

ORIGINAL

**BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION
REBUTTAL TESTIMONY OF
ROBERT V. FALCONE
ON BEHALF OF
AT&T COMMUNICATIONS OF
THE SOUTHERN STATES, INC.**

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1 consultant for Unitel of Canada. In 1995, I assumed my current position in the
2 Local Services Division.

3
4 **Q. PLEASE DESCRIBE YOUR CURRENT EMPLOYMENT AND THE**
5 **SCOPE OF YOUR RESPONSIBILITIES.**

6 A. I am employed by AT&T as a Division Manager in the Local Services Division.
7 My current duties include providing network technical support for new service
8 applications and participating in various federal and state proceedings.

9
10 **Q. PLEASE STATE THE PURPOSE OF YOUR TESTIMONY.**

11 A. The purpose of my testimony is to recommend that this Commission reject
12 BellSouth's proposal that CLEC's must utilize collocated facilities to combine
13 network elements, and to recommend a more efficient, non-discriminatory
14 alternative if this Commission finds that the Interconnection Agreement between
15 AT&T and BellSouth requires AT&T to combine network elements or that
16 BellSouth is not required to provide elements as they are already combined in
17 BellSouth's network. The purpose of this docket is to determine the prices AT&T
18 will pay when it purchases combined network elements, often referred to as the
19 "platform" of unbundled network elements. BellSouth has taken the position that
20 any CLEC who purchases a loop and switch combination must pay for those
21 elements as if the CLEC had purchased retail services for resale. BellSouth will
22 agree to the payment of rates set for the purchase of unbundled network elements
23 ("UNE's") only if the loop and switch are physically separated and provided to the
24 CLEC using facilities installed in its collocated space . The testimony of Messrs.
25 Gillan and Eppsteiner address BellSouth's obligation to provide combinations of

1 unbundled network elements. If the Commission determines that BellSouth is not
2 obligated to provide elements as they are currently combined or to combine
3 elements for AT&T, the purpose of my testimony is to demonstrate that physical
4 separation of the loop and switch is not necessary; and tremendously increases the
5 non-recurring and recurring costs associated with the purchase of unbundled
6 network elements.

7
8 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

9 A. First, I will explain the physical plant involved in combining UNE's. Second, I
10 will explain how BellSouth's policy of separating UNE's only to have AT&T
11 combine them using its own collocated facilities serves no valid commercial
12 purpose and does nothing more than create an insurmountable barrier to local
13 competition. Third, I will discuss alternatives to the use of collocated facilities
14 for combining elements and show that current capabilities of the switch allow
15 logical (i.e., electronic) separation and recombination of the loop and switch.
16 This is the only process that comes close to providing CLECs with a viable
17 commercial substitute for the activities that BellSouth performs for itself -- and
18 allows Centrex customers to perform for themselves -- today. Fourth, I will
19 discuss how the Commission could assure that CLECs will be able to provide
20 viable competition using combined loops and ports by prohibiting BellSouth
21 from disturbing existing combinations of elements.

22

1 **I. THE PHYSICAL PLANT INVOLVED IN COMBINING UNE'S USING**
2 **COLLOCATED FACILITIES**

3

4 **Q. WHAT IS BELLSOUTH'S POSITION REGARDING ITS ABILITY TO**
5 **PROVIDE ACCESS TO THE LOOP AND THE SWITCH?**

6 A. BellSouth maintains that, if AT&T wants to combine UNE's to provide competing
7 service, BellSouth will unbundle currently combined UNE's and provide them
8 separately to AT&T to combine with AT&T network equipment in collocated
9 space. BellSouth stated in a February 10, 1998 letter to AT&T: "BellSouth's
10 policy is to deliver UNE's to a CLEC's collocation space for the purpose of
11 combining unbundled network elements." See RVF-1 at 4.

12

13 To assess the reasonableness of BellSouth's position, it is useful first to describe
14 how loops and switch ports are typically connected in a central office, and then to
15 describe the steps that would be involved if CLECs seeking to combine the loop
16 and switching elements were required to use a collocation approach.

17

18 **Q. WHAT ARE THE METHODS USED BY INCUMBENT LECS TO**
19 **CONNECT LOOPS AND PORTS MANUALLY?**

20 A. There are two basic architectures in broad use among ILECs for manually
21 connecting loops to switch ports. The first, and most common, involves use of a
22 Main Distribution Frame ("MDF"), at which each copper wire loop is individually
23 cross-connected with a pair of wires that connect to a switch port connector block.
24 The second involves use of Integrated Digital Loop Carrier ("IDLC"), in which a

1 digital circuit carrying numerous multiplexed loops bypasses the MDF and
2 connects directly into the switch.

3

4 **Q. PLEASE DESCRIBE THE MAIN DISTRIBUTION FRAME METHOD OF**
5 **CONNECTION.**

6 A. Exhibit RVF-2, Figure 1 to my testimony depicts a typical configuration for
7 manually connecting copper loops to switch ports in an ILEC's central office. See
8 RVF-2, Figure 1. As noted, the connection is made at the Main Distribution
9 Frame (or "MDF"). The MDF consists of a series of connector blocks each
10 connected to ironwork uprights anchored to the floor and ceiling. The MDF is
11 depicted in Figure 1 as having two sides: a line-side and a switch-side. Bolted to
12 each side of the MDF is a series of connector blocks, each of which typically
13 contains approximately 200 terminals at which individual wires can be connected.
14 To aid frame technicians in distinguishing the two sides of the MDF, the
15 connector blocks on the line side are arrayed vertically, and the connector blocks
16 on the switch side are arrayed horizontally.

17

18 The typical connection between a copper loop and switch port is made as follows.
19 As shown in RVF-2, Figure 1, cables carrying multiple loops enter the central
20 office and run to the MDF. At the frame, each loop (typically a pair of copper
21 wires) is segregated from these cables and connected (by being installed at the
22 appropriate position on the block and then either wire wrapped or soldered) to the
23 specific terminal on a connector block to which it is assigned. This is a "hard-
24 wired" connection which is installed at the time the cables are brought into the
25 central office. Barring cable replacement these connections are never again

1 touched by the ILEC technicians. A second wire, known as a "cross-connect" (or
2 alternatively, "cross wire" or "jumper"), is then connected to those same line side
3 terminals. The cross-connect runs to the other (switch) side of the MDF, where it
4 is connected to a specific terminal on another connector block. From those
5 terminals, a pair of wires connects to the switch port (also known as the "line
6 card" or "line termination unit"). This final connection from the terminal to the
7 line card is also a "hard-wired" connection. It is established by the switch vendor
8 when the switch is installed, and -- barring equipment failure or replacement -- is
9 never moved or altered again.

10

11 Each ILEC maintains a software data base inventory of the numbers assigned to
12 each piece of equipment making up the loop-switch port connection. ILECs
13 typically keep track of each copper loop by its cable number and pair number, and
14 record its place on the connector block ("block assignment") by assigning a
15 number to each terminal on each block. Similarly, the line termination units (or
16 line ports) on the switch are assigned identifying numbers.

17

18 **Q. PLEASE DESCRIBE THE INTEGRATED DIGITAL LOOP CARRIER**
19 **("IDLC") METHOD.**

20 A. BellSouth is turning increasingly to a superior technology, IDLC, for serving new
21 residential and commercial developments and, where appropriate, replacing old
22 plant. In Florida, the percentage of IDLC lines today is approximately 20 percent.
23 This number will increase over time as BellSouth continues to deploy this more
24 efficient technology.

25

1 The architecture of the loop/switch connection with IDLC is substantially
2 different than with copper wire. See RVF-2, Figure 3. Instead of aggregating
3 copper in the central office, BellSouth brings the copper loop first to the IDLC
4 remote terminal located in an underground vault or locked cabinet in a
5 neighborhood. The remote terminal converts the analog loops to a digital signal
6 and multiplexes all the digital signals onto IDLC for transmission to the central
7 office. At the central office, the digital loops bypass the MDF altogether and
8 connect directly into the switch through a digital cross-connection frame. No
9 analog signal or physical appearance on an MDF is ever established to identify an
10 individual subscriber's loop.

11

12 **Q. WHAT IS THE RELATIONSHIP OF COLLOCATED SPACE TO THE**
13 **LOOP AND THE SWITCH?**

14 A. Collocated space is simply space within a central office that is leased by and
15 dedicated to a CLEC. Such space is often located at a significant distance from
16 the MDF -- possibly hundreds of feet and/or several floors away. Typically such
17 space is enclosed with a wire mesh cage, with entry through a locked door
18 controlled (except in emergencies) by the CLEC. Within the cage, a CLEC
19 seeking to connect loops to a switch would need to install its own "mini-MDF,"
20 tie-cables to the ILEC's frame, and cross-connects. (A CLEC seeking access to
21 loops for purposes of transmission to its own switch would need additional
22 equipment.)

23

1 Q. WHAT STEPS WOULD AT&T NORMALLY HAVE TO TAKE TO
2 CONNECT A LOOP AND A SWITCH IN A COLLOCATED SPACE?

3 A. The process for establishing facilities in collocated space is a two phase process --
4 an inquiry phase and an engineering/installation phase. The first phase, the
5 Application Inquiry phase, requires the following steps:

- 6 1) To begin phase I, AT&T would submit a collocation application
7 and a check for the processing fee to BellSouth for each office
8 where AT&T wants to combine unbundled elements.
- 9 2) AT&T must then wait to receive a response based on feedback
10 from BellSouth's engineers, space planners and facility planners
11 that space in the collocation area of the central office is available
12 and ready for engineering.
- 13 3) Upon receiving the response, AT&T must then submit a bonafide
14 Firm Order request to BellSouth including a detailed equipment
15 drawing and payment of applicable fees.

16 If that firm order is accepted, BellSouth and AT&T would move to the
17 engineering/installation phase which requires the following steps:

- 18 1) AT&T and BellSouth would schedule a joint planning meeting to
19 engineer the space to meet AT&T's needs and appropriate
20 BellSouth requirements.
- 21 2) Following the completion of the planning, AT&T would then await
22 BellSouth's notification that BellSouth (or a BellSouth approved
23 vendor) had completed building the collocation cage.
- 24 3) AT&T would then retain a BellSouth-authorized equipment vendor
25 to install, test, and turn-up AT&T's equipment. For prospective

1 connection of the loop and switch elements, this would consist of
2 installing a mini-MDF pre-wired with cross-connects and tie-
3 cables to the ILEC's POT frame, IDF, or MDF.

4 See BellSouth Collocation Handbook (Ex. RVF-3).

5

6 **Q. HOW LONG DO THESE PHASES TAKE TO COMPLETE?**

7 A. The length of time to complete each phase of establishing space is uncertain. It
8 will depend upon factors such as space availability, construction requirements,
9 and vendor availability. BellSouth has not provided standard intervals for
10 collocation. In the draft Collocation Business Process Agreement between
11 BellSouth and AT&T, the parties currently estimate that the inquiry phase will
12 last two to three months, and BellSouth in Florida has agreed to complete the
13 engineering/installation phase in another three months^{1/} for a total of five to six
14 months to install a cage.

15

16 **Q. DO THE STEPS DESCRIBED ABOVE CONSTITUTE ALL NECESSARY**
17 **STEPS FOR AT&T TO OBTAIN A COMBINED LOOP AND SWITCH IN**
18 **COLLOCATED SPACE?**

19 A. No. To provision service for an actual customer using those elements combined
20 by AT&T facilities in collocated space requires yet another sequence of steps.
21 This example sets out the steps needed to provide UNE-based service to a single-
22 line BellSouth residential POTS customer that wishes to switch over to AT&T,
23 using assumptions designed to maximize efficiency given the inherent constraints
24 of this approach:

- 1 1) In the most efficient approach, BellSouth would pre-wire all of the
2 cross-connections on the connector blocks at the IDF (if the IDF
3 was used), effectively establishing a connection from new
4 connector blocks on the MDF through the tie-cables to the IDF
5 through the pre-wired cross-connection to the tie cables to the
6 collocated frame. From the collocated frame, the connection
7 would go back to the IDF and finally back to the MDF. As
8 illustrated in RVF-2, Figure 4, this pre-wiring effectively creates a
9 giant "U" shaped circuit, with the new connector blocks on the
10 BellSouth MDF waiting to have loops and switch ports connected
11 to them.
- 12 2) AT&T would submit a service order to BellSouth requesting a loop
13 and switch. The request would specify the tie down information --
14 e.g., the tie-cable and pair number, and the block assignments to
15 connect that particular customer to the pre-wired "U" circuit
16 through the BellSouth's collocated frame and back to the MDF.
- 17 3) With the pre-wiring described in Step 1 in place, BellSouth can
18 then perform the actual cutover of service. The most efficient way
19 to accomplish the cutover is by performing a "hot-cut" (i.e., a
20 coordinated cutover in which the customer's service has not been
21 previously disconnected) to minimize customer downtime. Frame
22 technicians would lay-in the new cross-connection wires from the
23 customer's loop location on the MDF to the AT&T's line side
24 connector block and from the AT&T assigned connector block on
25 the switch side of the MDF to the switch port. The frame

- 1 technician would then disconnect the existing cross-connection
2 from the loop to the switch port, causing the customer to lose
3 service. The technician would then connect the new cross
4 connections that were just laid in, and remove the old, previously
5 disconnected, wires from the frame.
- 6 4) BellSouth must test continuity from the original switch port
7 termination at the MDF to the original loop termination at the
8 MDF.
- 9 5) If continuity is not established then BellSouth and AT&T must
10 troubleshoot the daisy chain of tie-pair cables and cross-connect
11 wires until proper continuity is restored.
- 12 6) Upon confirmation of (or restoration of) continuity, changes on the
13 customer's line need to be made in the switch software to establish
14 the customer as an AT&T UNE-customer for usage and billing
15 purposes and for making any needed changes to the features or
16 functions (e.g., customized routing for OS/DA) that are now to be
17 associated with that line.

1 **II. THE SIGNIFICANT ANTI-COMPETITIVE EFFECTS OF**
2 **BELLSOUTH'S COLLOCATION PROPOSAL**

3 **Q. WHAT ARE THE OBSTACLES ASSOCIATED WITH MANUAL**
4 **RECOMBINATION OF THE LOOP AND THE SWITCH USING**
5 **COLLOCATED FACILITIES?**

6 A. Even under the best of circumstances, the manual reconnection of the loop and
7 switch via collocated facilities is so cumbersome and inefficient that it prevents
8 AT&T from gaining access to the unbundled loop and switch in a manner that
9 would permit effective competition. In particular, that approach imposes four
10 serious obstacles to effective competition:

- 11 (1) it requires that the customer's line be taken completely out of
12 service and creates a substantial risk of an extended outage;
- 13 (2) it will prevent AT&T from using the loop/switch combination (a)
14 to service any customers soon; (b) to ever serve competitively
15 significant numbers of customers; and (c) potentially to serve some
16 customers (e.g., those on IDLC) at all;
- 17 (3) it will impose service on AT&T customers that is inferior to what
18 BellSouth customers receive; and
- 19 (4) it will impose excessive and entirely unnecessary costs that would
20 alone effectively foreclose competition via loop/switch
21 combinations with BellSouth (who will not incur such costs) for all
22 of AT&T's customers.

23

1 **Q. PLEASE DESCRIBE THE PROBLEMS ASSOCIATED WITH THE LOSS**
2 **OF SERVICE DURING CUTOVER AND THE FACTORS AFFECTING**
3 **THE TIME OF LOST SERVICE.**

4 A. In the collocation approach, there is no escaping the problem of placing the
5 customer out-of-service for some period of time in order to disconnect and then
6 reconnect the element. In the best-case scenario described above, pre-wiring by
7 AT&T and BellSouth reduces the time that the customer is without service to the
8 time it takes to perform a "hot cut" -- that is, disconnect both ends of a cross-
9 connect and cut on the two new cross-connections, without having previously
10 removed the dial tone at the switch. In addition, in the best case scenario,
11 BellSouth would establish methods and procedures to ensure that each hot cut is
12 performed correctly by an experienced crew, so that the amount of time the
13 customer would be kept out of service would be minimized.

14
15 There is significant room for discretion, even within the parameters of a "hot cut,"
16 to perform the procedure with greater or lesser impact on the customer. For
17 example, the technicians should check in advance of the cutover to make sure that
18 there was no active call on the line. Similarly, the sequence for disconnecting and
19 reconnecting each terminal that the technicians follow will affect the amount of
20 time that the customer's service is interrupted. And, because two cross-
21 connections must be made to provision any one customer with an unbundled loop
22 and switch, the number of technicians that BellSouth uses to provision each order
23 will also affect the amount of customer downtime. It would therefore be essential
24 to establish appropriate methods and procedures governing these and related

1 aspects of loop/switch provisioning, in order to minimize the disruptiveness of the
2 cutover process to the customer and to AT&T's ability to compete.

3
4 If the assumptions underlying the best-case scenario do not hold, however, the
5 chances for a prolonged outage increase. For example, the best case scenario
6 assumes that BellSouth is willing and able to adhere to procedures that require
7 complete pre-wiring to the point that the new cross-connections are tied down on
8 the blocks ready to be cut-over (as is typically done with collocation hot-cut
9 arrangements). If any of the pre-wiring is not completed, the time the customer
10 will be out of service will significantly increase. If no pre-wiring is done, the time
11 out-of-service will be quite substantial, for at least two individual
12 disconnect/reconnect procedures (two each at the MDF) would need to be
13 completed; an additional two at the IDF, if that is used, would only further
14 increase customer outage time. An even longer outage could occur if the pre-
15 wiring is not done correctly. Examples of predictable errors would include
16 misidentified block assignments or cable and pair numbers, or defective
17 connections. The technicians also might encounter an assignment not spare. An
18 "assignment not spare" occurs when a technician is given a correct block
19 assignment but nevertheless discovers on the job that the terminal is occupied by
20 another wire that was mistakenly not removed during a previous job.

21
22 The best-case scenario also assumes that BellSouth will devote the substantial
23 resources, e.g. overnight shifts of experienced frame technicians, needed to
24 minimize customer service interruption. It is doubtful, however, that BellSouth
25 will be able consistently to make such resources available to meet the demands of

1 CLECs in a competitive market. Finally, the best case scenario makes a number
2 of critical assumptions about methods and procedures that have yet to be
3 established.

4

5 **Q. HAS BELLSOUTH EXPERIENCED PROBLEMS WITH MANUAL**
6 **CUTOVERS?**

7 A. Yes. Even in the relatively simpler world of "pure" loop unbundled loop
8 provisioning (where only one disconnect/new connect need occur in a hot cut), it
9 is clear that CLEC customers have been subjected to substantial service outages.
10 Far from quickly cutting over service in the dead of night, BellSouth has left new
11 CLEC customers without service for hours at a time in mid-day.

12

13 ACSI, for example, has reported cutover outages routinely exceeding four hours.
14 The competitive impacts of such outages are immense: "BellSouth's inability to
15 avoid lengthy disconnections during the customer cutover process jeopardized
16 ACSI's ability to retain existing customers and to attract new customers to its
17 service. ACSI cannot compete with BellSouth if its customers must endure
18 service outages routinely exceeding 4 hours -- or if ACSI is made to appear
19 unable to switch a customer to its service.^{2/}

20

21 According to WorldCom, which has experienced three-to-four hour delays during
22 cutovers of large business customers, "BellSouth coordinated cutovers are
23 anything but."^{3/} WorldCom customers have been out of service "an unacceptably
24 long time" during cutovers, with delays caused by "limits on the number of
25 cutovers that [BellSouth] will perform and the hours in which it will perform

1 them."^{4/} Moreover, Sprint has reported "problems in virtually all phases of the
2 customer activation (or 'cutover') process for unbundled loops," leading it to file a
3 formal complaint with the Florida PSC.^{5/} Indeed, on one occasion, when
4 BellSouth repeatedly issued internal orders for an unbundled loop incorrectly, a
5 customer experienced an eighteen day installation interval.^{6/} In other instances,
6 "BellSouth has spent months sorting out problems with its cutover process before
7 Sprint's local customer received service from Sprint."^{7/}

8
9 The potential impact of mandatory, unpredictable, and potentially extended
10 service outages on the prospects for local competition cannot be overstated.
11 Customers will be alarmed at the prospect of any service outage, and will not
12 tolerate any prospect of an outage for more than a negligible period of time.

13
14 **Q. PLEASE DESCRIBE THE LIMITATIONS ON AT&T'S ABILITY TO**
15 **SERVE CUSTOMERS ASSOCIATED WITH COMBINING A LOOP AND**
16 **A SWITCH THROUGH COLLOCATED FACILITIES.**

17 A. Quite apart from the customer impact of losing service, there are three inherent
18 limitations associated with combining network elements through collocated
19 facilities. First, the time needed to construct collocation cages will delay any
20 market entry. Second, the architecture of the MDF imposes limits on the number
21 of customers that can be provisioned in a given day. Third, IDLC loops simply
22 cannot be separated without transitioning the customer's line to copper or
23 universal digital loop carrier ("UDLC"), which may not be available or may
24 degrade quality. As a result, the number of customers AT&T actually could serve
25 using unbundled loop and switch combinations would be only a fraction of the

1 customers AT&T otherwise could win. In contrast, when BellSouth enters the
2 long distance market, it will be unbounded in its ability to absorb new long
3 distance customers through the time-tested electronic PIC process.

4
5 **Q. HAVE CLECS EXPERIENCED PROBLEMS IN CONTRACTING FOR**
6 **COLLOCATED SPACE WITH BELLSOUTH?**

7 A. Yes. For example, BellSouth already has insisted on building collocated space
8 with gypsum-board walls rather than wire mesh, an unnecessary requirement that
9 serves only to prolong construction time and increase cost.^{8/} Indeed, ITC
10 DeltaCom has estimated that construction costs of the fully-walled collocation
11 cages required by BellSouth will run \$300.00 per square foot and that the cost to
12 construct such space in three central offices in Georgia is over \$300,000.^{9/}
13 Moreover, the BellSouth negotiation process has itself been a source of significant
14 delay. It took ITC DeltaCom several months to negotiate a collocation contract
15 with BellSouth, because the BellSouth representative "assigned the task a low
16 priority," "provided little or no response to DeltaCom's requested changes," and
17 "slow[ed] down the negotiation process completely."^{10/}

18
19 Indeed, BellSouth has already compiled a record of delay in completing
20 collocation orders. Under the MCI/BellSouth Interconnection Agreement in
21 Florida, BellSouth must provide MCI collocation within 90 days of a firm order.
22 In April 1997, MCI placed four firm orders for collocation, but as of October 22,
23 1997, all four orders remained pending.^{11/} Furthermore, in attempting to
24 implement its collocation agreements in Miami, WorldCom has experienced
25 "delays, missed dates, surprise changes, and more delays."^{12/} Thus, as this

1 Commission found in declining to approve BellSouth's petition for interLATA
2 authority, "BellSouth's inability to establish physical collocations in a timely
3 manner is still a problem which has a direct affect on the [CLECs'] ability to
4 compete meaningfully in the marketplace."^{13/}
5

6 By requiring collocation as a condition precedent to AT&T obtaining combination
7 of the loop and switching elements, BellSouth imposes on AT&T another layer of
8 negotiation, expense and unpredictable delay.
9

10 **Q. ARE THERE OTHER FACTORS THAT AFFECT THE NUMBER OF**
11 **CUSTOMERS AT&T COULD SERVE IF COLLOCATION IS**
12 **REQUIRED?**

13 A. There are varying problems associated with the manual work needed to establish
14 the cross-connections on the MDF. This would involve two basic steps that
15 would typically be performed by a team of three technicians: one person
16 working on the line side of the frame, one of the switch side, and a third who
17 coordinates their activity, e.g., by calling out assignments and block
18 appearances on the frame. First, the team would connect the connector block
19 containing the loop appearance to the connector block containing the tie-cable to
20 AT&T's collocated frame. Second, the team would connect the connector block
21 containing the tie-cable coming from the collocated frame to the connector block
22 containing the switch port. This wiring must be done on a customer-by-
23 customer basis, which limits the number of customers that could be provisioned
24 with UNE service in any one day.
25

1 Moreover, the MDF is a finite space so it is not possible to address the problem
2 by simply assigning more technicians. The number of technicians who can
3 work on the MDF at any one time is limited by the work space.

4

5 **Q. PLEASE DESCRIBE MORE SPECIFICALLY WHY AT&T WOULD NOT**
6 **BE ABLE TO COMPETE FOR CUSTOMERS SERVED BY IDLC.**

7 A. A local loop provisioned using IDLC terminates directly into the switch without
8 any physical appearance on the MDF. They cannot be physically disconnected
9 from the switch on a customer-by-customer basis in the way copper loops can be.
10 BellSouth has stated that it will "roll" the loop onto a universal DLC or other
11 alternate facility (copper) at no extra charge. If alternate facilities do not exist,
12 BellSouth will utilize its existing Special Construction Process to determine what
13 additional costs to charge for providing an unbundled loop to the end-user's
14 location.

15

16 "Rolling" the loop onto a spare analog loop pair would be possible only where a
17 spare analog loop that meets loop technical requirements can be found in the
18 vicinity of the customer. While no spare loop would be likely in a new
19 development that was provisioned with IDLC from the outset, there may be spare
20 loops in older areas where BellSouth has replaced copper loops with IDLC. If,
21 however, such loops were abandoned for an upgrade to IDLC technology, chances
22 are they are of poor quality, and the BellSouth customer who is moved off of
23 state-of-the-art IDLC onto the old analog loop plant may immediately experience
24 a degradation of service quality. To a CLEC struggling to establish consumer
25 confidence, the consequences of imposing such degraded service (or even the risk

1 of such degradation) on its new customers are very serious. Furthermore, this
2 method could impose additional costs and delay if the associated BellSouth
3 switch does not have sufficient analog line cards to support conversion of these
4 formerly digital loops to analog loops.

5
6 Moving the customer's line to a parallel UDLC also creates problems. This older
7 version of digital loop carrier equipment converts the loops back to an analog
8 signal in the central office, thereby allowing an individual customer's line to be
9 accessed at the MDF. This digital-to-analog conversion, however, may degrade
10 the quality of service for the customers involved.

11
12 Use of these methods (and acceptance of the associated degradation in service
13 quality) may be necessary in order to roll a loop to a competitor's switch. But
14 they are not necessary when the competitor seeks to combine the IDLC loop with
15 the incumbent's local switching element.

16
17 BellSouth's current position that it will utilize its existing Special Construction
18 Process to determine what additional costs to charge for providing an unbundled
19 loop to the end user's location conflicts with the obligations in the
20 AT&T/BellSouth Interconnection Agreement. BellSouth has agreed to provide
21 AT&T access to 100% of its loops in Florida, no matter what technology is
22 deployed. The Commission has established the price for purchasing an unbundled
23 loop. BellSouth should not be allowed to increase those charges by adding
24 additional costs.

25

1 **Q. WILL THE RECOMBINATION OF A SWITCH AND A LOOP USING**
2 **COLLOCATED FACILITIES AFFECT THE QUALITY OF AT&T'S**
3 **SERVICE FOR ITS CUSTOMERS?**

4 A. BellSouth's collocation requirement will lead to inherently inferior service quality
5 for CLECs who recombine the unbundled loop and switch port. The wire used on
6 the MDF typically is only 22 gauge, which means that the wires themselves are
7 approximately the diameter of pencil lead. Such thin wires are inherently frail.
8 Moreover, many of the wires connecting loops and switch ports have been in
9 place for many years. A collocation requirement entails unnecessary handling and
10 removing of these wires as customers change local service providers. As
11 significant competition develops and customers begin to churn, the continual
12 activity and increased congestion on the frame caused by installing new cross-
13 connects and removing the old cross-connects will put an unnecessary stress on
14 the frames' jumpers, potentially causing a connection to inadvertently break.

15
16 The impact of the increased strain on the frame and resultant service failures will
17 be borne disproportionately by AT&T and other CLECs, because recombination
18 by collocation will double the number of cross-connections on the MDF frame for
19 CLEC loops compared to BellSouth loops. Jumpers in a frame (especially the
20 MDF) are already subject to significant pulling and tugging as technicians move
21 other jumpers across or around the frame, or "mine" out old wires that are no
22 longer being used. As this pulling and tugging increases with competitive
23 activity, so too will CLECs' service failures.

24

1 Q. WILL REQUIRING COMBINATION OF THE LOOP AND SWITCH
2 USING COLLOCATED FACILITIES INTRODUCE ADDITIONAL
3 POINTS OF FAILURE IN THE NETWORK?

4 Yes. A typical BellSouth loop connection that is not provisioned with IDLC has
5 only two points of connection to a frame -- one on the terminal connecting to the
6 loop, and the other on the terminal making the connection to the switch port.
7 These points of connection are "points of failure," because they are places where
8 the loop connection is most likely to come apart. Under BellSouth's collocation
9 requirement, BellSouth loops that are recombined with BellSouth switching will
10 require an absolute minimum of four points of failure, and could require up to
11 eight or more such points depending on whether an intermediate frame is used to
12 reach AT&T's collocation space. Thus, the collocation requirement at least
13 doubles the possibility AT&T loops will fail.

14

15 Q. WILL REQUIRING COMBINATION OF THE LOOP AND SWITCH
16 AFFECT MAINTENANCE?

17 Yes. The additional loop length that would result from BellSouth's collocation
18 requirement may degrade the quality of service and will require changes in
19 BellSouth's records to reflect the changed characteristics of the loop. If BellSouth
20 does not make these changes, maintenance and repair functions cannot be
21 properly performed. For example, changing the length of loops could have an
22 impact on mechanized loop test (MLT) results, because when the make-up of a
23 loop is changed (e.g., a change in loop length), the test could give improper
24 results. Thus, BellSouth must reflect the change in its records to ensure that MLT
25 results will be accurate.

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Q. ARE YOU SUGGESTING THAT COLLOCATION ARRANGEMENTS ARE NEVER APPROPRIATE?

A No. If a CLEC simply wishes to purchase unbundled loops and use those loops to serve its customers with its own switch, then establishing a collocation arrangement is appropriate.

Q. WHY IS IT APPROPRIATE TO ESTABLISH A COLLOCATION ARRANGEMENT FOR THE PURCHASE OF UNBUNDLED LOOPS BUT NOT FOR THE PURCHASE OF UNBUNDLED LOOPS WHICH ARE TO BE COMBINED WITH UNBUNDLED LOCAL SWITCHING?

A. When a CLEC has its own switch, this switch resides in the CLEC's central office, which is located some distance from the BellSouth central office. The customer loops the CLEC wishes to purchase and serve with its switch terminate in the BellSouth central office. In order to obtain access to these loops and extend them to the CLEC's switch, it may be necessary for the CLEC to collocate equipment in the BellSouth's location. The collocated CLEC equipment may be either transport equipment or remote switching modules, depending on the CLEC's requirements and the types of equipment allowed to be collocated under the terms of the carriers' interconnection agreement.

In contrast, when a CLEC chooses to serve customers with a combination of the BellSouth's unbundled loops and unbundled local switching, both of these elements are housed within the same BellSouth central office. There is no need to extend the BellSouth's loops to another location, because the switch ports for

1 the unbundled switching element are located on the same cross-connection
2 frame (the MDF) within the central office where the loops appear. The most
3 efficient means of connecting these two elements that are located in the same
4 central office is with a single cross-connection on the MDF-- just as BellSouth
5 does for itself.

6

7 **Q. DOES BELLSOUTH'S COLLOCATION PROPOSAL FOR COMBINING**
8 **UNBUNDLED LOOPS AND SWITCH PORTS OFFER ANY BENEFITS**
9 **AT ALL FOR CLECS OR CONSUMERS?**

10 A. No. Allowing BellSouth to tear apart elements that are already connected only
11 adds cost, delay and inefficiency for all parties, including CLECs, consumers
12 and BellSouth itself. It puts unnecessary strain on often already congested
13 frames and on delicate cross connection wiring, substantially increases the risk
14 of human error and complicates central office maintenance and repair
15 procedures. Indeed the only "benefit" of this proposal to BellSouth is that the
16 unnecessary work of ripping up its network elements will make it harder for
17 new entrants to win and serve customers.

18

1 **II. ALTERNATIVES TO COLLOCATION**

2 **Q. YOU HAVE EXPLAINED HOW THE ILEC'S POLICY OF REQUIRING**
3 **CLECS TO UTILIZE COLLOCATED FACILITIES IN ITS CENTRAL**
4 **OFFICES PREVENTS CLECS FROM USING THE LOOP-PORT**
5 **COMBINATION TO COMPETE. ARE THERE ALTERNATIVES TO**
6 **COLLOCATION WHICH ARE LESS INEFFICIENT AND COSTLY**
7 **THAN COLLOCATION?**

8 **A. Yes.**

9
10 **Q. ARE THESE ALTERNATIVES AS EFFICIENT OR PRO-COMPETITIVE**
11 **AS PERMITTING CLECS TO PURCHASE IN COMBINATION**
12 **ELEMENTS THAT ARE ALREADY COMBINED IN THE ILEC'S**
13 **NETWORK?**

14 **A. No.**

15

16 **Q. WHY NOT?**

17 **A. No solution is more efficient than leaving together elements that are already**
18 **combined when a CLEC wishes to purchase them for use in providing a**
19 **competitive service to a customer. And only one alternative comes even close**
20 **to enabling CLECs to combine network elements in roughly the same manner as**
21 **BellSouth does for itself in similar circumstances. The others, although less**
22 **costly and inefficient than collocation, do not permit CLECs to combine**
23 **BellSouth's network elements in a commercially reasonable manner that could**
24 **support a fully competitive local services market.**

25

1 **Q. PLEASE DESCRIBE THESE ALTERNATIVES.**

2 A. AT&T has considered three possible alternatives to collocation. These are:
3 (1) logical or electronic combination of elements using the recent change
4 process; (2) direct access to the central office by a third party vendor to separate
5 and recombine elements; and (3) logical combinations using an electronic cross-
6 connection frame. Only the recent change process is similar to the way in
7 which BellSouth combines elements in its own networks in similar
8 circumstances and would enable AT&T to serve commercially significant
9 volumes of customers. The others, although superior to collocation, rely on
10 needless make-work activities that would constrict AT&T's ability to acquire
11 existing BellSouth customers using combinations of unbundled network
12 elements. Moreover, the third alternative considered is not currently available.
13 Because only logical separation and combination is similar to the way in which
14 BellSouth combines elements in its own network, it is the only alternative I
15 discuss in detail in my testimony. The other alternatives and their problems are
16 described in exhibit RVF-4.

17

18 **Q. WHAT DOES THE LOGICAL COMBINATION ALTERNATIVE**
19 **ENTAIL?**

20 A. This alternative involves the logical (i.e., electronic) separation and
21 reconnection of the BellSouth's unbundled loop and switch port.

22

1 Q. IS THE LOGICAL SEPARATION AND COMBINATION OF ELEMENTS
2 CONSISTENT WITH THE EIGHTH CIRCUIT'S DECISION THAT THE
3 FEDERAL TELECOMMUNICATIONS ACT DOES NOT REQUIRE
4 ILECS TO PROVIDE COMBINATIONS OF NETWORK ELEMENTS?

5 A. Yes. Nothing in the Eighth Circuit's ruling required that unbundled elements
6 have to be physically separated, as BellSouth's collocation proposal requires.
7 The separation of the customer's loop and switch port can be accomplished
8 logically just as BellSouth does for itself. Then, AT&T, using the features,
9 functions and capabilities of the unbundled switch it purchased would logically
10 combine the loop and switch electronically separated by BellSouth.

11

12 Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU SAY THE ILEC
13 SEPARATES LOOPS FROM THE PORTS ELECTRONICALLY.

14 A. When existing BellSouth customers wish to have their service discontinued
15 because, for example, they are changing their residences, BellSouth
16 accomplishes this by disconnecting the loop from the port through the use of a
17 process known as a "recent change" on the local switch software.

18

19 Q. WHAT EXACTLY DOES THE RECENT CHANGE PROCESS DO?

20 A. BellSouth uses the recent change process to update the switch software and,
21 among other things, disconnect the loop from the port by removing the dial tone
22 from the customer's line. This effectively accomplishes the same result as if
23 BellSouth physically removed the wires on the MDF connecting the customer's
24 loop to the switch port. Thus, rather than physically removing the connections
25 of the loop to the switch to disconnect the customer's service, as is required by

1 BellSouth's mandatory collocation proposal, BellSouth logically discontinues the
2 customer's service in the switch software.

3

4 **Q. WHY DOES BELLSOUTH PERFORM THE SEPARATION IN THIS**
5 **MANNER?**

6 A. It is done this way as a matter of efficiency. BellSouth knows that, shortly after
7 the disconnect of this customer's service, another customer will likely move into
8 the same location and request service. Rather than physically removing the
9 cross-connection wires on the frame to terminate service and then reinstalling
10 wires to establish service for the new customer, BellSouth avoids these wasteful
11 tasks by using the logical separation process. In such cases, the physical
12 connection of the loop and the port remains intact, and the disconnection and
13 reconnection of elements (and service) is done exclusively through the use of
14 software.

15

16 Typically, this change is instituted by a service representative entering a few
17 keystrokes at the time the customer who is leaving issues the request to
18 discontinue service, i.e., in a matter of seconds. BellSouth's downstream
19 systems then implement the software change, discontinuing the customer's
20 service at the time requested. When a new customer moves into the existing
21 location, service is restored using a similar process that is also automatically
22 executed in BellSouth's network after a customer service representative enters a
23 few keystrokes.

24

1 Q. AS A MATTER OF COMPARISON, HOW DOES BELLSOUTH
2 ACCOMPLISH A "PIC CHANGE" TODAY WHEN A CUSTOMER
3 WISHES TO CHANGE THEIR LONG DISTANCE PROVIDER?

4 A. PIC changes are also accomplished using the software capabilities of the local
5 switch. When customers choose to change their long distance carrier, BellSouth
6 personnel use existing switch software to update the pre-subscribed carrier
7 identification code (PIC code) from one long distance carrier to another.

8

9 Q. DOES THAT MEAN THAT IF BELLSOUTH WAS GRANTED IN-
10 REGION LONG DISTANCE RELIEF UNDER SECTION 271, ALL
11 BELLSOUTH WOULD HAVE TO DO TO MOVE CUSTOMERS FROM
12 AN EXISTING IXC CARRIER TO ITS OWN LONG DISTANCE
13 SERVICE IS A SOFTWARE CHANGE ON THE CUSTOMER'S LINE?

14 A. Yes. There is never any physical work required when customers change their
15 long distance provider.

16

17 Q. PLEASE EXPLAIN HOW THIS ELECTRONIC OR LOGICAL
18 SEPARATION COULD BE USED TO ALLOW CLECS THE ACCESS
19 NEEDED TO COMBINE UNBUNDLED NETWORK ELEMENTS.

20 A. There are two methods that can be used to accomplish this task. The first
21 utilizes existing technology that BellSouth uses to permit its Centrex customers
22 to have controlled access to the switch software. Today, every ILEC employs
23 an operational support system ("OSS") that allows Centrex customers to
24 perform changes in the ILEC switch for the Centrex user's lines. These

1 systems, with some modifications, can be used by the CLECs to have the access
2 they need to combine the loops and switch ports.

3

4 **Q. WHY IS THIS OSS USED?**

5 A. The OSS is used to provide BellSouth's Centrex customers access to the
6 software in the switch, so that Centrex customers can perform changes on their
7 lines, including, for example, adding or dropping features [or changing the
8 telephone numbers for different lines]. The OSS also serves as a "firewall" that
9 prevents Centrex customers from making any changes on the switch to lines that
10 they are not authorized to modify.

11

12 **Q. HOW MANY OSSs ARE USED BY THE ILECS TO PROVIDE CENTREX
13 CUSTOMERS ACCESS TO THE SOFTWARE CAPABILITIES OF THE
14 SWITCH?**

15 A. I am aware of three vendors of these OSS: CommTech, BellCore and American
16 Telecorp. The CommTech OSS, known as MACSTAR, is used by Bell
17 Atlantic, Southwest Bell, SNET, BellSouth and Rochester Telephone.
18 BellCore's product, know as CCRS, is used by BellSouth, Bell Atlantic, U.S.
19 West and Southwest Bell. The American Telecorp product (CENPAC) is used
20 by Pacific Bell. Each of these ILECs makes the recent change capability
21 available to its Centrex customers through at least one of these OSSs.

22

1 **Q. HAS AT&T DISCUSSED ITS PROPOSAL TO USE THIS TECHNOLOGY**
2 **WITH ANY OF THESE VENDORS?**

3 A. Yes, AT&T has discussed this with the CommTech Corporation and with
4 BellCore. CommTech indicated that what AT&T is proposing can be
5 accomplished by either modifying the existing MACSTAR system or through
6 another OSS they have available known as FastFlow.

7
8 **Q. CAN YOU BRIEFLY DESCRIBE HOW THE PROCESS WOULD WORK**
9 **USING MACSTAR AND FASTFLOW.**

10 A. Yes. The basic high-level steps on how such a process would work are as
11 follows:

- 12 (1) AT&T receives a service request from a customer.
- 13 (2) AT&T issues an electronic service order to BellSouth for the
14 network elements needed (e.g., loop and switch port) to provide
15 service to this customer.
- 16 (3) After AT&T receives an electronic firm order confirmation from
17 BellSouth, AT&T initiates a restore order to be held in the
18 system's buffer that will, at the appropriate time, electronically
19 reconnect the loop and port.
- 20 (4) BellSouth, on the due date of the order, issues an electronic
21 suspension of service order on the customer's line to
22 electronically disconnect the loop from the port through the
23 system. The BellSouth switch would notify the system that the
24 suspend order had been performed, and the system would initiate
25 the associated AT&T restore order from the buffer. Such

1 activities could be completed within a matter of seconds and be
2 performed automatically during off-peak hours, to minimize
3 customer outage and impact on the customer.

4

5 **Q. WHY WOULD THESE OSS BE USED AS AN INTERFACE IN LIEU OF**
6 **PROVIDING AT&T DIRECT ACCESS TO THE SOFTWARE IN**
7 **BELLSOUTH'S SWITCH?**

8 A. Some ILECs have expressed network security concerns about providing CLECs
9 direct access to their networks -- even though they did not express these
10 concerns to the Eighth Circuit before the court issued its decision on the FCC's
11 combinations rule (Section 51.315(b)). Accessing the necessary software
12 capabilities using one of these OSS as an intermediary between AT&T and the
13 BellSouth switch establishes a "firewall" that will allow AT&T to perform
14 changes only on its own customers' lines. Such a firewall would eliminate any
15 BellSouth excuse for not allowing CLECs to have the access they need to
16 logically combine the unbundled elements using software in the switch through
17 the recent change process.

18

19 **Q. ARE THESE SYSTEMS READY TODAY TO PERFORM THIS**
20 **FUNCTION OR WILL SOME DEVELOPMENT BE REQUIRED?**

21 A. These systems are not yet available to perform as described; however, based on
22 recent discussions with CommTech representatives, I believe that the necessary
23 development could be completed and tested within six months, and that the costs
24 of implementation would be very modest compared to the costs of collocation.
25 This is because the OSS firewall is similar to the one that is available today to

1 Centrex customers. The only change involved is to limit CLECs' access to the
2 specific line numbers of their customers, rather than the blocks of numbers
3 assigned to Centrex customers. Otherwise, the OSS would function similarly.
4

5 **Q. DO YOU HAVE ANY REASON TO BELIEVE THAT THE OTHER**
6 **SYSTEM VENDORS COULD NOT MODIFY THEM IN A SIMILAR**
7 **FASHION?**

8 A. No.
9

10 **Q. WHAT IS THE SECOND METHOD THAT CAN BE USED TO PERFORM**
11 **THE LOGICAL COMBINATION OF ELEMENTS?**

12 A. The second method is similar to the first and also uses the recent change
13 capabilities of the switch. The difference is that BellSouth and AT&T could use
14 a neutral third party as their agent to perform the logical separation and
15 combination of elements. This vendor would be identified by the industry
16 participants and funded jointly by the ILECs and the CLECs.
17

18 **Q. HOW WOULD THIS PROCESS WORK?**

19 A. A brief description of this process is as follows:

- 20 (1) AT&T receives a service request from a customer.
- 21 (2) AT&T issues an electronic service request to BellSouth.
- 22 (3) BellSouth returns an electronic firm order confirmation to
23 AT&T.
- 24 (4) AT&T issues an electronic restore order to electronically
25 reconnect the loop and port to the 3rd party vendor.

- 1 (5) BellSouth issues an electronic suspend service order to
2 electronically disconnect the loop from the port to the 3rd party
3 vendor.
4 (6) The 3rd party vendor's database matches the suspend order with
5 the restore order before any changes are performed to minimize
6 customer service downtime.
7 (7) Once the vendor matches both orders the vendor performs the
8 changes on behalf of BellSouth and AT&T.
9

10 **Q. IS THERE A PRECEDENT FOR THIS TYPE OF ACTIVITY BY A**
11 **THIRD PARTY VENDOR?**

12 A. Yes, a third party vendor is used today by the industry to administer the toll
13 free database. A third party vendor will also be used by the industry to
14 administer the local number portability (LRN) database. This would simply be
15 another application in which an independent vendor could be useful.
16

17 **Q. WHAT ADVANTAGES DO THE LOGICAL SEPARATION AND**
18 **COMBINATION HAVE OVER BELLSOUTH'S MANDATORY**
19 **COLLOCATION REQUIREMENT?**

20 A. Use of the software in the switch to combine elements effectively fixes all of the
21 problems identified with BellSouth's collocation proposal, including the
22 problems that result from the use of IDLC loops. It also effectively eliminates
23 capacity constraints that would prevent AT&T from serving a significant
24 number of customers through the use of the BellSouth's loop and port. An
25 additional benefit of using the software in the switch is that once a customer is

1 identified as an AT&T customer, AT&T will have the physical capability to add
2 or delete features, install originating screening on the line, suspend service and
3 otherwise update the customer's account without the need to send a separate
4 service order to BellSouth (and incur BellSouth order processing charges).

5

6 **Q. HOW DOES THE USE OF LOGICAL COMBINATION RESOLVE THE**
7 **PROBLEMS OF PROVIDING CLECS ACCESS TO IDLC LOOPS?**

8 A. The switch software can be used to suspend and restore service on any
9 customer's line, regardless of the type of loop technology used to serve the local
10 customer. An IDLC loop has no individual physical appearance anywhere in
11 the central office until after it connects to the switch. This lack of an individual
12 physical appearance is what makes all of the other alternatives unworkable for
13 IDLC loops. However, because the IDLC loops are physically connected to the
14 switch, the switch software allows logical access to each customer's individual
15 line.

16

17 **III. PROPOSED COMMISSION ACTION**

18 **Q. NOW THAT YOU HAVE DESCRIBED THE PROBLEMS WITH**
19 **COLLOCATION AND THE ALTERNATIVES THAT ARE, OR MAY BE,**
20 **AVAILABLE TO ALLOW AT&T TO COMBINE LOOPS AND PORTS,**
21 **WHAT DO YOU PROPOSE THIS COMMISSION SHOULD DO?**

22 A. First and foremost, let me emphatically restate that there is no technical benefit
23 -- and indeed significant potential harm -- flowing from BellSouth's mandatory
24 collocation proposal. Thus, although the alternative I have discussed in my
25 testimony is superior to collocation for the purpose of combining loops and

1 ports, nothing makes more sense and is more cost effective and pro-competitive
2 than leaving together elements that are already combined in BellSouth's
3 network. Thus, to facilitate competition in the residential and small business
4 markets, this Commission should prohibit BellSouth from ripping apart network
5 elements that are already combined. BellSouth committed in the interconnection
6 agreement to provide elements that are already combined and should honor that
7 contractual commitment. BellSouth's intention to separate network elements
8 serves no competitive or network security purpose. If implemented, it would be
9 anticompetitive, commercially unreasonable, and would potentially cripple the
10 chances for local competition in this state.

11

12 **Q. WHAT ALTERNATIVE ACTION COULD THIS COMMISSION TAKE?**

13 **A.** If the Commission determines that the Interconnection Agreement does not
14 require BellSouth to combine network elements, or to leave in place already
15 combined elements, it should reject BellSouth's collocation proposal and order
16 the logical combination process I described. As I described in my testimony,
17 the closest analog to how BellSouth combines the elements for itself -- and the
18 way it will compete with the IXCs for long distance customers -- is the
19 alternative which provides AT&T with access to the software capabilities of the
20 switch to combine elements. These capabilities are "features, functions and
21 capabilities" of a UNE being purchased by AT&T and AT&T should be free to
22 use them to combine the loop and switch.

23

1 **Q. CONSIDERING THE LOGICAL COMBINATION PROCESS MAY TAKE**
2 **SOME TIME TO IMPLEMENT, IS THERE SOMETHING THIS**
3 **COMMISSION COULD ORDER AS AN INTERIM?**

4 **A** While the process of developing the systems and procedures for using switch
5 software to combine elements is occurring, this Commission could allow
6 competition to move forward by ordering BellSouth to use the third party
7 vendor direct access option. See RVF-4 for description. This option is
8 extremely "low-tech" and is relatively cost-effective as an interim measure.
9 The only development required would be for BellSouth to develop a means of
10 providing the vendor a timely order listing all of the central office frame
11 locations for the loops which need to be "re-combined" each day.

12

13 **Q. THOUGH THE USE OF THE THIRD PARTY IS MORE EFFICIENT**
14 **THAN HAVING BELLSOUTH AND AT&T TECHNICIANS STANDING**
15 **SHOULDER-TO-SHOULDER, IT SEEMS LUDICROUS TO REQUIRE**
16 **THAT A TECHNICIAN BE DISPATCHED SIMPLY TO REMOVE A**
17 **WIRE AND IMMEDIATELY REPLACE IT. IS THERE SOMETHING**
18 **THAT CAN BE ORDERED WHICH IS MORE EFFICIENT?**

19 **A.** First, the Commission should recognize that this solution is no less ludicrous
20 than the problem it is intended to solve: how to respond to BellSouth's decision
21 to rip apart its own network for the sole purpose of handicapping its
22 competitors' ability to serve consumers. Nevertheless, there are two things
23 which BellSouth could do. If BellSouth demands that a separation and
24 recombination must take place, then BellSouth could, during the interim,
25 perform this function on behalf of AT&T using its existing switch software

1 capabilities. Alternatively, BellSouth could have its own technicians lift and
2 replace the wires (or leave them alone, as this lifting and replacing accomplishes
3 nothing). In either case, BellSouth should charge AT&T the proposed prices
4 contained in AT&T witness Richard Walsh's testimony, since these are
5 reflective of the process that will be in place once the logical combination
6 process is implemented.

7

8 **Q. WHAT IF BELLSOUTH REFUSES TO PERFORM THIS FUNCTION**
9 **AND INSISTS THAT AT&T DO IT?**

10 A. If BellSouth both refuses to allow a third party vendor to perform the work and
11 also refuses to combine the elements on behalf of AT&T, either in fact or
12 through a phantom "glue" charge that is equal to or less than the cost of the
13 CLECs doing the work for themselves through a third party, it cannot comply
14 with its obligations under Sections 251 and 252 until it makes the software
15 capabilities of the switch available to AT&T, either with or without a firewall.

16

17 **IV. SUMMARY**

18 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

19 A. Based on the testimony of AT&T witnesses Eppsteiner and Gillan, this
20 Commission should find that BellSouth is required to combine network elements
21 pursuant to its Interconnection Agreement with AT&T. Only if this
22 Commission determines that BellSouth is not required to perform the combining
23 should it consider other alternatives. If such alternatives are to be considered,
24 the Commission should reject BellSouth's collocation proposal and order the
25 logical combination described in my testimony. BellSouth's collocation

1 proposal is the most anti-competitive alternative to requiring the ILEC to
2 provide combinations of unbundled elements without first separating them. It
3 generates unnecessary costs for both CLECs and BellSouth, imposes
4 unnecessary market entry delays for CLECs and will create unnecessary
5 customer service disruption and dissatisfaction. Although there are other
6 options, some of which are much superior to collocation, none provides CLECs
7 with equivalent access to the unbundled network elements that BellSouth enjoys,
8 and only the use of switch software to separate and combine elements comes
9 close to allowing the CLECs competitively neutral access to the elements
10 BellSouth itself uses to provide service to its customers. Physically removing
11 the loop from the switch deprives CLEC's of use of some of the features of the
12 switch, the ability to electronically combine elements.

13

14 To the extent that the Commission is seeking an alternative to collocation that
15 does not require BellSouth to combine network elements or to leave existing
16 combinations in place, use of switch software to do the combination is the only
17 viable long-term alternative. Thus, if the Commission finds that BellSouth is
18 not required to combine network elements, it must order BellSouth to make the
19 switch software available to CLECs in a manner similar to the process it uses
20 for itself and/or provides to Centrex customers. If it is determined that
21 development work is necessary prior to making this capability available, it must
22 permit a third-party vendor to perform the physical disconnections and
23 reconnections described above. In the alternative, BellSouth should be required
24 to perform the work for CLECs or allow connected elements to remain together
25 until the long-term solution is implemented. The cost to perform this interim

1 work should be set at the prices recommended in the testimony of AT&T
2 witness Richard Walsh.

3

4 **Q. DOES THIS CONCLUDE YOUR TESTIMONY.**

5 **A. Yes it does.**

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^{1/} Memorandum of Florida Pub. Serv. Comm'n Staff, Docket No. 960786-TL, Consideration of BellSouth Telecommunications, Inc.'s Entry into InterLATA Services Pursuant to Section 271 of the Federal Telecommunications Act of 1996, at 70 (Oct. 22, 1997), aff'd in relevant part, Florida PSC, Order No. PSC-97-1459-FOF-TL (Nov. 19, 1997). BellSouth has yet to meet this commitment.

^{2/} ACSI Comments, In the Matter of BellSouth Corporation, BellSouth Telecommunications, Inc. and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in South Carolina, CC Docket No. 97-208, Affidavit of James C. Falvey ¶ 34 (Oct. 20, 1997).

^{3/} WorldCom Comments, In the Matter of BellSouth Corporation, BellSouth Telecommunications, Inc. and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in South Carolina, CC Docket No. 97-208, Ball Affidavit ¶ 18 (Oct. 20, 1997).

^{4/} Id.

^{5/} Sprint Comments, In the Matter of BellSouth Corporation, BellSouth Telecommunications, Inc. and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in South Carolina, CC Docket No. 97-208, at 16-17; Cloz Affidavit ¶¶ 65-84 (Oct. 20, 1997).

^{6/} Sprint Comments, Cloz Aff. ¶ 79.

^{7/} Sprint Comments at 17.

^{8/} See, e.g., BellSouth Barrier and Enclosure Wall Specifications, Louisiana PSC Docket Nos. U222022/U22093, appended to BellSouth Application at App. C-3, Vol. 33b, Tab 272(9); ALTS Comments, In the Matter of BellSouth Corporation, BellSouth Telecommunications, Inc. and BellSouth Long Distance, Inc. for Provision of In-Region, InterLATA Services in South Carolina, CC Docket No. 97-208, Affidavit of Steven D. Moses on behalf of ITC DeltaCom, Attachment C, ¶ 19 (Oct. 20, 1997) ("ITC DeltaCom Aff."). Wire mesh is preferable to drywall because it is far cheaper and quicker to install, improves visibility and thus enhances security, and eliminates the need for additional or new air conditioning capacity, dust protection measures during construction. See Direct Testimony of Gerald B. Crockett on behalf of MCI/AT&T, Louisiana PSC Docket Nos. U222022/U22093, appended to BellSouth Application at App. C-3, Vol. 33b, Tab 272(8), at 7-12.

^{9/} ITC DeltaCom Aff. ¶ 19.

^{10/} ITC DeltaCom Aff. ¶ 19.

^{11/} Memorandum of Florida Pub. Serv. Comm'n Staff, Docket No. 960786-TL, Consideration of BellSouth Telecommunications, Inc.'s Entry into InterLATA Services Pursuant to Section 271 of the Federal Telecommunications Act of 1996, at 70 (Oct. 22, 1997), aff'd in relevant part, Florida PSC, Order No. PSC-97-1459-FOF-TL (Nov. 19, 1997).

^{12/} In re: Consideration of BellSouth Telecommunications Inc.'s Entry into InterLATA Services Pursuant to Section 271 of the Federal Telecommunications Act of 1996, Florida Pub. Serv. Comm'n Order No. PSC-97-1459-FOF-TL, p. 48 (Nov. 19, 1997) (quoting WorldCom testimony).

^{13/} Id. at 58.

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Quinton E. Sanders
Sales - Assistant Vice President
AT&T Regional Account Team

February 10, 1998

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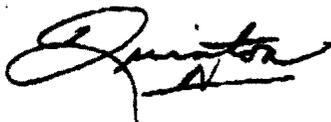
Dear Jim:

In response to your January 6, 1998 letter to Duane Ackerman, attached are BellSouth's responses to AT&T's 35 questions regarding combining unbundled network elements and collocation issues.

BellSouth continues to honor its contractual obligations with respect to the provisioning of combinations of UNEs identified by AT&T until such time as the Eighth Circuit's order becomes final and non-appealable. However, as BellSouth has stated before, if the Eighth Circuit's order is upheld, BellSouth will no longer have a legal obligation to provide combinations of unbundled network elements. BellSouth is still interested in exploring with AT&T the opportunity of a professional service arrangement in which BellSouth would combine UNEs for AT&T at market rate. Please contact me if AT&T is interested in pursuing such an arrangement.

The responses attached hereto provide the information that AT&T has requested. Should AT&T require any additional information, please address such request to me as your primary interface and contact. I will ensure that your request is handled accordingly. As your Account Team representative, I can assure you that adequate resources are available to AT&T via my staff and that such requests will be handled in an expeditious manner to meet AT&T's needs.

Sincerely,



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Sanders Letter
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cc: Duane Ackerman
Charlie Coe
Scott Schaefer
Elton King
Joe Baker
Scott Schaefer
Steve Inman
Alabama Public Service Commission
Florida Public Service Commission
Georgia Public Service Commission
Kentucky Public Service Commission
Louisiana Public Service Commission
Mississippi Public Service Commission
North Carolina Utilities Commission
South Carolina Public Service Commission
Tennessee Regulatory Authority

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Attachment to February 10, 1998 Letter from Quinton Sanders**AT&T Questions Regarding BellSouth's Collocation Proposal Alternative Arrangements for CLEC Combination of UNEs**

1. What UNEs will BellSouth provide to CLECs to combine in collocated space? Loops and ports only?

With the exception of specific sub-loop elements that will be provided to the CLEC at the field site, BellSouth will deliver to the CLEC collocation space the following combined elements: loop and cross connect, port and cross connect, port and cross connect and common transport, port and vertical features, port and common transport, loop and LNP¹, as well as single network elements, for the purpose of CLECs combining said elements in any manner technically feasible and that performs within the parameters of the industry standards.

2. Can a CLEC pre-wire the equipment in its collocation space?

In both a physical and virtual collocation arrangement, AT&T may pre-wire its equipment arrangement and the connection between its arrangement and the point of termination bay/frame using a vendor that has been certified by BellSouth.

3. Will BellSouth allow CLECs to share the same interoffice transport used by BellSouth?

Yes. CLECs may access unbundled interoffice transport - shared for interoffice transport purposes. Unbundled interoffice transport - shared allows access to the interoffice transport and is charged on a per minute of use basis. The CLEC would order the unbundled port in the central office where the collocation space is present which would allow the end user traffic to be transported over shared facilities.

Unbundled Interoffice Transport Dedicated may share the same physical facilities, fiber optic terminals, etc. An individual DS1 may be dedicated to a single CLEC, but the OC48 Fiber Optic Transport System would have multiple DS1s transiting the system.

4. Will BellSouth require that a CLEC purchase signaling separate from switching?

Yes. As contained in the CLEC agreements and as a result of arbitration decisions in the various states, SS7 signaling is an individual unbundled network element and therefore is purchased separately from switching.

¹ The combined elements listed above are offered by BellSouth based upon the technical limitations that do not allow them to be offered separately.

5. What does BellSouth propose where there is not sufficient room to collocate in central office?

BellSouth has offered both physical and virtual collocation to AT&T. Where there is insufficient space on BellSouth's premises for physical collocation, virtual collocation can be provided.

BellSouth does not anticipate any difficulty fulfilling requests for virtual collocation arrangements. In the event a situation arises where a virtual collocation request cannot be accommodated, BellSouth will discuss service alternatives on a case by case basis. Timely and accurate forecasts from CLECs will assist BellSouth in meeting CLEC's physical or virtual collocation needs.

6. How will BellSouth allow for the combining of loops and ports in central offices where there is no room for physical collocation?

When there is insufficient space for physical collocation, BellSouth will offer virtual collocation. In a virtual collocation arrangement, the CLEC may then make arrangements for the combination of the UNEs.

7. Will BellSouth offer CLECs a choice of either physical or virtual collocation or will virtual collocation be made available by BellSouth only if there is no more space available for physical collocation?

BellSouth offers CLECs a choice of either physical or virtual collocation.

8. How will BellSouth provision other UNEs for combining or recombining by CLECs?

BellSouth will provision UNEs as described in the applicable ordering guidelines, interconnection agreement and technical references. CLECs will determine how to use the UNEs, i.e., whether to combine them with other BellSouth provided UNEs or to use them with the CLEC's own equipment.

9. How will BellSouth maintain service coordination of the loop and port connections for each CLEC customer service order?

BellSouth offers service coordination for the individual unbundled network elements, the type of coordination being dependent upon how the network element is ordered. Such coordination should minimize the effect of transferring the end user customer from one provider to the other. This activity contemplates cooperation and coordination between the work forces of the providers involved in the transfer.

10. How will BellSouth maintain service continuity or minimize service disruption for CLEC customers during the loop and line port cut-overs?

During the process of loop conversions from BellSouth to a CLEC, the customer loop is physically removed from the BellSouth switch and then reconnected to the CLEC switch. This step is necessary to effect the conversion and does not produce lengthy interruptions of end user service. There are several options available to CLECs to reduce and virtually eliminate outage time. A CLEC can reduce the outage period by electing to have BellSouth provide manual order conversion. BellSouth also offers CLECs the option to request a specific conversion time and will then make every effort to accommodate the request.

11. Because the additional loop length caused by collocation may require loop conditioning, who will be responsible for performing the conditioning - BellSouth or the CLEC?

There will be no significant increase to the loop length as a result of provisioning the loop to a collocation space. Typically, the loop and the associated cross-connect to the collocation space would not be any longer than the loop and the associated cabling to a BellSouth switch. BellSouth will make whatever adjustments are necessary to ensure that the unbundled loop types requested meet the appropriate performance characteristics. The CLEC would be responsible for making any adjustments between its collocation space and the CLEC switch. In addition, due to the fact that the loop is not connected to the BellSouth switch, the CLEC will be responsible for providing any switched-based conditioning.

12. When will BellSouth provide written methods and procedures documenting its proposed collocation process for combining UNEs.

There are no unique M&Ps for the delivery of unbundled network elements to a collocation arrangement for the purpose of the CLEC combining said elements. The M&Ps developed by BellSouth for the purpose of ordering and provisioning of unbundled network elements will apply. These M&Ps have been previously provided to AT&T.

13. How many loop and line port jumper connections can BellSouth complete in a single day per central office? How many teams of technicians and shifts would this involve?

BellSouth is committed to being the provider of choice and as such is committed to employing the appropriate forces to meet the demands of the CLECs. However, the number of connections that can be completed in a single day varies day to day and varies from C.O. to C.O. BellSouth is prepared to work orders by the due date. AT&T should refer large projects to the Account Team to assure project handling and dedicated central office personnel. In addition, AT&T should provide a service

forecast to the Account Team, which will assist BellSouth in anticipating load requirements.

14. Will BellSouth allow CLECs to obtain less than 100 square feet of collocation space solely for purposes of combining or recombining the necessary UNEs? If so, how will BellSouth reduce its existing charges for collocation space?

Physical collocation arrangements can be used for the provisioning of any telecommunications service including combining or recombining unbundled network elements. BellSouth will allow CLECs to obtain less than 100 square feet for Physical Collocation when an equipment arrangement enclosure is not utilized. Where an enclosure is requested, OSHA requirements dictate that at least 100 sq. ft. be utilized. Rates and charges for collocation space are set forth in the agreement and will be assessed based on the shadow print of the arrangement plus a factor which includes maintenance and wiring aisle space.

Rates, terms and conditions for Virtual Collocation are contained in BellSouth's FCC #1 tariff, Section 20.

15. Will BellSouth allow CLECs to combine UNEs without collocation?

BellSouth's policy is to deliver UNEs to a CLEC's collocation space for the purpose of combining unbundled network elements. AT&T has proposed several delivery methods in its January 6, 1998 letter. BellSouth is reviewing these methods.

16. Is BellSouth combining any components of its network or elements today via an electronic connection using a remote terminal? If so, which ones?

BellSouth uses a variety of network management systems to manage its network. AT&T and other CLECs have a variety of options available to them to manage their network management systems.

17. Will BellSouth permit CLECs to have direct access to the BellSouth main distribution frame (MDF)?

No. As the MDF was not designed for multiple users, such access will lead to an unacceptable higher risk of disruption of service to a large population of telecommunications users when technicians from a number of different telecommunications companies have access to the network and facilities of all telecommunications providing service to end users from that location. Further, BellSouth's inventory systems are not equipped to handle access to the MDF. The inventory systems are not equipped to track circuit paths through the central offices and thus, would not be able to provide accurate and timely information for provisioning maintenance and repair activities.

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18. Will BellSouth provide CLECs access to its engineering records, as the records need to be updated to reflect the new loop length to ensure MLT testing works properly?

Metallic Loop Testing (MLT) does not rely on individual records to determine test parameters and, therefore, CLEC's do not need access to engineering records for such testing purposes.

19. How will maintenance of the combined unbundled elements work?

Unbundled network elements delivered to the CLEC's collocation space will be maintained by BellSouth in the same manner that such element was delivered to CLEC. In other words, each individual element can be tested to determine performance specifications.

20. Please describe all BellSouth methods and procedures to describe how it will separate already-combined elements and how CLECs will "recombine" these elements? If such methods and procedures do not yet exist, when will they be completed and made available to CLECs?

BellSouth recognizes that under the current agreements executed with AT&T, BellSouth may not disconnect those elements that are already combined. However, once the Eighth Circuit's decision becomes final and non-appealable, the combination provisions in the agreements will have to be revisited.

However, for purposes of answering this question, there are no unique M&Ps to provide unbundled network elements to AT&T for the purpose of AT&T combining these unbundled network elements. BellSouth offers order coordination for the purpose of transferring a BellSouth customer to an AT&T customer where AT&T intends to utilize unbundled network elements to provide service to that same customer.

21. What OSS impacts are anticipated from BellSouth's "collocation" proposal? What OSS will BellSouth access/utilize to separate already combined elements and to allow CLECs to "recombine" elements? How will BellSouth provide CLECs access to these OSS?

There are no OSS impacts due to BellSouth's collocation proposal. Collocation is ordered pursuant to Attachment 3 of the Interconnection Agreement. AT&T will utilize the OSSs set forth in Attachment 15 of the Interconnection Agreement to order individual network elements for the purpose of BellSouth delivering the unbundled network elements to AT&T's collocation space so AT&T can combine those unbundled network elements. Order coordination is available as set forth in BellSouth's response to number 20.

22. What impact does BellSouth's "collocation" proposal have on engineering and inventory records? What records will BellSouth access or modify to separate already connected elements? What records will need to be accessed and/or updated for a CLEC to complete recombination of UNEs? What is BellSouth's plan to accurately maintain such records? How will multiple CLECs using recombined UNEs be given access to BellSouth's engineering and inventory records?

The engineering and inventory records will be modified to reflect the delivery of the individual unbundled network elements to the collocation space, and will not be inventoried as services delivered to the end user.

BellSouth will have an inventory of the individual unbundled network elements delivered to the collocation space. BellSouth will not have any record of what the CLEC does with the individual unbundled network elements once they are delivered.

The CLEC will not require access to BellSouth's system for recombination of elements by the CLEC because the CLEC has assignment control at the collocation arrangement and can control where each unbundled element is delivered.

23. Has BellSouth investigated any alternatives to collocation for the recombination of network elements (for example, providing CLECs direct access to BellSouth's network equipment for physical recombining or logical separation and recombining)? If so, please describe these alternatives and explain BellSouth's reasons for not making these alternatives available to CLECs prior to this date? If not, when will any such investigation be done?

BellSouth has examined the offerings of various incumbent local exchange companies and has determined that, at present, collocation is the most appropriate arrangement for CLECs to combine unbundled network elements. AT&T proposed several alternatives to collocation in its January 6, 1998 letter to Duane Ackerman. BellSouth is investigating the feasibility of these alternatives.

24. How many customers will BellSouth be able to convert in each of its central offices per day when collocation is used to combine a loop and port?

See response to Issue 13

25. How many collocation arrangements can BellSouth accommodate per month per state?

BellSouth is committed to being the provider of choice and as such is continuing to improve its processes to become more efficient and expedient in fulfilling collocation requests.

Collocation arrangements shall be provisioned in accordance with Attachment 3 of the Interconnection Agreement. The number of arrangements that can be accommodated depends on the location, the number of requests, the work associated with each request and the commitment of both parties to jointly prioritize and plan implementation of the collocation arrangements requested.

A reasonable estimate of the locations and volume that AT&T is projecting would enhance BellSouth's ability to respond.

26. What is the availability of collocated space in each BellSouth central office? Please describe any limitations which may exist.

This question is overly broad in that there are approximately 1600 Central Offices in the BellSouth region (See NECA Tariff FCC No. 4 for a complete list of central offices). Responding to this question for each central office would require a colossal effort on BellSouth's part. However, to address your question, each request for collocation must be evaluated for space availability on an individual case basis. Availability is determined at the time a collocation application is submitted to BellSouth with the appropriate application fee.

27. Assuming a CLEC has pre-wired loop and switch connections in its collocation space to blocks on BellSouth MDF and/or IDF frames, what is the expected duration of customer down time for conversion of an existing BellSouth customer to a UNE CLEC customer?

The customer down time may vary depending upon whether coordination is required, the telephone number is ported, it is a designed or non-designed circuit and the type of frame in the central office.

28. How does BellSouth propose to remedy the provisioning/service parity issues associated with its collocation proposal e.g., (1) electronic provisioning vs. manual provisioning; (2) additional loop lengths and additional connections; (3) additional possible points of failure?

BellSouth is not aware of any provisioning/service parity issues associated with BellSouth's collocation proposal.

BellSouth does not electronically provision BellSouth customers on its own mainframe. This is a manual process requiring the use of BellSouth work forces to run jumpers.

BellSouth is not aware of any provisioning/service parity issue associated with BST's unbundled loop lengths. No additional loop lengths should be added on unbundled loops. The unbundled loop will be handed off to the CLEC at its

collocation space through a tie cable that replaces the tie cable that would normally route the loop to the switch. Additional connections may or may not be applicable on the BST side of the collocation space; however, the element delivered to the collocation space will perform in accordance with the industry standards and service performance parameters found in Attachment 2 of the Interconnection Agreement.

29. Will BellSouth allow a CLEC to collocate in a BellSouth remote switching site (location where it has a remote switching module)?

BellSouth will allow a CLEC to collocate on a BellSouth Premises (as "Premises" has been defined by the FCC's rules and regulations). BellSouth's position regarding collocation is the same regardless of the type of switching system used at a given central office.

30. Will BellSouth require AT&T to execute a "Master Collocation Agreement" or other agreement(s) before BellSouth will make collocation available to AT&T? If so, please provide a copy of this agreement(s). Are there any modifications needed to AT&T Interconnection Agreement(s) with BellSouth in any states before BellSouth will make collocation available to AT&T? If so, what are they?

AT&T will not be required to execute a "Master Collocation Agreement", as collocation is already incorporated into the AT&T Interconnection Agreements with BellSouth. BellSouth believes that no additional modifications are required to the existing collocation section of the Interconnection Agreement. If AT&T's opinion differs, BellSouth will be glad to discuss this issue.

31. What intervals will BellSouth commit to as to the provision of requests for collocation?

Request for collocation will be provisioned in accordance with Attachment 3, Section 2.2.18 of the Interconnection Agreement.

32. Has BellSouth tested, deployed facilities and/or personnel to assure itself that these intervals can be met? What remedies, if any, does BellSouth propose for CLECs if these intervals are not met?

BellSouth has negotiated interval dates with the CLECs and has been meeting those dates. BellSouth requests that CLECs provide all information required on the application to design the collocation space and obtain a building permit. BellSouth will stay in constant communication with the CLEC. If there is any problem with meeting the negotiated dates, BellSouth will notify the CLEC.

Pursuant to the AT&T/BellSouth Interconnection Agreement, BellSouth will reimburse AT&T in an amount equal to the AT&T expenditure incurred as a direct result of delays caused by BellSouth in the negotiated completion and turnover dates.

33. What costs are associated with BellSouth's collocation proposal? Please itemize all individual costs. What information will BellSouth provide to establish that such costs are "just, reasonable and nondiscriminatory?"

The costs associated with BellSouth's collocation proposal were provided in various proceedings throughout the BellSouth states. AT&T participated in all those proceedings. Collocation rates are contained in the interconnection agreement entered into between BellSouth and AT&T.

34. Does BellSouth have any actual commercial usage data from any of its states using physical collocation arrangements for purposes of allowing CLECs to combine UNEs? In other words, what testing has been done?

No unique testing is needed for the delivery of UNEs to a CLEC's collocation space. BellSouth has accepted orders and successfully delivered unbundled network elements to collocator's space for the purpose of the CLEC providing telecommunication services to end user customers.

35. How will BellSouth provision individual loops that currently are provisioned using integrated digital loop carriers for combining with local ports?

BellSouth will provision individual loops that currently are provisioned using integrated digital loop carriers for combining with local ports pursuant to Attachment 2, Section 3 of the Interconnection Agreement. Thus, BST will "roll" the loop from the IDLC onto a universal DLC or other alternate facility at no extra charge. If no alternate facility exists, BST will utilize its existing Special Construction Process to determine what additional costs would be required to provide an unbundled loop to that end-user's location. Once these loops are "un-integrated" they would be provisioned to the CLEC's collocation space to be combined with other elements as the CLEC chooses to combine them.

Figure 1 ILEC Loop And Switch Port Configuration (Without IDF)

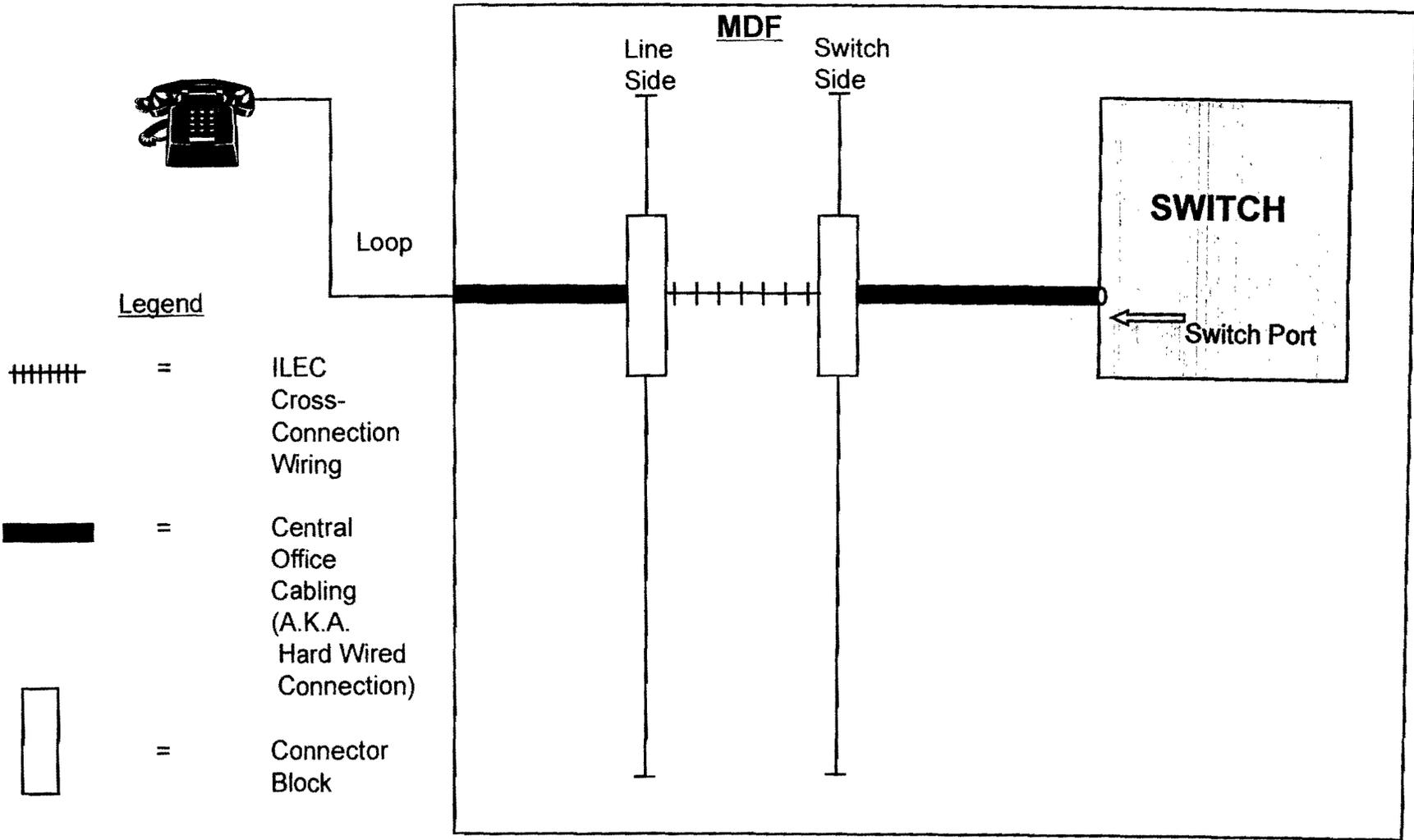


Figure 2 ILEC Loop And Switch Port Configuration (With IDF)

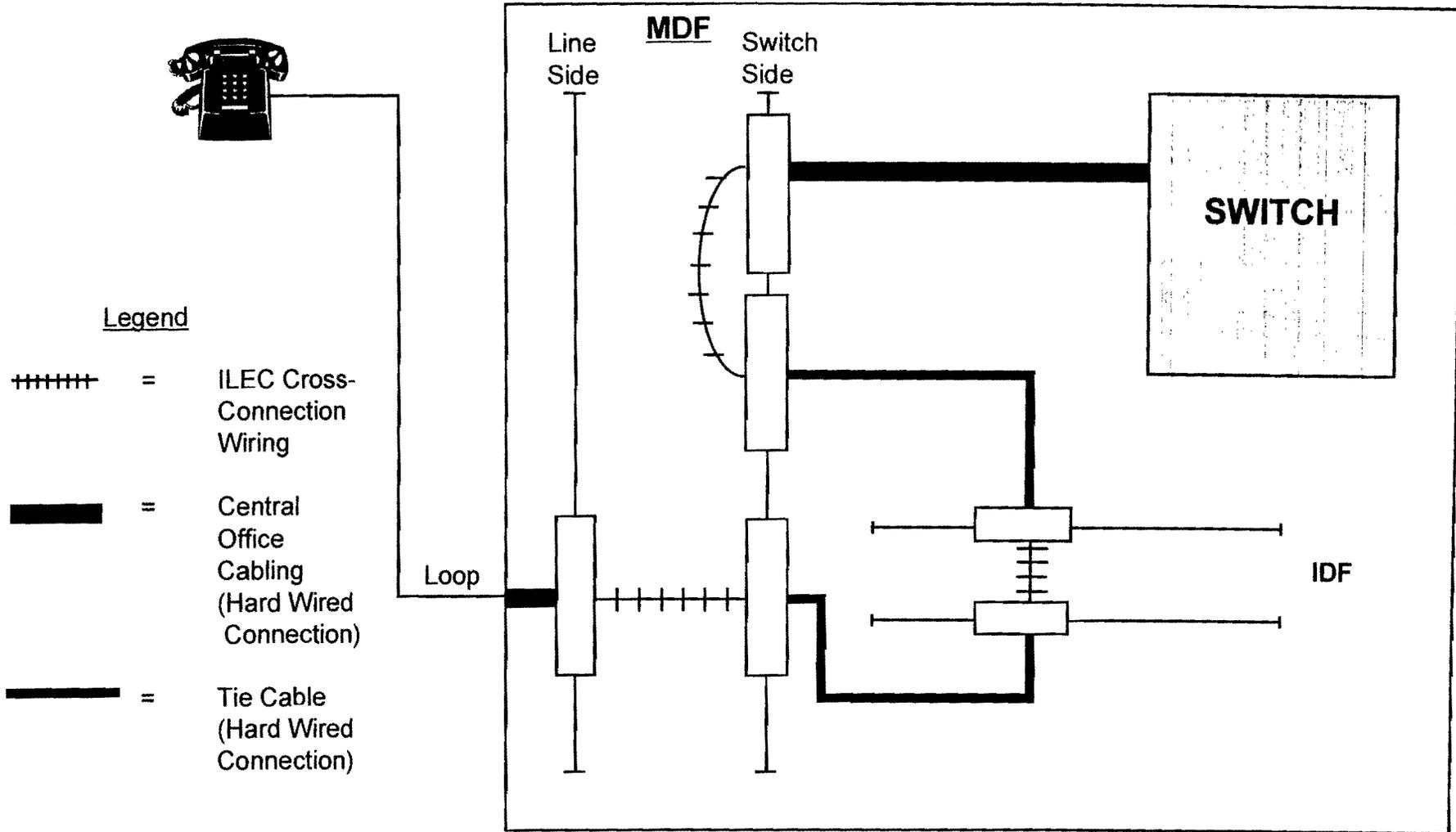


Figure 3: Typical IDLC Loop And Switch Port Configuration

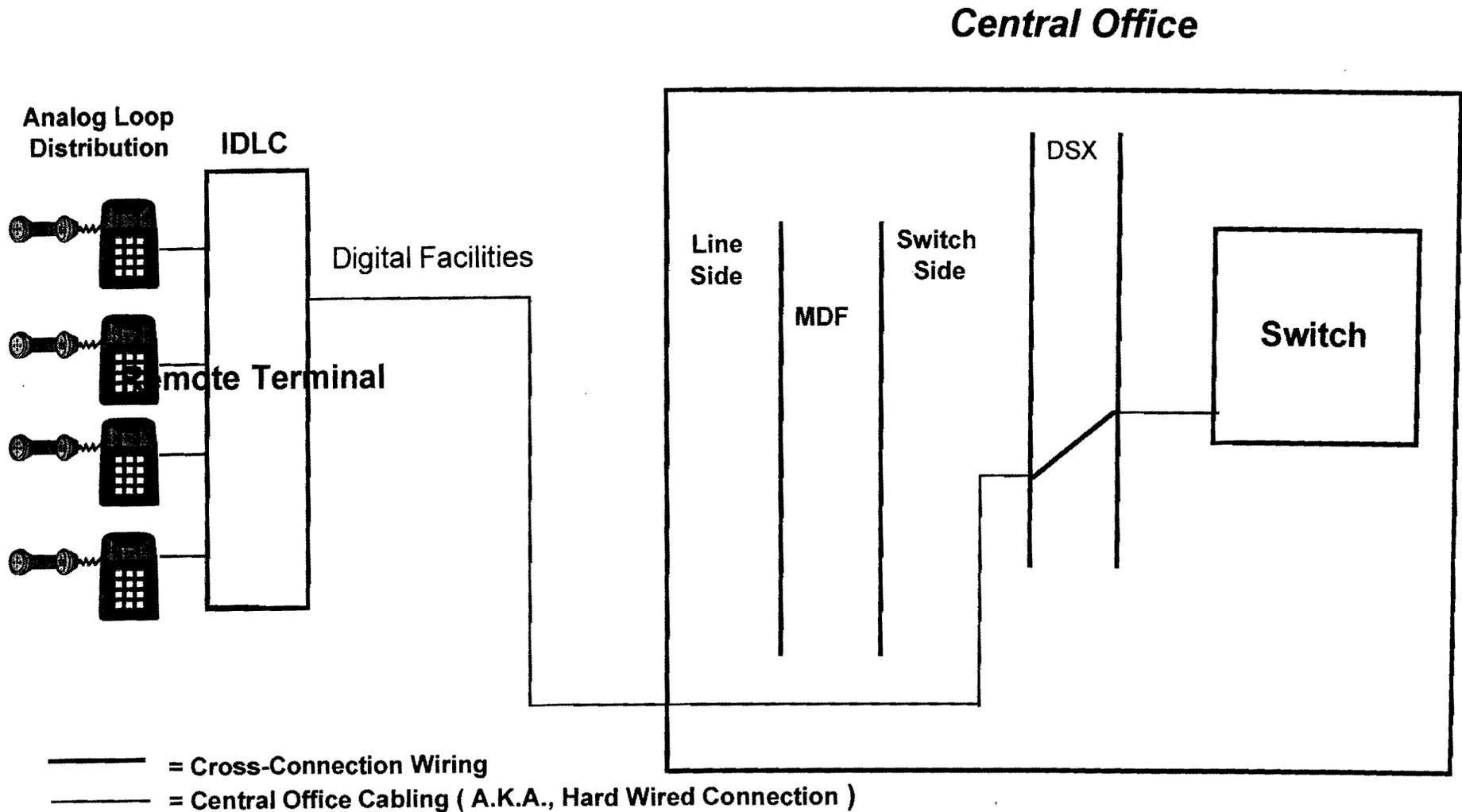
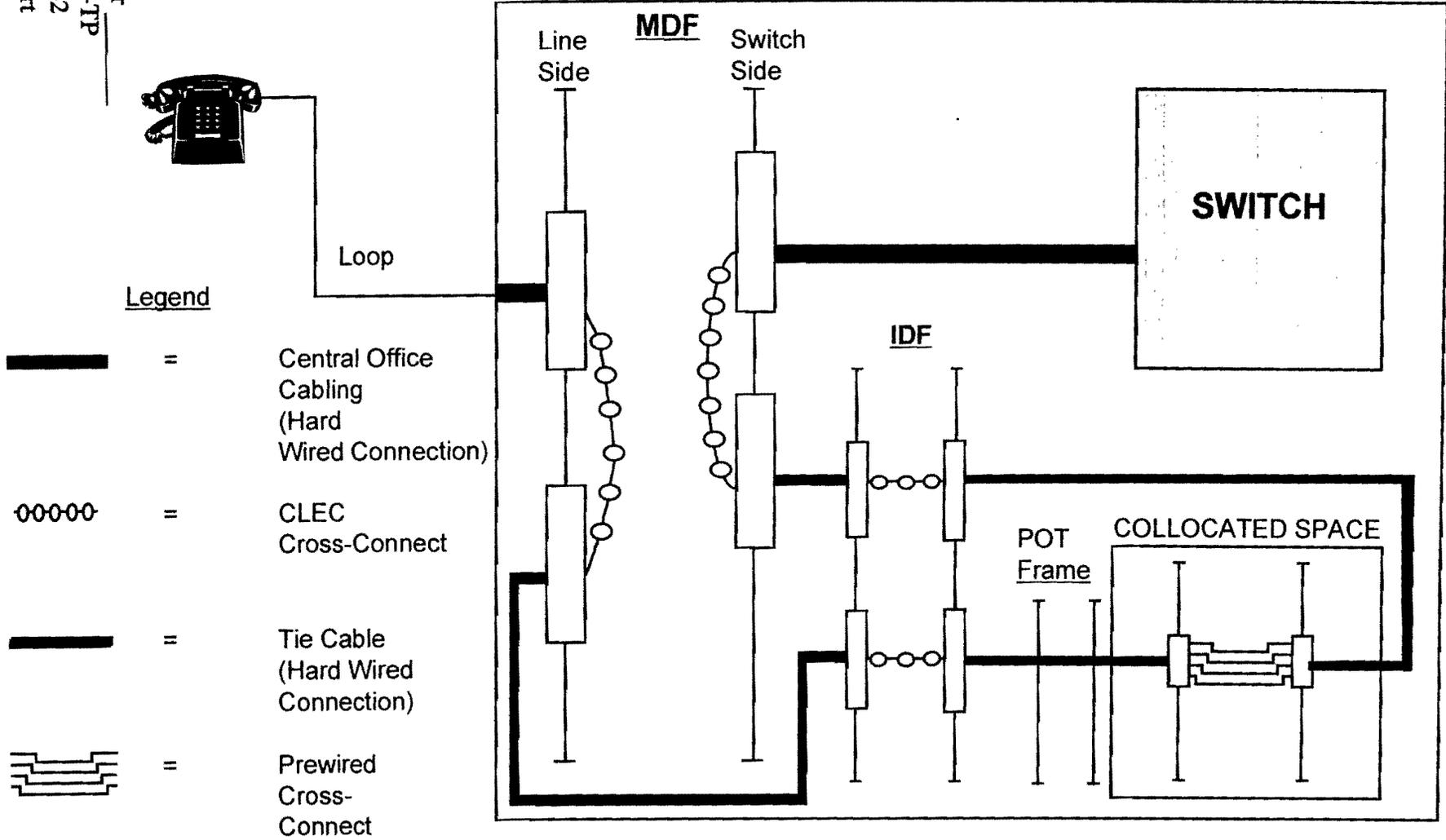


Figure 4 Collocation Configuration For Combining Elements Where IDF And POT Frames Are Used

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 Loop and Switch Chart
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Preface

This handbook describes BellSouth's Collocation offerings, *providing* general information regarding the terms and conditions, ordering, provisioning and maintenance of BellSouth's Collocation Offerings. By design, this document does not contain detailed descriptions of network interface qualities, network capabilities, local interconnection or product service offerings. This document does not represent a binding agreement in whole or in part between BellSouth and subscribers of BellSouth's Collocation services. For actual Terms and Conditions of BellSouth's Physical Collocation offering, please refer to BellSouth's Standard Physical Collocation Agreement. For actual Terms and Conditions of BellSouth's Virtual Collocation offering, please reference BellSouth's FCC #1 Tariff, section 20 or BellSouth's Florida Access Tariff (E20).

Introduction

BellSouth offers Virtual Expanded Interconnection Service as a tariffed service offering. BellSouth will negotiate Physical Collocation on an individual contract basis. Both Virtual and Physical collocation will be made available on a first come, first served basis, depending on space availability for interconnection to unbundled network elements, access services and state tariff services necessary for use by telecommunications service providers. You will find a list of contacts included for your convenience in discussing the above items.

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Service Descriptions

Virtual Expanded Interconnection Service (VEIS)

VEIS, or Virtual Collocation, is a tariffed service offering which provides for the placement of collocator-owned transmission equipment and facilities in BellSouth Central Offices for the interconnection to the BellSouth network. Collocation arrangements may interconnect to designated BellSouth tariffed services, local interconnection trunks and/or unbundled network elements.

With VEIS, the collocator places fiber optic cable from outside the central office to an interconnection point designated by BellSouth, (e.g. a serving manhole). The entrance facility is pulled into the central office cable vault by BellSouth, spliced into pre-terminated, fire-retardant riser cable and connected to the collocated equipment. Multiple entrance facility points will be made available where such entrances exist and capacity is available. The collocator must directly contract with its selected BellSouth Certified vendor for engineering and installation of the collocation equipment arrangement.

To ensure the compatibility of the facilities and equipment used to provision Virtual Collocation, collocated equipment and cabling facilities will be provided by the collocator. This includes, but is not limited to terminal transmission equipment and associated plug-ins/line cards, software, test equipment, the pre-terminated, fire-retardant riser cable, cabling from the equipment arrangement to the BellSouth cross-connect point, cabling from the arrangement to the BellSouth-provided power source, and any unique tools required to provision, maintain or repair the arrangement.

BellSouth will lease the collocator's entrance fiber, cabling and equipment arrangement for the nominal fee of one dollar. For this reason, VEIS equipment arrangements are most commonly located in the BellSouth equipment line-up. Performance monitoring and alarming of the collocated equipment is the responsibility of the collocator and must be performed remotely. BellSouth will perform all maintenance and repair on VEIS equipment once the collocator requests such work. For additional information regarding BellSouth's Virtual Expanded Interconnection Service, please reference Section 20 of BellSouth's FCC #1 tariff or section 20 of BellSouth's Florida Dedicated Access Tariff.

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Service Descriptions, cont.

Physical Collocation

Physical Collocation is a negotiated contract arrangement for the placement of collocator-owned facilities and equipment in BellSouth Central Offices. Physical Collocation is available as either **Expanded Interconnection Service (EIS)** or **Service Interconnection (SI)**. Expanded Interconnection Service includes placement of equipment connected to private fiber entrance facilities and cross-connected to BellSouth's network. Service Interconnection provides for the placement of collocator equipment, interconnected to BellSouth network, without the use of private fiber entrance facilities.

Unlike VEIS, Physical Collocation arrangements will be placed in floor space separated from BST equipment. Where space permits, BellSouth will construct a common area for all collocators, including separate ingress/egress where feasible. The cost of such construction will be shared by all collocators at that location on a pro-rated basis. Equipment ownership, maintenance and insurance is the full responsibility of the collocator or their approved agent. The equipment compliment may include transmission equipment, terminating equipment, switching equipment, power and battery equipment (under special conditions only), PCs and test access modems. A Point of Termination Bay (POT Bay) serves as the demarcation point between the collocator's equipment arrangement and BellSouth's network.

All equipment placed as part of a collocation arrangement must be installed by a BellSouth authorized vendor and must meet Bellcore/NEBS standards. A collocation arrangement enclosure may be purchased from BellSouth to house the equipment arrangement at the request of the collocator for an additional fee. A collocator has the option of arranging directly for the construction of the enclosure following BellSouth specifications. Under certain conditions, the collocator may be permitted to construct power plant. Power equipment installed by the collocator must be enclosed within fire rated walls, constructed to BellSouth and local building code specifications.

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General Terms and Conditions

Application for service

The application for collocation is a two-phase process consisting of the Application Inquiry phase and the bona fide Firm Order phase. Both phases use BellSouth's BSTEI forms. For copies of BellSouth's BSTEI forms and line by line instructions, a collocator may contact their BellSouth Interconnection Services Account Team contact noted on page 14 of this Handbook. A collocator must submit the inquiry document for review and planning by BellSouth equipment engineers, space planners and facility planners. Based on the feedback from these sources, BellSouth will respond to the application inquiry in writing. An application fee must accompany each Application Inquiry as indication of a bona fide request.

Following the collocator's review of BellSouth's Application Response, a Firm Order may be submitted for each location for which the collocator wishes to proceed. The Firm Order may be submitted on the same form used during the Application Inquiry phase, provided all necessary revisions are clearly marked to indicated the applicant's finalized plans. A detailed equipment drawing must accompany the Firm Order request along the pre-payment of applicable fees. Once the Firm Order is placed, the collocator may negotiate with a BellSouth Certified Vendor for equipment placement.

Assignment of space

BellSouth assigns space for collocation based on space availability on a first come, first served basis. For Virtual Collocation, space is assigned within the BellSouth equipment line-up based on the rack requirements for the equipment installation. Physical Collocation space is assigned per the customer's request, with equipment arrangements placed in separated floor space.

With Physical Collocation, a collocator may opt for an arrangement enclosure. Enclosures are available as a 100 square foot minimum based on space availability within the area designated for physical collocation. A collocator requesting more than a 100 square foot enclosure will be offered contiguous space where available. Where contiguous space is unavailable, the collocator may elect the construction of two separate enclosures and may interconnect its arrangements via direction connection or through the purchase of BellSouth cross-connects.

If BellSouth determines there is insufficient space within a central office to accommodate Physical Collocation, BellSouth will refund the Physical Collocation Application Fee. The requesting collocator may request Virtual Collocation, in lieu of Physical Collocation and in accordance with existing regulatory requirements, at the same premises by submitting a Virtual Collocation BSTEI form along with the appropriate Application Fee.

Equipment installation

The collocator must select an equipment installation vendor who has achieved BellSouth Certified/Authorized Vendor status to perform all engineering and installation work associated with the equipment collocation arrangement. This ensures BellSouth's standards for safety and quality are met. The Certified Vendor is responsible for installing the collocation

General Terms and Conditions (cont.)

Equipment installation (cont.)

equipment and components, running power feed(s) to the BellSouth Bus Distribution Fuse Bay (BDFB), performing operational tests after the equipment installation is completed, and notifying the local BellSouth Equipment Engineer and the Collocator upon successful completion of the installation and acceptance testing. Arrangements must be made such that the Collocator is billed directly by the Certified Vendor for activities associated with the arrangement installation. The lists of certified vendors effective the issue date of this document are contained on pages 16-18. For the most current list, a collocator may contact their BellSouth Interconnection Services Account Team contact noted on page 14 of this Handbook.

Occupancy of space

The collocator must complete the collocation equipment installation within 180 days from the date space is made available by BellSouth or forfeit the right to use the space. BellSouth may, at its discretion, extend this interval when best efforts have been demonstrated in attempting to meet this interval.

Alarm and monitoring

The collocator is responsible for the placement and remote monitoring of their equipment, environmental alarms, and/or power alarms. BellSouth will place environmental alarms in collocation areas for its own use and protection. Upon request, BellSouth will provide remote monitoring circuits at the tariff rate for the service requested.

Inspections

BellSouth will conduct an inspection of the collocator's equipment and facilities between the time of the initial turn-over of the space and the activation of cross-connect elements. Subsequent inspections may occur with equipment additions or on a predetermined interval basis. For such inspections, BellSouth will provide a minimum of 48 hours advance notification. BellSouth reserves the right to conduct inspections without prior notification to ensure compliance to the terms and conditions of the tariff or agreement. Collocator personnel have the right to be present for inspections.

A collocator may inspect their virtual collocation arrangement upon completion of the arrangement installation. A security escort is required for these inspections. Additional inspections must be coordinated with BellSouth and also require a security escort. Only collocators or their certified vendors are permitted for such inspections.

General Terms and Conditions (cont.)

Commencement Date

The date which the collocator, the collocator's vendor, and BellSouth jointly certify the interconnector's equipment is operational and is connected to BellSouth's network will be the commencement date.

Access to BellSouth Central Offices

Only BellSouth employees, BellSouth certified vendors, Collocator employees and their authorized agents are permitted in BellSouth Central Office collocation sites. Access to Virtual Collocation is permitted for BellSouth employees and certified vendors. Virtual Collocator's are permitted to view the completed installation for inspection only as referenced in the preceding paragraphs.

Access to Physical Collocation is permitted for Collocator employees and their authorized agents, BellSouth certified vendors, and BellSouth employees. All physical collocators are required to provide their employees and authorized agents a picture identification. This identification must have the employee name and company name clearly printed and must be visible at all times while the individual is inside a BellSouth facility. Manned offices will afford 24 hour, 7 day per week access, but may require a security escort to the collocation area depending on building configuration. Unmanned offices may require prior arrangement for the dispatch of a BellSouth employee or security escort for building access.

Liability

The collocator is responsible and accountable for the actions of their employees and their agents. The collocator will be required to pay damages to BST for damage to BST property, equipment or facilities as a result of the actions or behaviors of either the collocator employees or their agents.

Insurance

For Physical Collocation, BellSouth requires the following coverage: (1) \$10 million in commercial general liability insurance or a combination of commercial general liability and excess umbrella coverage totaling \$10 million; (2) workers compensation coverage/employers liability coverage with limits not less than \$100,000 each accident; (3) \$100,00 each employee by disease, \$500,000 policy limit by disease. BellSouth will review requests for self insurance on a case by case basis.

Insurance coverage for Physical Collocation must be in effect on or before the date work commences or equipment is delivered, whichever is sooner, and must remain in effect until departure of all collocator personnel and property from the central office.

General Terms and Conditions (cont.)

Insurance (cont.)

Insurance for Virtual Collocation is the responsibility of BellSouth per the arrangement lease agreement. Virtual Collocator's should submit annually to BellSouth an updated list of facilities and equipment contained in their Virtual Collocation arrangement to assist BellSouth in ensuring adequate insurance coverage is in place should a disaster occur.

Ordering Interconnected service

Virtual Collocation may interconnect to BellSouth's network at the DS3, DS1, 2-wire and 4-wire DS0 cross-connect levels. (DS0 equivalent is available in Florida only.) Interconnection to Physical Collocation is available at the 2-wire or 4-wire, DS1, DS3 or Fiber Optic interface levels on a negotiated basis only. Please ask your BellSouth contact for specific information.

Services to be interconnected to a collocation arrangement must be submitted on Access Service Request (ASR) forms or Local Service Request (LSR) forms using industry standards and code sets for accurate and complete requests. For information regarding the ASR ordering process and field definitions, please reference the Access Service Ordering Guide, Bellcore's Special Reports SR STS-471001 and 471004. For information regarding the LSR ordering process and field definitions, please reference BellSouth's Local Interconnection and Facility Based Ordering Guide.

Assignment of facilities

BellSouth assigns facilities within its network to the collocation interconnection demarcation point. BellSouth provides this facility interconnection information on the Design Layout Record (DLR) for DS1 and DS3 interconnection and on the Cable and Pair Assignment Matrix for 2-wire and 4-wire (DS0) interconnection. The customer must specify this interconnection information as circuit facility assignment (CFA) or cable and pair/channel assignment, respectively, on the Access Service Request or Local Service Request when ordering cross-connects to unbundled network elements or tariffed services.

Conversion of VEIS to Physical Collocation

Collocators who have existing VEIS arrangements may convert these arrangements to physical collocation provided the terms and conditions for Physical Collocation are met. The collocator will be responsible for the issuance of service order requests and the payment of fees associated with Physical Collocation, rearrangement of existing services and vendor costs for the relocation/removal of equipment.

General Terms and Conditions (cont.)

Recovery of extraneous expenses

Should BellSouth discover, upon beginning construction for physical collocation space, that unexpected major renovation or upgrade will be required to one of the following in order to facilitate physical collocation, BST will share the costs of these expenses among collocators based on the number of square footage being requested: ground plane addition, asbestos abatement, mechanical upgrade, major HVAC upgrade, separate egress, ADA compliance.

Cancellation of a request in progress

If a collocator cancels an in-progress request, the collocator will be responsible for reimbursing BellSouth for expenses incurred to date. If the collocator has prepaid all or a portion of the non-recurring fees, BellSouth will refund the amount not expended as of the date of the cancellation.

Disconnection/Relocation of an in-service arrangement

When a collocation arrangement is disconnected or relocated, the collocator must contract directly with its selected BellSouth Certified Vendor to remove/relocate all equipment and facilities associated with the decommissioned arrangement at the expense of the collocator.

Special Reports

BellSouth will negotiate with requesting parties for the development of administrative reports, based on the availability of the data being requested. A fee structure will be based on the complexity of the request and resources required to produce the report(s).

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Rate Components

Virtual Collocation

The rate element components of Virtual Collocation are contained in BellSouth's FCC #1 tariff, Section 20 and in the Florida Dedicated Services tariff, Section 20. Please refer to these references for the application of charges for Virtual Collocation.

Physical Collocation

Physical Collocation offers a menu-style ordering provision so you may select only the items required for your individual arrangement(s). Some components are required for all physical collocation arrangements as indicated by an (R) designation next to the item in the descriptions following.

Application fee (R)

The application fee is required for each application to cover the engineering and administrative expense associated with assessing the Application Inquiry request. This fee is a one time charge per location, per request and must accompany the Application Inquiry document before BellSouth will begin assessing the request. A subsequent request by the same customer in the same premises will be treated as "new" if the initial collocation installation request is complete. A Subsequent Application fee may apply in lieu of the Application fee when subsequent requests by the same customer in the same premises do not require BellSouth to expend capital and the collocator has this option negotiated as part of the contract arrangement.

Floor Space (R)

This component covers the square footage requirements for the equipment rack(s) and POT bay for the equipment arrangement. The square footage calculation of an arrangement having an enclosure equals the total square footage contained within the enclosure walls. When an enclosure is not requested, square footage is calculated by the total shadow print of the equipment racks and POT bay plus a factor of 2.50 to compensate for the collocator's pro-rated share of OSHA required wiring and maintenance aisle space. BellSouth requires an enclosure if a collocator places power equipment or requires a desk or terminal stand.

The floor space charge covers items such as, but is not limited to the use of lighting, heating, air conditioning, ventilation, emergency back-up for these systems and other allocated expenses associated with the central office building. Billing commences the day the collocation space is turned over to the collocator for occupancy, or the day equipment is delivered to the BellSouth location, whichever is sooner. The floor space element does not include the amperage required to power collocated equipment.

Rate Components (cont.)

Power (R)

Charges for -48V DC power is assessed per ampere per month based upon the certified vendor engineered and installed power feed fused ampere capacity. Rates include redundant feeder fuse positions (A&B), cable rack to the collocated equipment or equipment arrangement enclosure, and emergency back-up power. Fuses and power feed cables (A&B) must be engineered (sized), furnished and installed by a BellSouth certified vendor. The Interconnector's certified vendor must also provide a copy of the engineering power specification prior to the Commencement Date.

When a collocator requests collocation of equipment that requires BellSouth to construct an addition and/or an upgrade to the power plant in a specific central office, these additions and/or upgrades will be part of the Space Preparation charge. The collocator has the option of accepting responsibility for construction of such upgrades or additions per BellSouth specifications and assuming all costs associated with the construction. Power equipment placed by the collocator must be enclosed within fire rated walls.

Cross-connect (R)

This element provides the one-for-one interconnection to Unbundled Network Elements (i.e. 2-wire or 4-wire unbundled loop, unbundled ports) or BellSouth's tariffed service offerings (i.e. DS0, DS1 or DS3 services). It is a flat rate, non-distance sensitive charge and applies on a per loop, circuit or port connection basis. The cross-connect has both a non-recurring and recurring charge.

POT bay (R)

BellSouth requires the use of a Point of Termination (POT) bay or frame for demarcation with physical collocation. The charge applies on a per cross-connect basis on a monthly recurring basis only. There is currently no non-recurring charge for this element.

Cable Installation

The cable installation charge applies only to collocators who install private entrance facilities to their collocation arrangement. This is a one time (non-recurring) charge per cable installed to arrange the punch through to the manhole, pull fiber cable length from the serving manhole to the Central Office cable vault, perform splicing to collocator's connectorized fire retardant riser, and pull cable length through cable support structure to the collocation arrangement location.

Cable Support Structure

The component covers the use and maintenance of the Central Office duct, riser and overhead racking structure when the collocator elects to provide private fiber entrance facility to their equipment.

Rate Components (cont.)

Space Preparation fee

This one time fee applies for physical collocation only, per arrangement, per location and covers the survey, engineering, design, and building / support system modifications for the shared physical collocation area within a central office plus additional "make ready work" specific to the collocator which is not included in the enclosure construction fee. BellSouth will pro rate the common space preparation costs among all collocators at a given central office based on the number of square footage requested per collocator. This charge may vary dependent on the location and type of arrangement requested. A portion of the estimated Space Preparation charge must be paid prior to construction or equipment installation begins.

Should the customer elect to arrange the add/build of DC power plant, the costs for construction of the power equipment enclosure will be included in the space preparation fee when BellSouth performs the construction. Construction of the power equipment enclosure may be directly arranged with a BellSouth certified contractor. Such enclosure, whether constructed by BellSouth or a contracted vendor, will become the property of BellSouth.

Space construction fee

This element applies to physical collocation arrangements only and will vary based on the size of arrangement enclosure requested. The fee covers the materials and installation of an equipment arrangement enclosure. The collocator has the option of accepting responsibility for construction of their equipment arrangement enclosure per BellSouth specifications and assuming all costs associated with the construction. Enclosures constructed for collocation arrangements will become the property of BellSouth.

Security Escort (R)

A security escort is required for all equipment inspections under VEIS. A security escort may be required for physical collocation if the collocator or their agent must traverse a restricted area in order to access their collocation space. The charge is billed in half hour increments.

Additional Engineering

BellSouth's engineering and other labor time associated with establishing the equipment arrangement and establishing tie cables will be billed as additional engineering. This charge will also apply for modifications to an application in progress which result in architectural, design or engineering changes. Additional engineering charges may apply for work efforts specific to a collocator's space when an enclosure construction charge does not apply.

Administrative reporting

Collocators who request administrative reports will be assessed a report fee on an individual case basis.

Contacts

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Physical Collocation contract negotiation:

<u>Contact Name</u>	<u>Telephone</u>
Jerry Hendrix	404 927-7503

Competitive Access Provider (CAP) and CLEC Applications for collocation :

<u>Contact Name</u>	<u>Account</u>	<u>Telephone</u>	<u>Fax Number</u>
Nancy Nelson	CAP/CLEC	205 977-1136	205 977-0037
Gretchen Temple	CAP/CLEC	205 977-1122	205 977-0037
Jeanie Ash	MCIm	770 492-7541	770 621-0632
Valerie Gray	AT&T	770 492-7563	
Linda McGrue	SprintMetro	205 988-1719	205 988-1688
Connie Butrill	Wireless	770 454-2983	205 454-2907

For IXC customers:

Contact your Account Representative to obtain the name of your collocation coordinator if not listed above.

To obtain a copy of BellSouth's Application / Inquiry document:

Contact your Account Representative

Example Letter

**Customer Request
for
Physical Collocation Negotiations**

(Date)

Mr. Jerry Hendrix
Director - Marketing Interconnection Services
BellSouth Telecommunications, Inc.
675 W. Peachtree Street, N.E.
Room 34S91
Atlanta, Georgia 30375

Dear Mr. Hendrix:

(Company name) hereby requests to begin the negotiations process to reach a mutually acceptable Physical Collocation Agreement with BellSouth Telecommunications, Inc. in the state(s) of _____.

Please contact **(name of your contact)** at your earliest convenience to establish the appropriate company contacts and the desired procedural schedule necessary to implement the negotiation process.

Sincerely,

Contact Name and Title
Company Name and Address
Contact Phone Number, Fax Number

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Example
BellSouth Certified Transmission Vendor List
Engineering and Installation of Collocation Arrangements

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
ADC Communications	Ken Reeves Doug Guildry	800-223-9773 318-684-2860
ADC Da Tel	Basem Anshasi	205-655-9898
Alcatel	Ed Boatwright Alex Baber	770-270-8335 800-869-4869
E F & I Services Co.	Reed Tillis	904-355-7930
Fujitsu Network Communications, Inc., Certified - Collocation (OEM) <u>Fujitsu Equipment Only</u>	J. Quinta Evans	770-246-4102
Lucent Technologies, Inc.	(SC) Adrian Dye (MS) Larry Montgomery (GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins NC) (AL) Marc Haze (LA, TN, KY) Unknown	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 Use a # above
Mintel	Bill Quinn	770-923-0304
Quality Telecommunications, Inc.	Jerry Miller	770-953-1410
Rapid Response Comm.	Ted Pellaux	423-546-2886
Reltec Services	Woody Bell	770-449-0840
Six "R" Comm., Inc.	Ken Koontz Dick Phillips	704-289-5522
Tele-Tech Company	Rod Trawick	770-389-3043
Telpro Technologies, Inc.	Robert West, Jr.	404-629-1093
Trans Global Comm.	Dale White	904-304-0261
Volt Information Science	George Maquieira	908-245-0100
W. E. Tech, Inc.	Wes Evans	954-587-6996

Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

**Example
BellSouth Certified Switch Vendors
Engineering and Installation for Physical Collocation**

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
DSC Corporation (STP)	John Mastoras	214-491-1870
Ericsson(STP)	Karen A Caulk	972-583-5158
Fujitsu Network Communications, Inc. Certified – Collocation (OEM) Broadband	J. Quinta Evans	770-246-4102
Lucent Technologies, Inc.	(SC) Adrian Dye (MS)Larry Montgomery (GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins (NC) (AL) Marc Haze (LA, TN, KY) Unknown	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 Use a # above
Nortel	Margaret Skeen	770-661-4303
Siemens Stromberg – Carlson	Manfred Schmidtk Installation Karl Hoskins Engineering	407-942-5665 561-955-8621

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Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

**Example
BellSouth Certified Power Vendors
Engineering and Installation for Physical Collocation**

Note: Installation of Power equipment requires special BellSouth conditions and approval.

<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
Charles E. Singleton	Sam Wetzel	305-960-0158
Reltec Services	Bob Dietz	216-353-2070
Six R Communications	Ken Kootnz	704-535-7607
Lucent Technologies, Inc.	(SC) Adrian Dye (MS) Larry Montgomery (GA) Mike Chancey (NFL) Wayne Stricklen (NC) Abe Jenkins (NC) (AL) Marc Haze (LA, TN, KY) Unknown	803-926-5213 601-949-8277 404-573-6521 407-636-1421 704-529-0693 910-299-0326 334-265-1291 Use a # above

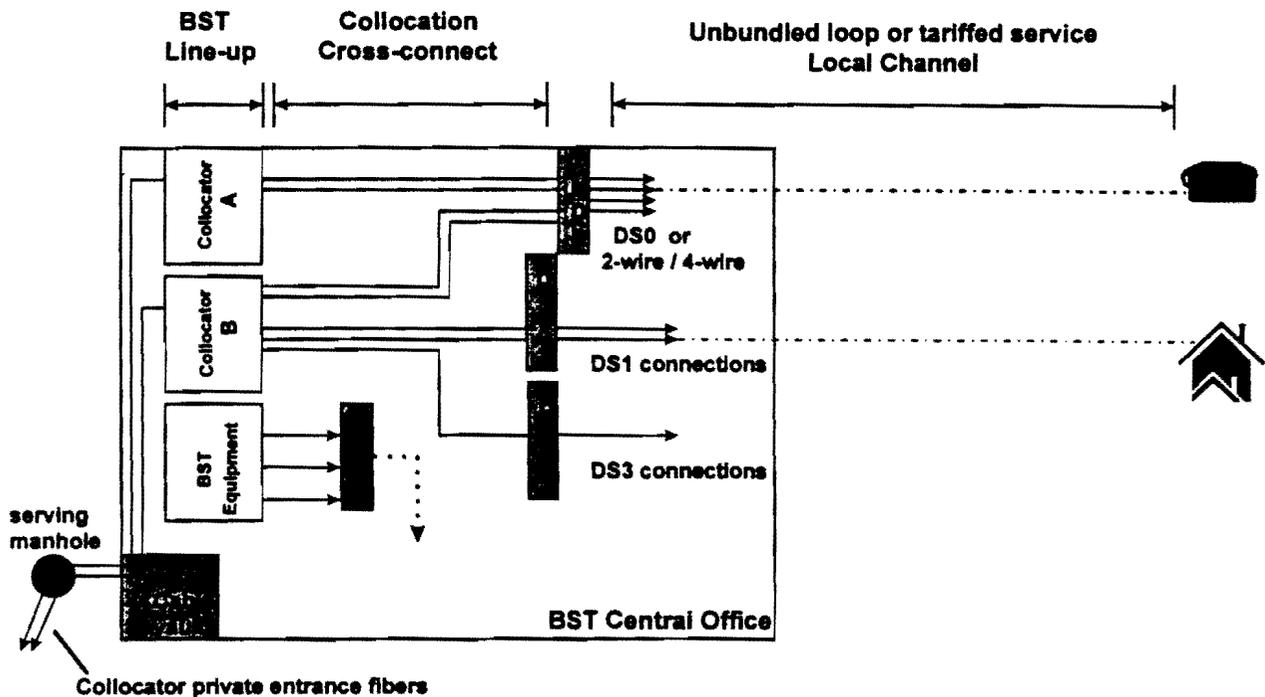
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Note:

The certification status of any listed vendor is subject to change monthly, therefore please ensure you have current information by contacting your BellSouth Collocation Coordinator. @This indicates a Certified Vendor is temporarily unavailable for collocation selection.

Virtual Collocation Example Schematic

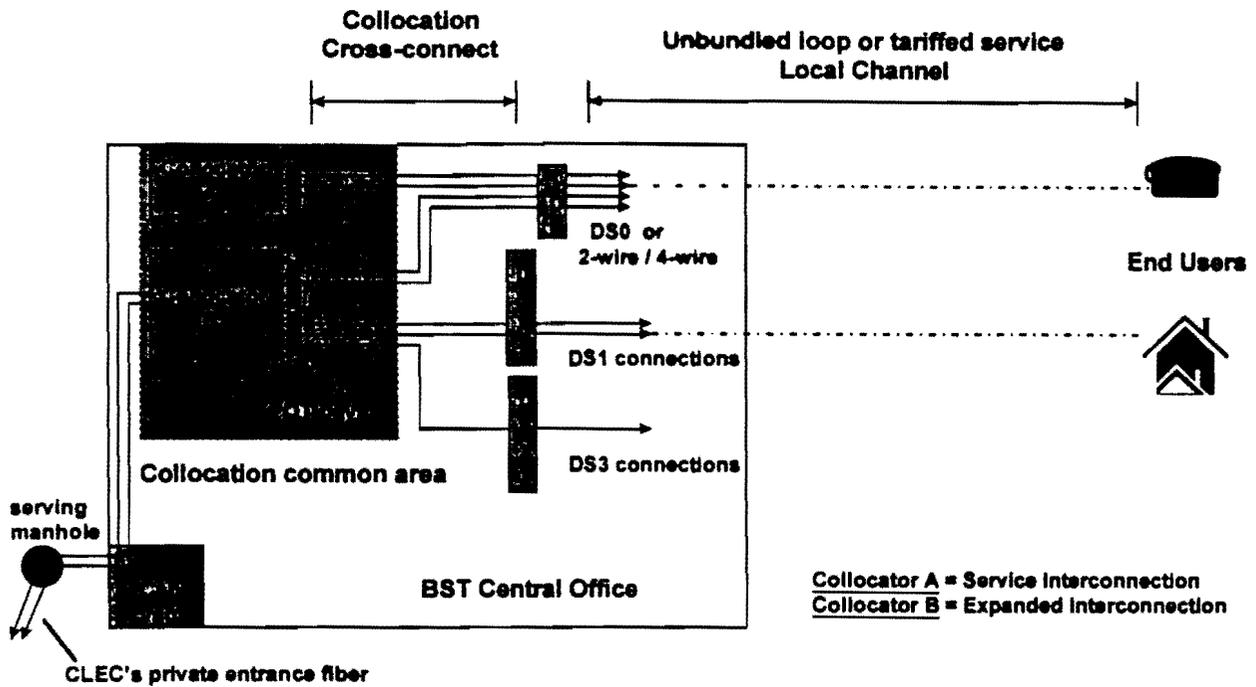
This schematic shows the placement of the Virtual Collocation equipment within the BellSouth line-up. The interconnection point between the collocator's equipment arrangement and BellSouth's network occurs at the frame (TMDF) or DSX (DSX1 or DSX3), depending on the service being interconnected. The "local channel" is shown as an example of the type of connection which can be made between a collocation arrangement and BellSouth's network but does not constitute the only option for such interconnection.



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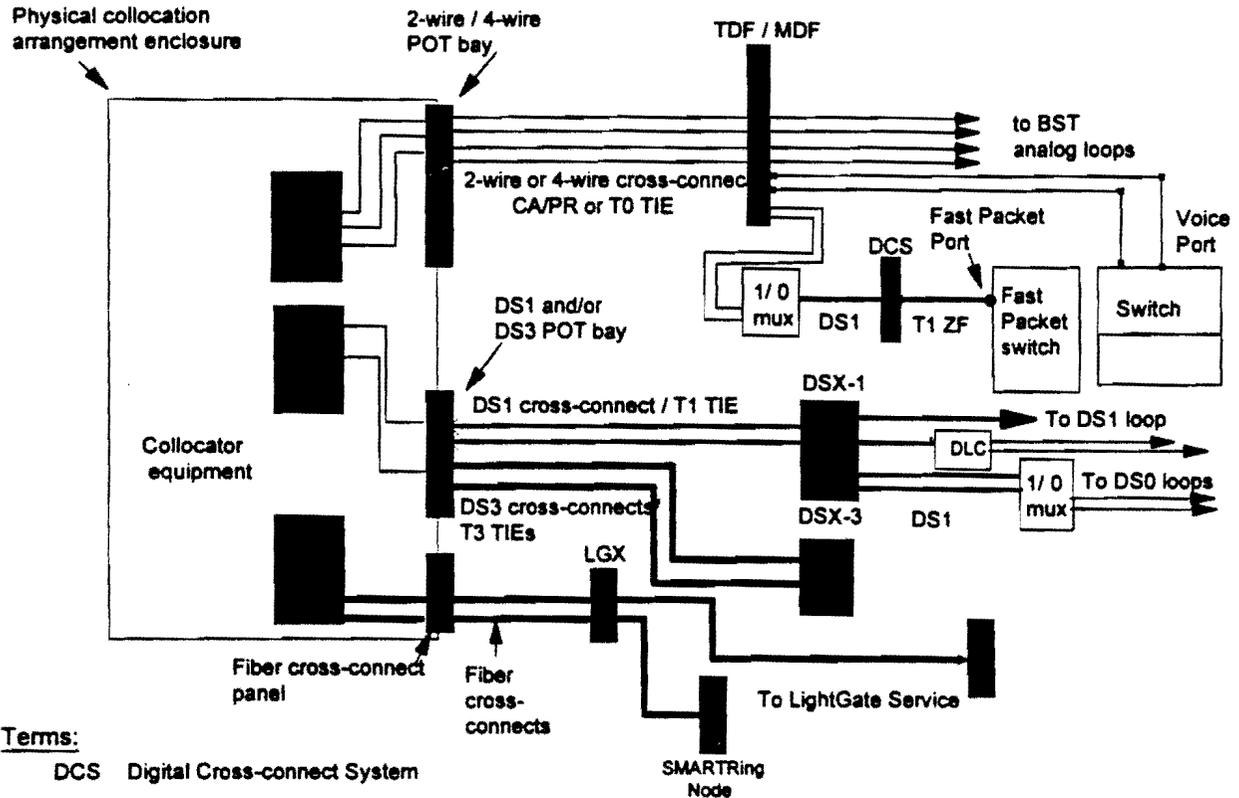
Physical Collocation Example Schematic

The example below illustrates the two types of Physical Collocation offered by BellSouth: Service Interconnection with Collocator "A" and Expanded Interconnection Service with Collocator "B". This Schematic shows the POT bay interconnection point between the collocator's equipment arrangement and BellSouth's network. The "local channel" is shown as an example of the type of connection which can be made between a collocation arrangement and BellSouth's network.



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Example Cross-connection Schematic Physical Collocation



Terms:

- DCS Digital Cross-connect System
- DLC Digital Loop Carrier (loop concentrator)
- LGX Light Guide Cross-connect
- MDF Main Distributing Frame
- TDF Toll Distributing Frame

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Collocation Agreement

By and Between

BellSouth Telecommunications, Inc.

and

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**BELLSOUTH PHYSICAL COLLOCATION
MASTER AGREEMENT**

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THIS AGREEMENT, made this _____ day of _____, 19____, by and between BellSouth Telecommunications, Inc., ("BellSouth") a corporation organized and existing under the laws of the State of Georgia, and _____, ("Interconnector") a (corporation) organized and existing under the laws of _____;

WITNESSETH

WHEREAS, Interconnector wishes the right to occupy the BellSouth Central Office(s) delineated herein for the purpose of interconnection to BellSouth's facilities;

WHEREAS, BellSouth has space available in its Central Office(s) which Interconnector desires to utilize; and

WHEREAS, BellSouth is willing to make such space available to Interconnector within its Central Office(s) subject to all terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the mutual agreements and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

I. SCOPE OF AGREEMENT

A. BellSouth hereby grants to Interconnector a right to occupy that certain enclosed area designated by BellSouth within a BellSouth Central Office, of a size and dimension which is specified by Interconnector and agreed to by BellSouth (hereinafter "Collocation Space"). BellSouth will design and construct at Interconnector's expense, a wall or other delineation to establish a clear division between the Collocation Space and other areas of the Central Office dedicated to BellSouth's use.

B. Interconnector shall use the Collocation Space for the purposes of installing, maintaining and operating Interconnector's equipment (to include testing and monitoring equipment) which is used to interconnect with telecommunications services and facilities provided by BellSouth. Pursuant to Article III, following, Interconnector may place Interconnector-owned fiber entrance facilities to the Collocation Space, in which case the arrangement is designated "Expanded Interconnection." Placement of equipment in the Collocation Space without the use of Interconnector-owned entrance facilities is designated "Service Interconnection." In addition to, and not in lieu of, interconnection to BellSouth services and facilities, Interconnector may connect to other interconnectors within the designated Central Office. The Collocation Space may be used for no other purposes except as specifically described herein or authorized in writing by BellSouth.

C. Interconnector may not provide or make available space within the Collocation Space to any third party. Any violation of this provision shall be deemed a material breach of this Agreement.

D. Interconnector agrees to pay the rates and charges identified at Exhibit A attached hereto.

E. A Collocation Space will be provided to Interconnector at each Central Office identified at Exhibit B attached hereto, which Exhibit shall be updated from time to time as additional Central Offices are made subject to the terms of this Agreement.

II. *TERM OF AGREEMENT*

A. Term. The term of this Agreement shall be for an initial period of two (2) years, beginning on the Agreement date stated above and ending two (2) years later on the month and day corresponding to such date.

B. Commencement Date. The "Commencement Date" shall be the first day after Interconnector's equipment becomes operational as described in Article II.B, following.

C. Occupancy. BellSouth will notify Interconnector that the Collocation Space is ready for occupancy. Interconnector must place operational telecommunications equipment in the Collocation Space and connect with BellSouth's network within one hundred eighty (180) days after receipt of such notice. BellSouth may consent to an extension beyond 180 days upon a demonstration by Interconnector that circumstances beyond its reasonable control prevented Interconnector from completing installation by the prescribed date. If Interconnector fails to place operational telecommunications equipment in the Collocation Space within 180 days and such failure continues for a period of thirty (30) days after receipt of written notice from BellSouth, then and in that event Interconnector's right to occupy the Collocation Space terminates and BellSouth shall have no further obligations to Interconnector with respect to said Collocation Space. Termination of Interconnector's rights to the Collocation Space pursuant to this paragraph shall not operate to release Interconnector from its obligation to reimburse BellSouth for all costs reasonably incurred by BellSouth in preparing the Collocation Space, but rather such obligation shall survive this Agreement. For purposes of this paragraph, Interconnector's telecommunications equipment will be deemed operational when cross-connected to BellSouth's network for the purpose of service provision.

D. Termination. Interconnector may terminate occupancy in a particular Collocation Space upon thirty (30) days prior written notice to BellSouth. Upon termination of such occupancy, Interconnector at its expense shall remove its equipment and other property from the Collocation Space. Interconnector shall have thirty (30) days from the termination date to complete such removal; provided, however, that Interconnector shall continue payment of monthly fees to BellSouth until such date as Interconnector has fully vacated the Collocation Space. Should Interconnector fail to vacate the Collocation Space within thirty (30) days from the termination date, BellSouth shall have the right to remove the equipment and other property of Interconnector at Interconnector's expense and with no liability for damage or injury to Interconnector's property unless caused by the negligence or intentional misconduct of BellSouth.

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III. *USE OF COLLOCATION SPACE*

A. Nature of Use. BellSouth shall permit Interconnector to place, maintain and operate in the Collocation Space any equipment that Interconnector is authorized by BellSouth and by Federal or State regulators to place, maintain and operate in collocation space and that is used by Interconnector to provide services which Interconnector has the legal authority to provide. The equipment must at a minimum comply with the BellCore Network Equipment Building System (NEBS) General Equipment Requirements (TR-NWT-000063) and National Electric Code standards. Interconnector may elect to enclose the Collocation Space. Interconnector shall not use the Collocation Space for marketing purposes. Interconnector shall place no signs or marking of any kind (except for a plaque or other identification affixed to Interconnector's equipment and reasonably necessary to identify Interconnector's equipment, and which shall include a list of emergency contacts with telephone numbers), in the area surrounding the Collocation Space or on the grounds of the Central Office housing the Collocation Space.

B. Entrance Facilities. Interconnector may elect to place Interconnector-owned entrance facilities into the Collocation Space. BellSouth will designate the point of interconnection in proximity to the central office building housing the Collocation Space, such as an entrance manhole or a cable vault. Interconnector will provide and place cable at the point of interconnection of sufficient length to be pulled through conduit and into the splice location. No splicing will be permitted in the entrance manhole. Interconnector will provide a sufficient length of fire retardant riser cable, to which the entrance cable will be spliced, which will extend from the splice location to the Interconnector's equipment in the Collocation Space. Interconnector must contact BellSouth for instructions prior to placing the entrance facility cable in the manhole. Interconnector is responsible for maintenance of the entrance facilities. Dual entrance will be permitted where capacity exists. The interconnection point for entrance facilities extending from a rooftop antenna will be designated by BellSouth on the Application/Inquiry response.

C. Demarcation Point. A point-of-termination bay(s) will designate the point(s) of interconnection between Interconnector's equipment and/or network and BellSouth's network. Each party will be responsible for maintenance and operation of all equipment/facilities on its side of the demarcation point. Interconnector may, at its option, provide its own point-of-termination bay(s) in accordance with BellSouth's guidelines and specifications, which BellSouth will provide upon request.

D. Interconnector's Equipment and Facilities. Interconnector is solely responsible for the design, engineering, testing, performance, monitoring, maintenance, and repair of the equipment and facilities used by Interconnector in the Collocation Space. Without limitation of the foregoing provisions, Interconnector will be responsible for servicing, supplying, repairing, installing and maintaining the following: (1) cable(s); (2) equipment; (3) point-of-termination cross-connects; (4) point of termination maintenance, including replacement fuses and circuit breaker restoration, if not performed by BellSouth; and (5) connection cable(s) and associated equipment which may be required within the Collocation Space to the points of interconnection.

E. Easement Space. From time to time BellSouth may require access to the Collocation Space. BellSouth retains the right to access such space for the purpose of making equipment and building modifications (e.g., running, altering or removing racking, ducts, electrical wiring, HVAC, and cables). BellSouth will give reasonable notice to Interconnector when access to the Collocation Space is required. Interconnector may elect to be present whenever BellSouth performs work in the Collocation Space. The Parties agree that Interconnector will not bear any of the expense associated with this work.

F. Access and Administration. Interconnector shall have access to the Collocation Space twenty-four (24) hours a day, seven (7) days a week. A security escort will be required at Central Offices where separate, secured ingress and egress are not available and access would require Interconnector to traverse restricted areas. All employees, agents and contractors of Interconnector having access to the Collocation Space shall comply with BellSouth's policies and practices pertaining to fire, safety and security, and each such employee, agent or contractor shall display an identification badge issued by Interconnector or certified vendor which contains a current photo, the individual's name and company name/logo. Interconnector agrees to comply with all laws, ordinances and regulations affecting the use of the Collocation Space. Upon expiration of this Agreement, Interconnector shall surrender the Collocation Space to BellSouth in the same condition as when first occupied by the Interconnector except for ordinary wear and tear.

G. Interference or Impairment. Notwithstanding any other provisions of this Agreement, equipment and facilities placed in the Collocation Space shall not interfere with or impair service provided by BellSouth or by any other interconnector located in the Central Office; shall not endanger or damage the facilities of BellSouth or of any other interconnector, the Collocation Space, or the Central Office; shall not compromise the privacy of any communications carried in, from, or through the Central Office; and shall not create an unreasonable risk of injury or death to any individual or to the public. If BellSouth reasonably determines that any equipment or facilities of Interconnector violate the provisions of this paragraph, BellSouth shall give written notice to Interconnector, which notice shall direct Interconnector to cure the violation within twenty-four (24) hours or, at a minimum, to commence curative measures within 24 hours and to exercise reasonable diligence to complete such measures as soon as possible thereafter. If Interconnector fails to take curative action within 24 hours or if the violation is of a character which poses an immediate and substantial threat of damage to property, injury or death to any person, or interference/impairment of the services provided by BellSouth, then and only in that event BellSouth may take such action as it deems appropriate to correct the violation, including without limitation the interruption of electrical power to Interconnector's equipment. BellSouth will endeavor, but is not required, to provide notice to Interconnector prior to taking such action and shall have no liability to Interconnector for any damages arising from such action, except to the extent that such action by BellSouth constitutes willful misconduct.

H. Personalty and its Removal. Subject to requirements of this Agreement, Interconnector may place or install in or on the Collocation Space such facilities and equipment as it deems desirable for the conduct of business. Personal property, facilities and equipment placed by Interconnector in the Collocation Space shall not become a part of the Collocation Space, even if nailed, screwed or otherwise fastened to the Collocation Space, but shall retain their status as personalty and may be removed by Interconnector at any time. Any damage caused to the Collocation Space by Interconnector's employees, agents or representatives during the removal of such property shall be promptly repaired by Interconnector at its expense.

I. Alterations. In no case shall Interconnector or any person acting on behalf of Interconnector make any rearrangement, modification, improvement, addition, repair, or other alteration to the Collocation Space or the BellSouth Central Office without the written consent of BellSouth, which consent shall not be unreasonably withheld. The cost of any such specialized alterations shall be paid by Interconnector.

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IV. ORDERING AND PREPARATION OF COLLOCATION SPACE

A. Application for Space. Interconnector shall submit to BellSouth a complete and accurate Application and Inquiry document, together with payment of the Application Fee as stated in Exhibit A. The Application shall contain a detailed description and schematic drawing of the equipment to be placed in Interconnector's Collocation Space(s) and an estimate of the amount of square footage required. BellSouth will respond to Interconnector's Application in writing following the completion of review, planning and design activities. Such response will include estimates on space availability, space preparation costs and space availability dates. In the event BellSouth cannot provide the requested Collocation Space, BellSouth shall refund the Application Fee to Interconnector.

B. Bona Fide Firm Order. Interconnector shall indicate its intent to proceed with equipment installation in a BellSouth Central Office by submitting a Bona Fide Firm Order to BellSouth. A Bona Fide Firm Order requires Interconnector to complete the Application/Inquiry process described in Article IV.A preceding, submit an updated Application document based on the outcome of the Application/Inquiry process, and pay all applicable fees referenced in Article V, following. The Bona Fide Firm Order must be received by BellSouth no later than thirty (30) days after BellSouth's response to Interconnector's Application/Inquiry. Space preparation for the Collocation Space will not begin until BellSouth receives the Bona Fide Firm Order and all applicable fees.

C. Use of Certified Vendor. Interconnector shall select an equipment installation vendor which has been approved as a BellSouth Certified Vendor to perform all engineering and installation work required in the Collocation Space. BellSouth shall provide Interconnector with a list of Certified Vendors upon request. The Certified Vendor shall be responsible for installing Interconnector's equipment and components, extending power cabling to the BellSouth power distribution frame, performing operational tests after installation is complete, and notifying BellSouth's equipment engineers and Interconnector upon successful completion of installation. The Certified Vendor shall bill Interconnector directly for all work performed for Interconnector pursuant to this Agreement and BellSouth shall have no liability for nor responsibility to pay such charges imposed by the Certified Vendor.

D. Alarm and monitoring. BellSouth shall place environmental alarms in the Central Office for the protection of BellSouth equipment and facilities. Interconnector shall be responsible for placement, monitoring and removal of environmental and equipment alarms used to service the Collocation Space. Upon request, BellSouth will provide Interconnector with applicable tariffed service(s) to facilitate remote monitoring of collocated equipment by Interconnector.

E. Basic Telephone Service. Upon request of Interconnector, BellSouth will provide basic telephone service to the Collocation Space under the rates, terms and conditions of the current tariff offering for the service requested.

F. Space Preparation. BellSouth shall pro rate the costs of any renovation or upgrade to Central Office space or support mechanisms which is required to accommodate physical collocation. Interconnector's pro rated share will be calculated by multiplying such cost by a percentage equal to the amount of square footage occupied by Interconnector divided by the total Central Office square footage receiving renovation or upgrade. For this section, support mechanisms provided by BellSouth may include, but not be limited to heating/ventilation/air conditioning (HVAC) equipment, HVAC duct work, cable support structure, fire wall(s), mechanical upgrade, asbestos abatement, ground plane addition, or separate ingress/egress construction. Such renovation or upgrade will be evaluated and the charges

assessed on a per Central Office basis. BellSouth will make reasonable efforts to provide for occupancy of the Collocation Space on the negotiated date and will advise Interconnector of delays. Interconnector agrees BellSouth shall not be liable to Interconnector for delays in providing possession of the Collocation Space.

G. Space Enclosure. Upon request of Interconnector, BellSouth shall construct an equipment arrangement enclosure of a size and dimension jointly agreed upon by the Parties. Interconnector may request enclosed floor space in increments of one hundred (100) square feet, with a minimum of one hundred (100) square feet. Interconnector may, at its option, arrange with a BellSouth certified contractor to construct the space enclosure in accordance with BellSouth's guidelines and specifications. Such contractor shall directly bill Interconnector for activities associated with the space enclosure construction.

H. Cancellation. If Interconnector cancels its order for the Collocation Space(s), Interconnector will reimburse BellSouth for any expenses incurred up to the date that written notice of the cancellation is received. In no event will the level of reimbursement under this paragraph exceed the maximum amount Interconnector would have otherwise paid for work undertaken by BellSouth if no cancellation of the order had occurred.

V. *RATES AND CHARGES*

Interconnector shall pay for Collocation Space(s) according to the rates contained in Exhibit A attached hereto and pursuant to the following:

A. Non-recurring Fees. In addition to the Application Fee referenced in Article IV preceding, Interconnector shall remit payment of a Cable Installation Fee, Space Construction Fee, as applicable, and one-half (1/2) of the estimated Space Preparation Fee coincident with submission of a Bona Fide Firm Order. The outstanding balance of the actual Space Preparation Fee shall be due thirty (30) days following Interconnector's receipt of a bill or invoice from BellSouth. BellSouth shall provide documentation to establish the actual Space Preparation Fee. Cable Installation Fee(s) are assessed per entrance fiber placed. No Cable Installation Fee is required for Service Interconnection. The Space Preparation Fee will be pro rated as prescribed in Article IV.F preceding. The Space Enclosure Construction Fee will be assessed for the materials and installation cost of the equipment enclosure. BellSouth's engineering and other labor time associated with establishing the Physical Collocation Arrangement will be assessed as Additional Engineering charges, under provisions in BellSouth's F.C.C. Number 1 Tariff, Sections 13.1 and 13.2. An estimate of the Additional Engineering charges will be provided by BellSouth to Interconnector in the Application Response.

B. Floor Space. The floor space charge includes charges for lighting, heat, air conditioning, ventilation and other allocated expenses associated with maintenance of the Central Office but does not include amperage necessary to power Interconnector's equipment. When the Collocation Space is enclosed by walls or other divider, Interconnector shall pay floor space charges based upon the number of square feet so enclosed. When the Collocation Space is not enclosed, Interconnector shall pay floor space charges based upon the number of square feet contained in a shadow print of Interconnector's equipment racks and POT bay, plus a factor of 2.50 multiplied by the shadow print, which represents Interconnector's share of wiring and provisioning aisle space for provisioning and maintenance activities. Floor space charges are due beginning with the date on which BellSouth releases the Collocation Space for occupancy or on the date Interconnector first occupies the Collocation Space, whichever is sooner.

C. Power. Charges for -48V DC power will be assessed per ampere per month based upon the certified vendor engineered and installed power feed fused ampere capacity. Rates include redundant feeder fuse positions (A&B) and cable rack to Interconnector's equipment or space enclosure. Fuses and power feed cables (A&B) must be engineered (sized), furnished and installed by Interconnector's certified vendor. The Interconnector's certified vendor must also provide a copy of the engineering power specification prior to the Commencement Date. In the event BellSouth shall be required to construct additional DC power plant or upgrade the existing DC power plant in a central office as a result of Interconnector's request to collocate in that central office ("Power Plant Construction"), Interconnector shall pay all costs associated with the Power Plant Construction. The determination of whether Power Plant Construction is necessary shall be within BellSouth's sole, but reasonable, discretion. BellSouth will notify Interconnector of the need for the Power Plant Construction and will estimate the costs associated with the Power Plant Construction if BellSouth were to perform the Power Plant Construction. Interconnector shall pay BellSouth one-half of the estimated Power Plant Construction costs prior to commencement of the work. Interconnector shall pay BellSouth the balance due (actual cost less one-half of the estimated cost) within thirty (30) days of completion of the Power Plant Construction. Interconnector has the option to perform the Power Plant Construction itself; provided, however, that such work shall be performed by a BellSouth certified contractor and such contractor shall comply with BellSouth's guidelines and specifications. Where the Power Plant Construction results in construction of a new power plant room, upon termination of this Agreement Interconnector shall have the right to remove its equipment from the power plant room, but shall otherwise leave the room intact. Where the Power Plant Construction results in an upgrade to BellSouth's existing power plant, upon termination of this Agreement, such upgrades shall become the property of BellSouth.

D. Security Escort. A security escort will be required whenever Interconnector or its approved agent desires access to the entrance manhole or must traverse a restricted area within BellSouth's central office. Rates for a BellSouth security escort are assessed in one-half (1/2) hour increments according to the schedule appended hereto as Exhibit A.

E. Rate "True-Up". The Parties agree that the interim prices reflected herein shall be "trued-up" (up or down) based on final prices either determined by further agreement or by final order, including any appeals, in a proceeding involving BellSouth before the regulatory authority for the State in which the services are being performed or any other body having jurisdiction over this agreement (hereinafter "Commission"). Under the "true-up" process, the interim price for each service shall be multiplied by the volume of that service purchased to arrive at the total interim amount paid for that service ("Total Interim Price"). The final price for that service shall be multiplied by the volume purchased to arrive at the total final amount due ("Total Final Price"). The Total Interim Price shall be compared with the Total Final Price. If the Total Final Price is more than the Total Interim Price, Interconnector shall pay the difference to BellSouth. If the Total Final Price is less than the Total Interim Price, BellSouth shall pay the difference to Interconnector. Each party shall keep its own records upon which a "true-up" can be based and any final payment from one party to the other shall be in an amount agreed upon by the Parties based on such records. In the event of any disagreement as between the records or the Parties regarding the amount of such "true-up," the Parties agree that the Commission shall be called upon to resolve such differences.

F. Other. Payment of all other charges under this Agreement shall be due thirty (30) days after receipt of the bill (payment due date). Interconnector will pay a late payment charge of one and one-half percent (1-1/2%) assessed monthly on any balance which remains unpaid after the payment due date.

VI. INSURANCE

A. Interconnector shall, at its sole cost and expense, procure, maintain, and keep in force insurance as specified in this Article VI and underwritten by insurance companies licensed to do business in the states contained in Exhibit B attached hereto and having a BEST Insurance Rating of B ++ X (B ++ ten).

B. Interconnector shall maintain the following specific coverages:

1. Commercial General Liability coverage in the amount of ten million dollars (\$10,000,000.00) or a combination of Commercial General Liability and Excess/Umbrella coverage totaling not less than ten million dollars (\$10,000,000.00). BellSouth shall be named as an ADDITIONAL INSURED on ALL applicable policies as specified herein.

2. Statutory Workers Compensation coverage and Employers Liability coverage in the amount of one hundred thousand dollars (\$100,000.00) each accident, one hundred thousand dollars (\$100,000.00) each employee by disease, and five hundred thousand dollars (\$500,000.00) policy limit by disease.

3. Interconnector may elect to purchase business interruption and contingent business interruption insurance, having been advised that BellSouth assumes no liability for loss of profit or revenues should an interruption of service occur.

C. The limits set forth in Article VI.B above may be increased by BellSouth from time to time during the term of this Agreement upon thirty (30) days notice to Interconnector to at least such minimum limits as shall then be customary with respect to comparable occupancy of BellSouth structures.

D. All policies purchased by Interconnector shall be deemed to be primary and not contributing to or in excess of any similar coverage purchased by BellSouth. All insurance must be in effect on or before the date equipment is delivered to BellSouth's Central Office and shall remain in effect for the term of this Agreement or until all Interconnector's property has been removed from BellSouth's Central Office, whichever period is longer. If Interconnector fails to maintain required coverages, BellSouth may pay the premiums thereon and seek reimbursement of same from Interconnector.

E. Interconnector shall submit certificates of insurance reflecting the coverages required pursuant to this Section a minimum of ten (10) days prior to the commencement of any work in the Collocation Space. Failure to meet this interval may result in construction and equipment installation delays. Interconnector shall arrange for BellSouth to receive thirty (30) days advance notice of cancellation from Interconnector's insurance company. Interconnector shall forward a certificate of insurance and notice of cancellation to BellSouth at the following address:

BellSouth Telecommunications, Inc.
Attn.: Risk Management Coordinator
3535 Colonnade Parkway, S9A1
Birmingham, Alabama 35243

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F. Interconnector must conform to recommendations made by BellSouth's fire insurance company to the extent BellSouth has agreed to, or shall hereafter agree to, such recommendations.

G. Failure to comply with the provisions of this Section will be deemed a material breach of this Agreement.

VII. *MECHANICS LIENS*

If any mechanics lien or other liens shall be filed against property of BellSouth, or any improvement thereon by reason of or arising out of any labor or materials furnished or alleged to have been furnished or to be furnished to or for Interconnector or by reason of any changes, or additions to BellSouth property made at the request or under the direction of the Interconnector, Interconnector shall, within thirty (30) days after receipt of written notice from BellSouth either pay such lien or cause the same to be bonded off BellSouth's property in the manner provided by law. Interconnector shall also defend on behalf of BellSouth, at Interconnector's sole cost and expense, any action, suit or proceeding which may be brought for the enforcement of such liens and Interconnector shall pay any damage and discharge any judgment entered thereon.

VIII. *INSPECTIONS*

BellSouth shall conduct an inspection of Interconnector's equipment and facilities in the Collocation Space(s) prior to the activation of facilities between Interconnector's equipment and equipment of BellSouth. BellSouth may conduct an inspection if Interconnector adds equipment and may otherwise conduct routine inspections at reasonable intervals mutually agreed upon by the Parties. BellSouth shall provide Interconnector with a minimum of forty-eight (48) hours or two (2) business days, whichever is greater, advance notice of all such inspections.

IX. *SECURITY*

Only BellSouth employees, BellSouth certified vendors and authorized employees or agents of Interconnector will be permitted in the BellSouth Central Office. Interconnector shall provide its employees and agents with picture identification which must be worn and visible at all times while in the Collocation Space or other areas in or around the Central Office. BellSouth may refuse entry to any person who fails to display the identification required by this section.

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X. INDEMNITY / LIMITATION OF LIABILITY

A. Interconnector shall be liable for any damage to property, equipment or facilities or injury to person caused by the activities of Interconnector, its agents or employees pursuant to, or in furtherance of, rights granted under this Agreement. Interconnector shall indemnify and hold BellSouth harmless from and against any judgments, fees, costs or other expenses resulting or claimed to result from such activities by Interconnector, its agents or employees.

B. BellSouth shall not be liable to Interconnector for any interruption of Interconnector's service or for interference with the operation of Interconnector's communications facilities, or for any special, indirect, incidental or consequential damages arising in any manner, including BellSouth's negligence, out of the use of the Collocation Space(s) and Interconnector shall indemnify, defend and hold BellSouth harmless from and against any and all claims, demands, causes of action, costs and reasonable attorneys' fees with respect to such special, indirect, incidental or consequential damages.

XI. PUBLICITY

Interconnector agrees to submit to BellSouth all advertising, sales promotion, press releases, and other publicity matters relating to this Agreement or mentioning or implying the tradenames, logos, trademarks or service marks (hereinafter "Marks") of BellSouth Corporation and/or any of its affiliated companies or language from which the connection of said Marks therewith may be inferred or implied, or mentioning or implying the names of any personnel of BellSouth Corporation and/or any of its affiliated companies, and Interconnector further agrees not to publish or use such advertising, sales promotions, press releases, or publicity matters without BellSouth's prior written consent.

XII. DESTRUCTION OF COLLOCATION SPACE

In the event a Collocation Space is wholly or partially damaged by fire, windstorm, tornado, flood or by similar causes to such an extent as to be rendered wholly unsuitable for Interconnector's permitted use hereunder, then either party may elect within ten (10) days after such damage, to terminate this Agreement, and if either party shall so elect, by giving the other written notice of termination, both parties shall stand released of and from further liability under the terms hereof. If the Collocation Space shall suffer only minor damage and shall not be rendered wholly unsuitable for Interconnector's permitted use, or is damaged and the option to terminate is not exercised by either party, BellSouth covenants and agrees to proceed promptly without expense to Interconnector, except for improvements not the property of BellSouth, to repair the damage. BellSouth shall have a reasonable time within which to rebuild or make any repairs, and such rebuilding and repairing shall be subject to delays caused by storms, shortages of labor and materials, government regulations, strikes, walkouts, and causes beyond the control of BellSouth, which causes shall not be construed as limiting factors, but as exemplary only. Where allowed and where practical in the sole judgment of BellSouth, Interconnector may erect a temporary facility while BellSouth rebuilds or makes repairs. In all cases where the Collocation Space shall be rebuilt or repaired, Interconnector shall be entitled to an equitable abatement of rent and other charges, depending upon the unsuitability of the Collocation Space for Interconnector's permitted use, until such Collocation Space is fully repaired and restored and Interconnector's equipment installed

therein (but in no event later than thirty (30) days after the Collocation Space is fully repaired and restored).

XIII. EMINENT DOMAIN

If the whole of a Collocation Space shall be taken by any public authority under the power of eminent domain, then this Agreement shall terminate as of the day possession shall be taken by such public authority and rent and other charges for the Collocation Space shall be paid up to that day with proportionate refund by BellSouth of such rent and charges as may have been paid in advance for a period subsequent to the date of the taking. If any part of the Collocation Space shall be taken under eminent domain, BellSouth and Interconnector shall each have the right to terminate this Agreement and declare the same null and void, by written notice of such intention to the other party within ten (10) days after such taking.

XIV. FORCE MAJEURE

Neither party shall be in default by reason of any failure in performance of this Agreement, in accordance with its terms and conditions, if such failure arises out of causes beyond the control of the nonperforming party including, but not restricted to, acts of God, acts of government, insurrections, fires, floods, accidents, epidemics, quarantines, restrictions, strikes, freight embargoes, inability to secure raw materials or transportation facilities, acts or omissions of carriers or any and all other causes beyond the party's control.

XV. ASSIGNMENT

Interconnector acknowledges that this Agreement does not convey any right, title or interest in the Central Office to Interconnector. Interconnector may not sublet its rights under this Agreement, nor shall it allow a third party to use or occupy the Collocation Space at any time or from time to time without the prior written consent, and at the sole discretion, of BellSouth. This Agreement is not assignable by either party without the prior written consent of the other party, and any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void. Notwithstanding the foregoing, either party may assign any rights, duties or obligations of this Agreement to a parent, subsidiary or affiliate without the consent of the other party.

XVI. NONEXCLUSIVITY

Interconnector understands that this Agreement is not exclusive and that BellSouth may enter into similar agreements with other parties. Assignment of space pursuant to all such agreements shall be determined by space availability and made on a first come, first served basis.

XVII. NO IMPLIED WAIVER

No consent or waiver by either party to or of any breach of any covenant, term, condition, provision or duty of the other party under this Agreement shall be construed as a consent to or waiver of any other breach of the same or any other covenant, term, condition, provision or duty. No such consent or waiver shall be valid unless in writing and signed by the party granting such consent or waiver.

XVIII. NOTICES

Except as otherwise provided herein, any notices or demands that are required by law or under the terms of this Agreement shall be given or made by Interconnector or BellSouth in writing and shall be given by hand delivery, or by certified or registered mail, and addressed to the parties as follows:

To BellSouth:

To Interconnector:

ATTN: _____

ATTN: _____

Such notices shall be deemed to have been given in the case of certified or registered mail when deposited in the United States mail with postage prepaid.

XIX. RESOLUTION OF DISPUTES

Except as otherwise stated in this Agreement, the Parties agree that if any dispute arises as to the interpretation of any provision of this Agreement or as to the proper implementation of this Agreement, the parties will petition the Commission in the state where the services are provided pursuant to this Agreement for a resolution of the dispute. However, each party reserves any rights it may have to seek judicial review of any ruling made by the Public Service Commission concerning this Agreement.

XX. SECTION HEADINGS

The section headings used herein are for convenience only, and shall not be deemed to constitute integral provisions of this Agreement.

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XXI. AUTHORITY

Each of the parties hereto warrants to the other that the person or persons executing this Agreement on behalf of such party has the full right, power and authority to enter into and execute this Agreement on such party's behalf and that no consent from any other person or entity is required as a condition precedent to the legal effect of this Agreement.

XXII. REVIEW OF AGREEMENT

The parties acknowledge that each has had an opportunity to review and negotiate this Agreement and has executed this Agreement only after such review and negotiation. The Parties further agree that this Agreement shall be deemed to have been drafted by both BellSouth and Interconnector and the terms and conditions contained herein shall not be construed any more strictly against one party or the other.

XXIII. ENTIRE AGREEMENT

This Agreement contains the full understanding of the Parties (superseding all prior or contemporaneous correspondence between the Parties) and shall constitute the entire agreement between BellSouth and Interconnector and may not be modified or amended other than by a written instrument signed by both parties. If any conflict arises between the terms and conditions contained in this Agreement and those contained in a filed tariff, the terms and conditions of this Agreement shall control.

IN WITNESS WHEREOF, the Parties have executed this Agreement by their duly authorized representatives in one or more counterparts, each of which shall constitute an original, on the day and year first above written.

BELLSOUTH TELECOMMUNICATIONS,
INC.

INTERCONNECTOR
(Full Company Name)

Authorized Signature

Authorized Signature

Print or Type Name

Print or Type Name

Title

Title

Date

Date

Schedule of Rates and Charges

<u>Rate Element Description</u>	<u>Type of Charge</u>	<u>Charge</u>	
Application Fee	NRC (per Arrangement, per C.O.)	\$3,850.00	
Subsequent Application Fee (Note 1)	NRC (per Arrangement, per C.O.)	\$1,600.00	
Space Preparation Fee (Note 2)	NRC (per Arrangement, per C.O.)	ICB	
Space Enclosure Construction Fee (Note 2)	NRC (per 100 square feet)	\$4,500.00	
Additional Engineering Fee (Note 3)	NRC	ICB	
Cable Installation	NRC (per entrance cable)	\$2,750.00	
Floor Space	Zone A	RC (per square foot)	\$7.50
	Zone B	RC (per square foot)	\$6.75
Power	RC (per amp)	\$5.00	
Cable Support structure	RC (per entrance cable)	\$13.35	
Cross-Connects	2-wire	RC (per cross-connect)	\$0.30
	4-wire	RC (per cross-connect)	\$0.50
	DS1	RC (per cross-connect)	\$8.00
	DS3	RC (per cross-connect)	\$72.00
	2-wire	NRC (first cross-connect)	\$19.20
	4-wire	NRC (first cross-connect)	\$19.20
	DS1	NRC (first cross-connect)	\$155.00
	DS3	NRC (first cross-connect)	\$155.00
	2-wire	NRC (each additional cross-connect)	\$19.20
	4-wire	NRC (each additional cross-connect)	\$19.20
	DS1	NRC (each additional cross-connect)	\$27.00
	DS3	NRC (each additional cross-connect)	\$27.00
POT Bay	2-wire	RC (per cross-connect)	\$0.40
	4-wire	RC (per cross-connect)	\$1.20
	DS1	RC (per cross-connect)	\$1.20
	DS3	RC (per cross-connect)	\$8.00
Additional Security Access Cards	NRC-ICB (each)	\$10.00	

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Schedule of Rates and Charges (cont.)

<u>Rate Element Description</u>	<u>Type of Charge</u>	<u>Charge</u>
Direct Connection (Note 4)		
(1) Fiber Arrangement	RC (per cable, per linear foot)	\$0.06
-with Initial Application	NRC (per Arrangement)	n/a
-Subsequent to Application	NRC (per Arrangement)	\$246.00
(2) Copper or Coaxial Arrangement	RC (per cable, per linear foot)	\$0.03
-with Initial Application	NRC (per Arrangement)	n/a
-Subsequent to Application	NRC (per Arrangement)	\$246.00
Security Escort		
Basic - first half hour	NRC-ICB	\$41.00
Overtime - first half hour	NRC-ICB	\$48.00
Premium - first half hour	NRC-ICB	\$55.00
Basic - additional half hour	NRC-ICB	\$25.00
Overtime - additional half hour	NRC-ICB	\$30.00
Premium - additional half hour	NRC-ICB	\$35.00

Notes

NRC: Non-recurring Charge - one-time charge

RC: Recurring Charge - charged monthly

ICB: Individual Case Basis - one-time charge

- (1) **Subsequent Application Fee.** BellSouth requires the submission of an Application Fee for modifications to an existing arrangement. However, when the modifications do not require BellSouth to expend capital (e.g., additional space or power requirements, BST termination/cross-connect equipment, etc.), BellSouth will assess the Subsequent Application Fee in lieu of the Application Fee.
- (2) **Space Preparation Fee.** The Space Preparation Fee is a one-time fee, assessed per arrangement, per location. It recovers costs associated with the shared physical collocation area within a central office, which include survey, engineering, design and building modification costs. BellSouth will pro rate the total shared space preparation costs among the collocators at each location based on the amount of square footage occupied by each collocator. This charge may vary depending on the location and the type of arrangement requested.

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Schedule of Rates and Charges (cont.)

Notes (cont.)

- (2) (cont.)
Space Enclosure Construction Fee. The Space Enclosure Construction Fee is a one-time fee, assessed per enclosure, per location. It recovers costs associated with providing an optional equipment arrangement enclosure, which include architectural and engineering fees, materials, and installation costs. This fee is assessed in 100 square-foot increments, with a minimum space enclosure size of 100 square feet. Interconnector may, at its option, arrange with a BellSouth certified contractor to construct the space enclosure in accordance with BellSouth's guidelines and specifications. In this event, the contractor shall directly bill Interconnector for the space enclosure, and this fee shall not be applicable.
- (3) **Additional Engineering Fee.** BellSouth's engineering and other labor costs associated with establishing the Physical Collocation Arrangement shall be recovered as Additional Engineering charges, under provisions in BellSouth's F.C.C. Number 1 Tariff, Sections 13.1 and 13.2. An estimate of the Additional Engineering charges shall be provided by BellSouth in the Application Response.
- (4) **Direct Connection.** As stated in Article I.B of the Collocation Agreement, Interconnector may connect to other interconnectors within the designated Central Office in addition to, and not in lieu of, interconnection to BellSouth services and facilities. Interconnector must use its Certified Vendor to place the direct connection. The Direct Connection NRC is assessed when direct connection is the only work requested by Interconnector. If any other work in addition to the direct connection is being requested, whether for an initial installation of a Collocation Space or for an augmentation to an existing Collocation Space, an Application Fee or a Subsequent Application Fee will be assessed in lieu of the Direct Connection NRC. Construction charges may also apply; BellSouth shall provide an estimate of these charges in the Application Response.

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Bona Fide Physical Collocation Arrangements

Central Office Name:
Central Office CLLI Code:
City:
State:
Date of Bona Fide Firm Order:

Central Office Name:
Central Office CLLI Code:
City:
State:
Date of Bona Fide Firm Order:

Central Office Name:
Central Office CLLI Code:
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TWO OTHER ALTERNATIVES TO COLLOCATION

ALTERNATIVE	DESCRIPTION	ADVANTAGES OVER COLLOCATION	DISADVANTAGES TO LOGICAL SEPARATION AND COMBINATION
Direct Access to the MDF	Qualified third-party vendor would disconnect and reconnect the elements as an agent for both parties.	<p>Eliminates customer outage.</p> <p>Eliminates unnecessary delay.</p> <p>Significantly reduces unnecessary cost.</p> <p>Eliminates additional points of failure.</p> <p>Simplifies manual work to be performed thereby increasing the number of customers who can change their local service provider.</p> <p>All CLEC's can use the same vendor and share costs.</p>	<p>Still results in CLECs incurring unnecessary cost.</p> <p>Poor utilization of human resources to remove a wire and immediately reattach it.</p> <p>Fewer customers may change in a given day than could change with logical separation.</p> <p>Does <u>not</u> allow for the transfer of customers served by IDLC.</p>

Exhibit _____
 Docket No. 971140-TP
 Exhibit RVF-4
 Two Other Alternatives to
 Collocation

ALTERNATIVE	DESCRIPTION	ADVANTAGES OVER COLLOCATION	DISADVANTAGES TO LOGICAL SEPARATION AND COMBINATION
Electronic Cross-Connection (not currently available)	Comparable equipment currently used to remotely configure digital circuits ("DCS-like equipment") would be deployed in each central office. The equipment would become an electronic version of the MDF to which all carriers would have remote access, allowing all carriers to combine elements electronically rather than physically.	<p>Eliminates need for collocation arrangements.</p> <p>All carriers would have parity access.</p> <p>Once installed, it eliminates manual work to be performed thereby increasing the number of customers who can change their local service provider.</p>	<p>Not currently available and availability cannot be estimated.</p> <p>Cost is unknown.</p> <p>Does <u>not</u> allow for the transfer of customers served by IDLC.</p>