BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition of Intermedia Communications of Florida, Inc. for expanded interconnection for AAVs within LEC central offices	)	DOCKET NO. 921074-TP
	)	Filed: June 24, 1993

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DIRECT TESTIMONY OF JONATHAN E. CANIS
ON BEHALF OF INTERMEDIA COMMUNICATIONS OF FLORIDA, INC.

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DIRECT TESTIMONY OF JONATHAN E. CANIS

Q. Please state your name and business address.

A. Jonathan E. Canis, Suite 300, 3000 K Street, N.W., Washington, D.C. 20007.

Q. Please provide your educational background.

A. I received my B.A. from Rutgers University with highest honors. I hold a J.D. from the Syracuse University College of Law, and a Masters in Telecommunications Management, which was conferred jointly by the Syracuse University School of Business Administration and the Newhouse School of Communications.

Q. Please provide your employment history since graduating from law school.

A. I am an attorney with the firm of Swidler & Berlin, Chartered. I have been associated with Swidler & Berlin since October 1988. Prior to that time, I was an associate in the telecommunications practice of Bishop, Cook, Purcell and Reynolds in Washington, D.C. In that capacity, my responsibilities included extensive work in local exchange carrier ("LEC") tariffs and rates on behalf of information service provider clients. I also participated extensively in the Federal Communications Commission's ("FCC") Docket CC No. 88-2, which established the FCC's rules governing "Open Network Architecture." Between 1984 and 1987, I worked as an attorney with the Federal Communications Commission in the Tariff Division and the Accounting and Audits Division. In that position, my responsibilities included reviewing LEC and interexchange carrier ("IXC") tariffs and rates, determining the methodology for adjusting the

allowed rate of return of the Bell Operating Companies, and establishing the FCC's rules governing the allocation of joint common costs between regulated and unregulated LEC businesses telecommunications practice at Swidler & Berlin.

Q. Please describe your telecommunications practice at Swidler & Berlin.

A. At Swidler & Berlin, I represent a number of clients, including IXCs, large users of telecommunications services and alternative access vendors ("AAVs") -- otherwise known as competitive access providers ("CAPs") -- in proceedings before the FCC and numerous state regulatory commissions. My responsibilities include participation in a broad range of policy-oriented rulemaking proceedings, assisting clients in various business transactions and negotiations, and monitoring -- and when appropriate opposing -- LEC and/or IXC tariffed service rates.

My specific experience regarding collocation issues includes the following: I was lead counsel for an AAV client in the New York Public Service Commission ("NYPSC") proceeding that established the first LEC-tariffed collocation arrangement in the country. That involvement included the drafting of pleadings in the NYPSC's rulemaking proceeding, as well as protracted negotiations with representatives of New York Telephone to establish the terms and conditions of its collocation tariffs and related contracts. Currently four LECs in the United States have tariffed physical collocation arrangements for intrastate services: New York Telephone, New England Telephone, Centel

of Illinois and Bell of Pennsylvania. I negotiated each of these four collocation tariffs on behalf of an AAV client. I have also participated actively in the proceedings concerning the virtual collocation tariffs that have been filed by Illinois Bell and Bell of Pennsylvania. On behalf of various AAV clients, including the Association for Local Telecommunications Services - the national AAV trade association -- I have participated -- and continue to participate -- extensively in the FCC's collocation proceeding.

Q. Have you been involved in any other proceedings in which states have considered the FCC's Expanded Interconnection Order?

A. I have represented competitive access providers in proceedings in Ohio, Pennsylvania, Delaware, West Virginia, Indiana and North Carolina. In Ohio, I continue to represent a coalition of five AAVs -- Cablevision Lightpath, Fibernet, MetroComm, Metropolitan Fiber Systems, and Ohio Linx in collocation-related proceedings. For Indiana I testified on collocation issues on behalf of City Signal and Indiana Digital Access.

Q. On whose behalf are you testifying today?

A. I am testifying on behalf of Intermedia Communications of Florida, Inc., to which I will hereafter refer to Intermedia. Intermedia currently provides competitive access services in Florida, as authorized by this Commission.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the functions served by collocation, the similarities and differences between physical collocation and

virtual collocation and to describe the collocation debate and its resolution in other states and at the Federal Communications Commission. I will also demonstrate the positive economic impact that could result from the adoption of a physical collocation policy like that contained in the FCC's Expanded Interconnection Order.

Q. Please describe the policy goal which resulted in the FCC's consideration and adoption of the Expanded Interconnection Order.

A. The FCC and those states that have considered issues of enhanced interconnection to LEC networks have all been motivated by the same policy goal -- the promotion of effective competition for local telecommunications services. These regulatory initiatives have been spurred by the recent development of the competitive access services industry.

In the mid-1980s, the declining cost of fiber optic cable and technological innovation in microwave-based and fiber-based transmission equipment made it possible for a small group of entrepreneurial companies to compete directly with LECs for the provision of local access services. These companies established fiber or microwave networks that typically serve large business, institutional and governmental customers in metropolitan markets across the country. The AAVs, such as Intermedia, provide three general types of telecommunications links: (1) direct links from one customer premises to another; (2) links between a customer premises and an IXC point of presence ("POP"), to provide the originating or terminating tail of an

interstate or intrastate, interexchange, service; and (3) links between IXC POPs, to hand off traffic from one IXC to another, or to offer a single IXC the ability to aggregate or reroute its traffic without expanding its network.

AAV services typically involve high-capacity digital facilities for the transmission of data and voice traffic, and run the gamut from low-capacity data lines used for credit card verification to Fiber Distributed Data Interface service, which connects local area networks at 100 Mbps. Moreover, AAV services provide the highest operating standards available, and include state-of-the-art features such as full circuit redundancy, which protects against catastrophic service outages, and guarantees uninterrupted service 99.999% of the time. AAVs have pioneered the development of such services and network configurations, and LECs have only recently begun to follow suit. Because AAV's offer protection against service outages, many customers require "vendor diversity" for critical communications services; i.e., they purchase redundant services from both LECs and AAVs.

The AAV industry has grown substantially over the past several years, and now includes over 40 different companies operating in over 60 metropolitan areas across the country. Nevertheless, the provision of competitive access services remains a nascent industry -- nationwide, AAV gross revenues represent less than 1% of the market for access services, which remains dominated by LECs.

The factor that most significantly inhibits AAV growth is the limited reach of their networks -- currently, AAVs are forced to serve a niche market of customers physically connected to their networks. As a method of expanding the reach of AAV services, several states (starting with New York), and the FCC have mandated or approved expanded interconnection arrangements, through which AAVs may cost-effectively connect their traffic to the LECs' networks, thereby gaining the ability to provide service to any customer located on the ubiquitous LEC network.

Q. What benefits have the FCC and other commissions identified with the expansion of local telecommunications competition?

A. The state public utility commissions and the FCC have identified a wide range of public interest benefits that will accrue from the increased competition for local services that collocation will stimulate. These benefits include more rapid deployment of new technology, system redundancy and increased protection against disastrous service outages, increased service innovation and greater customer choice, and price competition that will reduce the cost of telecommunications services to all customers. The importance of these benefits cannot be underestimated to communication dependent businesses. For example, information intensive businesses and health-care and educational institutions are and will continue in the future to be dependent upon a modern telecommunications infrastructure.

Indeed, Intermedia has already demonstrated that competition brings substantial public interest benefits: Intermedia introduced redundant fiber ring network architecture to Florida, which has only recently been copied by LECs. Intermedia's entry into Florida markets has also resulted in the introduction of new services, superior service quality, and lower service rates for telecommunications users. For Intermedia -- or any competitive service provider -- to succeed, it must offer potential customers competitive pricing, superior quality, and responsive, user-friendly service. Intermedia has grown to date because it offers business users in Florida these three elements. Departure from a physical collocation standard will severely limit Intermedia's ability to provide favorable pricing, high quality and ease of administration to its customers. Regulation which artificially inhibits or restricts carriers from employing the type and quality of service technology that is available in other jurisdictions can only harm communications users in Florida. The Commission must not inadvertently establish a regulatory scheme which will inhibit multiple vendors from providing the greatest variety of competitive services possible to end users. In order for Florida to maintain an innovative, state-of-the-art communications infrastructure, it is crucial that all networks be interconnectable to each other on a mutually equitable and efficient basis. These objectives cannot be achieved through virtual collocation, because such arrangements are not the operational, economic or technical equivalent of physical collocation.

Full and effective competition for local telecommunications will not develop in the midst of substantial regulatory uncertainty or inefficiency. Yet uncertainty and inefficiency would result if the Commission were to adopt a policy favoring virtual collocation, or giving the LEC discretion to select the form of collocation it will provide. Such a decision would yield uncertainty because, as discussed later in this testimony, virtual collocation greatly increases the risk of litigation over cost and discrimination issues. A virtual collocation or "LEC choice" policy would also be highly inefficient because it would be inconsistent with the physical collocation policy that governs interstate revisions, and would require AAVs and other collocators to build unnecessary and duplicative collocation arrangements, and to artificially segregate their interstate and intrastate traffic.

States that fail to guarantee effective interconnection and invite costly litigation over collocation terms and conditions -- as a virtual collocation policy will do -- risk driving some of the most innovative and progressive forces in telecommunications out of the market. AAVs, which pioneered the deployment of "disaster-proof" fiber ring technology, would likely enter or expand their networks in states with less burdensome regulatory environments; other parties that are now considering entry into the local services markets -- such as interexchange carriers and cable operators -- would look to invest in areas with greater competitive opportunity and regulatory certainty; large telecommunications-intensive businesses would look

to other states where competition has been more effective in reducing the rates for telecommunications services and increasing service options.

Q. Please describe briefly what collocation actually entails.

A. Through collocation, equipment necessary to terminate an interconnector's traffic is placed within the LEC central office ("CO"). This equipment typically includes: (1) optical line terminating multiplexers ("OLTMs") which terminate a fiber optic transmission and convert it from an optical to an electrical signal that may be processed by the LECs' switches; (2) other multiplexers, which typically include "3-1 multiplexers" which break down a single DS3 (45 Mbps) transmission into 28 individual DS1 (1.544 Mbps) circuits, and "1-0 multiplexers" which break DS1 transmissions down into 24 voice-grade (64 kbps or less) circuits; and (3) digital access and cross-connect systems ("DACS"), which reconfigure voice grade channels within a DS1 transmission, and are used to "groom" traffic (to route traffic over existing facilities in the most efficient manner possible). To terminate the interconnector's traffic within the CO, the interconnector brings its fiber optic cable up to a manhole near the central office, or mounts a microwave receiver on the CO roof. From those points, LEC personnel bring connecting cable into the CO, where it is attached to the collocated terminating equipment. Finally, individual circuits derived from the interconnector's equipment are cross-connected to LEC services to complete the transmission on the LEC network. The

interconnector monitors and controls the traffic between its network and the equipment collocated in the LEC CO.

Q. Do these functions differ for virtual vs. physical collocation?

A. No. The functions described above are identical under either physical or virtual collocation arrangements.

Q. How do these forms of collocation differ?

A. The two forms of collocation differ in two respects. First, under physical collocation, the interconnector's personnel are given access to the LEC CO in order to install and maintain the collocated equipment, while under virtual collocation, the interconnector personnel are excluded from the CO and the interconnector's equipment is installed, repaired and maintained by LEC personnel. Second, under physical collocation, the LEC typically sets aside a portion of unused CO space for interconnectors, and provides each interconnector with its own space (usually an area 10 feet square and 8-10 feet high) in which to place its equipment. Under virtual collocation, the LEC may also take this approach, or it may dedicate individual equipment bays near its main or intermediate distribution frames to an interconnector's use.

Q. Where was collocation first ordered?

A. The New York Public Service Commission ("NYPSC") issued an order adopting a collocation policy on May 16, 1989.

Q. What influenced the NYPSC in adopting this policy?

A. The NYPSC's initial and subsequent orders that established collocation as a means of stimulating competition for local telecommunications services were heavily influenced by the New York City Mayor's Office and representatives of communications-intensive industries in New York. The primary concern of these parties was to ensure that the New York metropolitan area retained a state-of-the-art telecommunications infrastructure in order to prevent communications-dependant industries such as stock brokerages and financial service institutions from relocating in neighboring states.

Q. Did the NYPSC mandate physical collocation?

A. No. The NYPSC stated that the interconnection must be technically and economically comparable to actual collocation and the terms must be reasonable," and ordered New York Telephone ("NYT") to negotiate reasonable terms and conditions with parties seeking collocation. The NYPSC later extended this requirement to all other LECs operating in New York.

Q. What was NYT's response to that order?

A. NYT responded to the NYPSC order by filing its first collocation tariff, called the Optical Transport Interconnection Service ("OTIS"), which provided for virtual collocation.

Q. Was that tariff implemented?

A. Partially. The filing immediately was challenged by potential interconnectors, which argued that the service failed to meet the "comparability" standards established by the NYPSC. The NYPSC allowed the OTIS tariff to take effect,

but required that representatives of NYT and the interconnectors form a Task Force to negotiate a resolution to the interconnectors' complaints. As discussed below, the New York Telephone virtual collocation tariff was withdrawn within a year.

Q. What were the results of the NYPSC mandated negotiations?

A. The Task Force convened a series of formal meetings and informal communications that stretched from June 1990 to January 1991. The Task Force was chaired by a member of the NYPSC staff, who acted as an arbiter. The negotiations were successful in eliminating many of the remaining differences among the parties. NYT gradually modified its position on many of the substantive economic comparability issues. In November, 1990, it formally announced its intention to allow for physical collocation of competing carriers within its central office buildings.

NYT's "OTIS II" physical collocation tariff finally took effect in May, 1991 -- two years after the NYPSC mandated collocation. From that two-year period of formal complaints, task forces and informal negotiations, physical collocation emerged as the only standard that satisfied the interconnectors' needs and the NYPSC's comparability and reasonableness standards. Significantly, NYT in its Comments to the FCC in the Expanded Interconnector Proceeding stated that it found that "[w]hile virtual collocation arrangements may be appropriate for some LECs, the NTCs [NYNEX Telephone Companies] have found that physical collocation provides a more suitable

solution to the needs of the NTCs and their customers." Confirming this is the fact that NYNEX has not opposed the mandatory physical collocation provision in the FCC's Collocation Order.

Q. What is the status of collocation in New York?

A. At least two AAVs currently are providing intrastate services over collocation arrangements in at least 14 NYT COs. Rochester Telephone became the second LEC in New York to file a collocation tariff. The Rochester tariff also provides for physical collocation, and took effect on October 1, 1991.

Q. Have other states considered collocation tariffs?

A. Yes.

Q. Please describe collocation tariffs in states other than New York.

A. Central office collocation arrangements have only been tariffed in three states outside of New York. In Massachusetts, New England Telephone adopted an OTIS tariff that largely mirrors that established by New York Telephone. The New England collocation service, like OTIS II, provides physical collocation, and took effect on August 14, 1991. At present at least two AAVs are providing intrastate service over collocation arrangements in eight New England Telephone central offices in the Boston metropolitan area.

In Illinois, Centel filed a tariff providing for physical collocation on May 8, 1992. The Centel service, called the Centel Facility Interconnect Service ("CFIS"), establishes straightforward and non-burdensome security practices that permit AAV personnel access to the Centel COs to install and maintain

their equipment. Although CFIS has only been offered for a few months, three different interconnectors have already obtained collocation in at least one Centel CO.

In contrast to the collocation tariffs established in New York and Massachusetts, and by Centel in Illinois, Illinois Bell filed an intrastate tariff providing virtual collocation in Illinois. The Illinois Bell Tariff establishes an Optical Interconnection Service, and took effect on April 7, 1991. Although the Illinois Bell tariff has been available for twenty months, I am aware of only one AAV currently providing service over virtual collocation arrangements in three Illinois Bell COs.

Bell of Pennsylvania has recently filed a trial collocation tariff with a limited duration of one year. Filed to settle a AAV complaint, the collocation service provides both physical and virtual collocation in different central offices. The tariff took effect on November 30, 1992.

Both New Jersey Bell and Pacific Bell have established a single virtual collocation arrangement apiece as customer-specific contracts. These arrangements are each limited to a single customer and a single business application, and are not generally available to the public.

In addition, a number of other states have completed proceedings requiring either virtual or physical collocation for intrastate service. To date, no LEC has filed collocation tariffs pursuant to those proceedings.

Q. Please briefly describe the FCC's Expanded Interconnection proceeding.

A. The FCC's Expanded Interconnection order is the culmination of a process that began in 1989. Initiated in response to a 1989 AAV petition for rulemaking, the FCC's proceeding involved two separate notices of proposed rulemaking, and produced thousands of pages of comments, data and affidavits filed by nearly 70 parties. These comments included hundreds of pages devoted to the relative merits of physical versus virtual collocation submitted by interested parties. The FCC released its final orders concerning collocation standards on June 9, 1993, and required LECs to provide physical collocation in most instances.

Q. Can a virtual collocation arrangement provide the operational, economic and technical equivalent of physical collocation?

A. No. Under a physical collocation arrangement, the AAV has unfettered discretion in deciding how and when equipment will be deployed and, most importantly, in setting performance standards for its services and for its personnel. These decisions define the type and quality of the service an AAV provides. In contrast, under virtual collocation, AAVs will be denied the ability to control some of the most fundamental aspects of their business.

This problem reflects a fundamental and unavoidable flaw in virtual collocation: virtual collocation insinuates the LEC between an AAV and the service the AAV provides. In effect, virtual collocation perpetuates the bottleneck that has resulted in LEC domination of the local exchange market. To date, AAVs have crafted an attractive competitive alternative to LEC

services by deploying innovative new technologies, increasing service reliability, and offering greater responsiveness to customer needs. Under physical collocation, AAVs will retain the ability to offer these competitive alternatives to a vastly increased number of customers. Under virtual collocation, however, the LEC's own performance standards will become the de facto standards for AAV services. Customers located on the LEC network will have to accept LEC provisioning and repair intervals, even though the AAV industry has evolved in part because end users demanded higher operating standards and quicker installation times. Equally important, virtual collocation will impose highly inefficient conditions on collocators, including training costs, equipment carrying costs, and overtime charges, and litigation costs that simply are not incurred in a physical collocation environment. These inefficiencies will needlessly inflate AAV service rates, masking AAV operational economies, and denying the end user the ability to make economically rational and efficient choices.

Q. Are there additional costs associated with virtual collocation arrangements?

A. Yes. In addition to these operating and economic inefficiencies, virtual collocation invariably will lead to excessive levels of litigation, unnecessarily burdening the resources of both the Commission and the industry. Because the LEC is a competitor of collocated AAVs, it has a vested interest in seeing that AAV efficiency and service standards do not exceed its own. Because, under virtual collocation, the LEC is interposed between the AAV and its

equipment located within the central office, the LEC has the ability (and incentive) to act on this interest by failing to provide AAVs with timely and competent installation, repair and maintenance of collocated equipment. Virtual collocation is therefore the telecommunications equivalent of placing the fox in charge of the henhouse, and invariably will engender charges of sabotage, price gouging and discrimination by AAVs against LECs, requiring stringent Commission oversight of LEC responses to AAV service requests.

Q. Is virtual collocation the operational equivalent of physical collocation?

A. One of an AAV's strongest selling points is its ability to respond to a customer's unique needs, and to offer the type of individualized service and timely performance that LECs cannot (or do not) provide. For example, most LECs require two weeks or more to install a new DS1 or DS3 service to a customer. AAV on average "turns up" new service to customers on its existing network in a matter of several days. Moreover, in response to customer emergencies, it is not unusual for an AAV to install a new DS1 or DS3 service overnight.

Under virtual collocation, an AAV's ability to provide this extraordinary level of service would be eliminated. Because AAV personnel would not have access to the AAV's terminating equipment within the LEC central office, the AAV would have to rely on the LEC to provide LEC personnel to make the necessary additions to, or modifications of, the AAV's interconnected facilities in order to turn up the requested service. Because the LECs do not provide

their own customers with the level of responsiveness available from AAVs, they cannot install and repair AAV equipment in the time required to maintain AAV standards. Indeed, even if LECs were capable of providing AAVs with the superior level of service standards demanded by AAV customers, they would have to discriminate against their other customers to do so. No LEC has stated its willingness to comply such standards under a virtual collocation arrangement. As a result, the quality of service that competitive AAVs may provide via virtually collocated facilities will unquestionably be diminished.

Under virtual collocation, AAVs are constrained in their ability to upgrade, modify, or expand their networks. In a physical collocation environment, an AAV may install new equipment, or remove old equipment, as it deems appropriate. Under virtual collocation, such network changes must be scheduled with LEC personnel, who ultimately determine when such changes may take place. Similarly, physical collocation arrangements provide a significant advantage to AAV technicians by giving them direct access for testing and monitoring of the AAV's services.

Q. Are there concerns other than timing which affect the operational equivalence of virtual and physical collocation?

A. Yes. For example, under physical collocation, all of an AAV's equipment is located in one 10x10 foot space, which provides adequate room for both initial deployment of an AAV's facilities and for subsequent expansion of its equipment. In contrast, under virtual collocation there is no guaranty that all

AAV equipment will be installed in the same place. If a LEC disperses AAV equipment racks throughout its central office, the AAV may be denied the opportunity to expand or modify equipment efficiently, or may be required to bear the expense of cabling and repeaters that would be unnecessary if they were able to expand their operations within a centralized operating area.

Even after initial installation, when and if the equipment requires servicing, the limited number of LEC personnel familiar with the equipment will undoubtedly lead to further delays. The fact that these few individuals may have had no hands-on experience with the equipment, except for a training course weeks or months earlier, would most likely adversely affect the quality and promptness of service efforts. It is doubtful that LEC employees, no matter how skilled, will be as capable at servicing unfamiliar equipment as would be the AAV's own employees who deal with that equipment on a daily basis. This is especially true in instances in which multiple AAVs are collocated; LEC personnel cannot reasonably be expected to remain current on the technical intricacies of all of the equipment a number of different AAVs will choose to use based upon their different networks. Indeed, this is exactly what New York Telephone experienced in negotiating its OTIS II tariff.

During the course of these negotiations, it became apparent that virtual collocation as it was evolving in New York presented extremely complex operational and administrative problems. Although the interconnector could select the equipment functionality and remotely monitor and control that

equipment, ownership as well as the responsibility to purchase, install, and maintain equipment remained with NYT. Since interconnectors could choose equipment with which NYT's personnel were not familiar, and seek to impose repair and maintenance standards different from those NYT imposed on itself, NYT concluded that physical collocation, whereby the interconnector would provision its own service, and own, install, and maintain the equipment, was a better option for all concerned parties in New York.

Related arguments were raised before the FCC in its Expanded Interconnection proceeding. In that proceeding, Metropolitan Fiber Systems, Inc. ("MFS") argued that, based upon information obtained from Pacific Bell and Illinois Bell, the cost of training LEC personnel to operate interconnector-specified equipment could be estimated at approximately $60,000 to $70,000 per wire center initially, plus an additional $40,000 per year per wire center for yearly refresher courses. These estimates were based on training eight LEC employees (two per shift, plus two additional to assure coverage during vacations, illnesses, etc.) at each wire center. MFS also estimated that these training expenses would have to be incurred again any time the interconnector chose to add a new brand or model of equipment to its network.

Ameritech responded to the MFS argument by indicating that it would provide its personnel with only minimal training and thus could not reasonably be able to ensure that its personnel would be entirely familiar with AAV-

designated equipment. Ameritech further stated that trouble conditions might require the AAV's personnel to assist LEC personnel in performing tests.

Thus, in the event of a serious problem, Ameritech will allow AAV personnel to enter the central office and work on its terminating equipment.

Notwithstanding the question of what constitutes a "serious" problem and who makes the decision that a "serious" problem is imminent, as a practical matter, if AAV personnel can enter the central office and work on AAV-designated equipment when a "serious" problem arises without jeopardizing the LEC network, there is absolutely no reason why AAV personnel should not be able to enter the central office for regular (preventive) maintenance. Indeed, failure to allow AAV personnel to work regularly in the central office will ensure confusion in the event of an extraordinary problem and will limit the AAV's ability to respond to an emergency. This results in total overall degradation of the standards AAVs can maintain.

In addition to these concerns, other disputes are inevitable. One obvious example relates to provisioning intervals. In the event that an AAV determines that the LEC is not installing, maintaining or repairing its equipment in a timely manner, how would the dispute be resolved? Will the Commission be forced to hold an evidentiary hearing every time an AAV believes that a LEC is providing it with inadequate service? Will the AAV or the LEC have to provide customer-specific information to prove the speed with which they turn up service? Clearly the two competitors are not in a position to act as judge

and jury in such disputes. Rather, the Commission would be called upon to adjudicate these disputes on an ad hoc basis, and such litigation would place an enormous burden on the resources of the Commission and the AAVs. Such costly and burdensome litigation would be wholly obviated if physical collocation is adopted as the norm.

Q. Is virtual collocation the economic equivalent of physical collocation?

A. No. The operational problems discussed earlier raise the related problem of determining who should bear the economic costs associated with virtual collocation. First, as noted, if an AAV desires to use a particular brand or model of equipment that the LEC does not routinely use in its own network, it will be necessary for the LEC to train some of its personnel to operate and maintain that equipment. Regardless of who bears the cost of such training, inevitably there will be other operational costs that the AAV -- and ultimately the end user -- will have to bear. For example, the installation of the equipment could be delayed by weeks or months, until the LEC completes the training of the requisite number of employees without disrupting its other operations.

Moreover, such a training requirement would be highly inefficient, and would impose grossly excessive costs on collocating AAVs. In contrast to AAVs' efficient use of manpower, a LEC could require training for its personnel in every office in which an AAV is collocated, and presumably would need trained staff available on the morning, afternoon and evening shifts. Clearly, if

a single AAV collocates in several LEC central offices, it will be required to train a significant number of LEC personnel in order to have a qualified maintenance and repair staff available 24 hours a day. This is not only an enormous waste of time and money, it also unreasonably inflates the AAV's service rates, rendering the AAV less able to compete. It also provides a benefit to the LEC, who will acquire personnel with additional skills and training, at no expense.

Who should bear the cost of this training? In order to introduce new technology, the AAV will already have borne the costs of educating its employees about the new technology, thus it would be unfair and unreasonable for the AAV to also have to bear additional costs associated with educating LEC employees. This is especially true when the LEC will be able to utilize that training for its own purposes as well. On the other hand, with multiple interconnectors the LEC may incur training costs which ultimately prove unrelated to any service competitively provided by the LEC. It would be unreasonable to force the LEC (and ultimately its ratepayers) to incur such costs, which are not useful in the provision of LEC services.

Moreover, with regard to the installation, repair and maintenance of AAV-designated equipment, what specific labor costs should the AAV or the LEC be obligated to bear? LECs traditionally incur higher labor costs than do interconnectors. Thus, LECs will seek to impose their tariffed labor rates, which are based upon a calculation which includes actual labor cost as well as

overhead and rate of return. If LEC rates apply, the LEC labor involved in installing and maintaining AAV equipment will become a profit-making enterprise for the LEC. Obviously, this is not the economic equivalent of physical collocation and provides the LEC with a disincentive for providing the AAV with efficient service.

Another example relates to overtime. As a growth industry AAVs have, of necessity, been required to arrange employment agreements which are structured to avoid or reduce overtime costs to the maximum possible extent. In contrast, LECs have no incentive to minimize the use of overtime in attending to AAV equipment. As before, the competitive relationship between LECs and AAVs raises difficult administrative questions that invariably will result in needless litigation. It is abundantly clear that there is no reasonable method for resolving the inevitable disputes which will arise between LECs and AAVs, absent the Commission's micromanagement of the collocation relationship. For example, regardless of what general labor and overtime rate applies, who decides in a particular circumstances whether the LEC was justified in charging an AAV for overtime work which could reasonably have been conducted during regular business hours? If in a particular instance, there is limited labor available, and overtime expenses must be incurred, it is only reasonable to expect that the LEC will seek to impose all overtime expenses on its competitor rather than splitting the overtime labor between LEC and AAV projects. When is that a reasonable (or unreasonable) practice?

From the LEC's perspective, it would be reasonable to charge the AAV for all such expenses, because absent the AAV the LEC would not incur the charge. On the other hand, from the AAV's perspective, it cannot be held responsible for the extraordinary costs that result from a shortage of LEC labor.

Another example relates to the need for redundant training. In the event of LEC employee turnover, who pays the cost of training new LEC employees? Under what conditions is turnover reasonable or unreasonable? These are questions that the LEC, as a monopoly provider, has never had to answer. Moreover, how do the parties prove their contentions? Will the Commission review LEC and AAV operating practices to determine their reasonableness? It seems obvious that the Commission does not have the resources to apply to this type of conflict.

A more specific problem relates to spare parts. Under Illinois Bell's Optical Interconnection Service tariff, for example, the interconnector is required to pay Illinois Bell a recurring monthly charge for maintaining spare parts for the interconnector-designated equipment. Not only does this eliminate the AAV's ability to achieve lower equipment cost by procuring its own spare equipment directly, but over time the monthly rental rates paid by the AAV will exceed the actual cost of the spere parts, thereby unreasonably and unnecessarily inflating the AAV's cost for collocation. Moreover, where an AAV interconnects with multiple LECs, multiple spare part recurring costs will be imposed on the AAV. This is clearly inefficient, because in the absence of

virtual collocation the AAV would be able to maintain a centralized -- and limited -- supply of spare parts. This is the equivalent of requiring a trucking firm to maintain a separate supply of spare parts in each county it serves.

As this discussion well illustrates, the problem with virtual collocation is not simply that the LEC has the incentive to provide AAVs with unreasonable service; virtual collocation raises unsolvable, structural problems arising from the fact that the LECs are not equipped economically to install and maintain the AAV network. Virtual collocation invariably imposes any LEC's inefficiencies on the collocated AAVs.

This is precisely the reason that the FCC mandated physical collocation but gave the parties the option of negotiating virtual collocation. Only when the AAV has the ability to utilize physical collocation does the LEC have the necessary incentive to negotiate a virtual collocation agreement which may be economically equivalent to physical collocation and will not present the need for extensive regulatory involvement.

Q. Is virtual collocation the technical equivalent of physical collocation?

A. No. Under virtual collocation the AAV is not free to exercise reasonable technical control over its own network, nor is it free to update its network in response to technological developments. For example, under virtual collocation the AAV has no opportunity to supervise the LEC's maintenance and repair activities, and therefore is entirely at its competitor's mercy for the quality of its service. Indeed, because of this inability to maintain and

supervise its own equipment, it is possible for an AAV's network to be degraded as a result of faulty or incompetent installation, maintenance or repair by LEC personnel, without the AAV becoming aware of such operating practices until a serious problem arises.

Indeed, even if LECs provide their normal quality of service in maintaining and operating AAV facilities, they would degrade the quality of AAV service considerably. For example, AAVs typically provide uninterrupted service 99.99% of the time. The LECs' generally fail to meet this standard, as illustrated by Southern Bell's direct direct high capacity service, which provides an error-free rate of only 98.75%. For industries critically dependant on uninterrupted communications, such a difference is considerable. In fact, on an annual basis, a 98.75% service rate could mean total service disruptions amounting to a full 4.56 days.

Another serious concern relates to the dissemination of proprietary information. As noted, under virtual collocation, the AAV is forced to coordinate with the LEC every time it desires to upgrade or replace equipment on its network. This inhibits technical innovation, because an AAV cannot introduce new equipment into its network without first disclosing it to its principal competitor -- the LEC. Moreover, the AAV must also give the LEC the opportunity (and possibly pay the LEC) to train LEC personnel on that equipment. In other words, under virtual collocation when an AAV desires to upgrade its network, the AAV must first inform its principal competitor, pay that

competitor to train its own personnel to work on that equipment, and wait until the training has been accomplished. This will clearly inhibit introduction of new technology by the AAV. Clearly this process is far more time consuming and costly than replacing or upgrading equipment under physical collocation, in which case the AAV would simply obtain the equipment it prefers and install that equipment in its secure, partitioned portion of the central office. In addition, because virtual collocation would make it unduly burdensome for an AAV to replace equipment, even when no special innovation is involved, AAVs likely will be slower than otherwise to reconfigure their networks.

Q. What concerns have LECs raised in connection with physical collocation?

A. In opposing physical collocation before the FCC and elsewhere LECs raised the specter that under physical collocation network integrity will suffer and that they would have insufficient control over interconnector personnel.

Q. Have these concerns ever been expressed before?

A. Yes. These are the identical "concerns" which were raised a decade ago by AT&T in an attempt to prevent MCI and other interexchange carriers from interconnecting with its interstate network, and were later found meritless in the Execunet decisions, which allowed MCI to compete directly against AT&T. Before that, these arguments were raised in an attempt to prevent customers from connecting independently-manufactured customer premises equipment to the Bell network. Similarly, these arguments were ultimately dismissed in the Carterfone decision, which established the right of independent manufacturers

of customer premises equipment to interconnect their equipment with the Bell Atlantic network. As has been demonstrated by practical experience over the last twenty years and as demonstrated below, these allegations are baseless.

Q. Will physical collocation compromise the security of LEC central offices?

A. No. The Commission should not presume that only LEC employees have access to LEC central offices and wire centers. As a normal business practice, LECs regularly provide central office access to outside contractors, who are issued photo IDs and are permitted free and regular access to the most sensitive of central office equipment. There is no demonstrable reason why AAV personnel should not be afforded similar access based upon similar security conditions. Indeed, this is the conclusion drawn by New York Telephone, and is incorporated into its Collocation License Agreement. I have attached to my testimony excerpts of various collocation license agreements which freely address this concern. Thus, for example, in New York, the AAV is responsible for supplying NYT with a list of employees and approved vendors. NYT issues such personnel color-coded photo identification cards which permit access to the partitioned collocation space. It is as simple as that.

Moreover, a LEC truly concerned about control over AAV personnel is free to take the additional step of designating separate secured interconnection areas which do not permit AAV personnel access to common areas. This would reasonably serve the dual purpose of protecting the LEC from any imagined security problems while still permitting physical collocation.

As the FCC has stated, the cost of preparing the secured area could be charged to the interconnectors. It is my understanding that Illinois Bell is beginning to do this now in anticipation of interstate collocation, by designating for AAV use an elevator that is programmed to open only on the floor in which AAV equipment is collocated.

Q. Have the LEC's raised other concerns about physical collocation?

A. Yes. As a general matter the LECs have raised an assortment of concerns that allegedly arise under physical collocation. For instance, LECs have raised the specter that, under physical collocation, strikes by AAV employees would interfere with LEC operations. This is an unrealistic concern, because most LECs are heavily unionized and most AAVs are not; in fact LEC strikes pose a far greater threat to collocated AAVs. This is evidenced by the fact that NYT's collocation license agreement ("CLA") has a provision designed to protect AAVs in the event of the a NYT strike, which provides that in the event of work stoppages NYT will provide AAVs with access to a separate entrance where possible.

LECs have also argued that under physical collocation they will be unable to exclude undesirables from central offices (undesirables being defined as personnel who have violated central office safety codes in the past), and that they will be unable to enforce fire codes and other operational standards on AAV personnel. These fears are unfounded and simply illogical -- AAV employees will adhere to the same conduct and safety codes that

subcontractors adhere to, and LECs will maintain the same control over their central offices that they maintained before physical collocation.

Lastly, LECs have evidenced concern that under physical collocation LEC personnel will be required to restrict their communications in common areas to protect the confidentiality of proprietary information from their AAV competitors. LECs have every right to be concerned over their personnel discussing trade secrets in public areas, but this concern should exist regardless of whether collocation is offered in a given central office. Any subcontractor that currently performs work for a LEC -- and has ready access to the LEC central office -- could obtain employment with a competitor. Thus, this theoretical concern over unintentional disclosure of sensitive information exists with any non-LEC employees, and is not confined to AAV personnel. And again, considerable IXC and AAV experience with collocation has not identified this issue as a legitimate concern. Moreover, the LECs ignore the other side of this equation: as demonstrated above, under virtual collocation AAVs not only have to advise the LEC of the new equipment they intend to install, they also have to pay to have LEC personnel trained in the use of that equipment. Thus, virtual collocation requires the actual disclosure of AAV proprietary information to LECs, which should outweigh any LEC hypothetical concerns. Finally, if LECs build secured interconnector areas, as Illinois Bell appears to be doing, this alleged concern is eliminated.

LEC concerns over AAV personnel in central offices are extreme, illogical, speculative, and overstated. These concerns were raised at length before the FCC, which found them unsupported and unconvincing.

Q. Will physical collocation threaten network integrity?

A. No. In marked contrast to the hypothetical concerns raised over the last several years by LECs who have no experience with physical collocation, actual experience in New York and Massachusetts reveals that alleged concerns over network security under physical collocation are baseless and that physical collocation presents no threat to LEC network integrity.

In the first place it should be obvious that any disruption of the LEC network (or the AAV network) as a result of AAV activities would likely destroy the reputation -- and thus economic viability -- of the AAV. Thus, in order to protect the integrity of both AAV and LEC networks, AAVs routinely follow the same established technical equipment standards followed by the LEC. Moreover, AAVs are not adverse to following the installation and operating standards mandated by a particular LEC for a particular central office, provided that the LEC adheres to such standards itself.

Indeed, this has been the case in New York and Massachusetts. For example, the New York Telephone Collocation License Agreement requires AAVs to follow not only the Bellcore equipment standards, but also particular NYNEX and NYT installation and operating standards. For example, not only must all interconnector entrance facilities and splices comply with "Bellcore

Generic Specification For Optical Fiber and Optical Fiber Cable" but all interconnector equipment must be on NYT's list of approved products or comply with the "Bellcore Network Equipment Building System Generic Equipment Requirement." In addition, all interconnectors must comply with NYNEX "Information Standards For Central Office Installation And Removal Procedures," and "NYT's Central office engineering, environmental and transmission standards as they relate to fire, safety, health and environmental safeguards, or interference with NYT's service or facilities." Likewise, AAVs in Florida would voluntarily comply with the equipmant or installation standards and operation manuals established and followed by the Florida LECs.

These same network integrity arguments were debated at length before the FCC, and the FCC concluded that they were groundless. In the Expanded Interconnection Order the FCC concluded that collocation of AAV-designated equipment would not harm the local network or diminish its reliability since the FCC would require interconnectors to comply with all network integrity and operational safeguards being developed by the FCC's "Network Reliability Council." Further, the FCC found that "[i]n the unlikely event" AAV operating practices "represented a significant and demonstrable technical threat to the LEC network... the LEC would be allowed to proscribe for use of such... practices." Despite this cautionary warning the FCC concluded that they expected such problems to be "rare." Id.

Q. Will the FCC's order prevent a LEC from using its central office space for its own interstate or intrastate services.

A. No. The FCC specifically provided in its order that a LEC may obtain a waiver from the physical collocation requirement if it demonstrates that there is inadequate space for physical collocation in a particular central office in which interconnection has been requested. The FCC expressly recognized that a LEC's need for central office space to provide interstate or intrastate services in the future would constitute a legitimate basis for obtaining a waiver.

Q. How will this affect LEC's future space needs?

A. To the extent those needs are presently known and planned for, the FCC order again specifically provides for a waiver. With respect to future planning, a LEC must simply consider interconnection needs in planning additional space, just as it is required to consider needs for other services in its construction planning.

Q. Will physical collocation prevent a LEC from closing down or consolidating central offices?

A. No. All of the LEC physical collocation tariffs and contracts currently in effect include language that expressly reserves the LEC's right to terminate a physical collocation arrangement if it requires the space for any reason -- including closing down or consolidating its central offices. The FCC's order would not disrupt such provisions.

Q. Based on your understanding of the FCC's order, the comparability of physical and virtual collocation and the benefits to be derived from collocation, what policy do you recommend the Commission adopt?

A. For the reasons discussed above, I urge the Commission to require Florida LECs to provide physical collocation for interconnectors.

Q: Should the Commission require all Florida LECs to provide physical collocation?

A: I recommend that the Commission require only Tier I LECs to offer collocation as a tariffed, generally available service. Other LECs may control central offices that are critically important to competitors, however. The Commission should therefore review requests for collocation in non-Tier 1 LEC central offices on a case-by-case basis. If AAVs or other potential collocators have a bona fide interest in collocating in such central offices, and if the LEC has the technical capability to accommodate collocation, the Commission should approve it. Such ad hoc adjudication of collocation in non-Tier 1 LEC central offices would extend the benefits of increased competition to smaller LECs.

Q: For which central offices must the LECs tariff physical interconnection?

A: In the federal collocation proceedings, the FCC forged a compromise that limited the number of COs in which interconnection had to be tariffed, thereby minimizing the need for LECs to establish CO-specific rates. Under the initial FCC plan, LECs were required to tariff each CO for physical collocation, even if there was little likelihood that collocation would be requested in a particular

office. The LECs opposed this approach, stating that they would be required to survey and establish rates for COs for which no demand for collocation was likely. In response, the FCC announced a compromise position, under which a LEC initially would tariff only the top 10% of the COs in its service area. These tariffed COs would be the ones at which collocators likely will seek to collocate.

Recognizing, however, that potential collocators might wish to collocate at some offices other than the ones initially tariffed, the Commission established a period within which potential collocators could request the tariffing of additional COs. Under this compromise position, the LECs need not tariff offices where there is unlikely to be an immediate need for collocation; however, upon request, collocators can achieve expanded interconnection in any CO where they foresee competitive opportunity. This accommodation of competing interests is quite rational, and I recommend that the Commission adopt the same approach.

Q: Should collocators allow LECs and other parties to interconnect with their networks?

A: Intermedia is willing to provide reciprocal interconnection arrangements for LECs or other parties, upon similar terms and conditions as those established by the LECs.

Q: Should the Commission require all special access and private line providers to file tariffs?

A: The Commission appropriately requires LECs to tariff their services since these carriers have both the ability and incentive to cross-subsidize their competitive services with their noncompetitive services. For competitive access providers, on the other hand, whose services are priced according to the dictates of the market, a tariffing requirement is superfluous. These providers have no captive customer base from which they can exact monopoly profits. Furthermore, as recognized by the Commission in its Alternative Access Vendor Order, No. 24877, AAV customers are generally sophisticated users who do not need expansive Commission protection. Thus, the Commission declined in its AAV Order to require tariffing by AAVs. The considerations that informed that decision still hold true today.

Q: Do the LECs need additional pricing flexibility to be able to compete under expanded interconnection?

A: No. The Commission already has granted LECs substantial pricing flexibility -- allowing them to offer contract serving arrangements and individual case basis pricing, under which the LECs may price their services at nearly any level they desire, so long as they meet the LECs' average variable costs. This degree of flexibility allows the LECs to meet the competitive challenge posed by AAVs, but imposes certain limits on that flexibility to help ensure that LECs do not unfairly cross-subsidize their competitive services.

Q. What is the relation of the FCC's Expanded Interconnection Order to this Florida proceeding?

A. The FCC order only deals with interconnection for interstate services. Every state is free to determine a collocation policy for intrastate services. State regulators are free to establish mandatory collocation policies for intrastate traffic within their states, or to prohibit collocation for intrastate services altogether. As a practical matter, however, once a physical collocation arrangement is established for interstate services, it would not be efficient to establish a conflicting collocation standard for intrastate services. Because the FCC has required Tier 1 LECs in Florida to provide physical collocation in most cases for interstate services, I believe that it is not desirable from a public policy perspective to establish an inconsistent standard for collocation for intrastate services.

Q. If Florida adopts a physical collocation standard, does this mean that a virtual collocation agreement is never permissible?

A. No. If the Commission adopts the FCC standard, virtual collocation arrangements would be authorized when either there is insufficient space for physical collocation or the LEC and AAV voluntarily agree that a virtual collocation arrangement is best. Although the FCC believed that physical collocation was necessary to right the competitive imbalance created by the LEC's control of its central offices, its Order expressly allows for virtual collocation arrangements in these two instances.

Q: It is, then, your opinion that a physical collocation standard would offer significant procompetitive benefits to the citizens of Florida?

A: The interests of the Florida public will best be served by a Commission policy that promotes competition for local services to the fullest extent possible. The LECs' interest is diametrically opposed to this public interest: they have every incentive to impede expanded interconnection while they hurriedly seek to upgrade their existing networks with technology developed by the AAVs -- technology that, significantly, the LECs long ignored.

Intermedia pioneered the use of fiber ring networks in Florida, inaugurating the first such network in Orlando in 1988. GTE, however, just announced plans to install fiber-optic networks, costing $240 million, in parts of Florida, among other places, which duplicate the architecture of the network deployed by Intermedia 5 years ago. The import of the LECs' sudden conversion is clear: they sense the inevitability of expanded interconnection and thus seek, through regulatory and legislative delay, to hold the AAVs at bay while they solidify control over their captive customers, a task made easier by the massive resources they can devote to updating their networks.

Once GTE deploys these fiber rings, it will enjoy unrestricted interconnection and access to its own monopoly network. In addition, its sales force will have unrestricted access to customer information and be able to resell GTE's monopoly services. This is clearly an unfair advantage in providing what is also clearly a competitive service.

In addition, however, to LEC attempts to delay the advent of expanded interconnection while they play catch up with the AAVs, the LECs have also urged, as a second defense, adoption of a collocation standard that poses the least threat to their entrenched interests: a virtual collocation standard. Not surprisingly, this collocation standard is also the one least likely to promote effective competition in the intrastate market. The ability of AAVs to compete effectively for local services is contingent upon their ability to gain expanded interconnection within the central offices owned and controlled by the LECs. Under a virtual collocation standard, however, the LECs have the every incentive to use their strong bargaining position to impose excessive rates and burdensome and restrictive terms and conditions on any collocation arrangement they establish. Under such circumstances, little or no procompetitive benefit is realized.

Furthermore, the LECs' ability and incentive to provide ineffective virtual collocation to AAVs cannot be overcome by Commission mandate -- the amount of litigation and regulatory micromanagement that would be required would exhaust the resources of both the Commission and the AAVs. As I have testified, the considerable experience gained with collocation in other states, and the voluminous record compiled in the FCC's collocation proceeding fully demonstrate that only a mandatory physical collocation standard can place interconnectors on competitively equal footing with the

LECs. As a result, I urge the Commission to adopt the mandatory physical collocation standard embraced by the FCC.

CERTIFICATE OF SERVICE

Docket No. 921074-TP

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by United States Mail this 24th day of June, 1993, to the following.

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