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In the Matter of	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	CC Docket No. 98-147
And	
Implementation of the Local Competition Provisions of the Telecommunications Act of 1996	CC Docket No. 96-98

JOINT COMMENTS OF COVAD COMMUNICATIONS COMPANY, RHYTHMS NETCONNECTIONS INC., AND WORLDCOM, INC.

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SUMMARY

Digital Subscriber Line ("DSL") technologies represent the most robust form of broadband competition. Consumer demand for these services has taken off. These customers must retain the ability to obtain DSL offerings from a choice of carriers, offering a variety of service options.

The Federal Communications Commission ("Commission") has established regulations that give carriers a menu of options for pursuing facilities-based competition. However, most of those options are not immediately available. The only immediately available alternative is the unbundled loop with the full features, functions and capabilities necessary to provide broadband data services. By treating loops used to provide data services in precisely the same manner as loops used to provide voice services, and requiring all the features, functions and capabilities (including "packet switching") of those loops to be made available to competitive local exchange carriers ("CLECs"), the Commission will foreclose discriminatory treatment by incumbent local exchange carriers ("ILECs"). Without this option, CLECs will be foreclosed from a significant and increasing segment of the market for some time to come.

The ILECs, including SBC and Verizon, are already rolling out Next Generation Digital Loop Carrier ("NGDLC") architectures, such as Project Pronto, which push fiber and loop electronics farther out into the network to the remote terminal. Insidiously, the ILECs are using these new architectures to shut down competition and reassert their monopoly control in order to lock-up the DSL broadband market. In order to preserve competition in the immediate future, CLECs must to be able to access an unbundled loop with the full features, functions and capabilities necessary to provide broadband data services, including access to the parameters necessary to differentiate their service offering.

In the NGDLC architectures, unbundled loops used for data, just like the unbundled loops used for voice, have electronics in the middle, at the remote terminals. In the case of a loop capable of transmitting data, the electronics in the middle include DSLAM functionalities. The new architectures represent precisely the type of change this Commission specifically reserved the right to address when it excluded packet switching from its unbundling rules. For ILECs to refuse to provide this loop functionality to data providers is not technologically neutral, and unfairly singles out data providers for discriminatory treatment.

While the Commission must ensure that ILECs fully comply with their statutory and regulatory obligations by granting CLECs the ability to select from a menu of alternatives, such as line card collocation, unbundled subloops and dark fiber, as well as spare copper, the only scaleable, immediate alternative for competitors is the availability of a fully functional UNE loop, consistent with this Commission's Orders. With one exception, the Commission need make no changes to its existing unbundling rules to ensure that consumers are not denied a choice of broadband provider at the broadband bottleneck of the future—the remote terminal. The purpose of these Comments is to suggest the lowest-impact means for the Commission to ensure competitive access to DSL and line sharing capabilities at the remote terminal.

In past rulemakings, the Commission has made abundantly clear that the loop unbundling obligations of incumbent LECs extend to remote terminal, DLCs, and other intermediate electronics on mixed copper and fiber loops. Because of the technical limitations of NGDLC systems, competitive carriers seeking to offer broadband DSL services via loops served through such systems need access to all of the electronic features, functions and capabilities of the NGDLC. The Commission has already determined that requesting carriers are entitled to such access—with one exception. The Commission's carve-out of DSLAM functionality from

NGDLC architectures, made over a year ago in a different technological and financial climate, should be re-examined in this proceeding. The Commission must reaffirm its commitment to competition by ensuring that all carriers have access to the features and functionalities of unbundled loops in order to provide consumers the widest possible variety of innovative broadband services.

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JOINT COMMENTS OF COVAD COMMUNICATIONS COMPANY, RHYTHMS NETCONNECTIONS INC. AND WORLDCOM, INC.

Covad Communications Company ("Covad"), Rhythms NetConnections Inc. ("Rhythms") and WorldCom, Inc. ("WorldCom"), by its attorneys, submit these comments in response to the Commission's request for comments regarding the issues raised with respect to line sharing where an incumbent LEC has deployed fiber in the loop plant.[1]

I. COMMISSION ACTION IS NECESSARY TO PRESERVE A DYNAMIC COMPETITIVE BROADBAND MARKET

The Commission has affirmed, repeatedly, that CLECs have the right to engage in both line sharing and line splitting over an unbundled loop with the full features, functions and capabilities necessary to provide broadband data services. Regardless of the clarity of that principle, the ILECs continue to exploit the line sharing order and slow the competitive deployment of DSL to consumers and small businesses all across America.[2] The Commission

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[1] *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability,* CC Docket No. 98-147, Third Further Notice of Proposed Rulemaking, *and Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, Sixth Further Notice of Proposed Rulemaking, FCC 01-26 (rel. Jan. 19, 2001).

[2] DSL is primarily an offering targeted at serving residential areas, regardless of whether the actual service is being provided as a business or individual offering.

has explicitly stated that "ILECs are required to unbundle the high frequency portion of the local loop even where the incumbent LEC's voice customer is served by [digital loop carrier] DLC facilities."[3] Consumers are demanding DSL service in areas served by DLC, yet the competitive demands of the market are left unsatisfied. The Commission must enforce the rules that enable those consumers to have DSL services in areas served by digital loop carriers ("DLC").

The Commission has clearly affirmed the obligation that ILECs must "unbundle the high frequency portion of the local loop, even where the incumbent LEC's voice customer is served by DLC facilities."[4] The Commission must enforce this requirement, and the corollary access requirements that enable CLECs to provide DSL services to consumers and small businesses in DLC communities. CLECs have the option of accessing the loop at either the remote terminal or central office,[5] and further, "the subloop can be unbundled at any accessible terminal in the outside loop plant."[6] If this right is not enforced, and the ILECs do not provide access to these unbundled elements on a reasonable and timely basis, competition will continue to dwindle and consumers will suffer.

A. Demand for DSL Services is Increasing, Including in the Residential Markets Largely Targeted by ILEC NGDLC Deployment Plans.

Consumer demand for DSL continues to increase rapidly in U.S. markets. While the ILECs hold and continue to develop a strong lead in the DSL market, competitors like Covad, Rhythms, and WorldCom created and have spurred this customer demand, and are working to

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[3] *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket Nos. 98-147, 96-98, Report and Order (rel. Dec. 9, 1999) ("*Line Sharing Order*") at ¶¶ 88-92; *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket Nos. 98-147, 96-98, Order on Reconsideration (rel. Jan. 19, 2001) ("*Line Sharing Order on Reconsideration*") at ¶¶ 10-13.

[4] *Line Sharing Order* at ¶ 91.

[5] *Line Sharing Order* at ¶ 91.

[6] *Line Sharing Order* at ¶ 92.

provide DSL to residential markets. A recent study by TeleChoice shows that of the 2.4 million DSL lines installed by the 4th quarter of 2000, ILECs account for 78% of the total, followed by CLECs with 21% and interexchange carriers ("IXCs") with about 1%."[7] TeleChoice noted that "For the U.S. market this represents over a 700,000 subscriber increase from the end of third quarter 2000. Led by SBC's 251,000 new subscribers and strong growth by Verizon and BellSouth, the ILECs increased their base by 46%."[8] TeleChoice also notes that of the 1.8 million ILEC DSL lines, 80% of those are residential.[9] This is the same percentage that the Commission quoted in the *Line Sharing Order* when it relied on TeleChoice data in 1999.[10]

The Commission has recognized the growing consumer demand for DSL and sought to foster access to competitive broadband alternatives through line sharing.[11] However, as DLC becomes an integral part of the ILECs' deployment of DSL service to consumers, the fiber connection has been exploited as a means to deny CLECs the ability to access the unbundled network elements necessary to provide DSL service.

It is without question that DLC will become increasingly important to providing advanced services to consumers. For example, with its Project Pronto, SBC plans to spend $6 billion to deploy fiber to make 80 percent of its loops DSL-capable by 2003.[12] Over the past year, more than half of SBC's wire-line customer locations—18.3 million —were DSL-capable,

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7 "TeleChoice Announces North American DSL Market Nears 3 Million Lines at Year End 2000," Feb. 13, 2001, http://www.telechoice.com/inthenews/telechoice/485.asp.

8 *Id.*

9 "TeleChoice DSL Deployment Projections – Updated 02/13/01," (*TeleChoice 2000 Study*) http://www.xdsl.com/content/resources/deployment_info.asp. It should be noted that TeleChoice provided the survey material relied upon by the FCC in the *Line Sharing Order*. *See Line Sharing Order* at ¶ 34 n.64-65.

10 *See Line Sharing Order* at ¶¶ 32, 34 n. 61, 64-65. CLECs' residential customer base was 19% in 1999, but has risen to 37% of its total DSL customer base (residential to commercial), a significant increase. *See TeleChoice 2000 Study*, supra n.8. Despite that increase, ILECs still maintain an 8:1 advantage over CLECs in the residential market, with 80% of their customer base in the residential market.

11 *See generally, Line Sharing Order*, supra n.1.

up from 10.2 million at the beginning of 2000.[13] Verizon has echoed the intent to increasingly deploy fiber in its loop network architecture. Qwest continues to deploy fiber in large metropolitan cities across its territory.[14] Taken together, this paints a compelling picture of the extent to which competitors' ability to serve a substantial segment of the customer market is at risk. Consequently, customers risk no longer having a choice of service providers.

B. ILECs Are Leveraging DLC To Gain Or Perpetuate Market Control Over DSL For Consumers.

The ILECs are using the excuse of deployment of fiber to delay or deny competitors the ability to provide the variety and service distinctions that are the key characteristic of a competitive environment. A study ordered by the California PUC and provided to the FCC is a good example of the difficulties CLECs have had in deploying DSL services in areas serviced by DLC. In the time period between June 6 and July 20, 2000, SBC-ASI (the SBC advanced service affiliate) claims that it and Pacific Bell processed over 20,000 requests for line shared service.[15] However, during the time that Pacific Bell provisioned 20,000 loops with its advanced service affiliate, it had not provisioned a *single* line shared loop for Covad, Rhythms, or NorthPoint in California.[16]

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[12] *SBC Announces Sweeping Broadband Initiative*, Investor Briefing No. 211 (Oct. 18, 1999) at 1.

[13] *Growth in Data, Wireless and Long Distance Highlights SBC's Fourth Quarter Results*, Investor Briefing No. 223 (Jan. 25, 2001) at 4.

[14] Louis Trager, "Qwest Takes Broadband To Customers' Doorsteps," Interactive Week (Mar. 15, 1999).

[15] *See* Letter from Cristin Flynn, Associate Policy Counsel, WorldCom to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket Nos. 98-147, 96-98, and 98-146 (August 18, 2000), (annexing status reports of Covad Communications, Inc., Rhythms Links, Inc., NorthPoint Communications, Inc. and Pacific Bell, from California PUC DSL Proceeding) (*DLECs Status Reports*). PacBell also boasted in its filing that it had successfully provisioned and completed "more than 8,000 local service requests" for shared line service from June 6 to July 17, 2000.

[16] *DLECs Status Reports* at 4. Requests for line sharing at adjacent collocation sites were flatly rejected by Pacific Bell. *See DLECs Status Reports* at 7.

BellSouth's recent statements that "a full impairment analysis must precede any extension of BellSouth's existing obligations to provide unbundled network elements to [CLECs, in the DLC environment]"[17] also shows complete disregard for the Commission's clear unbundling obligations. BellSouth's veiled threat that "UNE Regulation of new last mile fiber is likely to remove incentives for deployment of fiber to provide consumers advanced services" is disingenuous at best.[18] Since the FCC announced the obligation to provide unbundled access to subloops to serve DLC-supported customers on December 9, 1999, SBC has grown Project Pronto from a press release into a reality. Verizon continues to consider its own DLC deployment, and Qwest quietly installs fiber loops in large metropolitan communities.

The Commission has repeatedly stressed that ILECs provide the entire loop, with all features, functions and capabilities, to any requesting CLEC, and specifically identified DSL providers.[19] Regardless of these existing legal obligations, the ILECs continue to refuse to allow adequate and appropriate access to DLC-served residential and small business consumers. By clearly articulating the parameters of existing requirements, the Commission can ensure that customers benefit from the most vibrant competition resulting from the 1996 Act.

Without action by the Commission to ensure its rules are implemented and followed, customers will have no choice in service providers for DSL. An ever-increasing pool of customers will only be able to choose among technologies (DSL from the incumbent, cable modem from the monopoly cable company, or wireless access), not among service providers of

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[17] *See* Letter from Kathleen B. Levitz, Vice President, Federal Regulatory, BellSouth, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket Nos. 98-147, 96-98 (February 13, 2001) (*BellSouth February 13, 2001 ex parte*).

[18] *Id.* at Attachment A, p. 3.

[19] *See* 47 U.S.C. § 159(28); *Line Sharing Order* at ¶ 17.

each of these offerings.[20] Commission action to enforce access to DLC-served customers is also consistent with the goals of the 1996 Act, which was designed to ensure *telecom* competition. Competition by ILEC telecom providers with other non-telecom technologies may be a part of the overall competitive broadband reality but it is not sufficient to satisfy the competitive mandate of Congress.

C. The Marketplace Is Demanding *Definitive* Action Regarding Unbundling of NGDLC.

In the current economic climate, competitive providers cannot tolerate uncertainty. Unprecedented mergers, foreclosures and the constriction of capital markets have whittled away at competitors' ability to weather uncertainty or protracted litigation to enforce ILECs' statutory and regulatory obligations. In 1999, the year the *Line Sharing Order* was issued, NorthPoint had its IPO. Several weeks after the *Line Sharing Reconsideration Order*, NorthPoint's stock was de-listed from NASDAQ.[21] Bankruptcies have thinned the number of competitive DSL providers, hurting consumer choice significantly. By sending a signal that the ILECs cannot remonopolize customers, the Commission has an opportunity to influence these factors and protect competition while it still exists.

D. ILEC Deployment of NGDLC Must Not Be Permitted to Undermine the Commission's Line Sharing Policies.

Of paramount concern to the FCC in unbundling the high frequency portion of the loop and the subloops that serve DLC customers is the ability for those customers to continue to have

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[20] *See* Brian Ploskina, "Top-Dollar DSL," *Inter@active Week*, Feb. 18, 2001, http://www.zdnet.com/filters/printerfriendly/0,6061,2687148-2,00.html. *Inter@active Week* noted that the FCC has not done enough to allow "DSL competitors to survive against dominant regional Bell telecommunications powerhouses" and that RBOCs have "convinced regulators that their chief competitors for high-speed Internet access are the cable companies". SBC was also cited as raising its consumer DSL rates from $40 a month to $50 a month.

[21] NorthPoint Communications Delisted from NASDAQ, February 8, 2001, http://www.northpointcom.com/about_press.asp?PressReleaseID=1181.

competitive choices and bring DSL to the widest number of consumers possible. The fact that the infrastructure that supports DSL has evolved into a fiber-fed DLC system does not change the FCC's line sharing policies, which were specifically designed to ensure customers have access to competitive DSL alternatives over their existing phone line. The FCC concluded that "requesting carriers are functionally precluded from deploying xDSL services where incumbent carriers have deployed DLC systems . . . ." [22] The Commission must reiterate that its rules require ILECs to provide CLECs with UNE loops, regardless of technology deployed in those loops, for line shared service. Without strong enforcement of the existing unbundling obligations, and clear and repeated support for DSL competition from the Commission, the ILECs will continue to disregard clear legal obligations in order to gain market share.

II. ILECs MUST BE REQUIRED TO FULFILL THEIR OBLIGATION TO PROVIDE FULLY FUNCTIONAL LOOP UNEs TO DSL PROVIDERS

The Commission is faced with a clear choice. Fortunately, the rules and regulations needed to avoid the catastrophe of re-monopolization already exist. Those existing rules and regulations permit and require clarification that the Commission's existing loop unbundling rules require incumbent LECs to provide UNE loops through NGDLCs with features and functionality necessary to provide competitive broadband services.

DSL provides the most vibrant form of local broadband competition. Competitive providers such as Covad, Rhythms and WorldCom compete daily with the entrenched monopolies. Consumers have enjoyed both an increase in availability and a wide menu of DSL flavors from which to chose. Tantamount to this choice is the differentiation in the types of DSL that competitors provide. Incumbent LECs rely almost solely on a one-size-fits-all, line-shared

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[22] *Line Sharing Order* at ¶ 90; *see also Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Third Report and Order and Fourth Further Notice of Proposed Rulemaking FCC 99-238 (rel. Nov. 5, 1999)("*UNE Remand Order*") at ¶¶ 163-318.

ADSL product. Competitive LECs provide a variety of options, including ADSL, RADSL, SDSL, and HDSL. These varied service options allow competitors to meet the needs of both residential and small business users, filling a void left by the incumbents.

At the root of such varied offerings are the Commission's regulations regarding collocation of broadband equipment. And while regulations exist that extend competitive LEC collocation rights to the remote terminals of next-generation loop architecture, most of those options are currently not economically or technically feasible. SBC and Verizon, the monopolies that control access to almost two-thirds of the phone lines in the nation, are already deploying their next generation local loop architecture. In doing so, the monopolies are intentionally and willfully locking out competition by insisting that requesting carriers can only resell whatever DSL service the monopoly chooses to provide.

Time will certainly provide an answer to collocation in remote terminals, the lack of competitive options available to consumers and the increasing prices of ILEC services requires immediate Commission action. The best option available to the Commission today to preserve competition is through existing loop unbundling rules, and that is all requesting carriers are seeking. The Commission must ensure that facilities-based competitive LECs collocated in incumbent LEC central offices not only have access to full unbundled loop functionality, but also to the control parameters necessary to differentiate the variety of their offerings.

A. The Commission's Rules Provide the Foundation for the Actions Necessary to Ensure Competition in the NGDLC Architectures.

In the *Local Competition First Report and Order*, the Commission took the first steps to implement its mandate from Congress to open local telecommunications markets to

competition.[23] In particular, the Commission adopted unbundling rules, pursuant to section 251(c)(3) of the Act, in order to ensure competitive LEC access to the last mile monopoly bottleneck. As the Commission has repeatedly recognized, no carrier could ever hope to duplicate the last mile facilities that incumbents built with captive ratepayer funding, and thus it is only by virtue of those unbundling rules that competitive carriers have a chance of offering their innovative services to consumers who demand them.[24]

One of the pernicious battles that incumbent LECs have forced their competitors to fight is the battle for the loop. Although the Commission has taken great pains in numerous proceedings over five years to impress upon incumbents their loop unbundling obligations, incumbents simply do not want to listen. DSL providers, like Covad and Rhythms, have been forced to wage endless battles before the Commission and the states in the face of incumbent refusals to provide DSL-capable loops, refusal to condition those loops and now, refusal to provide DSL-capable loops that pass through remote terminals. As the broadband revolution migrates closer to the customer, the remote terminal is on the verge of becoming the next critical bottleneck. The Commission faces a clear choice—whether to permit incumbents to once again utilize the wide range of anticompetitive tools, forged during the battle to offer DSL through central offices, to foreclose competitive entry in the remote terminal. Or the Commission can take the simple step of clarifying that its unbundling rules apply to all loops and all of their functionalities—particularly those that pass through remote terminals. Broadband DSL services

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[23] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd. 15,499 at ¶1 (1996) ("*Local Competition Order*").

[24] *See, e.g., UNE Remand Order* at ¶ 165 (concluding that "[r]equiring carriers to obtain loops from alternative sources would materially raise entry costs, delay broad-based entry, and limit the scope and timeliness of the competitor's service offerings," and thus "neither self-provisioning loops nor obtaining loops from third-party sources is a sufficient substitute that would justify excluding loops from an incumbent LEC's unbundling obligation under section 251(c)(3).").

are rapidly expanding to remote terminals, but it is only incumbent LECs that are providing those services. This is not what the Act either contemplates or requires.

The most critical bottleneck facility, the local loop, has remained at the core of the Commission's unbundling rules since their inception. Nearly five years ago, the Commission first identified the local loop as a network element from the customer premises to the central office that incumbent LECs must unbundle "at any technically feasible point."[25] Incumbent LECs are obligated to provide an unbundled loop with the full features, functions and capabilities necessary to provide broadband data services to a requesting carrier, "subject only to considerations of technical feasibility."[26] Thus, the Commission requires incumbent LECs to provide fully functional UNE loops to requesting broadband carriers, permitting incumbents to refuse to provide such loops only if it is not technically possible.

The Commission first concluded in the *Local Competition First Report and Order* that it was "technically feasible" to unbundle loops that pass through an integrated digital loop carrier ("IDLC") or similar remote concentration devices, and required incumbent LECs to unbundle such loops for competitive LECs.[27] Thus, the incumbent LECs' existing obligation to provide requesting carriers with fully functional conditioned loops extends to loops provisioned through remote concentration devices such as digital loop carriers.[28] The Commission recognized from the inception of its market-opening rulemaking that incumbent LECs had every incentive to deny their competitors access to the full functionalities of loops, in an effort to stifle the deployment of innovative services. As the Commission concluded in the *First Advanced Services Order*, "if we

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[25] *Local Competition Order*, 11 FCC Rcd at 15690, ¶ 379

[26] *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket No. 98-147, First Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd 4761 (1999) ("*Advanced Services Order*") at ¶ 53.

[27] *Local Competition Order* at 15692, ¶ 383.

are to promote the deployment of advanced telecommunications capability to all Americans, competitive LECs must be able to obtain access to incumbent LEC xDSL-capable loops on an unbundled and nondiscriminatory basis."[29]

Importantly, the Commission has also recognized that its loop definition must be subject to reinterpretation or alteration in the event that changes in technology provide incumbent LECs with new opportunities to impose bottlenecks on competitive entry. Indeed, in revising the definition of the loop to clearly set out incumbent unbundling obligations in the *UNE Remand Order*, the Commission made clear that it was "[o]ur 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."[30] The rapid deployment of remote terminal NGDLC DSL capabilities, and incumbent LEC efforts to deny access to those loop functionalities, is the exact scenario the Commission had in mind in giving flexibility to its unbundling rules.

B. Remote Terminal NGDLC Functionalities Fit Squarely Within the Commission's Existing Definition of the Loop.

In the *UNE Remand Order*, the Commission concluded that loops that pass through remote terminals and digital loop carriers include electronic capabilities that are integral to the functioning of the loop, and thus fit within the definition of the loop. "Some loops, such as [IDLC], are equipped with multiplexing devices, without which they cannot be used to provide service to end users. Because excluding such equipment from the definition of the loop would limit the functionality of the loop, we include the attached electronics (with the exception of

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[28] *Advanced Services Order* at ¶ 54.

[29] *Advanced Services Order* at ¶ 52.

DSLAMs) within the loop definition."[31] Thus, the Commission recognized that remote terminal electronics are a part of the loop itself—they are "features, functions, and capabilities" of the loop and fall squarely within the incumbent LECs' unbundling obligations. It is the parenthetical—"with the exception of DSLAMs"—that competitive LECs respectfully suggest the Commission must re-evaluate in the face of rapid incumbent LEC deployment of NGDLC architectures.

There is no question that, as a policy matter, the Commission seeks to make the widest possible variety of loops and loop functionalities available to competitive LECs. As the Commission concluded in the *UNE Remand Order:*

> 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. Access to unbundled loops will also encourage competition to provide broadband services. We are convinced that greater, not fewer, options for procuring loops will facilitate entry by competitors, and that Congress intended for competitors to have these options available.[32]

As a result of this policy determination, the Commission concluded that it should clarify its loop unbundling rules to prevent incumbent LECs from denying their competitors access to any and all loop functionalities, or even portions of loops, that requesting carriers seek. Indeed, the Commission found ample support in the record of the *UNE Remand* proceeding for its conclusion that competitive LECs must have access to all possible permutations of loop architectures, including those that run through remote terminals, because such architectures are impossible for competitors to duplicate. "We agree with commenters that loop facilities, including subloop elements, are the most time-consuming and expensive network element to

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30 *UNE Remand Order* at ¶ 167.

31 *UNE Remand Order* at ¶ 175.

32 *UNE Remand Order* at ¶ 200.

duplicate on a pervasive scale, and that the cost of self-provisioning subloops can be prohibitively expensive. Self-provisioning subloops would require requesting carriers to incur significant sunk costs prior to offering services to end users."[33] The Commission recognized that access to loops would be meaningless if competitive LECs were forced to construct parallel networks in order to gain that access.[34]

With this important policy goal in mind, the Commission addressed with specificity competitive LEC access to loops that pass through remote terminals. In particular, the Commission recognized that remote terminals were rapidly becoming the new central office bottlenecks, and that consumers served over remote terminals could only access true broadband capabilities if their carrier—incumbent or competitor—offered DSL capability through the remote terminal. The Commission concluded that, if incumbent LECs began offering remote terminal-based DSL services, competitive LECs would need access to all the features, functions, and capabilities of remote terminal-deployed loops in order to compete with such incumbent retail offerings. The Commission noted that such a conclusion fit within its existing unbundling rules, which were designed "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."[35]

The Commission concluded that DSL carriers seeking remote terminal access would have to access DSLAM capabilities at the remote terminal itself, rather than at the central office, because of the mix of copper and fiber in DLC-based loops. The Commission further concluded that such a technical restriction on provisioning of DSL service meant that it was absolutely vital

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[33] *UNE Remand Order* at ¶ 211.

[34] *See* Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996); 47 U.S.C. § 251(c); *see also Local Competition Order* at ¶ 366.

for competitive carriers to access DSLAM functionalities at the remote terminal. The Commission saw two ways for competitors to accomplish this: either by collocating their own DSLAM at the remote terminal, or if unable to do so, by unbundled access to the incumbent LEC's DSLAM functionality in the terminal. Importantly, the Commission concluded that "if a requesting carrier is unable to install its DSLAM at the remote terminal or obtain spare copper loops necessary to offer the same level of quality for advanced services, the incumbent LEC can effectively deny competitors entry into the packet switching market."[36]

The Commission envisioned that a competitive LEC would install its own DSLAM at the remote terminal, accessing all NGDLC functionalities through that DSLAM—but recognized that the lynchpin of such functionality would be the ability to offer the "same level of quality for advanced services." The Commission also concluded that if competitive LECs could not deploy DSLAMs, incumbent LECs would have to provide DSLAM functionality in remote terminals, and that "the incumbent will be relieved of this unbundling obligation only if it permits a requesting carrier to collocate its DSLAM in the incumbent's remote terminal, on the same terms and conditions that apply to its own DSLAM."[37] But the Commission left out of its determination two very important elements—what does it mean for an incumbent LEC to "permit" a requesting carrier to collocate its DSLAM, and how is the determination made that a competitive LEC can offer the "same quality for advanced services" as the incumbent? Because the Commission viewed the DSLAM functionality in remote terminals as a stand-alone feature, rather than an integrated part of the whole NGDLC loop architecture, competitive LECs are left today with a gaping hole in their ability to access UNE loops through NGDLCs. The

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35 *UNE Remand Order* at ¶ 167; 47 C.F.R. § 51.319(a)(1).

36 *UNE Remand Order* at ¶ 313.

37 *UNE Remand Order* at ¶ 313.

Commission has carved out an exception to DSLAM unbundling—allowing incumbent LECs to claim erroneously that DSLAM-type cards placed in an NGDLC are "packet switches" and thus not subject to unbundling. As a result, competitive LECs are denied access to full NGDLC functionality. This could not have been the Commission's intent, and as discussed below this is exactly the type of industry and technology change that the Commission had in mind in promising to re-evaluate the effectiveness of its unbundling rules.

Recognizing that the competitive environment—and the technology of remote terminals—may change, the Commission promised to keep a watchful eye on industry developments, including the ongoing ability of competitive LECs to deploy their own DSLAMs in remote terminals, and the ability of those carriers to effectively compete with incumbent LEC retail DSL services provided through remote terminals. "We note that we will carefully monitor the deployment of broadband services to ensure that the objectives of section 706 and the Act are being met."[38]

It is important to note that the Commission's decision to carve out a DSLAM exception to its unbundling rules was based on two important ideas. First, the Commission did not—and indeed could not—recognize in 1999 the exact form that NGDLC DSL deployment would take, and the need to include integrated DSLAM functionality with unbundled loops that pass through remote terminals. Second, the Commission saw the state of the competitive DSL industry as strong and growing, to the extent that it viewed competitive LECs as fully capable of deploying DSLAMs in tens of thousands of remote terminals across the country. The Commission summarized the record before it:

> Both the record in this proceeding, and our findings in the *706 Report*, establish that advanced services providers are actively deploying facilities to offer

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[38] *UNE Remand Order* at ¶ 317.

> advanced services such as xDSL across the country. Competitive LECs and cable companies appear to be leading the incumbent LECs in their deployment of advanced services. For example, in 1999, Rhythms expects to roll out xDSL services in 1,000 end offices nation wide. Covad's planned network deployment is expected to reach 51 MSAs by the end of 1999. In the past year, NorthPoint deployed facilities capable of transmitting xDSL signals in 17 metropolitan markets. NorthPoint plans to expand its DSL-based local networks from 25 major markets, representing 37 metropolitan statistical areas (MSAs), to 28 markets, or 61 MSAs, by the end of 1999. Qwest announced in August 1999, that it is now providing DSL service in 13 U.S. markets and plans to expand to more than 30 major markets by the end of 1999. In addition, EarthLink has partnered with Sprint to offer nationwide xDSL service.[39]

Most of the events never came to pass. Covad recently announced it was shutting down several hundred central offices and pulling out of numerous markets entirely, all while laying off a substantial portion of its workforce. Rhythms announced it was focusing on its top 45 markets. NorthPoint declared bankruptcy. Qwest became an incumbent LEC. And Sprint/Earthlink DSL never came to be.

The state of the competitive DSL sector in 1999 led the Commission to conclude that "[m]arketplace developments like the ones described above suggest that requesting carriers have been able to secure the necessary inputs to provide advanced services to end users in accordance with their business plans."[40] The state of the competitive DSL sector in 2001 should lead the Commission to a modified conclusion.[41] Indeed, DSL providers that once participated actively in the Commission's rulemaking proceedings—NorthPoint, Jato, HarvardNet, Digital Broadband, Vitts—are, along with many of their peers, no more. Covad, Rhythms and WorldCom

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[39] *UNE Remand Order* at ¶ 307.

[40] *UNE Remand Order* at ¶ 307.

[41] WorldCom has sought reconsideration of the FCC's *UNE Remand Order* with regard to DSLAMs, packet switches, and splitters. *See* Petition for Reconsideration of MCI WorldCom, Inc. *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98 (Feb. 17, 2000).

respectfully request that the Commission re-examine its prior conclusion that competitive LECs are fully capable of deploying stand-alone remote terminal functionalities by themselves.

C. Loops that Pass through DSL-Enabled Remote Terminals Must Include, by Definition, All the Electronic Features, Functions, and Capabilities of those Remote Terminals and NGDLC.

As the Commission has already recognized, NGDLC systems involve much more than simply a DSLAM—yet the DSLAM functionality inherent in the NGDLC is an integral part of the functionality of that NGDLC. As a result, granting competitive LECs access to every functionality in the NGDLC except the DSLAM line card is a meaningless exercise. As the Commission concluded in the *Project Pronto Order*:

> A plug-in ADLU Card is only one component of an NGDLC system. An NGDLC system typically contains several "channel bank assemblies," which are multiplexers used to provide service to end users. In each channel bank assembly, a carrier "plugs in" cards that are used to provide specific telecommunications services. For example, a carrier wishing to provide T-1 service to a customer will plug in a card with T-1 capabilities. Other plug-in cards allow carriers to more efficiently provide second lines to consumers by transforming a single phone line into two lines. The ADLU Card is a plug-in card used to provide ADSL service from an NGDLC system. The ADLU Card works in conjunction with other plug-in cards and software to provide such service. In addition to the channel bank assemblies and the associated plug-in cards, DLC systems (including NGDLC systems) also contain a common control assembly that contains multiplexing, power, and other capabilities.[42]

In sum, the NGDLC is an electronic mid-point on the loop, one that offers numerous functionalities to the carrier that has access to it. In particular, a carrier seeking to provide competitive DSL service through an NGDLC will not be able to access the end user if given access to only part of that NGDLC. The Commission could not have intended such a result from its DSLAM carve-out in the *UNE Remand Order*. As the Commission recognized a year later in the *Project Pronto Order*, "the plug-in ADLU Card is an indispensable component for providing

ADSL service through the manufacturer's NGDLC system; without the plug-in ADLU Card in the NGDLC system, a carrier would have to collocate other equipment (e.g., a DSLAM) in the remote terminal to provide DSL service to consumers served by such remote terminals."[43] Clearly, technology is changing, and the Commission's prior view that a competitive LEC could simply collocate a DSLAM in a remote terminal and access all of the features, functions, and capabilities of the loop by means of that collocated DSLAM is no longer technically tenable. The Commission must, as it promised to do, re-evaluate its rules in the face of technical changes in the industry. Having recognized that the DSLAM-type functionality inherent in an NGDLC is an integral part of the loop functionality itself, the Commission should take the short step of clarifying its packet-switching rules to make clear that incumbent LECs cannot withhold a vital piece of the technology from requesting carriers.

In application, the Commission has created a unique situation wherein it recognizes that access to the DSLAM functionality of a NGDLC is vital to competitive carriers seeking to compete with incumbent LEC remote terminal-based DSL retail offerings, but the Commission's packet switching rules can be read to deny requesting carriers access to the same vital functionality.[44] The Commission must therefore clarify its rules to make clear that, where an incumbent LEC has deployed any remote terminal-based DSL capability, the Commission's

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[42] *In re Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transferor, to SBC Communications, Inc., Transferee*, CC Docket No. 98-141, Second Memorandum and Order, FCC 00-336 (rel. Sep.8, 2000)("*Project Pronto Order*") at ¶ 4 n. 11.

[43] *Project Pronto Order* at ¶ 14 (noting that "SBC has chosen to use the Litespan NGDLC system manufactured by Alcatel USA, Inc. and the UMC-1000 NGDLC system manufactured by Advanced Fiber Communications. In both manufacturers' NGDLC systems, plug-in cards are inserted into channel bank assemblies in order to provide advanced services to consumers. *See Alcatel May 4, 2000 Ex Parte*. Through these additional plug-in cards, an NGDLC system "provides DSL services from both the central office and remote terminals." Alcatel USA, Inc. , THE NEW WORLD ACCESS NETWORK AND THE ROLE OF THE NEW WORLD DIGITAL LOOP CARRIER 6 (1999) (*Alcatel NGDLC White Paper*) (contained in *Alcatel May 4, 2000 Ex Parte*)).

[44] *See Project Pronto Order* at ¶ 14 ("We conclude that plug-in cards provide carriers with DSLAM functionality, so that the plug-in cards become "functionally equivalent" to a DSLAM.").

existing loop unbundling rules require the incumbent LEC to provide requesting carriers with the same features and functionalities of those remote terminal-based loop capabilities. Specifically, the Commission must reiterate, as it has several times in recent years, that remote terminal electronics are inherent features, functions, and capabilities of the loop. As a result, incumbent LECs are required, pursuant to section 251(c)(3) of the Act, to provide unbundled access to all remote terminal functionalities of the loop, including all electronics and the functionalities therein. The DSLAM "functionality" is simply one portion of the broader NGDLC capability—there are numerous other features and functionalities of the NGDLC that the Commission has already concluded are accessible as part of the loop UNE. By leaving out the DSLAM functionality, however, the Commission has effectively ensured that no competing carrier can offer DSL service through an NGDLC.

In addition, the Commission must make clear that the software and other OSS that manages the remote terminal functionalities are available as integral parts of the loop, because without access to those capabilities requesting carriers will be unable to manage their customer's particular services.[45] For example, as the Commission noted in the *Project Pronto Order*, "Alcatel states that providing DSL service through Alcatel NGDLC systems requires special software and two types of plug-in cards, *i.e.*, ADLU Cards and ADSL Bank Control Unit (ABCU) Cards. ABCU Cards, which Alcatel explains contain certain multiplexing and intelligence capabilities, are plugged into a channel bank assembly alongside the ADLU

[45] Rather than repeat the specific technical parameters of the software and OSS functionalities of NGDLC here, the Joint Commenters hereby incorporate by reference into this docket the pleadings of Rhythms and Covad submitted in the Commission's consideration of SBC's Project Pronto merger condition waiver request. In those pleadings, Covad and Rhythms set out the specific technical aspects of NGDLC architecture that the Commission should make clear fall within the parameters of section 251(c)(3) of the Act. *See also* Comments of Rhythms NetConnections, CC Docket Nos. 98-147 & 96-98 (filed Oct. 12, 2000); Joint Declaration of Martin Garrity, David Reilly, Tom Stumbaugh and Rob Williams (filed Oct. 12, 2000); Reply Comments of Rhythms, CC Docket Nos. 98-147 & 96-98 (Filed Nov. 17, 2000).

Cards."[46] After recognizing that ADLU card functionality is an inherent part of the NGDLC itself, the Commission must have intended to carve out an exception to its DSLAM unbundling determination in the *UNE Remand Order* a year earlier. It now remains for the Commission to make that distinction clear.

D. The Commission Must Specify Strict Parameters to Ensure Timely Implementation of its Requirements to Assure ILECs Do Not Unfairly Disadvantage their Competitors.

In order to prevent incumbent LECs from forcing competitors to engage in year-long regulatory battles simply to secure access to this most crucial loop functionality, the Commission must take concrete steps in this proceeding to address with specificity several specific requirements. First and foremost, the Commission must make clear that incumbent LECs cannot begin to offer remote terminal-based DSL capabilities to their retail customers until *after* they have given competitors the actual ability to do so.

In particular, the Commission should seek to avoid the biggest travesty of line sharing implementation—that competitive carriers are still struggling to access line sharing capabilities from incumbents well over a year after the Commission's line sharing order was released. At the same time, incumbent LECs are utilizing their retail DSL channels to successfully provision thousands of their own line sharing customers each and every day, as previously explained. The Commission must recognize that the only way that incumbent LECs will make remote terminal functionality available to competitors in a timely manner is if the Commission expressly forbids incumbents from marketing their retail services until *after* the competitive LEC community is able to do the same. This means that collaboratives to implement competitive LEC remote

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[46] *Project Pronto Order* at ¶ 14 n. 34 (*citing* Alcatel USA, Inc., Q&A: LITESPAN-ADSL (1998) (contained in Alcatel May 4, 2000 Ex Parte).).

terminal DSL access must be completed, not simply commenced, before incumbents may launch their retail products.

E. Resale Offerings Alone are Insufficient to Meet ILECs' Section 251 Obligations.

Finally, the Commission must recognize the limitations of the broadband "service" approach it allowed in the *Project Pronto Order*. By permitting SBC to offer a service, rather than a UNE, the Commission addressed the particular parameters of the merger conditions imposed on SBC, and not the unbundling needs of the industry as a whole. As a result, the Commission's order did not address whether NGDLC functionalities should be considered part of the loop—it did not have to, as that determination had already been affirmatively made in the *UNE Remand Order*. By allowing SBC to provide remote terminal functionality as a service, rather than a UNE, the Commission sought to address the narrow issue of ownership of equipment by the SBC incumbent LECs, rather than by SBC's affiliate. As has been made clear by the recent pronouncement of the D.C. Circuit Court of Appeals on the subject of BOC advanced services affiliates, the ongoing viability of regulatory decisions based on those affiliates is in question. As such, the Commission should continue to address the proper interpretation of incumbent loop unbundling obligations in the rulemaking arena.

SBC's Project Pronto wholesale offering is not a UNE—it is, in essence, a resale obligation. As a result, competitive carriers are wedded to the exact technical parameters of SBC's service, and in turn are denied an opportunity to innovate beyond SBC's retail offering. In addition, because it is not a UNE, SBC has no obligation—beyond its voluntary commitment—to price the offering pursuant to the Commission's pricing rules. Finally, as evidenced by Verizon's outright refusal to even admit before state commissions that it has any remote terminal obligations (despite the plain language of paragraph 3(d) of the Bell

Atlantic/GTE merger conditions), merger conditions are not a sufficient substitute for clear and enforceable rules. In particular, the Commission should not leave competitive LECs and their customers in limbo by relying on sunsetting merger conditions to guarantee remote terminal access, potentially leaving large numbers of competitively served customers—current and future—without a viable service offering at some point in the near future.

As the Commission observed, "[n]othing about our modification of the ownership restrictions in the *Merger Conditions* limits a competitive LEC's ability to obtain an unbundled local loop or subloop, including loops capable of providing xDSL services. Nor does this decision revise or restrict our existing definition of the local loop or the subloop network elements."[47] By clarifying its rules to make clear that full NGDLC functionality, including DSLAM line cards, fall squarely within the loop unbundling provisions of section 251(c)(3) and the Commission's rules, the Commission will ensure that the remote terminal does not become the next broadband bottleneck. While the "resale" model of Project Pronto is a starting point, the Commission must make clear that it is unbundling, not resale, that incumbent LECs are obligated to provide to requesting carriers.

III. THE AVAILABILITY OF A FULLY-FUNCTIONAL NGDLC LOOPS DOES NOT ALTER THE ILEC OBLIGATIONS TO COMPLY WITH THEIR CURRENT UNBUNDLING AND COLLOCATION REQUIREMENTS

In its NPRM, the Commission identified a broad range of alternative access scenarios that CLECs might use to provide broadband service to customers served behind DLC.[48] The Commission must ensure that ILECs fully comply with their statutory and regulatory obligations by insisting that CLECs maintain the ability to select from a menu of alternatives, such as line card collocation, unbundled subloops and dark fiber, as well as spare copper.

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[47] *Project Pronto Order* at ¶ 29.

Yet while essential, none of these options enables carriers to ubiquitously serve the customer markets affected by the evolving network architecture deployments of the ILECs. Furthermore, as discussed in detail below, the intransigence with which the ILECs meet their statutory and regulatory obligations means that meaningful implementation of the rules is not only not a reality today, but will take some time to reach fruition. Accordingly, the Commission must adopt the clarification of ILEC loop unbundling obligations discussed above, while still preserving a menu of alternatives for CLECs to use as they ripen into real options at some time down the line.

A. CLECs Must Have the Ability to Collocate Line Cards in the DLC Chassis at the ILECs' Remote Terminals on a Nondiscriminatory Basis.

As numerous CLECs, including Rhythms, WorldCom, and Covad, have repeatedly—and correctly—argued to state and federal regulators, collocation of line cards falls squarely within the Commission's existing collocation, unbundling and interconnection requirements.[49] Given

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[48] *E.g., NPRM* at ¶¶ 56-58.

[49] *E.g., Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transferor, to SBC Communications, Inc., Transferee*, CC Docket No. 98-141, Comments of DSL Access Telecommunications Alliance on SBC's Request for Interpretation, Waiver, or Modification of the SBC/Ameritech Merger Conditions (March 3, 2000)("DATA Comments"); *In the Matter of the Arbitration between Rhythms Links, Inc. and Covad Communications Company Versus Bell Atlantic-Maryland, Inc., Pursuant to Section 252(b) of the Telecommunications Act of 1996,* Maryland Case No. 8842, Post-Hearing Brief of Rhythms Links Inc. at 29-41, Post-Hearing Brief of Covad Communications Company (Aug. 14, 2000); *In re: Further Pricing of Bell Atlantic-PA Inc.'s Unbundled Network Elements*, Pennsylvania Docket No. R-00005261, Joint Testimony of Terry L. Murray and Joseph P. Riolo on behalf of Covad Communications Company, Intermedia Communications, Inc. and Rhythms Links Inc. at 14-23, 177-179 (Oct. 4, 2000), Main Brief on behalf of Covad Communications Company and Rhythms Links Inc. (Jan. 10, 2001); *Proceeding on Motion of the Commission to Examine Issues Concerning the Provision of Digital Subscriber Line Services*, New York Case 00-C-0127, Initial Brief of Covad Communications Company at 15-18, Initial Brief of Rhythms Links Inc. at 44-50 (Aug. 15, 2000), *Proceeding on Motion of the Commission to Examine Issues Concerning the Provision of Digital Subscriber Line Services*, New York Case 00-C-0127, Reply Brief of Covad Communications Company at 12-15, Reply Brief of Rhythms Links Inc. at 18-27 (Aug. 25, 2000); *Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in M.D.T.E. No. 17, filed with the Department by Verizon New England, Inc. d/b/a Verizon Massachusetts on May 5 and June 14, 2000, to become effective October 2, 2000*, Massachusetts D.T.E. 98-57-Phase III, Initial Brief of Rhythms Links Inc. (Aug. 18, 2000) at 36-48, Initial Brief of Covad Communications Company (Aug. 18, 2000) at 12-13, Reply Brief of Rhythms Links Inc. at 25-35, Reply Brief of Covad Communications Company at 12-17(Sept. 1, 2000); *Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in M.D.T.E. No. 17, filed with the Department by Verizon New England, Inc. d/b/a Verizon Massachusetts on May 5 and June 14, 2000, to become effective October 2, 2000*, Massachusetts

the ILECs' deployment of next generation architecture, the ability to place line cards in the DLC is essential to development of the facilities-based competition envisioned by the Act. Accordingly, the Commission must act now to reiterate—consistent with a rapidly increasing number of state commission rulings—that "a requesting carrier may physically or virtually collocate its line card at the remote terminal by installing it in the incumbent's DLC for the purposes of line sharing."[50]

To foster facilities-based competition, several state commission have recognized the feasibility of allowing CLECs to collocate line card in the remote terminals for interconnection with the incumbents' networks. For instance, the Illinois Commerce Commission "require[s] Ameritech to install plug-in cards that support all DSL-based services requested by the

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D.T.E. 98-57-Phase III, WorldCom Comments Regarding Motions for Reconsideration, Clarification and Extension of Time filed in Response to Department's September 29, 2000 Order at 2 (Nov. 9, 2000); *Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, California Rulemaking 93-04-003 (Filed April 7, 1993) *and Investigation on the Commission's Own Motion Into Open Access and Network Architecture Development of Dominant Carrier Networks*, California Investigation 93-04-002 (Filed April 7, 1993) Second Joint Pre-Hearing Conference Statement Of Rhythms Links, Inc (U 5813 C), AT&T Communications Of California, Inc.(U 5002 C), And Worldcom, Inc. (U 5011 C) (Feb. 7, 2001); *Proposed Implementation of High Frequency Portion of Loop (HFPL)/Line Sharing Service*, Illinois Docket No. 00-0393, Opening Brief of Rhythms Links, Inc. (Nov. 17, 2000); *Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company d/b/a Ameritech Illinois, and for an Expedited Arbitration Award on Certain Core Issues,* Illinois Docket Nos. 00-0312 and 00-0313, Post-Hearing Brief of Rhythms Links, Inc. and Covad Communications Company at 28-33 (July 13, 2000), Reply of Rhythms Links, Inc. and Covad Communications Company to Ameritech Illinois' Brief on Exceptions at 5-26 (Jan. 29, 2001); *Petition of IP Communications Corporation to Establish Expedited Public Utility Commission of Texas Oversight Concerning Line Sharing Issues*, Texas Docket No. 22168, *Compliant of Covad Communications Company and Rhythms Links, Inc. Against Southwestern Bell Telephone Company and GTE Southwest Inc. for Post-Interconnection Agreement Dispute Resolution and Arbitration Under the Telecommunications Act of 1996 Regarding Rates, Terms, and Conditions and Related Arrangements for Line-Sharing*, Texas Docket No. 22469, Rhythms Initial Brief at 32-57 (Feb. 9, 2001); *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability,* CC Docket No. 98-147, and *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Rhythms Comments at 19-23, 44, 53; WorldCom Comments at 2, 7-10 (Oct. 12, 2000).

[50] *NPRM* at ¶ 56.

CLECs."[51] The Massachusetts DTE has also concluded that Verizon must "file a tariff that would enable CLECs to place or have Verizon place CLEC-purchased line cards in Verizon's DLC electronics at the RT."[52] Furthermore, Verizon and SBC are already performing trials of the NGDLC technology that allows for placement of DSL line cards at the remote terminals.[53] In reiterating the ILEC obligations under its rules, this Commission must be careful not to undo the considerable efforts of these states. At the same time, the Commission must recognize that competitive LECs have been forced into the tenuous position of advocating the same position in state after state, while incumbent LECs resist providing NGDLC access in any state that has not yet ordered it. A federal rule clearly setting out these obligations would obviate the need for such regulatory battles.

Yet, the reality of the present ILEC-controlled climate is that even with the statutory and regulatory mandates to permit CLECs to collocate line cards firmly in place, and echoed by a growing number of state commissions, ILEC intransigence and refusals will mean that CLECs will be unable to realize the full benefit of this requirement for some time to come. ILECs will contest the rulings, engaging in prolonged regulatory and appellate litigation. While giving lip-service to implementation, their tariff offerings will undoubtedly once again fall far short of their obligations. ILECs may choose not to equip their DLCs with line cards that can provide the full technically feasible array of DSL-based services. ILECs may require CLECs to engage in

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[51] *Rhythms Links, Inc. Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company d/b/a Ameritech Illinois, and for an Expedited Arbitration Award on Certain Core Issues*, Docket Nos. 00-0313, *et al.*, Arbitration Decision (I.C.C. Aug. 17, 2000)("*Illinois Line Sharing Order*") at 32.

[52] *Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in M.D.T.E. No. 17, filed with the Department by Verizon New England, Inc. d/b/a Verizon Massachusetts on May 5 and June 14, 2000, to become effective October 2, 2000*, D.T.E. 98-57-Phase III, Order (September 29, 2000) ("*Massachusetts Line Sharing Order*") at 72.

protracted testing exercises. Just as with implementation of line sharing, the ILECs will delay the necessary processes as long as possible, all the while locking in the broadband customer base that CLECs are denied the ability to serve.

Ultimately, a competitive market will demand full interoperability by manufacturers of DLCs and cards. In order for DSLAM manufacturers to develop cards, certain limited technical specifications are required from the DLC manufacturers, which have not been forthcoming with this information. True interoperability requires sufficiently open standards so that carriers can control their own networks and vendors can manufacture plug-compatible cards. These standards take time to develop. ILECs have resisted such interoperability. They have already enlisted the assistance of their primary vendors to deter the interoperability standards that would benefit the "plug and play" process. Without support from key purchasers of DLC equipment, most vendors have little incentive to develop such options. Moreover, the uncertainty over how the ILECs' statutory obligations will be enforced constrains the research and development by vendors, although Section 256 established strict principles of openness and interoperability in constructing a competitive network.[54]

The opposition to CLEC placement of line cards by ILECs and their manufacturers should be seen as the effort by the incumbents to preserve and extend the self-serving monopoly position they seek to enshrine in a Commission rule by granting themselves immunity from the Act in any new network architecture or technology. The Commission, therefore, must also ensure that the ILECs do not deny CLECs the opportunity to compete for DLC customers today.

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[53] Pennsylvania Public Utility Commission arbitration conference Docket Nos. A-310696 and A-310698, at Tr. 207; News Release: SBC to Start Offering DSL Service From Neighborhood Broadband Gateways Deployed Through Project Pronto (August 22, 2000).

[54] Section 256 obligates all carriers and this Commission to ensure that ILECs work cooperatively with competitors to ensure continued interconnection and interoperability between and among networks. 47 U.S.C. § 256.

When their NGDLC is being deployed, ILECs must provide CLECs with the full unbundled NGDLC loop capabilities, including DSLAM functionality, as discussed previously in section II.

B. CLECs Must Continue to Have Nondiscriminatory Access to Subloops.

Federal rules require—and must continue to require—ILECs to provide competitors with access to subloops and dark fiber.[55] According to the Commission in the *UNE Remand Order*, "[l]ack of access to subloops discourages competitive LECs from attempting to combine their own feeder plant with the incumbent's distribution plant to minimize their reliance on the incumbents' facilities."[56] This Commission's NPRM appropriately recognized that subloops and dark fiber offerings are insufficient to enable CLECs to broadly serve customers as ILECs rapidly deploy NGDLC in their network.[57] Consequently, in addition to these requirements, the Commission must reiterate the ILEC requirement to provision a fully DSL-capable loop through NGDLC architectures as described above.

All portions of the loop from the NID to the MDF must be available as unbundled subloop elements, regardless of the technology used to provision the loop. Thus, CLECs may access any of the feeder, feeder distribution interfaces or distribution components of the loops as individual network elements,[58] accessible subject to the Commission's collocation rules.[59] Specifically, the Commission should require that CLECs be able to obtain any subloop element required to complete the facility between the end user and the central office. A requesting CLEC must have access to the subloop element that provides a copper distribution facility serving the end user premises. CLECs must also be able to obtain, as a subloop element, the feeder portion

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55 *UNE Remand Order* at ¶¶ 167, 174, 196-199, 209-219.

56 *UNE Remand Order* at ¶ 205. *See also* 47 C.F.R. § 51.319(a)(2); *UNE Remand Order* at ¶ 202.

57 *NPRM* at ¶ 57.

58 *UNE Remand Order* at ¶ 202.

59 47 C.F.R. §§ 51.321-323.

of the loop from the FDI to the remote terminal, as well as the fiber facility that runs from the DLC to the central office, where the ILEC hands off the signal to a collocated CLEC.

As stated in *UNE Remand Order*, "lack of access to the part of the incumbent's loop they need could impede competitors' ability to develop their own network architecture and provide new service offerings."[60] Although the availability of subloop options will ultimately enable CLECs to use their own facilities, as opposed to the ILECs providing the services, the existing ILEC subloop offerings fall far short of enabling the goal of facilities-based deployment, and are not "readily available" from the ILECs.[61] Moreover, the ILECs' offerings for subloops and dark fiber do not provide for access at every technically feasible point, or every remote terminal.[62]

For example, ILECs impermissibly limit their subloop unbundling offerings to the provision of copper loop distribution plant, thereby stranding CLECs at the remote terminals or FDIs.[63] Verizon's *UNE Remand* implementation tariff contains a limited definition of available "subloops" refusing to provide the unbundled facility between the FDI and the remote terminals housing the DLC equipment.[64] As a consequence, the necessary subloop portions are incomplete and CLECs have no "readily available" subloop alternative.

The Commission's rules also provide competitors the option of purchasing dark fiber facilities in the outside loop plant, specifically between the remote terminal and the central office.[65] As a practical matter, accessing dark fiber at the remote terminal for use of carrying

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60 *UNE Remand Order* at ¶ 215.

61 *NPRM* at ¶ 57.

62 SBC Technical Reference Notice for Broadband Service Phase 1; Verizon M.D.T.E. No. 17, Part B, Section 18 and 20; New York Telephone Company, P.S.C. No. 916, original page 114, § 5.19.1.1.

63 On certain NGDLC local loops, the fiber and copper portions of the loop do not meet at the FDI. The loop may consist of a fiber feeder portion that connects to a short length of copper feeder that connects to the copper distribution pair.

64 *See e.g.*, Verizon M.D.T.E. No. 17, Part B, Section 18 and 20.

65 47 C.F.R. § 51.319.

DSL signals requires additional equipment to be collocated at the remote location.[66] In addition to placing equipment with DSLAM functionality in the remote terminal, CLECs would also be required to place equipment in the remote terminal to light the fiber.[67] Even assuming competitors were willing to sustain the additional time and costs associated with such deployment, it is unlikely that the remote terminal will have the space to collocate the necessary equipment. This also presumes that ILECs will take the affirmative step of deploying dark fiber at all. SBC is generally deploying twelve strand fiber to the RT, and has announced that only two strands will be available for CLEC use.[68]

The serious deficiencies of the ILEC subloop offerings make them completely unsuitable for provisioning customers in an NGDLC architecture at this time. Furthermore, the significant delay and reluctance these options foretell heightens the need for Commission action on a unbundled loop with the full features, functions and capabilities necessary to provide broadband data services. Consumers should not be compelled to wait for competitive options for broadband services until suitable subloop alternatives *are* readily available.

C. CLECs Must Continue to Have Nondiscriminatory Access to Spare Copper.

The Commission has recognized that spare copper provides yet another option for competitors, once the ILECs begin offering advanced services over their NGDLC architectures.[69] Competitors continue to require the right to access to spare copper even after deployment of NGDLC in a distribution area. Only with access to copper plant can carriers continue to deploy varieties of DSL, such as SDSL, that are not yet supported by NGDLC technology. Thus, in

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66 Rhythms October 12th Joint Declaration at 106-107.

67 Rhythms October 12th Joint Declaration at 106-107.

68 WorldCom October 12th Comments at 13.

69 *NPRM* at ¶ 58.

order to ensure that customers continue to be able to select among a menu of DSL services that meet their particular service needs, the Commission should require ILECs to make copper available to broadband competitors.

Furthermore, the Commission should not allow ILECs to take copper plant out of service if it is being used by a CLEC to provision service. In a shared line context, as opposed to a stand-alone loop product such as SDSL, the DSL CLEC shares the existing voice line, the Commission has accurately noted that there could be "service disruption" that would "make this a less desirable option".[70]

Access to spare copper alone, however, is insufficient to ensure that CLECs can offer a competitive line sharing product to all customers served behind DLC. The typical ILEC practice—once fiber is installed—is to re-use the existing copper in the feeder plant to serve customers between the central office and the remote terminal. Consequently, the "old" copper loop to a customer beyond the remote terminal no longer exists: the distribution portion (half the copper loop) of the loop is now used to connect the customer to the remote terminal, which in turn is connected by the fiber to the central office. The copper feeder portion of the loop is recycled to another customer closer to the central office. Thus, the copper loop no longer exists as the loop was, but the copper is still in the ground.

Moreover, as WorldCom and Rhythms have stated, spare copper may not work for every DSL application, especially ADSL, because of interference concerns.[71] The copper plant that parallels NGDLC loop plant may be unusable due to interference from the remote terminal

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[70] *NPRM* at ¶ 58.

[71] Rhythms October 12th Comments at 89; Rhythms October 12th Joint Declaration at 121-124; WorldCom October 12th Comments at 14; *see also* Illinois Commerce Commission, Proposed Implementation of High Frequency Portion of Loop (HFPL) Line Sharing Service, Docket No. 00-0393, Hearing Tr. (John P. Lube, SBC Communications, Inc.) (October 16, 2000) ("Lube Tr.") at 199-355.

generated ADSL signals of ILECs or competitors.[72] Specifically, ADSL—the primary technology used for line sharing—generates a signal at the DSLAM in the downstream direction that attenuates as it reaches the end user.[73] Thus, a signal carried on the copper feeder cable from the central office would have significantly attenuated by the time it reached the copper distribution cable at the remote terminal. As the signal weakens, it becomes more susceptible to interference. In the next generation architecture, ADSL would also be generated from the remote terminal location. The strength of this signal generated in the remote terminal would interfere with the ADSL originating in the central office, therefore running ADSL on parallel copper loops once a DSLAM has been deployed in a remote terminal may simply not be possible.[74]

It is crucial that the Commission not allow the ILECs to avoid their unbundling obligations in the next generation network. As competition advances in the DSL market, the CLECs' need for access to each of the unbundled elements will also grow. This Commission has developed a regulatory scheme of unbundling and collocation requirements that, if implemented properly, will ensure facilities-based competition through the fulfillment of the ILECs' statutory requirements under Section 251. To find otherwise would hinder the broadest deployment of facilities-based competitive provider alternatives.

As another example, by literally hard wiring the subloops to the remote terminal, SBC designed the Project Pronto remote terminals in a manner that precluded any reasonable access to subloops by collocating CLECs. SBC's retail DSL affiliate can access subloops through Project Pronto at zero incremental cost, while collocating CLECs must pay between $15,000 and

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72 Rhythms October 12th Joint Declaration at 121-126; WorldCom October 12th Comments at 14.

73 Rhythms October 12th Joint Declaration at 121-126; WorldCom October 12th Comments at 14.

74 Focus Group 3 of the Network Reliability and Interoperability Council (NRIC V) is presently preparing a spectrum management plan for the Commission that addresses these issues. A Status Report was presented to the full NRIC Council on February 27, 2001.

$30,000 per remote terminal for access to the subloops (setting aside other collocation costs). Given SBC's assumption of 16-24 remote terminals per central office, collocating CLECs must pay between $240,000 and $720,000 per central office more than SBC's retail DSL affiliate merely to access subloops.[75] Accordingly, ILECs should be required to legally unbundle the subloop at the remote terminal, should retrofit the existing DLC remote terminals to allow for access at the remote terminal (*e.g.*, the engineering controlled splice in the case of SBC), and should price the access to the subloop applying forward-looking costing and pricing principles—which results in a zero price.

[75] At a recent DSL hearing at the Texas commission, SBC's witness stated that an engineered controlled splice would cost a CLEC between $15,000 and $30,000 per remote terminal. Petition of IP Communications Corporation to Establish Expedited Public Utility Commission of Texas Oversight Concerning Line Sharing Issues; Petition of Covad Communications Company and Rhythms Links, Inc. Against Southwestern Bell Telephone Company and GTE Southwest, Inc. for Post-Interconnection Dispute Resolution and Arbitration Under the Federal Telecommunications Act of 1996 Regarding Rates, Terms, and Conditions and Related Arangements for Line Sharing, Docket Nos. 22168 and 22469, Texas Public Utility Commission, Tr. at 441 (Hearing on the Merits, November 29, 2000).

CONCLUSION

For all these reasons, the Commission should expeditiously conclude that its present unbundling rules require ILECs to provide an unbundled loop with the full features, functions and capabilities necessary to provide broadband data services, in addition to the variety of other alternatives available to CLECs for provisioning advanced services to customers served by NGDLC loops.

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