BELLSOUTH

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VIA HAND DELIVERY

Mr. David Waddell, Executive Secretary
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243

Re: *Generic Docket to Establish UNE Prices for Line Sharing per FCC 99-355 and Riser Cable and Terminating Wire as Ordered in TRA Docket No. 98-00123*
Docket No. 00-00544

Dear Mr. Waddell:

Enclosed are the original and thirteen copies of BellSouth's Post-Hearing Brief. Copies of the enclosed are being provided to counsel of record for all parties.

Very truly yours,

Guy M. Hicks

GMH/jem

Enclosure

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BEFORE THE TENNESSEE REGULATORY AUTHORITY
Nashville, Tennessee

In Re: *Generic Docket to Establish UNE Prices for Line Sharing per FCC 99-355 and Riser Cable and Terminating Wire as Ordered in TRA Docket No. 98-00123*

Docket No. 00-00544

BELLSOUTH'S POST-HEARING BRIEF

BellSouth Telecommunications, Inc. ("BellSouth") hereby respectfully submits its Post-Hearing Brief.

INTRODUCTION

Rates for unbundled network elements and interconnection must be "just and reasonable" and "based on the cost (without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or unbundled network element." This is the pricing standard set forth in Section 252(d) of the Telecommunications Act of 1996 ("1996 Act"). The 1996 Act provides no further guidance on how the state regulatory bodies should establish rates. Nevertheless, the Authority also must ensure that rates are set at a level which implements local competition in a fair and balanced manner and that such rates comply with the pricing rules established by the Federal Communications Commission ("FCC") -- a task complicated by the fact that the validity of at least some of those rules is in doubt. *See Iowa Utils. Bd. v. FCC*, 219 F.3d 744, 750 (8th Cir. 2000), *cert. granted*, __ U.S. __ (January 22, 2001).

This Authority previously conducted an extensive investigation into the cost methodology to be used by incumbent local exchange carriers ("ILECs") in developing the cost, and therefore the rate, for many interconnection services and unbundled network elements ("UNEs"). In earlier proceedings in Docket No. 97-01262, the Authority adopted BellSouth's TELRIC Calculator to set cost-based rates for interconnection services and UNEs offered by

BellSouth to competitive local exchange carriers ("CLECs") in Tennessee.[1] While adopting BellSouth's TELRIC Calculator as the basic cost model, the Authority did not agree with all of BellSouth's proposed inputs to the model. Therefore, in its First and Second Interim Orders in Docket No. 97-01262, the Authority adjusted the inputs for shared and common costs, fill factors, depreciation lives, cost of capital, plant specific expenses, ad valorem tax rate, monthly compounding as expressed in the cost of money, drop length, residential/business loop weighting, structure sharing, fall-out rates for operational support system ("OSS") Electronic Interfaces, testing. Caldwell Direct Testimony (11/13/00) at 11-12. Moreover, the TRA ordered that only direct costs should be recovered through non-recurring charges and that disconnect costs should be separated from installation costs. *Id.* at 12-13.

In November 1999, The FCC issued the Third Report and Order in CC Docket No. 96-98 ("*319 Order*"). In that order, the FCC listed eight basic types of network elements which must be unbundled: loops, subloops, the Network Interface Device ("NID"), circuit switching, packet switching (in limited circumstances), interoffice transmission facilities, signaling and call-related databases, and operational support systems ("OSS"). Separately the FCC identified the high frequency portion of the loop as a new UNE in its Third Report and Order in CC Docket No. 98-147 and Fourth Report and Order in CC Docket No. 96-98 ("*Line Sharing Order*").

BellSouth filed four cost studies in this proceeding. After adopting BellSouth's cost model and determining that certain adjustments were appropriate, the Authority ordered BellSouth to file proposed prices which reflected those decisions. BellSouth complied with that order and filed proposed prices on June 9, 2000 in response to the Authority's May 9, 2000 directive. In addition, on June 30, 2000, BellSouth filed additional cost studies, as required by

[1] The Authority did not adopt BellSouth's model for collocation. Instead, the Authority adopted the Collocation Model filed by AT&T and MCI, with certain adjustments.

the Authority, which identified costs for unbundled intrabuilding network cable, unbundled network terminating wire, and line sharing. Caldwell, Tr. Vol. I-B at 75-76. Thereafter, on October 2, 2000, again in response to the Authority's directive, BellSouth filed costs for all the UNEs which FCC identified as elements which ILECs must make available to CLECs and for which the Authority had not established a rate. *Id.* at 76. On October 20, BellSouth filed a study which identified the costs associated with line sharing in the situation where the CLEC owns the splitter. BellSouth filed that information along with costs for certain combinations of UNEs which we had not previously submitted. *Id.* at 77. On November 13, 2000, BellSouth filed some corrections to the nonrecurring costs for certain elements, xDSL nonrecurring, loop modification and line sharing. *Id.* In all cases, the cost studies were filed in both paper format and on CD-ROM. They include executive summaries, element descriptions, input files, and work papers that detailed factor development. Beyond that, BellSouth responded to numerous discovery requests.

DISCUSSION

BellSouth filed cost studies in this proceeding for the Authority to use in setting permanent rates for those unbundled network elements which the Authority did not consider in Docket No. 97-01262. To that end, BellSouth has submitted detailed cost studies consistent with the FCC's pricing rules. Although all of BellSouth's competitors rely, to one extent or another, upon BellSouth's cost studies as the basis for their various pricing proposals, one would never know given the significant disparity in many of the prices they propose. Such disparity is primarily due to fundamentally different approaches in this case. BellSouth's goal in this proceeding is to have prices established that will fairly and adequately compensate BellSouth for the services, functions and facilities that it is required to provide to CLECs and that will further

facilitate competition in the local exchange market in Tennessee. By contrast, BellSouth's competitors seek to compel BellSouth to subsidize CLEC entry into the local exchange market in Tennessee. To that end, various CLECs have proposed various adjustments to BellSouth's cost studies that, if adopted, would result in the establishment of rates well below the costs BellSouth is expected to incur in providing service in Tennessee in the future.

BellSouth's cost studies reflect recurring (capital and non-capital) and nonrecurring costs. Caldwell Direct Testimony (11/13/00) at 5. Capital recurring costs reflect the cost of purchasing an item and include depreciation, cost of money, and income tax. *Id.* Non-capital recurring costs reflect the use of an investment and include maintenance, ad valorem taxes, and gross receipts taxes. *Id.* Non-recurring costs are one time expenses associated with provisioning, installing, and disconnecting the network capability. These costs generally include five major categories of activity: service inquiry, service order, engineering, connect and test, and technician travel time. *Id.*

BellSouth's cost studies comply with the Authority's earlier orders in this docket. Caldwell, Tr. Vol. I-B at 100. Moreover, the cost studies before the Authority in this proceeding are effectively the same cost studies (as modified to conform with the interim orders) which the Authority used to set rates in Docket No. 97-01262. For example, the cost studies include the TRA-ordered cost of money, depreciation lives, and shared and common factors. Caldwell Direct Testimony (11/13/00) at 8-9. The results of this methodology reflect the costs BellSouth expects to incur in providing UNEs to CLECs on a going-forward basis in the state of Tennessee. These costs are based on an efficient network, designed to incorporate currently available forward-looking technology, but to also recognize BellSouth's provisioning practices and network guidelines.

BellSouth's cost studies are consistent with the FCC's costing methodology as set forth in FCC Rule 51.505 (Forward-looking economic cost) which defines the FCC's cost methodology for UNEs. Pursuant to the FCC's rules, such costs must be developed using an efficient network configuration that uses the existing location of the ILEC's wire centers. Further, the costs should be developed using a forward-looking cost of capital and economic depreciation rates, and a reasonable allocation of forward-looking common costs is appropriate. The forward-looking economic costs may not include embedded costs, retail costs, opportunity costs or revenues to subsidize other services.

Costs are either recurring or nonrecurring. The recurring costs associated with an unbundled loop, for example, reflect the costs to BellSouth "to engineer and place the cable in the ground, to bury it, splice it, get it ready to provide service." Caldwell, Tr. Vol. I-B at 96. The nonrecurring costs reflect activities which occur after the CLEC places the order for the loop, such as "the time to actually run that cross connect at the cross box, to get to the physical location, the travel time, the testing time after actually putting it to work." *Id.* In this proceeding, the intervening parties focused much of their criticism on BellSouth's proposed nonrecurring costs.

The nonrecurring costs identified in BellSouth's cost studies reflect costs BellSouth will incur in provisioning UNEs in Tennessee. Ms. Caldwell explained how BellSouth developed its nonrecurring costs: "Basically, what we do is we get the estimates from the subject matter experts on the amount of time that's required to perform the activity. Our function is to process that through the [TELRIC Calculator] and really carry it to cost and then look for consistencies among the UNEs in terms of the actual work times. Again, that is in the work times that BellSouth will incur, and that's what the subject matter experts have provided to us." *Id.* at 91.

In addition, the cost group, of which Ms. Caldwell is a member, conducted a more thorough analysis of the nonrecurring costs associated with each of the loops that were studied: "the cost department put together each individual UNE, the work centers and the work times involved, and then we carried that through a review process with all the subject matter experts and the individuals responsible for performing those activities." *Id.* at 95. According to Ms. Caldwell, "that step was taken to look at the numbers to verify that they were the actual times that were taking place." *Id.* The work times in the costs studies were further validated by direct discussions with the individuals who perform on a daily basis the work activities at issue. *Id.*

To provide an additional level of review, Mr. H.B. Greer (one of BellSouth's witnesses at the hearing) was brought in to review work times. Ms. Caldwell explained: "Also, within the last few months, going into new cost dockets, we have brought Mr. Greer on board, and he is analyzing the input separately, so that's another check. And in cases where he has questioned some of the inputs and maybe found additional data or talked to people, that is the result of what we filed on November 13th. We revised the work times to be in line with all his findings, so that's our checks and balances." *Id.* at 92-93.

While BellSouth submitted cost data to support each of the additional UNEs, the intervenors focused on a few issues in this proceeding. In challenging BellSouth's cost studies, the CLECs raised the following specific issues: (1) the manner in which BellSouth provisions xDSL-capable loops and the impact of such provisioning on the costs associated with such loops; (2) the availability of loop qualification data; (3) the assumptions underlying BellSouth's costs identified for line sharing; and (4) BellSouth's proposed method of access to and costs associated with Unbundled Network Terminating Wire and Unbundled Intrabuilding Network Cable. Each of these issues is discussed below.

A. BellSouth's Provision of xDSL Loops.

BellSouth offers a number of loops capable of supporting xDSL services and for which the Authority should establish recurring and nonrecurring rates. These xDSL loops include:

> High Bit-Rate Digital Subscriber Line (HDSL) Compatible Loop: The 2- and 4-wire copper loops are best suited for HDSL services. The technical characteristics of a loop are screened to ensure that the loop meets stringent industry standards for Carrier Serving Area ("CSA") transmission specifications to support HDSL services. The strict requirements for these loops mean that the end user must be served by a non-loaded copper pair, and the loop typically cannot be more than 12,000 feet long on 24 gauge copper wire. If 26 gauge copper wire is used, the limit is 9,000 feet or less. In either case, the loop may have up to 2,500 feet of bridged tap with no single bridged tap exceeding 2,000 feet.
>
> Asymmetrical Digital Subscriber Line (ADSL) Compatible Loop: This 2-wire copper loop is provisioned according to the Revised Resistance Design ("RRD") industry standards which means they may be up to 18,000 feet long and may have up to 6,000 feet of bridged tap which is inclusive of the loop length. This means that for every foot of bridged tap, the loop length is reduced by an equal amount. Therefore, an RRD loop that has 4,000 feet of bridged tap could be no longer than 14,000 feet.
>
> Unbundled Copper Loop (UCL) – These 2- and 4-wire copper loops are segmented between loops less than 18,000 feet ("UCL-Short") and loops greater than 18,000 feet ("UCL-Long"). The UCLs are commonly referred to as "dry copper" loops because they have no intervening equipment such as load coils, bridged tap, repeaters, etc., between the end user premises and the serving wire center. The UCL-Short will be designed to Resistance Design on a non-loaded metallic facility up to 18,000 feet in length. The UCL-Long will be any copper loop longer than 18,000 feet in length. BellSouth does not guarantee the transmission quality beyond the resistance design standards. However, BellSouth will ensure that these loops have electrical continuity and balance relative to the tip and ring conductors.

Milner Direct Testimony (11/13/00) at 10-11.

BellSouth also offers other loops that may be used to support xDSL service. In particular, BellSouth offers its Integrated Services Digital Network ("ISDN")-capable loop and its Universal Digital Channel ("UDC")-capable loop, both of which may support the xDSL service known as Integrated Digital Subscriber Line ("IDSL"). BellSouth provisions its ISDN-

capable loops according to applicable industry standards which means they may be provisioned via copper or via a Digital Loop Carrier ("DLC") system. These loops are also free of any load coils but are not referred to as "clean copper loops" because they may be provisioned via DLC systems that are compatible with ISDN service. The UDC is identical to the ISDN loop, except that it is provisioned uniquely to support IDSL service. Milner Direct Testimony (11/13/00) at 12.

BellSouth offers many types of loops in order to meet the needs of various CLECs and the different types of services that they offer to their customers. Latham, Tr. Vol. V-D at 230. These loops were developed to fulfill legal requirements or CLEC needs as expressed in interconnection agreements. *Id.* For example, while the unbundled copper loop ("UCL") has been available to CLECs since the second quarter of 1999, BellSouth more recently developed the UCL–Long in response to a request by some CLECs who wish to obtain an unbundled copper loop that was unlimited in length. Milner Direct Testimony (11/13/00) at 11.

The Data Coalition criticized BellSouth's xDSL loop assumptions for three reasons: (1) loops need not be designed; (2) "a loop is a loop" and, therefore, any voice grade loop, if it meets the transmission requirements, can be provisioned and maintained as an xDSL-capable loop; and (3) BellSouth's assumptions about loop conditioning are incorrect. Each of these criticisms is misplaced.

1. Designed Loops

The New Entrants contend that there is no need for xDSL loops to be designed, arguing that BellSouth imposes this requirement on CLECs simply to raise CLECs' costs unnecessarily. *See* Starkey Rebuttal Testimony (11/20/00) at 12. This argument is misguided.

An xDSL-capable loop includes a design layout record ("DLR"). The DLR is a by-product of the design process. Latham, Tr. Vol. V-D at 251. The DLR provides CLECs with specific information about the loop they have ordered and confirms that they have received what they requested. *Id.* at 249. BellSouth provides designed loops because, during negotiation, CLECs requested that the loops be designed. *Id.* at 231. The design process provides a benchmark set of measurements for the loop. The DLR provides a benchmark so that, in the event of future technical problems, BellSouth and the CLEC will have a valid set of criteria to compare the condition of the loop too and thereby isolate the trouble. Greer, Tr. Vol. V-B at 129-30. The design process also allows BellSouth to insure that the loop meets the parameters that have been established for unbundled xDSL-capable loops. Greer, Tr. Vol. V-C at 156. BellSouth measures the resistance and the capacitance of the loop. *Id.* at 156-57.

A designed loop also comes with test points, which allows BellSouth to remotely conduct certain tests in the event a trouble is reported on the line. Latham, Tr. Vol. V-D at 231. If the test point were not included, repairs to the line would be delayed. *Id.* Moreover, without a test point, the CLEC would be charged in circumstances where BellSouth dispatched a technician in response to a CLEC trouble call, but no trouble was found with the line. *Id.* at 232-33. Mr. Latham explained that most CLECs prefer the test point "because of its expediency to provide effective maintenance and repair and because they don't have to pay for the dispatch in a no-trouble-found situation." *Id.* at 233.

Significantly, up until a few weeks before the hearing, BellSouth had not received a request for a non-designed unbundled copper loop. *Id.* at 266. Having received such a request, BellSouth is in the process of developing such a loop offering. *Id.* But even if BellSouth ultimately offers a new loop, the Authority should not ignore the very real differences between

SL1 loops and xDSL-capable loops as they have been presented in this proceeding. BellSouth's proposed rates for the xDSL-capable loops are reasonable and should be adopted.

2. A Loop is a Loop

Apart from their concern about designed loops, the Data Coalition have also questioned whether it is appropriate to distinguish xDSL loops based on loop length. This issue demonstrates perhaps more clearly than any other that the Data Coalition primary motivation in this docket is simply to increase their profit margin by obtaining xDSL-capable loops at the lowest possible price. There can be no serious dispute that loop length and the particular DSL technology involved affect the cost of an xDSL loop. Milner Direct Testimony (11/13/00) at 13. Even the FCC has recognized as much:

> Provision of xDSL service is subject to a variety of important technical constraints. One is the length of the subscriber loop: ADSL, the most widely deployed xDSL-based service, generally requires loops of less than 18,000 feet using current technology. Another is the quality of the loop, which must be free of excessive bridged taps, loading coils, and other devices commonly used to aid in the provision of analog voice and data transmission, but which interfere with the provision of xDSL services. "Conditioning" loops to remove those impediments, or constructing fiber-based digital loop carrier systems to overcome loop length difficulties, can be expensive.

See Line Sharing Order, at ¶ 8, n.9.

Taking loop length into account in developing costs is appropriate because, for unbundled loops, loop length is the major cost driver. Caldwell, Tr. Vol. I-B at 101. Since the cost of xDSL loops is a function of loop length (as well as the particular technology to be deployed), it is appropriate for a cost study to take such considerations into account in developing forward-looking costs.

There is no merit to the Data Coalition's argument that a "loop is a loop" and that BellSouth should only offer a single Service Level 1 ("SL-1") loop that CLECs can use to

support their xDSL services. Starkey Rebuttal Testimony (11/20/00) at 10-12. As Mr. Latham explained, "a voice grade loop and a DSL-capable loop are not the same." Latham, Tr. Vol. V-D at 235. "[A]n SL1 voice-grade loop can be provisioned over loaded copper, nonloaded copper, fiber, digital loop carrier system . . . practically any type of media that exists today, you can use, or a mixture or combination of all of them." *Id.* By contrast, xDSL loops such as HDSL and ADSL-compatible loops "require certain specific parameters, such as they have to be nonloaded copper . . ., there are certain restrictions about the bridge tap" and cannot be provisioned over a digital loop carrier system without the installation of a line card at the remote terminal. *Id.* at 235-36.[2] Because an SL1 loop can be provisioned over a variety of technologies, it is less expensive to provision. *Id.* at 236. Of course, rather than purchasing one of BellSouth's xDSL loops, the Data Coalition always has the option to purchase an SL-1 loop to support their xDSL service. However, BellSouth will only support that SL1 loop as a voice grade circuit. *Id.* And, although a CLEC may order an SL1 and use it to provide ADSL service, there is no guarantee that the loop won't be rolled over to a digital loop carrier system in the future. Milner, Tr. Vol. II-B at 74.[3]

3. Loop Conditioning

In an attempt to avoid paying loop conditioning costs, the Data Coalition argues that BellSouth should not be entitled to charge a CLEC when it must remove load coils or bridged tap from a loop because a forward-looking network would not have these elements. While there is no dispute that a forward-looking network being designed today would not include load coils,

[2] The differences between SL-1 and xDSL loops become particularly acute when the loop is provisioned using DLC. The FCC has gone so far as to conclude that a CLEC is "precluded" from offering xDSL service to customers served by DLC "unless the competitor can gain access to the customer's copper loop before the traffic on that loop is multiplexed." *319 Order*, ¶ 218.

[3] Even BellSouth's ADSL customers are warned in the tariff that network modifications may impact their ability to obtain DSL service. Latham, Tr. Vol. V-D at 269-70.

that does not alter the fact that CLECs are requesting unloaded copper loops from BellSouth's existing network, which contains both load coils and bridged tap. The removal of these elements is a very real on-going cost that BellSouth will incur each and every time that a CLEC requests that BellSouth condition a loop. Caldwell Direct Testimony (11/13/00) at 15-16.

The FCC could not have been more clear that BellSouth is entitled to recover the costs associated with loop conditioning, notwithstanding that load coils and bridged tap may not be included in a "forward-looking" network design. The FCC stated in no uncertain terms that: "under our rules, the incumbent should be able to charge for conditioning such loops." *319 Order* ¶ 193. *See also Line Sharing Order* ¶ 82 (concluding that "although loops of 18,000 feet or shorter normally should not require voice-transmission enhancing devices, these devices are sometimes present on such loops and the incumbent LEC should be able to charge for conditioning such loops").

In his testimony, Mr. Fassett characterized BellSouth's estimates of the time it would take to remove load coils from loops (also referred to as "unloading" the loops). During his summary, Mr. Fassett purported to demonstrate the unloading of fifty cable pairs in an aerial environment. Fassett, Tr. Vol. IV-C at 149. At best, Mr. Fassett's demonstration was incomplete. At worst, it was misleading.

Under cross-examination, Mr. Fassett admitted that the "demonstration" he performed for the Authority did not represent all of the work steps that were need to unload a cable pair even in an aerial environment. Fassett, Tr. Vol. IV-C at 182-83. In particular, Mr. Fassett omitted any time estimate for the travel time to the site and the time the technician would take to secure the site for work. *Id.* Mr. Fassett also admitted that his demonstration did not include whatever work would have to be done to physically remove the load coil. Rather he only demonstrated the

work associated with disconnecting the cable pair from the load coil. *Id.* at 191-92.[4] Moreover, Mr. Fassett admitted that if the unloading were to take place in an underground (manhole) environment there would be different and additional work steps that would have to be performed. *Id.* at 183.

Among other differences, in an underground environment, load coils would be contained in a sealed case which would have to be opened and from which the sealant would have to be removed. *Id.* at 169. Following the work, the case would have to be sealed again. *Id.* When unloading loops in an underground environment, the technician must prepare the manhole. *Id.* at 172. Upon arrival at the site, the first step is to set-up a protective area around the manhole. According to Mr. Fassett that takes approximately five minutes. *Id.* at 173. If the manhole needs to have water removed, that can add an additional five to ten minutes. *Id.* at 173-74. Manholes also need to be ventilated to ensure that there are no stale or harmful gases present. *Id.* at 174-75. According to Mr. Fassett, ventilating a manhole takes approximately ten minutes. *Id.*

Moreover, the work to be done is different depending on the type of cable. During his demonstration, Mr. Fassett was using duct PIC-type cable. *Id* at 178. But, 94% of the cable in BellSouth's network in Tennessee is pulp cable. *Id.* at 182. When pulp cable is involved, the technician must pressurize the cable before any work can be done. *Id.* at 177-78. Because he selected PIC cable, Mr. Fassett's demonstration necessarily did not include the steps involved in pressurizing pulp cable. An additional consideration which Mr. Fassett did not take into account is the possibility that cables may need to be rearranged or re-racked before any work could be performed. Mr. Fassett admitted that re-racking may need to be done in what he refers to as

[4] Mr. Fassett stated that removing the load coil would take another "couple of minutes." *Id.* at 192.

"congested" manholes. *Id.* at 180. And, he agreed that congested manholes tend to occur in downtown areas, the place where competition for DSL services is taking place. *Id.* at 181.

In addition to presenting an incomplete picture of the work associated with load coil removal, Mr. Fassett's estimates are based on nothing more than his personal experience. *Id.* at 185-86. Yet, he offered no compelling reason for this Authority to adopt his estimates in place of the estimates provided by BellSouth's subject matter experts. Mr. Greer validated the 4.5 hour time estimate in BellSouth's study for load coil removal by observing BellSouth employees performing that work. Greer, Tr. Vol. V-B at 142. The job he observed actually took more than 4.5 hours. *Id.* at 142-43. In sum, Mr. Fassett's demonstration should not be used as a basis for adjusting any of BellSouth's cost inputs or proposed work times from which those cost inputs are derived.

Aside from the issue of which work times and processes more accurately reflect BellSouth's costs for loop conditioning, BellSouth has requested that the Authority approve its proposed loop additive. The loop additive was developed to permit BellSouth to recover a reasonable amount of the cost associated with loop conditioning. As Mr. Latham explained, although BellSouth will condition ten loops at a time, "the vast majority" of orders from CLECs are for only one loop. Latham, Tr. Vol. V-D at 244. At that point, if BellSouth were to recover only one/tenth of the loop conditioning cost, then BellSouth would, in Mr. Latham's words, be left "holding the bag" for the remaining ninety percent of the conditioning cost. *Id.* Therefore, BellSouth developed a method of cost recovery that is fair to the CLECs and to BellSouth. First, BellSouth assumed that the CLEC placing the order would order two loops. *Id.* Next, BellSouth assumed that it would use four of the conditioned loops. *Id.* Finally, BellSouth assumed that the remaining four loops would be used by CLECs at some point in the future. *Id.* at 245. The net

result of the approach BellSouth took is that forty percent of the cost of loop conditioning is spread among the CLECs who order xDSL-capable loops. *Id.*

B. Loop Make-up Data

The CLECs, particularly the Data Coalition, have suggested that BellSouth is not providing nondiscriminatory access to loop makeup information. Starkey Rebuttal Testimony (11/20/00) at 35. They are incorrect. To comply with the *319 Order*, BellSouth implemented a manual loop-makeup service inquiry process. This process provides CLECs with non-discriminatory access to the same underlying loop makeup information that is available to BellSouth. In addition to the manual service inquiry, BellSouth has recently implemented electronic access to the detailed loop makeup information contained within BellSouth's Loop Facilities Assignment and Control System ("LFACS"). LFACS is the database where loop makeup information resides within the BellSouth OSS. Pate, Tr. Vol. III-A at 6. The electronic inquiry to LFACS has undergone beta testing with several CLECs since July 29, 2000, and was made available to interested CLECs in the production environment in November, 2000. *Id.* at 7. In addition, BellSouth is beta testing a system to permit CLECs to electronically order xDSL-compatible loops and unbundled cooper loops. That functionality will be made available to interested CLECs upon the conclusion of that testing. *Id.* at 7.

To support their claim of discrimination, the Data Coalition has attempted to compare BellSouth's Loop Qualification System ("LQS") with the access they have to information about loops. But the comparison is inappropriate. The information from the LQS system does not inform the CLECs whether a loop meets their specifications for xDSL services; it only provides information concerning the loops' conformity to BellSouth's ADSL parameters. Pate, Tr. Vol.

III-C at 177-78. As Mr. Pate explained, the systems serve different functions and, in any event, BellSouth has made LQS available to CLECs for free:

> LQS was designed as a tool for network service providers, the purchasers of BellSouth's tariffed industrial class ADSL offering, to determine whether a particular service location is qualified for BellSouth's industrial class ADSL offering based on BellSouth's defined technical parameters. By entering a telephone number, LQS provides the user with a qualified response based on the technical parameters of BellSouth's industrial class offering. LQS does not provide loop makeup information as contemplated by the FCC's UNE Remand Order. With that said, subsequent to the FCC's UNE Remand Order, access to LQS was provided to CLECs at no charge.

Pate, Tr. Vol. III-A at 8. In sum, BellSouth is providing nondiscriminatory access to loop makeup information.

C. Line Sharing

BellSouth has implemented line sharing consistent with the FCC requirements. The Data Coalition has challenged the manner in which BellSouth has implemented line sharing, including the rates BellSouth has proposed in connection with such implementation. The issues raised by the Data Coalition include (1) the placement of the line splitters within the central office and (2) the time necessary to install a splitter.

BellSouth believes it is appropriate to place the splitter on a relay rack in the central office, rather than mounted on a main distributing frame ("MDF"). Milner, Tr. Vol. II-A at 27. Among other reasons, such placement permits the use of a bantam test jack, a device which provides "unencumbered test access to the loop and the cross-connections across the central office." *Id.* at 40. At a BellSouth-CLEC collaborative in Georgia, two CLECs -- New Edge and Duro Communications -- had no objection to the splitter being placed in a common area within the central office. Greer, Tr. Vol. V-B at 118-19.

While Mr. Zulevic expressed concern about the distance from the splitter to the MDF and the additional cable that might be required, the fact is that there is no material cost difference caused by this arrangement. *Id.* at 35. Moreover, despite Mr. Zulevic's concern that up to one thousand feet of additional cable could be required, the worst case scenario which BellSouth has discovered added only 250 feet of additional cable. *Id.* at 35-36. Significantly, regardless of the actual cable length required, BellSouth's cost study only assumed 150 feet of cable in calculating the costs associated with line sharing. *Id.* at 36. And, while Mr. Zulevic prefers frame-mounted splitters, he admitted splitters cannot be mounted on COSMIC frames. Zulevic, Tr. Vol. I-A at 45. That fact alone undermines Mr. Zulevic's proposal because, in Tennessee, twenty-five of BellSouth's sixty-two line sharing central offices in Tennessee have COSMIC frames. Greer, Tr. Vol. V-B at 114. Moreover, Mr. Zulevic agreed that it would be very difficult to use bantam test jack with a frame-mounted splitter. *Id.* at 47

Mr. Zulevic also challenged BellSouth's work times associated with line sharing. But, on cross examination, he admitted that his time estimate for splitter installation (3-4 minutes) reflected only the time to screw in four mounting screws, and did not include the other work required to install and use a splitter. *Id.* at 39. He did not include work associated with cabling in his time estimates. *Id.* at 40. In fact, according to Mr. Zulevic, the installation and use of a 96 port splitter involves terminating 200 separate wires in the central office. *Id.* at 40. And, if the splitter were fully utilized, 600 wires (12 25-pair cables) would have to be terminated in the central office. *Id.* at 49-50.

Mr. Zulevic also admitted that, while he had identified only two cross connects for the provision of a line shared loop in his prefiled testimony (at page 15), a relay rack mounted splitter in a central office with toll main distributing frame would require three tie cables and five

cross connects. *Id.* at 50-51. As Mr. Zulevic acknowledged, ILECs such as BellSouth quite often have a toll main distributing frame in a downtown central office. *Id.* at 52. Mr. Zulevic's adjustments are based on an incomplete and unrealistic view of the network and its components and should be rejected.

The Authority should reject the Data Coalition's suggestion that BellSouth be required to install, for the CLECs' use, dual purpose line cards in the digital loop carrier system. As Mr. Milner explained, if BellSouth were required to install, utilize, and permit CLECs to utilize dual purpose DLC line cards, BellSouth would be providing unbundled packet switching functionality. Milner, Tr. Vol. II-A at 11-12. The FCC does not require that ILECs provide such functionality except in limited circumstances. *Id.* at 12. Even if the CLEC were to provide the line cards, the arrangement would amount to joint operation of the DLC equipment, which is certainly not required by the 1996 Act or the FCC.

The last issue related to line sharing that merits discussion is the OSS functionality to electronically process line sharing service requests as well as xDSL-compatible loops. BellSouth is implementing a vendor solution by Telcordia Technologies. This extensive technical solution provides an integrated software and hardware package to be implemented in BellSouth's operations environment. It establishes a new corporate gateway along with a new system architecture for the processing of local service requests for the *319 Order* and the *Line Sharing Order*. While this has not yet been implemented, BellSouth has implemented an interim solution in the existing systems to allow mechanized firm ordering of CO-based BellSouth-owned splinter line sharing. This solution was implemented on September 30, 2000. Pate, Tr. Vol. III-A at 10 and 11. The Telcordia solution is solely for the CLECs' community and does not provide

support to BellSouth's retail offerings. *Id.* at 17. The costs associated with this solution are reasonable and should be recovered through BellSouth's proposed rates.

D. UNTW and UINC

BellSouth offers access to all of the subloop elements through offerings that comply with the FCC's requirements. Milner, Tr. Vol. II-A at 6. Unbundled intrabuilding network cable ("UINC") and unbundled network terminating wire ("UNTW") are sub-elements of the loop. CLECs are entitled to purchase these elements and BellSouth is entitled to be compensated for the parts of BellSouth's loop used by a CLEC, including UINC and UNTW. The loop, including all sub-elements, is on the network side of the demarcation point or NID. Milner Direct Testimony (11/13/00) at 18-19.

UINC and UNTW are subloop elements found in multi-tenant or high rise buildings. INC is that part of BellSouth's loop facilities extending from a cross-connect terminal at, or close to, the entrance point of the distribution cable. It is located on the network side of the demarcation point between BellSouth's network and the inside wire at an end user customer's premise. Milner Direct Testimony (11/13/00) at 21. UINC is sometimes referred to as "riser cable." *Id.* UNTW provides a copper transmission path between distribution cable or INC, and "fans out" to individual customer rooms in a building. *Id.* at 22.

The primary issue which the intervenors raised with respect to UINC and UNTW is the manner in which the CLECs will obtain access to those elements. Under BellSouth's proposal, BellSouth will construct an Access Terminal through which CLECs can access UINC and UNTW. For garden apartments, BellSouth will pre-wire to the Access Terminal all the NTW pairs which serve a particular building. For example, in the garden apartment arrangement, this means that each cable pair available to serve customers in that garden apartment building will

appear both on BellSouth's terminal and on the Access Terminal. A CLEC wanting to serve a customer in the garden apartment situation would build its terminal at that location and then wire its cable pair to the appropriate pre-wired location on the Access Terminal. Milner Direct Testimony (11/13/00) at 25-26, Exhibit WKM-1. Access to UINC in high-rise buildings will be accomplished in a similar manner. BellSouth's proposal provides CLECs with the access they need while preserving network security and reliability. Milner Direct Testimony at 26.

AT&T objects to the use of an Access Terminal for accessing UINC and UNTW, insisting that they should have direct access to these elements instead. However, such direct access is not technically feasible because it would compromise network reliability and security. *See* 47 C.F.R. § 51.5. First, if given direct access, CLEC technicians could, intentionally or unintentionally, disrupt the service provided by BellSouth to end user customers, including both BellSouth's and CLECs' end user customers. Milner Direct Testimony (11/13/00) at 27-28. In a commercial high-rise building involving business customers with high-speed digital data services operating 24 hours per day, the problem is even more acute. Any disturbance of a working circuit would cause harm to existing services and subject BellSouth and this Authority to numerous customer complaints.

Second, direct access also would place BellSouth at the CLECs' mercy to tell BellSouth how, when, where, and which of BellSouth's facilities are being used, which would have a totally debilitating effect on BellSouth's ability to maintain accurate cable inventory records. With direct access, any CLEC in Tennessee could walk into an equipment room in a high-rise building and start appropriating pairs and facilities for its own use, without any obligation to keep appropriate records so that the next person in the room knows what belongs to whom. This lack of accurate inventory information would result in imminent failure of BellSouth's service

provisioning, maintenance and repair processes and those of CLECs using subloop elements acquired from BellSouth. Milner Direct Testimony (11/13/00) at 28.

The Florida Public Service Commission considered and rejected the argument that CLECs should have direct access to UNTW, as was proposed by MediaOne in its arbitration with BellSouth (FPSC Docket 990149-TP). The FPSC concluded:

> The record does not contain evidence of any case which would support a proposal where one party is seeking to use its own personnel to, in effect, modify the configuration of another party's network without the owning party being present. We find that MediaOne's proposal to physically separate BellSouth's NTW cross-connect facility from BellSouth's outside distribution cross-connect facilities is an unrealistic approach for meeting its objectives. Therefore, BellSouth is perfectly within its rights to not allow MediaOne technicians to modify BellSouth's network.
>
> ...Based on the evidence presented at the hearing, we believe that it is in the best interests of the parties that the physical interconnection of MediaOne's network be achieved as proposed by BellSouth.
>
> We find from the record that at least one other ALEC in Florida and an unknown number of ALECs in other states have been able to provide service based on BellSouth's NTW proposal. Thus, we believe that MediaOne should be able to provide service using BellSouth's NTW proposal...

MediaOne Order at 17.[5]

The FPSC's decision is consistent with the FCC's *319 Order*. The FCC required that incumbents provide a "single point of interconnection" ("SPOI") at multi-unit premises that is suitable for use by multiple telecommunications carriers. *319 Order* ¶ 226. The SPOI is conceptually identical to the use of an Access Terminal approved by the FPSC in Docket 990149-TP, except that it is intended for use by multiple carriers rather than by a single carrier.

[5] The Florida Commission's *MediaOne Order* is consistent with a decision reached by the Georgia Public Service Commission in an arbitration also involving MediaOne. In that case, the Georgia Commission directed BellSouth to "construct a single point of interconnection that will be fully accessible and suitable for use by multiple carriers" and permitted MediaOne to obtain access to NTW by means of an Access Terminal or "access cross connect (CSX) facility."

Nothing in the FCC's *319 Order* can reasonably be read to mandate the direct access that CLECs seek here. The FCC plainly required that the ILEC "construct" a SPOI to permit access to subloop elements, which necessarily means that the SPOI required by the FCC does not presently exist. *319 Order* ¶ 226. There would be no need for ILECs to construct anything, if the FCC contemplated that CLECs would simply have direct access to BellSouth's existing facilities.

Furthermore, the FCC did not alter its requirement that each carrier "retain responsibility for the management, control, and performance of its own network." *First Report and Order* ¶ 203. If direct access to UINC and UNTW as proposed by the Data Coalition, BellSouth would be unable to manage and control its network in the provision of service to its and the CLECs' end user customers. Indeed, the FCC expressly reserved to state commissions the authority to determine issues associated with network reliability and security in resolving issues concerning subloop unbundling. *319 Order* ¶ 228.

To be sure, the construction of an Access Terminal, which is BellSouth's proposed method for CLECs to gain access to unbundled subloop elements, will not eliminate the possibility that network reliability and security may be compromised. However, BellSouth's proposal makes it more clear who's working on what part of the network and minimizes those unfortunate incidents.

The Authority should reject the intervenors' Coalition's suggestion that BellSouth bear the cost of constructing the Access Terminal. First, the CLEC, not BellSouth, has caused the cost of the Access Terminal to be incurred and should alone bear that cost. An Access Terminal is necessary to prevent intentional or unintentional service disruptions caused by CLECs' technicians and to ensure accurate record keeping and billing as a result of CLECs' access to

subloop elements. BellSouth would have no reason to construct Access Terminals if not for the CLECs' desire to gain access to BellSouth's subloop facilities. Milner, Tr. Vol. II-A at 23.

E. Other Issues

The Data Coalition, through Mr. Fassett, proposed numerous assumptions for the Authority to adopt for use in BellSouth's cost studies. None of these assumptions is reasonable.

For example, in his pre-filed testimony on p. 22, line 19, Mr. Fassett stated that it would take approximately twenty minutes to travel from a dispatched location to a non-staffed office. Fassett, Tr. Vol. IV-D at 216-17. He admitted that the twenty minutes was based on nothing more than his experience in upstate New York driving from central office to central office. *Id.* at 217. He did not compile any data to derive a true average. *Id.* at 217-18. In fact, he admitted that he had no idea whether the twenty minutes was accurate or inaccurate as it related to Tennessee. *Id.* at 218.

On page 23 of his pre-filed testimony, Mr. Fassett provided opinions about the operational support systems BellSouth uses. He admitted that he had no experience with operational support systems as they related to competitive local exchange carriers ordering unbundled network elements. Fassett, Tr. Vol. IV-D at 218-19. Moreover, his experience was limited to NYNEX's operational support systems. *Id.*

Also on page 23 of his pre-filed testimony, he provided an estimate of OSS fallout at two percent. This two percent figure conflicts with the TRA's established seven percent figure. On questioning, Mr. Fassett stated that he did not believe that the seven percent figure adopted by this Authority was reasonable. *Id.* at 221.

On page 25 of his testimony, Mr. Fassett suggested a proxy labor rate of $40.00. Mr. Fassett admitted that he did no analysis to come up with the $40.00. *Id.* at 222. When asked

what the basis was for his $40.00 rate. Mr. Fassett responded: "There is no basis. It's my own opinion." *Id.* at 223. In fact, the $40.00 rate Mr. Fassett used was the same $40.00 figure that was contained in the Hatfield Model, which this Authority has rejected. *Id.* at 224-25.

At page 33 of his pre-filed testimony, lines 12-17, Mr. Fassett suggested that one of BellSouth's subject matter experts, Mr. Zitzmann, had exaggerated the time required for even the most basic use of mechanized systems. After being cross-examined on the basis for his statement, Mr. Fassett agreed that he had not fairly represented Mr. Zitzmann's position on this question:

> Q. Okay. Do you think you fairly represented Mr. Zitzmann's position on logging in and logging out in your testimony by omitting his explanation -- which I understand you may disagree with it -- but by omitting his explanation that the logging out and the logging in is a matter of BellSouth practices?
>
> A. No, I don't think so.

Fassett, Tr. Vol. IV-D at 243. Further on, Mr. Fassett admitted that he misrepresented Mr. Zitzmann's testimony:

> Q. Well, but you say that -- you quote him on lines 15-17 that he said that the log-in process involves only two screens and a few keystrokes. He didn't say that, did he?
>
> A. No, but he -- at least I --
>
> Q. My question was: He didn't say that, did he? What's your answer?
>
> A. No. No.

Id. Taken as a whole, Mr. Fassett's testimony is a collection of guesses and half-truths. The Authority should give his testimony no weight. BellSouth has provided adequate support for its proposed numbers and other inputs.

CONCLUSION

Based on the evidence presented in this proceeding, and for the reasons set forth above, BellSouth requests that the Authority adopt BellSouth's position on all issues.

Respectfully submitted this the 23rd day of January, 2001.

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CERTIFICATE OF SERVICE

I hereby certify that on January 23, 2001, a copy of the foregoing document was served on the parties of record, via the method indicated:

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