BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL TESTIMONY OF KEITH MILNER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 30, 1996

Q. Please state your name, address and position with BellSouth Telecommunications, Inc. ("BellSouth" or "The Company").

A. My name is W. Keith Milner. My business address is 675 West Peachtree Street, Atlanta, Georgia 30375. I am a Director - Strategic Management for BellSouth Telecommunications, Inc.

Q. Are you the same W. Keith Milner who filed direct testimony in this docket on August 12, 1996?

A. Yes.

Q. What is the purpose of your rebuttal testimony being filed today?

A. My testimony is filed in rebuttal to direct and supplemental testimony filed in this proceeding by Mr. James A. Tamplin, Jr. of AT&T. Specifically, I will address the eight (8) network elements for which no agreement between BellSouth and AT&T has been reached. Those

ACK
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OTH

elements are:

- Network Interface Device
- Loop Distribution Media
- Loop Concentrator/Multiplexer
- Loop Feeder
- Local Switching
- Operator Systems
- Dedicated Transport
- Common Transport

Additionally, because AT&T has raised the issue of providing unbundled access to certain capabilities referred to as Advanced Intelligent Network (AIN) triggers. I will address that subject as well.

It is important to note here that Mr. Tamplin's supplemental testimony in this proceeding is little more than a recitation of selected paragraphs from the Federal Communications Commission (FCC) Order 96-325 (the "Order"). No new rationale for or insight into AT&T's claims of technical feasibility may be gleaned from this extensive list of recitations.

Q. Mr. Tamplin's testimony cites the FCC's definition of technical feasibility. Is that definition complete?

A. No. BellSouth can agree that technical feasibility refers to technical and operational concerns, however, the FCC's definition does not provide adequate criteria for making reasonable determinations of technical feasibility in particular cases. I believe that the FCC recognized this, especially, for example, since it expressly excluded 1AESS switches from the requirement of providing "customized routing." In this case, the FCC recognized that the 1AESS is capable of customized routing but only in limited quantities. The FCC thus excluded the 1AESS from its definition of technical feasibility in the case of customized routing. Without such additional criteria, the definition is unworkable and will likely lead to endless, theoretical discussions.

Q. What criteria should be incorporated into the FCC's definition to make it workable?

A. BellSouth stated earlier its belief that the following minimum criteria are appropriate:

1. The ability to provision, track and maintain the element.
2. The ability to deliver discrete, stand-alone facilities, equipment, or logical functions of the existing or scheduled LEC network.
3. The ability to maintain network integrity without undue risk, including risk of physical hazards to telephone plant or operating personnel, or risk to service degradation or service impairment

of any kind.

4. The ability to provide physical or logical operational interfaces between the incumbent LEC and the requesting company.

Further, guiding principles of technology deployment and evolution are necessary to ensure that BellSouth's network remains state-of-the-art, using appropriate technology, arrangements and configurations. To ensure such an evolution, BellSouth must have assurances that it will continue to have the following:

1. The flexibility to upgrade or change technology, serving arrangements and operational procedures when, where and how it chooses.
2. The flexibility to remove from its network any technology, serving arrangement or operational procedure that BellSouth considers obsolete.
3. The flexibility to change any operation consideration, such as digital loop concentration ratios, in order to ensure high quality, cost effective service.

The FCC's Order appears to agree with these guiding principles when it states "Each carrier must be able to retain responsibility for the management, control, and performance of its own network." FCC Order number 96-325 at Paragraph 203.

Q. Please briefly describe the format and content of BellSouth's comments on the FCC's conclusions regarding the technical feasibility of

unbundling the network elements.

A. I will address each element separately. The first four network elements discussed (Network Interface Device, Distribution Media, Concentrator/Multiplexer and Feeder) are loop elements.

Network Interface Device (NID)

Q. Please define the requested Network Element.

A. The NID is a single-line termination device or that portion of a multiple-line termination device required to terminate a single line or circuit.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. In its Order, the FCC concluded that it is technically feasible to unbundle the NID, however, the FCC does not require that the Alternative Local Exchange Company (ALEC) be allowed to terminate its loop directly to BellSouth's NID. Mr. Tamplin is mistaken in his supplemental testimony when he asserts that "The FCC Order requires BellSouth to provide access to the NID as AT&T requested." Not once during negotiations between BellSouth and AT&T did AT&T request a NID-to-NID connection as the FCC's Order contemplates. Instead, AT&T steadfastly held to the position that BellSouth should allow AT&T

to directly attach its loop to the BellSouth NID or that BellSouth should remove the BellSouth loop from the BellSouth NID in order that AT&T could attach its loop to that same NID. Instead of agreeing to AT&T's request, the FCC describes a NID-to-NID connection that would allow AT&T access to the inside wire.

Q. Does BellSouth agree with the conclusions reached by the FCC regarding the technical feasibility of unbundling the NID?

A. Yes. While BellSouth does not agree that the NID-to-NID connection described in the FCC's Order constitutes a form of unbundling, BellSouth does believe that such a NID-to-NID connection is an appropriate arrangement for an ALEC to connect its loop to the inside wire, providing, of course, that the ALEC, in connecting to the inside wire, does not disrupt or disable the BellSouth loop and NID. As stated in my direct testimony in this proceeding, BellSouth believes that neither unbundling of the NID nor direct connection of the AT&T loop to the BellSouth NID (apart from the NID-to-NID connection described above) is technically feasible.

Distribution Media

Q. Please define the requested Network Element.

A. Distribution Media provides sub-loop connectivity between the NID

component of Loop Distribution and the terminal block on the customer-side of a Feeder Distribution Interface (FDI).

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC did not include the sub-loop element Distribution Media in its list of network elements to be unbundled but noted that "State commissions, as previously noted, are free to prescribe additional elements, and parties may agree on additional network elements in the voluntary negotiation process." FCC Order 96-325 at Paragraph 366. In his supplemental testimony, Mr. Tamplin does not comment on the technical feasibility of unbundling Distribution Media, thus Mr. Tamplin's testimony collectively reveals little more about his opinion of such technical feasibility other than that he apparently disagrees with BellSouth's rationale.

Q. What is BellSouth's position regarding the technical feasibility of unbundling of Distribution Media?

A. As was stated in my direct testimony in this proceeding, BellSouth believes that a reasonable definition of technical feasibility must include the seven elements named earlier in this testimony. Applying the criteria of such a definition would lead to the conclusion that unbundling of Distribution Media is not technically feasible.

Loop Concentrator/Multiplexer

Q. Please define the requested Network Element.

A. The Loop Concentrator/Multiplexer is the Network Element that:

1. Aggregates lower bit rate or bandwidth signals to higher bit rate or bandwidth signals (multiplexing).

2. Disaggregates higher bit rate or bandwidth signals to lower bit rate or bandwidth signals (demultiplexing).

3. Aggregates a specified number of signals or channels to fewer channels (concentrating).

4. Performs signal conversion, including encoding of signals (*i.e.*, analog to digital and digital to analog signal conversion).

5. In some instances performs electrical to optical (E/O) conversion.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. Here again, the FCC did not include the sub-loop element Loop Concentrator/Multiplexer in its list of network elements to be unbundled. Here again, in his direct and supplemental testimony, Mr. Tamplin

offers little in the way of explanation for his belief that unbundling of Loop Concentrator/Multiplexer is technically feasible.

Q. What is BellSouth's position regarding the technical feasibility of unbundling of Loop Concentrator/Multiplexer?

A. As I stated in my direct testimony in this proceeding, BellSouth believes that a reasonable definition of technical feasibility must include the seven elements named earlier in this testimony. Applying the criteria of such a definition would lead to the conclusion that unbundling of Distribution Media is not technically feasible.

Loop Combinations with Integrated Digital Loop Carrier

Q. Please define the requested Network Element.

A. The requested Network Element is a complete contiguous loop from the BellSouth Central Office to the end-user premises, where that loop is provided via Integrated Digital Loop Carrier (IDLC).

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC apparently believes that it is technically feasible in some cases to unbundle loops served by IDLC. The FCC states that various

methods were described by the commenters as to how such unbundling of loops might be achieved. Mr. Tamplin's supplemental testimony is once again silent regarding any method by which he purports unbundling to be technically feasible.

Q. Does BellSouth agree with the conclusions reached by the FCC regarding the technical feasibility of providing unbundled loops served by IDLC?

A. BellSouth agrees that there are appropriate methods to provide such unbundled access to the loops. My direct testimony in this proceeding described two such methods.

Q. What are the two methods by which BellSouth will provide unbundled access to loops served by IDLC?

A. The following methods accommodate AT&T's request for unbundled loops served by IDLC?

1. Reassign the loop from an integrated carrier system and use a physical copper pair.
2. In the case of Next Generation Digital Loop Carrier (NGDLC) systems, "groom" the integrated loops to form a virtual Remote Terminal (RT) set up for universal service. In this context, "groom" means to assign certain loops (in the input stage of the

NGDLC) in such a way that discrete combinations of multiplexed loops may be assigned to transmission facilities (in the output stage of the NGDLC).

Q. Please comment on the FCC's depiction of "demultiplexing" equipment as another method of providing access to unbundled loops served by IDLC.

A. The "demultiplexing" equipment the FCC refers to is likely the same type of equipment that was removed from BellSouth's network as it evolved to the IDLC environment. IDLC arrangements eliminate costly digital to analog conversions and also improve the overall transmission quality. The claim that unbundling can be accomplished by re-installing obsolete serving arrangements such as demultiplexing equipment does not comport with a reasonable view of technical feasibility. As noted earlier, a tenet of BellSouth's view of technical feasibility is that BellSouth must have the flexibility to remove from its network any technology, serving arrangement or operational procedure that BellSouth determines to be obsolete. BellSouth, therefore, does not believe that the use of demultiplexing equipment is a technically feasible method of accomplishing unbundling where loops are served by IDLC.

Loop Feeder

Q. Please define the requested Network Element.

A. The Loop Feeder is the Network Element that provides connectivity between (1) a Feeder Distribution Interface (FDI) associated with Loop Distribution and a termination point appropriate for the media in a central office, or (2) a Loop Concentrator/Multiplexer provided in a remote terminal and a termination point appropriate for the media in a central office.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC did not include the sub-loop element Loop Feeder in its list of network elements to be unbundled. Once again, Mr. Tamplin offers no insight in his supplemental testimony as to the basis for his belief that unbundling of Loop Feeder is technically feasible.

Q. What is BellSouth's position regarding the technical feasibility of unbundling of Loop Feeder?

A. There is not a question of technical feasibility in the case of Loop Feeder. However, as I stated in my direct testimony in this proceeding, BellSouth believes that the same functionality requested by AT&T as the sub-loop element Loop Feeder can be acquired at present via BellSouth's tariffs. As a result there is no need to require an unbundled

network element.

Combination of Loop Concentrator/Multiplexer with Loop Feeder

Q. Please define the requested Network Element.

A. This element is a bundled combination of the previously described Loop Feeder and Loop Concentrator/Multiplexer.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC did not include the sub-loop element Combination of Loop Concentrator/Multiplexer with Loop Feeder in its list of network elements to be unbundled. No specific reference to the technical feasibility of unbundling this sub-loop element is made by Mr. Tamplin in his supplemental testimony.

Q. What is BellSouth's opinion regarding the technical feasibility of unbundling of the combination of Loop Concentrator/Multiplexer with Loop Feeder?

A. As in the case of Loop Feeder discussed earlier, there is not a question of technical feasibility. BellSouth believes that the equivalent

functionality sought by AT&T in its request for Loop Concentrator/Multiplexer with Loop Feeder is available at present via BellSouth's tariffs. As a result there is no need to require an unbundled network element.

Local Switching

Q. Please define the Network Element Local Switching.

A. Local Switching is the Network Element that provides the functionality required to connect the appropriate originating lines or trunks wired to the Main Distributing Frame (MDF) or to the Digital Cross Connect (DSX) panel to a desired terminating line or trunk.

Q. Will BellSouth provide the unbundled network element Local Switching?

A. Yes, however, as was stated in my direct testimony in this proceeding, BellSouth does not agree with the definition of local switching as has been used by AT&T.

Q. How are BellSouth's and AT&T's definitions of Local Switching different?

A. As pointed out in my direct testimony in this proceeding, AT&T has defined Local Switching as also having a new functionality referred to

as selective routing.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC concluded that Local Switching, including the selective routing functionality, (or "customized routing" as referred to in the Order) is technically feasible in some circumstances. Specifically, the FCC apparently concluded that customized routing is technically feasible because "many" switches are capable of providing such customized routing. The FCC did note, however, that some switch types, for example the Lucent Technologies 1AESS are not capable of providing customized routing. As I noted earlier, this analysis forms the basis for my opinion that the FCC did not intend as narrow a definition of technical feasibility as AT&T would have us believe. The 1AESS can provide some customized routing, it just exhausts that capability quickly.

Q. How does this affect BellSouth?

A. First, the FCC noted that 9.8% of the RBOC, GTE and SNET switches of the 1AESS type. While this may be true, a lot more than 9.8% of our lines are served by the 1AESS. Second, BellSouth has other switch types not cited by the FCC that are also not capable of providing customized routing.

Q. What are those switch types?

A. In addition to the Lucent Technologies 1AESS, other switch types not capable of providing customized routing for the same reasons as for the 1AESS include:

- Lucent Technologies 2BESS
- Nortel DMS100
- Nortel DMS10
- Siemens Stromberg Carlson DCO

Q. Are there any switch types in BellSouth's network that are capable of providing customized routing?

A. There are switches such as the Lucent Technologies 5ESS and Siemens EWSD which have considerably more capacity to provide selective routing than that of the 1AESS which the FCC found not to be capable of serving this function. However, as was pointed out in my direct testimony in this proceeding, the true test of customized routing technical feasibility is whether it can be accommodated in the "real world" environment where many ALECs simultaneously demand customized routing in a given switch. As BellSouth demonstrated, such a capability exists only in a very small fraction of the switches in the BellSouth network.

Q. What types and quantities of switches does BellSouth have in its network in Florida?

A. There are 148 host switches in BellSouth's network in Florida of the following types:

- Lucent Technologies 1AESS (32 or 22% of the total)
- Lucent Technologies 5ESS (61 or 41% of the total)
- Nortel DMS-100 (44 or 30% of the total)
- Siemens EWSD (11 or 7% of the total)

Thus at least 51% of the total switches in BellSouth's network in Florida (that is, the 1AESS and DMS-100 switches) are extremely limited in their capability to accommodate selective routing in that they are not capable of accommodating in many cases even one ALEC using selective routing. It should be noted, however, that even the 5ESS and EWSD switches, with their more robust capabilities are not capable of accommodating selective routing for eight or more ALECs using selective routing.

Q. Do you have an opinion as to how many ALECs would be expected to resell BellSouth local services?

A. It is difficult to forecast the extent to which companies will take advantage of a new business opportunity. However, I would consider

as a model the events that took place when competition came to the domestic long distance market beginning about 1982. The Equal Access Order originally set a requirement for a 3 digit carrier code under the assumption that allowing for 1,000 long distance companies would be enough to last forever. The format of the carrier code was later modified to allow for greater than 1000 long distance companies.

Within a period of two years the number of facilities based and reseller long distance companies exceeded 500, or an average of 10 per state with higher concentrations in the larger metropolitan areas. I do not think it unreasonable to believe the larger metropolitan areas could have about 50 resellers.

There is also the likelihood that one or more of the resellers would establish authorized sales agencies which in turn may want unique routing or branding for their subscribers.

Q. Please summarize BellSouth's opinion of the technical feasibility of customized routing.

A. BellSouth believes that customized routing is technically feasible because it can be accommodated in **some** switches is **not** the test the FCC intended to adopt. Clearly the test the FCC used in identifying the 1AESS as a switch in which selective routing is not technically feasible turned on the capacity of the switch to accommodate all comers. Using

that test, each switch must be examined individually to assess that switch's capacity. **None** of the switches in BellSouth's network in Florida that BellSouth studied are capable of accommodating customized routing for more than just a few ALECs.

Operator Systems

Q. Please define the requested Network Element.

A. Operator Systems provide for access to the operator or automated call handling and billing, special services, customer telephone listings, and optional call completion services.

Q. Is there a difference of opinion between BellSouth and AT&T as to the definition of Operator Systems?

A. Yes. As in the case of the local switching AT&T has intentionally confused the technical issues. AT&T requested that the Commission order BellSouth to provide customized routing arrangements that will enable a customer (for which AT&T acquires service from BellSouth at wholesale and resells at retail) to reach an AT&T operator platform just as a BellSouth customer can reach a BellSouth operator service platform today (i.e., through dialing 0- or 411).

Q. Is this the same technical issue ("customized" or "selective" routing) as

was discussed in the local switching network element discussed earlier?

A. It is exactly the same issue.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. Here again, the FCC concluded that Operator Systems, including the selective routing functionality, (or "customized routing" as referred to in the Order) is technically feasible, presumably on the same basis as described for customized routing as discussed above.

Q. Does BellSouth agree with AT&T's conclusions regarding the technical feasibility of Customized Routing for Operator Systems?

A. No. This is exactly the same issue I just discussed and the result is the same.

Q. Please summarize BellSouth's opinion of the technical feasibility of customized routing for Operator Systems.

A. As in the case of Local Switching, BellSouth believes AT&T is wrong in arguing that customized routing is technically feasible because it can be accommodated in **some** switches. By comparison, BellSouth

believes that customized routing is not technically feasible in **most** switches for providing customized routing to several ALECs simultaneously. In BellSouth's study of customized routing capability, **none** of the switches in BellSouth's network in Florida are able to accommodate customized routing.

Dedicated Transport

Q. Please define the Network Element.

A. Dedicated Transport is an interoffice transmission path between two designated points. Dedicated Transport is used exclusively by a single company (in this case, AT&T) for the transmission of its traffic.

Q. Is there a difference between what BellSouth will provide as Dedicated Transport and AT&T's request for Dedicated Transport?

A. Yes. AT&T defines Dedicated Transport as an interoffice transmission path between AT&T designated points used in conjunction with a selective routing capability that would allow the switch to direct calls to a given trunk group based on who (BellSouth or AT&T) provides service to the end user.

Q. Is this the same technical issue, (selective routing) as was discussed in the local switching network element discussed earlier?

A. Here again, it is exactly the same issue. Apparently AT&T believes that if it makes the same argument in a number of different ways, that perhaps one of them will work.

Common Transport

Q. Please define the Network Element.

A. Common Transport is an interoffice transmission path between two designated points. Common Transport is used to carry the traffic of more than a single company for the transmission of their aggregate traffic.

Q. Is there a difference between what BellSouth will provide as Common Transport and AT&T's request for Common Transport?

A. Yes. Once again, AT&T defines Common Transport as an interoffice transmission path between AT&T designated points used in conjunction with a selective routing capability that would allow the switch to direct calls to a given trunk group based on who (BellSouth or AT&T) provides service to the end user.

Q. Is this the same technical issue (selective routing) as was described in the local switching network element discussed earlier?

A. Here again, it is exactly the same issue.

Advanced Intelligent Network (AIN)

Q. Please define the requested Network Element.

A. AT&T has requested unbundling of the following AIN network elements:

1. Signal Transfer Points (STPs) which provide a signaling network function that, along with their associated signaling links, enable the exchange of Signaling System 7 (SS7) messages among and between switching elements, database elements and signaling transfer point switches.

2. Service Control Points (SCPs) and other call related databases which provide the functionality for storage of, access to, and manipulation of information required to offer a particular service and/or capability.

Q. What is your understanding of the FCC's conclusions regarding the technical feasibility of unbundling this Network Element?

A. The FCC arrived at three major conclusions regarding the technical feasibility of providing unbundled access to AIN functionality. The first

is that the exchange of signaling information may occur through an STP-to-STP interconnection.

Q. Does BellSouth agree with the FCC's conclusion?

A. Yes. The FCC specifically cited the STP as the appropriate interconnection point rather than at the SCP.

Q. What is the second conclusion reached by the FCC regarding the unbundling of AIN?

A. The FCC concluded that incumbent LECs must provide access to their signaling links and STPs on an unbundled basis.

Q. Does BellSouth agree with the FCC's conclusion?

A. Yes.

Q. What is the third conclusion reached by the FCC regarding the unbundling of AIN?

A. If parties are unable to agree to appropriate mediation mechanisms through negotiations, during arbitration of such issues the states must consider whether such mediation mechanisms will be available and will adequately protect against intentional or unintentional misuse of the

incumbent LEC's AIN facilities.

Q. Does BellSouth agree with the FCC's conclusion?

A. Yes. As was noted in my direct testimony in this proceeding, BellSouth believes that, even with the development of new AIN functionality, a mechanism for mediation is required to prevent intentional or unintentional disruption of BellSouth's AIN network by an ALEC.

Rights of Way (ROW), Conduits and Pole Attachments

Q. Please define AT&T's request.

A. AT&T has requested access to ROW, conduits, pole attachments and any other pathways.

Q. Will BellSouth provide the requested unbundled Network Element?

A. Yes.

Q. Are there procedural issues on which BellSouth and AT&T have not agreed?

A. Yes. In my direct testimony in this proceeding I discussed two such procedural issues. The first refers to the amount of space in conduits

or on poles that BellSouth should be allowed to reserve for its own uses. The second issue refers to the proprietary nature of certain records of conduits and poles.

Q. What is your understanding of the FCC's conclusions regarding the issue of the amount of space in conduits or on poles that BellSouth should be allowed to reserve for its own uses?

A. The FCC apparently concludes that a new definition of non-discrimination is appropriate in this matter.

Q. What is your opinion of how the FCC has altered its definition of non-discrimination?

A. The FCC appears to have broadened its view of non-discrimination to provide that in certain regards BellSouth may not treat itself differently than it treats its competitors. In the issue at hand, the FCC apparently concludes that BellSouth may not reserve space in conduits or on poles for its own uses differently than it would allow ALECs to reserve space in BellSouth conduits and poles.

Q. What is BellSouth's response to the FCC's non-discrimination requirement?

A. This type of analysis only leads to one of two conclusions, neither of

which should be acceptable to anyone thinking clearly. In the first scenario, no reservations are made by either BellSouth or the ALECs. Conduit and pole space is allocated on a first come, first served basis. In such a circumstance, no one could plan for the orderly growth of the network in such an environment. In the second scenario, reservations are accepted from any of the parties and for whatever time frame is desired. If the reserving party were not required to pay for both the space used plus the space reserved, this would result in the inefficient use of the network. No doubt, however, BellSouth's competitors would object to paying for this reserved capacity but to do otherwise would simply create chaos.

Q. Does BellSouth have a proposal to make regarding reservations of space in conduits and on poles?

A. Not at this time. The choices, if the FCC's Order stands, are so inefficient that it is difficult to accept either one.

Q. Will BellSouth provide the conduit and pole engineering records requested by AT&T?

A. No. The 1996 Telecommunications Act does not require BellSouth to provide copies of BellSouth's engineering records, referred to as "plats". Further, the FCC's Order accords BellSouth reasonable protection of its proprietary information that would be contained in the

records sought by AT&T. FCC Order 96-325 at Paragraph 1223.

Q. Does this conclude your testimony?

A. Yes.