

incumbent LECs are subject to the unbundling requirements of section 251(c) in their provision of advanced services.⁵⁹ The Commission further confirmed that “all incumbent LECs must provide requesting telecommunications carriers with unbundled loops capable of transporting high-speed digital signals, and must offer unbundled access to the equipment used in the provision of advanced services, subject to considerations of technical feasibility and the provisions of section 251(d)(2).”⁶⁰

Similarly, the Commission has explicitly held that “the incumbents face loop unbundling obligations no matter which technology they deploy.”⁶¹ This applies to the technologies in use today, as well as those that may be deployed in the future. “Our intention is to ensure that the loop definition will apply to new as well as current technologies, and to ensure that competitors will continue to be able to access loops as an unbundled network element as long as that access is required pursuant to section 251(d)(2) standards.”⁶² In addition, the

encoded as an analog and digital signals, respectively. Clearly voice (though usually carried as an analog signal) can be encoded as a digital signal and data (though generally carried as a digital signal) can be encoded as an analog signal.

⁵⁹ *Advanced Services Order* ¶ 11; see also *UNE Remand Order* ¶ 190; *Line Sharing Order* ¶ 25.

⁶⁰ *Advanced Services Order* ¶ 11.

⁶¹ *UNE Remand Order* ¶ 199.

⁶² *UNE Remand Order* ¶ 167. In addition, the incumbent LEC may not inhibit a competitor’s access to the loop element by imposing “limitations, restrictions, or requirements on requests for, or the use of, unbundled network elements that would impair the ability of a requesting telecommunications carrier to offer a telecommunications service in the manner the requesting telecommunications carrier intends.” 47 C.F.R. § 51.309(a); *UNE Remand Order* ¶ 167. The Commission has held that an incumbent LEC “must also provide access to *any* [technical feasible] functionality of the loop requested by a competing carrier” (*New York 271 Order* ¶ 271 (emphasis added); see also *Local Competition Order* ¶ 381), regardless of whether the incumbent LEC is itself providing the loop functionality requested. *Iowa Utils Bd. v. FCC*, 120 F.3d at 813 n.33 (citing *Local Competition Order* at ¶ 198) (section 251(c)(3) requires ILECs to provide modifications to their facilities to the extent necessary to accommodate access to network elements such as the loop).

Commission also made clear that such technological neutrality applies not only to loops, but also to subloops.⁶³ In short, the Act and the Commission's prior decisions agree that the definition of the loop does not -- and cannot -- hinge on the type of electronics attached to the loop or the type of service that is carried over the loop.

The Commission must also prevent incumbent LECs from using their separate affiliates as a vehicle to evade their unbundling obligation. The Commission should not countenance any effort by the incumbents to circumvent the unbundling obligations of section 251(c)(3), whether the means employed to effect it is a transfer of line cards and other electronics at the remote terminal to an unregulated affiliate or to have such an affiliate deploy electronics that would in the ordinary course of events be deployed by the ILEC itself.

If an incumbent LEC sought to transfer its copper pairs to its affiliate, or arranged to have new deployment of copper pairs handled by its affiliate rather than by the incumbent, the Commission would presumably focus on the substance of the arrangement and recognize the need to treat the affiliate as a "successor or assign" of the incumbent.⁶⁴ For all the reasons stated above, remote terminal electronics are no less a part of the loop than are the copper pairs to which they are attached. Thus, incumbent LECs may not use an affiliate as its surrogate to deploy components of the loop so as to diminish the features, functions, and capabilities of the "loops" incumbents provide as unbundled network elements.

⁶³ *UNE Remand Order* ¶ 207.

⁶⁴ *See* 47 U.S.C. § 251(h)(1)(B)(ii). The Commission also holds rulemaking authority to achieve the same result by a somewhat different analysis via 47 U.S.C. § 251(h)(2).

To SBC's credit, it recognized that the ADLU cards and OCDs used in its Project Pronto properly belonged in its operating companies, and not in its data affiliate.⁶⁵ AT&T supported that request⁶⁶ and the Commission ultimately agreed that SBC's incumbent LECs could own these electronics rather than its separate affiliate.⁶⁷ As a result, the Commission avoided in that case the need to treat the separate affiliate as a "successor or assign," and, more importantly, it has left the assets where they can and should be treated as components of the loop -- which they are.

E. The Commission Has Recognized that Mere Access to Spare Copper Loops Is Insufficient to Support Competition.

The attachment of new electronics to a loop, and the resulting increase in its capacity to serve new customers or to improve the services delivered to existing customers, does not diminish the need for unbundled access to this critical element. Just as before, competitors must have a way to access voice and data traffic delivered from the customer's premises at the central office. Thus, their dependence on incumbent LEC loops is unaffected by the intervening presence of splitting, multiplexing, and/or demultiplexing or any other transmission

⁶⁵ Letter from Paul K. Mancini, Vice-President and Assistant General Counsel, SBC Communications, Inc., to Mr. Lawrence K. Strickling, Chief, Common Carrier Bureau, FCC, CC Docket No. 98-141, ASD File No. 99-49, at 4-6 (dated Feb. 15, 2000).

⁶⁶ *Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules*, CC Docket 98-141, ASD File No. 99-49, Comments of AT&T Corp., at 6-9 (filed Mar. 3, 2000).

⁶⁷ *Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules*, CC Docket No. 98-141, ASD File No. 99-49, Second Memorandum Opinion and Order, FCC 00-336, ¶ 10 (rel. Sept. 8, 2000). The Commission analyzed the matter solely in terms of the merger conditions and expressly left the issues of statutory interpretation to be addressed in this proceeding. *Id.* ¶ 9.

functionalities that are enabled or more efficiently provided by new technology. Indeed, since the new technology also improves the ILEC's efficiencies in its loop plant, the economic case for CLEC access is heightened.⁶⁸

Access to the full functions, features and capabilities of the loop, including the attached electronics (whether deployed in the RT or the central office) is critical for carriers using a UNE-L entry strategy, a UNE-P entry strategy, or both. Only by assuring that requesting carriers have access to the "entire" loop will the Commission support the competition that it has consistently sought to promote, *i.e.*, competition that (i) is ubiquitous, serving remote areas as well as urban and suburban areas, (ii) meets the needs of residential consumers as well as large and small businesses, and (iii) brings not just advanced telecommunications capabilities but competitive choice for such capabilities to all Americans on a reasonable and timely basis.⁶⁹

There is simply no workable alternative to providing competitive LECs with access to all of the functionalities of local loops at the ILEC central office. Certainly the theoretical right of competitive LECs to obtain spare copper (from the customer premises to the central office) will not suffice.⁷⁰ The physical characteristics of copper facilities preclude competitive LECs from using spare copper to offer the same services that the incumbent LECs and their affiliates offer.

⁶⁸ Riolo Decl. ¶¶ 79-81.

⁶⁹ *Local Competition Order* ¶ 378 ("Requiring incumbent LECs to make available unbundled local loops will facilitate market entry and improve consumer welfare. Without access to unbundled local loops, new entrants would need to invest immediately in duplicative facilities" which would "likely delay market entry and postpone the benefits of local telephone competition for consumers"); *see also UNE Remand Order* ¶ 200 ("We conclude that access to the full capabilities of incumbent LECs' loop plant nationwide will further the goals of the Act. Requiring access to unbundled loops will promote the rapid development of competition and bring the benefits of competition to greater numbers of consumers").

⁷⁰ Riolo Decl. ¶¶ 85-89.

Under the governing legal framework, the applicable question is whether use of the spare copper would enable the CLEC to obtain all of the loop's "features, functions, and capabilities, in a manner that allows the requesting telecommunications carrier to provide any telecommunications service that can be offered by means of that network element."⁷¹ Because available transmission rates decrease as the length of copper increases,⁷² competitive LECs need access to the same short copper loop segments made possible by RT technology as much as the incumbent LECs and their data affiliates. Accordingly, even though competitive LECs should have the *option* of obtaining access to spare copper if they so desire, access to spare copper is not a substitute for assuring that competitive LECs have access to the full capabilities made possible by use of shorter copper runs, signal splitting at the RT, and multiplexing of voice and data bit streams onto fiber from RTs to an incumbent LEC central office.⁷³ Thus, in virtually every case, the mere availability of spare copper will not discharge the incumbent LECs' unbundling obligation, because competitive LECs will not be able to use those facilities to "support[] xDSL services the requesting carrier seeks to offer,"⁷⁴ *i.e.*, at least the same services that the ILEC and its affiliate can make available to the same customer.

F. Theoretical Opportunities for CLEC Collocation at the RT Are Insufficient to Support a Competitive Marketplace.

In the *UNE Remand Order*, the Commission recognized that spare copper availability alone is insufficient to assure new entrants have a reasonable and nondiscriminatory ability to compete, recognizing that, even "if there are spare copper facilities available, these

⁷¹ 47 C.F.R. § 51.307(c) (emphasis added).

⁷² Riolo Decl. ¶ 87.

⁷³ Riolo Decl. ¶¶ 85-89.

⁷⁴ 47 C.F.R. § 51.319(c)(5)(ii).

facilities may not meet the necessary technical requirements for the provision of certain advanced services.”⁷⁵ Thus, it also adopted requirements for collocation at RTs. Unfortunately, the practical reality is that remote collocation is rarely available, and even when it is, it is economically impractical for competitive LECs to use it.

A simple review of the available space at RTs and the applicable economics clearly demonstrates that the needs of new entrants -- and the interests of consumers -- cannot be satisfied simply by instructing incumbent LECs to permit competitive LECs to collocate at the remote terminal. In the first place, the incumbent LECs have openly admitted that RTs are typically housed in small cabinets that have not been designed with excess space sufficient to accommodate any additional (competitive LEC) equipment.⁷⁶ Even where there may be some extra space, it is almost certainly insufficient to accommodate industry-wide access.⁷⁷ The Commission has already concluded that the unbundling analysis required by section 251(d)(2) should look to the entire (potentially) competitive market in general, not just the ability of a few competitive LECs to obtain access.⁷⁸ Moreover, even if extra space is available, it is unlikely

⁷⁵ *UNE Remand Order* ¶ 313.

⁷⁶ SBC has previously advised the Commission that “there is little or no excess space in cabinets,” which are the most prevalent of the three types of RTs currently deployed. *See* SBC Letter to Lawrence R. Strickling, Chief, Common Carrier Bureau, Federal Communications Commission, CC Docket No. 98-141, Ownership of Plugs/Cards and OCDs, February 15, 2000, at 2. Similarly, Verizon and BellSouth advised the Commission that the majority of existing and planned future cabinets lack sufficient space to accommodate collocation of equipment for even a single competitor, much less several. *See* Public Forum: Competitive Access to Next Generation Remote Terminals, CC Docket 96-98 *et al.*, Transcript at 22-24 (May 10, 2000) (“NGRT Public Forum”).

⁷⁷ *See* NGRT Public Forum, Transcript at 20-23 (ILEC representatives acknowledge that RTs are inherently incapable of supporting industry wide access to retail customers); *see also* Riolo Decl. ¶¶ 67-72.

⁷⁸ *UNE Remand Order* ¶ 53 (“the Act is designed to create a regulatory framework that requires incumbent LECs to make network elements subject to the unbundling obligations of section 251

that the space will also have the power to run the equipment and the heat, ventilation, and perhaps air conditioning (“HVAC”) necessary for proper deployment of a competitive LEC’s electronics.⁷⁹ Further, even if the remote terminal space is available for collocation and has the necessary power and HVAC, there is typically no way for a competitive LEC to cross-connect facilities efficiently within the remote terminal.⁸⁰

At least equally significant is the fact that collocation at an RT will almost always be economically impracticable.⁸¹ Experience has shown that competitive LEC collocation at the central office requires a formidable commitment,⁸² but at least the cost of collocation in such locations can be amortized over the entire universe of customers in that central office that a competitive LEC might expect to win. Although the costs of RT collocation may be marginally smaller than those of collocating at the central office,⁸³ the universe of potential customers is significantly smaller (and the number of necessary collocations significantly larger), so that the

available to all requesting carriers, subject to the requirements of section 251(d)(2), and allows the marketplace to determine ultimately which competitors thrive or survive.”); *see also id.* ¶ 54 (“the ability of one or more competitors to serve certain customers in a particular market is not dispositive of whether competitive LECs without unbundled access to the incumbent LEC’s facilities are able to compete for other customers in the same market”).

⁷⁹ Riolo Decl. ¶ 73.

⁸⁰ Riolo Decl. ¶¶ 74-77.

⁸¹ Riolo Decl. ¶¶ 79-81.

⁸² *See UNE Remand Order* ¶¶ 262-266 (finding that collocating in incumbent LEC central offices imposes material costs and delays on a requesting carrier and materially diminishes a requesting carrier’s ability to self-provision circuit switches to serve residential and small business market).

⁸³ Riolo Decl. ¶¶ 79-81 (noting that a CLEC could incur fixed RT collocation costs of approximately \$50,000-\$100,000 at a cabinet and \$250,000 at a CEV DLC cite).

per-customer cost is vastly higher.⁸⁴ RT cabinets, for example, generally, serve a range of 24 to 2016 lines,⁸⁵ in contrast to the tens of thousands typically served by a single central office. In some extreme circumstances, RTs may serve as few as four to eight homes, as is the case in BellSouth territory.⁸⁶ Moreover, placing RTs farther out in the network does not just mean competitive LECs face increased costs due to the need for additional equipment deployment. When equipment is that far out in the network, deployment becomes more visible to customers and communities. This, in turn, raises heightened issues of neighborhood comfort levels, aesthetics, and space utilization. As SBC has indicated, remote terminal use necessitates addressing increased local restrictions, rights-of-way responsibilities and responsibilities to conceal remote terminals.⁸⁷

In short, the only workable solution that advances the objective of rapid, large-scale residential competition for advanced services as well as traditional voice services, is to enable competitive LECs to obtain -- at the central office -- both the voice and the data streams delivered over the hybrid fiber/copper loop. To this end, the Commission should not -- and may not lawfully -- alter the definition of the loop to exclude next generation equipment that is used

⁸⁴ Riolo Decl. ¶¶ 80-81; *see also Deployment of Wireline Services Offering Advanced Telecommunications Capability, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996* CC Docket Nos. 98-147, 98-96, Ex Parte of Catena Networks, Inc. (filed Apr. 6, 2000). In contrast, if requesting carriers can obtain nondiscriminatory, cost-based access to the enhanced extended link, collocation costs would decrease significantly because they would only need to collocate in as few as one incumbent LEC central office in an MSA to provide service. *See UNE Remand Order* ¶ 288.

⁸⁵ Riolo Decl. Exh. B ¶ 5.

⁸⁶ *See* NGRT Public Forum, Transcript at 34-35.

⁸⁷ *See* NGRT Public Forum, Transcript at 31. Adjacent collocation simply amplifies these concerns. Localities would be even more sensitive to "adjacent collocation," as providers would be utilizing more space and be more visible. This would put increased pressure on competitors

to support the ordinary functionality of the loop, *i.e.*, to provide connectivity from the customer's premise to an incumbent LEC central office environment.

G. Assuring That Competitive LECs Continue To Have Access to All of the Functionalities of Local Loops Is Necessary To Achieve the Commission's Stated Goals and Requires Adjustment of the *UNE Remand Order's* Treatment of "Packet Switching."

The Commission has consistently recognized that access to loops is the most essential prerequisite for facilities-based competition.⁸⁸ Numerous Commission orders acknowledge that the incumbent LEC loop is the biggest bottleneck for competitors and is the portion of the incumbent LEC network with the most pronounced monopoly characteristics.⁸⁹ As a result, the Commission had no difficulty determining that lack of access to loops would "impair" competitive LECs from providing the services they seek to offer.⁹⁰ Such unbundling was not limited to 2-wire analog loops but encompasses all loop architectures, including all fiber and copper/fiber loops. The simple truth that competitive LECs will be impaired without access to loops is not altered by the advent of next-generation networks or by what services may be feasible using the loop. Thus, the very same logic that supported the Commission's previous decision on loop unbundling compels the same determination when an incumbent LEC implements a next-generation RT architecture.

Unfortunately, there is a danger of confusion stemming from the Commission's decision regarding the treatment of packet switching in the *UNE Remand Order*. That decision,

to manage the local right of way processes, and invariably require the dedication of more resources to this effort. Riolo Decl. ¶ 83.

⁸⁸ See, e.g., *Local Competition Order* ¶ 378; *UNE Remand Order* ¶ 182; *Line Sharing Order* ¶ 37.

⁸⁹ See *supra* n. 48.

⁹⁰ *UNE Remand Order* ¶ 165.

however, when reviewed in appropriate context, does not require the Commission to alter its definition of the local loop simply because an incumbent LEC may have implemented a next generation architecture.

The *UNE Remand Order* properly found that packet switching is a separate network element, because carriers in fact use different switches to route data packets than they use to route POTS calls. Critically, however, the Commission also found that, in the residential and small business segments of the market, “competitors are impaired in their ability to offer advanced services” without access to unbundled packet switching.⁹¹ Despite this conclusion, the Commission then went on to apply additional policy considerations to support its decision “not [to] order unbundling of the packet switching functionality as a general matter.”⁹² Critically, the Commission also applied this same analysis to Digital Subscriber Line Access Multiplexers (“DSLAMs”) because it viewed them “as a component of the packet switching functionality.”⁹³

Incumbent LECs should not be allowed to seize upon these decisions to prevent competitive LECs from obtaining access to all of the functionality of local loops, regardless of

⁹¹ *UNE Remand Order* ¶ 309.

⁹² *Id.* ¶ 306. The Commission created “one limited exception” to its decision not to unbundle packet switching. *Id.* ¶ 313; *see* 47 C.F.R. § 51.319(c)(5)(B)(setting forth four criteria). The Commission found that packet switching is subject to unbundling only when: (i) the incumbent has deployed a DLC system or introduced fiber into the distribution plant; (ii) the CLEC is unable to “obtain spare copper loops necessary to offer the same level of quality for advanced services” as the incumbent LEC; (iii) the CLEC is unable to deploy or collocate a DSLAM at (or near) the RT; and (iv) the incumbent LEC has deployed packet switching capability for its own use. *Id.*

⁹³ *Id.* ¶ 303. AT&T has petitioned the Commission for reconsideration of its determination that DSLAMs are not included as part of the attached electronics within the definition of the loop. *See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, AT&T Corp.’s Petition For Reconsideration and Clarification of the Third Report and Order, at 9-11 (filed Feb. 17, 2000).

the technology the incumbents deploy to implement this functionality.⁹⁴ Indeed, any decision to do so would have severe anticompetitive impacts and frustrate the Commission's policy objectives to promote the growth and competitiveness of the advanced services marketplace. There are many reasons that support this conclusion.

First, events subsequent to the release of the *UNE Remand Order* call into question the marketplace assumptions upon which it was based. It bears emphasis that the Commission found that lack of access to unbundled packet switching satisfied the "impair" requirement of section 251(d)(1).⁹⁵ The Commission nonetheless decided not to require unbundling of this element because of "the nascent state of the advanced services marketplace"⁹⁶ and because of an apparent belief that unbundling would not "open local markets to competition" or "encourage the rapid introduction of local competition to the benefit of the greatest number of customers."⁹⁷

Subsequent events suggest otherwise. At the time of the *UNE Remand Order*, the Commission relied heavily on the belief that "advanced services providers are actively deploying

⁹⁴ For example, SBC, as part of its Project Pronto initiative, proposed to offer CLECs only a prepackaged subloop *service* rather than the actual access to the entire loop that section 251(c)(3) requires. Although this prepackaged service involved the use of the fiber portion of SBC-owned loops and attached electronics, it was classified as a service that was suitable for resale but *not* a substitute for actual access to the loop element. The difference between the two categorizations is very significant under the Act because the unbundling obligation implicates interconnection, cost-based pricing, and other incumbent LEC obligations (such as an on-going obligation to provide access to the element) that are not present with resale services. The Commission should therefore clarify that the CLECs must have unbundled access to the entire loop to allow for interconnection with other elements.

⁹⁵ *UNE Remand Order* ¶ 310 ("[i]n light of the substantial number of packet switches deployed by competitive LECs, even in comparison to incumbent LEC deployment, we conclude that these non-trivial costs are substantial enough to impair the requesting carrier's ability to provide the services it seeks to offer within the meaning of section 251(d)(2)").

⁹⁶ *Id.* ¶ 306.

facilities to offer advanced services such as xDSL across the country.”⁹⁸ Notwithstanding competitive LECs’ deployment of new facilities, however, incumbent LECs are capturing virtually all of the ADSL business.⁹⁹ Meanwhile, the two data competitive LECs that the Commission cited¹⁰⁰ as the leading examples of the competitive LECs’ ability to achieve economies of scale while providing their own packet switches have both found that their fortunes lie in aligning with – not competing against – the incumbent LECs.¹⁰¹ A third company cited for the same proposition¹⁰² has since acquired an incumbent LEC.¹⁰³

Second, requiring competitors to first meet a list of conditions before gaining access to unbundled DSLAM functionality is fundamentally flawed in several respects. As explained above, spare copper will almost never enable a competitive LEC to match the service

⁹⁷ *Id.* ¶ 309.

⁹⁸ *Id.* ¶ 307.

⁹⁹ SBC, for example, has revealed that, despite a multitude of nominal competitors, it is signing up nine of every ten ADSL subscribers in Texas. *See Application of SBC Communications Inc. Pursuant to Section 271 of the Telecommunications Act of 1996 To Provide In-Region, InterLATA Services in Texas*, CC Docket 00-65, Ex Parte filing of SBC Communications, Inc. (filed April 21, 2000) (reporting on PM 58-09).

¹⁰⁰ *UNE Remand Order* ¶ 307.

¹⁰¹ NorthPoint is now entering into an alliance with Verizon allowing Verizon a 55% stake in NorthPoint. NorthPoint Receives \$150 Million Investment From Verizon; Permanent Financing Part of Agreement to Merge Companies’ DSL Businesses, NorthPoint Press Release (Sept. 6, 2000) <http://biz.yahoo.com/prnews/000906/ca_northpo_2.html>. Similarly Covad and SBC have teamed up, with SBC investing \$600 million and taking a 6% stake in Covad. Kathleen Cholewka, Covad, SBC Shack Up (Sept. 15, 2000) <<http://biz.yahoo.com/fo/000915/mu3437.html>>

¹⁰² *UNE Remand Order* ¶ 307 & n. 605.

¹⁰³ *See Qwest Communications International Inc. and US WEST, Inc., Applications for Transfer of Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License*, CC Docket No. 99-272, Memorandum Opinion and Orders (rel. Mar. 10, 2000 and June 26, 2000).

capabilities of the incumbent LEC and there is no practical way that competitive LECs can make use of collocation at (or near) incumbent LEC RTs. Thus, one condition to the availability of packet switching -- the availability of spare copper loops that provide "the same level of quality for advanced services" -- is superfluous because it will almost always apply. A second condition -- the availability of RT collocation -- acts as a severe competitive barrier because it wrongly assumes that RT collocation provides CLECs with a practical means to maximize the efficiencies and benefits of the next generation loop architecture to the same extent as the incumbent LECs (and their data affiliates). Indeed, the Commission recognized that the competitive LECs' need for access to the DSLAM functionality (which has been defined as packet switching) is even stronger in a DLC environment than it is in a standard all-copper context.¹⁰⁴ It would accordingly be contrary to the letter and spirit of the Act, as well as the Commission's own policy and rules, to maintain any restriction that functions as a competitive barrier, rather than as an incentive for competitive LECs to provide advanced services.¹⁰⁵

Third, when the technical characteristics of RT-associated electronics are carefully examined, and the Commission's stated goals are properly pursued, it is apparent that nothing about the Commission's previous discussion of packet switching (or its inclusion of DSLAMs (or splitting functions) in the definition of packet switching) provides a sustainable

¹⁰⁴ See *UNE Remand Order* ¶ 313 (but see discussion below).

¹⁰⁵ A third condition -- that the incumbent LEC deploy packet switching for its own use -- is also inapplicable since, as discussed below, *none* of the equipment used in the RT provides a switching or routing function. This condition is flawed for the additional reason that it might enable an incumbent LEC to escape its unbundling requirement simply by deploying packet switching for its unregulated affiliate's use. The fourth condition -- that an incumbent LEC actually deploy a DLC system or introduce fiber into the distribution plant -- is self-evident, and no party contends otherwise.

justification for excluding *any* attached electronics from the definition of the unbundled loop element.

As an initial matter, the “packet switching unbundled network element” is defined as the “function of routing individual data units based on address or other routing information.”¹⁰⁶ But that is not at all what *any* DSLAM does, particularly the DSLAM functionality employed in an RT.¹⁰⁷ Since the very purpose of the remote equipment is to transport signals from a customer’s premises to a switch in an incumbent LEC’s office, all of this equipment is performing the “ordinary” function of a loop, *i.e.*, to transport signals from the customer’s premise to an incumbent LEC office. Thus, by definition, *none* of the equipment used in the RT provides a switching or routing function.¹⁰⁸ Therefore, any rule that assumes otherwise rests on a false factual predicate and could not be sustained.

The DSLAM, in particular, is not used as a packet switch in this configuration. It does no routing at all; rather, it functions solely as a multiplexer. Indeed, when the commingled multiplexed signals arrive at the terminating end of the fiber facility at the incumbent’s office, no carrier – including the incumbent itself – can identify its own traffic until the packets have been demultiplexed. Thus the routing (*i.e.*, switching) of data packets to individual carriers’ data

¹⁰⁶ *UNE Remand Order* ¶ 302.

¹⁰⁷ Even in a central office environment, a DSLAM operates, as its name implies, *only* as a multiplexer, *not* as a switch. A DSLAM has no ability to perform the basic function of a switch, *i.e.*, to choose and establish real-time routing paths for particular communications. A central office DSLAM that also performs line splitting functions has multiple subscriber loops on the customer side and one facility on the network side. The DSLAM connects the signals in a GR303 format to *one and only one* circuit switch and connects signals in cell format to *one and only one* ATM device. The DSLAM makes no determination regarding the transmission path that will be used for a particular transfer of information. Rather, it sends a commingled stream of packets from multiple data communications sent by multiple customers. Riolo Decl. ¶ 56.

¹⁰⁸ Riolo Decl. ¶¶ 51-56.

networks does not -- and cannot -- occur until *after* the commingled traffic is carried to another piece of equipment in the incumbent LEC's network (usually an ATM device) and demultiplexed. It is only at that point that traffic from individual customers' data transmissions can be routed to their carriers' separate data networks, including their carrier's packet switches.¹⁰⁹

The essential characteristic of the RT architecture is that it enables the incumbent LEC to support efficient use of the transmission conductor to a customer premises and provides a convenient place to separate voice and data traffic so as to implement separate multiplexing strategies more attuned to the characteristics of the traffic being carried. All of this, however, is part of the "classic" loop function, *i.e.*, the functionality necessary to carry traffic from a customer's premises back to a frame on a central office, where it can be delivered to a competitor for handling or connected to another unbundled element. All of the same economies of scale relating to loops in general apply to the RT architecture. Indeed, the economies are heightened because the signal processing and aggregation functions are performed even closer to customers than with home-run loop configurations. Thus, competitive LECs are even less likely to be able to duplicate the economies of the RT architecture than those of the old copper loop plant.

¹⁰⁹ The DSLAM, in conjunction with the ATM, performs what is known as statistical multiplexing. Riolo Decl. ¶ 59. Unlike time division multiplexing, which is used for voice signals, statistical multiplexing permits more information to be transmitted on a facility per unit of time, because the arrangement allows the DSLAM to send data packets in any order they arrive and does not require the reservation of capacity for idle users. However, because cells of various carriers are commingled on a common feeder facility, some there must be a means to extract and deliver the cells to the appropriate destination carrier. This function is performed by the ATM device at the ILEC's central office, which provides a demultiplexing/re-multiplexing function that segregates all of the cells destined for a particular carrier and puts them all on the same facility. *Id.* ¶¶ 59-61. Without this functionality of the ATM, an ILEC could not deliver the traffic generated by a competitive LEC's retail customer to that carrier. *Id.* ¶ 62.

Moreover, the Commission has from the outset recognized that the DLC functionality, including the associated multiplexing and demultiplexing needed to get traffic on and off of high capacity facilities, is part of the *loop* element.¹¹⁰ Indeed, no party has ever seriously questioned this fact. Next generation RT architectures are merely a more efficient way of implementing that functionality.

Incumbent LECs' introduction of next generation equipment does not alter their legal obligation to provide competitive LECs with technically and economically feasible access to all the capabilities of their loop plant. The inadequacy of spare copper loops to provide a full competitive capability, the lack of space in RTs, the diseconomies of requiring competitive LECs to collocate remotely to serve small numbers of customers, the added efficiencies resulting from the increased use of high-capacity fiber facilities between RTs and incumbent LEC COs, and the incumbents' ability to offer integrated bundles of POTS and advanced services capabilities each individually support this conclusion. Collectively, they compel this result.

If an incumbent LEC and its data affiliate are allowed to use next generation technology to offer additional services and increase the scope, efficiencies and economies of the incumbent LEC's outside loop plant (as they should), it becomes all the more imperative for competitive LECs to have access to such improvements. For one thing, the incumbent LECs' increased geographic scope and improved economies make it even more difficult for competitive LECs to replicate comparable loop facilities. For another, the Commission's policy to increase

¹¹⁰ *Local Competition Order* ¶ 383. See also *Advanced Service Order* ¶ 54 (“[t]he incumbent LECs' obligation to provide requesting carriers with fully functional conditioned loops extends to loops provisioned through remote concentration devices such as digital loop carriers (DLC). The Commission concluded in the *Local Competition Order* that it was ‘technically feasible’ to unbundle loops that pass through an integrated DLC or similar remote concentration devices, and required incumbent LECs to unbundle such loops for competitive LECs”); see also *BA-NY 271 Order* ¶ 271.

investment in advanced services facilities -- the principal rationale for going beyond the "impair" analysis for packet switching -- would be utterly defeated by any other result, because the competitive LECs' investment is stranded if they do not have an economically efficient way to access all the functionalities of their customers' loops.

It should also be noted that the Commission's desire to promote competitive LEC investment in packet switching would be unaffected. Regardless of the potential capabilities of the next generation electronics that incumbent LECs may place in an RT, competitive LECs do not want them -- and cannot use them -- to perform actual data switching or routing functions. Rather, these capabilities are all used for a single purpose: to be able to obtain access to all of their customers' communications at a technically and economically feasible point. This is the traditional function of a local loop.

Once a competitive LEC can finally access all the cells (or packets) generated by its customers, it must then transmit them to its own data network (including data switches) to be able to serve its customers. Ensuring that competitive LECs can obtain such access is the best way the Commission can promote additional competitive LEC investment in -- and real competition for -- advanced data services. In sharp contrast, placing artificial and uneconomic limits on competitive LECs' ability to access their customers' data traffic is the surest way to balkanize the market and establish further incumbent LEC monopolies.

H. Nondiscrimination and Advance Disclosure of Network Planning Information Are Also Vital.

It is clear from the foregoing that the prospects for competition depend on the Commission's decision regarding the application of the unbundling requirements for loops provided using next generation equipment. Successful pursuit of the Commission's competitive objectives will also require proper formulation and enforcement of rules assuring that

competitive LECs (1) are treated in a nondiscriminatory manner compared with incumbent LEC data affiliates and (2) have access to information regarding the incumbent LECs' plans to deploy new technology.

To enhance the prospects for competition in the advanced services market, the Commission has increasingly relied on the use of "separate affiliates." The two largest incumbent LECs have agreed to conduct their advanced services activities through "separate affiliates" established in accordance with section 272.^{111/} For a variety of reasons, however, this approach has not proved to be the panacea that the Commission might have hoped.

The theory of the separate affiliate provisions is that competitors will benefit because the ILEC will treat them and the affiliate alike, putting each in an equal position to succeed or to fail in the marketplace.^{112/} Unfortunately, this represents a triumph of hope over experience, because the theory is flawed and because implementation does not even comport with the theory.

First, the creation of a separate affiliate does not even purport to address the needs of companies that wish to compete directly with the incumbent LEC *as well as* with its separate affiliate. The needs of an incumbent LEC affiliate are inherently different from those of

¹¹¹ See *Application of GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee, for Consent to Transfer Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License, CC Docket 98-184*, Memorandum Opinion and Order ¶¶ 260-278 (rel. June 16, 2000) ("GTE/BA Order"); *Application of Ameritech Corp., Transferor, and SBC Communications Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, 101 of the Commission's Rules, CC Docket 98-141*, Memorandum Opinion and Order ¶¶ 444-476 (rel. Oct. 8, 1999) ("SBC/Ameritech Merger Order").

¹¹² See *GTE/BA Order* ¶¶ 261-264 ("[e]stablishing an advanced services separate affiliate will provide a structural mechanism to ensure that competing providers of advanced services receive effective, nondiscriminatory access to the facilities and services of the merged firm's incumbent LECs that are necessary to provide advanced services").

competitors, such as AT&T, that are attempting to compete with the services of *both* the incumbent LEC and its affiliate. The incumbent LEC can provide traditional services but not advanced services, and its affiliate provides advanced services but not traditional services. However, both the incumbent LEC and its affiliate can “joint market” the services of the other. Thus, the incumbent LEC can fully meet the affiliate’s needs by offering it only a fraction of what a rival carrier needs. Moreover, it can make the access to a network element conditioned upon the affiliate’s agreement not to undermine the incumbent’s voice monopoly -- a condition that no full-service competitive LEC could agree to. So long as the incumbent LEC itself is providing the voice service, and the separate affiliate is providing only data, the needs of a competitive LEC that wishes to compete in both the voice and the data markets are demonstrably different from those of the affiliate, and the theoretical ability to be treated “the same as the affiliate” is meaningless.

Second, the core requirements of section 272 -- the cornerstone of the separate affiliate regime -- are that the separate affiliate “operate independently” of the incumbent LEC and that the incumbent LEC not discriminate “in the provision or procurement of goods, services, facilities, and information or in the establishment of standards.”^{113/} But the Commission has allowed incumbent LECs to flout these basic precepts through prolonged “transitional” provisions that allow many of the incumbent LECs’ advantages to be transferred to their affiliates on a preferential basis.¹¹⁴

¹¹³ 47 U.S.C. § 272(b)(1) & (c)(1).

¹¹⁴ Compare *Non-Accounting Safeguards Order* ¶ 163 (stating that allowing a BOC and its affiliate to share operation, installation, and maintenance (“OI&M”) functions would “inevitably afford the affiliate access to the BOC’s facilities that is superior to that granted to the affiliate’s competitors”) with *SBC/Ameritech Merger Order* ¶ 365 (allowing shared OI&M between SBC and its data affiliate for initial six months).

Third, and of special relevance here, the incumbent LECs are planning their networks on an integrated basis, making sure that they meet the needs of their affiliates but making no comparable effort to understand -- much less fulfill -- the needs of nonaffiliates. True nondiscrimination means accommodating the needs of the competitive LEC as much as those of the separate affiliate, before the decisions are made. The Commission should make clear that the nondiscrimination requirement is *not* satisfied when nonaffiliated competitive LECs are limited exclusively to functionalities that have been requested by, and made available to, incumbent LEC affiliates (and were specifically designed to be uniquely beneficial to the incumbent LEC affiliate). If the incumbent LEC is willing to do what is necessary to meet its affiliate's needs and to position itself and its affiliate to offer both voice and data services to consumers, then true nondiscrimination would require that the incumbent LEC be equally forthcoming in fully meeting the needs of nonaffiliates, so that they can enjoy comparable efficiencies in offering both voice and data services to consumers. It also necessitates that all critical loop functionalities be owned and operated by incumbent LECs, not their "separate" affiliates.

Critically, the nondiscrimination requirement must also apply to the planning process, and to the decisions an incumbent LEC makes about what capabilities will be offered to its affiliate and to nonaffiliates.¹¹⁵ An incumbent LEC cannot be permitted to choose which technologies to use, and what capabilities to make available, in a manner that is uniquely advantageous to the affiliate. Competitive LECs are also entitled to have their own unique needs considered and met on an equivalent basis. Here again true nondiscrimination requires that such decisions are made with as much concern for the desires and needs of nonaffiliates as for those

¹¹⁵ *Non-Accounting Safeguards Order* ¶¶ 210-12.

of the affiliate.¹¹⁶ Again, this means that all features, functions, and capabilities of the loop must be arranged by the ILEC, not by any unregulated affiliate.

Nondiscrimination also means making sure that competitive LECs are as knowledgeable about changes in the network -- their nature, their location, and their timing -- as is the affiliate. No disinterested observer would claim that the incumbent LECs have been nondiscriminatory in their network planning, or in divulging the results of their network planning. Indeed, the 1996 Act plainly requires ILECs to apprise CLECs of changes to the network that would impact their services. Under section 251(c)(5), ILECs must "provide reasonable public notice of changes in the information necessary for the transmission and routing of services using that local exchange carrier's facilities or networks, as well as of any other changes that would affect the interoperability of those facilities or networks."¹¹⁷ In addition, the Commission's rules implementing this provision state that the network disclosure requirement is a "broad standard" that includes changes to network configuration.¹¹⁸ Obviously, the deployment of next generation architecture constitutes exactly the type of change that the Commission anticipated would trigger such advance notice requirements.¹¹⁹

III. THE COMMISSION SHOULD ADOPT NATIONAL RULES GOVERNING SPACE PROVISIONING RESERVATION POLICIES.

As the Commission has recognized and as the record in these proceedings clearly demonstrates, national space provisioning and reservation standards are necessary to ensure that

¹¹⁶ *Id.* ¶ 211.

¹¹⁷ 47 U.S.C. § 251(c)(5).

¹¹⁸ *Local Competition Second Report and Order* ¶ 182.

¹¹⁹ *Id.* ("[e]xamples of network changes that would trigger public disclosure obligations include, but are not limited to, changes that affect: transmission; signaling standards; call routing; network configuration; logical elements; electronic interfaces; data elements; and transactions that support ordering, provisioning, maintenance and billing").

incumbent LECs comply with their statutory obligation to provide collocation on terms and conditions that are “just, reasonable, and nondiscriminatory” pursuant to Section 251(c)(6).¹²⁰ Indeed, it has been repeatedly demonstrated that “incumbent LECs in many states will continue to delay unreasonably competitive LECs’ build-out of their facilities” in the absence of national provisioning rules.¹²¹ National standards mandating the “[t]imely provisioning of physical collocation space [are] critically important to telecommunications carriers’ ability to compete effectively” and to the development of competition generally.¹²² Accordingly, the Commission should adopt national standards to curb incumbent LECs’ continuing ability to stifle competition through space provisioning and reservation policies.

A. Provisioning Intervals

In the FNPRM (¶ 114), the Commission seeks comment on whether it “should specify an overall maximum collocation provisioning interval shorter than 90 calendar days or shorter intervals for particular types of collocation arrangements,” such as cageless collocation, modifications to existing collocation arrangements, or collocation within remote incumbent LEC structures. While AT&T believes that the 90-day interval proposed by the Commission is generally appropriate for caged collocation and certain other collocation arrangements in unconditioned space, AT&T submits that shorter intervals should be adopted to reflect the substantial reduction in the amount of work (and time) required to provide collocation in conditioned space, to provision cageless collocation arrangements, and to complete basic

¹²⁰ *Collocation Order* at ¶ 13; *Local Competition Order* at ¶ 558.

¹²¹ *FNPRM* at ¶ 22. See also, e.g., *UNE Remand Order*, 15 FCC Rcd. at ¶¶ 90-91 (concluding that incumbent LECs can take advantage of collocation provisioning delays to lock-up customers prior to competitive entry);

¹²² *FNPRM* at ¶ 22.

augmentations and modifications to existing physical collocations. Accordingly, AT&T proposes the default rules set out below.

1. **Cageless Collocation in Conditioned Space.** The Commission should adopt a 60-day interval for provision of cageless collocation when conditioned space is available. Because the incumbent avoids both preparing (conditioning) space for the collocation as well as installing a cage, incumbent LECs require substantially less time to complete such collocation arrangements.

Indeed, state commission orders, industry practice, and numerous comments and submissions in these proceedings provide ample support for adopting a shorter provisioning interval for cageless collocation in conditioned space. For example, after thorough review the Public Utility Commission of Texas (Texas Commission) determined that while 90 days was a reasonable interval for provision of *caged* collocation, cageless collocation arrangements could routinely be completed in 70 days or less. In addition, the Texas Commission concluded that, if the collocating carrier installs its own bays and racks, which would further decrease the work required of the incumbent LEC, the appropriate interval would be reduced to a mere 55 days.¹²³

Industry practice and data also support adopting a 60-day interval. For example, Qwest has committed to provide cageless collocation within 45 days where space and power are available. And, as Rhythms has pointed out in these proceedings, collocation providers that are not incumbent LECs frequently are able to provide cageless collocation within only 14 days of receiving a complete application.¹²⁴ Numerous other parties have provided similar supporting

¹²³ *FNPRM* at ¶ 17.

¹²⁴ Rhythms Oct. 19, 1999 Letter, at 6-7.

examples.¹²⁵ In sum, it is clear that incumbent LECs can provision cageless collocation in substantially less than the current 90-day interval, and the Commission should adopt a 60-day interval.

2. **Virtual Collocation.** As with cageless collocation, when incumbent LECs provide virtual collocation they avoid construction of a cage and the ancillary tasks involved with its installation. Thus, for the same reasons that a shorter provisioning period is appropriate for cageless collocation in conditioned space, the Commission should adopt a 60-day period for virtual collocation as well.

3. **Augmentations to Existing Physical Collocation Space.** Where a CLEC has existing physical collocation space and requests an augmentation or modification, incumbent LECs should be required to comply with such requests within 30 days unless substantial construction or a structural build-out is required. If substantial construction is required, the interval should be no longer than that for provision of new collocation. In particular, AT&T proposes that certain routine augmentations (*e.g.*, the provision of no more than 28 DS1s or 3 DS3s or additional overhead lighting) should be completed within 15 days. The Commission should also establish that other common, but more difficult, augmentations be classified in a manner similar to the approach adopted by the Texas Commission. [Cite & explain].

B. Space Reservation

The Commission should also adopt national rules governing space reservation policies to limit the ability of incumbent LECs to continue to discourage competitive market entry by using space reservation to delay and disadvantage would-be market entrants. The

¹²⁵ See *FNPRM* at nn. 7 & 44.

Commission should follow the general approach taken by the Texas Commission and other state PUCs in formulating national space reservation rules and periods.¹²⁶

As numerous parties to these state proceedings have correctly argued, space reservation periods for the various classes of equipment should be set based on a variety of factors, including engineering limitations (e.g., maximum viable distance between related equipment), relative scalability and environmental constraints of the various types of equipment, all viewed with an eye toward relevant technological and market developments.¹²⁷ Although far from a precise formula, consideration of these factors will allow the Commission to set rational space reservation periods that will adequately address the need of new market entrants to obtain collocation space, while at the same time preventing the use of space reservation to impede competition and balancing the legitimate needs of ILECs and CLECs to reserve space for such periods of time as will allow them to make plans for expansion and ensure that they will have sufficient space to provide future service.

The principal engineering constraint relevant to determining appropriate space reservation periods is the requirement that certain types of related equipment be located within a certain distance of each other. This, of course, raises the legitimate concern that space in the necessary location (*i.e.*, within the requisite distance of other equipment) might be exhausted or hoarded, leaving no opportunity for future expansion.¹²⁸ Thus, for example, transport equipment

¹²⁶ See *FNPRM* at ¶ 117 (summarizing Texas Commission approach).

¹²⁷ Technological developments will likely decrease the relative size of various types of equipment, thus partially mitigating the need for long space reservation periods by allowing capacity growth through equipment upgrades rather than expansion. For example, current DCS equipment provides approximately four times the termination capacity as the equipment of precisely the same size built just three years ago.

¹²⁸ Sprint Petition at 7-9; *see also* AT&T Comments at 2 (urging that where an incumbent LEC claims that space is exhausted at a particular premises, the state commission should be required