at 115.

[157] *Id.*

charges are supportable. The Authority should follow the course laid out by the Massachusetts DTE, and thwart the ILECs' attempt to "tack back and forth between different network assumptions based solely on whether the network assumption produced higher rates" for the ILEC. Having selected a network that does not require conditioning for the purposes of calculating their recurring loop rates, the ILECs should be required to use the same network assumptions to calculate their nonrecurring loop rates. Applying such network assumptions here results in a network that does not need conditioning, and hence a conditioning rate of zero.

3. Since BellSouth Does Not Impose Nonrecurring Conditioning Charges On Its Retail Customers, The Authority Should Set Conditioning Rates at $0

The third principle reason the Authority should set nonrecurring conditioning charges of zero is that BellSouth imposes no nonrecurring charges on its retail services. Provisioning a DS-1 (commonly known as a T1)[158] or ISDN loops to a retail customer requires the same conditioning activity as provisioning an xDSL loop to a wholesale customer.[159] In other words, those services will not work on loops that have load coils or excessive bridged tap. To enable loops to support ISDN service or T-1 service, BellSouth must condition those loops. Although BellSouth proposes to impose a large non-recurring charge upon CLECs requiring conditioning for xDSL loops, BellSouth's witnesses Caldwell and Latham admitted on cross examination that BellSouth's retail customers purchasing ISDN and DS1 services do not pay a separate charge for loop conditioning.[160]

Thus, BellSouth is either recovering for that work in its maintenance charges, as described above, or is waiving the charge for its retail customers. Either way, BellSouth's competitors are being discriminated against through enormous and unsubstantiated nonrecurring charges. Most likely, BellSouth does not impose a separate charge on its retail customers for preparing its network to

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[158] Tr. Vol. V, Latham cross at 280; *see also* Newton's Telecom dictionary, Sixth ed. (2000)..

[159] Tr. Vol. V, Latham cross at 280.

[160] Tr. Vol. V, Latham cross at 281; Tr. Vol. I, Caldwell cross 203-204.

support digital services, and instead considers these expenses to be an investment in the network. As an investment expense, conditioning costs are capitalized over the life of the facility and recovered through a monthly recurring charge from all users of the network, rather than through a one-time charge to a user who requires that the loop be conditioned. According to Mr. Starkey "in this fashion, BellSouth will be required to recover some of the conditioning investment in an economically rational manner (i.e., over time by the parties that use those conditioned facilities) and from all parties who benefit (including its own retail business units)."[161] Such capitalization and cost recovery is much more equitable, as no one user of the network bears more than its fair share to use it.

Evidence in the record further supports the conclusion that BellSouth already recovers conditioning expenses through its recurring rates. During discovery for this proceeding, the Data Coalition asked BellSouth to identify conditioning expenses booked to its accounts from 1998-2000. In its response BellSouth stated:

> BellSouth does not maintain its accounting records in a manner that would permit it to provide the detailed information sought by this request. While BellSouth records the dollars (whether capital or expense) associated with an outside plant construction job, **a job often includes many tasks and determining the cost incurred by the actual "conditioning" may not be separable from other tasks.** Also, even the identification of those jobs that included the removal of some portion of the plant, is dependent on the verbiage of the engineer stated in the title of the job and therefore capturing all the relevant jobs would be unlikely.[162]

Given the ILECs' current practice of preparing their networks for digital services, conditioning expenses should already be recovered in the ILECs' rates for unbundled loops. Therefore, the Authority should reject the ILEC proposals to adopt a stand-alone loop-conditioning rate.

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[161] Starkey Pre-Filed Rebuttal at 59.

[162] BellSouth Response to Broadslate's Revised 1st Interrogatories, November 1, 2000, Item No. 26 (Emphasis added) (Admitted as Ex. 14).

B. If the Authority Erroneously Allows BellSouth to Impose a Nonrecurring Charge for Conditioning, Those Charges Must Be Based on Reasonable Task Times and Multiple Pair Efficiencies

Although the Data Coalition believes the evidence in this record does not authorize the Authority to allow BellSouth to impose a nonrecurring charge for loop conditioning, any such charge must be based on forward looking pricing principles. Significantly, the evidence in the record shows that:

- BellSouth's proposed task times must be rejected in light of compelling evidence that they are grossly inflated
- Nonrecurring charges must be based on conditioning 50 pairs at a time, rather than the 10 proposed by BellSouth
- BellSouth's Assumptions About Where Load Points Will Be Found In the Network Are Completely Unsupported

Each of these issues will be explained in detail below.

1. BellSouth's proposed task times must be rejected in light of compelling evidence that they are grossly inflated

Although BellSouth bears the burden of proving the appropriateness of its proposed loop conditioning charges,[163] it failed to meet that burden by offering only the testimony of Mr. Greer to support its inflated nonrecurring charges for loop conditioning. Mr. Greer never conditioned a loop, never supervised personnel who conditioned loops, or never "had the pleasure of being in an aerial environment, where loop conditioning often takes place."[164] Mr. Greer's almost nonexistent experience pales in comparison with the experience offered by the Data Coalition's expert witness on conditioning, Dean Fassett, who spent 26 years either performing or supervising the performance of conditioning jobs.[165]

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[163] *See Local Competition Order*, at ¶¶ 680, 691

[164] Tr. Vol. V, Greer at 195.

[165] Fassett Pre-Filed Rebuttal at 5.

Mr. Fassett's testimony conclusively shows that BellSouth's unsupported task times are inflated to the point of absurdity. BellSouth did not present testimony from any witness that had personally driven a truck out and cut bridged tap or removed load coils. Nor did BellSouth submit to the Authority supporting material with adequate source references or descriptions of the basis for the majority of the study inputs, or the assumptions or sources for the input provided by anonymous "subject matter experts." Moreover, in contrast to the way Sprint performs its cost studies, Mr. Greer admitted on the stand that BellSouth's cost study in this proceeding does not rely on actual data on BellSouth's network in Tennessee.[166]

The Data Coalition's expert Mr. Fassett provided the Authority with a stark example of how inflated BellSouth's task times for conditioning really are. The splicing work Mr. Fassett demonstrated for the Authority at the hearing is the exact same splicing work ILEC employees perform to open a splice case and remove the load coil splice from the loops during a real conditioning job in the field. As the Directors, staff and witnesses saw, Mr. Fassett completed the splice work, including opening the splice case, unloading 50 cable pairs, and closing the splice case, in a matter of minutes. In BellSouth's cost study, BellSouth allots **150 minutes to do the same work on only 10 pair**. The discrepancy is stunning. Notably, BellSouth was unable to explain why work done in the hearing room in a matter of minutes would take 15 times longer by a skilled BellSouth technician. Moreover, Mr. Fassett testified that he was out of practice conducting splicing jobs and would have been able to do it faster in an actual plant environment, rather than on his knees in the hearing room.[167]

Mr. Fassett's simple demonstration casts enormous doubt on all of the estimated task times in BellSouth's cost studies. BellSouth was free to conduct time and motion studies to support its task times, but it did not do so. In fact, BellSouth's witness Mr. Greer offers only the most general validation for the task times. Given his complete lack of experience in this area, Mr. Greer admitted

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[166] Tr. Vol. V, Greer cross at 202-203.

that he did not revise any of the work times proposed by the secret conditioning subject matter experts, but he did "validate" them.[168]

In similar circumstances, the Michigan Public Service Commission expressed appropriate skepticism of Ameritech Michigan's nonrecurring charges, initially ordering a 50% reduction in nonrecurring charges because it found Ameritech Michigan's "support for the higher costs to be based on arbitrary labor costs, a vague definition of the costs, and a flawed methodology."[169] In a subsequent proceeding, Authority Staff found fault with Ameritech Michigan's nonrecurring charges because "much of the analysis relies on the "subject matter experts" of activity times and probability of occurrence, and it is difficult to quantify the subjective effect of the opinion."[170]

Likewise, the New York Public Service Commission ("NY PSC") in reviewing Verizon's loop conditioning charges found that Verizon failed to justify the work functions underlying its proposed estimates, and relied instead "almost exclusively on the judgments of a small number of engineers."[171] In this case BellSouth's cost studies contain similar deficiencies to those that led the NY PSC to invalidate the Verizon studies. In contrast to BellSouth's undocumented costs and unsupported assumptions, the Data Coalition provided testimony from Dean Fassett, who has substantial experience in outside plant operations.[172] Mr. Fassett has over 30 year working with or supervising those who work with outside plant in the telephone network.[173] In his testimony, Mr. Fassett provided detailed testimony that the total average work time to remove all load coils from a loop is 9.6 minutes per working pair.[174] This, with a labor rate of $45 per hour and reasonable assumptions about the number

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[167] Tr. Vol. IV D, Fassett, p. 155.

[168] *Id.*

[169] *Michigan November 1999 TSLRIC Order* at 25.

[170] *Id.*

[171] Opinion No. 99-12, *Opinion and Order Concerning DSL Charges* (December 17, 1999) at 39 ("*NY DSL Order*").

[172] Fassett Pre-Filed Rebuttal at 5.

[173] *Id.*

[174] Fassett Pre-Filed Rebuttal at p. 71.

of loops that would be conditioned at a time, would produce a load coil removal charge of $7.52 per pair.[175] More importantly, unlike the anonymous sources of BellSouth's task times, Mr. Fassett appeared before the Authority to subject his assumptions, opinions, and conclusions to the vigor of cross-examination. Because the testimony of Mr. Fassett is the only reliable probative and detailed evidence on the costs of efficient loop conditioning, the Authority should adopt the Data Coalition's cost estimates and rates.[176]

2. Nonrecurring charges must be based on conditioning 50 pairs at a time, rather than the 10 proposed by BellSouth

Given that the cost of conditioning multiple loops is essentially the same as the cost of conditioning a single loop, common sense dictates that efficient loop conditioning practices entail conditioning more than one loop at a time. Although BellSouth's cost study and testimony do not use efficient conditioning methods its actual practices reflect an understanding that efficient practices require conditioning of at least 50 loops at a time. In contrast to their actual practice, BellSouth's cost study assumes that only 10 pair will be conditioned at one time.

Mr. Fassett explained in detail why 50 pair would be conditioned at a time on average. First, in contrast to the BellSouth proposal of 10 at a time, Fassett explained that the outside plant network of every ILEC is built around maintaining the integrity of a 25 pair cable.[177] When the ILECs added load coils to the network thirty years ago, they inserted splicing modules for the entire 25 pair binder group. Thus, when a copper pair in that cable must be unloaded, it makes the most sense to unload the entire 25 pair complement. Fassett testified that it would "create chaos in the network" to intentionally have

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[175] Starkey Pre-Filed Rebuttal at 66. Mr. Starkey provided revised conditioning charges for both the UCL-S and the UCL-L in his testimony in the event the Authority determines that such distinctions are valid.

[176] If, for any reason, the Authority is not satisfied with these estimates, it should not rely on the ILECs' unsupported figures, but should require BellSouth to perform the same type of detailed and statistically validated studies that the New York PSC required of Verizon. *NY DSL Order* at 39.

[177] Tr. Vol. IVC, Fassett at 150.

some loaded and some unloaded pairs in the same cable, as BellSouth suggests.[178] Moreover, since conditioning work requires a truck roll, it make more sense to condition as many pairs as possible at a time.

Evidence in the record indicates BellSouth's assumptions in its cost study do not conform to its actual practice. On cross-examination, Ms. Caldwell testified that BellSouth in North Carolina enters into outside plant contracts that base *** **BST PROPRIETARY** [redacted] *** **END BST PROPRIETARY.** [179] Although Ms. Caldwell attempts to explain that this contract price does not include the actual splicing, Mr. Fassett's demonstration and testimony shows the Authority how much time that activity actually takes.

BellSouth contends that inefficient conditioning practices are some times justified in order to preserve sufficient amount of copper for voice services. The evidence in this case, however, shows that spare copper will be available for the conditioning of multiple loops, even for loops longer than 18,000 feet, for two separate reasons. First, the fill factors approved by the Authority provide for ample spare capacity to prepare the networks for digital service without requiring the use conditioning of pairs already in service. As Mr. Starkey testified:

> BellSouth has already assumed within its unbundled loop study that it will maintain 34.9% of its copper feeder and 49.8% of its copper distribution facilities as spare facilities.[180] That is, at any point in time, 35% to 50% of BellSouth's entire network will be vacant and unassigned to existing customers. BellSouth cannot assume such low utilization within its unbundled loop studies for purposes of charging higher unbundled loop rates, and then completely ignore these assumptions in establishing rates for conditioning. Fill rates of 40%-60% should provide ample spare facilities for purposes of conditioning an average of at least 50 copper pairs on a single dispatch.[181]

Second, the increasing use of digital loop carrier systems in the ILEC network provides for the possibility that far greater numbers of copper cables can be made available for use by digital

[178] Tr. IV C, Fassett, p. 154.

[179] Tr. Vol. I, Caldwell cross at 219.

[180] *See First Interim Order* at 10.

services.[182] Since DLC systems support multiple voice grade circuits over far fewer copper facilities, when an ILEC deploys DLC a significant number of spare copper loops become available. Those additional copper loops can then be conditioned to support digital services. In response to a discovery request, BellSouth provided "engineering work prints that clearly demonstrate the fact that BST does remove load coils as fiber fed digital loop carrier is deployed in the network."[183] ***BST PROPRIETARY [redacted] END PROPRIETARY *** Instances such as this, demonstrate that it is possible to support future digital services growth without depleting voice grade circuits available to support future voice service demands.

As a result, the Authority should require that loop conditioning costs be predicated upon the assumption that an average of 50 loops will be conditioned at a time, both for loops under and over 18,000 feet in length.

3. BellSouth's Assumptions About Where Load Points Will Be Found In the Network Are Completely Unsupported

BellSouth unreasonably estimates that *** **BST PROPRIETARY** [redacted] **END PROPRIETARY***** of the time it conditions loops for CLECs the loops will be underground,

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[181] Starkey Pre-Filed Rebuttal at 66.

[182] *See* Tr. Vol. Milner direct at 5-7.

[183] Fassett Pre-Filed Rebuttal at 63; BellSouth Response to Broadslate Revised First Request for Production, November 1, 2000 (Admitted as Exhibit 14).

[184] Tr. Vol. IV, Fassett Pre–Filed Rebuttal at 64.

requiring access through a manhole.[185] There is little dispute that conditioning underground loop facilities that must be accessed through a manhole is far more time consuming and expensive than conditioning buried or aerial loops.[186] BellSouth's estimate that 90 percent of the loops requiring conditioning will be underground is completely unsupported. Although BellSouth never provided the rationale for that assumption in its cost study,[187] BellSouth witness Greer endorsed it by arguing that most CLEC conditioning requests will come in metropolitan areas.[188] In this proceeding, Mr. Greer further admitted that BellSouth made no effort to survey and its Tennessee network to estimate where such facilities might be located.[189]

It is likely that BellSouth made no effort to survey its Tennessee network because it knew that the result would contradict the assumption it prefers to use. BellSouth documents produced in discovery show that the assumption is unsupportable and contradicted by actual data. For example, in ***** BST PROPRIETARY** [redacted] **END PROPRIETARY***** This evidence undoubtedly "calls into question the assumption in BellSouth's cost study that it will perform conditioning in two underground sites on each loop that needs conditioning."[190]

The Data Coalition agrees with Sprint that BellSouth "'uses too many assumptions in its loop conditioning cost studies and not enough actual information based upon real OSP environments."[191] This contrasts with Sprint's cost study, which based its loop conditioning costs on the actual

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185 Tr. Vol. I, Caldwell cross at 211.

186 Tr. Vol. IV, Gordon rebuttal at 23; Tr. Vol. V, Greer rebuttal at 138 ("It's expensive to put it underground"). *See* Tr. Vol. I, Caldwell cross at 212.

187 Tr. Vol. I, Caldwell cross at 212.

188 Tr. Vol. V, Greer rebuttal at 139.

189 Tr. Vol. VC, Greer cross at 202-203.

190 Fassett Pre-Filed Rebuttal at 64.

191 Tr. Vol. IV, Gordon rebuttal at 15.

distribution of load coils in their network. Sprint's study showed that 52.6% of the time the first load requiring removal is located in a manhole environment.[192] For the second load point, Sprint's study shows that 31.6% of the time the second load coil will be in a manhole environment.[193] Given the actual data from Sprint, Mr. Starkey's assumption that 41.6% of load coil removal would be in manholes was generous to BellSouth.[194]

4. Any Conditioning Charges Allowed Should Be Recovered in Recurring Charges

The FCC's rules state that "[s]tate commissions may, where reasonable, require incumbent LECs to recover nonrecurring costs through recurring charges over a reasonable period of time."[195] A recurring monthly charge is the appropriate way to charge for these activities. A rate design employing recurring, rather than non-recurring, charges would reduce the opportunity for ILECs to use loop-conditioning charges as a barrier to entry. Moreover, monthly recurring charges would provide for recovery of the cost of correcting the deficiencies in the ILECs' network over the economic life of the correction. There is a high probability that that more than one competitor will use loops in a given conditioned binder group over the economic life of those loops.. It would be patently unfair to force the first carrier and/or the first end user to bear the full brunt of the ILEC's conditioning charges. With recurring rates, the Authority can ensure that the burden of loop conditioning falls fairly upon all who benefit from the conditioned facility.

The chief argument the ILECs raise against recovering loop conditioning costs in this fashion is that there is no guarantee that they will be able to fully recover their investment. This is incorrect, however, because ILECs own the network and therefore benefit by having upgraded that network to modern engineering standards, such that it can support advanced services like DSL. Furthermore,

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[192] Starkey Pre-Filed Rebuttal at 65, citing Sprint Loop Conditioning Cost Study at 34-35.

[193] *Id.*

[194] *See* Starkey Pre-Filed Rebuttal at 66.

[195] 47 C.F.R. § 51.507(e).

BellSouth is experiencing far greater demand for new digital lines than for analog.[196] On its website, BellSouth touts the availability of 11.5 million lines for DSL by the end of the year 2000.[197] With the anticipated growth in demand for BellSouth digital services, it is reasonable to conclude that BellSouth will fully recoup its investment in conditioning their existing plant to accommodate that demand.

IV. BELLSOUTH FAILS TO PROVIDE NON-DISCRIMINATORY ACCESS TO LOOP MAKEUP INFORMATION CONSISTENT WITH THE FCC'S RULES AND FORWARD LOOKING COST METHODOLOGY

As with loop conditioning, since BellSouth does not recover loop makeup costs from its retail customers, it should not be permitted to recover them from CLECs. As state commissions in Ohio, Massachusetts, Illinois and Nevada have determined, such recovery would discriminate against CLECs competing with the ILEC's retail offering. To the extent the Authority allows BellSouth to impose loop makeup charges upon CLECs, the Authority should adjust the rates to reflect that the record in this case does not support those work times, costs, and assumptions the BellSouth proposes.

A. BellSouth fails to meet its legal obligation for providing access to loop makeup information and providing that access electronically

Under the FCC's requirement that ILECs must provide unbundled access to OSS, ILECs must provide unbundled "access to loop qualification information" because carriers seeking to provide advanced services using unbundled loops need nondiscriminatory access to information that "identifies the physical attributes of the loop plant...that determine whether the loop is capable of supporting xDSL and other advanced technologies."[198] Such access allows a CLEC to judge for itself whether the loop is capable of supporting the advanced service it intends to deploy.[199] Although the ILECs are not

[196] Starkey Pre-Filed Rebuttal at 54-55; Ex. MTS-2.

[197] See Gordon Pre-filed rebuttal at 17-18.

[198] *Id.* The specific information the ILECs must make available to CLECs includes the composition of the loop material, the existence, location and type of any electronic or other equipment on the loop, the loop length, including the length and location of each type of transmission media, the wire gauge(s) of the loop, the electrical parameters of the loop. *Id.* at ¶ 427.

[199] *Id.* at ¶ 427.

required to generate databases of such information that do not already exist, they may not "filter or digest" the data they provide.[200] An ILEC must also provide access to loop qualification data "within the same time intervals" it provides such data to itself.[201]

Consistent with the ILECs' broader obligation to provide nondiscriminatory access to OSS, access to loop makeup information includes the functionality of electronic interfaces the ILEC uses to access its loop makeup information.[202] If an ILEC's employees access loop makeup databases electronically and the ILEC only give CLECs manual access to the same information, the ILEC fails to meet its obligation under § 251(c)(3).[203]

BellSouth fails to show that it fully complies with its obligation to provide CLECs with nondiscriminatory access to loop makeup information in compliance with the FCC's rules. BellSouth's employees have electronic access to LFACS. In fact, BellSouth admits that its electronic loop makeup access interface for CLECs is still "under development."[204] Even if it were ready for broad CLEC use, beyond the current beta testing, it would be insufficient to satisfy its legal obligation to provide loop makeup information because BellSouth does not provide access to all of its backoffice systems that contain loop makeup information.

The FCC specifically prohibits BellSouth from filtering or digesting loop makeup data it makes available to CLECs.[205] Mr. Pate's testimony demonstrates that BellSouth's loop makeup system for CLECs flouts that prohibition. In his testimony, Mr. Pate explained that when a CLEC performs a loop makeup query using BellSouth's electronic interfaces, the CLEC must indicate the BellSouth flavor loop for which they are looking. In other words, BellSouth limits a CLEC to looking for a

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[200] *UNE Remand Order* at ¶ 428.

[201] *Id.* at ¶ 431.

[202] *Local Competition Order* at ¶ 523 n. 1274.

[203] *Id.* at ¶ 523.

[204] Tr. Vol. III, Pate direct at 5.

[205] *UNE Remand Order* at ¶ 428.

specific loop type (ADSL, HDSL, UCL-L, UCL-S) when performing a loop makeup query.[206] Mr. Pate further testified that BellSouth artificially limits the number of loops a CLEC can look at on each individual query to ten loops.[207]

CLECs have instead requested that the Authority require BellSouth to provide direct access to LFACS.[208] As Mr. Fassett testified: "[d]irect access to the databases is the efficient means to allow CLECs the opportunity to qualify loops and it also ensures that competitors and incumbents have parity in terms of their ability to assess which advanced services they can offer to end user customers."[209] Direct access would free CLECs from the artificial filters BellSouth imposes on CLEC access to LFACS, which result in a cumbersome loop makeup inquiry process. According to Mr. Pate with "direct access, the product limitations, as the system is currently designed would not be imposed."[210] Mr. Pate further suggests that CLECs can petition BellSouth for a "change control request" to make such improvements.[211] The Data Coalition submits that BellSouth's obligation to comply with the law does not depend on the a CLEC submission of a "change control request."

The FCC has ordered that BellSouth must provide nondiscriminatory access to all "underlying loop qualification information contained in its engineering record, plant records, and other backoffice systems."[212] In contrast, the proposed loop makeup inquiry system for CLECs that BellSouth claims it is currently beta testing, only provides data from LFACS,[213] while the record indicates that BellSouth's

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[206] *Id.*

[207] *Id.* at 48.

[208] Fassett Pre-Filed Rebuttal at 77.

[209] *Id.* at 79.

[210] Tr. Vol. III, Pate cross at 51.

[211] *Id.*

[212] *UNE Remand Order* at ¶ 428.

[213] Tr. Vol. III, Pate Direct at 5.

employees have electronic access to a broad array of databases from which to cull loop makeup data.[214]

B. BellSouth's Loop Makeup Rates Fail to Conform to FCC Pricing Rules

The fact that BellSouth does not charge its retail customers for loop qualification further indicates that a zero rate is reasonable.[215] In the ADSL cost study it filed at the FCC, BellSouth attributes ***BST PROPRIETARY [redacted] END PROPRIETARY *** in nonrecurring costs to provide its ADSL service. As discussed earlier, this includes all costs including provisioning the loop, providing DSLAM capacity, ATM switching capacity and interoffice transport. Discovery in this proceeding revealed that none of these costs are associated with qualifying a loop for ADSL service.[216] Since BellSouth does not include any loop makeup costs in its retail ADSL study, it cannot be allowed to claim them now. Sanctioning the loop qualification charges proposed by BellSouth would thus create a safe haven in which BellSouth could discriminate in favor of its retail data offerings, thus inflicting a price and service quality squeeze on its CLEC customers.

Numerous state commissions have established a loop qualification rate of zero. In Massachusetts, the DTE determined that forward looking pricing principles required that Verizon not be permitted to charge CLECs for loop qualification costs.[217] Similarly in determining, the interim rate for loop qualification in Covad's arbitration with SWBT in Kansas, the Kansas Corporation Commission determined that in a forward looking network there is no need to qualify loops for xDSL service.[218] The Public Utilities Commission of Ohio has determined that loop qualification charges should be eliminated in their entirety because loop qualification should have been "an inventory

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[214] Starkey Pre-Filed Rebuttal at 35.

[215] Starkey Pre-Filed Rebuttal at 34.

[216] BellSouth ADSL Cost Study, Exhibit 4.

[217] *Investigation as to Propriety of the Rates and Charges set Forth in M.D.T.E. No. 17, etc.*, D.T.E. 98-57-Phase III, at 101-2 (Mass. D.T.E. Sept. 29, 2000).

function developed by [the ILEC] to identify the type and location of any loop at any given time."[219] Most recently, a Hearing examiner for the Illinois Public Service Commission recommended the PSC establish a loop qualification rate of zero, finding that Ameritech-IL's manual processing charges were inappropriate.[220] The Authority should apply a similar principle here and deny BellSouth's proposal to impose loop qualification charges on the CLECs.

In the event the Authority permits BellSouth to impose manual loop makeup charges upon CLECs, the Data Coalition proposes reasonable alternatives to replace the wholly unsupported assumptions and grossly overstated work times behind BellSouth's proposed rates. The purpose of the ILECs' loop makeup obligation is to require incumbents to produce the information that will allow CLECs to determine *for themselves* whether a loop satisfies the prerequisites for the service the CLEC intends to provide.[221] Because all the necessary information is already contained in BellSouth's databases – or should be – the forward-looking cost of providing such information is necessarily *de minimis.*

Thus, for example, the Texas Commission has found that "SWBT should be fairly compensated for the real time access to its OSS functionalities," establishing a nominal interim nonrecurring charge of 10 cents per loop for loop qualification information.[222] The Nevada Commission likewise adopted a 10 cent rate for loop qualification.[223] The Nevada Commission determined that Nevada Bell's charges

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[218] *Arbitrator's Order*, State Corporation Authority of the State of Kansas, Docket No. 00-DCIT-389-ARB, May 9, 2000 at 20.("*KCC Order*").

[219] *See In the Matter of the Application of Cincinnati Bell Telephone Company for Approval of a Retail Pricing Plan Which May Result in Future Rate Increases and For a New Alternative Regulation Plan*, PUCO Case No, 96-899-TP-ALT, Second Entry on Rehearing at 13. (January 20, 2000).

[220] *Illinois Hearing Examiner Proposed Order* at 68.

[221] *See UNE Remand Order* at ¶ 430. This purpose is implicit in the FCC's finding that "under its existing rules, the relevant inquiry is *not* whether the retail arm of the incumbent has access to the underlying loop qualification information, but, instead, whether such information exists anywhere within the incumbent's back office and can be accessed by any of the incumbent LEC's personnel. Requiring such "back office" information to be made available to the CLEC necessarily excludes "front office" activities engaged on the part of the incumbent to interpret that information.

[222] *Texas Arbitration Award* at 102-103.

[223] *In re filing by Nevada Bell of its Unbundled Network Element (UNE) Nonrecurring cost study pursuant to the Order issued in docket No. 98-6004*, Docket 99-12033, *Order*, (Nev. P.S.C.)(rel. Nov. 20, 2000) ("*Nevada Loop Order*").

for manual loop makeup charges were "very costly for those loops where the inventory has not been updated or maintained and this cost could very well be a barrier to competition."[224] After noting that Nevada Bell's loop inventory, if it were current, would be electronic, the Nevada PSC concluded that:

> updating and maintaining Nevada Bell's database on its loop inventory is the responsibility of Nevada Bell and is a function of doing business and the cost to perform that function is a cost of doing business. The fact that Nevada Bell has not had an aggressive inventory program to maintain its database should not be reason to pass the cost of bringing its loop inventory data base current to CLECs.[225]

BellSouth's manual loop make up inquiry charges must likewise be rejected. As BellSouth admits, CLECs cannot today obtain loop make up electronically.[226] Under the FCC's *UNE Remand Order*, BellSouth has been obligated since May 17, 2000 to provision this service electronically. BellSouth should not be allowed to penalize CLECs by charging manual loop make up charges that result from its failure to meet its legal obligations. Once the electronic system is available, some CLECs may still need to access obtain manual loop make up either because they are not able to access the electronic system or because the information on their customer's loops is not available electronically. When the CLEC does not have access to electronic loop makeup information it merely needs BellSouth's personnel to perform the electronic search in LFACS, print the results, and send them to the CLEC. In that case, the manual charge must be based on forward looking and efficient task times.

When LFACS does not contain information about the particular loop the CLEC seeks to qualify or particular information about a loop is missing from LFACS, the CLEC needs BellSouth to manually review the paper plats that record critical information about the loop. Mr. Fassett testified that an experienced engineer takes no more than 30 minutes to manually review paper plats. BellSouth, despite having the burden in this case, offered no evidence supporting its assumption its cost study that

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[224] *Id.* at ¶ 39.

[225] *Id.*

a manual loop make up using paper plats takes 52 minutes. The Authority must reject BellSouth's unsupported task times and, if adopts any loop makeup rate at all should adopt a rate warranted by the evidence in Mr. Fassett's testimony.

V. BELLSOUTH MUST PROVIDE DIRECT ACCESS TO ITS INSIDE WIRE SUBLOOPS

Pursuant to the 1996 Act and FCC rules,[227] the ILECs must provide unbundled access to subloops, including inside wire.[228] Consistent with the FCC's decision to require ILECs to unbundle their inside wire facilities, BellSouth offers CLECs access to Intrabuilding Network cable ("INC") and Network Terminating Wire ("NTW"). BellSouth describes INC as "that part of BellSouth's loop facilities extending from the building's cable entrance (often in the basement or on the first floor) and rising to each floor."[229] Mr. Milner describes NTW as BellSouth's facility that is "connected to the intra-building network cable at cross-connect terminals usually on each floor of the building and 'fans out' the cable pairs to individual customer suites or rooms on the floor."[230]

BellSouth intends to charge each CLECs $535.12 in non-recurring charges to connect to "individually constructed access terminals."[231] Mr. Milner claims that BellSouth requires the use of an intermediate access terminal to protect against adverse network reliability impacts and to manage its network inventory efficiently.[232] In addition to the intermediate access terminal requirement, and to address further network reliability concerns, BellSouth will require one of its technicians to be present anytime a CLEC connects to a pair from the main terminal in the building to the CLEC's individually

[226] Tr. Vol. III A, Pate Summary at 6.

[227] *See* 47 C.F.R. §51.319(a)(2)(i); § 51.5.

[228] *See UNE Remand Order*, at ¶ 168-171.

[229] Tr. Vol. II, Milner direct at 21.

[230] *Id.* at 22.

[231] *Id.* at 26

[232] *Id.* at 27

constructed access terminal.[233] BellSouth proposes that the CLEC bear the cost of the technician's presence.[234] These two proposals add enormous up-front expense to CLECs that seek to use BellSouth's INC facilities.[235] In that respect, BellSouth's proposal discriminates against CLECs, since CLECs will incur the expense of building an intermediate access terminal, while BellSouth will not. Moreover, such a requirement raises a barrier to facilities based competition since the CLEC will need to have its terminal built and ready for service before it can begin marketing, or serving customers in a particular building.

CLECs need not incur the unnecessary expense of constructing redundant terminals. BellSouth could (but chooses not to) provide CLECs with access to BellSouth's main terminal, where BellSouth terminates its outside plant facilities. Access to these facilities on an unbundled basis is critical for CLECs, especially facilities based carriers that intend to serve customers in large office buildings, apartment buildings or on sprawling campuses. BellSouth's proposals for limiting direct access and imposing excessive costs upon CLECs requesting access to inside wire are unreasonable and undermine the FCC's reasoning that requiring the construction of redundant inside wiring facilities would impede competitive entry.[236]

> The FCC's rules require BellSouth to provide direct access. The FCC's definition of inside wire requires that BellSouth provide unbundled access "at any technically feasible point including, but not limited to, the network interface device, the minimum point of entry, the single point of interconnection, the pedestal, or the pole."[237] If BellSouth claims such access is not technically feasible, it has the burden of proving that to this Authority in this proceeding.[238]
>
> BellSouth must therefore prove to the Authority by "clear and convincing evidence" that providing CLECs direct access to the main terminal is not technically feasible. To meet its heavy burden in this instance, BellSouth

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[233] Tr. Vol. II, Milner rebuttal at 22.

[234] *Id.*

[235] Starkey Pre-Filed Direct at 118.

[236] *See UNE Remand Order*, at ¶ 216.

[237] 47 C.F.R. § 51.319(a)(2)(i).

[238] 47 C.F.R. § 51.319(a)(2)(ii).

> offered Mr. Milner's testimony that use of an access terminal is a reasonable measure to protect network reliability.[239] BellSouth has expressed, but does not substantiate, safety concerns about access to these terminals.[240]

Nor can BellSouth rely on its argument that billing and accounting concerns for NTW and INC allow it to impose an intermediate access requirement on CLECs. Pursuant to FCC rules, BellSouth must provide access to subloops including inside wire at any point unless it can show such access is not technically feasible. The FCC's definition of technically feasible, however explicitly prohibits consideration of accounting and billing.

At least two other state commissions have addressed this issue in arbitration dockets where CLECs sought access to BellSouth's inside wire subloops. Mr. Milner suggests that the Authority adopt the Florida Authority's decision in its MediaOne arbitration that adopted BellSouth's position.[241] As Mr. Milner recognized, that decision was issued before the FCC issued the *UNE Remand Order* declaring that inside wire subloops were a UNE.[242] The Georgia Commission considered a similar arbitration between MediaOne and BellSouth. Unlike the Florida arbitration, the Georgia arbitration was decided after the FCC released the *UNE Remand Ord*er and applied the standards the FCC set forth in that order. Mr. Milner contended the Georgia Commission "found that MediaOne should gain access through the use of an access terminal."[243]

Contrary to Mr. Milner's reading, the Georgia Authority squarely rejected the same arguments BellSouth (and its witness in that case Mr. Milner) made in this proceeding. The Georgia Authority, in rejecting BellSouth's nonrecurring rates for NTW concluded, "Because the Authority has declined to adopt BellSouth's proposal, the Authority rejects BellSouth's proposed non-recurring rates."[244]

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[239] *See* Tr. Vol. II, Milner direct at 28.

[240] Tr. Vol. II, Milner direct at 28.

[241] *Id.* at 29.

[242] Tr. Vol. II, Milner cross at 153.

[243] Tr. Vol. II, Milner direct at 30.

[244] GA PSC *MediaOne* at 7.

The Georgia Authority further determined that BellSouth's claims of network reliability impact failed to satisfy its burden, noting that:

> While ensuring the safety and security of BellSouth's network and the accuracy of BellSouth's records are legitimate concerns, the Authority finds that these concerns can be adequately addressed through the implementation of appropriate procedures. The Authority agrees with MediaOne that a procedure could be put in place by the Authority to require notice to a carrier regarding any change made by any LEC or CLEC to the carrier's customer's service.[245]

To the extent that the Authority determines that direct access is not technically feasible, it should not adopt BellSouth's proposed rates for providing CLECs with indirect access. If BellSouth's unfounded network security concerns drive BellSouth to require that CLECs access inside wire through intermediate access terminals, BellSouth, as the cost causer, should bear the "costs of constructing and maintaining the intermediate access terminals."[246] BellSouth should also be required to prepare or "pre-wire the intermediate terminal so that a CLEC can access any INC/NTW in the building without a BellSouth technician being dispatched."[247] For the same reason, the costs of initially wiring the access terminal in this fashion should be borne by BellSouth.[248] In this manner, CLECs will not be "dependent on BellSouth's personnel to provision services" to its own customers and will minimize the expense of hooking up new customers.[249]

In the event the Authority determines that CLECs should bear a portion of the cost to construct intermediate terminals that they neither request nor need, the Authority should adopt a rate proposal that does not impede competition. BellSouth's proposal, by imposing large non-recurring charges for access to intermediate panels, would impede competitive entry. Any proposal that requires CLECs to bear the cost of BellSouth's intermediate access terminal should recognize that the intermediate terminal is a network investment that allows BellSouth to offer access to an element it is required to

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[245] *Id.* at 6.

[246] Starkey Pre-Filed Rebuttal at 117.

[247] *Id.*

[248] *Id.*

provide under law. This rate should further recognize that multiple CLECs would use the access terminal during its economic life.[250] Accordingly, like other network equipment investment, BellSouth should capitalize the cost of constructing intermediate access terminals and recover those costs over the life of the investment through recurring charges.

VI. DARK FIBER

The *UNE Remand Order* requires ILECs to unbundle and provide access to dark fiber at TELRIC rates. Dark Fiber is simply fiber facilities with no electronics attached at the ends. If dark fiber is priced properly, CLECs can recognize significant savings by providing their own electronics and not having to lease those electronics from ILECs. BellSouth's proposals for dark fiber will not yield any such savings for CLECs.

First, BellSouth introduced no testimony or other evidence into the record to support its dark fiber nonrecurring and recurring charges. Nonetheless, BellSouth proposes that CLECs should pay a nonrecurring charge equal to $1,121 simply to access dark fiber (for both interoffice and local channel facilities). BellSouth bases this rate on its assumption that BellSouth engineers will spend a total of **28.4 hours** in providing CLECs access to dark fiber. As previously discussed, dark fiber is fiber optic cable that is not connected to electronic equipment, is not currently providing any service, and is simply laying fallow in the ground or in the air. There is no engineering design that is required nor is there any need to dispatch outside plant personnel to do anything to allow access to the fiber. Yet, somehow BellSouth believes that one of its engineers would need to spend nearly 4 full workdays (28.4 hours) just to allow access to these facilities.[251]

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[249] *Id.*

[250] *Id.* at 118.

[251] Starkey Pre-Filed Rebuttal, p. 121.

BellSouth's recurring rates for this element are likewise unsupported. BellSouth proposes that a CLEC should pay $58.33 per month, per mile for dark fiber access (local channel).[252] On the other hand, the CLEC can buy a fully functioning OC48 facility for less than half that amount ($26.52 per month, per mile).[253] Again, note that dark fiber includes no digital electronics equipment (other than simple termination equipment) and that the carrier is being provided access to fiber that is simply laying in the ground. There is no need for BellSouth to provision any expensive electronic transmission equipment (as it must in the OC48 loop) or to design, engineer or otherwise provision the facility. Nonetheless, BellSouth's dark fiber rates exceed its digital services rates by nearly 100%.[254] This simply isn't reasonable or plausible.

As a result, the Authority should reduce the recurring rates for dark fiber to that of the OC48 loop, and should dramatically reduce the engineering time inputs that drive the high nonrecurring charge.

VII. PRINCIPLES THAT SHOULD GUIDE THE AUTHORITY IN ESTABLISHING COST-BASED, FORWARD LOOKING RATES FOR XDSL LOOPS, LINE SHARING AND RELATED SERVICES AND ELEMENTS

To establish cost-based, forward looking rates for xDSL loops, Line Sharing and related elements, the Authority must rely on two principles to screen the BellSouth proposals.

- Rates must be based on a forward looking operational support system, including electronic pre-ordering and ordering functionalities for all elements, including xDSL loops. Otherwise, the Authority will inadvertently reward BellSouth for slowing development of electronic systems and will otherwise provide a disincentive to BellSouth for future productivity enhancements through mechanization of processes.
- Rates must be based on and supported by the evidence in this record.

Each of these principles will be discussed in detail below.

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[253] Ruscilli Pre-Filed Direct, Exhibit JAR-1.

[254] Starkey Pre-Filed Rebuttal, p. 121.

A. Forward Looking Nonrecurring Costs Must Be Based on Forward Looking Operational Support Systems, Including Appropriate Mechanization of tasks and Efficient Processes

The Authority should base its assumptions regarding operations support systems ("OSS") design on the forward-looking OSS system that should be utilized by BellSouth. First and foremost, a forward looking OSS includes electronic preordering and ordering functions that enable a CLEC to access to the data needed to qualify its own loops and to submit an xDSL capable loop order electronically.[255] The electronic OSS should allow orders to flow through without manual handling. A fully functional, electronic OSS rejects orders with errors or incorrect inputs almost instantaneously, allowing the CLEC to immediately correct the error or seek further clarification. Once the order is submitted, work tasks should be assigned electronically, again without manual intervention, for the work to be performed in the central office or in the field, if necessary.

The Authority reached this identical conclusion in the Order it issued on January 4, 20001 in Docket No. 97-01262.[256] In that Order the Authority noted that BellSouth failed to include in its revised cost studies in Tennessee those technological advances that were reflected in BellSouth's cost studies filed in Georgia. The Authority stated that "TELRIC-based rates must reflect the forward-looking costs for an incumbent local exchange carrier ("ILEC") to furnish to a competitor those portions or capacities of the ILEC's facilities and equipment the competitor will use, including any system or component upgrade that the ILEC chooses to increase its own efficiency."[257]

BellSouth acknowledges that it is in the process of beta testing an electronic pre-ordering and ordering system for xDSL loops.[258] BellSouth further acknowledged that it is also developing an EDI interface (the industry standard interface) for such pre-ordering and ordering. Nonetheless, BellSouth

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[255] Fassett Pre-Filed Rebuttal, p. 34.

[256] *In Re: Petition of BellSouth Telecommunications, Inc. to Convene A Contested Case to Establish "Permanent Prices" For Interconnection and Unbundled Network Elements,* Docket No. 97-01262, *Third Interim Order re: BellSouth's Revised Cost Studies,* ("*Third Interim Order*").

[257] *Third Interim Order* at 6-7.

cost studies assume its Operation Support Systems are manual, with no order flow through. The key to electronic pre-ordering and ordering is to enable CLECs to qualify loops and submit an order using a single interface. As a result of this process being electronic, BellSouth's LCSC and CRSG groups should have no involvement in xDSL loop order. It will flow from the CLECs straight into the ILEC back office systems, and be assigned mechanically to the work groups necessary to perform the wiring work.[259] In the rare event of fallout, when the order must be handled manually, Mr. Fassett has proposed appropriate fallout rates, and task times for those activities.[260]

As Mr. Fassett testified, fallout from a forward-looking, electronic OSS will be designed to be minimal.[261] For example, no more than a 10% fallout rate is acceptable for service inquiry OSS functions. Likewise, 3% fallout from the engineering OSS tasks is reasonable and achievable.[262] This evidence stands in sharp contrast to assumptions made in the BellSouth cost studies, which are unsupported by the record.

Furthermore, not a single BellSouth witness testified that the process it used or will use in the future to deliver xDSL loops is the most efficient process available; not a single BellSouth witness explained why its own existing electronic systems suffered high failure rates; and not a single BellSouth witness justified its development of provisioning OSS that would result in fallout (i.e., require manual intervention) 55% percent of the time (in just the engineering portion of the BellSouth process).[263] In fact, the record is bare of any reference to BellSouth's belief that its process is anything more than an error filled, manually dependant process resulting from years of BellSouth's failure to invest in system upgrades necessary to deliver efficient service in Tennessee.

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[258] Pate Pre-Filed Direct, at p. 8.

[259] Fassett Pre-Filed Rebuttal, at p. 34.

[260] *Id.*

[261] Fassett Pre-Filed Rebuttal, p. 34

[262] Fassett Pre-Filed Rebuttal, p. 34.

[263] Fassett Pre-Filed Rebuttal, p. 36.

Instead of the efficiency contemplated in a forward looking network, BellSouth's OSS processes are riddled with inefficiencies, duplicative processes, and enormous built in failure rates. For example, BellSouth appears to have built an OSS process in which mechanical functions must be checked 100% of the time by manual means. While BellSouth has mechanized the order assignment functions within a central office and the dispatch functions for field work, it still requires manual oversight 100% of the time.[264] Furthermore, BellSouth's OSS process places two separate work groups (the CRSG and LCSC) in the path of an xDSL capable loop order, performing duplicative manual functions. Both groups apparently "validate information" on service order forms and check for errors made by CLECs.

As a preliminary matter, these functions should be performed by a fully functional, electronic OSS system that rejects orders when basic service information is incorrect.[265] Nonetheless, even if a manual process were necessary occasionally, there is no reason that two different sets of BellSouth employees must review a single order for CLEC errors. At a minimum, efficiency demands that a single work group review a complete Service Inquiry and Local Service Request for errors. In contrast, BellSouth has built duplicate processes that greatly increase costs to competitors.

Furthermore, for the cluster of tasks associated with engineering an xDSL loop, a process which the Data Coalition believes is completely unnecessary, BellSouth's OSS cost study apparently builds in enormous failure rates. BellSouth's cost study lists essentially two groups involved with the engineering of an xDSL loop: the CPG (Circuit Provisioning Group) and the AFIG (Address and Facility Inventory Group).[266] Although BellSouth admits that the work functions of both groups are mechanized, the CPG tasks include two distinct time estimates for correcting OSS fallout, which take 15 and 18 minutes respectively. Further, BellSouth estimates that each type of fallout will occur 15%

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[264] Fassett Pre-Filed Rebuttal, p. 38.

[265] Fassett Pre-Filed Rebuttal, p. 31.

[266] Fassett Pre-Filed Rebuttal, p. 35.

of the time. Likewise, although the AFIG tasks of loop facility assignments are mechanized, BellSouth assumes that this mechanized process will fail a staggering 30% of the time.[267]

These assumed OSS failure rates are problematic for two reasons. First, BellSouth offers no support whatsoever for the assumptions. Despite BellSouth's burden in this case, no evidence exists in the record that these assumptions are based on historical data, BellSouth review of fallout rates, or any other verifiable process. Despite the numerous discovery requests issued by members of the Data Coalition in various state proceedings, not a single document produced by BellSouth explains how these assumptions were developed, the basis for them, or even identifies exactly who developed them. BellSouth apparently feels no compulsion to justify these enormous fallout rates or to offer support for them. Yet, each assumption about fallout from OSS triggers a startling cost increase driven by the inflated times and unnecessary tasks BellSouth includes in its xDSL cost studies. Accordingly, BellSouth's assumptions must be rejected.

Second, BellSouth's fallout rates do not account for improvements to the systems that would decrease the manual (and expensive) intervention. BellSouth's proposal permits BellSouth to recover costs that result from its embedded, malfunctioning OSS existing today. Despite its legal obligation to present a forward looking cost study that by its definition excludes embedded costs, BellSouth makes no attempt to look forward toward improvements that are clearly warranted by its own assumptions about the level of electronic OSS failure. The Authority should set UNE rates based on a forward-looking, electronic OSS in which all conceivable opportunities are taken to reduce fallout to manual processing. The ability to deliver high volumes of products at lower costs requires electronic systems that function as designed more than 40% of the time. Any competitive business experiencing the level of fallout that BellSouth assumes in its cost study would clearly be incented to drive those fallout rates down to more acceptable levels. Looking forward, this Authority must base prices on the efficient use

[267] *Id.* at 35.

of a fully functional, electronic OSS for xDSL preordering and ordering, such that fallout rates are kept to a bare minimum. Data Coalition witness Fassett outlines what those fallout rates, if any, should be.[268]

Where BellSouth now penalizes competitors by forcing them to use expensive, manual processes, those processes should be automatic and costs should be set on a forward-looking basis to reflect that automation. One fundamental underpinning of a forward-looking network is the recognition that tasks that can be automated will be automated. BellSouth's assumptions fail to recognize the need to, and in fact BellSouth's stated plans to, automate its systems, eliminate duplicative work groups and streamline its provisioning processes. A forward-looking process does not require "designed" xDSL capable loops. A forward-looking process has mechanized service inquiry functions and would not require manual engineering work. This Authority is empowered to require BellSouth to provide service in the most efficient manner possible, including providing incentives to BellSouth to properly automate its OSS by establishing rates that assume forward-looking electronic OSS. BellSouth should be allowed to recover for manual tasks only where BellSouth has proven that those tasks cannot be automated.

B. The Authority Must Set Rates That Are Supported By Evidence in the Record

The August 10, 2000 Procedural Order governing this docket clearly requires the party or parties proposing rates to file and serve with its cost study a summary and supporting documentation for that cost study. When issuing the order, the Hearing Officer, Director Greer, specifically indicated that he did not want any "black boxes," cost studies without sufficient information to allow either CLECs or the Authority to adequately review and challenge provisions of the study. Director Greer made it clear:

> And the order was that you supply adequate documentation. But that's the risk you have to take in filing it. The burden of proof -- and we clearly agreed upon

[268] *Id.* at p. 31-43.

> that -- the burden of proof in this case relies entirely upon the two ILECs that have presented their cost studies. It is your burden of proof. [269]

In response, BellSouth indicated that "[w]e filed the documentation which we believe presents sufficient information for you to decide this case."[270] Now, it is time for the Authority to decide whether the information provided by BellSouth does indeed support the task times, work groups and assumptions in BellSouth's cost study.

The Data Coalition has pointed out numerous instances in which BellSouth has either completely failed to offer support for its study assumptions or has offered information that is insufficient. One glaring example, of course, is BellSouth's decision not to introduce the Telcordia contract for its Line Sharing OSS upgrades. As a result of BellSouth's decision, the Authority has no evidence in the record to support these upgrades other than (1) the cost study; (2) Mr. Pate's testimony; and (3) the one data request to which BellSouth responded on the subject. That is insufficient evidentiary support for a charge of millions and millions of dollars.

With regard to other unbundled network elements, BellSouth's own cost witness Ms. Caldwell admitted that the "detailed description of the process BellSouth uses to provision an xDSL loop" was not in the cost study or testimony.[271] Likewise, the identity of people who created the task times, an explanation or basis of the assumptions, changes made from previous cost studies, and work papers supporting the cost study were not found in the cost study or pre-filed testimony.[272]

In contrast, the Data Coalition has provided evidence to support each of its recommended task times, rate adjustments, and policy concerns. We respectfully request that the Authority insist that BellSouth bear the burden of proof. Where BellSouth has provided no support for its assumptions,

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[269] Tr. Vol. IIA, p.52.

[270] Tr. Vol. IIA, p.54.

[271] Tr. Vol. IC, Caldwell Cross, p.118.

[272] *Id.* at 118-133.

task times and work groups or where the evidence offered is insufficient by law, the Authority must reject BellSouth's proposals. Instead, it should adopt the Data Coalition's proposals in their entirety.

CONCLUSION

The Data Coalition respectfully requests that the Authority set TELRIC cost based rates in this docket in the following manner:

1) **All xDSL loops (ADSL, HDSL, UCL, and IDSL loops).** Rates should be set according to the task times set forth in Data Coalition witness Fassett's Pre-Filed Testimony (p.43), or in the alternative, nonrecurring and recurring rates should be set no higher than rates for voice grade SL1 loops. Additionally, BellSouth is ordered to enable CLECs to electronically qualify, reserve and order a voice grade loop for DSL service. Such loops shall be identified in the BellSouth records, so that they are not rolled to fiber facilities.

2) **Line Shared Loops**. Nonrecurring charges for splitters and for provisioning of the loop must be reduced to the reasonable task times outlined by Mr. Fassett and Mr. Zulevic. Recurring charges for ILEC owned splitters must be reduced by decreasing the splitter price, removing costs for bantam test jack, and establishing reasonable cabling and installation charges. The recurring charge for the Line Shared loop should be zero, since BellSouth has failed to support its proposed charge.

3) **Line Sharing Terms and Conditions.** (1) ILEC should offer three splitter ownership options: ILEC owned/ILEC maintained; CLEC owned/CLEC maintained; and CLEC owned/CLEC maintained. (2) 180 days after the order, ILECs should provision Line Shared loops in 24 hours; (3) CLECs are entitled to full test access to all points of interconnection on a Line Shared loop; (4) ILEC owned splitters should be placed on or near the MDF; (5) ILEC owned splitters should be provisioned on a port at a time basis, as well as in bulks of 24 and 96 ports.

4) **Loop Conditioning.** Because a forward looking network contains no load coils or excessive bridged tap, nonrecurring loop conditioning charges are zero. In the alternative, loop conditioning charges must be based on unloading 50 pairs at a time in the reasonable times outlined in Mr. Fassett's testimony. No additional additive should be charged.

5) **Access to Loop Makeup.** CLECs shall have undiluted, direct access to all back office databases used by BellSouth to house loop make-up information. The charge for accessing this information electronically or manually shall be zero, since BellSouth's retail units pay nothing for this charge. Likewise, since all information on loops should be accurately and timely loaded into the BellSouth systems, the charge for manual loop makeup must be zero in a forward looking OSS system.

6) **Network Terminating Wire.** CLECs shall be granted access to network terminating wire on the terms and conditions outlined in Mr. Starkey's testimony.

7) **Dark Fiber.** The nonrecurring charge for dark fiber must be reduced dramatically to account for the inflated engineering task times proposed by BellSouth. Likewise, the recurring rate should be equal to that of an OC48 facility, since BellSouth has failed to support its proposed rate.

Respectfully submitted,

THE DATA COALITION

Eric J. Branfman
Thomas R. Lotterman
Joshua M. Bobeck
Swidler Berlin Shereff Friedman, LLP
3000 K Street, NW, Suite 300
Washington, DC 20007-5116
Telephone (202) 424-7500
Facsimile: (202) 424-7645

Attorneys For Broadslate Networks
of Tennessee, Inc.

Catherine F. Boone
Covad Communications Company
10 Glenlake Parkway
Suite 350
Atlanta, GA 30328
Telephone: (678) 579-8388
Facsimile: (678) 320-9433

Attorney for Dieca Communications,
Inc. d/b/a Covad Communications
Company

John Kerkorian
Mpower Communications Company, Inc.
5607 Glenridge Drive
Suite 300
Atlanta, GA 30342
Telephone: (404) 554-1217
Facsimile: (404)-554-2427

Attorney for MGC Communications, Inc.,
d/b/a Mpower Communications, Inc.

Henry Walker
Boult Cummings Conners & Berry, PLC
4141 Union Street, Suite 1600
Post Office Box 198062
Nashville, TN 37219
Telephone: (615)-244-2363
Facsimile: (615)-252-6363

Attorney for the Data Coalition

January 23, 2001

Respectfully submitted,

THE DATA COALITION

Joshua Bobeck

Eric J. Branfman
Thomas R. Lotterman
Joshua M. Bobeck
Swidler Berlin Shereff Friedman, LLP
3000 K Street, NW, Suite 300
Washington, DC 20007-5116
Telephone (202) 424-7500
Facsimile: (202) 424-7645

Attorneys For Broadslate Networks of Tennessee, Inc.

John Kerkorian

John Kerkorian
Mpower Communications Company, Inc.
5607 Glenridge Drive
Suite 300
Atlanta, GA 30342
Telephone: (404) 554-1217
Facsimile: (404)-554-2427

Attorney for MGC Communications, Inc., d/b/a Mpower Communications, Inc.

Catherine Boone by HW

Catherine F. Boone
Covad Communications Company
10 Glenlake Parkway
Suite 350
Atlanta, GA 30328
Telephone: (678) 579-8388
Facsimile: (678) 320-9433

Attorney for Dieca Communications, Inc. d/b/a Covad Communications Company

Henry Walker

Henry Walker
Boult Cummings Conners & Berry, PLC
4141 Union Street, Suite 1600
Post Office Box 198062
Nashville, TN 37219
Telephone: (615)-252-2363
Facsimile: (615)-252-6363

Attorney for the Data Coalition

January 23, 2001

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been forwarded via U.S. Mail, postage prepaid, and/or hand delivered to the following on this the 23rd day of January, 2001.

Guy Hicks, Esq.
BellSouth Telecommunications, Inc.
Suite 2101
333 Commerce Street
Nashville, Tennessee 37201-3300

Jim Lamoureux
AT&T
1200 Peachtree St., NE
Room 4060
Atlanta, GA 30309

James Wright, Esq.
United Telephone Southeast
14111 Capitol Blvd.
Wake Forest, NC 27587

Charles B. Welch, Esq.
Farris, Mathews, Branan & Hellen PLC
205 Capitol Blvd., Suite 303
Nashville, TN 37219

R. Dale Grimes, Esq.
Bass, Berry & Sims, LC
2700 First American Center
Nashville, TN 37238-2700

Dana Shaffer, Esq.
XO Tennessee, Inc.
105 Molloy St., Suite 300
Nashville, TN 37201

Clay Arendes, Esq.
Vectris Telecom, Inc.
6500 River Place Blvd.
Building 2, Suite 200
Austin, TX 78730

Susan Berlin, Esq.
MCI Telecommunications d/b/a
MCI WorldCom
6 Concourse Parkway
Atlanta, GA 30328

Bennett Ross, Esq.
BellSouth Telecommunications, Inc.
675 W. Peachtree St., Suite 4300
Atlanta, GA 30375

John Spilman
Director of Regulatory Affairs and
Industry Relations
BroadSlate Networks, Inc.
675 Peter Jefferson Parkway, Suite 310
Charlottesville, VA 22911

Henry Walker

Henry Walker

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