DIRECT TESTIMONY OF DREW CAPLAN
ON BEHALF OF
MCI TELECOMMUNICATIONS CORPORATION AND
MCImetro ACCESS TRANSMISSION SERVICES, INC
(MCI/GTEFL ARBITRATION DOCKET)
August 26, 1996

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Drew Caplan, and my business address is 8521 Leesburg Pike, Vienna, Virginia 22182.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by MCI Telecommunications Corporation as Director of Local Services Network Engineering.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR BACKGROUND AND WORK EXPERIENCE.

A. I have been employed in the telecommunications field since 1983, starting with MCI as a traffic engineer and moving on to hold a variety of staff and management positions in the areas of traffic engineering, computer system design, switch routing and database administration, plant utilization management, and access management. The positions I have held include: Supervisor of network routing systems development; Manager of Network Management systems development; heading a task force on network plant utilization; Senior Manager of product development, customer network management products; and on the staff of the Vice President of Network Administration. From 1992 to 1994, I was Senior Manager, Eastern Region Access Management, where I was responsible for servicing and optimizing MCI's access network in the NYNEX and Bell Atlantic regions. In this position, I directed MCI's network reconfiguration pursuant to the FCC-mandated Local Transport Restructure, as well as directed MCI's efforts to convert the NYNEX and Bell Atlantic access networks to CCS#7 signalling.

Since July 1994, I have held my current position of Director of Network Engineering, which entails managing the organization responsible for planning, designing, and coordinating the installation of MCImetro's networks. My daily responsibilities include hands-on involvement in the implementation of interconnection of MCI's local network with the network of the Incumbent Local Exchange Company ("ILEC"), collocation, and access to unbundled elements. Through my experience over the last two and a half years, I have first hand knowledge of the items necessary to make local competition possible from an engineering perspective. As Director of Network Engineering, I have also been part of MCI's team which negotiated MCImetro's local interconnection and unbundling arrangements with ILECs.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address the following topics: (1) ***the MCI Local Network:*** an overview of the local network that MCI is installing; (2) ***the Interconnection of Networks:*** the steps necessary to interconnect MCI's local network with the ILEC network so that all forms of traffic can be exchanged between the networks; (3) ***Access to Unbundled Network Elements:*** a description of unbundled network elements that MCI is requesting and how MCI proposes to gain access to these unbundled elements; and (4) ***Collocation:*** a description of collocation arrangements required under the Act and under the FCC's recent order. I will also discuss related issues such as ordering and provisioning that play a critical role in the success or failure of interconnection and use of unbundled elements.

Network unbundling will allow MCI and other competitive local exchange companies ('CLECs") to provide a wide variety of new products to a broad array of customers using portions of the ubiquitous ILEC network combined with differentiating network elements provided by the CLEC. Interconnection, effective network unbundling, and procedures to make collocation viable are essential in order for competition to become a reality in the local exchange market.

MCI'S LOCAL NETWORK

Q. PLEASE DESCRIBE THE LOCAL NETWORK MCI IS INSTALLING.

A. To understand MCI's need for interconnection, access to unbundled elements and collocation, it is necessary to understand MCI's local network and how MCI plans to use that network to provide local service. MCImetro is MCI's subsidiary in charge of constructing local networks and, from a technical perspective, interconnecting MCI's local network with the ILEC's network. To understand MCImetro's network, how it has evolved, and how it will continue to evolve, it is necessary to understand the history of MCImetro. MCImetro began its corporate life as a special access provider, also known as a competitive access provider (CAP). Special access providers provide high capacity network facilities to mid and large business customers for the purpose of originating and terminating interexchange traffic directly to or from the interexchange carrier. As such, MCImetro's original network consisted of a limited set of fiber optic rings in several urban areas.

In January 1994, MCI made the decision to expand MCImetro to offer switched local services. Beginning with the fiber rings, MCI embarked on a capital construction program with two major goals. First, MCImetro had to expand its existing fiber ring facilities to reach more customer buildings and construct new rings in other urban areas. Second, MCImetro had to install local switches to provide switched services. (MCI's interexchange switches were not suitable for handling local traffic without significant modifications.) Over the last two and one half years, MCI has invested over $700 million in its local network. As a result, as of the date of my testimony, MCI's local networks, nationwide, consist of approximately 2,600 route miles of fiber rings and 13 switches.

While MCI's local network is growing, it is still small compared to the ubiquitous reach of the ILECs' networks. While MCImetro has been building local networks for just over 2 years, the ILECs have been building local networks for over one hundred years. While MCI's local network passes by several thousand buildings in mostly urban areas, the

ILECs' networks reach into practically every building and home in the country. While MCImetro has installed 13 local switches, the ILECs collectively own over 23,000 local switches. It is not an overstatement to say that the ILECs' networks are practically everywhere.

Q. WHAT IS MCI'S GOAL IN PROVIDING LOCAL SERVICE?

A. MCI's goal is to reach a broad array of customers, business and residential, to provide local services that are consistent across geographic areas and are differentiated from today's monopoly offerings. Thus, while total service resale is part of MCI's local efforts and will in some circumstances be MCI's vehicle for initial entry into the local market, resale alone will not allow MCI to differentiate its service or develop consistent services across geographic areas. In order to reach that goal, and enable true competition in the local services market, MCI and other competitive local exchange carriers (CLECs) must be able to create and offer their own services. The primary means of achieving this is through deployment of MCI's own local facilities. This has been the path that MCI has chosen to date. However, as mentioned earlier, MCI's significant investment in switching and network construction over the past two plus years has only allowed it to reach a maximum of several thousand buildings, mostly in urban areas. Network unbundling, discussed in more detail below, will allow MCI and other CLECs to provide a broad array of new products to a much larger group of customers using portions of the ubiquitous ILEC network combined with differentiating network elements provided by the CLEC. Without effective ILEC network unbundling, real competition will not become a reality.

One further item is worth noting. MCI's local network has a substantially different architecture than that of the ILEC. ILEC networks, developed over many decades, employ an architecture characterized by a large number of switches within a hierarchical system, with relatively short subscriber loops. By contrast, MCI's local network employs state-of-the-art equipment and design principals based on the technology available today, particularly optical fiber rings, that does not require the deployment of as many switches. In general, there is a trade-off between the number of switches and the length of the local loop. The fewer the switches deployed in any given territory, the longer the loop length necessary to serve customers, and vice versa. In any given service territory, MCI will have deployed fewer switches than the ILEC. In general, at least for now, MCI's switches all serve areas at least equal in size if not greater than the serving area of the ILEC tandem. For example, in Baltimore, Bell Atlantic uses two access tandems to serve the Baltimore local calling area. MCI uses just one. Thus, MCI's one switch in Baltimore serves an area actually greater than the service area of either of BA's tandems. Similarly, in New York, NYNEX has six tandems access that serve the New York Metropolitan LATA; initially, MCI has deployed one switch to serve the same geography. This last point becomes critical later in my testimony as I discuss reciprocal compensation arrangements for transport and termination of traffic.

In sum, MCI's recent but very real experience in deploying local services gives it a unique perspective on what it takes to make competition a reality. Our "hands on" experience allows us to be very clear on what will be required in the areas of implementing network interconnection and gaining access to unbundled ILEC network elements.

INTERCONNECTION OF NETWORKS

Q. WHAT IS INTERCONNECTION AND WHY IS IT IMPORTANT?

A. Building a local network means nothing unless that network can be seamlessly interconnected with the ILEC's network and with the networks of other telecommunications carriers. In the context of my testimony, interconnection means the linking of networks. The point at which MCI's local network physically connects to the ILEC's network is called the interconnection point (IP), or sometimes the point of interconnection (POI). This definition of "interconnection" is consistent with how the FCC defined that term at Paragraph 176 of the First Report and Order in CC Docket No. 96-98, In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 (the "Order"). Connection of unbundled elements ("access to unbundled elements") to the MCI network is discussed later in my testimony.

The IP plays a critical role in overall interconnection. From a financial perspective, the IP represents the "financial demarcation" -- the point where MCI's network ends and the ILEC's "transport and termination" charges begin. From an engineering perspective, there are variety of things that must happen at the IP to make interconnection seamless and complete. In my testimony, I focus on the engineering aspects, but obviously the financial ramifications have a significant impact on how we interconnect and exchange traffic with the ILEC. Therefore, there also is a later discussion about the financial implications of interconnection.

Q. WHAT IS REQUIRED TO PHYSICALLY LINK MCI's LOCAL NETWORK WITH THE NETWORKS OF INCUMBENT LOCAL EXCHANGE CARRIERS?

A. From MCI's viewpoint, physical linking of networks is not a daunting engineering task. Carriers have interconnected networks -- local network to local network and interexchange network to local network -- for years. Thus, physical linking is neither new nor overly complicated.

Physical linking of networks involves the following steps:

- The physical connection of MCI's facilities to the ILEC facilities at the interconnection point (IP).

- The establishment of trunking arrangements for the exchange of local traffic, for the exchange of intraLATA and interLATA toll traffic, for "operator-to-operator" calls, for directory assistance calls, for 911/E911 calls, and for "transit" traffic.

- The physical connection of MCI's signaling network and the ILEC's signaling network so that signaling information can be exchanged.

I discuss these steps in more detail below.

1. Interconnection Point (IP) for exchange of traffic

Q. WHAT ISSUES ARE INVOLVED IN THE ESTABLISHMENT OF AN INTERCONNECTION POINT (IP)?

A. From an engineering perspective, establishment of the IP includes determination of where the IP is located, the method of interconnection, and the types of facilities that will be used to carry traffic back and forth over the IP.

a. Location of the IP

Q. PLEASE DISCUSS THE LOCATION OF THE IP.

A. As the Act and the FCC Order states, the ILEC must provide interconnection "at any technically feasible point within the ILEC's network." (Final Rules, Section 51.305(a)(2)) Thus, MCI, as the new entrant, is permitted to select the IP from any point in the ILEC's network where it is technically feasible to physically interconnect networks and exchange traffic. (Order, at Paragraph 220, footnote 464) Specifically, MCI must have the ability to select the location or locations of any IP so long as it is within the LATA that contains the end offices for which traffic will be exchanged. Moreover, as the FCC Order notes, "technically feasible" under this definition "refers solely to technical or operational concerns, rather than economic, space, or site considerations." Thus, so long as the ILEC can -- from a technical perspective -- take the traffic from the IP and terminate it to any particular end office, then that IP is *technically feasible*.

I raise this because of a special problem MCI has faced in New York with NYTEL. NYTEL has attempted to make MCI establish IPs at each of their access tandems in the LATA that covers the Metropolitan New York City area. There are six such access tandems in that LATA. Clearly, for a new entrant such as MCI, physically building out facilities to establish an IP at each of those access tandems would be a time consuming and expensive proposition, delaying the ability of MCI to offer service in that LATA and making it more expensive than necessary to offer that service.

The "technical feasibility" portion of the FCC Order precludes NYTEL from insisting on this build out, and here's why. MCI already has established an IP with NYTEL in Manhattan. Because of NYTEL's extensive transport network in the LATA, it is technically feasible for NYTEL *to take traffic from that IP and transport it to any end office in the* LATA, regardless of which access tandem that end office subtends. Therefore, that IP can -- and at MCI's discretion should -- serve as the IP for the entire LATA. I also note that Ameritech and MFS have agreed to a single IP per LATA.

Naturally, however, any decision on where an IP is located or whether to use more than one IP will have an impact on the transport portion of any transport and termination compensation paid to the ILEC. If MCI chooses to have only one IP in the LATA, for example, the transport charges that MCI must pay as part of "transport and termination" for local calls will reflect the increased distance that calls must travel from the IP to the particular end office where they terminate. This will be discussed in more detail later in my testimony where I address the financial implications of network interconnection.

At section 51.305(a)(2) of its Rules, the FCC identifies the minimum set of places where the ILECs must provide interconnection, but explicitly states in that section that interconnection must be provided at "at any technically feasible point within the incumbent LEC's network." Thus, the FCC explicitly did not limit potential IPs to these locations (Order at paragraphs 209, 549, 550, 551, 552, 553, and 54). It is technically feasible to establish an IP at most points on the ILEC network where ILEC facilities meet each other or meet other facilities (either the ILEC's or some other entity's facilities).

In engineering terms, facilities are always connected with each other at what are called "cross-connect points." Cross-connect points, as the name implies, are places in any network where one facility can be connected to another, either manually or electronically. With a manual cross connect, two facilities are physically connected by means of a third piece called a "jumper." Simply put: Wire A comes in to a point on the cross to connect apparatus, and Wire B comes in on another point. Then a jumper is used connect Wire A to Wire B. A main distribution frame (MDF) or any similar "patch panel" is an example of a manual cross-connect device. With an electronic cross-connect, there is no jumper wire, rather, the "jumper connection" is performed electronically. A DCS (digital cross connect system) is an example of an electronic cross connect.

IP's do not have to be limited to residing at an ILEC tandem or end office switch. The FCC's Order specifies some potential interconnection points; each one of those is a "cross-connect point," as I have defined that term, in either a tandem switch or an end office switch. There are other cross-connect points in the ILEC network, however. For example, MCI's switches are generally located in commercial office buildings. For any particular MCI switch, the ILEC will also have network facilities into that building that end at what is called a "telco closet." A telco closet in this sense includes -- or can technically support -- a cross-connect device. Thus, an ILEC telco closet in a commercial building can also serve as an IP. In fact, MCI interconnects with Ameritech at such telco closets now in Detroit. Thus, this type of IP is certainly technically feasible.

b. Methods of Interconnection

Q. PLEASE DISCUSS THE VARIOUS METHODS OF INTERCONNECTION.

A. The FCC permits any method of interconnection that is technically feasible. (Order at paragraph 549) In its Order, the FCC discusses three specific methods of interconnection: physical collocation, virtual collocation, or meet point. (Order at paragraph 553) Collocation, either virtual or physical, is well known from a technical perspective and is discussed later in my testimony.

Meet point arrangements are also well known. Under a typical "meet point" arrangement, MCI and the ILEC would each "build out" to a meet point. Under this type of arrangement the official "IP" -- as I have been using that term -- is the point where the ILEC build out connects to the rest of the ILEC network. The "limited build out" to the meet point is the financial responsibility of each party and is part of what the FCC calls the "reasonable accommodation of interconnection." (Order at paragraph 553)

A variation of this is what I refer to as "mid-span meet." Under this arrangement, MCI and the ILEC would jointly provision the fiber optic facilities that connect the two networks and share the financial and other responsibilities (as detailed below) for that facility. In this situation, the facilities do not actually join at a "cross-connect point" but are spliced together. This is essentially the method of interconnection that MFS and Ameritech agreed to. Thus, it is certainly technically feasible.

c. Types of facilities at the IP

Q. WHAT TYPES OF FACILITIES CAN BE USED AT THE IP?

A. Having determined the location of the IP, it is necessary, from an engineering perspective to determine the types of facilities that will be used to interconnect. The types of facilities that are used to link the networks, regardless of the types of traffic carried, are well known both to MCI and to the ILECs. Network interconnection may occur at light (fiber) level, or at DS3, DS1, or voice-grade levels.

2. Trunking and Interconnection of Signaling Networks

Q. WHAT ARRANGEMENTS SHOULD BE PROVIDED FOR THE TRUNKING OF TRAFFIC?

A. Once networks are physically connected via the facilities and arrangements as described above, then it is necessary from an engineering perspective to partition those facilities into various types of trunk groups required to carry the different types of traffic that are necessary for complete interconnection. Based on our experience, MCI believes that traffic should be segregated as follows:

- a separate trunk group that carries local traffic, non-equal access intraLATA interexchange traffic, and local transit traffic to other LECs.
- a separate trunk group for equal access interLATA or intraLATA interexchange traffic that transits the ILEC network.
- separate trunks connecting MCI's switch to each 911/E911 tandem.
- a separate trunk group connecting MCI's switch to the ILEC's operator service center. This permits MCI's operators to talk to the ILEC's operators. Operator-to-operator connection is critical to ensure that operator assisted emergency calls are handled correctly and to ensure that one carrier's customer can receive busy line verification or busy line interrupt if the other end user is a customer of a different LEC.
- a separate trunk group connecting MCI's switch to the ILEC's directory assistance center where MCI is purchasing the ILEC's unbundled directory assistance service.

With regard to the first requested trunk group, the Commission should note that there is no technical requirement to segregate local and intraLATA interexchange traffic on separate trunk groups. Indeed, it is often more efficient to "pack" a trunk with both local traffic and interexchange traffic. Because these types of traffic are "rated" differently, however, the receiving carrier would either have to discern between types itself or have to rely on reporting by the sending carrier, via a "percent local usage" (PLU) or similar reporting mechanism. The trunk segregation detailed above is an initial architecture that meets MCI's immediate needs for interconnection. As MCI's network evolves, and as we seek to provide new services, there may be a requirement for a further or different combination of traffic types. For example, it may be efficient for MCI to aggregate local and interexchange traffic on a single trunk. It is incumbent upon the ILEC to prove that a request for a revised traffic combination is technically infeasible.

Q. WHAT SIGNALLING SHOULD BE PROVIDED WITH RESPECT TO THESE TRUNK GROUPS?

A. The trunk groups that connect the networks will require specific signaling characteristics. The trunks that carry local and interexchange traffic are generally similar to the industry standard Feature Group D trunks with CCS7 signaling. MCI requires CCS7 signaling on all trunks used to pass local and interexchange traffic. The specific details about the interconnection of signaling networks is discussed later in my testimony where I address access to unbundled elements. MCI also requires that the trunks used to carry local and interexchange traffic are configured with B8ZS Extended Superframe (ESF). B8ZS ESF is required to support the transmission of 64Kbps ("Clear Channel") traffic between the networks of ILECs and CLECs. Without Clear Channel transmission, subscribers of ILECs and CLECs would not be able to terminate various types of switched data traffic, including some ISDN applications.

Trunks can also be either one-way or two-way. Generally, two-way trunking is more efficient than one-way trunking for traffic that flows in both directions (for example, local and interexchange traffic), since, with two-way trunking, fewer trunks are needed to establish the interconnection than are needed when ILECs insist only on one-way trunking. The FCC has recognized the benefits of two-way trunking by ordering ILECs to make them available upon a CLEC's request (Order, Paragraph 219).

Q. YOU PREVIOUSLY MENTIONED THAT THE FINANCIAL IMPLICATIONS OF INTERCONNECTION MUST BE CONSIDERED. WHAT ARE THE FINANCIAL IMPLICATIONS WHICH ARISE IN CONNECTION WITH THE PHYSICAL LINKING OF NETWORKS?

A. Whenever networks are interconnected and traffic is exchanged, a major issue between the parties -- bluntly stated -- is "Who pays for what?" Fortunately, the FCC Order provided some very specific definitions that help determine financial responsibility. As noted above, the IP is the point where the MCI network physically connects with the ILEC network. Generally, therefore, each carrier is responsible for bringing or getting its facilities to the IP.

When an MCI customer makes a local call to an ILEC customer, MCI will hand off that call to the ILEC at the IP. MCI then must pay the ILEC compensation for the "transport and termination" of that local call. (Final Rules, Section 51.701) The FCC has separately -- and specifically -- defined "transport" and "termination" in this context. (Order at Paragraph 1039) "Transport" is defined as "the transmission and any necessary tandem switching of local telecommunications traffic ... from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party...." (Final Rules, Section 51.701(c)) "Termination" is defined as "the switching of local telecommunications traffic at the terminating carrier's end office switch...." (Final Rules, Section 51.701(d)) Thus, the IP determines the point at which MCI (when it is terminating local traffic to the ILEC) must begin paying transport and termination compensation to the ILEC.

Conversely, when an ILEC must hand over local traffic to MCI for MCI to "transport and terminate," the ILEC must use the established IP. For the ILEC to be allowed to do anything else would eviscerate the FCC's requirement that the ILEC permit the use of two-way trunking. Thus, the IP also serves as the point at which the ILEC must begin payment of "transport and termination" to MCI when it terminates a local call on MCI's local network.

It is important to note that in Section 51.711 of the Final Rules the FCC has determined that "rates for transport and termination of local telecommunications traffic shall be symmetrical." In addition, the FCC has decided that "where the switch of a carrier other than an incumbent LEC serves a geographic area comparable to the area served by the incumbent LEC's tandem switch, the appropriate rate for the carrier other than the incumbent LEC is the incumbent LEC's tandem interconnection rate." I noted previously that MCI's switch clearly serves a geographic area comparable to the area served by the ILEC's tandem. Therefore, MCI believes it is appropriate for it to charge the ILEC the tandem interconnection rate (defined as tandem switching plus the average transport between an ILEC tandem and the subtending end offices plus the local switching rate) for calls terminating to MCI's network. In addition, the ILEC and MCI will share the cost of the facilities used to interconnect the networks as defined by the location of the IP.

The FCC also determined, in section 51.709 of the Final Rules, that "the rate of a carrier providing transmission facilities dedicated to the transmission of traffic between two carriers networks shall recover only the costs of the proportion of that trunk capacity used by an interconnecting carrier to send traffic that will terminate on the providing carrier's network."

Q. COULD YOU GIVE AN EXAMPLE OF HOW THE SELECTION OF AN IP AFFECTS THE FINANCIAL ARRANGEMENTS?

A. Yes, given all this, it is possible to walk through two examples to describe how the selection of the IP affects the "transport and termination" charge that both MCI and the ILEC must face.

Example 1: MCI Collocates at the Wire Center Housing an Access Tandem to Which MCI Needs to Trunk.

In this example, MCI has established a collocation at the wire center housing a tandem; the collocation will be designated as the IP. Two-way trunking will be established between the MCI switch and the ILEC tandem via the collocation facilities.

- o The Transport and Termination Charges to MCI for calls terminating on the ILEC network are:
  - (1) tandem switching and transport from the tandem to the end office where the call terminates (based on average transport from ILEC tandem to subtending end offices); plus
  - (2) termination at the end office.

  The total rate paid by MCI in this case is also known as the Tandem Transport and Termination rate or Tandem Interconnection Rate.

- o The Transport and Termination Charges to the ILEC for calls terminating on MCI's network are:
  - (1) Transport from the IP to the MCI switching center (as discussed in Final Rules, Section 51.709), plus
  - (2) The symmetrical Tandem Transport and Termination.

  In this example, the ILEC pays for the transport from the IP at its access tandem to the MCI switching center because MCI has provided the facilities from that switching center to the IP, and the ILEC is using those facilities to transport local traffic from the IP back to the MCI switching center. Once the call reaches the MCI switching center, however, MCI is permitted to charge the ILEC a transport and termination rate equal to the ILEC's tandem interconnection rate since MCI's switch serves an area comparable (if not larger) than the area served by the ILEC's tandem switch. (Final Rules, Section 51.711(3))

As detailed above, the specific symmetrical tandem transport and termination rate should be calculated as follows:

- Tandem switching rate, plus
- Shared transport based on average mileage from the ILEC tandem to the various end offices that subtend that tandem.

Example 2: IP At an Agreed to Meetpoint

In this example, MCI will jointly provision interconnect facilities to an agreed to meetpoint at a technically feasible location on the ILEC's network. The IP is at this meetpoint. MCI and the ILEC will establish two-way trunking to both an access tandem and an end office via these interconnection facilities.

o The Transport and Termination charges to MCI for traffic terminating to the ILEC via the tandem switch are:

  (1) transport from the IP to the access tandem; plus

  (2) the Tandem Interconnection/Transport and Termination Rate, as described in Example 1.

o The Transport and Termination charges to ILEC for traffic terminating to MCI via the tandem switch are:

  (1) transport from IP to the MCI switching center; plus

  (2) the symmetrical ILEC Tandem Interconnection/Transport and

Termination Rate.

- o The Transport and Termination charges to MCI for traffic terminating to the ILEC via direct end office trunking (bypassing the tandem switch) are:
  - (1) transport from the IP to the ILEC end office switch, plus
  - (2) the local termination rate.

- o The Transport and Termination charges to the ILEC for traffic terminating to MCI via the direct end office trunking are:
  - (1) transport from the IP to the MCI switching center, plus
  - (2) the symmetrical ILEC Tandem Interconnection/Transport and Termination Rate.

There are, of course, other options and possibilities, but the concept will be the same. The IP will delineate not only the physical point where one network ends and another begins, but also will determine the transport and termination charges that each carrier must pay to one another.

ACCESS TO UNBUNDLED NETWORK ELEMENTS

Q. WHY IS IT IMPORTANT FOR MCI TO HAVE ACCESS TO THE UNBUNDLED ELEMENTS OF THE INCUMBENT LOCAL EXCHANGE COMPANIES' NETWORKS?

A. As noted previously, MCI desires to offer local service as broadly as possible to both residential and business customers. MCI's local network, however, currently consists of high capacity fiber rings in downtown areas. While some residential apartment buildings may be accessible via MCI's fiber ring, this network, by itself, simply does not have the reach to serve a broad base of residential and business customers. Additionally, although MCI continues to implement local service switching centers throughout the nation, its capacity for providing switched services is extremely limited. Each of the 13 switches that MCI has implemented to date is capable of serving only 30,000 to 50,000 customers -- a drop in the bucket compared to the national base of over 100 million customers. To reach this larger base, MCI must have access to the unbundled elements of the ILEC's ubiquitous network.

Q. WHAT IS THE EFFECT OF THE FCC ORDER ON THE ISSUE OF WHICH UNBUNDLED ELEMENTS MUST BE MADE AVAILABLE BY THE ILECs?

A. The FCC's order mandates a set of seven unbundled elements that the ILEC must make available. The FCC ordered this first set of elements with the explicit recognition that further unbundling may be appropriate today, but it did not have the necessary information on the record to make such judgments, and therefore left that to the states to determine. It also indicated that further unbundling will be appropriate in the future. The FCC rules explicitly allows the states to order more unbundling on a case by case basis. MCI, in this arbitration, requests the Florida Commission to order unbundling beyond the minimum set in the FCC's order since there are additional elements that meet the FCC criteria. In addition, as networks evolve, it will be necessary on occasion to request additional unbundled elements. MCI is requesting an expedited bona fide request process to accomplish that future unbundling. That process is described in the testimony of MCI witness Don Price. The FCC's minimum set of elements includes some network elements, as defined in the Act, such as operator services and directory assistance, that are discussed in Mr. Price's testimony.

Q. WHAT ARE THE UNBUNDLED NETWORK ELEMENTS REQUESTED BY MCI AND HOW DOES MCI PROPOSE TO GAIN ACCESS TO THEM?

A. The FCC rules require the ILECs to unbundle a set of elements, but do not specify a method of implementation to ensure the unbundled elements are usable to requesting carriers. This task must be performed by state commissions. Although access to these elements is necessary, it is not sufficient for CLECs to be viable providers: the terms and conditions at which they are available also effect our viability. In the following testimony, I will review each element to give this Commission some direction on how to best ensure proper implementation by the ILECs. I will also describe the additional elements that meet the FCC criteria and that the Florida Commission should include in the ILEC's initial unbundling requirements. For each element, I will provide a basic description of the element, why that element is necessary to be unbundled, and how MCI proposes to gain access to that element from an engineering perspective.

A. Connecting Unbundled Elements

Q. PLEASE DESCRIBE HOW UNBUNDLED NETWORK ELEMENTS ARE

CONNECTED.

A. Physical unbundled network elements (elements other than call processing databases) interconnect to other network elements or to CLEC collocations in a similar fashion. The elements terminate at some type of cross-connect devices (these devices can be Main Distribution Frames, or DS-1 or DS-3 cross-connect devices, for example). To connect the unbundled network element to either another element or to an MCI collocation (which also terminates at a cross-connect device), the ILEC must supply connecting cabling, which includes jumper wires to connect positions within a cross-connect device as well as house cabling running between the two cross-connect devices. Both the jumper cabling and house cabling are, very simply, just wires. There are no electronics or other intelligence associated with this cabling. Arranging this cabling may appear to be a minor issue in the larger scheme of unbundling of the network -- in fact, identical connection cabling and is routinely provisioned by the ILECs to connect its own network elements today. However, we have found, through first-hand experience, that the untimely, inaccurate and expensive provisioning of such cabling can be a significant bottleneck to network unbundling.

Each physical network element detailed below must also include the cabling required to make it operational, unless otherwise noted.

B. Elements the FCC Ordered to be Unbundled

1. Local Loop

Q. WHAT ARE LOCAL LOOPS AND HOW SHOULD THEY BE PROVISIONED?

A. The FCC defines the local loop as "a transmission facility between a distribution frame [cross-connect], or its equivalent, in an incumbent LEC central office, and the network interface device at the customer premises. This includes, but is not necessarily limited to, two- wire analog voice-grade loops, and two-wire and four-wire loops that are conditioned to transmit the digital signals needed to provide ISDN, ADSL, HDSL, and DS1-level signals. " (Order at paragraph 380)

As the definition implies, unbundled loops end at the distribution frame of the ILEC. As discussed earlier, appropriate cabling will be required to connect the unbundled loop's frame appearance to other cross-connect points to access other network elements or MCI's or a third party's collocation. This cabling must be efficient and available in a timely fashion. Otherwise, it will not be financially feasible for MCI to utilize unbundled loops and MCI's ability to reach residential and small business customers will be extremely curtailed.

MCI anticipates provisioning unbundled loops in a variety of ways, each of which is clearly supported by the FCC rules. These methods include, but are not limited to:

- connecting the unbundled loop to an MCI collocation where MCI has placed digital loop carrier equipment (DLC) or other subscriber loop electronics of its choice. The DLC or DLC-type equipment will then be connected to interoffice transport facilities, either owned by MCI or leased from the ILEC or third party, that connect the collocated space to MCI's network
- combining the unbundled loop to other unbundled network

elements, such as ILEC provided transport or switching

- connecting the unbundled loop to a third party collocation for provision of transport or other services

Several things are critical to make these arrangements work. First, there must not be unreasonable delays in establishing collocation, and the costs for collocation must be economically sound. In New York, for example, establishing collocations can sometimes take up to nine months and cost over $50,000 to just build the "collocation cage." This kind of delay and expense is intolerable. Second, MCI must have the ability to place the electronics of its choice in the collocated space. Some ILECs, such as Pacific Bell, have denied MCI's request to have this choice and thus in essence hold "veto power" over MCI's network design. Not only will this restriction prevent MCI and other CLECs from efficiently capturing the unbundled loop, it will delay the deployment state of the art network and limit our ability to differentiate our services from the ILEC. All of these issues are later in my testimony in the collocation discussion.

Q. WHAT ARRANGEMENTS SHOULD BE MADE FOR TRANSFERRING SERVICE TO MCI FROM AN ILEC?

A. Another issue is important when it comes to gaining access to unbundled loops -- coordinated (or "hot") cutovers. When MCI gains an existing ILEC customer and needs that unbundled local loop to serve that customer, then that local loop will need to be "cut over" from the ILEC to MCI. Mechanically, this is not a complex task; it only involves the movement of jumper wires on the MDF. Most importantly, however, the cutover cannot result in significant "downtime" for the customer's telephone line. Not only could that customer's safety be jeopardized, but such a degradation of service would be a significant disadvantage in switching service to MCI.

MCI proposes the following procedure for coordinated cutovers:

(1) On a per order basis, the ILEC and Metro will agree on a scheduled conversion time, which will be a designated two-hour time period within a designated date.

(2) The ILEC will coordinate activities of all ILEC work groups involved with the conversion. This coordination will include, but not be limited to, work centers charged with manual cross-connects, electronic cross-connect mapping, and switch translations (including, but not limited to, implementation of interim local number portability translations).

(3) The ILEC will notify MCI when conversion is complete.

(4) End user service interruptions will be minimized and should not exceed five minutes.

2. Network Interface Device

Q. PLEASE DESCRIBE THE UNBUNDLED ELEMENT KNOWN AS THE NETWORK INTERFACE DEVICE.

A. The Network Interface Device (NID) is "the cross-connect device used to connect LEC loop facilities to inside wiring not belonging to the LEC." The FCC Order, at paragraphs 392 and 393, describes the need for access to the NID. In summary, it is necessary on many occasions when serving large residential or office buildings in order to gain access to the inside wiring that is not owned by the ILEC.

According to the FCC Order, MCI should be able to gain access to the ILEC NID by connecting its own NID to the ILEC NID. This form of NID-to-NID connection is technically feasible and does not raise reliability concerns. It will be incumbent upon the ILEC to demonstrate that such connection is not feasible, and, if not, to detail the specific building locations at which such connection is not feasible. We expect that generally cabling to connect the NIDs will be provided by the ILECs.

If connection to the NID involves a cutover of live customer traffic at that premise, then the cutover procedures described above must be followed.

3. Switching Capability

Q. WHAT SWITCHING CAPABILITY SHOULD BE UNBUNDLED?

A. Switching capability unbundling is defined in the FCC Rules by two distinct switch functions: local switching and tandem switching.

a. Local Switching

Q. WHAT IS LOCAL SWITCHING AND HOW SHOULD IT BE PROVISIONED?

A. In Section 51.319(c)(1)(i) of the FCC Rules, the local switching capability network element is defined as:

(A) line-side facilities, which include but are not limited to, the connection between a loop termination at a main distribution frame and a switch line card;

(B) trunk-side facilities, which include but are not limited to, the connection between trunk termination at a trunk-side cross-connect panel and a switch trunk card; and

(C) all features, functions, and capabilities of the switch, which include, but are not limited to:

(1) the basic switching function of connecting lines to lines, lines to trunks, trunks to lines, and trunks to trunks, as well as the same basic capabilities made available to the incumbent LEC's customers, such as a telephone number, white page listing, and dial tone; and

(2) all other features that the switch is capable of providing, including but not limited to custom calling, custom local area signaling service features, and Centrex, as well as any technically feasible customized routing functions provided by the switch.

In this context, features, functions, and capabilities includes: i) all basic switching functions, ii) telephone numbers, iii) directory listing, iv) dial tone, v) signaling, and vi) access to directory assistance, vii) access to operator services, viii) access to 911, ix) all vertical features the switch is capable of providing; and x) any customized call routing features.

Access to local switching is at the ILEC end office. There are two points of access: the main distribution frame (or equivalent) and the trunk-side cross-connect. ILEC switching may be connected to MCI-provided loops, MCI-provided transport facilities, ILEC-provided loops, ILEC-provided transport facilities, or loops or transport facilities provided by a third party. MCI will require the ILEC to connect these elements as described above in "Connecting Unbundled Elements."

Q. WHO SHOULD DETERMINE HOW CALLS PLACED BY MCI CUSTOMERS ARE ROUTED?

A. MCI will be responsible for establishing how its customers calls will route, and for specifying in advance a trunking scheme to make such routing possible. Such trunking will be either supplied by MCI, or will be comprised of other unbundled network transport elements (dedicated or shared), or a combination of the two. The ILEC must make available to MCI any switch-supported trunk interface for the provision of network trunking, including SMDI interfaces for MCI-supplied voice mail services. Customer specific routing will be implemented via line class codes or equivalent switch-specific methods. Such routing will allow MCI to designate routing for that customer's service, for each of the following call types:

- 0+/0- calls
- 911 calls
- 411/DA calls
- InterLATA calls specific to PIC or regardless of PIC
- IntraLATA calls specific to PIC or regardless of PIC
- 800/888 calls, prior to database query
- Call forwarding of any type supported on the switch, to a line or a trunk
- Any other customized routing that may be supported by the

ILEC switch

On the line side, MCI must be able to purchase any line service available on the switch, including but not limited to POTS services, Centrex services, and ISDN BRI services, with all of their vertical features and signaling options. On the trunk side, MCI must be able to purchase any customer trunk service available on the switch, including but not limited to DID, DOD, 2-way, and ISDN PRI trunk services.

b. Tandem switching

Q. WHAT IS TANDEM SWITCHING AND HOW SHOULD IT BE PROVISIONED?

A. The tandem switching capability network element is defined by the FCC as:

(1) trunk connect facilities, including but not limited to the connection between trunk termination at a cross-connect panel and a switch trunk card;

(2) the basic switching function of connecting trunks to trunks; and

(3) the functions that are centralized in tandem switches (as distinguished from separate end-office switches), including but not limited to call recording, the routing of calls to operator services, and signaling conversion features.

This unbundled element is necessary to be able to perform a variety of functions including transit functions. The transit function is critical for new entrants to efficiently interconnect with other CLECs, IXCs and small independent carriers that home off the ILEC tandem. Until traffic levels justify the direct connection of these carriers, the ILEC tandem is the only method to interconnect all carriers in a market. (See also the FCC Order at paragraph 425)

MCI should be able to gain access to this unbundled element at the tandem switch location. Access will always be at a trunk cross-connect device serving the tandem switch. This cross-connect point will be connected to other unbundled elements, third party networks or MCI's collocation as described in "Connecting Unbundled Elements."

4. Interoffice Transmission Facilities

Q. WHAT ARE INTEROFFICE TRANSMISSION FACILITIES AND HOW SHOULD THEY BE PROVISIONED?

A. The FCC defines interoffice transmission facilities "as incumbent LEC transmission facilities dedicated to a particular customer or carrier, or shared by more than one customer or carrier, that provide telecommunications between wire centers owned by incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunication carriers." Interoffice transmission facilities are customarily defined as either shared facilities or dedicated facilities.

The shared interoffice transmission is the path between end offices and a tandem, or between end offices, that is shared by multiple carriers. This element is necessary to connect the tandem switching function to the local switching function. (See FCC Order at paragraph 441) In addition, MCI will purchase the shared transport element between ILEC end offices in conjunction with the purchase of the unbundled local switching element.

MCI will gain access to the shared interoffice transport facilities at the trunk cross-connect at the end office and/or the trunk cross connect at the tandem switch. This cross-connect point will be connected to other unbundled elements, third party networks or MCI's collocation as described in "Connecting Unbundled Elements."

Dedicated transmission facilities are transport facilities used exclusively for the requesting carrier's traffic and connect one or more of the following points: ILEC end offices, ILEC tandems, ILEC serving wire centers, other carrier wire centers or switching centers, IXC points of presence, collocated equipment at any ILEC end or tandem office. Such facilities shall be all technically feasible transmission capabilities, including but not limited to: DS0, DS1, DS3, and all optical levels.

Q. SHOULD MCI BE PROVIDED ACCESS TO DARK FIBER AS AN UNBUNDLED ELEMENT?

A. Although the FCC did not specifically require that the ILECs make available unbundled optical fiber or "dark fiber," MCI contends that dedicated transport must also include dark fiber, which from an engineering perspective is simply another level in the transmission hierarchy. Because network construction for the initial placement of fiber facilities is timely and costly since it involves permits, road work, conduit placement, etc., telecommunications carriers typically install large quantities of fiber cables. Therefore, we believe that many of the ILECs have the dark fiber available where they have upgraded their facilities from copper plant and should be required to provide plant records to detail where excess capacity exists.

Dark fiber is necessary for MCI to expand its network reach with the flexibility of installing electronics that comport to its network architecture. This flexibility is essential for MCI to strategically deploy efficient new technologies into its network. Without this network element, MCI's only choices are to undertake the timely and expensive construction effort to place its own fiber in the ground or to purchase the use of "lit" (fiber with electronics) transport services from the ILEC. It does not make sense to require MCI to purchase the use of ILEC electronics where spare fiber capacity is available; in fact, using the ILEC's existing electronic technology forces MCI to be held captive to the ILEC's network technology and design rather than being allowed to deploy new, more efficient technologies that are consistent across geographic locations.

MCI and other carriers should be able to request availability of dark fiber on a particular route. The ILEC should respond to that request within 10 days on availability on that route or comparative alternative route and specify all available splice points and specifications of the fiber optic plant. If the fiber is available, MCI will meet the ILEC at its specified splice points (usually in a manhole) with its own fibers. MCI will then deploy its own electronics at its network sites.

Q. WHAT ARE DIGITAL CROSS-CONNECT SYSTEMS, AND HOW SHOULD THEY BE PROVIDED?

A. The FCC Order, at paragraph 444, requires that ILECs provide requesting carriers access to digital cross connect system functionality. They describe the DCS as a device that "aggregates and disaggregates" high-speed traffic. In general, the DCS provides for transmission level changes within a transport route, or where two transport routes meet. Aside from providing electronic software controlled multiplexing of facilities at different transmission levels, DCS also provides automated cross connection of transmission facilities at like levels, for the purposes of "grooming" facilities to optimize network efficiency. Types of DCSs include but are not limited to DCS 1/0s, DCS 3/1s, and DCS 3/3s, where the nomenclature 1/0 denotes interfaces typically at the DS1 rate or greater with cross-connection typically at the DS0 rate. This same nomenclature, at the appropriate rate substitution, extends to the other types of DCSs specifically cited as 3/1 and 3/3. Types of DCSs that cross-connect Synchronous Transport Signal level 1 (STS-1s) or other Synchronous Optical Network (SONET) signals (for example, STS-3) are also DCSs, although not denoted by this same type of nomenclature. DCS may provide the functionality of more than one of the aforementioned DCS types (for example, DCS 3/3/1 which combines functionality of DCS 3/3 and DCS 3/1).

Devices that provide similar aggregation and disaggregation functions via manual cross-connections are generally referred to as "multiplexors." Because of their functional similarity to the DCS, we interpret the FCC's DCS directive to include multiplexors such as M13s and channel banks.

ILECs routinely provide both DCS (including multiplexor) functions today to interexchange carriers in conjunction with dedicated transport services. MCI agrees that DCS supports transport services, but also requests that the ILEC be required to provide this function in combination with dedicated transport or separately so MCI can combine DCS with its own transport or that supplied by other parties.

MCI will gain access to the digital cross-connection system at the appropriate (optical, DS3, DS1, voice grade level) cross-connection device serving the DCS. This cross-connect point will be connected to other unbundled elements, third party networks or MCI's collocation as described in "Connecting Unbundled Elements."

5. Signaling Networks, Call-Related Databases, and Service Management Systems

a. Signaling Systems

Q. WHAT ARE UNBUNDLED SIGNALING SYSTEMS AND HOW SHOULD SIGNALLING NETWORKS BE INTERCONNECTED?

A. As explained in the FCC Order, signaling systems "facilitate the routing of telephone calls between switches SS7 networks use signaling links to transmit routing messages between switch, and between switches and call-related databases." (at paragraphs, 455, 456) The Order goes on to state that "incumbent LECs are required to accept and provide signaling in accordance with the exchange of traffic between interconnecting networks." It concludes that "the exchange of signaling information may occur through an STP to STP interconnection." (at paragraph, 478)

The FCC also identifies a need for the ILECs to offer unbundled access to their STP and signaling link elements. (Order at Paragraph 479) MCI concurs that such access is required on non-discriminatory terms and conditions. However, it is clear from the ensuing discussion in paragraphs 479 - 483 that access to unbundled signaling links and STP ports is intended to allow new entrants to obtain signaling services from the ILEC. This eliminates the CLEC's burden of installing their own signaling networks. This requirement is clearly distinct from the requirement to connect signaling networks for support of traffic exchange as described in the previous paragraph of this paper.

Interconnection of the signaling networks facilitates routing of telephone calls flowing from the ILEC to the CLEC and from the CLEC to the ILEC. It also is required for the provision of certain CLASS services such as caller ID, automated callback, and automated recall, as well as the transmission of 64 kbps ("clear channel") calls flowing in both directions. Thus, the connecting carriers must share the burden of signaling network interconnection in support of traffic exchange.

MCI proposes that this be accomplished as follows:

- In each LATA, there will be two signaling points of interconnection (SPOIs). The requirement for two SPOIs is driven by the critical importance attached by all parties to signaling link diversity.
- Each party will designate one of the two SPOIs in the

LATA. A SPOI can be any existing cross-connect point in the LATA. Since each party will designate a SPOI, we believe that both parties will be incented to select reasonable and efficient SPOI locations.

- Each signaling link requires a port on each party's STP. We propose that each party provide the necessary ports on its STPs without explicit charge.

The SS7 interconnection shall provide connectivity to all components and capabilities of the ILEC SS7 network. These include:

- ISDN Services User Part (ISUP) signaling for calls between MCI and ILEC switches
- ISUP signaling for calls between MCI and other networks that transit through the ILEC switched network.
- Translations Capability Applications Part (TCAP) messaging in support of querying SCP-housed databases, and TCAP messaging in support of CLASS services

b. Call Related Databases

Q. WHAT ARE CALL RELATED DATABASES AND WHY ARE THEY IMPORTANT?

A. As defined by the FCC, call related databases are databases, other than operations support systems, that are used in signaling networks for billing and collection or the transmission, routing, or other provision of a telecommunications service. An incumbent LEC shall provide access to its call-related databases, including, but not limited to, the Line

Information database, Toll Free Calling database, downstream number portability databases, and Advanced Intelligent Network databases, by means of physical access at the signaling transfer point linked to the unbundled database.

Access to Call-Related databases provides for the centralized intelligence that governs the disposition of calls. Additionally, service control points (SCPs) serve as the means by which subscriber and service application data is provided, and maintained. The databases provide, in response to an SS7 inquiry, the information necessary to provide a service or deliver a capability.

For MCI to be able to gain access to call-related databases, the following requirements must be met:

- The ILEC must provide MCI billing and recording information to track database usage.

Specific to LIDB:

- The ILEC must enable MCI to store in the ILEC's LIDB any customer line number or special billing number record, whether ported or not, for which the NPA-NXX is supported by that LIDB.

- The ILEC must perform the following LIDB functions for MCI's customer records:
  - billing number screening
  - calling card validation
  - data screening function

Specific to LNP Database:

- The ILEC LNP SCP must return to the MCI switch:
  - appropriate routing for ported numbers
  - industry specified indication for non-ported numbers, and
  - industry specified indication for non-ported NPA-NXX

Specific to AIN Applications:

- The ILEC must provide MCI with descriptive and detailed technical information regarding each of the ILEC's AIN applications housed in its AIN SCPs.

- The ILEC must routinely provide MCI with information regarding database and application capacity available on each of its AIN SCPs.

- The ILEC must allow MCI to gain access to another party's applications housed in the ILEC AIN SCPs, assuming that MCI has gained written notification from that third party permitting MCI to make use of its applications.

c. *Service Management Systems*

Q. WHAT ARE SERVICE MANAGEMENT SYSTEMS AND HOW SHOULD THEY BE PROVISIONED?

A. The FCC defines Service Management Systems as computer databases or systems not part of the public switched network that, among other things, interconnect to the service control point and send to that service control point the information and call processing instructions needed for a network switch to process and complete a call, and provide a telecommunication carrier with the capability of entering and storing data regarding the processing and completing of a call.

The FCC ordered that the ILEC make its SMS and AIN Service Creation Environment available to CLECs for creation and downloading of AIN applications, on a non-discriminatory basis. (Paragraph 493) It is MCI's belief that, in order for this requirement to be met:

- The ILEC must make SCE hardware, software, testing, and technical support resources available to MCI in a similar fashion to how they make such resources available to themselves.
- The ILEC must partition its SCP so as to protect MCI's service logic and data from unauthorized access or execution.
- The ILEC must provide training and documentation to MCI at parity with that provided to itself.
- The ILEC must provide MCI secure LAN/WAN and dial-up remote access to its SCE/SMS.
- The ILEC must allow MCI to create applications and download data without ILEC intervention.

The Operations Support Systems Functions and Operator Services Directory Assistance are addressed in the testimony of Don Price.

C. Additional Unbundled Elements

Q. WHAT ADDITIONAL UNBUNDLED ELEMENTS SHOULD THE

COMMISSION ORDER GTEFL TO PROVIDE?

A. MCI requests the Florida Commission to immediately order at least one additional unbundled element beyond the FCC minimum set: Loop Distribution. This element, described below, meets the guidelines detailed in the FCC rules that give the state authority to order additional elements. MCI plans to pursue further unbundled network elements in the future that include, but are not limited to: additional AIN (advanced intelligent network) unbundling, data switching, and further unbundling of the local loop.

1. AIN

Q. WHY IS NONDISCRIMINATORY ACCESS TO AIN CAPABILITY IMPORTANT?

A. The elimination of all discriminatory access to AIN capability will become increasingly important as more and more innovative new services depend on that capability. MCI expects to be introducing such services within a year, and to be able to move forward with our plans we must have appropriate access to the capability. In particular, in order to provide new services that are consistent across geographic locations and make the most creative use of MCI's existing intelligent network platforms, we believe that it is extremely important the state commissions order the ILECs to interconnect their signaling systems to MCI applications/databases housed in MCI AIN SCPs. The FCC noted that the record on the technical feasibility of such interconnection was not clear, and encouraged state commissions to consider this issue. (Order at paragraph 502) MCI believes that such interconnection is technically feasible, and plans to present detailed testimony on this issue, and to propose appropriate industry trials, in several states that have been at the forefront of Local Number Portability implementation. We then plan to use the results of those proceedings to extend the interconnection practice to other states via the BFR process. The BFR process is discussed fully in the testimony of Mr. Price.

2. Loop Distribution

a. Definition

Q. PLEASE DEFINE THE LOOP DISTRIBUTION THAT MCI WANTS THE COMMISSION TO REQUIRE GTEFL TO UNBUNDLE AT THIS TIME.

A. Loop Distribution is the portion of the loop from the network interface device at the customer premise to the feeder distribution interface. Per Bellcore specifications, there are three basic types of feeder-distribution connection: i) multiple (splicing of multiple distribution pairs onto one feeder pair); ii) dedicated ("home run"); and iii) interfaced ("cross-connected"). While older plant uses multiple and dedicated approaches, newer plant and all plant that uses DLC or other pair-gain technology necessarily uses the interfaced approach. The feeder-distribution interface (FDI) in the interfaced design makes use of a manual cross-connection, typically housed inside an outside plant device ("green box") or in a vault or manhole.

b. The need for unbundled loop distribution plant

Q. WHY DOES MCI NEED UNBUNDLED LOOP DISTRIBUTION PLANT?

A. Loop distribution is necessary to give MCI flexibility in deploying loop facilities by permitting MCI to use its own loop feeder plant where available. (See FCC Order at paragraph 390) Lack of loop distribution will impair MCI's ability to provide local service because it will increase MCI's costs unnecessarily in those instances where it does not require the ILEC's loop feeder plant, but nonetheless requires the ILEC's distribution plant. As MCI and other CLECs expand their facilities-based, efficient SONET networks, they may be located very near an FDI and only require the loop distribution to reach multiple customer premises. However, without this sub-loop element available for purchase, CLECs will be forced to purchase the whole loop, even though they have their own facilities that could be used for a portion of the loop. MCI does not want to have to purchase functional elements in the ILEC's networks that it can efficiently provide itself using new technologies. Thus, an appropriate level of granularity is required for the unbundled local loop so CLECs can make a rational lease vs. build decision in smaller increments. Without this sub-loop element, competitive carriers will be forced to build full loops to multiple customer premises on a speculative basis (which is timely and costly) rather than economically and efficiently replace portions of the leased network with constructed facilities. Replacing the feeder portion of the loop is the most efficient method for CLECs to evolve to a facilities based carriers.

c. Access to loop distribution

Q. HOW SHOULD ACCESS TO UNBUNDLED LOOP DISTRIBUTION BE PROVIDED?

A. Access to loop distribution is technically feasible in general for feeder distribution connections in the interface design. The ILEC can make available connecting block capacity within its Interfaced FDI for connection of MCI's copper feeder facilities. This can either be capacity within its terminal block or an additional terminal block. MCI will require an interval of 30 days to make a FDI ready for provisioning. These make-ready activities include:

- Review of available capacity and other engineering issues and confirmation of committed make-ready date (5 days after order).
- Interval of 5 days from request for make ready to delivery of a make-ready firm order commitment (FOC).
- Physical preparation of the FDI, including making available feeder block capacity through block expansion, addition of an additional block, or removal of unneeded ILEC feeder facilities, and preparation of the FDI for entrance of MCI's feeder cable.
- Delivery of feeder block designation and assignments to MCI.
- Testing the installation of MCI's feeder cables through the feeder block via cooperatively developed loopback tests.

MCI's responsibilities will include delivery of copper feeder cable to the ILEC designated manhole or other interface point serving the FDI, with enough spare cable to extend from the interface point to the FDI. MCI may elect to include spare copper pairs in the cable for repair and growth.

Once in place, MCI will order distribution elements to all addresses served by the FDI on a customer order basis. MCI will be responsible for selecting the feeder cable assignment within the order. The ILEC will be responsible for manually cross-connecting the appropriate distribution cable to MCI's selected feeder and cooperatively testing service between the customer demarcation point and MCI's selected feeder termination point. The standard interval for this activity should be two business days.

Feeder/Distribution unbundling in situations where the ILEC has deployed Multiple or Dedicated designs, as well as unbundled purchase of Loop Electronics and Loop Feeder, will be requested via a bona fide request process.

COLLOCATION

Q. WHAT ARE THE ARRANGEMENTS WHICH MUST BE IN PLACE FOR COLLOCATION TO BE VIABLE?

A. The terms and conditions for collocation for interconnection and access to unbundled network elements are different -- broader -- than those that were needed in the past for competitive access providers. As of today, the terms and conditions surrounding collocation serve as a barrier to enable competitive entry. The FCC has recognized this and has taken four corrective measures. We urge this Commission to ensure proper procedures are put in place to make collocation viable:

1. **Ability to collocate subscriber loop electronics, such as Digital Loop Carrier, in the Central Office.** The current collocation rules, terms

and conditions that only allow the placement of basic transmission equipment in the Central Office were not designed with access to unbundled elements in mind, and give the ILEC a de facto bottleneck veto on CLEC network design plans. (Order at paragraph 580)

2. **Ability to purchase unbundled dedicated transport to the collocation facility**, rather than physically construct from the CLECs network to the ILEC Central Office. (Order at paragraph 590)

3. **Ability to interconnect with other collocators in the same Central Office**. This ability is necessary to allow the expedient and economic interconnection of CLECs networks for the exchange of local traffic or for the use of one another's facilities via negotiated business arrangements. (Order at paragraph 594)

4. **Ability to collocate via physical or virtual facilities.** (Order at paragraph 565)

As mentioned earlier in my testimony, MCI has experienced unacceptably long intervals in establishing collocations. Because collocation is such a fundamental requirement for competitive entry, we request this Commission to mandate a maximum three month interval for physical and a two month interval for virtual collocations.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?
A. Yes.

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