BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of	:DOCKET NO. 960833-TP
Petitions by AT&T Communications of	:DOCKET NO. 960846-TP
the Southern States, Inc., MCI Telecommunications Corporation, MCI Metro Access Transmission Services, Inc., and American Communications Services of Jacksonville, Inc., for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc., concerning interconnection and resale under the Telecommunications Act of 1996.	:DOCKET NO. 960916-TP

THIRD DAY - AFTERNOON SESSION

VOLUME 18

PAGE 2607 through 2754

PROCEEDINGS: HEARING

BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA

DATE: Friday, October 11, 1996

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: NANCY S. METZKE, RPR, CCR

APPEARANCES:

(As heretofore noted.)

INDEX

EXHIBITS

P R O C E E D I N G S

(Transcript follows in sequence from Volume 17)

Whereupon,

W. KEITH MILNER

was called as a witness on behalf of BellSouth and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. LACKEY:

Q Were you sworn earlier Mr. Milner?

A Yes, I was.

Q Would you please state your name and address for the record?

A Yes. My name is Keith Milner. My business address is 675 West Peachtree Street, Atlanta, Georgia.

Q And by whom are you employed?

A I'm an employee of BellSouth Telecommunications, Incorporated.

Q Mr. Milner, have you caused to be prefiled in this proceeding, and specifically the AT&T portion of this proceeding, direct testimony consisting of 76 pages accompanied by 13 exhibits?

A Yes, I have.

Q And have you caused to be filed in this, that same proceeding rebuttal testimony consisting of 28 pages

and no exhibits?

A Yes.

Q In connection with the MCI portion of this proceeding, docket -- MCI portion of this proceeding, did you cause to be filed six pages of direct testimony with no exhibits?

A Yes.

Q And did you cause to be filed two pages of rebuttal testimony, again with no exhibits?

A Yes.

Q And do you have any changes or corrections to any of that prefiled testimony?

A I do not.

Q If I were to ask you the questions that appear in that prefiled testimony today, would your answers be the same?

A Yes, they would.

MR. LACKEY: Madam Chairman, I would like to have the testimony included in the record.

CHAIRMAN CLARK: The prefiled testimony which consists of direct and rebuttal testimony in the AT&T docket and the MCI docket will be inserted in the record as though read.

BY MR. LACKEY:

Q Do you have any changes or additions to your 13

exhibits?

A No, I do not.

MR. LACKEY: Madam Chairman.

CHAIRMAN CLARK: We will mark it as exhibit 91.

(SO MARKED EXHIBIT 91)

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF KEITH MILNER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 12, 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. I have served in this role since February, 1996 and have been involved with the management of certain issues related to local interconnection and unbundling.

Q. Please summarize your background and experience.

A. I graduated from Fayetteville Technical Institute in Fayetteville, North Carolina in 1970 with an Associate of Applied Science in Business Administration degree. I also have a Master of Business Administration Degree from Georgia State University in Atlanta, Georgia. I am also a member of Beta Gamma Sigma, the national honor society for business school graduates.

My business career spans 26 years and includes responsibilities in the areas of network planning, engineering, training, administration and operations. I have held positions of significant responsibility with a local exchange telephone company, a long distance company and a research and development laboratory. I have extensive experience in all phases of telephonic network planning, deployment and operation (including research and development) in both the domestic and international arenas.

I began my career with Southern Bell (now BellSouth) in 1970 as a Traffic Engineer for switches in North Carolina. My responsibilities included planning and switch engineering and for providing network administrative staff support. In 1974, I was assigned to Southern Bell Company Headquarters in Atlanta, Georgia where I provided technical support to network administration groups. I was also part of a team that implemented mechanized data collection and processing systems (Total Network Data System) used by Network personnel throughout Southern Bell. I joined Southern Bell's technical training organization where I developed and delivered technical training to managers in the Network Department. I was concurrently responsible for curriculum planning for administration and engineering job disciplines. In 1978 I joined Southern Bell's Engineering Department in Miami, Florida where I managed a group of management network design engineers. Based on my extensive knowledge of mechanized support systems, I formed

and led a new group responsible for planning and implementing all Operations Support Systems in South Florida. In 1981, I joined Southern Bell's Network Operations Department where I led an operations center responsible for installation and maintenance of central office equipment for special services, message trunking and digital carrier systems in large metropolitan switching centers in the South Florida Area. I also managed a group which provided switching system administration, service analysis and performance monitoring for a major portion of South Florida. In 1982 I joined AT&T as part of its Divestiture Planning Team in Basking Ridge, New Jersey. I served as Technical Expert for switching network planning and engineering. This team developed and implemented intercompany contracts representing about $1 Billion per year in contract billing between AT&T and the Operating Companies. Upon Divestiture in 1984, I joined Bell Communications Research as a Member of Technical Staff and was responsible for systems engineering for digital switching systems (AT&T 5ESS and Northern Telecom DMS-100). I developed computerized engineering and administration tools. I also developed and conducted load capacity and regression analyses to determine switch performance with various methods of load and computer memory management. During that assignment I won the Bell Communications Research Award for Excellence for my research in digital switching technology.

In 1986 I returned to BellSouth in Atlanta, Georgia where I joined the Network Planning and Engineering Department. I developed and led the New Service Planning and Network Architecture Planning Group. This group was responsible for financial and technical evaluations as well as funding and deployment coordination. In 1993 I joined BellSouth International as Associate Director for Operations. In this role I was responsible for business planning and implementation activities for national and international long distance markets. I was responsible for regulatory and interconnection planning activities in BellSouth's successful bid for a long distance license in Chile. I served as a key member of that implementation team. In 1994 I returned to BellSouth Telecommunications, Incorporated as Director - Access Customer Advocate Centers. In this role I directed the implementation and operation of three customer operations centers for key access customers (AT&T, MCI, and all Wireless Customers). I led a large team of managers and technicians which provided provisioning and maintenance of switched and special access services across a nine-state region.

Q. Have you testified previously before any state public service commission; and if so, briefly describe the subject of your testimony.

A. I have testified before the state Public Service Commission in Georgia on the issue of technical capabilities of the switching and facilities

network regarding the introduction of new service offerings, expanded calling areas, etc.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to discuss the technical feasibility of unbundling certain network elements as requested by AT&T. The following discussion is based on my understanding of AT&T's request as described in AT&T's Petition For Arbitration in this proceeding. I may, in the future, provide testimony in response to AT&T testimony in this proceeding.

Specifically, I will address the eight (8) network elements for which no agreement between BellSouth and AT&T has been reached. BellSouth believes that these eight network elements are either (1) available at present via BellSouth's tariffs or (2) cannot be made available because there is no technically feasible method of providing such unbundling. I will address the network elements in the following list:

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

- Dedicated Transport
- Common Transport

Additionally, 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.

Q. Since the term "technical feasibility" has been and will continue to be widely used, please give a summary of BellSouth's definition of technical feasibility.

A. In establishing the technical feasibility of an unbundled network element, 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.

Q. AT&T made the claim in its Petition For Arbitration in this proceeding that it is technically feasible to provide access to the network elements it has requested. In some cases AT&T has based its claim of technical feasibility on references to a proposed Interconnection Agreement between AT&T and BellSouth as well as references to AT&T's Attachment 2 of that proposed Interconnection Agreement. Would you comment on the content of these claims?

A. The references to the issue of technical feasibility as presented in AT&T's Petition For Arbitration in this proceeding may be found in the following footnotes. Also shown is the network element being discussed in these footnotes:

- Footnote 47 (Network Interface Device)
- Footnote 48 (Loop Distribution)
- Footnote 49 (Loop Concentrator/Multiplexer)
- Footnote 50 (Loop Feeder)
- Footnote 51 (Local Switching)
- Footnote 54 (Operator Systems)
- Footnote 55 (Dedicated Transport)
- Footnote 56 (Common Transport)

Each and every one of these "supporting" statements refer back to AT&T's original request for the unbundled network element. In other words, AT&T's support for its claim that unbundling is technically

feasible is based on the fact that AT&T requested such unbundling. AT&T would have this Commission believe that the technical feasibility of unbundling is evidenced by AT&T's request for unbundling and little else. Such "circular references" serve only to obscure the fact that AT&T has produced little or no support for its claims of technical feasibility except that (1) AT&T made a request and (2) AT&T disagrees with BellSouth's conclusions regarding unbundling of network elements.

Q. Please briefly describe the format and content of BellSouth's evaluation of technical feasibility of unbundling the network elements that AT&T has requested in its Petition For Arbitration.

A. I will address each element separately, citing technical limitations, testing and operational considerations, record-keeping requirements and other factors as may be appropriate to the network element under discussion. The first four network elements discussed (Network Interface Device, Distribution Media, Concentrator/Multiplexer and Feeder) are loop elements. Attachment WKM-1 shows a high level view of these 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. The fundamental function of the NID is to establish the official network demarcation point between a company and its end-user customer. The NID features two independent chambers or divisions which separate the service provider's network from the customer's inside wiring. Each chamber or division contains the appropriate connection points or posts to which the service provider, and the end-user customer each make their connections. The NID provides a protective ground connection, and is capable of terminating cables such as twisted pair cable. Attachment WKM-2 shows a functional schematic of a typical residential NID. Attachment WKM-3 shows the use of the NID as part of the overall loop composition.

Q. What is your understanding of how AT&T intends to use this Network Element?

A. AT&T wishes to attach its transmission media (that is, AT&T's loops) to embedded installed NIDs located at the customer's premises.

Q. Please give an estimate of the amount of investment represented by the Network Element as well as an estimate of the degree of difficulty presented to AT&T if they were to replicate this Network Element.

A. No specific investment data is available, however, every residence and business line in service today (approximately 21 million) is terminated on a NID or equivalent. BellSouth has not been presented with any information which would indicate that it is either technically difficult or economically burdensome for AT&T to install its own NIDs.

Q. Will BellSouth provide the requested unbundled Network Element?

A. No. BellSouth cannot provide NID as an unbundled Network Element because of the following:

1. The National Electrical Code requires that loop distribution plant be grounded and bonded via the NID. Attachment WKM-4 shows pertinent sections of the National Electrical Code as it pertains to grounding requirements for the NID (National Electrical Code, Paragraph 800.30, 1996 version).

2. The NID also provides a standard test access point for the BellSouth loop. If the NID is located outside a business customer's premises, BellSouth would utilize a NID that is similar to that used for residence outdoor NID applications.

3. If the NID is located inside the customer's premises, several different types of devices are used depending on the number of lines terminated and the type of NID requested by the customer.

Q. Please comment on the National Electrical Code requirement for grounding of the loop and risks incurred if BellSouth were to not conform with this requirement.

A. BellSouth's investigation revealed the following:

1. The National Electrical Code requires that loop plant be terminated to a protector device at the customer's premises. Use of such a device allows proper bonding and grounding of the loop in order to prevent or eliminate electrical hazards.

2. Removal of the BellSouth loop from an existing NID without re-termination of that loop to another similarly bonded and grounded NID would create a potentially hazardous condition and thus a Code violation. To prevent such a situation would require that a BellSouth technician be dispatched to the customer's premises to install a new NID and to move BellSouth's loop to that NID for bonding and grounding purposes.

Thus, BellSouth's conclusion is that, given the Code requirement for the loop to be connected to a protector device (which is an integral part of the outdoor NID), unbundling of the NID is not technically feasible. Since AT&T will be at the customer's premises to install its own loop or

loop equivalent, it seems reasonable to expect, given these Code requirements, that AT&T would furnish its own NID at the same time.

Q. For NIDs, are the serving arrangements different in residential and business settings?

A. The serving arrangement in business settings may or may not be different from that of residence settings on a case-by-case basis. If the NID is located outside the customer's premises, BellSouth would utilize a NID that is similar to that used for residence outdoor NID applications. If the NID is located inside the customer's premises, several different types of devices are used (i.e., RJ21X, RJ45, RJ48, RJ11, etc.) depending on the number of lines terminated and the type of NID requested by the customer.

Q. Please comment on the technical feasibility of unbundling the NID in business settings.

A. In those instances where a multiple line NID is used (that is, RJ21X), unbundling of the NID is not technically feasible for the following reasons:

- The actual customer interface is a 50 pin amphenol connector on the side of the RJ21X jack into which the customer directly plugs the inside wire. Placing different service provider's circuits on a

single RJ21X interface is not a sound practice nor is it desirable from the end-user's viewpoint. The purpose of the amphenol connector is to enable the end user's Customer Provided Equipment (CPE) to be quickly and easily disconnected in order to avoid potential harm to the service provider's network and to facilitate service provider testing of the network while isolating the end-user's CPE. Shared use on an RJ21X would result in all service provider's circuits being disconnected during maintenance and repair visits to the end-users premises even though only one service provider's circuits were in trouble.

- If the NID was not to be shared but simply reused by the company, technical difficulties would result during cutover procedures since removal of the amphenol plug would cause an out-of-service condition. Since, in all cases, the actual NID is an integrated connector (either single or multi-line), it is not possible to disconnect the NID without interrupting the customer's existing service.

- In addition, there are instances where BellSouth utilizes business NIDs inside a building which incorporate electrical and lightning protection into the NID unit. Similar to outdoor-type devices, disconnection of BellSouth's feeder cable from this device would leave the cable unprotected, resulting in a safety hazard in violation of the National Electrical Code.

Q. Are there more varieties of NID used in BellSouth's network?

A. Yes. A wide variety of different devices have been deployed in BellSouth's network over time. The basic configuration of all of these NIDs can be found in the FCC's Code of Federal Regulations, Part 68. There is such a variety of NIDs, and such a variety of manufacturers used for each type of NID, as to seemingly make a listing of these of questionable value. This is true especially since the usage of NIDs is subject to very frequent change. The choice of NID is made based on the quantity of loops to be terminated and the customer's order. It should be noted that actual cost of NID hardware is relatively insignificant compared with the cost to install the drop wire or cable. It is BellSouth's opinion that the costs associated with unbundling the NID (that is, coordination between companies, potential service outages, need for dispatch of a BellSouth service technician, etc.) plus the potential creation of electrical hazards would far outweigh any perceived benefit derived from the unbundling of this device.

Q. What alternatives can BellSouth offer for this functionality?

A. BellSouth is unable to identify <u>any</u> circumstances where it is technically feasible to unbundle the NID. Also, given the apparent ease with which AT&T could install its own NIDs, it seems obvious that while AT&T is at the customer's premises installing its loops, AT&T could also install a

NID and connect it to that loop for very little additional time and expense. BellSouth has agreed, however, to install a new NID at AT&T's expense upon request.

Q. Please comment on typical costs of providing a separate NID for AT&T's use.

A. Even if the technical limitations that prevent the unbundling of the NID could somehow be overcome the cost for BellSouth to provide an unbundled NID would be significant. No cost study has been developed by BellSouth but some rough cost estimates have been made. Using typical NID material cost, average travel times for a technician dispatch to the end user premises and minimal installation time yields a total cost of about $58.30. This cost may be considered a "best case" cost and was developed for a single line residence or single line business customer. Of course, more complex or difficult NID placements such as those in high-rise buildings, older construction buildings or apartment complexes would yield significantly higher costs. Given this large variability in cost, BellSouth has offered to provide and install a NID for AT&T on a time and materials basis.

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). The FDI is a device that terminates the Distribution Media and the Loop Feeder, and cross-connects them in order to provide a continuous transmission path between the NID and a telephone company central office. For loop plant that contains a Loop Concentrator/Multiplexer, the Distribution Media may terminate at the FDI (if one exists), or at a termination and cross-connect field associated with the Loop Concentrator/Multiplexer. This termination and cross-connect field may be in the form of an outside plant distribution closure, remote terminal or fiber node, or an underground vault. The Distribution Media may be copper twisted pair, coax cable, or single or multi-mode fiber optic cable. Attachment WKM-5 shows the Distribution Media as a loop element.

Q. What is your understanding of how AT&T intends to use this Network Element?

A. It is anticipated that AT&T would provide their own feeder facilities and would use this portion to complete the loop facilities to the customer.

Q. Will BellSouth provide the requested unbundled Network Element?

A. No. BellSouth cannot unbundle the distribution portion of the local loop. It is not technically feasible to unbundle this network element because:

1. The operations and support systems including Loop Facilities Assignment and Control System (LFACS) and Trunk Inventory and Record Keeping System (TIRKS) cannot handle administration of loops without feeder facilities. TIRKS and LFACS are registered trademarks of Bell Communications Research, Incorporated. The systems used by BellSouth build loops from the Central Office to the end-user premises and cannot handle administration of loops without feeder facilities (that is, sub-loop elements). Considerable cost and time would be needed to redesign the existing systems to handle these configurations.

2. Without a viable support system, assignment information would need to be maintained via manual paper records. These paper records would conflict with the mechanized record keeping systems. There would be no way to mechanically feed this manually maintained information to AT&T.

3. Additional facilities would need to be built to provide access to the distribution facilities. This could include replacement of

existing cross connect boxes which is extremely time consuming and costly.

4. Ordering, provisioning, maintenance, administration and billing systems would all be adversely affected. Manual procedures would be necessary which would add considerable costs.

5. Future provisioning options would be limited or complicated. Establishment of a permanent hand off point (that is, a point of interface) would make altering the feeder/distribution network difficult. Future rearrangements would be costly both to the Local Exchange Company (LEC) and Alternative Local Exchange Companies (ALEC). Should the facilities need reinforcement or replacement considerable LEC labor would be involved.

6. Establishment of a permanent point of interface could constrain BellSouth from using new technology such as "Fiber In The Loop" (FITL) when a replacement for copper is planned. There is no feasible way to make the FITL technology available for hand off to an ALEC on an individual loop basis. This is because the fiber may carry a number of different multiplexed loops simultaneously. There should be no constraints placed on BellSouth that would make copper an imbedded distribution

facility with no way for BellSouth to replace it with new technology.

Q. What alternatives can BellSouth offer for this functionality?

A. BellSouth can provide a complete unbundled loop from the BellSouth central office to the end-user premises.

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.

The Loop Concentrator/Multiplexer function may be provided through a Digital Loop Carrier (DLC) system, channel bank, multiplexer or other equipment at which traffic is encoded and decoded, multiplexed and demultiplexed, or concentrated. Attachment WKM-6 shows the Concentrator/Multiplexer as a loop element.

Q. What is your understanding of how AT&T intends to use this Network Element?

A. AT&T requests access to that portion of the local loop which consists of the loop concentrator/multiplexer function of the carrier systems that BellSouth has deployed to provide feeder facilities in BellSouth's network. AT&T wants access to the concentration capabilities of the BellSouth carrier systems. AT&T would use this to concentrate their local loops through BellSouth carrier systems and then transport them back to their switch through transport facilities.

Q. Will BellSouth provide the requested unbundled Network Element?

A. No. This option is not technically feasible. BellSouth cannot provide this service because:

1. BellSouth's operations and support systems, particularly the Loop Facilities Assignment and Control System (LFACS) and Trunk Inventory and Record Keeping System (TIRKS), cannot handle assignment and administration of this small portion of a carrier system. Manual records would need to be maintained that would conflict with BellSouth's mechanized systems.

2. There is no technically feasible method to segregate the concentration portion of the carrier system from the feeder transport to it. The systems are designed as a single entity and cannot be separated. This means that the concentration portion and the feeder transport portion are one entity. They provide the necessary facilities to transport and concentrate loop facilities from the central office to the remote terminal.

3. Providing this type of service based upon existing technology could constrain BellSouth from using new technology such as Fiber In The Loop (FITL) when replacement is planned. There is no technically feasible method to make the FITL technology available for hand off to an ALEC on an individual loop basis. This is because the fiber may carry a number of multiplexed loops simultaneously. BellSouth should not be constrained from being able to transition to a newer technology as appropriate.

Q. What alternatives can BellSouth offer for this functionality?

A. The technically feasible alternative is to provide an unbundled loop from the Central Office to the end-user premises.

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). IDLC comprises loop facilities that include multiple NIDs, distribution media, remote terminal and feeder. The feeder interfaces directly to the digital switch at the DS1 level without the requirement for a central office terminal or other demultiplexing equipment. Attachment WKM-7 depicts a typical Contiguous Loop configuration.

Q. What is your understanding of how AT&T intends to use this Network Element?

A. AT&T desires the ability to utilize single unbundled loops that are integrated into IDLC arrangements. This involves a "splintering" of the integrated loop facilities into discrete (individual) loops. This would require a conversion of the digital bitstream (multiple loops) back to analog (individual loops). Such an arrangement would add cost. Also,

from a voice quality viewpoint, multiple extra conversions from digital to analog and back to digital lower overall transmission quality due to the voice sampling and encoding techniques used.

Q. Will BellSouth provide the requested unbundled Network Element?

A. BellSouth cannot provide an unbundled loop through integrated facilities in all cases because:

1. Loops served by IDLC do not have an analog (copper) appearance in the central office and therefore cannot be provided to an ALEC. The multiplexed loops are attached directly to the switch without digital to analog conversion.

2. Integrated facilities were designed not to have a copper appearance in the central office and thereby eliminate costly electronics associated with carrier systems. The switch handles the concentration/channelization of the carrier system. Use of integrated facilities results in considerable savings.

3. Converting an integrated DLC system to a universal DLC system (non-integrated) would cause economic penalties in provisioning the switch. Considerable labor is required to convert an integrated carrier system to a non-integrated carrier system.

4. If BellSouth were to be forced to provide loops through integrated systems, the use of integrated systems will decrease causing the cost of providing service to BellSouth's customers to increase.

Q. What alternatives can BellSouth offer for this functionality?

A. Several alternatives have been investigated for those loops served by IDLC. The following describes those alternatives and the results:

Alternative 1: Reassign the loop from an integrated carrier system and use a physical copper pair.

This is a technically feasible alternative in cases where sufficient physical copper pair facilities are available. If sufficient physical copper pairs are available, BellSouth will assign the unbundled loop to a physical copper pair. Available facilities are those that are generally available for use rather than those specifically placed there for other reasons. Such cases could include but are not limited to the following: Unloaded pairs in a loaded area reserved for digital services or limited physical pairs placed in a Carrier Serving Area (CSA) for services that cannot be integrated.

Alternative 2: Bring the loop out of the integrated switch using "hair pin" options. Attachment WKM-8 depicts a typical "hair pin"

configuration for extracting a single loop out of an Integrated DLC digital bitstream.

This alternative is not technically feasible for the following reasons:

Using the "hair pin" option ties up a channel into and out of the switch and would be functionally equivalent to AT&T's use of an unbundled switch port. As a result, valuable switching equipment is tied up permanently (switch ports, DS-1 and D4 banks and plug-ins). This would result in premature exhaust of the equipment. Also, since the loop must be brought to a D4 channel bank and handed off at the Voice Frequency (VF) level, added expense is incurred in provisioning the plug-in in the D4 bank. In summary, this alternative does not separate the switch port from the loop.

Alternative 3: 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).

This is a technically feasible alternative in cases where NGDLC facilities are available. Both of the NGDLC systems currently approved

for use in the BellSouth network have "grooming" capabilities. However, the availability of this option is limited. Given that NGDLC is still a relatively new technical capability, currently there is an insufficient amount of NGDLC in the BellSouth network to meet AT&T's total demand. Availability will be limited due to the fact that the universal portion of a NGDLC system is sized for those special service circuits that cannot be integrated that were forecast for a given site. This option is available only where fully approved NGDLC systems are operating. As in the case of Alternative 1 described above, available facilities are those that are generally spare and available for use rather than those specifically placed there to meet other specific needs.

Alternative 4: Physically groom all channels of a carrier system so that one or more DS-1 circuits contain only the ALEC's service and hand off these DS-1 circuits to the ALEC.

This alternative is not technically feasible. This is a version of concentrated DS-1 transport with the transport vehicle being located in the field. BellSouth's operations support systems cannot handle the administration that would be needed for this arrangement. In addition, BellSouth's existing older technology systems do not have the ability to groom. In order to provide DS-1 circuits with only one ALEC's traffic, mechanized processes are not available to provision that ALEC's circuits via specific channel banks. This would in effect dedicate a

channel bank (D4 or similar) to an ALEC that would not otherwise be available for other traffic.

Alternative 5: In those cases where DLC serves a customer where the ALEC has won 100% of the business, would BellSouth sell the ALEC the entire system?

This alternative is not technically feasible if AT&T expects BellSouth to provide associated Operations Support Systems for provisioning, maintenance and administration. Here again BellSouth's Operation Support Systems cannot assign and maintain this type of arrangement. Problems would occur in the provisioning and maintenance of the system. In particular, the alarms that are normally sent when a DLC experiences a failure are wired from the central office terminal. With this type of service the alarms would not be accessible by BellSouth's mechanized systems. Further, since the equipment is located at a remote site, it is not available for manual inspection. The system could fail and no one (and no mechanized system) would be aware of the failure. BellSouth's assignment systems, TIRKS and LFACS would require extensive manual interventions and "workarounds" to accomplish the required assignment and inventorying tasks.

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. Attachment WKM-9 shows Loop Feeder as a loop element.

Q. What is your understanding of how AT&T intends to use this Network Element?

A. AT&T wants physical access to the FDI and the right to connect its distribution media to the Loop Feeder at the FDI. AT&T wants to have access to the feeder facilities from the BellSouth central office to a hand off point within the BellSouth network.

Q. Will BellSouth provide the requested Network Element?

A. Yes, however, this capability is available now and should not be considered part of loop unbundling. Loop feeder facilities can be purchased as tariffed services. The following describes the existing tariffed offerings:

1. The capabilities sought by AT&T do not request unbundling, but rather a service already provided in BellSouth's Special Access Tariffs.

2. These facilities may be provided as at present via Special Access Tariffs.

3. BellSouth will provide connections, consisting of DS-0 or DS-1 level service, from its central office to a premises site designated by an ALEC.

4. ALEC premises can be either an ALEC cross box or another appropriate termination point.

5. In any event, however, the termination point must allow for the location of an appropriate network demarcation and any required NIDs.

6. The demarcation point and NIDs used will vary based on the type of service.

7. This transport will consist of the feeder from the BellSouth central office to the termination point. If the connection is to an ALEC owned cross box, BellSouth will place and assign the pairs in this "tie cable" facility between the BellSouth cross box and the ALEC cross box.

8. BellSouth will generate and provide to the ALEC a Design Layout Record (DLR) as part of the provisioning process. The cable pair assignment will be under BellSouth assignment control and the actual pair(s) used will be indicated in the DLR.

Attachment WKM-10 shows a typical special access circuit that provides the same functionality requested by AT&T as the unbundled network element "Loop Feeder".

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 how AT&T intends to use this Network Element?

A. This combination of elements equates to the feeder provided by a carrier system. AT&T wants two unbundled elements, feeder and concentration, put together to form one element. This element is equivalent to a carrier system with concentration.

Q. Will BellSouth provide the requested Network Element?

A. Yes. BellSouth can supply feeder facilities under existing tariffs however BellSouth does not guarantee a particular level of loop concentration (concentration ratio) will be achieved. Attachment WKM-10 shows a typical special access circuit that provides the same functionality requested by AT&T as the unbundled network element "Combination of Loop Concentrator/Multiplexer with Loop Feeder".

Q. Why is BellSouth not able to guarantee a particular level of loop concentration?

A. BellSouth cannot administer a carrier system in this manner for the following reasons:

1. This would necessitate making a concentration ratio part of the service. As used here, the term concentration ratio refers to the ratio of the quantity of loops to be concentrated (on the input stage of the carrier system) to the quantity of transmission paths or channels in the transmission media (in the output stage of the carrier system). Concentration ratios are set and administered based on call volume. As the call volume increases, the concentration ratio decreases towards a one-to-one relationship. BellSouth's tariffs do not make assurances of which concentration ratios that will be used in particular cases. For example, the tariffs do not separately address one party

residential flat rate service (1FR) as being carried over DLC (where there is no concentration) versus 1FR service provided via DLC with a variety of possible concentration ratios.

2. Facility assignments such as LFACS are not driven by concentration ratios. To set up a system to guarantee a certain concentration ratio would make that system dedicated to that ALEC.

3. Making guarantees of concentration ratio would lock in the type of technology (and concentration ratios) for which the DLC system was initially designed. It would be very difficult at some future date to change technologies or to change concentration ratios. Each and every DLC technology choice would require a unique design making the migration from one to the other difficult.

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. The functionality is

often referred to as the unbundled network element "switch port". The functionality includes all of the features, functions, and capabilities that the switch is capable of providing for the given class of service, including but not limited to: line signaling and signaling software, digit reception, dialed number translations, call screening, routing, recording, call supervision, dial tone, switching, telephone number provisioning, announcements, carrier pre-subscription (for example, long distance company intraLATA toll), testing and other operational features inherent to the switch and switch software. It provides access to capabilities such as calling features and capabilities (including call processing), Centrex and Automatic Call Distributor (ACD). It also provides access to transport, signaling (ISDN User Part or ISUP) and Transaction Capabilities Application Part (TCAP), and platforms such as adjuncts, Public Safety Systems (911), BellSouth operator services, BellSouth directory services, BellSouth repair service and Advanced Intelligent Network (AIN) services. BellSouth will clearly provide local switching as an unbundled network element.

Q. Will BellSouth provide unbundled switching as defined above?

A. Yes.

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

A. Yes. AT&T has created considerable confusion by requesting that the local switching capability be made available both as an unbundled network element and as a separate element of total service resale. What AT&T defines as "local switching" is more appropriately referred to as "selective routing". AT&T requested that the Commission order BellSouth to provide selective routing arrangements that will enable an end-user (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 or repair service platform today (i.e., through dialing 0, 411 or 611). AT&T has further attempted to confuse this Commission by defining three other unbundled network elements (operator systems, dedicated transport and common transport) as having the selective routing capability. BellSouth will offer all three capabilities (operator and directory services, dedicated transport and common transport) on an unbundled basis, however, when BellSouth provides local switching it is not technically feasible for it to allow selective routing to similar non-BellSouth functions. Further, BellSouth believes it is not appropriate to provide such selective routing when requested as a modification to a resold local exchange service.

Q. Please describe the capability that AT&T has defined as unbundled local switching.

A. Fundamentally, AT&T requests that for certain calls (for example, those calls destined for an operator services or repair service platform) a determination be made during call set-up of whose customer (AT&T's end user or BellSouth's end user) is dialing the call and to make a selection of outgoing trunk group accordingly. This implies that:

1. Billing records (or some surrogate for billing records) would be accessed by the switch.

2. A determination of account control would be made (that is, "AT&T end user" or "BellSouth end user").

3. This information would be used by the switch to properly select a trunk group to AT&T's operator services platform or to BellSouth's operator services platform based on that account control indicator.

Q. Why is BellSouth not able to provide the requested unbundled Network Element?

A. First of all, the selective routing functionality does not exist. This request is not a legitimate request for unbundling. The ability to selectively route calls to termination points specified by resellers (differing from BellSouth designated points) would be a <u>new</u> capability. BellSouth made inquiries of two switching equipment manufacturers

(Lucent Technologies and Nortel) regarding the current capabilities of their flagship switching products. Responses from those manufacturers are attached as Attachment WKM-11. Lucent Technologies responded that "This feature, Alternate Local Exchange Routing Capability or Third PIC, is not currently available on the 5ESS switch." Similarly, Nortel responded that "Currently Nortel's DMS10 and DMS100 Switching Systems do not have the requested capability as outlined in you Request For Feature BSO000403, SFIS #30863."

Second, an insurmountable complication arises because AT&T desires that its customers dial the same telephone numbers to reach its operator services or repair service (0-, 411 and 611) and have the telephone switching network somehow determine whose customer (that is AT&T's end user or BellSouth's end user) is dialing the call.

Q. Please describe BellSouth's analysis of exiting capabilities of its switches regarding provision of selective routing?

A. BellSouth analyzed the technical feasibility of four alternatives for the capability of providing selective routing of AT&T customers to AT&T operator service platforms. Not one of the four alternatives accommodate the selective routing that AT&T has requested. The following four alternative serving arrangements were analyzed:

- Use of Line Class Codes (LCCs).

- Use of switching system translations capabilities to create individual dialing plans.
- Use of AIN capabilities to provide selective routing.
- Use of other switch-based capabilities to provide selective routing.

Line Class Codes (LCCs)

Q. Please discuss BellSouth's evaluation of the Line Class Code alternative.

A. In order to terminate the same dialed digits to multiple destinations, the originating switching system must have the intelligence to determine the desired routing. BellSouth has had discussions with several ALECs (including AT&T) who have stated their intent to resale most or all classes of service that BellSouth currently offers. Routing to a different reseller's location based on the same dialed digits would require BellSouth to duplicate every resold class of service in a given end office for every reseller. Correspondingly, these new classes of service would each require a unique LCC to be assigned. However, there is a finite number of LCCs codes available.

The table in Attachment WKM-12 shows LCC capacity in the various switch types used in BellSouth's network in Florida. Discussions with Lucent Technologies suggested that their technical reference

documents were in error regarding the stated LCC capacity for the 5ESS and that the capacity might be nominally higher. Lucent Technologies was not willing, however, to confirm a different LCC capacity than as shown in the latest version of their technical reference documents. Even with the presumed higher LCC capacity for 5ESS, no material difference in BellSouth's conclusion would result regarding the infeasibility of using LCCs to achieve selective routing.

Q. Please describe the parameters of BellSouth's evaluation of the LCC alternative.

A. The study parameters include the following:

1. Counts of LCCs in service were taken during July and August 1995. No growth of LCCs in service was assumed except for completion of deployment of the Call Authorization Management[SM] (CAM) capability. As a result, true case will be worse than as calculated and depicted without the inclusion of growth for LCCs used.

2. LCC capacities for specific switch types were set at the maximum known capability. These maximum levels are the greater of currently installed capacities or, as in the case of the Nortel DMS-100, announced LCC capacity levels. Apart from

these assumed levels of LCC capacity, BellSouth is not aware of other augmentations either planned or under development.

3. The measurement mechanism used could not count LCCs actually in service above the level of 1000 due to a restriction of the register size. This situation is limited to the case of the Lucent Technologies 5ESS switches. As a result, the true case is actually worse than depicted for three (3) of the 56 5ESS switches in which the counts were taken.

4. Counts were taken in 102 switches of the following types

- Lucent Technologies 1AESS (6 of 32)
- Lucent Technologies 5ESS (56 of 58)
- Nortel DMS-100 (40 of 41)

The 1AESS switches have not been equipped for Mechanized Translations System (MTS) given the replacement strategy for this switch type. At present, BellSouth has a total of 131 of the switch types listed above in its network in Florida. Thus the sampled rate of this universe is 78%.

The table in Attachment WKM-13 shows the results of BellSouth's study. The percentages shown are the proportions of installed switches that are not capable of providing the selective routing requested by AT&T.

Q. Please describe BellSouth's conclusions regarding the use of LCCs to accommodate selective routing.

A. The obvious conclusions that may be drawn from the information in the table above include the following:

- Use of LCCs as a method of providing selective routing in the resale environment only 'works' for BellSouth plus one ALEC (that is, AT&T) in 76% of the switches in BellSouth's network in Florida (100% - 24%). Such a limited capability will produce widespread confusion if the Commission orders BellSouth to provide the capability because customers served by certain switches would have their calls routed differently than customers served by other switches.

- In the robust, competitive environment that BellSouth expects to operate, most or all companies would demand similar treatment of calls from their resold customers to their own branded operators. Virtually all of BellSouth's switches would be exhausted (82%) in the likely 'real world' scenario of BellSouth competing with five (5) or more ALECs in the near future. BellSouth expects to face at least eight (8) competitors in major markets in Florida. With BellSouth and eight ALEC competitors none of BellSouth's switches in Florida could accommodate the

selective routing capability. All of these switches would reach exhaustion based on LCC utilization.

- Since entire communities are often served by a single switch, for those switches exhausted by LCCs, selective routing capability would not be available.

- LCCs are used for a variety of purposes including the creation of new local serving areas and new services. To cause the premature exhaust of LCC capacity simply to allow AT&T (but not other companies) a marketing advantage would be done at the expense of BellSouth's not being able to introduce new products, services or dialing patterns. It is in the public interest to deny AT&T's request for this type of switching capability and to have BellSouth continue the stream of new products and services so customers can have more choices, rather than less, in the new competitive environment. Until the switch vendors, such as Nortel and Lucent Technologies, can provide additional capabilities or features to accommodate selective routing, selective routing based on use of LCCs should not be an option.

- To cause the premature exhaust of LCCs would preclude the possibility in some cases of adding remote switches to an existing host switch. In such a case, significant extra cost would be incurred by BellSouth to deploy a stand-alone or host switch

when a simple remote switch could be provisioned. Further, some existing host/remote arrangements would have to be modified such that the remote switches would need to be upgraded to host switches, again with considerable expense to BellSouth.

Q. Please summarize BellSouth's position on the use of LCCs to accommodate selective routing.

A. BellSouth's analysis demonstrates that the use of LCC is not a technically feasible alternative given that:

1. This solution only 'works' for BellSouth and AT&T in the 5ESS and DMS-100 switches. No development work is planned for the Lucent Technologies 1AESS or 2BESS switches to expand LCC capacity since these switch types are being steadily replaced.

2. BellSouth expects at least eight (8) competitors in major markets in Florida who would demand equal treatment. This selective routing solution used for all eight competitors could be accommodated in none of BellSouth's 1AESS, 5ESS and DMS-100 switches (100% switch exhaust based on LCC consumption).

Switch Translations Capabilities

Q. Please discuss BellSouth's findings regarding the use of switch translations capabilities to accommodate selective routing.

A. BellSouth's analysis of the use of switch translation capabilities to create individual dialing plans likewise requires the duplication of existing LCCs. Due to this dependence on LCCs to implement the use of switching translation capabilities, the use of translations capabilities is also not technically feasible. BellSouth is aware of no technically feasible means of using switch translations capabilities to create the selective routing capability in a resale environment as requested by AT&T.

A second translations capability that was examined in terms of its ability to accommodate AT&T's request is the use of certain code conversion tables. The code conversion provides the capability to associate directory assistance, repair service and 911 services to a particular telephone number. The problem with this solution is that the code conversion works on a rate area basis. In other words, all customers in a particular rate area will be routed to the individual destinations for each the above services, as designated in the code conversion form. Code conversion could not be performed on an individual customer basis.

Q. Are there other technical limitations to using switch translations capabilities to accommodate selective routing?

A. Yes. Even if the technical limitations described earlier could be overcome, there are other switch resources that would become limiting factors in each switch technology.

BellSouth analyzed the use of each of these other switch resources and concludes that such use is neither practical nor technically feasible. The switch resources analyzed include:

- Digit prefixing and deleting
- Screening Indices
- Directory assistance trunk group capacity
- Rate centers

Q. Please discuss the technical limitations of using digit deleting and prefixing.

A. AT&T requested that certain calls (that is, calls dialed as "411" and "611") be converted to 10-digit numbers and delivered to AT&T for routing through its network. Delivering calls via selective routing as requested by AT&T, would require deleting and prefixing digits (that is, for example, delete "411" and prefix the 10-digit number). The Lucent Technologies 5ESS and 1AESS switching systems can not delete and

prefix digits with equal access signaling on Signaling System 7 (SS7) trunks. With traditional signaling on Multifrequency (MF) trunks, the 1AESS can only delete and prefix seven (7) digits.

Q. Please discuss the technical limitations of using screening indices.

A. Screening indices are resources that are used to minimize translations required by serving as standard pre-translators in the Nortel DMS-100 or Digit Analysis Selectors (DAS) in the Lucent Technologies 5ESS. In most cases, these resources are even more limited, and thereby, more restrictive, than the LCCs.

Q. Please discuss the technical limitations of directory assistance trunk group capacity.

A. Technical limitations include the Nortel DMS-100 capacity of 16 routes for 411. At present, four of the 16 are in use. Replication would be required for each company that wanted its own selective routing pattern so only four (4) companies (including BellSouth) could have the selective routing capability for its customers. Other companies would not be able to offer selective routing to their customers, thereby creating a potential discrimination issue between competing service providers.

Q. Please discuss the technical limitations of switch translations rate centers.

A. Routing 0- traffic in the 5ESS or the DMS-100 on a selective routing basis would require a different rate center to be created for each service provider. Here again, based on switch type, rate center capacities range from 64 to 255. Implementing selective routing using unique rate centers would require that separate rate centers be established for each company. This solution would be even more limiting than the use of LCCs. Additionally, this alternative suffers from being significantly more complex than the LCC scenario.

Q. Please summarize BellSouth's conclusions regarding the technical feasibility of using switch translations capabilities to accommodate selective routing.

A. BellSouth's analysis demonstrates forcefully that the use of existing translations capabilities to effect the selective routing that AT&T has requested is not technically feasible.

Advanced Intelligent Network (Ain) Capabilities

Q. Please discuss BellSouth's findings regarding the use of AIN capabilities to accommodate selective routing.

A. BellSouth does not currently have an AIN capability that will provide the selective routing capability that AT&T has requested. Further study is required to determine if a new AIN capability could provide such a functionality in the BellSouth switches that are AIN equipped (that is, 5ESS and DMS-100 offices that are equipped for AIN Release 0.1). BellSouth asserts that the use of existing AIN capabilities to effect the selective routing that AT&T has requested is not technically feasible.

Q. Please discuss BellSouth's findings regarding the use of other switch based capabilities to accommodate selective routing.

A. The capability to provide a selective routing capability where customer routing patterns can be determined based upon a preferred LEC indicator (rather than using LCCs, switch translations capabilities or AIN capabilities as discussed above) is not available in any end office switch in BellSouth today.

Bell Communications Research (Bellcore) at present supports a preferred carrier indicator only for calls bound for intraLATA carriers, interLATA carriers or international carriers. These indicators are discussed in Bellcore's Local Switching Systems Generic Requirements (LSSGR). Development would be needed to create requirements for a similar indicator for LECs. Calls originating from customers could be automatically routed to their preferred local carrier unless the customer specifies a different carrier by dialing a special

access code prefix. Again, Bellcore does not at present support a preferred carrier indicator feature for LECs.

For these reasons, the use of other existing switch based capabilities to effect the selective routing that AT&T has requested is not technically feasible.

Q. Please summarize BellSouth's position on the technical feasibility of selective routing using existing switch resources and capabilities.

A. The capability for selective routing based on account control does not at present exist, nor could it be constructed with existing switch based or AIN based capabilities.

Q. Does BellSouth believe that it is appropriate to combine the use of unbundled network elements with resale of total service?

A. No. AT&T's suggestion that the Commission order BellSouth to provide this selective routing in the total service resale environment confuses the clearly distinct subjects of resale and unbundling. AT&T argued that it, and perhaps other resellers, wanted to provide their own operator services where, for example, they resold BellSouth's 1FR or 1FB service. If AT&T wishes to purchase unbundled loops from BellSouth and to use its own operators to service its customers, that is AT&T's option. However, the term "resale" seems pretty simple to

understand. If AT&T wants to resell BellSouth's 1FR service, it has to resell that service, with its abilities and limitations. It cannot disassemble the service to suit its own notion of what it wants and claim to be reselling the service.

Q. Please compare serving arrangements in the resale environment compared to the facilities based interconnection environment.

A. In the resale environment, the resold service includes routing of traffic to directory assistance, operator services and repair services delivered to BellSouth specified termination points. These termination points are the same for BellSouth end user customers as well as for the end user customers of all resellers.

By comparison, in the facilities based interconnection environment, calls can be delivered to BellSouth operator services platforms (or Alternate Operator Services platforms) over dedicated trunk groups from AT&T switches. For example, AT&T could acquire unbundled loops from BellSouth, transport those loops to an AT&T switch and then deliver 0- or 411 traffic to either its own or BellSouth's operator services platform. Since the traffic arrives over discrete rather than common trunk groups, BellSouth's operator services platforms could differentiate calls from AT&T customers reaching the BellSouth platform from the calls of BellSouth customers reaching that same platform. If AT&T desired that BellSouth brand incoming calls to

BellSouth's operators, then, at a minimum, additional cost would be incurred by BellSouth for development of this new service.

Q. Could a facilities based company use some of BellSouth's unbundled network elements in conjunction with its own elements to achieve the functionality that AT&T desires?

A. Yes. For example, AT&T could acquire unbundled loops from BellSouth, transport those loops to an AT&T switch and then deliver 0- or 411 traffic to either its own or BellSouth's operator services platform. Since the traffic arrives over discrete rather than common trunk groups, BellSouth's operator services platforms could differentiate calls from AT&T customers reaching the BellSouth platform from the calls of BellSouth customers reaching that same platform. However, if AT&T desired that BellSouth brand incoming calls to BellSouth's operators, then, at a minimum, additional cost would be incurred by BellSouth for development of this new service.

Q. Please comment on any additional costs that BellSouth would incur if selective routing were somehow to become technically feasible.

A. Resale of local exchange service envisions discounts to reflect costs avoided by BellSouth. Setting technical limitations aside, selective routing of directory assistance or operator services for resellers would

generate additional, new costs for BellSouth. These costs would include the following activities:

- Switch translations changes to implement new LCCs.
- Changes to order entry systems to allow an indication of the routing treatment desired on an end user customer-by-customer basis.
- Numerous new ordering entries required to convey new LCC information into switch memory.

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. Operator Systems provides two types of capabilities: operator services and directory services. BellSouth will offer both operator services and directory services as separate stand-alone capabilities. If AT&T wishes to use BellSouth's operator services and directory services, it must provide its own routing capability in order to reach those platforms. Presumably, this would be

accomplished by AT&T's providing its own switches to provide the routing functionality needed.

Q. What is your understanding of how AT&T intends to use the Network Element that AT&T defines as Operator Systems?

A. 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 selective 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). Fundamentally, AT&T requests that for certain calls (that is, only those calls destined for an operator services or repair service platform) a determination be made during call set-up of whose customer (AT&T's end user or BellSouth's end user) is dialing the call and to make a selection of outgoing trunk group accordingly.

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

A. It is exactly the same issue. The same reasons as cited earlier as to why AT&T's request for unbundled local switching is not technically feasible are also applicable in discussing Operator Systems.

Q. What alternatives can BellSouth offer for this functionality?

A. Here again, access to operator services on a selective routing basis should not be confused with the actual provision of operator services. BellSouth will provide unbundled operator services and directory services as separate, stand-alone capabilities. In order to use the unbundled operator services and directory services that BellSouth will provide, AT&T must perform its own routing, presumably with its own switch. If AT&T chooses not to utilize BellSouth's operator services and directory services, then AT&T must make some arrangement to have its customers reach the reseller's operators.

Q. It has been suggested that, if AT&T wants its 0- or 411 calls directed to a BellSouth operator, that BellSouth put some type of indicator (a special tone or signaling sequence, for example) such that these calls may be identified and branded "AT&T". Some have described this capability as discrete signaling. Are BellSouth's switches capable of providing "discrete signaling" in this manner?

A. No. This "discrete signaling" is selective routing by yet another name. Such identification of incoming calls to BellSouth's operator service and directory service platforms is not possible except in the case where AT&T were to provide its own routing, with its own switch, and place this traffic on a separate "AT&T only" trunk group.

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. Will BellSouth provide Dedicated Transport?

A. Yes. BellSouth will provide to ALECs, via its access tariffs, the same access services (including dedicated transport) that BellSouth now offers its access customers.

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. Dedicated Transport is used exclusively by a single company (in this case, AT&T) for the transmission of its traffic. Here again, the technical issue is whether BellSouth's switches are

capable of providing selective routing to determine which trunk group to select based not on what digits the customer dialed but rather on who the service provider is (BellSouth or AT&T).

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. The same reasons as cited earlier as to why AT&T's request for unbundled local switching is not technically feasible are also applicable in discussing Dedicated Transport.

Q. Will BellSouth provide the unbundled Network Element as requested by AT&T?

A. No. For the same reasons as were cited earlier in the discussion of Local Switching, BellSouth cannot provide the unbundled Network Element as it has been defined by AT&T. BellSouth, however, will offer Dedicated Transport. Here again, this access to dedicated transport should not be confused with the actual provision of dedicated transport.

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. Will BellSouth provide Common Transport?

A. Yes. BellSouth will provide to ALECs, via its restructured access tariffs, the same access services that BellSouth now offers its access customers.

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

A. Yes. 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. Common Transport is used by more than one company for the transmission of their collective traffic. As with local switching, operator systems and dedicated transport, the technical issue is whether BellSouth's switches are capable of providing selective routing to determine which trunk group to select based not on what digits the customer dialed but rather on who the service provider is.

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. The same reasons as cited earlier as to why AT&T's request for unbundled local switching is not technically feasible are also applicable in discussing Common Transport.

Q. Will BellSouth provide the unbundled Network Element as requested by AT&T?

A. For the same reasons as were cited earlier in the discussion of Local Switching, BellSouth cannot provide the unbundled Network Element as requested by AT&T. As in the case of local switching, operator systems and dedicated transport, this access to common transport should not be confused with the actual provision of common transport.

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 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/Databases provide the functionality for storage of, access to, and manipulation of information required to offer a particular service and/or capability. A Service Control Point (SCP) is a specific type of database network element deployed in a SS7 network that executes service application logic in response to SS7 queries sent to it by a switching system also connected to the SS7 network. SCPs also provide operational interfaces to allow for provisioning, administration and maintenance of subscriber data and service application data. For example, an 800 database stores customer record data that provides information necessary to route 800 calls.

Q. Will BellSouth provide the requested unbundled Network Element?

A. No. SS7 AIN access as proposed by AT&T is not technically feasible. There are a number of functions required to support SS7 access to AIN that cannot be supported via AT&T's proposed architecture. These functions include the following:

1. Routing/Addressing. The Routing/Addressing function allows AIN messages to be routed to the appropriate AIN destination

(e.g., the third party AIN), This function requires identification of the destination AIN based on information established in the service provisioning process.

2. Protocol Interworking. Protocol Internetworking is an agreement between BellSouth and third parties regarding which protocols will be used for messages and parameters. This function provides a common syntactical basis for communication, for example, what messages to expect, the order in which messages will occur, what to do with those messages, what behavior is acceptable, what to do in the case of a syntactical error or upon receipt of a type message or value that cannot be understood.

3. Recording/Billing. The two main Recording/Billing capabilities that are needed for Open AIN are the ability to charge on a per message basis and the ability to pass billing information (e.g., correct charge number) to the switch to generate the appropriate Automatic Message Accounting (AMA)records.

4. Provisioning. The Provisioning function determines how third party service providers place orders for service on behalf of end users and how BellSouth provisions those services on the end users' lines. This function addresses how BellSouth's

operational processes, centers, and systems are set up to receive, coordinate, and work orders.

5. Security. Security functions control access to the network to determine the appropriateness of the access. Security measures are required to ensure privacy and protect proprietary information as well as ensuring high quality, reliable service.

6. Network management. This functionality provides real-time measurement and control of network traffic between network elements. The function is needed to control traffic to/from different AIN destinations so that the guaranteed traffic volume is available to each AIN destination and does not exceed provider capacity. This function is also required to monitor the use of particular resources, such as switch announcements.

7. Performance Management. Performance Management involves monitoring functions that generate, collect, and analyze maintenance traffic data.

8. Fault Management. This functionality includes processes between BellSouth and the Open AIN service provider for trouble detection, trouble isolation, and recovery.

9. Protocol/Message Screening. This is real-time functionality to screen AIN messages (or parameter values within messages) that are inappropriate for the service provider to send. Without this functionality, a service provider could turn off a competitor's trigger, charge calls to inappropriate numbers, etc.

10. Feature Interaction Management. Feature Interaction Management includes the procedures and capabilities to manage interactions between multiple services to which the end user may subscribe. Feature interactions may apply between multiple AIN services on a line, or between an AIN service and a switch-based feature (e.g., custom calling).

Q. What does BellSouth propose to allow the AIN access requested by AT&T?

A. BellSouth is investigating a means of supporting the functions required to support SS7 access to AIN via a mediation device which BellSouth refers to as the Open Network Access Point (ONAP). The ONAP would provide an alternative SS7 access to AIN that would enable third parties to create and implement the same services as would AT&T's proposed architecture for SS7 AIN Access.

Because neither the ONAP nor the functions required to support SS7 access to AIN exist in the network today, SS7 access to AIN via the ONAP is not technically feasible today.

Q. What new functionality is needed to overcome the Routing/addressing limitations?

A. The capability exists today to route based on Translation Type. However, Translation Types are a limited resource. In an environment in which the goal is as many AIN Service Providers supported as possible, there will be too many service providers for each to have a unique Translation Type. Therefore routing -- specifically, identifying the correct service provider to which to route the call -- in this environment will require network capabilities which do not exist today.

Q. What new functionality is needed to overcome the Protocol Interworking limitations?

A. Existing protocols (AIN 0.1 and SS7/TCAP/ISUP) should be used for Open AIN interworking. It is important to note that protocol interworking addresses the protocol to be passed, but not the appropriateness of the values or messages for a given service provider. So, while no new protocols are required for Open AIN, there does exist a need for protocol/message screening functions that do not exist today.

Q. What new functionality is needed to overcome the Recording/billing limitations?

A. Presently it is completely appropriate in the TCAP protocol for the SCP to omit AMA parameters or to populate them with any values. Without the mediation point to validate responses, a third party could avoid billing or could cause billing to be assigned to the wrong accounts.

If BellSouth wants to charge service providers on a per query basis, and/or charge differently for different types of messages, network functionality is needed to record, in real time, the data necessary to bill each service provider. There are no existing network capabilities that fulfill this function.

Q. What new functionality is needed to overcome the Provisioning limitations?

A. Existing provisioning functions are not designed to support a multiple service provider Open AIN environment. BellSouth's experience with Carrier Identification Code (CIC) "slamming" indicates that a process is required to properly protect end users and third parties from similar practices in Open AIN. The Open AIN provisioning function must equip the network with the ability to allow service providers to control their own services and service specific customer data while ensuring that service providers and their service specific customer data remain

properly partitioned from one another. Additionally, the provisioning function may include features such as electronic ordering in lieu of the manual process of having to place a phone call to BellSouth.

Q. What new functionality is needed to overcome the Security limitations?

A. Security measures are an important part of many of the required mediation functions. Without the proper security functionality, a third party SCP connected directly to a BellSouth switch would have numerous opportunities to engage in fraudulent practices.

Q. Please give examples of such fraudulent practices.

A. The third party could activate/deactivate any trigger on the switch. This would mean that any third party who is interconnected in this manner could turn on or off services that are provided by another third party or by BellSouth.

The third party could control CIC codes on a real-time basis. This would permit a third party who provides an AIN service to an end user to override that end user's presubscribed interexchange carrier (IXC) without the end user's knowledge or consent.

The third party could modify parameters such as Charge Number, resulting in billing fraud.

The third party could send concentrated traffic to a competing service provider's route index in order to create congestion at the competitor's location, resulting in denial of service.

Q. What new functionality is needed to overcome the Network Management limitations?

A. The network as it exists today has limited capabilities to control traffic among multiple interconnected networks. For example, Automatic Code Gapping (ACG) is used to control overloads in AIN. If an SCP becomes overloaded, it will send ACG messages to the appropriate Service Switching Points (SSPs) requesting that the SSPs discontinue sending queries that originate from certain NPA-NXXs. An SSP cannot determine that it should control queries to only one service provider's SCP and let queries continue to originate to other SCPs. Instead, once ACG is invoked, the SSP will inhibit *all* messages that originate in the affected NPA-NXXs, and all service providers' services may be impacted.

Q. What new functionality is needed to overcome the Provisioning limitations?

A. The ability to measure and analyze maintenance traffic data on a per service provider basis does not exist today.

Q. What new functionality is needed to overcome the Fault Management limitations?

A. Although BellSouth currently has internal procedures for trouble detection, trouble isolation, and recovery, no procedures exist for performing these functions in the Open AIN environment with multiple third parties. Open AIN trouble resolution procedures are needed (e.g., who is the customer's first point of contact, how do the forces in each company contact one another to isolate troubles, etc.).

Q. What new functionality is needed to overcome the Protocol/message screening limitations?

A. Network capabilities exist today to identify protocol errors, such as inappropriate response messages, or a message being formatted incorrectly, but these capabilities are based on, and are limited to, what is conformant to the protocol. What does not exist today in the network is the capability to identify messages (or parameter values within messages) that conform to the protocol, but are capable of causing harm in the network.

An example is sending a route index value that does not match the value that BellSouth has provisioned for the service provider. Such a message would be correct and conform from a protocol perspective so

no existing capabilities would catch this. At worst, this could result in switches crashing, or trunks associated with the incorrect route index taken out of service. These trunks could be associated with other BellSouth access customers.

BellSouth uses and maintains route index values in its normal installation and maintenance processes. Presently these values are not distributed, coordinated or verified with outside organizations. A mediation point can be used to map the route index parameter values from the third party to values reflected in the BellSouth network. To support this parameter without mediation, BellSouth would have to make substantial changes to BellSouth's procedures. This is costly and error prone. Without a mediation point validating or mapping route index values there is a high probability of frequent service failures and the opportunity for deliberate or accidental denial of service, misuse of facilities and fraud.

Also, without new screening capabilities it would be possible for one third party to turn off the triggers for any subscriber line, including ones using another third party's services.

Q. What new functionality is needed to overcome the Feature Interaction Management limitations?

A. An example of a feature interaction is the conflict that can arise when an end user is subscribed to both AIN services and custom calling services that depend on Calling Party Number (CPN). The SCP has the ability to control the value of the CPN. If a third party's SCP were to alter the CPN from that of the originating caller, and then terminate the call to an end user who has subscribed to certain custom calling features, the custom calling features would not operate as designed. For instance, if the end user is subscribed to a calling number or calling name delivery service, the incorrect number/name would be presented. If the end user attempted to invoke a call return-type service, the call would not be returned to the intended caller.

Feature interactions could be reduced or eliminated in non-real-time by severely restricting the combinations of services that may be provisioned on an end user's line; however, this kind of restriction is highly undesirable. For the CPN example, a preferred alternative would be to provide a real-time screening mechanism that could restrict messages in which manipulation of CPN has occurred.

Q. Could BellSouth's concerns be satisfied through certification and contractual agreements?

A. No. Certification only validates a system at a single point in time. Once a system completes certification it begins evolving over time. Program changes will occur in the platforms and applications. The data

used by those programs will also change. The third party service provider will want the ability to make changes as often as is necessary to respond to market demand and innovation.

Each of these updates increases the likelihood that a significant failure will occur. Most of the highly publicized network failures over the past few years have occurred following a program update which introduced new problems.

No certification program can re-certify every software update. To attempt to do so would be costly and cumbersome for both the third party service provider and for BellSouth. Also, in the competitive environment of Open AIN, a third party service provider will not want BellSouth to know that a new service is being created until they start marketing it.

Certification also will not address the failures that can occur due to provisioning errors.

Thus, certification should be viewed as a supplement to, rather than a replacement for, real-time mediation.

Q. Please cite an example of how certification alone would not provide adequate safeguards.

A. During the provisioning process, BellSouth and a third party agree to certify allowable route index values. After the service is implemented, the third party begins sending a route index value that does not match the value that BellSouth has provisioned for them. Because such a message would be correct and conform from a protocol perspective, no existing capabilities would catch this. At worst, this could result in switches crashing, or trunks associated with the incorrect route index being taken out of service. These trunks could be associated with other BellSouth access customers. Only real-time mediation can adequately screen out improper parameter values such as route index.

Q. Please summarize BellSouth's position on the technical feasibility of unbundled AIN access.

A. Access to AIN network elements is not technically feasible. BellSouth has identified ten different functions required to support unbundled access to AIN that currently cannot be supported. Even with the development of this new functionality, mediated access to AIN elements will still be required. The mechanism for mediated access (the Open Network Access Point) has likewise not yet been developed.

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. I will discuss two such 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. Please discuss BellSouth's position regarding the amount of space in conduits or poles it should be allowed to reserve for its own uses.

A. BellSouth's position is that it is entitled to reserve in advance five year's worth of capacity for itself. BellSouth has agreed to provide AT&T equal and non-discriminatory access to poles, duct, conduit (excluding maintenance spares), entrance facilities, ROW under its control and not required by BellSouth in its 5-year forecast. Such equal and non-discriminatory access shall be on terms and conditions equal to that provided by BellSouth to itself or to any other party. Such access shall

not include BellSouth's maintenance spares, nor shall it include mandatory conveyance of interest in real property involving third parties.

Q. What has AT&T proposed regarding the amount of conduit or pole capacity that BellSouth should be entitled to reserve for its own uses?

A. AT&T has requested that BellSouth reduce its allocation to one year's requirement.

Q. Does BellSouth agree with AT&T that BellSouth's reserved conduit and pole capacity should be reduced to that required for one year?

A. No. BellSouth's planning and construction program is forecast for five (5) years for budgeting, growth forecasting and construction program planning. This is reviewed annually and revised appropriately. This planning window reflects long held industry practices that pre-date the 1984 Divestiture. In negotiations, AT&T admits that they use the same five year standard with annual updates. Foregoing BellSouth's five year planning cycle will have adverse budget and growth impacts.

AT&T has requested access to any available structure space, including BellSouth's maintenance spares not used within twelve months. BellSouth refuses to give access to its maintenance spare at any time. Reserving a maintenance spare is another standard

telecommunications industry practice. A spare cell is reserved for emergency restoration situations, testing new cables, etc. Extensive delays in service restoration will be experienced if the maintenance spare is forfeited.

BellSouth has no way of guaranteeing the maintenance needs for its emergency cell for only twelve months after AT&T's request for occupancy. AT&T had readily admitted during negotiations that they, too, retain a maintenance spare in their own structures for their emergency needs and would not be willing to allow it to be used by other utilities.

AT&T has not requested the reservation of one year's capacity for AT&T's needs. BellSouth's response would be, however, that BellSouth will provide available space on a first come, first served basis under the terms and conditions outlined above. This could result in needless expenditures for construction (materials and labor) of facilities that may or may not ultimately be used. Also, it would imply that BellSouth would be required to physically monitor any space that AT&T has reserved to make sure that no other company attached in that reserved space. The 1996 Telecommunications Act does not require BellSouth to reserve space for ALECs in these facilities for future ALEC needs.

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". BellSouth has agreed to provide AT&T with structure occupancy information regarding conduits, poles, and other right-of-way requested by AT&T within a reasonable time frame. BellSouth will allow designated AT&T personnel, or agents acting on behalf of AT&T, to examine engineering records or drawings pertaining to such requests that BellSouth determines would be reasonably necessary to complete the job. In negotiations, AT&T has said it has been satisfied with BellSouth's coordination and cooperation on structure access situations. Additionally, in negotiations AT&T said that it would not be willing to give BellSouth copies of their plats in a reverse situation. Plats and detailed engineering records are considered proprietary information. If BellSouth were to provide plats and engineering records to AT&T, BellSouth would be obligated to provide these types of records to all parties upon request.

Q. Please summarize your testimony.

A. BellSouth has demonstrated that for three network elements (NID, Distribution Media and Concentrator/Multiplexer) there is no technically feasible method of providing the access that AT&T has requested given

existing capabilities in the operations support systems used to assign and inventory network facilities. Until such time as these operations systems are enhanced to allow such automatic assignment and inventorying, intensive manual intrusions into the assignment and inventory systems would be required which would lead to unreliable records as well as costly, inefficient provisioning maintenance processes and procedures.

In the case of four other elements (Local Switching, Operator Systems, Dedicated Transport and Common Transport) BellSouth will provide the capability. There is, however, using available network resources and capabilities, no technically feasible method of providing the selective routing capability in the "real world" of multiple local exchange companies who would each demand the same capabilities. The issue of selective routing is not limited to Florida but is instead an industry limitation, national in scope. Any technical solution must work in a variety of situations with a variety of service providers and their variety of equipment and their variety of network configurations. It is BellSouth's understanding is that AT&T has proposed this issue to the Industry Carriers Compatibility Forum (ICCF) for resolution. BellSouth agrees with AT&T that a national forum such as the Industry Carriers Compatibility Forum is the vehicle which has the necessary expertise to successfully resolve this complex issue. The Commission should defer this issue to the ICCF for resolution.

In the case of one network element (Loop Feeder) BellSouth has shown that the functionality requested by AT&T may be obtained via BellSouth's existing tariffs without the need for network unbundling.

BellSouth has demonstrated that access to AIN network elements is not technically feasible. BellSouth has identified ten different functions required to support unbundled access to AIN that currently cannot be supported. Even with the development of this new functionality, mediated access to AIN elements will still be required. The mechanism for mediated access (the Open Network Access Point) has likewise not yet been developed.

Q. Does this conclude your testimony?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF KEITH MILNER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960846-TP

SEPTEMBER 9, 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. I have served in this role since February, 1996 and have been involved with the management of certain issues related to local interconnection and unbundling.

Q. Please summarize your background and experience.

A. I graduated from Fayetteville Technical Institute in Fayetteville, North Carolina in 1970 with an Associate of Applied Science in Business Administration degree. I also have a Master of Business Administration Degree from Georgia State University in Atlanta, Georgia. I am also a member of Beta Gamma Sigma, the national honor society for business school graduates.

My business career spans 26 years and includes responsibilities in the areas of network planning, engineering, training, administration and operations. I have held positions of significant responsibility with a local exchange telephone company, a long distance company and a research and development laboratory. I have extensive experience in all phases of telephonic network planning, deployment and operation (including research and development) in both the domestic and international arenas.

I began my career with Southern Bell (now BellSouth) in 1970 as a Traffic Engineer for switches in North Carolina. My responsibilities included planning and switch engineering and for providing network administrative staff support. In 1974, I was assigned to Southern Bell Company Headquarters in Atlanta, Georgia where I provided technical support to network administration groups. I was also part of a team that implemented mechanized data collection and processing systems (Total Network Data System) used by Network personnel throughout Southern Bell. I joined Southern Bell's technical training organization where I developed and delivered technical training to managers in the Network Department. I was concurrently responsible for curriculum planning for administration and engineering job disciplines. In 1978 I joined Southern Bell's Engineering Department in Miami, Florida where I managed a group of management network design engineers. Based on my extensive knowledge of mechanized support systems, I formed and

led a new group responsible for planning and implementing all Operations Support Systems in South Florida. In 1981, I joined Southern Bell's Network Operations Department where I led an operations center responsible for installation and maintenance of central office equipment for special services, message trunking and digital carrier systems in large metropolitan switching centers in the South Florida Area. I also managed a group which provided switching system administration, service analysis and performance monitoring for a major portion of South Florida. In 1982 I joined AT&T as part of its Divestiture Planning Team in Basking Ridge, New Jersey. I served as Technical Expert for switching network planning and engineering. This team developed and implemented intercompany contracts representing about $1 Billion per year in contract billing between AT&T and the Operating Companies. Upon Divestiture in 1984, I joined Bell Communications Research as a Member of Technical Staff and was responsible for systems engineering for digital switching systems (Lucent Technologies 5ESS and Nortel DMS-100). I developed computerized engineering and administration tools. I also developed and conducted load capacity and regression analyses to determine switch performance with various methods of load and computer memory management. During that assignment I won the Bell Communications Research Award for Excellence for my research in digital switching technology.

In 1986 I returned to BellSouth in Atlanta, Georgia where I joined the Network Planning and Engineering Department. I developed and led the New Service Planning and Network Architecture Planning Group. This group was responsible for financial and technical evaluations as well as funding and deployment coordination. In 1993 I joined BellSouth International as Associate Director for Operations. In this role I was responsible for business planning and implementation activities for national and international long distance markets. I was responsible for regulatory and interconnection planning activities in BellSouth's successful bid for a long distance license in Chile. I served as a key member of that implementation team. In 1994 I returned to BellSouth Telecommunications, Incorporated as Director - Access Customer Advocate Centers. In this role I directed the implementation and operation of three customer operations centers for key access customers (AT&T, MCI, and all Wireless Customers). I led a large team of managers and technicians which provided provisioning and maintenance of switched and special access services across a nine-state region.

Q. Have you testified previously before any state public service commission; and if so, briefly describe the subject of your testimony.

A. I have testified before the state Public Service Commission in Georgia on the issue of technical capabilities of the switching and facilities

network regarding the introduction of new service offerings, expanded calling areas, etc.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to discuss the technical feasibility of unbundling certain network elements as requested by MCI. The following discussion is based on my understanding of MCI's request as described in MCI's Petition For Arbitration in this proceeding. I may, in the future, provide testimony in response to MCI testimony in this proceeding.

Specifically, I will address the eight (8) network elements for which no agreement between BellSouth and MCI has been reached. BellSouth believes that these eight network elements are either (1) available at present via BellSouth's tariffs or (2) cannot be made available because there is no technically feasible method of providing such unbundling. I will address the network elements in the following list:

Network Interface Device
Loop Distribution Media
Loop Concentrator/Multiplexer
Loop Feeder
Local Switching
Operator Systems

Dedicated Transport

Common Transport

Additionally, MCI 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.

Finally, MCI has raised two issues that are procedural in nature. The first issue concerns BellSouth's providing copies of engineering records that include customer specific information with regard to BellSouth poles, ducts and conduits. The second issue \concerns the amount of capacity that is appropriate for BellSouth t o reserve with regard to its poles, ducts and conduits. I will also address these issues.

Since the issues named above were raised in MCI's petition for arbitration have been previously addressed in earlier testimony, I would like to adopt by reference my Direct Testimony with exhibits filed August 12, 1996, in Florida Docket No. 960833-TP and my Rebuttal Testimony with exhibits filed on August 30, 1996 in Florida Docket 960833-TP.

Q. Does this conclude your testimony?

A. Yes.

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

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.

BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL TESTIMONY OF KEITH MILNER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960846-TP

SEPTEMBER 16, 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 September 9, 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. Drew Caplan of MCI. Specifically, I will

address the network elements for which no agreement between BellSouth and MCI has been reached. Those elements are:

- Network Interface Device
- Loops using Integrated Digital Loop Carrier
- Local Switching
- Operator Systems

Additionally, because MCI 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.

Since the issues named above were raised in MCI's petition for arbitration have been previously addressed in earlier testimony, I would like to adopt by reference my Rebuttal Testimony with exhibits filed September 23, 1996, in Florida Docket 960833.

Q. Does this conclude your testimony?

A. Yes.

BY MR. LACKEY:

Q Do you have a brief summary of your testimony, Mr. Milner?

A Yes, I do.

Q Could you please give it?

A Yes. Good afternoon, Commissioners, I'm Keith Milner, and I'm here today to discuss some of the technical issues in this proceeding. The FCC's order requires BellSouth to provide network elements in those cases where providing them is technically feasible. AT&T and MCI have requested that BellSouth provide access to certain unbundled network elements. BellSouth will provide some of those elements but cannot provide other network elements because there is not a technically feasible method by which to provide them.

Q Mr. Milner, let me interrupt you. You are going to have the court reporter have a stroke here. You need to slow down just a tad.

CHAIRMAN CLARK: Yeah, brief doesn't mean fast.

WITNESS MILNER: Brief doesn't mean fast. I apologize.

MR. LACKEY: Yeah, I said brief; I didn't say quick.

WITNESS MILNER: I apologize. If I go too slowly, correct me on that too please.

BY MR. LACKEY:

Q Ready.

A Okay.

Q Don't start over again. Pick up where you left off.

A Oh, I will not.

Through this arbitration proceeding, AT&T and MCI have requested that this Commission order BellSouth to provide those network elements for which no agreement has been reached. At the very core of each and every one of these disagreements are the very different views held by BellSouth, AT&T and MCI regarding the proper definition of technical feasibility. I have cited additional criteria that should be considered along with the FCC's definition of technical feasibility that together would make the FCC's definition workable.

These criteria, relating to technical and operational concerns, are intended to explain, not replace, the FCC's definition. Rather than rely on an overly broad definition of technical feasibility, based on theoretical assumptions and speculations of what might or might not exist in the future, BellSouth supports a definition of technical feasibility based on the workability of existing or planned capabilities that will function properly and will provide high quality affordable customer service in

the real world of local competition that very soon will exist.

BellSouth, therefore, believes that this Commission should deny the requests for the network elements requested, for which agreement has not been reached, for a request for unbundling are at issue here today. First, the FCC offered what BellSouth believes to be a reasonable solution that allows AT&T, MCI and others access to the inside wire at a customer's premises. The FCC provided a method of connecting a new entrant's network interface device to the BellSouth network interface device in such a way as to provide access to the inside wire without disruption to the remainder of the BellSouth loop, and more importantly, without creating a risk of personal injury or property damage.

My understanding is that MCI has agreed to this form of interconnection. AT&T, on the other hand, has requested further unbundling of the network interface device. While AT&T has not suggested any method by which any other form of unbundling of the network interface device might be accomplished, AT&T wants this Commission to trust them that no harm would result and to order BellSouth to allow this further unbundling in addition to that required by the FCC's order. BellSouth believes this Commission should deny AT&T's request.

Second, MCI has requested that the loop itself be dismembered such that loop distribution, the last mile, is made available as a separate element. BellSouth has explained that the operation support system resources required to accomplish this further unbundling are not available at present and that a fundamental modification or perhaps even a replacement of those systems would have to be completed in order to accommodate this further unbundling. BellSouth is working with the computer software developer, Bell Communications Research, to determine how to make these changes. Instead, however, MCI asks this Commission to trust them, that such modifications are minimal in nature, that no harm will result, and as a result, to order BellSouth to provide for this further unbundling. Here again, BellSouth believes this Commission should deny MCI's request.

Third, AT&T and MCI request that this Commission order BellSouth to provide the selective routing capability to them, or customized routing as referred to in the FCC's order. You may recall that selective routing would allow AT&T or MCI customers, for example, who dial zero minus or 411 to reach AT&T or MCI operators instead of BellSouth's operators. Several alternatives have been discussed extensively, including the so-called line class code method. BellSouth and AT&T looked at four different ways

to accommodate selective routing; however, none of these alternatives, using available and planned resources, would allow for more than only a very few new entrants to enjoy the benefits of selective routing. The remainder of the new entrants would not be able to have this capability at all. BellSouth believes this Commission should deny this request and while allowing work to proceed in a national forum, such as Industry Carriers Compatibility Forum, or ICCF, that seeks a permanent solution to the selective routing issue. BellSouth and AT&T are co-chairing the ICCF group working on this issue.

Fourth, AT&T and MCI have requested access to BellSouth's advanced intelligent network in such a way that both intentional and unintentional disruption of the network are possible. Modern telecommunications networks are complex arrays of computer systems. Just as personal computers need protection from computer viruses, telecommunications networks need protection from disruption. To prevent such disruption, BellSouth has asked that computer software referred to as mediation devices be put in place. Examples of these devices include BellSouth's design edge and port edge services being tested now and BellSouth's proposed open network access point or ONAP product. Once again, this Commission is asked to trust AT&T and MCI that such disruption would not occur and

to order BellSouth to allow direct access to its advanced intelligent network without such protective devices. BellSouth believes this Commission should deny this request.

To conclude, BellSouth has relied on the FCC's definition of technical feasibility as relating to technical and operational concerns and as explained by the criteria which BellSouth believes are required to make the FCC's definition workable in the real world of local competition that very soon will come into being. BellSouth is rightly concerned with the consequences of any misguided unbundling requirements based on purely theoretical speculative claims because of BellSouth's concerns for the continued affordability and availability of high quality reliable telephone service to all Florida consumers. BellSouth is also concerned about impacts which may effect the physical safety of our customers and employees.

Finally, much has been said in these proceedings regarding the transition now underway in the telecommunications industry. Transitions involve moving from one environment to another. With time and effort, that which is not feasible today may become feasible. Computer systems are changed or replaced, new technology is developed, and new techniques are identified in testing. Working together, many of the problems we have discussed

can and will be overcome. BellSouth has been and remains committed to being a part of that cooperative effort. Thank you for your attention. That concludes my summary.

MR. LACKEY: Mr. Milner is available.

MS. McMILLIN: No questions.

MS. AZORSKY: Madam Chair, I need to enter an appearance. My name is Tammy Azorsky on behalf of AT&T.

CHAIRMAN CLARK: Go ahead, Ms. Azorsky.

CROSS EXAMINATION

BY MS. AZORSKY:

Q Mr. Milner, can you describe for me the difference between an ESSX loop and a CENTREX loop?

A I'll try. ESSX is BellSouth's brand name for CENTREX, so I don't believe there is a difference between those terms. Let me also add though, I'm not sure there is such a thing as either a CENTREX or an ESSX loop since ESSX service may -- I mean the loop, the ESSX or the CENTREX capability is a function of the switch, not of the loop. So the loop itself doesn't deliver that capability that we refer to as either CENTREX or ESSX.

Q Okay. Does an ESSX loop look different than a loop serving a residential single line?

A Not to my knowledge. I mean it would be either a 2-wire loop or a 4-wire loop or, you know, whatever was required.

Q All right. Were you here when Ms. Caldwell testified?

A Yes, throughout most of that, not all.

Q All right. Do you recall that she referred to ESSX loops that served four correctional institutions?

A Yes, I was here.

Q I'm showing you a copy of what is exhibit --

MR. HATCH: 72.

Q Thank you. And if you'd turn to page 5 of that exhibit, near the end of the paragraph Titled Statement of Facts, you will see a reference to Brevard Correctional Institution.

A Yes.

Q Do you know where that is located?

A Thankfully, no, I don't.

Q Okay. How about Dade Correctional Institution?

A Again, I'm not familiar with that. I presume it's in Dade County.

Q All right. How about Everglades or Washington?

A I have absolutely no idea.

Q Okay. Would you agree with me that correctional institutions generally are located in more rural or less populated areas?

A Not necessarily. I mean, and I probably shouldn't note this, but Atlanta Federal Penitentiary is

pretty close to Downtown Atlanta.

Q All right, that is fair.

Would you agree with me that in rural areas loops are generally longer than they are in urban areas?

A Yes, generally, I'll have to agree.

Q Mr. Milner, will you please refer to page 9 of your testimony?

A Yes.

Q And exhibit -- what has been named exhibit 91 for this hearing and the pages of that that were previously identified as exhibit number WKM-2?

A Yes.

Q You state in your testimony that WKM-2 shows a functional schematic of a typical residential NID; is that correct?

A It shows, you know, one of a variety of NIDs or NIDs that might be used, yes, and it's typical.

Q Okay. And is it your testimony then that WKM-2 does not show what is a typical residential NID?

A It shows the basic functionality or the basic components of a NID, so in that regard it is typical. There are several different types of NIDs that are used based on the number of loops that need to be terminated at a customer's premise or house.

Q Okay. Now the schematic that you attached to

your testimony and identified as a typical residential NID shows spare capacity; is that correct?

A The drawing shows that, yes, although in practice there generally is not spare capacity.

Q Okay. Are you familiar with the FCC order on local competition?

A If you --

Q The FCC order we have been discussing throughout this hearing?

A Yes.

Q When BellSouth provided comments during the consideration of that rulemaking, did BellSouth provide this same schematic to the FCC?

A No, we did not.

Q Assuming for a moment, Mr. Milner, that a network interface device on a house looks exactly like what you have depicted in your schematic and a telephone company attached to the spare capacity in that network interface device, would BellSouth's loop remain grounded?

A In that example it would be; but again, let me add that the NID is sized relative to the number of loops that are to be terminated to that house. If the drop has four pairs, then a four-pair -- a four-loop NID is installed. If six loops are to be terminated, then a six-loop. If only two-pair is a two-pair loop -- NID.

Q Mr. Milner, when you were giving your summary, you referenced the Industry Carrier Compatibility Forum. When the ICCF considers issues, does it face any time constraints?

A Not to my knowledge, no.

Q Okay. Do both incumbent local exchange companies and those seeking to enter the market participate in ICCF activities?

A To my knowledge ICCF is open to any of those companies, and a good number of companies represented in this room are members of ICCF.

Q Okay. The issue that you discussed as selective routing, which the FCC order calls customized routing, would you agree with me that a decision on customized routing effects routing to operator services, directory assistance, local switching and dedicated and common transport as AT&T has defined them?

A Yes, it has.

Q Okay. It also effects the branding that AT&T is requesting, doesn't it?

A Yes, it effects it to the extent that customized routing or selective routing is required to enable that branding, if that's clear. In other words, without selective routing there cannot be the type of branding that AT&T has requested.

Q In exhibit 91, Mr. Milner, the two pages that were previously identified, exhibit number WKM-11, include two letters, one from Lucent Technologies and one from Nortel?

A Yes.

Q What question did you ask those companies in order to receive those letters?

A The question was whether or not there was some switch-based capability other than the use of line class codes which could provide selective routing. The question in general was, Do you know something other than line class codes that would accommodate AT&T's request?

Q Okay. So you did not ask those companies whether using line class codes you could accommodate AT&T's request?

A No, because we felt that the capability of line class codes was fairly clear from the documentation that the vendors produce.

Q Okay. You are not contending, are you, Mr. Milner, that these switches in BellSouth's network are incapable of customized routing using line class codes?

A That's correct, I'm not saying that. I'm saying that our position that selective routing is not technically feasible is based on the fact that the resource, such as line class codes, is not cable of providing that selective

routing for more than a very few companies that would request it.

Q Okay. Let's talk for just a moment about your conclusions regarding exhaustion of line class codes or your notion that the switches wouldn't support this methodology for more than a few entrants into the market. In reaching those conclusions, did you assume that each new entrant to the market would request customized routing to its own operator services platform?

A Repeat the question.

Q Did you assume that each new entrant into the market would request customized routing to its own operator services platform?

A Well, we didn't make that assumption, instead the study was a function of how many requesting companies could be accommodated with that resource. No, we made no assumptions about how many would.

Q Okay. Did you assume that each new entrant would use the same number of line class codes that BellSouth currently uses?

A Yes, we did. In fact, we discussed that issue with AT&T on several cases -- on several occasions and was given that indication, that, yes, AT&T would use the same number, that we could use that as a planning assumption. Further, we corroborated that with other companies who gave

us the same.

Q Assume for a moment, Mr. Milner, that AT&T only wanted to offer five classes of service. Could it offer those five classes of service with customized routing to its own operator services platform using only five line class codes?

A Yes, it could do that, but on the other hand, AT&T has said in these proceedings and others that it intends to resell all of BellSouth's current services, including grandfathered services.

Q How many line class codes is BellSouth currently using?

A Well, that is a function of the switch type. It's a function of the switch itself in that the number of classes of service effects that usage, the number of rate areas served by the switch, the number of optional calling plans, a number of factors, so there is not a set number. We have used the number somewhere between 300 and 350 in the case of the DMS-100 as being fairly representative.

Q Okay. Now is each of those 350 line class codes associated with a type of service?

A No, each of the 350 is associated with a class of service that also has other attributes, such as optional calling plans, toll restriction and things like that. For example, a one party flat rate class of service may have

four or five dialects, if you will, of that. One party flat rate that has optional EAS, one party flat rate that does not, one party flat rate that has toll restriction, so on and so forth. So one class of service may consume a number of different line class codes based on the treatment that you want.

Q Mr. Milner, is it possible for you to provide a list of the purposes for which BellSouth uses line class codes?

A BellSouth has previously provided to AT&T, a list of things that consume line class codes. We provided that, if memory serves, back in May or June, not specifically that a particular line class code was used with a certain class of service, but we did provide information that said these are the consumers of line class codes, if that's what you're after.

Q What I'm after, Mr. Milner, is the types of things that BellSouth uses line class codes for. Can you provide such a list as a late-filed exhibit to this proceeding?

A I can provide the same information that we provided to AT&T earlier, yes.

Q Well, what I'm interested in is the types of functions that you use line class codes for, and I'm not sure that you are answering the same question. Am I asking

something different than you are asking?

MR. LACKEY: Perhaps we need to get a clarification. Does she want to know that residential 1-FR service uses the class code, residential 1-FR service with EAS uses a line class code? Is that what we are talking about, every possible combination of our services that would require a line class code?

MS. AZORSKY: That is exactly what I'm asking for, Madam Chair.

CHAIRMAN CLARK: Mr. Milner, is that the thing you provided back in May?

WITNESS MILNER: No, Madam Chairman. What we provided to AT&T earlier was a more generic answer that said, These are the things that require the use of additional line class codes. What AT&T's counsel is asking for, I believe, would be a very exhaustive study that says on a switch by switch basis take all of those and determine how you use them.

MS. AZORSKY: No, I'm not asking on a switch by switch basis but just a representative list. I mean you have used an average of 350; I would expect a list that would include at least 350 uses to which line class codes are put. I mean the issue is exhaust, and Madam Chair, it seems to me that such a list could be useful in determining that issue.

CHAIRMAN CLARK: Well, Ms. Azorsky, I'm not clear what you're asking about, and I'm not clear that he understands, and that is all we are trying to do at this point.

MS. AZORSKY: Okay. We are asking for exactly what Mr. Lackey described, and I think he understands exactly what I'm asking for, which is the types of services with whatever modifications that each of those line class codes are used for, not on a switch by switch basis, but just the listing of the types of things that they are used for, and I shouldn't say the types, the things they are used for specifically.

MR. LACKEY: You know, I'm not a line class code expert, but I have a recollection that like in a 5AESS, whatever it is, we may use a thousand or 15 hundred of these things. I mean it's just whatever possible combination of services you'd get, wouldn't it?

MS. AZORSKY: Mr. Lackey, is not a witness in this proceeding.

MR. LACKEY: Well, but I need to understand.

CHAIRMAN CLARK: Well, Ms. Azorsky, we are trying to figure out just what you want, and you thought he knew what you wanted.

MS. AZORSKY: Okay.

CHAIRMAN CLARK: Let me do this. We will leave

that pending for a while. When we take a break, we'll let you all discuss what it is you might want, and we will identify it as a late-filed exhibit rather than spend the time on the record trying to figure it out. We will take a break and you all can get together and decide what it is.

MR. LACKEY: That's fine.

CHAIRMAN CLARK: Do you have any more questions?

MS. AZORSKY: Thank you, Madam Chair.

BY MS. AZORSKY:

Q Mr. Milner, are you aware that the Illinois Commerce Commission in ICC Docket Number 95-0458 required customized routing to a reseller's operator services, directory assistance platform?

A Yes, but my understanding of that is that it is not what AT&T and MCI have requested in this proceeding.

MS. AZORSKY: Madam Chair, I would like to request official recognition of that order which was attached as attachment 6 to AT&T's petition in this proceeding.

CHAIRMAN CLARK: What is the order again?

MS. AZORSKY: Illinois Commerce Commission order in Docket Number 95-0458.

CHAIRMAN CLARK: Right. Is that the same, is that the number they use when they issue the order?

MS. AZORSKY: Yes, ma'am.

CHAIRMAN CLARK: Okay. We will take official recognition of that order.

BY MR. AZORSKY:

Q Are you aware, Mr. Milner, that Southern New England has agreed to provide customized routing using line class codes?

A That is my understanding, subject to the same limitations that we have named here, that the resource would be exhausted at some point and that new companies that requested that capability would not have access to it.

Q Are you aware that Southwestern Bell has agreed to provide customized routing using line class codes and on switches that can't accommodate line class codes using the advanced intelligent network?

A My understanding, again, is that they have agreed to that subject to the recognition that that capability is only available to certain companies, a very few, using line class codes; and further, that as we sit here, they do not have an AIN solution but have committed to develop one.

Q Are you aware that Bell Atlantic in Pennsylvania has agreed to use customized routing using the advanced intelligence network?

A I understand that they have an advanced intelligent network solution for only some of their switches, I believe only the DMS-100s and the 5ESS, that

they still have development for some other method for the other switches; further, that as we sit here, they have no AIN solution but, again, have only committed to develop one.

Q And are you aware that GTE has agreed that routing to AT&T's operator services directory assistance platform is technically feasible?

A Again, subject to the limitations of the uses of line class codes that we have already talked about, that is, that only a very few number of companies can have that capability, and someone will have to decide later on what to tell those companies that can't have that capability.

Q And is it your understanding, Mr. Milner, that the digital switches used by those companies have pretty much the same capabilities as the switches here in Florida?

A The digital switches? I'll accept that, yes.

Q I would like to turn to the advanced intelligence network.

A Okay.

Q BellSouth is not opposed to unbundling its advanced intelligence network is my understanding; is that correct?

A That is correct.

Q What you are proposing is a mediation device, and you've given a couple of names to it, design edge, port

edge or open network access point; is that correct?

A Yes, that is correct.

Q Okay. Now that device, regardless of which one you use, would increase post dial delay, wouldn't it?

A Not for all of them. Design edge and port edge are service creation tools that are not involved in call processing; that is, they develop services that would be loaded on devices called service control points, so they are not in -- design edge and port edge are means of developing new services. So as a result, since they are not involved in call processing, they in no way add to post dialing delay.

Q And those two items, design edge and port edge, could be used as the mediation devices that you were discussing in your summary; is that --

A Partially. They -- again, that only effects the sort of mediation that is required to create services during the actual call processing, and I think this gives the question you asked about post dialing delay a different sort of mediation, and that is the device we referred to as open network access point, or ONAP, would be engaged to protect the operation of BellSouth's network from information that was housed in AT&T's data bases.

Q Okay. And this open network access point does involve a separate step in the network and would increase

post dial delay; is that correct?

A It will increase post dialing delay. There is a good amount of controversy about what the amount of that delay would be, and more importantly, I believe, whether any additional delay is detectable in human terms or not.

Q Okay. Now this access point, open access network point doesn't exist in the signaling system that BellSouth has today; is that correct?

A That is correct.

Q And as I understand it, BellSouth is proposing that its competitors' customers' calls would have to pass through that access point, but that BellSouth's customers' calls would not; is that correct?

A No, that is not correct. That is correct only to the extent that those services that you refer to as AIN services are resident on someone's AIN devices other than BellSouth's. That is, generally that information is housed in a data base referred to as a service control point. If that service control point is owned and operated by AT&T, for example, then, yes, BellSouth expects that its network be protected from that information through some mediation device. So it's not a question of whose customer it is; it's a question of who owns and operates the data base that gives call routing instructions.

Q So if an AT&T customer is using a data base

because of a new service that AT&T has created, that customer's call would pass through this access point?

A That's correct, both AT&T's customers and BellSouth's customers using that feature would pass through that open network access point, yes.

Q But if it is a service that BellSouth has created, the customer would not pass through that access point; is that correct?

A That is correct, because BellSouth believes that BellSouth's switches and signal transfer points do not need protection from BellSouth data bases.

Q Okay. Are you aware that Southwestern Bell has agreed that any mediation device inserted into the advanced intelligent network system would be applied to all users of the system, including those using data bases created by Southwestern Bell?

A No, I'm not aware of that.

MS. AZORSKY: Okay. I have no further questions.

MR. HORTON: No questions.

CHAIRMAN CLARK: Staff.

MS. CANZANO: We just have a couple.

CROSS EXAMINATION

BY MS. CANZANO:

Q Good evening, Mr. Milner.

A Good evening.

Q If the Florida Public Service Commission requires BellSouth to use line class codes, do you believe that this Commission should allow BellSouth to reserve some of those codes for its future use?

A Yes, I do. Line class codes used by BellSouth will benefit not only BellSouth customers but any customers of AT&T's or MCI's that are provided on a resale basis. AT&T and MCI and any other company can resell any future service that BellSouth Telecommunications develops, and so to the extent that line class codes are required for those services, both BellSouth customers and AT&T and MCI customers enjoy the benefit of that.

Q If that is the case, in your opinion then, how much should BellSouth be allowed to reserve?

A I've never thought of it in those terms. I don't have a recommendation, I'm sorry.

Q Staff has made a copy of your deposition transcript and marked it WKM-2. Have you had a chance to review that document?

A Yes, I read it last night in fact.

Q And you have provided staff with an errata sheet which staff is now distributing and has already handed you a copy of that errata sheet, and with those changes, are there any -- is this document true and correct to the best of your knowledge?

A Yes, it is.

MS. CANZANO: At this time staff requests that WKM-2 be marked for identification as an exhibit.

CHAIRMAN CLARK: We'll mark the deposition and errata sheet as exhibit 92.

(SO MARKED EXHIBIT 92)

MS. CANZANO: Thank you.

BY MS. CANZANO:

Q And Mr. Milner, you have provided Late-filed Deposition Exhibits 1 through 5. Have you had a chance to review those documents?

A Yes, I have.

Q And are they true and correct to the best of your knowledge?

A Yes, they are.

Q Staff notes that these are confidential documents and staff has prepared a yellow sheet called WKM-3.

A Yes.

MS. CANZANO: And we would like to request that this be marked for identification as an exhibit.

CHAIRMAN CLARK: Ms. Canzano, I have, you've titled it late-filed deposition exhibits 1 through 3. Do you mean 1 through 5?

MS. CANZANO: It should be 1 through 5, I'm sorry for that typographical error.

CHAIRMAN CLARK: All right. Then we will mark that as exhibit 93.

MS. CANZANO: Thank you.

And thank you, Mr. Milner. Staff has no further questions.

CHAIRMAN CLARK: Redirect.

MR. LACKEY: Just a couple of things please, Madam Chairman.

REDIRECT EXAMINATION

BY MR. LACKEY:

Q Mr. Milner, do you recall a few moments ago when you and the attorney for AT&T were talking about mediation?

A Yes.

Q Did you understand that the issue was how much post dial delay was involved?

A That's one consideration, yes.

Q Do I understand that there is a debate about whether its even detectable by human beings?

A Yes, there is a fairly significant difference in opinion between AT&T and BellSouth as a result of some joint testing that they conducted in an attempt to determine the need for mediation, and there is quite a difference on two points: One, the amount of post dialing delay that would actually be introduced by mediation; and secondly, and more importantly, I believe, whether frail

humans like myself can detect the difference of a tenth of a second perhaps in post dialing delay with or without mediation.

Q Okay. Let's talk about line class codes just for a moment. If I recall correctly, you mentioned the figure of 350 line class codes being used in association with the DMS-100; is that correct?

A Yes.

Q Can you recall how many line class codes, slash, line attributes a DMS-100 can handle?

A At present that capacity is 1024.

Q Okay. Now if AT&T wished to come into our service area where that DMS-100 is located and replicate resell every service that BellSouth currently offered to its customers in that area, how many line class codes would they need?

A They would need 350 in addition to the 350 already used.

Q All right. If MCI then came in and wanted to replicate every service that AT&T and BellSouth are now offering in that area, how many would they need?

A Well, they would need the same 350; however, the 1024 would not accommodate MCI's request.

Q And if the Nancy White Telephone Company showed up the next day and wanted to offer all the services that

the big boys and girls are offering, AT&T, MCI and BellSouth, how many would they need?

A Well, they would need 350. Unfortunately, the Nancy White Telephone Company would not be able to have that capability because the resource is already exhausted.

Q And suppose the Public Service Commission decided to have an additional EAS offering in that area after the BellSouth, MCI and AT&T local exchange companies had gotten all the line class codes they needed, how would we implement this new extended area service plan in that area?

A Well, it would not be implemented, and I hope someone other than me would come back and tell the Commission that.

Q And why is that?

A Well, I mean it simply could not be accommodated because the resource has been exhausted.

COMMISSIONER DEASON: Mr. Lackey, are you conceding that we can order EAS than this --

MR. LACKEY: As long as the line class codes are exhausted, yes.

BY MR. LACKEY:

Q Now different switches have different line class code capacity; is that correct?

A Yes, that's true.

Q Is the 350 line class codes representative of all

switches or just the DMS-100?

A No, that's representative of the consumption in the DMS-100, but it varies widely by switch type. As an example, there are a number of 5EASS switches that consume well over a thousand of those line class codes.

Q And how many are available in a DMS -- I'm sorry, in a 5E?

A In the 5ESS there is a capacity of 4096 at present.

Q So the fifth new entrant there who wanted to duplicate the services, would there be line class codes available for them?

A No, there would not be.

MR. LACKEY: That's all I have. Thank you, Madam Chairman.

CHAIRMAN CLARK: Thank you. What I would like to do is go ahead and get the last witness --

MS. WHITE: Mr. Atherton.

CHAIRMAN CLARK: -- Mr. Atherton on the stand, and if I can ask the people that need to consult with Mr. Milner to see if you can develop what you need in the way of a late-filed exhibit.

MS. AZORSKY: Madam Chair, I think I have a suggestion that might resolve it.

CHAIRMAN CLARK: Okay.

MS. AZORSKY: Which is AT&T would like to have a list of the purposes for which the line class codes are used in one 5ESS and one DMS-100, and we would leave that selection choice, as long as it is a representative choice, to BellSouth.

MR. LACKEY: I've got to ask Mr. Milner. I've got no problem with it, but then I won't have to gather it.

WITNESS MILNER: That could be done.

MR. LACKEY: Pardon?

WITNESS MILNER: That could be done.

MR. LACKEY: That's fine with us, Madam Chairman.

CHAIRMAN CLARK: All right. Give us a title again, a list of class codes available --

MS. AZORSKY: The purposes for which line class codes are used in one representative 5ESS switch and one representative DMS-100 switch.

CHAIRMAN CLARK: Okay. That will be late-filed Exhibit 94.

(SO MARKED EXHIBIT 94)

CHAIRMAN CLARK: Thank you, Mr. Milner.

WITNESS CLARK: Thank you.

MR. LACKEY: Could I move exhibit 91, please?

CHAIRMAN CLARK: Exhibit 91 will be admitted in the record without objection.

MS. CANZANO: And staff moves 92 and 93.

CHAIRMAN CLARK: They will be admitted in the record without objection.

And only staff has questions for Mr. Atherton; is that right?

MS. AZORSKY: AT&T has no questions.

MR. MELSON: That's correct.

CHAIRMAN CLARK: Okay.

(Transcript follows in sequence in Volume 19)