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Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matters of )  
)  
Deployment of Wireline Services Offering ) CC Docket No. 98-147  
Advanced Telecommunications Capability )  
)

FIRST REPORT AND ORDER AND  
FURTHER NOTICE OF PROPOSED RULEMAKING

Adopted: March 18, 1999  
1999

Released: March 31,

Comment Date: June 15, 1999  
Reply Comment Date: July 15, 1999

By the Commission: Commissioner Furchtgott-Roth dissenting in part and issuing  
a statement;  
Commissioner Powell concurring in part and issuing a statement; Commissioner  
Tristani issuing a  
separate statement.

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I. INTRODUCTION

1. One of the fundamental goals of the Telecommunications Act of 1996 (1996 Act) is to promote innovation and investment by all participants in the telecommunications marketplace, in order to stimulate competition for all services, including advanced services. In this order, we take important steps towards implementing Congress' goals with respect to advanced services.

2. The market for advanced telecommunications is a nascent one. Today, both incumbent local exchange carriers (LECs) and new entrants are at the early stages of developing and deploying innovative new technologies to meet the ever-increasing demand for high-speed, high-capacity advanced services. Because it is in the early stages of development, the advanced services market is ripe for competition to develop in a robust fashion. In order to encourage competition among carriers to develop and deploy new advanced services, it is critical that the marketplace for these services be conducive to investment, innovation, and meeting the needs of consumers.

3. To this end, we are committed to removing barriers to competition so that competing providers are able to compete effectively with incumbent LECs and their affiliates in the provision of advanced services. We are also committed to ensuring that incumbent LECs are

able to make their decisions to invest in, and deploy, advanced telecommunications services based on market demand and their own strategic business plans, rather than on regulatory requirements. We intend to take deregulatory steps towards meeting this goal in a subsequent order.

4. In this order, we adopt several measures that we believe will promote competition in the advanced services markets. We fully expect that these measures will create incentives for providers of advanced services to innovate and to develop and deploy new technologies and services on a more efficient and expeditious basis. As a result, consumers will ultimately benefit through lower prices and increased choices in advanced services.

## II. OVERVIEW AND EXECUTIVE SUMMARY

### A. Overview

5. Increasingly, electronic communications are becoming digital and are transmitted by means of "packet switching." Packet-switched transmission of information promises a revolution in information, communications services, and entertainment by offering businesses, residential users, schools and libraries, and other end users of information the ability to access and send large amounts of information very quickly across the street or across the globe. Moreover, for wireline carriers, digital subscriber line technologies are making it possible for ordinary citizens to access various networks, such as the Internet, corporate networks, and governmental networks, at high speeds through the existing copper telephone lines that connect their residences or businesses to the incumbent LEC's central office. The existing infrastructure is being used in new ways that make available to average citizens a variety of new services and vast improvements to existing services. The ability of all Americans to access these high-speed, packet-switched networks will likely spur our growth and development as a nation.

6. We adopt, in this order, additional measures to further facilitate the development of competition in the advanced services market. First, we strengthen our collocation rules to reduce the costs and delays faced by competitors that seek to collocate equipment in an incumbent LEC's central office. For example, we require incumbent LECs to make available to requesting competitive LECs shared cage and cageless collocation arrangements. Moreover, when collocation space is exhausted at a particular LEC location, we require incumbent LECs to

permit collocation in adjacent controlled environmental vaults or similar structures to the extent technically feasible. Second, we adopt certain spectrum compatibility rules and adopt a Further Notice of Proposed Rulemaking (Further NPRM) to explore issues related to developing long-term standards and practices for spectrum compatibility and management. Finally, in the Further NPRM, we consider whether we should require LECs to allow competitors to offer advanced services to end users over the same line on which the LEC is offering voice service.

7. We intend to address, in a future order, other specific forms of regulatory relief that may be needed to stimulate investment and deployment of advanced services by incumbents or new entrants, or whether other changes to the Commission's local competition rules may facilitate deployment of advanced services by competing carriers. For example, in the Advanced Services Order and NPRM, we had proposed an option under which incumbent LECs would be free to establish separate affiliates to provide advanced services that would not be subject to section 251(c) obligations if those affiliates were structured in a fashion so as not to be deemed a successor or assign of the incumbent. We also sought comment on the applicability of section 251(c)(4) resale obligations to advanced services to the extent such services are exchange access services. In addition, the NPRM proposed limited modifications of LATA boundaries. We also had set forth proposals in the Advanced Services Order and NPRM relating to incumbent LEC loop unbundling obligations. We are deferring action on those issues and proposals.

#### B. Executive Summary

8. In the Order, we take the following steps:

#### Collocation

□ Incumbent LECs must make available to requesting competitive LECs shared cage and cageless collocation arrangements. Moreover, when collocation is exhausted at a particular LEC location, incumbent LECs must permit collocation in adjacent controlled environmental vaults or similar structures to the extent technically feasible.

□ A collocation method used by one incumbent LEC or mandated by a state commission is presumptively technically feasible for any other incumbent LEC.

□ Incumbent LECs may adopt reasonable security measures to protect their central office equipment.

□ Incumbent LECs may not require competitive LEC equipment to meet more stringent safety requirements than those the incumbent LEC imposes on its own equipment.

□ Incumbent LECs must permit competitors to collocate all equipment used for interconnection and/or access to unbundled network elements (UNEs), even if it includes a "switching" or enhanced services function, and incumbent LECs cannot require that the switching or enhanced services functionality of equipment be disengaged.

□ Incumbent LECs must permit a competitive LEC to tour the entire central office in which that competitive LEC has been denied collocation space. Incumbent LECs must provide a list of all offices in which there is no more space. Incumbent LECs must remove obsolete, unused equipment, in order to facilitate the creation of additional collocation space within a central office.

□ The collocation rules set forth in the Order serve as minimum standards, and permit any state to adopt additional requirements.

#### Spectrum Compatibility

□ We adopt certain spectrum compatibility and management rules to allow competitive providers to deploy innovative advanced services technology in a timely manner.

Specifically, any loop technology that complies with existing industry standards, has been successfully deployed by any carrier without significantly degrading the performance of other services, or has been approved by this Commission, any state commission, or an industry standards body is presumed acceptable for deployment. A LEC may not deny a carrier's request to deploy technology that is presumed acceptable for deployment, unless the LEC demonstrates to the state commission that deployment of the particular technology within the LEC network will significantly degrade the performance of other services.

□ We also seek comment in the Further NPRM on measures that would facilitate timely development of long-term industry standards and practices on spectrum compatibility and

management to facilitate deployment of new and innovative loop technologies.

#### Line Sharing

□ In the Further NPRM, we tentatively conclude line sharing is technically feasible, and we seek comment on the operational, pricing, and policy ramifications to determine whether or not to mandate line sharing nationally.

### III. BACKGROUND

#### A. Advanced Services Technologies

9. While the existing telephone network in the United States, with a line running into virtually every home and business, has provided superior voice telephony, until recently it was not thought suitable for the provision of interactive video or high speed data communications. First, the copper telephone wire running the "last mile" to each home, the "local loop," was generally thought to be capable of carrying only a relatively modest stream of information. Second, the public telephone network is circuit-switched, that is, it maintains an end-to-end channel of communication for the entire duration of the call. Although this is a useful means of transmitting ordinary voice telephony, it is not efficient for transmitting data and other types of information.

10. xDSL technology, coupled with packet-switched networks, addresses both of these constraints. With xDSL technology, two modems are attached to each telephone loop: one at the subscriber's premises and the other at the telephone company's central office. The use of xDSL modems allows transmission of data over the copper loop at vastly higher speeds than can be achieved with analog data transmission. Moreover, combining xDSL technology with packet switching permits more efficient use of the network because information generated by multiple users can be sent over a telecommunications facility that in a circuit-switched environment may be dedicated to only one customer for the duration of a call. In addition, the customer can potentially make ordinary voice calls over the public switched network at the same time as he or she is using the same line for high-speed data transmission.

11. In circumstances in which the xDSL-equipped line carries both POTS ("plain old telephone service") and data channels, the carrier must separate those two streams when they

reach the telephone company's central office. This is generally done by a device known as a digital subscriber line access multiplexer, or DSLAM. The DSLAM and central office xDSL modem send the customer's POTS traffic to the public, circuit-switched telephone network. The DSLAM sends the customer's data traffic (combined with that of other xDSL users) to a packet-switched data network. Thus, the data traffic, after traversing the local loop, avoids the circuit-switched telephone network altogether.

12. Once on the packet-switched network, the data traffic is routed to the location selected by the customer, for example, a corporate local area network or an Internet service provider. That location may itself be a gateway to a new packet-switched network or set of networks, like the Internet.

#### B. Statutory Framework

13. In the 1996 Act, Congress established a "pro-competitive, deregulatory national policy framework" for telecommunications, opening all telecommunications markets to competition so as to make advanced telecommunications and information technologies and services available to all Americans. At the core of the Act's market-opening provisions is section 251. In section 251, Congress sought to open local telecommunications markets to competition by, among other things, reducing economic and operational advantages possessed by incumbents.

14. Section 251 requires incumbent LECs to share their networks in a manner that enables competitors to choose among three methods of entry -- the construction of new networks, the use of unbundled elements of the incumbent's network, and resale of the incumbent's retail services. Section 251(a) requires all "telecommunications carriers" to "interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers." Section 251(c)(3) requires incumbent LECs to provide nondiscriminatory access to unbundled network elements. In addition, section 251(c)(6) imposes an obligation on incumbent LECs "to provide, on rates, terms and conditions that are just, reasonable, and nondiscriminatory, for physical collocation of equipment necessary for interconnection or access to unbundled network elements. . . ." Finally, for competitors that seek to compete by reselling the incumbent LEC's services,



section 251(c)(4) requires incumbent LECs to offer for resale at wholesale rates "any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers."

### C. Procedural History

15. On August 7, 1998, we released the Advanced Services Order and NPRM, in response to six petitions suggesting action we should take to speed the deployment by wireline carriers of advanced services. In that order, we concluded, inter alia, that the pro-competitive provisions of the 1996 Act are technology-neutral and thus apply equally to advanced services and to circuit-switched voice services. We therefore concluded that incumbent LECs are subject to section 251(c) in their provision of advanced services. Specifically, we found that incumbent LECs are subject to the interconnection obligations of section 251(a) and 251(c)(2) with respect to both their circuit-switched and packet-switched networks. We also clarified that the facilities and equipment used by the incumbent LECs to provide advanced services are network elements and generally subject to the obligations in section 251(c)(3). In response to the petitions of Ameritech, Bell Atlantic, SBC and U S WEST requesting us to forbear from applying the requirements of section 251(c), or section 271, or both with respect to their provision of advanced services, we concluded that we lacked the statutory authority to do so and therefore denied those petitions.

16. In the Advanced Services Order and NPRM, we proposed, in relevant part, to strengthen collocation requirements to foster timely, cost-effective, competitive deployment of advanced services. We also proposed to establish spectrum compatibility and management guidelines so that multiple carriers could deploy advanced technologies on common facilities.

17. On January 25, 1999, the Supreme Court released an opinion in AT&T Corp. v. Iowa Utilities Board in which it addressed the Commission's rule setting forth those network elements that incumbent LECs must make available to competitors. The Court held that the Commission did not adequately consider the standards of section 251(d)(2) in determining which network elements must be unbundled pursuant to section 251(c)(3). The Court stated that the Commission's rule setting forth the network elements that incumbent LECs must make available

to requesting carriers should be vacated, and it remanded the matter for further proceedings.

We are currently reviewing the section 251(d)(2) standard consistent with the Supreme Court opinion in Iowa Utilities Board, and will seek further comment on the issue of whether network elements used in the provision of advanced services should be unbundled.

#### IV. FIRST REPORT AND ORDER

##### A. Measures to Encourage Competitive LEC Deployment of Advanced Services

###### 1. Overview

18. In this section we adopt additional measures that we expect will further facilitate competitive deployment of advanced services. In order to enable competitive LECs to compete effectively with incumbents in the advanced services marketplace, we establish additional standards and rules that will strengthen our collocation requirements, thereby reducing costs and delays associated with competitors collocating in an incumbent LEC's central office. We also adopt certain spectrum compatibility and management rules to allow competitive providers to deploy innovative advanced services technology in a timely manner. We acknowledge that the rules we adopt in this Order focus on the provision of advanced services, but we emphasize that the actions we take today pursuant to the Act apply to all telecommunications services, whether traditional voice services or advanced services.

###### 2. Collocation Requirements

###### a. Background

19. In 1992, in the Expanded Interconnection proceeding, the Commission adopted rules pursuant to section 201 of the Act that required certain incumbent LECs to offer physical and virtual collocation for parties seeking to locate interstate special access and switched transport transmission facilities at LEC premises.

20. Section 251(c)(6) of the 1996 Act requires incumbent LECs to "provide, on rates terms and conditions that are just, reasonable, and nondiscriminatory, for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the local exchange carrier, except that the carrier may provide for virtual collocation if the local exchange carrier demonstrates to the State commission that physical collocation is not practical

for technical reasons or because of space limitations." In the Local Competition First Report and Order, the Commission adopted specific rules to implement the collocation requirements of section 251(c)(6). In the Advanced Services Order and NPRM, we tentatively concluded that we should adopt additional collocation rules, as urged by ALTS, to ensure that competing providers have access to the physical collocation space they need in order to offer advanced services.

21. Consumer demand for advanced services is increasing exponentially, and competitive LECs and incumbent LECs alike are rushing to meet that demand. Competitive LECs rely on the incumbents to provision collocation space for the equipment needed to provide advanced services, and these new entrants cannot meet consumer demand for advanced services absent reasonable and nondiscriminatory collocation arrangements. For example, any xDSL-based services provided over unbundled local loops would require location of a DSLAM within a reasonable distance of the customer's premises, usually less than 18,000 feet. As such, competitive LECs generally must collocate their DSLAMs in the incumbent LEC's premises where the customer's unbundled loop terminates. Absent viable collocation arrangements, the customer will not have a choice of LECs from which to purchase advanced services. As discussed in greater detail below, we now adopt several collocation measures that we consider critical steps in encouraging the competitive provision of advanced services.

b. Adoption of National Standards

(1) Background

22. In the Local Competition First Report and Order, the Commission adopted minimum requirements for nondiscriminatory collocation arrangements. The Commission adopted rules for, among other things, space allocation and exhaustion, types of equipment that could be collocated, and LEC premises where parties could collocate equipment. The Commission also concluded that state commissions should have the flexibility to adopt additional collocation requirements that are otherwise consistent with the Act and the Commission's regulations. In the Advanced Services Order and NPRM, we sought comment on the extent to which we should establish additional national rules for collocation pursuant to sections 201 and 251 in order to remove barriers to entry and speed the deployment of advanced services.

(2) Discussion

23. We adopt our tentative conclusion to establish additional national rules for collocation. We emphasize that the collocation measures we adopt in this order apply to all telecommunications services, including advanced services and traditional voice services. The standards and rules we implement in this proceeding will serve as minimum requirements. We note that state commissions commenting in this proceeding generally support our proposal to adopt additional national rules. We conclude that states will continue to have the flexibility to respond to specific issues by imposing additional requirements. For example, although we do not adopt at this time specific provisioning intervals for collocation space preparation, we appreciate the efforts of the Texas Public Utilities Commission and other states that have worked hard to ensure that collocation is provisioned in a timely manner. State commissions play a crucial role in furthering the goals of our collocation rules by enacting rules of their own that, in conjunction with federal rules, ensure that collocation is available in a timely manner and on reasonable terms and conditions. In addition, as we noted in the NPRM, competitive LECs can pursue remedies for violations of our collocation requirements before the Commission and the appropriate state commissions.

24. We do not agree with the comments of certain incumbent LECs that national rules are unnecessary because there are no remaining collocation issues that require federal involvement. As discussed more fully below, there are numerous problems that remain with provisioning of collocation space, and we believe that there are concrete steps we can take, in conjunction with the ongoing work of state commissions, to further the pro-competitive goals of the 1996 Act.

c. Collocation Equipment

(1) Background

25. Section 251(c)(6) requires incumbent LECs to allow collocation of "equipment necessary for interconnection or access to unbundled network elements . . . ." In the Local Competition First Report and Order, the Commission concluded that section 251(c)(6) requires collocation of equipment used for: (1) interconnection for "the transmission and routing of

telephone exchange service and exchange access" pursuant to section 251(c)(2); and (2) access to unbundled network elements for "the provision of a telecommunications service" pursuant to section 251(c)(3). The Commission interpreted section 251(c)(6) as requiring incumbent LECs to permit competitors to collocate equipment that is "used and useful" for either interconnection or access to unbundled network elements.

26. The Commission concluded in the Local Competition First Report and Order that new entrants may collocate transmission equipment, including optical terminating equipment and multiplexers, on incumbent LEC premises. The Commission further concluded, at the time, that incumbent LECs need not permit the collocation of other types of equipment, including switching equipment and equipment used to provide enhanced services. With respect to switching equipment, however, the Commission recognized that "modern technology has tended to blur the line between switching equipment and multiplexing equipment." This trend in manufacturing has benefited service providers and their customers by reducing costs, promoting efficient network design, and expanding the range of possible service offerings. As a consequence of this integration, certain equipment that competing carriers need to collocate to provide advanced services efficiently may also perform switching functions. Because incumbent LECs are currently not required by our rules to permit collocation of switching equipment, competing providers argue that incumbent LECs have delayed competitive entry by contesting, on a case-by-case basis, the functionality of a particular piece of equipment (which may perform switching functions in addition to its other functions) and whether it may be collocated.

## (2) Discussion

27. Equipment with switching and enhanced services functionality. In the Advanced Services Order and NPRM, we tentatively concluded that incumbent LECs should not be permitted to impede competing carriers from offering advanced services by imposing unnecessary restrictions on the type of equipment that competing carriers may collocate. We sought comment on whether we should require incumbent LECs to allow new entrants to collocate any equipment that is used for interconnection and access to unbundled network elements, even if such equipment also includes a switching functionality. Specifically, we asked if collocation of

equipment that performs both switching and other functions would encourage competitive LECs to use integrated equipment that otherwise might not be allowed in incumbent LEC premises.

28. We agree with commenters that our existing rules, correctly read, require incumbent LECs to permit collocation of all equipment that is necessary for interconnection or access to unbundled network elements, regardless of whether such equipment includes a switching functionality, provides enhanced services capabilities, or offers other functionalities. Our rules obligate incumbent LECs to "permit the collocation of any type of equipment used for interconnection or access to unbundled network elements." Stated differently, an incumbent LEC may not refuse to permit collocation of any equipment that is "used or useful" for either interconnection or access to unbundled network elements, regardless of other functionalities inherent in such equipment. Rather, our rules require incumbent LECs to permit collocation of any equipment required by the statute unless they first "prove to the state commission that the equipment will not be actually used by the telecommunications carrier for the purpose of obtaining interconnection or access to unbundled network elements." We further agree with commenters that this rule requires incumbent LECs to permit competitors to collocate such equipment as DSLAMs, routers, ATM multiplexers, and remote switching modules. Nor may incumbent LECs place any limitations on the ability of competitors to use all the features, functions, and capabilities of collocated equipment, including, but not limited to, switching and routing features and functions.

29. We consider this clarification of our existing rules to be particularly important given the rapid pace of technological change in the telecommunications equipment marketplace. Several commenters contend that incumbent LECs are refusing to permit collocation of advanced services equipment that, while used or useful for interconnection or access to unbundled network elements, also contains, for example, a switching functionality. For example, we note that remote switching modules, which terminate circuits and perform multiplexing and switching functions, do not function as stand-alone switches, but rather provide integrated functionalities in a single piece of equipment. By clarifying that incumbent LECs must permit such equipment to be collocated on their premises, we take an important step towards elimination of obstacles to

competition. In order to compete effectively in the advanced services marketplace, competitive telecommunications providers must be permitted to collocate integrated equipment that lowers costs and increases the services they can offer their customers.

30. We continue to decline, however, to require incumbent LECs to permit the collocation of equipment that is not necessary for either access to UNEs or for interconnection, such as equipment used exclusively for switching or for enhanced services. Although we may explore requiring such collocation in the future, we do not find sufficient support in the record at this time for such a requirement. We reiterate that incumbent LECs are obligated, pursuant to section 251(c)(6), to permit competitors to collocate multi-functional equipment, even equipment that includes switching or enhanced services functionalities, if such equipment is necessary for access to UNEs or for interconnection with the incumbent LEC's network.

31. We do not agree with the contention of certain commenters that the statute does not authorize the Commission to impose such a requirement. This contention is premised on the assumption that requiring incumbent LECs to permit collocation of equipment with a switching or enhanced services functionality, as long as that equipment is used or useful for interconnection with the incumbent's network or access to unbundled network elements, would constitute an unlawful taking. As the Commission stated in the Local Competition First Report and Order, section 251(c)(6) "expressly requires incumbent LECs to provide physical collocation, absent space or technical limitations," and thus physical collocation is not, the Commission concluded, an unlawful taking. Because the statute authorized the Commission to require incumbent LECs to permit physical collocation, the only takings-related issue in ordering physical collocation, the Commission concluded, was just compensation. Even assuming, arguendo, that our revised collocation rules constitute a taking, they do not constitute an unlawful taking, because such action would clearly be for a public purpose, pursuant to express statutory authorization, and our implementation provides for just compensation. We conclude that to interpret section 251(c)(6) as denying competitive carriers the ability to collocate multi-functional equipment in incumbent LEC central offices would place competitors at an unreasonable competitive disadvantage. Given the technological trend towards integrated telecommunications equipment, requiring competitive

LECs to purchase single-function equipment would relegate competitors to less efficient equipment and create unnecessary roadblocks to competitive entry. Section 251(c)(6) mandates incumbent LECs permit competing carriers to collocate any equipment that is either used or useful for interconnection or access to unbundled network elements, regardless of any other functionalities that may be offered by that equipment. Equipment that meets the used or useful test falls squarely within the parameters of section 251(c)(6).

32. Cross-Connects. In the Advanced Services Order and NPRM, we noted ALTS' contention that some incumbent LECs do not allow competitive LECs to interconnect their collocated equipment with that of other collocating carriers. We observed that, pursuant to our current rules, an incumbent LEC is required to allow competing carriers to establish cross-connects to the collocated equipment of other competing carriers at the incumbent's premises. The Commission did not, however, expressly require incumbent LECs to permit competitors to construct their own connecting transmission facilities. We sought comment on any additional steps we might take so that competitive LECs are able to establish cross-connects to the equipment of other collocated competitive LECs.

33. We now revise our rules to require incumbent LECs to permit collocating carriers to construct their own cross-connect facilities between collocated equipment located on the incumbent's premises. No incumbent LECs objected specifically to permitting competitive LECs to provision their own cross-connect facilities. Although we previously did not require incumbent LECs to permit collocating carriers to construct their own cross-connect facilities, we did not prevent incumbent LECs from doing so. Several competitive LECs raise the issue of delay and cost associated with incumbent LEC provision of cross-connect facilities, which are often as simple as a transmission facility running from one collocation rack to an adjacent rack. We see no reason for the incumbent LEC to refuse to permit the collocating carriers to cross-connect their equipment, subject only to the same reasonable safety requirements that the incumbent LEC imposes on its own equipment. Even where competitive LEC equipment is collocated in the same room as the incumbent's equipment, we require the incumbent to permit the new entrant to construct its own cross-connect facilities, using either copper or optical facilities, subject only to



the same reasonable safety requirements the incumbent places on its own similar facilities.

Moreover, we agree with Intermedia that incumbent LECs may not require competitors to purchase any equipment or cross-connect capabilities solely from the incumbent itself at tariffed rates.

34. **Equipment Safety Requirements.** In the Advanced Services Order and NPRM, we tentatively concluded that incumbent LECs may require that all equipment that a new entrant places on its premises meet safety requirements to avoid endangering other equipment and the incumbent LECs' networks. Certain performance and reliability requirements, however, may not be necessary to protect LEC equipment. Such requirements may increase costs unnecessarily, which would lessen the ability of new entrants to serve certain markets and thereby harm competition. We tentatively concluded that, to the extent that incumbent LECs use equipment that does not satisfy the Bellcore Network Equipment and Building Specifications (NEBS) requirements, competitive LECs should be able to collocate the same or equivalent equipment. We further tentatively concluded that incumbent LECs should be required to list all approved equipment and all equipment they use.

35. We conclude that, subject to the limitations described herein, an incumbent LEC may impose safety standards that must be met by the equipment to be collocated in its central office. First, we agree with commenters that NEBS Level 1 safety requirements are generally sufficient to protect competitive and incumbent LEC equipment from harm. NEBS safety requirements, originally developed by the Bell Operating Companies' own research arm, are generally used by incumbent LECs for their own central office equipment, so we conclude that NEBS adequately address the safety concerns raised by incumbent LECs when competitors introduce their own equipment into incumbent LEC central offices. We reject SBC's argument that equipment safety and performance standards should vary from location to location and that no general rules of applicability should be imposed. While we agree that equipment safety standards are important to protect incumbent LEC central offices, we also believe that as a matter of federal policy, there should be a common set of safety principles that carriers should meet, regardless of where they operate. We agree with those commenters that contend that NEBS

requirements that address reliability of equipment, rather than safety, should not be used as grounds to deny collocation of competitive LEC equipment. Thus, an incumbent LEC may not refuse to permit collocation of equipment on the grounds that it does not meet NEBS performance, rather than safety, requirements.

36. Second, we conclude that, although an incumbent LEC may require competitive LEC equipment to satisfy NEBS safety standards, the incumbent may not impose safety requirements that are more stringent than the safety requirements it imposes on its own equipment that it locates in its premises. Because incumbent LECs generally have been setting their own rules for the safety standards that collocating carriers must adhere to, we need to adopt measures that reduce incentives for discriminatory action. We agree with commenters' suggestion that an incumbent LEC that denies collocation of a competitor's equipment, citing safety standards, must provide to the competitive LEC within five business days a list of all equipment that the incumbent LEC locates within the premises in question, together with an affidavit attesting that all of that equipment meets or exceeds the safety standard that the incumbent LEC contends the competitor's equipment fails to meet. We find that absent such a requirement, incumbent LECs may otherwise unreasonably delay the ability of competitors to collocate equipment in a timely manner. For example, without this requirement, incumbents could unfairly exclude competitors' equipment for failing to meet safety standards that the incumbent's own equipment does not satisfy, or may unreasonably refuse to specify the exact safety requirements that competitors' equipment must satisfy.

#### d. Alternative Collocation Arrangements

##### (1) Background

37. In the Advanced Services Order and NPRM, we made several tentative conclusions and sought comment on issues raised by ALTS in its petition contending that the practices and policies that incumbent LECs employed in offering physical collocation impeded competition by imposing substantial costs and delays on competing carriers for space and construction of collocation cages. Based on the record submitted in this proceeding, we now adopt several of our tentative conclusions related to the provisioning of collocation space in incumbent LEC premises.

38. In the Advanced Services Order and NPRM, we tentatively concluded that we should require incumbent LECs to offer collocation arrangements to new entrants that minimize the space needed by each competing provider in order to promote the deployment of advanced services to all Americans. Such alternative collocation arrangements include: (1) the use of shared collocation cages, within which multiple competing providers' equipment could be either openly accessible or locked within a secure cabinet; (2) the option to request collocation cages of any size without any minimum requirement, so that competing providers will not use any more space than is reasonably necessary for their needs; and (3) physical collocation that does not require the use of collocation cages ("cageless" collocation).

(2) Discussion

39. We now adopt our tentative conclusion that incumbent LECs must provide specific collocation arrangements, consistent with the rules we outline below, at reasonable rates, terms, and conditions as are set by state commissions in conformity with the Act and our rules. We agree with those commenters that argue requiring such alternative collocation arrangements will foster deployment of advanced services by facilitating entry into the market by competing carriers. By requiring incumbent LECs to provide these alternative collocation arrangements, we seek to optimize the space available at incumbent LEC premises, thereby allowing more competitive LECs to collocate equipment and provide service. Moreover, we noted in the Advanced Services Order and NPRM, and the record reflects, that more cost-effective collocation solutions may encourage the deployment of advanced services to less densely populated areas by reducing the cost of collocation for competitive LECs.

40. We now adopt new rules requiring incumbent LECs to make certain collocation arrangements available to requesting carriers. In adopting new rules, we reject the arguments of incumbent LEC commenters that additional national collocation rules are not necessary. For example, BellSouth argues that, rather than adopt additional rules, the Commission should "allow the parties to discuss and resolve any issues they may have on a case-by-case basis," and Ameritech argues that "collocation rates, terms and conditions have been resolved as important contractual obligations." The record is replete, however, with evidence documenting the expense and provisioning delays inherent in the caged collocation process. National rules

governing specific collocation arrangements will help solve those problems. We require incumbent LECs to make each of the arrangements outlined below available to competitors as soon as possible, without waiting until a competing carrier requests a particular arrangement, so that competitors will have a variety of collocation options from which to choose. We note, however, that incumbent LECs and their competitors can, in the course of voluntary negotiations, agree to additional or different collocation terms and conditions beyond those we require in this order.

41. First, we require incumbent LECs to make shared collocation cages available to new entrants. A shared collocation cage is a caged collocation space shared by two or more competitive LECs pursuant to terms and conditions agreed to by the competitive LECs. In making shared cage arrangements available, incumbent LECs may not increase the cost of site preparation or nonrecurring charges above the cost for provisioning such a cage of similar dimensions and material to a single collocating party. In addition, the incumbent must prorate the charge for site conditioning and preparation undertaken by the incumbent to construct the shared collocation cage or condition the space for collocation use, regardless of how many carriers actually collocate in that cage, by determining the total charge for site preparation and allocating that charge to a collocating carrier based on the percentage of the total space utilized by that carrier. In other words, a carrier should be charged only for those costs directly attributable to that carrier. The incumbent may not place unreasonable restrictions on a new entrant's use of a collocation cage, such as limiting the new entrant's ability to contract with other competitive carriers to share the new entrant's collocation cage in a sublease-type arrangement. In addition, if two or more competitive LECs who have interconnection agreements with an incumbent LEC utilize a shared collocation arrangement, the incumbent LEC must permit each competitive LEC to order UNEs to and provision service from that shared collocation space, regardless of which competitive LEC was the original collocator.

42. Second, we require incumbent LECs to make cageless collocation arrangements available to requesting carriers. In general, we agree with commenters that the use of a caged collocation space results in the inefficient use of the limited space in a LEC premises, and we

consider efficient use of collocation space to be crucial to the continued development of the competitive telecommunications market. While we do not prevent incumbent LECs from offering caged collocation arrangements, we require incumbent LECs to make cageless collocation available so as to offer competitors a choice of arrangements. Subject only to technical feasibility and the permissible security parameters outlined below, incumbent LECs must allow competitors to collocate in any unused space in the incumbent LEC's premises, without requiring the construction of a room, cage, or similar structure, and without requiring the creation of a separate entrance to the competitor's collocation space. We further agree with commenters that incumbent LECs may require competitors to use a central entrance to the incumbent's building, but may not require construction of a new entrance for competitors' use, and once inside the building incumbent LECs must permit competitors to have direct access to their equipment. Incumbent LECs may not require competitors to use an intermediate interconnection arrangement in lieu of direct connection to the incumbent's network if technically feasible, because such intermediate points of interconnection simply increase collocation costs without a concomitant benefit to incumbents. In addition, an incumbent LEC must give competitors the option of collocating equipment in any unused space within the incumbent's premises, to the extent technically feasible, and may not require competitors to collocate in a room or isolated space separate from the incumbent's own equipment. The incumbent LEC may take reasonable steps to protect its own equipment, such as enclosing the equipment in its own cage, and other reasonable security measures as discussed below. The incumbent LEC may not, however, require competitors to use separate rooms or floors, which only serves to increase the cost of collocation and decrease the amount of available collocation space. The incumbent LEC may not utilize unreasonable segregation requirements to impose unnecessary additional costs on competitors.

43. Incumbent LECs must also ensure that cageless collocation arrangements do not place unreasonable minimum space requirements on collocating carriers. Thus, a competitive LEC must be able to purchase collocation space sufficient, for example, to house only one rack of equipment, and should not be forced to purchase collocation space that is much larger than the carrier requires. We require incumbent LECs to make collocation space available in single-bay

increments, meaning that a competing carrier can purchase space in increments small enough to collocate a single rack, or bay, of equipment. We conclude that this requirement serves the public interest because it would reduce the cost of collocation for competitive LECs and it will reduce the likelihood of premature space exhaustion. We rely on state commissions to ensure that the prices of these smaller collocation spaces are appropriate given the amount of space in the incumbent LEC's premises actually occupied by the new entrants.

44. Finally, we require incumbent LECs, when space is legitimately exhausted in a particular LEC premises, to permit collocation in adjacent controlled environmental vaults or similar structures to the extent technically feasible. Such a requirement is, we believe, the best means suggested by commenters, both incumbents and new entrants, of addressing the issue of space exhaustion by ensuring that competitive carriers can compete with the incumbent, even when there is no space inside the LEC's premises. Because zoning and other state and local regulations may affect the viability of adjacent collocation, and because the incumbent LEC may have a legitimate reason to exercise some measure of control over design or construction parameters, we rely on state commissions to address such issues. In general, however, the incumbent LEC must permit the new entrant to construct or otherwise procure such an adjacent structure, subject only to reasonable safety and maintenance requirements. The incumbent must provide power and physical collocation services and facilities, subject to the same nondiscrimination requirements as traditional collocation arrangements.

45. In the Advanced Services Order and NPRM, we also asked whether, if an incumbent LEC offers a particular collocation arrangement, such an arrangement should be presumed to be technically feasible at other LEC premises. We recognize that different incumbent LECs make different collocation arrangements available on a region by region, state by state, and even central office by central office basis. Based on the record, we now conclude that the deployment by any incumbent LEC of a collocation arrangement gives rise to a rebuttable presumption in favor of a competitive LEC seeking collocation in any incumbent LEC premises that such an arrangement is technically feasible. Such a presumption of technical feasibility, we find, will encourage all LECs to explore a wide variety of collocation arrangements and to make such arrangements available in a reasonable and timely fashion. We believe this "best practices"

approach will promote competition. Thus, for example, a competitive LEC seeking collocation from an incumbent LEC in New York may, pursuant to this rule, request a collocation arrangement that is made available to competitors by a different incumbent LEC in Texas, and the burden rests with the New York incumbent LEC to prove that the Texas arrangement is not technically feasible. The incumbent LEC refusing to provide such a collocation arrangement, or an equally cost-effective arrangement, may only do so if it rebuts the presumption before the state commission that the particular premises in question cannot support the arrangement because of either technical reasons or lack of space.

e. Security

46. In the Advanced Services Order and NPRM, we sought comment on the security and access issues that may arise from a requirement that incumbent LECs provide alternative collocation arrangements, including cageless collocation. We noted that, in the Local Competition First Report and Order, the Commission concluded that incumbent LECs should be permitted reasonable security arrangements to protect their equipment and ensure network security and reliability. We recognized that adequate security for both incumbent LECs and competitive LECs is important to encourage deployment of advanced services.

47. We conclude, based on the record, that incumbent LECs may impose security arrangements that are as stringent as the security arrangements that incumbent LECs maintain at their own premises either for their own employees or for authorized contractors. To the extent existing security arrangements are more stringent for one group than for the other, the incumbent may impose the more stringent requirements. Except as provided below, we conclude that incumbent LECs may not impose more stringent security requirements than these. Stated differently, the incumbent LEC may not impose discriminatory security requirements that result in increased collocation costs without the concomitant benefit of providing necessary protection of the incumbent LEC's equipment.

48. We agree with commenting incumbent LECs that protection of their equipment is crucial to the incumbents' own ability to offer service to their customers. Therefore, incumbent LECs may establish certain reasonable security measures that will assist in protecting their

networks and equipment from harm. The incumbent LEC may not, however, unreasonably restrict the access of a new entrant to the new entrant's equipment. We permit incumbent LECs to install, for example, security cameras or other monitoring systems, or to require competitive LEC personnel to use badges with computerized tracking systems. Incumbent LECs may not use any information they collect in the course of implementing or operating security arrangements for any marketing or other purpose in aid of competing with other carriers. We expect that state commissions will permit incumbent LECs to recover the costs of implementing these security measures from collocating carriers in a reasonable manner. We further permit incumbent LECs to require competitors' employees to undergo the same level of security training, or its equivalent, that the incumbent's own employees, or third party contractors providing similar functions, must undergo. The incumbent LEC may not, however, require competitive LEC employees to receive such training from the incumbent LEC itself, but must provide information to the competitive LEC on the specific type of training required so the competitive LEC's employees can complete such training by, for example, conducting their own security training.

49. Moreover, in order to provide customers with a competitive level of service, we agree with commenters that competitive LECs must have access to their collocated equipment 24 hours a day, seven days a week. If competitors do not have such access, they will be unable to service and maintain equipment or respond to customer outages in a timely manner. We do not agree, however, with Ameritech and SBC that 24 hour security escorts are necessary. We agree with commenters that alternative security measures, like those outlined above, adequately protect incumbent LEC networks without the added cost and burden of security escorts. We therefore conclude that incumbent LECs must allow collocating parties to access their equipment 24 hours a day, seven days a week, without requiring either a security escort of any kind or delaying a competitor's employees' entry into the incumbent LEC's premises by requiring, for example, an incumbent LEC employee to be present. We also require incumbent LECs to provide competitors reasonable access to basic facilities, such as restroom facilities and parking, while at the incumbent LEC's premises.

f. Space Preparation Cost Allocation

50. In the Advanced Services Order and NPRM, we sought comment on ALTS'



proposal that we establish rules for the allocation of up-front space preparation charges. One approach we noted, which had been adopted by Bell Atlantic in its pre-filing statement in the New York Commission's section 271 docket, was that the competing provider would be responsible only for its share of the cost of conditioning the collocation space, whether or not other competing providers were immediately occupying the rest of the space. In addition, Bell Atlantic committed to allowing smaller competing providers to pay on an installment basis. We sought comment on whether we should adopt Bell Atlantic's approach, or any other approach, as a national standard in order to speed the deployment of advanced telecommunications capability to all Americans.

51. We conclude, based on the record, that incumbent LECs must allocate space preparation, security measures, and other collocation charges on a pro-rated basis so the first collocator in a particular incumbent premises will not be responsible for the entire cost of site preparation. For example, if an incumbent LEC implements cageless collocation arrangements in a particular central office that requires air conditioning and power upgrades, the incumbent may not require the first collocating party to pay the entire cost of site preparation. In order to ensure that the first entrant into an incumbent's premises does not bear the entire cost of site preparation, the incumbent must develop a system of partitioning the cost by comparing, for example, the amount of conditioned space actually occupied by the new entrant with the overall space conditioning expenses. We expect state commissions will determine the proper pricing methodology to ensure that incumbent LECs properly allocate site preparation costs among new entrants. We also conclude that these standards will serve as minimum requirements, and that states should continue to have flexibility to adopt additional collocation requirements, consistent with the Act.

#### g. Provisioning Intervals

52. In the Advanced Services Order and NPRM, we sought comment on how to address the entry barrier posed by delays between the ordering and provisioning of collocation space. Specifically, we sought comment on ALTS' proposal that we should establish presumptive reasonable deployment intervals for new collocation arrangements and expansion of existing arrangements. Currently, some incumbent LECs require a new entrant to obtain state

competitive LEC certification before it can begin to negotiate an interconnection agreement. In addition, competitive LECs asserted that some incumbent LECs will not allow a requesting carrier to order collocation space until an interconnection agreement becomes final.

53. We conclude that an incumbent LEC may not impose unreasonable restrictions on the time period within which it will consider applications for collocation space. Specifically, we conclude that an incumbent LEC may not refuse to consider an application for collocation space submitted by a competitor while that competitor's state certification is pending, or before the competitor and incumbent LEC have entered into a final interconnection agreement. We agree with commenters who contend that there is no legitimate reason for an incumbent LEC to refuse to begin processing a collocation application, especially given that competitors pay an application fee to the incumbent to cover the costs associated with consideration of the application.

54. We do not adopt specific provisioning intervals at this time. We have adopted several new collocation rules in this Order, and we do not yet have sufficient experience with the implementation of these new collocation arrangements to suggest time frames for provisioning. While we do not at this time adopt specific intervals, we retain authority to adopt specific time frames in the future as we deem necessary. We emphasize the importance of timely provisioning, and we are confident that state commissions recognize the competitive harm that new entrants suffer when collocation arrangements are unnecessarily delayed. The record in this proceeding reflects the significant competitive harm suffered by new entrants whose collocation space is not ready for as long as six to eight months after their initial collocation request is submitted to the incumbent LEC. Several state commissions have taken significant steps to lessen the time periods within which incumbent LECs provision collocation space. The Texas PUC has required Southwestern Bell Telephone Company (SWBT) to provide competitive LECs with information on space availability in a SWBT premises within ten days of receipt of a collocation request. Because of the importance of ensuring timely provisioning of collocation space, we encourage state commissions to ensure that incumbent LECs are given specific time intervals within which they must respond to collocation requests.

55. The practices of several carriers suggest that provisioning intervals can be short.

Both GTE and Ameritech state that they respond to physical collocation requests within ten days by advising the requesting carrier whether space is available or not. We view ten days as a reasonable time period within which to inform a new entrant whether its collocation application is accepted or denied. Even with a timely response to their applications, however, new entrants cannot compete effectively unless they have timely access to provisioned collocation space. We urge the states to ensure that collocation space is available in a timely and pro-competitive manner that gives new entrants a full and fair opportunity to compete.

#### h. Space Exhaustion

56. In the Advanced Services Order and NPRM, we noted that one of the major barriers facing new entrants that seek to provide advanced services on a facilities basis is the lack of collocation space in many incumbent LEC premises. Pursuant to the Act, incumbent LECs must provide physical collocation unless they demonstrate to the state commission's satisfaction that "physical collocation is not practical for technical reasons or because of space limitations." Because incumbent LECs have the incentive and capability to impede competition by reducing the amount of space available for collocation by competitors, the Commission, in the Local Competition First Report and Order, required incumbent LECs that deny requests for physical collocation on the basis of space limitations to provide the state commission with detailed floor plans or diagrams of their premises. The Commission concluded that such submissions would aid the state commission in evaluating whether the denial of physical collocation was justified.

57. We now adopt our tentative conclusion that an incumbent LEC that denies a request for physical collocation due to space limitations should, in addition to providing the state commission with detailed floor plans, allow any competing provider that is denied physical collocation at the incumbent LEC's premises to tour the premises. This proposal received wide support in the record. Specifically, we require the incumbent LEC to permit representatives of a requesting telecommunications carrier that has been denied collocation due to space constraints to tour the entire premises in question, not just the room in which space was denied, without charge, within ten days of the denial of space. As we noted in the Advanced Services NPRM, allowing competing providers to walk through a LEC's premises will enable those providers to

identify space that they believe could be used for physical collocation. If, after the tour of the premises, the incumbent LEC and competing provider disagree about whether space limitations at that premise make collocation impractical, both carriers could present their arguments to the state commission. We disagree with the comments of several incumbent LECs that tours are unnecessary and could potentially harm LEC central offices. Incumbent LECs are permitted to assign their own personnel to such tours, thus offering sufficient protection against harm to the network and proprietary information.

58. We also adopt our tentative conclusion that an incumbent LEC must submit to a requesting carrier within ten days of the submission of the request a report indicating the incumbent LEC's available collocation space in a particular LEC premises. This report must specify the amount of collocation space available at each requested premises, the number of collocators, and any modifications in the use of the space since the last report. The report must also include measures that the incumbent LEC is taking to make additional space available for collocation. In addition to this reporting requirement, we adopt the proposal of Sprint that incumbent LECs must maintain a publicly available document, posted for viewing on the Internet, indicating all premises that are full, and must update such a document within ten days of the date at which a premises runs out of physical collocation space. Such requirements will allow competitors to avoid expending significant resources in applying for collocation space in an incumbent LEC's premises where no such space exists. We expect that state commissions will permit incumbent LECs to recover the costs of implementing these reporting measures from collocating carriers in a reasonable manner.

59. We disagree with those commenters that argue that preparing such reports would be of no use to requesting carriers because the information contained in them would change frequently. For network planning purposes, new entrants need to know what incumbent LEC offices are available for collocation. We disagree with GTE that new entrants should first have to "submit a written request [for collocation space] along with an application fee" before discovering if space is available in a LEC office. Each new entrant cannot be required to apply for collocation space in every central office in order to find out if there is space available in that

office, when such information is readily available to the incumbent LEC that occupies that office.

60. Finally, we conclude that in order to increase the amount of space available for collocation, incumbent LECs must remove obsolete unused equipment from their premises upon reasonable request by a competitor or upon the order of a state commission. There is no legitimate reason for an incumbent LEC to utilize space for obsolete or retired equipment that the incumbent LEC is no longer using when such space could be used by competitors for collocation. The record reflects that some incumbent LECs already remove obsolete equipment to increase collocation space. We believe it would be anticompetitive for an incumbent to maintain such equipment in its premises and contend that no collocation space is available. We rely on state commissions to settle disputes between carriers as to which incumbent equipment is truly obsolete and unused and can be removed from the LEC's premises. We also note that carriers may utilize the complaint provisions of section 208 of the Act in the case of collocation disputes that fall within the Commission's jurisdiction.

#### B. Spectrum Compatibility

61. Background. Spectrum compatibility refers generally to the ability of various loop technologies to reside and operate in close proximity while not significantly degrading each other's performance. Our discussion of spectrum compatibility includes spectral compatibility standards issues, such as setting the signal power densities so as to minimize interference, and spectrum management issues, such as establishing binder group administration and deployment practices. The development of spectral compatibility standards should help to minimize crosstalk, the noise caused by extraneous signals combining with the intended signal. This noise can result in the degradation of the intended signal. Compatibility becomes a significant concern with the introduction of new high-speed services in a multiple provider environment. For example, if an incumbent LEC and a competitive LEC offer DSL services that use different line encoding technologies, and if their respective customers' loops are located adjacent to each other within a binder group, the two technologies may unintentionally interfere with one another and interrupt the signals travelling over each loop. One method of ensuring spectral compatibility is through the use of power spectral density (PSD) masks. PSD masks are represented as graphical

templates that define the limits on signal power densities across a range of frequencies so as to minimize interference. The goal of PSD mask standards is to permit divergent technologies to coexist in close proximity within the same binder groups. Standards bodies, such as T1E1.4, define these masks as technology develops. The development of spectrum management rules and practices should help enable multiple technologies to coexist within binder groups.

62. In the Advanced Services Order and NPRM, we sought comment on how to address the host of loop spectrum compatibility issues. In particular, we asked commenters to consider how we should address interference concerns that may result from provision of advanced services using different signal formats on copper pairs in the same bundle. We asked parties to suggest ways to determine when a particular service, technology, or piece of equipment causes network interference such that the use of the particular service, technology, or piece of equipment should be prohibited. We also asked commenters to suggest ways to distinguish between legitimate claims that particular services, technologies, or equipment create spectrum interference and claims raised simply to impede competition. We sought comment on whether we should adopt any industry standards as the basis for national spectrum compatibility requirements. We also sought comment on how any requirements should evolve over time so as to encourage and not stifle innovation. In addition, we sought comment on other approaches to spectrum management that would foster pro-competitive use of the loop plant by incumbent LECs and new entrants, while providing necessary network protection.

63. Discussion. We acknowledge that clear spectral compatibility standards and spectrum management rules and practices are necessary both to foster competitive deployment of innovative technologies and to ensure the quality and reliability of the public telephone network. We find, however, that incumbent LECs should not unilaterally determine what technologies LECs, both competitive LECs and incumbent LECs, may deploy. Nor should incumbent LECs have unfettered control over spectrum management standards and practices. We are persuaded by the record that allowing incumbent LECs such authority may well stifle deployment of innovative competitive LEC technology. Various commenters argue that some incumbents are frustrating the deployment of advanced services under the guise of spectrum compatibility

concerns. The better approach, we believe, is to establish competitively neutral spectral compatibility standards and spectrum management rules and practices so that all carriers know, without being subject to unilateral incumbent LEC determinations, what technologies are deployable and can design their networks and business strategies accordingly.

64. We find that we do not have a sufficient record with which we can adequately address all of the long-term spectrum compatibility issues. Thus, we adopt below a Further NPRM through which we hope to resolve, in a timely manner, the long-term spectrum compatibility issues. In the Further NPRM, we seek comment on additional measures we can take to encourage deployment of innovative technology while simultaneously ensuring the integrity of the network. In this Order, we adopt certain rules on spectrum compatibility and management which we believe will enable reasonable and safe deployment of advanced services prior to development of industry standards and resolution of all the issues raised in the Further NPRM.

#### 1. Existing Power Spectral Density Masks

65. Commenters generally agree that the process of establishing power spectral density masks best occurs within the industry standards setting bodies. Such standards bodies possess the combined knowledge and expertise of a broad sector of the industry.

66. We conclude, however, that we should establish certain rules on spectrum compatibility that will immediately facilitate the deployment of advanced services, until long-term standards and practices can be established. Although we believe that the development of power spectral density masks is best left to standards bodies such as the T1E1.4, we also believe the Commission can take certain immediate steps to encourage the deployment of advanced services. Rather than setting forth in this Order specific standards for the new technologies, we establish certain rules to foster deployment of advanced services while maintaining network integrity, until the standards bodies adopt comprehensive standards for the new technologies. We find that any equipment deployed consistent with the rules adopted here can be connected to the public switched telephone network with reasonable confidence that this technology will not significantly degrade the performance of other advanced services, and with reasonable confidence that this technology will not impair traditional voice band services.

67. We conclude that any loop technology that complies with existing industry standards is presumed acceptable for deployment. Specifically, we conclude that technology that complies with any of the following standards is presumed acceptable for deployment: T1.601, T1.413, and TR28. Furthermore, any technology which has been successfully deployed by any carrier without significantly degrading the performance of other services or has been approved by this Commission, any state commission, or an industry standards body is presumed acceptable for deployment.

68. We conclude that a LEC may not deny a carrier's request to deploy technology that is presumed acceptable for deployment, unless the LEC demonstrates to the state commission that deployment of the particular technology within the LEC network will significantly degrade the performance of other advanced services or traditional voice band services. We conclude further that industry standards are not upper limits on what technology is deployable; incumbent LECs and competitive LECs are free to mutually agree to deploy new technologies that may exceed these standards. We encourage cooperation between incumbents and competitors to establish agreements on the deployment of non-standard xDSL-based and other advanced services technology. We expect that as standards are ratified for new technologies, carriers will recognize these as deployable technologies and will not deny competitors the ability to deploy these technologies. In the event that a LEC subsequently demonstrates to this Commission or the relevant state commission that a deployed technology is significantly degrading the performance of other advanced services or traditional voice band services, the carrier deploying the technology shall discontinue deployment of that technology and migrate its customers to technologies that will not significantly degrade the performance of other such services.

69. We further conclude that incumbent LECs cannot deny requesting carriers the right to deploy a new technology that does not conform to the standards cited in the preceding paragraph and has not yet been approved by a standards body (or otherwise authorized by this Commission or any state commission), if the requesting carrier can demonstrate to the state commission that this particular technology will not significantly degrade the performance of other advanced services or traditional voice band services. In this situation, there would be no



presumption in favor of deployment and the burden would be on the requesting carrier to make the appropriate showing.

## 2. Spectrum Management

70. Commenters disagree on how to address spectrum management issues. Incumbent LECs state that they are ultimately responsible for the management of the network and should make the final decision whether a technology should be deployed. Non-incumbent LECs claim that the incumbent LECs are using this authority to exclude technologies that could be safely deployed. In order to encourage deployment of innovative technology and allow competitors the same opportunity as incumbent LECs to deploy advanced services, while simultaneously ensuring the integrity of the network, we establish certain spectrum management rules.

71. We define spectrum management to include binder/cable administration as well as the broader issue of deployment practices (e.g., the rules for testing and implementing xDSL-based and other advanced services). We believe that the industry must develop a simpler and more open approach to spectrum management. Currently, each incumbent LEC defines its own spectrum management specifications. These measures vary from provider to provider and from state to state, thereby requiring competitive LECs to conform to different specifications in each area. We find that uniform spectrum management procedures are essential to the success of advanced services deployment. As such, we adopt the following spectrum management rules.

72. We conclude that the incumbent LEC must provide competitive LECs with nondiscriminatory access to the incumbent LEC's spectrum management procedures and policies. The procedures and policies that the incumbent LEC uses in determining which services can be deployed must be equally available to competitive LECs intending to provide service in an area. We believe that competitive LECs need nondiscriminatory access to such information so that the competitive LEC can independently and expeditiously determine what services and technologies it can deploy within the incumbent LEC's territory.

73. We conclude that incumbent LECs must disclose to requesting carriers information with respect to the rejection of the requesting carrier's provision of advanced services, together with the specific reason for the rejection. The incumbent LEC must also disclose to requesting

carriers information with respect to the number of loops using advanced services technology within the binder and type of technology deployed on those loops. We believe that such disclosure will allow for a more open and accessible environment, foster competition, and encourage deployment of advanced services.

74. We strongly believe that industry should discontinue deployment of well recognized disturbers, such as AMI T1. We further believe carriers should, to the fullest extent possible, replace AMI T1 with new and less interfering technologies. In the accompanying Further NPRM, we seek comment on methods by which to reduce or eliminate the deployment of AMI T1.

75. We conclude that if a carrier claims a service is significantly degrading the performance of other advanced services or traditional voice band services, then that carrier must notify the causing carrier and allow that carrier a reasonable opportunity to correct the problem. Any claims of network harm must be supported with specific and verifiable supporting information.

76. We recognize that there may be a limit to the number of lines delivering advanced services that can share a binder group without interfering with other customers' services. We conclude that the incumbent LEC shall bear the burden of demonstrating to the relevant state commission when a requested advanced service will significantly degrade the performance of existing services, such that the incumbent can deny the competitor's request. We do not believe this will be a problem until advanced services penetrate a significant portion of the market and expect incumbents to manage binder groups in such a manner so as to maximize the number and types of advanced services that can be deployed.

77. We recognize further that the standards development process may delay the deployment of new technologies. To address this difficulty, we encourage the industry to apply a "test and see" strategy, which would allow competitive LECs and incumbent LECs to cooperate in testing and deployment of new services. We find that this strategy will encourage innovation and allow for the more rapid deployment of new technologies. Our hope is that all providers recognize that cooperation is essential in this future shared environment.

## V. Further Notice of Proposed Rulemaking

## A. Spectrum Compatibility -- Long-Term Standards and Practices

### 1. Overview

78. In the Advanced Services Order and NPRM, we requested comment on loop spectrum issues. We asked commenters to address any degradation of service that may result from provision of advanced services using different signal formats on copper pairs in the same bundle. In the Order above, we establish spectrum compatibility and management rules to the extent currently feasible in order to promote the timely deployment of advanced services without significantly degrading the performance of other advanced services or traditional voice band services. These rules rest upon currently established technical standards and practices. We recognize that, in the long term, more comprehensive technical standards and practices must be developed. We therefore adopt this Further NPRM, through which we hope to resolve, in a timely manner, the host of long-term spectrum compatibility and management issues.

### 2. Discussion

79. In the companion Order, we find that incumbent LECs may not unilaterally set spectrum compatibility and spectrum management policies. In place of incumbent LEC-determined standards and practices, we found in the companion Order that there should be a competitively neutral spectrum standards setting process to investigate the actual level of interference between technologies to determine what technologies are deployable and under what circumstances. In this Further NPRM, we tentatively conclude that this process should include the active participation of the incumbent LECs, competitive LECs, equipment suppliers, and the Commission. We further tentatively conclude the following: the process should be competitively neutral in both structure and procedure; representation should be equitably spread over all segments of the industry; and representatives should have equal authority, with no party or groups of parties presuming to have greater weight or "veto" power. We seek comment on these tentative conclusions and how to establish such a process to develop long-term standards and practices. We also seek comment on our authority to direct industry bodies to engage in the process of developing spectrum compatibility and management policies, and our authority to compel industry bodies to adhere to any requirements we establish for the functioning of such

bodies.

80. In this Further NPRM we seek comment on two broad and interrelated issues: spectrum compatibility and spectrum management. With regard to spectral compatibility, we generally believe, as indicated in the accompanying Order, that the industry, via its standards bodies, can create acceptable standards for xDSL and other advanced services. Much of the standards development process is continuous in nature, and our hope is that the industry will fairly and expeditiously develop standards beyond completion of this proceeding. Future technologies will require the T1E1.4, or other standards bodies, to develop these compatibility standards in a timely, fair, and open manner. We believe, however, that the Commission can play a role in fostering timely, fair, and open development of standards for current and future technologies.

81. We seek comment on the best process or forum for developing future power spectral density (PSD) masks. We tentatively conclude that T1E1.4 is the best choice for this task. Commenters have expressed concern, however, that T1E1.4 is not representative of the developing advanced services industry as a whole and may be overly represented by incumbent carriers and large manufacturers. We seek comments on how to foster broader representation and participation in this standards body. We also ask commenters to suggest other forums or methods of guaranteeing fair and timely resolution of spectrum compatibility problems.

82. We seek comment on whether generic masks would be an appropriate means to address spectrum compatibility. We seek comment on whether this approach might restrict deployment of technologies that otherwise would not harm the network.

83. We seek comment on whether a calculation-based approach, in addition to a power spectral density mask-based approach, provides a better tool for defining spectral compatibility. We specifically seek comment whether such an approach provides a more accurate predictor of spectrum compatibility.

84. With regard to spectrum management, we believe that comments in response to this Further NPRM can provide the information necessary to establish long-term spectrum management rules. Our goal is that the rules developed as a result of the Further NPRM will

encourage technical innovation while preserving network reliability. Although we believe that T1E1.4 could serve as the common ground where industry resolves these issues, we think the Commission can facilitate industry development of fair standards through this Further NPRM. We seek specific comment and clarification on the following items initially raised in the NPRM, but not sufficiently explicated in the record.

85. We seek comment on methods to encourage the industry to develop fair and open practices for the deployment of advanced services technologies. We tentatively conclude that T1E1.4 should serve as the forum to establish fair and open deployment practices. This conclusion is premised on the assumption that a method will be developed by which to ensure the active participation of all segments of the industry in T1E1.4. What role should the Commission play in facilitating broad participation in this process?

86. We ask commenters to consider how to maximize the deployment of new technologies within binder groups while minimizing interference. We seek comment on the development of xDSL binder group administration practices, including specifications on the types and numbers of technologies that can be deployed within a binder group. This should include procedures allowing for deployment of various xDSL-based services in a nonrestrictive manner. We seek comment on the procedures for maintaining and updating these administrative practices so as to minimize interference with future technologies. We seek comment on the practice of segregating services based on the technology. For example, we recognize AMI T1 as a potential disturber and understand that incumbent LECs currently assign AMI T1 to separate binder groups. Competitive LECs have expressed concern that incumbent LECs might apply a similar segregation practice to xDSL technology -- a practice competitive LECs claim is not necessary or beneficial. We seek comment on whether to allow incumbent LECs to segregate xDSL technology in such a manner.

87. We seek comment on whether we should establish a grandfathering process for interfering technologies. For example, should the Commission establish a sunset period for services such as AMI T1? As noted above, we recognize that carriers have a substantial base of AMI T1 in deployment and that in some areas AMI T1 provides the only feasible high-speed transmission capability. We seek comment on whether carriers should be required to replace AMI

T1 with new and less interfering technologies, and, if so, what time frame would be reasonable.

We ask commenters to propose rules for a possible grandfathering process which will not disrupt the network and simultaneously encourage investment in, and deployment of, new technology.

88. We seek comment on whether to develop a dispute resolution process regarding the existence of disturbers in shared facilities. Specifically, we ask commenters to suggest how best to resolve disputes arising out of claims that a technology is "significantly degrading" the performance of other services. We also seek comment on whether, and if so, how we should define "significantly degrade" so as to ensure that consumers have the broadest selection of services from which to choose without harming the network. If we develop a dispute resolution process, should it rely on an outside party as an arbitrator, such as the state commission, the FCC, or a neutral third party, or should the procedures simply provide the rules by which players must conform?

89. We seek comment to determine whether the Commission should solicit the assistance of a third party in developing loop spectrum management policies. What role could such a third party serve in facilitating communication between the industry and regulatory bodies? Should it serve a role similar to the role served by the administrator for local number portability? Should it be empowered to develop binder group management procedures, facilitate the development of future PSD masks, and resolve disputes between carriers over the existence of disturbers in shared facilities? We also ask parties to comment on whether a voluntary industry effort could effectively address loop management issues.

90. We acknowledge that the industry, via the T1E1.4, is currently engaged in developing standards for various varieties of xDSL technologies. We recognize further that the industry can best address many of the details concerning spectral compatibility. Furthermore, we acknowledge that many of the spectral compatibility issues will require on-going analysis and oversight beyond the completion of this proceeding. Although we have initiated this Further NPRM in order to develop rules to address long-term spectrum management concerns, we expect that the industry, via the T1E1.4 or other bodies, will continue to develop standards and procedures to promote deployment of advanced services and resolve the problems that arise when

multiple carriers deploy multiple technologies over the same facilities. We encourage the industry, through its standards bodies, to continue its independent efforts to develop long-term standards and practices for spectrum management. We expect that the industry will conduct this ongoing role in a expeditious, fair and open manner.

91. We ask commenters to address any additional measures the Commission could take to ensure that spectrum compatibility and management concerns are resolved in a fair and expeditious manner. We also ask commenters to consider what measures the Commission could take to ensure that spectral compatibility requirements are forward-looking and able to evolve over time to encourage, rather than stifle, innovation and deployment of advanced services.

## B. Line Sharing

### 1. Overview

92. In the Advanced Services Order and NPRM, we sought comment on whether two different service providers should be allowed to offer services over the same line, with each provider utilizing different frequencies to transport voice or data over that line. For example, ADSL-technology allows a high-speed data channel to run on higher frequencies above the frequency used for delivery of analog voice signals. By separating the line into a voice channel and an advanced services channel, such a line can carry both voice and advanced services traffic simultaneously and, potentially, each service could be provided by a different carrier. We asked commenters whether we should mandate such line sharing, specifically whether the competitive LEC should have the right to run high frequency data signals, or other advanced services, over the same line as the incumbent LEC's voice signal.

93. Shared line access makes it possible for a competing carrier to offer advanced services over the same line that a consumer uses for voice service without requiring the competing carrier to take over responsibility for providing the voice service. Such shared line access would enable new entrants to focus solely on the advanced services market without having to acquire the resources or the expertise to provide other types of telecommunications services, such as analog voice service. Shared line access could also remove any cost disadvantage that an advanced services only provider might face if it had to provide advanced services over a stand-alone line. A

competitive LEC, therefore, may want to take advantage of the ability of advanced services technology, such as ADSL, to run on the frequency above the analog voice channel by providing only high-speed data service, without voice service, over a loop.

94. We believe each end user customer should be able to choose from a broad array of services and from whom to obtain these services. Just as customers can choose one carrier to provide local service, another carrier to provide long distance, and a third entity to provide Internet access over a single line, a customer should have the right to purchase voice service from one carrier and advanced services from another over the same line. In particular, we believe allowing consumers to keep their voice service provider while allowing them to obtain advanced services on the same line from a different provider will foster consumer choice and promote innovation and competitive deployment of advanced services.

95. Line sharing assumes that a requesting carrier will have access to the incumbent LEC's local loop. While the Supreme Court, in Iowa Utilities Board, has directed the Commission to reevaluate the standard for defining the local loop as an unbundled network element, we see no reason to delay seeking comment in this proceeding on whether competing carriers may have access to the high frequency portion on an incumbent LEC's loop. To the extent that any redefinition of the local loop, or other network elements, affects any conclusions drawn from this proceeding, we will revise our analysis and conclusions accordingly.

## 2. Discussion

96. The existing record indicates that incumbent LECs have denied competitors the option of offering advanced services over the same line on which the incumbent LEC provides voice service. Therefore, in order to provide advanced services to their customers, competing carriers have had to obtain additional lines, typically dedicated to high speed, digital transmission. We believe that if shared line access could be made widely available, competition for advanced services would grow more rapidly as consumers would not be required to purchase a second telephone line in order to have access to high-speed digital services, and competitors would offer advanced services to markets, such as the residential market, where loop costs make a stand-alone data service uneconomic. Line sharing also holds the possibility of enabling more providers to



enter the advanced services market and to enter the market in a manner that enables them to incur no greater costs than the incumbent LEC or its affiliate will incur. As a result, line sharing should promote consumer choice. For example, consumers might want to stay with their existing local telephone company for their plain old telephone service and might want to choose a different carrier for advanced services without incurring the additional expense of installing a new line. Line sharing will enable such customers to keep their analog voice service with their local telephone company, while a competitive LEC provides high-speed digital services over the same line.

97. We decline, however, to mandate line sharing at the federal level at this time under the accompanying Report and Order. Although we find no evidence that line sharing is not technically feasible, we find that the record does not sufficiently address the operational, pricing, and other practical issues that may arise if LECs are compelled to share lines with competitors. We acknowledge that the Commission has concluded that a "determination of technical feasibility does not include consideration of economic, accounting, billing, space, or site, concerns." Several incumbent LECs have raised, however, billing, accounting, and other operational issues, that we would like to consider before we determine whether to mandate line sharing nationwide. For example, how will two carriers coordinate and manage assignment, maintenance, repair, and billing systems? While none of the issues raised by the incumbents challenge the technical feasibility of line sharing, we believe that there may be practical considerations that have not been adequately addressed in the existing record. Moreover, there may be policy considerations that weigh against line sharing, even if the Commission were to conclude that technical and operational concerns could be met. For example, would line sharing create disincentives for investment in facilities or in using the full capability of the local loop? As a result, we seek additional comments in the Further NPRM in order to develop a more comprehensive record on the policy and practical ramifications of federally mandated line sharing, including any policy considerations that weigh against line sharing.

a. Authority to Require Line Sharing

98. In Iowa Utilities Board, the Supreme Court held that we have jurisdiction to

implement the local competition provisions of the Act and that our rulemaking authority extends to sections 251 and 252. We therefore tentatively conclude that we have authority to require line sharing. We seek comment on this tentative conclusion. Finally, we tentatively conclude that nothing in the Act, our rules, or caselaw precludes states from mandating line sharing, regardless of whether the incumbent LEC offers line sharing to itself or others, and regardless of whether it offers advanced services. We seek comment on these tentative conclusions.

b. Access to "High-Frequency Portion" of the Loop

99. We tentatively conclude that incumbent LECs must provide requesting carriers with access to the transmission frequencies above that used for analog voice service on any lines that LECs use to provide exchange service when the LEC itself provides both exchange and advanced services over a single line. We tentatively conclude that, without such a ruling, competitive LECs will be hampered in their ability to compete in providing advanced services to end users because the competitive LEC would have to obtain a new line from the incumbent LEC in order to provide advanced services whereas the incumbent LEC could provide advanced services far less expensively by using the existing line. We seek comment on these tentative conclusions. Moreover, in the absence of line sharing, the competing carrier effectively may be forced to provide both voice and data over the local loop it leases from the incumbent. This means that the competing carrier potentially must invest in two technologies -- circuit switched technology for voice transmissions and packet switched technologies for data. The competing carrier may need to make this investment in circuit technology even though that technology may become obsolete over time. We seek comment on the extent to which the absence of line sharing requires such dual investment and the competitive effect of such dual investment.

100. We also seek comment in this proceeding on whether we should more precisely define what constitutes the frequency above that used for analog voice service, so that it is clear to all parties what the incumbent must unbundle, in the event we require line sharing. We ask commenters to address whether setting a specific dividing line between a low frequency channel and a high frequency channel on the loop would arbitrarily freeze technological development and

deny carriers opportunities to use the loop to provision services that rely on different frequencies bands within the loop.

101. We also tentatively conclude that any rules we adopt on line sharing should not mandate a particular technological approach to the use of a line for multiple services. We believe that shared line access is a rapidly evolving technology and any rules we adopt must be forward-looking and flexible enough to stimulate, rather than stifle, technological innovation. We ask commenters to address how we can construct regulations that promote local competition and technological innovation so that American consumers can take full advantage of the line's features, functionalities, and capabilities.

c. Technical, Operational, Economic,  
Pricing, and Cost  
Allocation Issues Associated with Line Sharing

102. The current record in this proceeding reveals that incumbent LECs have opposed line-sharing with xDSL-based providers on the grounds that simultaneous provision of advanced service and voice service over a single line by separate providers is not technically feasible. These parties broadly argue that allowing new entrants to acquire rights to the high frequency channel of the line, while declining to purchase the voice channel of the line, would harm the network. We find that incumbent LECs have placed nothing on the record in this proceeding demonstrating that a competitor's advanced services equipment is likely to cause any network problems.

103. Technical Issues. We find nothing in the existing record to persuade us that line sharing is not technically feasible. In fact, incumbent LECs are already sharing the line for the provision of both voice and advanced services. Pacific Bell, for instance, offers line sharing to an independent Internet Service Provider, Concentric Network, Inc, which describes its xDSL-based service as follows:

Installation prices include the following: DSL modem, and if using PacBell and an existing phone line, a splitter . . . . If PacBell is the LEC, the standard phone service charge for the phone line used as the DSL circuit is not included. However, an existing phone line may be used, and a splitter will be installed to enable your existing phone line to

carry both your data and voice traffic. Our other DSL LECs require a new phone line be installed and the phone service fee is included.

Technically, there appears to be no analytic difference between Pacific Bell's offering to Concentric of xDSL-based services for Internet connectivity over a shared line and Pacific Bell allowing an xDSL provider to order the data functionality of a loop. In both cases, consumers will receive two separate services from two separate providers (at least in terms of operational responsibility) over one copper loop. In the Concentric case, the incumbent LEC owns and maintains the network portion of the xDSL equipment at the customer premises and in the central office (or wherever the xDSL line terminates), and splits the data signals off at the line termination for Concentric. In the case of a competitive xDSL provider, the equipment employed would be virtually identical, but would be owned and maintained by the advanced services provider. Once again, the advanced services and voice signals would run together along the copper loop until they reached the termination of the xDSL-capable loop (in the central office or remote terminal) where the voice signal would be directed to the incumbent LEC's switch, and the advanced services signal would be transported to the advanced services provider's point of presence. Furthermore, the incumbent LEC retail xDSL tariffs filed with the Commission specifically offer ADSL service as an overlay to existing voice service, so that both services are provided over the same line. In these offerings, the incumbent LEC uses splitter functionality to bundle the voice and data at the customer's premises and unbundle them at the central office end of the loop. Thus the incumbent LEC xDSL tariffs add further support to the proposition that line sharing is technically feasible. As further evidence of the technical feasibility of line sharing, at least one competitive LEC reports that it has successfully conducted technical trials for line sharing of its xDSL-based data services with the voice services of an independent incumbent LEC. Because incumbent LECs are already using single lines to provide both voice and advanced services and are even sharing lines with other providers for the provision of both voice and advanced services, it appears that there exists no bona fide issue of technical infeasibility. As such, we tentatively conclude that line sharing is technically feasible. We seek comment on this tentative conclusion.

104. Although not set forth in the record, we can conceive of some circumstances in

which advanced services cannot share a line with analog voice service. For example, some varieties of xDSL may interfere with the analog voice signal. Furthermore, if load coils or repeaters are needed to amplify the voice signal over a long loop, removal of those repeaters to allow for the transmission of high frequency signals would hamper the quality of the voice service. We tentatively conclude that such isolated situations can be remedied and should not interfere with the incumbent's general obligation to share the line. We tentatively conclude that, to the extent that an incumbent LEC can demonstrate to the state commission that digital loop conditioning would interfere with the analog voice service of the line, line sharing is not technically feasible on that particular line, and the incumbent is not obligated to share that line. We tentatively conclude that incumbent LECs would be required to perform other sorts of conditioning, such as removing bridge taps or cleaning up splices along the loop, that would not interfere with the analog voice signal. We seek comment on these tentative conclusions. We ask commenters to address any other technical problems that may arise in line sharing arrangements and to suggest remedies for such problems.

105. Operational Issues. In addition to technical feasibility concerns, commenters raise concerns about operational barriers to line sharing. U S WEST, for example, concedes that the issue is not the technical feasibility of actually sharing the line between voice and advanced services, but instead the operational ability to manage shared lines in terms of "assignment, maintenance, billing and repair systems." We ask commenters to discuss the operational issues that may arise with line sharing. For example, what effect will line sharing have on existing analog voice service? Should carriers be allowed to request just the voice channel of a line? Should carriers be allowed to request any unused portion of a line? How will line sharing affect existing and evolving operations support systems? To what extent will LEC operations support systems need to be modified in order to allow two carriers to share a line? Which entity should manage the multiplexing equipment if two carriers are offering services over the same loop? Should different customers be allowed on the same physical loop? How and by whom should problems on the line be handled? What happens if conditioning a loop for advanced services requires removal of repeaters or load coils, which are needed to preserve the quality of the analog voice

signal? These examples are merely illustrative of issues that may arise from two carriers providing services over the same line. We ask commenters to address these issues and any other operational, administrative, and pricing concerns with specificity.

106. Economic, Pricing, and Cost Allocation Issues. We also seek comment on the economic, pricing, and cost allocation issues that may arise from line sharing. For example, how might line sharing affect federal and state access charge regimes and universal service mechanisms? What are the pricing consequences of requiring line sharing (e.g., what consequences will line sharing have on the price of the unbundled local loop)? Should the entire cost of the loop be imputed to the voice channel or divided equally or otherwise between the two services sharing the facility? What cost allocation issues, if any, are raised by line sharing? What effect will line sharing have on new entrants' ability to compete with incumbents? How will line sharing stimulate or retard innovation? How will line sharing affect investment in local exchange facilities?

107. Finally, we ask commenters to address the continued viability of line sharing arrangements as telecommunications network architectures migrate from a circuit to a packet environment. As carriers deploy ATM and other packet technologies, and as voice traffic moves from the circuit-switched network to Internet Protocol (IP) or ATM networks, is a line sharing requirement commercially or technically feasible? Commenters should address whether a competitive LEC's ability to deliver voice service over a packet-switched network obviates the need to share a loop with the incumbent LEC.

### C. Procedural Matters

#### 1. Ex Parte Presentations

108. The matter in Docket No. 98-147, initiated by the Further NPRM portion of this item, shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's ex parte rules. Persons making oral ex parte presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. Other rules pertaining to oral and written presentations are set forth in Section 1.1206(b) as well.

## 2. Initial Paperwork Reduction Act Analysis

109. The Further NPRM contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this Notice, as required by the Paperwork Reduction Act of 1995, Public Law No. 104-13. Public and agency comments are due at the same time as other comments on this Notice; OMB comments are due 60 days from date of publication of this Notice in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

## 3. Initial Regulatory Flexibility Analysis

110. As required by the Regulatory Flexibility Act, see 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible impact on small entities of the proposals suggested in this document. The IRFA is set forth as Appendix D. Written public comments are requested with respect to the IRFA. These comments must be filed in accordance with the same filing deadlines for comments on the rest of the NPRM, but they must have a separate and distinct heading, designating the comments as responses to the IRFA. The Office of Public Affairs, Reference Operations Division, will send a copy of this NPRM, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with the Regulatory Flexibility Act.

## 4. Comment Filing Procedures

111. The proceeding, Deployment of Wireline Services Offering Advanced Telecommunications Capability, CC Docket No. 98-147, is initiated by the Further NPRM portion of this item. Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on or before June 15, 1999 and reply comments on or before July 15, 1999. All filings should refer only to Deployment of Wireline

Services Offering Advanced Telecommunications Capability, CC Docket No. 98-147.  
Comments

may be filed using the Commission's Electronic Comment Filing System (ECFS) or  
by filing paper

copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed.  
Reg. 24,121

(1998). Comments filed through the ECFS can be sent as an electronic file via  
the Internet to

<<http://www.fcc.gov/e-file/ecfs.html>>. Generally, only one copy of an  
electronic submission must

be filed. In completing the transmittal screen, commenters should include their  
full name, Postal

Service mailing address, and the applicable docket or rulemaking number, which  
in this instance is

CC Docket No. 98-147. Parties may also submit an electronic comment by Internet  
e-mail. To

get filing instructions for e-mail comments, commenters should send an e-mail to  
[ecfs@fcc.gov](mailto:ecfs@fcc.gov),

and should include the following words in the body of the message, "get form  
<your e-mail

address." A sample form and directions will be sent in reply.

112. Parties who choose to file by paper must file an original and four  
copies of each

filing. All filings must be sent to the Commission's Secretary, Magalie Roman  
Salas, Office of the

Secretary, Federal Communications Commission, 445 12th St. N.W., Room TW-B204,  
Washington, D.C. 20554.

113. Parties who choose to file by paper should also submit their comments  
on diskette.

These diskettes should be submitted to Janice Myles, Common Carrier Bureau,  
Policy and

Program Planning Division, 445 12th Street, S.W., Washington, DC 20554. Such a  
submission

should be on a 3.5 inch diskette formatted in an IBM compatible format using  
WordPerfect 5.1

for Windows or compatible software. The diskette should be accompanied by a  
cover letter and

should be submitted in "read only" mode. The diskette should be clearly  
labelled with the

commenter's name, proceeding (including the docket number, in this case, CC  
Docket No. 98-

147), type of pleading (comment or reply comment), date of submission, and the  
name of the

electronic file on the diskette. The label should also include the following  
phrase "Disk Copy -

Not an Original." Each diskette should contain only one party's pleadings,  
preferably in a single

electronic file. In addition, commenters must send diskette copies to the  
Commission's copy

contractor, International Transcription Service, Inc., 1231 20th Street, N.W.,  
Washington, D.C.

20037.

114. Regardless of whether parties choose to file electronically or by  
paper, parties



should also file one copy of any documents filed in this docket with the Commission's copy contractor, International Transcription Services, Inc., 1231 20th Street, N.W., Washington, D.C., 20036. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center, 445 12th Street, S.W., Washington, DC 20554.

115. Comments and reply comments must include a short and concise summary of the substantive arguments raised in the pleading. Comments and reply comments must also comply with section 1.49 and all other applicable sections of the Commission's rules. We also direct all interested parties to include the name of the filing party and the date of the filing on each page of their comments and reply comments. All parties are encouraged to utilize a table of contents, regardless of the length of their submission. We also strongly encourage that parties track the organization set forth in this NPRM in order to facilitate our internal review process.

116. Written comments by the public on the proposed and/or modified information collections are due on or before June 15, 1999 and reply comments on or before July 15, 1999. Written comments must be submitted by the OMB on the proposed and/or modified information collections on or before 60 days after date of publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, 1-C804, 445 12th Street, SW, Washington, DC 20554 or via the Internet to [jboley@fcc.gov](mailto:jboley@fcc.gov) and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, DC 20503 or via the Internet to [fain\\_t@al.eop.gov](mailto:fain_t@al.eop.gov).

#### 5. Further Information

117. For further information regarding this proceeding, contact Michael Pryor, Deputy Division Chief, Policy and Program Planning Division, Common Carrier Bureau, at 202-418-1580 or [mpryor@fcc.gov](mailto:mpryor@fcc.gov). Further information may also be obtained by calling the Common Carrier Bureau's TTY number: 202-418-0484.

#### VI. Ordering Clauses

118. Accordingly, IT IS ORDERED that, pursuant to sections 1-4, 10, 201, 202, 251-

254, 256, 271, and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-154, 160, 201, 202, 251-254, 256, 271, and 303(r), the FIRST REPORT AND ORDER is hereby ADOPTED. The requirements adopted in this Order shall be effective 30 days after publication of a summary thereof in the Federal Register.

119. IT IS FURTHER ORDERED that, pursuant to sections 1-4, 10, 201, 202, 251-254, 256, 271, and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-154, 160, 201, 202, 251-254, 256, 271, and 303(r), the FURTHER NOTICE OF PROPOSED RULEMAKING is hereby ADOPTED.

120. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, SHALL SEND a copy of this FIRST REPORT AND ORDER, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

121. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, SHALL SEND a copy of the FURTHER NOTICE OF PROPOSED RULEMAKING, including the Initial Regulatory Flexibility Certification, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas  
Secretary

APPENDIX A

Advanced Telecommunications Services  
CC Docket No. 98-147  
Comments  
September 25, 1998

1. ADC Telecommunications, Inc.
2. Ad Hoc Telecommunications Users Committee
3. Alliance for Public Technology
4. Allegiance Telecom, Inc.
5. America Online, Inc.
6. America's Carriers Telecommunications Association (ACTA)
7. Ameritech
8. Association for Local Telecommunications Services (ALTS)
9. AT&T Corp.
10. Bell Atlantic
11. BellSouth Corporation
12. Cable & Wireless, Inc.
13. Cablevision Lightpath, Inc.
14. Central Texas Telephone Cooperative, Inc.
15. Cincinnati Bell Telephone Company
16. Coalition of Utah Independent Internet Service Providers
17. Commercial Internet Exchange Association
18. Communications Workers of America
19. Competition Policy Institute
20. Competitive Telecommunications Association (CompTel)
21. Computer & Communications Industry Association
22. Consumer Federation of America
23. Copper Mountain Networks, Inc.
24. Cottonwood Communications
25. Covad Communications Company
26. CTSI, Inc.
27. e.spire Communications, Inc.
28. Federal Trade Commission
29. First Regional TeleCOM, LLC and FirstWorld Communications, Inc.
30. Florida Digital Network, Inc.
31. Florida Public Service Commission
32. General Services Administration
33. GST Telecom Inc.
34. GTE Service Corporation
35. GVNW Inc.
36. Hyperion Telecommunications, Inc.
37. ICG Telecom Group, Inc.
38. Illinois Commerce Commission
39. Indiana Utility Regulatory Commission and Staff of Public Service  
Commission of  
Wisconsin
40. Information Technology Association of America
41. Intermedia Communications Inc.
42. Internet Access Coalition
43. Internet Service Providers' Consortium
44. Keep America Connected, United Homeowners Association, Alpha One,  
American  
Council on Education, National Braille Press, National Association of  
Commissions for

Women, the National Trust for the Development of African American Men,  
National

Association for College and University Business Officers, Latin American  
Women and

Supporters, Harlem Consumer Education Council, National Latino  
Telecommunications

Task Force, Northern Virginia Resource Center for the Deaf and Hard of  
Hearing,

MaineCITE Coordinating Committee, Florida Association for the Deaf,  
American

Telemedicine Association, World Institute on Disability, The Massachusetts  
Assistive

Technology Partnership, and National Association of Development  
Organizations

45. Kiesling Consulting LLC

46. KMC Telecom, Inc.

47. Level 3 Communications, Inc.

48. MachOne Communications, Inc.

49. McLeodUSA Telecommunications Services, Inc.

50. MCI WorldCom, Inc.

51. MGC Communications, Inc.

52. Mindspring Enterprises, Inc.

53. Minnesota Department of Public Service

54. Moultrie Independent Telephone Company

55. National Rural Telecom Association and the Organization for the  
Promotion and

Advancement of Small Telephone Companies (NRTA/OPASTCO)

56. National Telephone Cooperative Association

57. Network Access Solutions, Inc.

58. Network Plus, Inc.

59. New Networks Institute (Bruce Kushnick)

60. New World Paradigm, Ltd.

61. New York Department of Public Service

62. NEXTLINK Communications, Inc.

63. Northern Telecom, Inc.

64. Northpoint Communications Inc.

65. OpTel, Inc.

66. Paradyne Corporation

67. Paging and Messaging Alliance of the Personal Communications Industry  
Association

68. Paging Network, Inc. (PageNet)

69. People of the State of California and PUC of California

70. PSINet, Inc.

71. Public Utility Commission of Texas

72. Qwest Communications Corporation

73. RCN Telecom Services, Inc.

74. Rhythms NetConnections, Inc.

75. Rural Telecommunications Group

76. SBC Communications Inc.

77. Sprint Corporation

78. Supra Telecommunications and Information Systems, Inc.

79. Tandy Corporation

80. Technology Entrepreneurs Coalition

81. TCA, Inc.

82. Telecommunications Resellers Association

83. Telehub Network Services Corporation

84. Time Warner Telecom

85. Transwire Communications, Inc.
86. United States Small Business Association
87. United States Telephone Association
88. UTC
89. U S WEST Communications, Inc.
90. US Xchange, LLC
91. Virtual Hipster (Shad Nygren)
92. Warner, Jim
93. Washington Association of Internet Service Providers
94. Westel, Inc.
95. Williams Communications, Inc.
96. xDSL Networks, Inc.

Reply Comments -- October 16, 1998

1. Allegiance Telecom, Inc.
2. ALLTEL Communications Services Corporation
3. Ameritech
4. Association for Local Telecommunications Services (ALTS)
5. AT&T Corp.
6. Aware, Inc.
7. Bell Atlantic
8. BellSouth Corporation
9. Coalition of Utah Independent Internet Service Providers
10. Commercial Internet Exchange Association
11. Consumer Federation of America
12. Covad Communications Company
13. CTSI, Inc.
14. DSL Access Telecommunications Alliance
15. e.spire Communications, Inc.
16. Excel Telecommunications, Inc.
17. Florida Digital Network, Inc.
18. General Services Administration
19. GST Telecom Inc.
20. GTE Service Corporation
21. Hyperion Telecommunications, Inc.
22. Intermedia Communications Inc.
23. Keep America Connected, United Homeowners Association, Harlem Consumer Education Council, National Latino Telecommunications Task Force, American Telemedicine Association, National Association of Development Organizations, Alpha One, and The World Institute on Disability
24. KMC Telecom, Inc.
25. Level 3 Communications, Inc.
26. MachOne Communications, Inc.
27. MCI WorldCom, Inc.
28. MGC Communications, Inc.
29. Mindspring Enterprises, Inc.
30. Moultrie Independent Telephone Company
31. National Cable Television Association
32. National Rural Telecom Association and the Organization for the Promotion and Advancement of Small Telecommunications Companies
33. National Telephone Cooperative Association
34. Network Access Solutions, Inc.

35. Network Plus, Inc.
36. New World Paradigm, Ltd.
37. Next Level Communications
38. NEXTLINK Communications, Inc.
39. Northpoint Communications Inc.
40. Qwest Communications Corporation
41. RCN Telecom Services, Inc.
42. Rural Telecommunications Group
43. SBC Communications Inc.
44. Sprint Corporation
45. Telecommunications Resellers Association
46. Telehub Network Services Corporation
47. Teligent, Inc. and Net2000 Group, Inc.
48. Time Warner Telecom
49. Transwire Communications, Inc.
50. United States Small Business Association
51. United States Telephone Association
52. Universal Service Alliance
53. U S WEST Communications, Inc.
54. Verio Inc.
55. Virgin Islands Telephone Corporation

APPENDIX B - Final Rules

AMENDMENTS TO THE CODE OF FEDERAL REGULATIONS

1. Part 51 of Title 47 of the Code of Federal Regulations (C.F.R.) is amended as follows:

PART 51 - INTERCONNECTION

\* \* \* \*

Subpart A - General Information

\* \* \* \*

2. Section 51.5 is amended by adding the following language:

□ 51.5 Terms and Definitions.

\* \* \* \*

Advanced Services. The term "advanced services" is defined as high speed, switched, broadband, wireline telecommunications capability that enables users to originate and receive high-quality voice, data, graphics or video telecommunications using any technology.

\* \* \* \*

Subpart D - Additional Obligations of Incumbent Local Exchange Carriers

3. Section 51.321 is amended by revising paragraphs (c) and (f) and adding new paragraphs (h) and (i) to read as follows:

□ 51.321 Methods of obtaining interconnection and access to unbundled elements under section 251 of the Act.

\* \* \* \*

(c) A previously successful method of obtaining interconnection or access to unbundled network elements at a particular premises or point on any incumbent LEC's network is substantial evidence that such method is technically feasible in the case of substantially similar network premises or points. A requesting telecommunications carrier seeking a particular collocation arrangement, either physical or virtual, is entitled to a presumption that such arrangement is technically feasible if any LEC has deployed such collocation arrangement in any incumbent LEC premises.

\* \* \* \*

(f) An incumbent LEC shall submit to the state commission, subject to any protective order as the state commission may deem necessary, detailed floor plans or diagrams of any premises where the incumbent LEC claims that physical collocation is not practical because of space limitations. An incumbent LEC that contends space for physical collocation is not available in an incumbent LEC premises must also allow the requesting carrier to tour the entire premises in question, not just the area in which space was denied, without charge, within ten days of the receipt of the incumbent LEC's denial of space.

\* \* \* \*

(h) Upon request, an incumbent LEC must submit to the requesting carrier within ten days of the submission of the request a report indicating the incumbent LEC's available collocation space in a particular LEC premises. This report must specify the amount of collocation space available at each requested premises, the number of collocators, and any modifications in the use of the space since the last report. This report must also include measures that the incumbent LEC is taking to make additional space available for collocation. The incumbent LEC must maintain a publicly available document, posted for viewing on the incumbent LEC's publically available Internet site, indicating all premises that are full, and must update such a document within ten days of the date at which a premises runs out of physical collocation space.

(i) An incumbent LEC must, upon request, remove obsolete unused equipment from their premises to increase the amount of space available for collocation.

4. Section 51.323 is amended by revising paragraphs (b), (c), (h), and (i) and adding new paragraph (k) to read as follows:

□ 51.323 Standards for physical collocation and virtual collocation.

\* \* \* \*

(b) An incumbent LEC shall permit the collocation of any type of equipment used or useful for interconnection or access to unbundled network elements. Whenever an incumbent LEC objects to collocation of equipment by a requesting telecommunications carrier for the purposes within the scope of section 251(c)(6) of the Act, the incumbent LEC shall prove to the



state commission that the equipment will not be actually used by the telecommunications carrier for the purpose of obtaining interconnection or access to unbundled network elements. An incumbent LEC may not object to the collocation of equipment on the grounds that the equipment does not comply with safety or engineering standards that are more stringent than the safety or engineering standards that the incumbent LEC applies to its own equipment. An incumbent LEC may not object to the collocation of equipment on the ground that the equipment fails to comply with National Equipment and Building Specifications performance standards. An incumbent LEC that denies collocation of a competitor's equipment, citing safety standards, must provide to the competitive LEC within five business days of the denial a list of all equipment that the incumbent LEC locates within the premises in question, together with an affidavit attesting that all of that equipment meets or exceeds the safety standard that the incumbent LEC contends the competitor's equipment fails to meet. Equipment used for interconnection and access to unbundled network elements includes, but is not limited to:

(1) Transmission equipment including, but not limited to, optical terminating equipment and multiplexers, and

(2) Equipment being collocated to terminate basic transmission facilities pursuant to §§ 66.1401 and 64.1402 of this chapter as of August 1, 1996.

(3) Digital subscriber line access multiplexers, routers, asynchronous transfer mode multiplexers, and remote switching modules.

\* \* \* \*

(c) Nothing in this section requires an incumbent LEC to permit collocation of equipment used solely for switching or solely to provide enhanced services; provided, however, that an incumbent LEC may not place any limitations on the ability of requesting carriers to use all the features, functions, and capabilities of equipment collocated pursuant to subsection (b), including, but not limited to, switching and routing features and functions and enhanced services functionalities.

\* \* \* \*

(h) An incumbent LEC shall permit a collocating telecommunications carrier to

interconnect its network with that of another collocating telecommunications carrier at the incumbent LEC's premises and to connect its collocated equipment to the collocated equipment of another telecommunications carrier within the same premises provided that the collocated equipment is also used for interconnection with the incumbent LEC or for access to the incumbent LEC's unbundled network elements.

(1) An incumbent LEC shall provide, at the request of a collocating telecommunications carrier, the connection between the equipment in the collocated spaces of two or more telecommunications carriers. The incumbent LEC must permit any collocating telecommunications carrier to construct its own connection between the carrier's equipment and that of one or more collocating carriers, if the telecommunications carrier does not request the incumbent LEC's construction of such facilities. The incumbent LEC must permit the requesting carrier to construct such facilities using copper or optical fiber equipment.

(2) An incumbent LEC shall permit collocating telecommunications carriers to place their own connecting transmission facilities within the incumbent LEC's premises outside of the actual physical collocation space, subject only to reasonable safety limitations.

(i) As provided herein, an incumbent LEC may require reasonable security arrangements to protect its equipment and ensure network reliability. An incumbent LEC may only impose security arrangements that are as stringent as the security arrangements that incumbent LECs maintain at their own premises for their own employees or authorized contractors. An incumbent LEC must allow collocating parties to access their collocated equipment 24 hours a day, seven days a week, without requiring either a security escort of any kind or delaying a competitor's employees' entry into the incumbent LEC's premises. Reasonable security measures that the incumbent LEC may adopt include:

(1) installing security cameras or other monitoring systems; or

(2) requiring competitive LEC personnel to use badges with computerized tracking systems; or

(3) requiring competitive LEC employees to undergo the same level of security training, or its equivalent, that the incumbent's own employees, or third party contractors providing similar functions, must undergo; provided, however, that the incumbent LEC may not require

competitive LEC employees to receive such training from the incumbent LEC itself, but must provide information to the competitive LEC on the specific type of training required so the competitive LEC's employees can conduct their own training.

\* \* \* \*

(k) An incumbent LEC's physical collocation offering must include the following:

(1) Shared collocation cages. A shared collocation cage is a caged collocation space shared by two or more competitive LECs pursuant to terms and conditions agreed to by the competitive LECs. In making shared cage arrangements available, an incumbent LEC may not increase the cost of site preparation or nonrecurring charges above the cost for provisioning such a cage of similar dimensions and material to a single collocating party. In addition, the incumbent must prorate the charge for site conditioning and preparation undertaken by the incumbent to construct the shared collocation cage or condition the space for collocation use, regardless of how many carriers actually collocate in that cage, by determining the total charge for site preparation and allocating that charge to a collocating carrier based on the percentage of the total space utilized by that carrier. An incumbent LEC must make shared collocation space available in single-bay increments or their equivalent, i.e., a competing carrier can purchase space in increments small enough to collocate a single rack, or bay, of equipment.

(2) Cageless collocation. Incumbent LECs must allow competitors to collocate in any unused space in the incumbent LEC's premises, without requiring the construction of a cage or similar structure, and without requiring the creation of a separate entrance to the competitor's collocation space. An incumbent LEC may require collocating carriers to use a central entrance to the incumbent's building, but may not require construction of a new entrance for competitors' use, and once inside the building, incumbent LECs must permit collocating carriers to have direct access to their equipment. An incumbent LEC may not require competitors to use an intermediate interconnection arrangement in lieu of direct connection to the incumbent's network if technically feasible. In addition, an incumbent LEC must give competitors the option of collocating equipment in any unused space within the incumbent's premises, and may not require competitors to collocate in a room or isolated space separate from the incumbent's own

equipment. An incumbent LEC must make cageless collocation space available in single-bay increments, meaning that a competing carrier can purchase space in increments small enough to collocate a single rack, or bay, of equipment.

(3) Adjacent space collocation. An incumbent LEC must make available, where space is legitimately exhausted in a particular incumbent LEC premises, collocation in adjacent controlled environmental vaults or similar structures to the extent technically feasible. The incumbent LEC must permit the new entrant to construct or otherwise procure such an adjacent structure, subject only to reasonable safety and maintenance requirements. The incumbent must provide power and physical collocation services and facilities, subject to the same nondiscrimination requirements as applicable to any other physical collocation arrangement. The incumbent LEC must permit the requesting carrier to place its own equipment, including, but not limited to, copper cables, coaxial cables, fiber cables, and telecommunications equipment, in adjacent facilities constructed by either the incumbent LEC or by the requesting carrier itself.

## APPENDIX C -- REGULATORY FLEXIBILITY ANALYSIS

### FINAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Advanced Services Order and NPRM. The Commission sought written public comment on the proposals in the Advanced Services Order and NPRM, including comment on the IRFA. [The comments received are discussed below.] This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

I. Need for and Objectives of this First Report and Order and the Rules Adopted Herein.

2. In order to encourage competition among carriers to develop and deploy new advanced services, it is critical that the marketplace for these services be conducive to investment, innovation, and meeting the needs of consumers. In this First Report and Order, we seek to ensure that all carriers have economic incentives to innovate and invest in new technologies.

3. We also adopt additional measures to further facilitate the development of competition in the advanced services market. First, we strengthen our collocation rules to reduce the costs and delays faced by competitors that seek to collocate equipment in an incumbent LEC's central office. We also adopt certain spectrum compatibility guidelines and adopt a Further Notice of Proposed Rulemaking (FNPRM) to explore issues related to developing long-term standards and practices for spectrum compatibility and management and line sharing. The issues which are the subject of the FNPRM will be discussed in a separate Initial Regulatory Flexibility Analysis.

II. Summary of Significant Issues Raised by Public Comments in Response to the IRFA.

4. In the IRFA, we stated that any rule changes would impose minimum burdens on small entities. We indicated that the collocation section of the NPRM proposed reporting requirements. The IRFA solicited comment on alternatives to our proposed rules that would minimize the impact they may have on small entities. In response we received comments from the Office of Advocacy, United States Small Business Administration (SBA) specifically directed to

the IRFA. Specifically, SBA contends that the Commission's IRFA was inadequate because it failed to consider the effect of its proposed rules on small incumbent LECs. While we continue to believe that incumbent LECs are dominant and therefore not "small" businesses within the meaning of the SBA, we include a discussion of the effect of the actions taken in this order on small incumbent LECs in order to remove any possible issue of RFA compliance. As noted in Part V of this FRFA, in making the determinations reflected in this order, we have given consideration to the SBA's comments, as well as comments of parties that generally addressed the impact of our proposed rules on small entities. We also do not agree with SBA's contention that our IRFA was not sufficiently detailed to generate "meaningful comments on the impact of the proposed rules." The comments of the SBA, the National Rural Telecom Association, and the Organization for the Promotion and Advancement of Small Telecommunications Companies, among others, provided more than sufficient detail for us to prepare this FRFA.

### III. Description and Estimates of the Number of Small Entities Affected by the First Report and Order.

5. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the actions taken in this First Report and Order. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

6. Below, we further describe and estimate the number of small entities that may be affected by the decisions in this First Report and Order.

7. The most reliable source of information regarding the total numbers of certain common carrier and related providers nationwide, as well as the numbers of commercial wireless entities, appears to be data the Commission publishes annually in its Telecommunications Industry Revenue report, regarding the Telecommunications Relay Service (TRS). According to data in

the most recent report, there are 3,459 interstate carriers. These carriers include, inter alia, local exchange carriers (LECs), wireline carriers and service providers, interexchange carriers, competitive access providers, operator service providers, pay telephone operators, providers of telephone toll service, providers of telephone exchange service, and resellers.

8. The SBA has defined establishments engaged in providing "Telephone Communications, Except Radiotelephone" to be small businesses when they have no more than 1,500 employees. Below, we discuss the total estimated number of telephone companies and small businesses in this category, and we then attempt to refine further those estimates.

9. Although some affected incumbent LECs may have 1,500 or fewer employees, we do not believe that such entities should be considered small entities within the meaning of the RFA because they are either dominant in their field of operations or are not independently owned and operated, and therefore by definition not "small entities" or "small business concerns" under the RFA. Accordingly, our use of the terms "small entities" and "small businesses" does not encompass small incumbent LECs. Out of an abundance of caution, however, for regulatory flexibility analysis purposes, we will separately consider small incumbent LECs within this analysis and use the term "small incumbent LECs" to refer to any incumbent LECs that arguably might be defined by the SBA as "small business concerns."

10. Local Exchange Carriers. Neither the Commission nor the SBA has developed a definition for small LECs. The closest applicable definition under the SBA rules is for telephone communications companies other than radiotelephone (wireless) companies. According to the most recent Telecommunications Industry Revenue data, 1,371 carriers reported that they were engaged in the provision of local exchange services. We do not have data specifying the number of these carriers that are either dominant in their field of operations, are not independently owned and operated, or have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of LECs that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that fewer than 1,371 providers of local exchange service are small entities or small incumbent LECs that may be affected by the proposed rules, if adopted.

11. Competitive LECs. Neither the Commission nor SBA has developed a definition of small entities specifically applicable to providers of competitive LECs. The closest applicable definition under the SBA rules is for telephone communications companies except radiotelephone (wireless) companies. The most reliable source of information regarding the number of competitive LECs nationwide is the data that we collect annually in connection with the TRS Worksheet. According to the most recent Telecommunications Industry Revenue data, 109 companies reported that they were engaged in the provision of either competitive local exchange service or competitive access service, which are placed together in the data. We do not have information on the number of carriers that are not independently owned and operated, nor have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of competitive LECs that would qualify as small business concerns under the SBA definition. Consequently, we estimate that there are fewer than 109 small competitive LECs or competitive access providers.

#### IV. Summary of Projected Reporting, Recordkeeping, and Other Compliance Requirements.

##### A. Collocation

12. We establish additional national rules for collocation. We require incumbent LECs to permit collocating carriers to construct their own cross-connect facilities between collocated equipment located on the incumbent's premises. An incumbent LEC that denies collocation of a competitor's equipment, citing safety standards, must provide to the competitive LEC within five business days a list of all equipment that the incumbent LEC locates within the premises in question, together with an affidavit attesting that all of that equipment meets or exceeds the safety standard that the incumbent LEC contends the competitor's equipment fails to meet. Incumbent LECs must provide specific collocation arrangements, consistent with the rules we outline below, at reasonable rates, terms, and conditions as are set by state commissions in conformity with the Act and our rules.

13. Incumbent LECs must make shared collocation cages, cageless collocation, and adjacent controlled environmental huts, each with single-bay collocation arrangements, available to new entrants. Subject only to technical feasibility and certain security parameters, incumbent



LECs must allow competitors to collocate in any unused space in the incumbent LEC's premises, without requiring the construction of a cage or similar structure, and without requiring the creation of a separate entrance to the competitor's collocation space. Incumbent LECs may not require competitors to use an intermediate interconnection arrangement in lieu of direct connection to the incumbent's network if technically feasible, because such intermediate points of interconnection simply increase collocation costs without a concomitant benefit to incumbents. Incumbent LECs must allow competitive LECs to have access to their collocated equipment 24 hours a day, seven days a week, without requiring a security escort or delaying a competitor's employees' entry into the incumbent LEC's premises.

14. Incumbent LECs must allocate space preparation, security measures, and other collocation charges on a pro-rated basis so the first collocater in a particular incumbent premises will not be responsible for the entire cost of site preparation. An incumbent LEC may not refuse to consider an application for collocation space submitted by a competitor while that competitor's state certification is pending, or before the competitor and incumbent LEC have entered into a final interconnection agreement. Incumbent LECs must permit representatives of a requesting telecommunications carrier that has been denied collocation due to space constraints to tour the entire premises in question. Upon request from a competitive LEC, an incumbent LEC must submit to the requesting carrier within ten days of the submission of the request a report indicating the incumbent LEC's available collocation space in a particular LEC premises. This report should specify the amount of collocation space available at each requested premises, the number of collocators, and any modifications in the use of the space since the last report. The report should also include measures that the incumbent LEC is taking to make additional space available for collocation. In addition to this reporting requirement, incumbent LECs must maintain a publicly available document, posted for viewing on the Internet, indicating all premises that are full, and must update such a document within ten days of the date at which a premises runs out of physical collocation space. Finally, incumbent LECs must remove obsolete unused equipment from their premises to increase the amount of space available for collocation.

#### B. Spectrum Compatibility

15. We establish certain spectrum compatibility guidelines in order to permit the safe deployment of xDSL and other advanced technologies. We determine that complying with these rules may require use of engineering, technical, operational, accounting, billing, and legal skills. However, we believe that incumbent LECs will already have these skills.

V. Steps Taken to Minimize Significant Economic Impact on Small Entities and Small Incumbent LECs, and Alternatives Considered.

A. Collocation

16. Incumbent LECs that deny competitive LECs collocation of certain equipment in a central office must provide the requesting carrier, within five business days, a list of all equipment the incumbent locates within the premises in question, together with an affidavit attesting that all the incumbent's equipment meets the safety standards that the incumbent contends the competitor's equipment fails to meet. In addition, an incumbent LEC must submit to the requesting carrier within ten days of the submission of the request a report indicating the incumbent LEC's available collocation space in a particular LEC premises. These requirements allow competitive LECs, who would otherwise have been unable to discover if incumbent LECs are imposing discriminatory standards, to determine what type of equipment incumbents will accept to be collocated, and further will allow competitive LECs to determine if incumbent LECs are discriminating in enforcing equipment requirements on competitive LECs but not on themselves. The burden in preparing these reports is minimum, because incumbent LECs already know what equipment they have in their offices, how much space they have available, and the way in which they apply their collocation standards.

17. Incumbent LECs that deny collocation for space reasons must allow competitive LECs to tour facilities. This requirement again provides proof of lack of space, and allows competitive LECs to gather evidence for presentation to state commission if there is a factual dispute regarding space availability. The burden on the incumbent LEC is minimum, because it can schedule tours when an employee is on site and available to give one.

18. An incumbent LEC must make public a document available on Internet that lists all its premises that have no more collocation space available, within 10 days of the time that the

space fills up completely. This serves competitive LECs by telling them when an incumbent LEC office is full, so they need not apply for space. The burden on incumbent LECs is minimal, because an Internet site is easy and cheap to maintain, and all they are doing is making available information that they already know themselves.

19. An incumbent LEC must submit a report, within 10 days of receipt of a request for such a report, to a requesting competitive LEC indicating how much space is available in a particular incumbent LEC premises. This benefits competitive LECs by allowing them to find out if space is available without having to go through the lengthy and expensive application process. There is minimal burden on the incumbents because they already know the design of their own central offices and should be able to easily state how much space is available for collocation.

20. Incumbent LECs must remove obsolete unused equipment from their premises to create more collocation space. Such a requirement can result in the creation of more collocation space in central offices that were previously without space. The burden on incumbent LECs is minimal, because if the equipment is obsolete and unused, the removal of such equipment will not affect the network operations of the incumbent.

#### B. Spectrum Compatibility

21. Incumbent LECs must make public the spectrum management guidelines and policies that they use to determine what services competitive LECs can provide over unbundled loops. This requirement benefits competitive LECs by ensuring they know what services they can provide over unbundled loops. There is a minimal burden to incumbent LECs, because they already know what spectrum management guidelines they are applying to their own network, and they are now simply required to make such information public.

#### VI. Report to Congress

22. The Commission will send a copy of the FIRST REPORT AND ORDER, including this FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, see 5 U.S.C. § 801(a)(1)(A). In addition, the Commission will send a copy of the FIRST REPORT AND ORDER, including FRFA, to

the Chief Counsel for Advocacy of the Small Business Administration. A copy of the

FIRST REPORT AND ORDER and FRFA (or summaries thereof) will also be published

in the Federal Register. See 5 U.S.C. § 604(b).

## INITIAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act (RFA), the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this Further Notice of Proposed Rulemaking. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the Further NPRM provided above in paragraph 111. The Commission will send a copy of the Further NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. In addition, the Further NPRM and IRFA (or summaries thereof) will be published in the Federal Register.

### I. Need for and Objectives of the Proposed Rule

2. The Commission is issuing the Further NPRM to seek comment on issues related to spectrum compatibility management. We ask commenters to consider whether the Commission should establish rules for deployment of central office equipment similar to those set forth in Part 68 of our rules. We also ask commenters to address the technical, operational, pricing, legal or policy ramifications of line sharing. We tentatively conclude that there are no technical, legal, regulatory or policy obstacles to line sharing among competing carriers. Further, we seek comment on our tentative conclusions that incumbent LECs must provide requesting carriers with unbundled access to the transmission frequencies above that used for analog voice service on any lines that LECs use to provide exchange service when the LEC itself provides both exchange and advanced services over a single line. We ask commenters to address any other technical problems that may arise in line sharing arrangements and to suggest remedies for such problems.

### II. Legal Basis

3. The legal basis for any action that may be taken pursuant to the Further NPRM is contained in sections 1-4, 10, 201, 202, 251-254, 271, and 303(r) of the Communications Act as amended, 47 U.S.C. §§ 151-154, 160, 201, 202, 251-254, 271, and 303(r).

### III. Description and Estimates of the Number of Small Entities Affected by the Further Notice of Proposed Rulemaking

4. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposals in this Further NPRM, if adopted. The RFA generally defines the term "small entity " as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

5. Below, we further describe and estimate the number of small entities that may be affected by the proposals in this Further NPRM, if adopted.

6. The most reliable source of information regarding the total numbers of certain common carrier and related providers nationwide, as well as the numbers of commercial wireless entities, appears to be data the Commission publishes annually in its Telecommunications Industry Revenue report, regarding the Telecommunications Relay Service (TRS). According to data in the most recent report, there are 3,459 interstate carriers. These carriers include, inter alia, local exchange carriers (LECs), wireline carriers and service providers, interexchange carriers, competitive access providers, operator service providers, pay telephone operators, providers of telephone toll service, providers of telephone exchange service, and resellers.

7. The SBA has defined establishments engaged in providing "Telephone Communications, Except Radiotelephone" to be small businesses when they have no more than 1,500 employees. Below, we discuss the total estimated number of telephone companies and small businesses in this category, and we then attempt to refine further those estimates.

8. Although some affected incumbent LEC may have 1,500 or fewer employees, we do not believe that such entities should be considered small entities within the meaning of the RFA because they are either dominant in their field of operations or are not independently owned and operated, and therefore by definition not "small entities" or "small business concerns" under the RFA. Accordingly, our use of the terms "small entities" and "small businesses" does not encompass small incumbent LECs. Out of an abundance of caution, however, for regulatory

flexibility analysis purposes, we will separately consider small incumbent LECs within this analysis and use the term "small incumbent LECs" to refer to any incumbent LECs that arguably might be defined by the SBA as "small business concerns."

9. Local Exchange Carriers. Neither the Commission nor the SBA has developed a definition for small LECs. The closest applicable definition under the SBA rules is for telephone communications companies other than radiotelephone (wireless) companies. According to the most recent Telecommunications Industry Revenue data, 1,371 carriers reported that they were engaged in the provision of local exchange services. We do not have data specifying the number of these carriers that are either dominant in their field of operations, are not independently owned and operated, or have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of LECs that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that fewer than 1,371 providers of local exchange service are small entities or small incumbent LECs that may be affected by the proposed rules, if adopted.

10. Competitive LECs. Neither the Commission nor SBA has developed a definition of small entities specifically applicable to providers of competitive LECs. The closest applicable definition under the SBA rules is for telephone communications companies except radiotelephone (wireless) companies. The most reliable source of information regarding the number of competitive LECs nationwide is the data that we collect annually in connection with the TRS Worksheet. According the most recent Telecommunications Industry Revenue data, 109 companies reported that they were engaged in the provision of either competitive local exchange service or competitive access service, which are placed together in the data. We do not have information on the number of carriers that are not independently owned and operated, nor have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of competitive LECs that would qualify as small business concerns under the SBA definition. Consequently, we estimate that there are fewer than 109 small competitive LECs or competitive access providers.

IV. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements

11. We were unable to gather a sufficient record on the development of rules relating to procedures for equipment testing and compliance, so we seek additional comments on this issue. We are seeking comments on whether the Commission should establish rules for deployment of central office equipment similar to those set forth in Part 68 of our rules. We also ask commenters to address whether the Commission should be involved with the actual testing and compliance procedures or whether the industry is better suited to serve this function through the use of independent and accredited labs. We ask commenters to address any additional measures the Commission could take to ensure that spectrum compatibility and management concerns are resolved in a fair and expeditious manner. We seek comment on the level of demand for line sharing, and on technical and operational obstacles to sharing a single line between two service providers.

V. Significant Alternatives to Proposed Rule Which Minimize Significant Economic Impact on Small Entities and Small Incumbent LECs, and Accomplish Stated Objectives

12. In this Further NPRM, we seek to develop a record sufficient enough to adequately address issues related to developing long-term standards and practices for spectrum compatibility and management, and to the sharing of loops by multiple providers. In addressing these issues, we seek to ensure that competing carriers, including small entity carriers, obtain access to inputs necessary to the provision of advanced services. We tentatively conclude that our proposals in the Further NPRM would impose minimum burdens on small entities. We seek comment on these proposals and the impact they may have on small entities.

VI. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rule

13. None.



SEPARATE STATEMENT OF  
COMMISSIONER HAROLD FURCHTGOTT-ROTH  
DISSENTING IN PART

Re: In the Matter of Deployment of Advanced Wireline Services Offering  
Advanced  
Telecommunications Capability; (CC Docket No. 98-147).

I support many aspects of this Order, but write separately to express several reservations. First, while I generally support the collocation requirements adopted here, I am concerned with the Commission's continuing establishment of additional rules or clarifications under Section 251. I believe that Congress had expected this agency to fully implement the Section 251 requirements expeditiously and then to allow the market to function without further government intervention. I hope that the collocation requirements adopted today will provide clear guidelines for local exchange carrier (LEC) interaction, and provide some level of certainty without the need for continuing government involvement.

In addition, I specifically dissent from the majority's decision to proceed with a Further Notice on line sharing at this time. We have not even asked what our new standard for the unbundling of network elements should be. I believe the Commission should first address the standard for unbundling network elements consistent with the Supreme Court's remand, prior to concluding, even tentatively, that we have the authority to require line sharing when one of the bases to make such a conclusion is that it is an unbundled network element. Moreover, it would have been preferable to have these issues addressed subsequent to or at least in conjunction with the UNE proceeding so that commenters could apply their proposed section 251(d)(2) standard to line sharing. Since the Commissioners had not even seen a draft of any item initiating the remand proceeding prior to adopting this Further Notice, the Further Notice and accompanying comment schedule is at best premature and may even prejudice issues that are more appropriately discussed in a comprehensive manner. I believe that in adopting this Further Notice the Commission has put the cart before the horse, especially since it has yet to release even a public notice seeking comment on the issues that were remanded to this agency almost two months ago.

STATEMENT OF COMMISSIONER MICHAEL K. POWELL,  
CONCURRING IN PART

Re: Deployment of Wireline Services Offering Advanced Telecommunications  
Capability (CC  
Docket No. 98-147)

I am pleased to support most aspects of this Order and FNPRM in their entirety because I agree that, by strengthening our collocation and related rules, we stand a better chance of promoting the development of facilities-based local competition in advanced services and telecommunications generally.

I cannot, however, support the majority's tentative conclusions in favor of mandating line sharing. Although I remain open-minded as to the appropriateness of such requirements, I think the tentative conclusions we adopt today are premature. First and foremost, I find it virtually impossible to separate this issue from that which is the subject of our upcoming proceeding to address the Supreme Court's vacation and remand of our unbundled network element Rule 319. The Court has charged us with a very serious task, namely, that we determine anew the standards, pursuant to section 251(d)(2), that will be used to determine which network elements incumbent LECs must unbundle. As today's decision appears to concede, at least in part, the Rule 319 remand is inextricably intertwined with the issue of line sharing. Simply put, I believe that we must first establish and apply the section 251(d)(2) standard to determine whether loops must be unbundled before we make even tentative conclusions about whether some portion of that loop must also be unbundled or "shared." Further, I am skeptical that we can sidestep the hard work of establishing and applying a new section 251(d)(2) standard based on nondiscrimination or other provisions of the statute.

Second, as the many unanswered operational, cost allocation and other questions raised in the FNPRM suggest, too much is still unknown about the implications of line sharing. As a general matter, I feel we should make tentative conclusions only when we are more sure than not that the tentative conclusions should be the ultimate outcome. Although I fully recognize the many potential benefits of line sharing, the record is far from complete. As such, there may be many factors that weigh against line sharing that we do not yet know. Under these circumstances, I feel it is incumbent on me to reserve judgment entirely until a more fulsome record covering

both the advantages and drawbacks of line sharing is before us. I reject, furthermore, the suggestion that such a record cannot be built on the excellent questions and observations made in the FNPRM unless we also make tentative conclusions. Although tentative conclusions may allow regulators to "send signals" as to how they will ultimately decide an issue, they add nothing from an evidentiary standpoint to a FNPRM of this caliber, in which the specificity of the proposals and discussion themselves is likely to lead to an adequately focused record. Thus, regretfully, I can only concur in the FNPRM's discussion of line sharing.

In closing, I reiterate that my belief that the tentative conclusions on line sharing are premature says nothing about whether I believe we should, from a policy perspective, favor such requirements. This belief merely reflects that I have an open mind on this issue. Based on my participation in this action, I have no doubt that my colleagues are similarly open-minded. I also trust that, as we move forward in making it easier for competitive LECs to compete in the advanced services markets that we remain attentive to removing, whenever possible, the regulatory strictures that currently bind incumbent LECs. It is only by enabling all firms incumbents and newer entrants alike to compete in the market for advanced services that we stand a chance of achieving Congress' vision of broadband deployment to all Americans.

Separate Statement of  
Commissioner Gloria Tristani

Re: Deployment of Wireline Services Offering Advanced Telecommunications  
Capability,  
First Report and Order and Further Notice of Proposed Rulemaking.

I strongly support the Commission's decision to adopt stronger collocation rules. These new rules will lower costs and reduce delays currently involved in the collocation process. By simplifying collocation for competitors, I hope we will hasten the deployment of advanced services.

In many areas, it has been new entrants that have been most responsive to end users' demand for bandwidth. And where competitors have gone, incumbents have quickly followed. So I am convinced that eliminating costly and time-consuming collocation requirements will accelerate the deployment of high-speed services by competitors and incumbents alike.

I am also pleased with the Commission's tentative conclusion that we should require line sharing by incumbent LECs. Line sharing refers to the practice of two carriers providing different services over a single loop. In the typical example, one carrier would provide voice-grade service while a second carrier, using a different frequency, would be able to transmit data over that same loop.

Today, if a competitor wants to provide high-speed data service to a customer, the competitor must purchase a separate line from the incumbent LEC and use it just for data. The competitor's purchase of stand-alone lines is a cost that the incumbent LEC does not incur if it seeks to win a customer for high-speed data service. Consequently, competitors today are at a potentially significant competitive cost disadvantage in the high-speed data market.

My strong support for both parts of today's decision is based largely on my desire to encourage the deployment of high-speed service to residential markets. Today, the business market is starting reap the benefits of competition among providers of high-speed data service. Residential markets, unfortunately, are much farther behind. The steps we take today could greatly enhance competitors' ability to serve residential markets.

I am told that, if high-speed data offerings are to gain a foothold in residential markets, the service must be priced lower than in business markets. Better collocation rules and line sharing, if ultimately adopted, will go far toward lowering the input costs for new providers of advanced services. I hope that a cost structure that is free of unreasonable impediments will accelerate competition in business markets and allow competitors to expand their footprints to include residential areas.