Before the

Federal Communications Commission

Washington, D.C. 20554

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96-98

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

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FEDERAL COMMUNICATIONS COMMISSION
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To the Commission:

COMMENTS OF
NETWORK ACCESS SOLUTIONS, INC.

Rodney L. Joyce
J. Thomas Nolan
SHOOK, HARDY & BACON
600 14th Street, N.W., Suite 800
Washington, DC 20005-2004
(202) 783-8400
Its Attorneys

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SUMMARY

In this proceeding, the Commission reconsiders which network features of the ILECs must be provided to CLECs as UNEs. Although the agency had adopted a rule in 1996 defining seven network features as UNEs, the Supreme Court recently vacated that rule because the Commission had failed to consider whether mandating their provision is consistent with Section 251(d)(2) of the Act.

The questions on which the FCC seeks comment fall into one of two categories. First, commenters are asked to define the specific features of ILEC networks that they believe the Commission should require ILECs to provide as UNEs. Second, commenters are asked to show that provision of each desired UNE containing proprietary features is "necessary" to CLECs and that failure to provide each desired UNE without proprietary features would "impair" CLECs, as required by Section 254(d)(2) of the Act.

Since NAS's business is providing DSL service, we focus our comments on the specific network features that CLECs need in order to provide that service. First, we show that ILECs should be required to provide three non-proprietary UNEs defined in the FCC's vacated rule -- loops, interoffice transmission, and OSS -- since failure to provide these three elements would "impair" the ability of CLECs to provide DSL service. We also request that the Commission clarify in reinstating the OSS UNE that this UNE requires ILECs to provide CLECs with online access to loop makeup information when CLECs desire to use a loop for DSL service since this information is an essential part of the OSS functionality that CLECs need in order to provide that service. Second, we show that ILECs should be required to provide one non-proprietary UNE not defined in the FCC's vacated rule -- Frequency Unbundled DSL Loops -- because failure to provide that UNE also "impairs" the

ability of CLECs to provide DSL service. Third, we show that ILECs should be required to provide another non-proprietary UNE not defined in the vacated rule -- a combined loop/transport/packet switching UNE -- since failure to provide that UNE also "impairs" the ability of CLECs to provide DSL service. However, the Commission should mandate provision of this latter UNE only in the narrow circumstance where a CLEC desires to provide DSL service over a loop provisioned through a digital loop carrier system. Fourth, we show that ILECs should be required to provide another non-proprietary network feature as a UNE -- DSLAM functionality -- in the (hopefully) rare situation where an ILEC either declines to let CLECs collocate their own DSLAMs under a physical collocation arrangement or allows physical DSLAM collocation only on uneconomic terms. ILEC provision of DSLAM functionality as a UNE is required in this limited situation since failure to provide that functionality also would "impair" the ability of CLECs to provide DSL service.

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COMMENTS OF
NETWORK ACCESS SOLUTIONS CORPORATION

Network Access Solutions Corporation ("NAS") is a facilities-based CLEC providing high speed data transmission service to residences and businesses using digital subscriber line ("DSL") technology. The company markets its DSL services under the brand CuNet (pronounced "Copper Net"). By subscribing to CuNet, a customer may access the Internet or its corporate network through a high speed, always-on connection. CuNet prices typically are just 30 percent to 70 percent of the price of traditional services offering comparable data transmission speeds. At present, NAS offers CuNet in six metropolitan areas: Boston; New York; Philadelphia; Baltimore; Washington, D.C.; and Richmond. By September, the company intends to begin providing CuNet in the areas of Pittsburgh; Norfolk; and Wilmington, Delaware, too.

NAS provides CuNet by obtaining three unbundled network elements ("UNEs") -- loops, interoffice transmission, and operations support systems -- from Bell Atlantic, the incumbent LEC

("ILEC") in areas where NAS provides service.[1] NAS connects its loops with its interoffice transmission *via* DSLAMs at Bell Atlantic central offices where the loops of its customers terminate. NAS owns the DSLAMs, and it deploys them on Bell Atlantic property by taking advantage of the collocation requirements that the FCC and state PUCs have adopted in accordance with Section 251(c)(6) of the Act. By the end of 1999, NAS expects to be collocated in 360 Bell Atlantic central offices in the nine metropolitan areas referred to above.

In this proceeding, the Commission reconsiders which network features of the ILECs must be provided to CLECs as UNEs. Although the agency had adopted a rule in 1996 defining seven network features as UNEs -- including the three elements necessary to provide DSL service -- and requiring ILECs to provide each of these UNEs to CLECs, the Supreme Court recently vacated that rule.[2] In doing so, the Court did not criticize the seven UNEs into which the FCC had divided ILEC networks, including the loop, interoffice transmission, and OSS UNEs that CLECs need in order to provide DSL service. But it vacated the rule requiring that ILECs provide these seven UNEs to CLECs because the Commission had failed to consider whether mandating their provision is consistent with Section 251(d)(2) of the Act. That statute instructs the FCC to require that ILECs provide a given *non-proprietary* network feature only after considering whether failure to provide that feature would "impair" the ability of CLECs to provide the telecommunications service for which the feature is requested. Similarly, the statute instructs the Commission to require that ILECs provide a *proprietary* network feature only if doing so is "necessary" to CLECs in providing the

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1. In a few cases, NAS obtains interoffice transmission from sources other than Bell Atlantic.

2. *AT&T Corp. v. Iowa Util. Bd.,* 119 S. Ct. 721 (1999) (vacating 47 C.F.R. § 51.319).

service for which that feature is requested. The Supreme Court held that the FCC had failed properly to consider whether the seven UNEs it had defined met these standards.[3] While the FCC rule mandating provision of UNEs no longer is in effect, ILECs have agreed to provide CLECs with the seven UNEs set forth in the vacated rule pending completion of the present rulemaking.[4]

The questions on which the FCC seeks comment fall into one of two categories. First, commenters are asked to define the specific features of ILEC networks that they believe the Commission should require ILECs to provide as UNEs. Second, commenters are asked to show that provision of each desired UNE containing proprietary features is "necessary" to CLECs and that failure to provide each desired UNE without proprietary features would "impair" CLECs.

Since NAS's business is providing DSL service, we focus our comments on the specific network features that CLECs need in order to provide that service. First, we show that ILECs should be required to provide three non-proprietary UNEs defined in the FCC's vacated rule -- loops, interoffice transmission, and OSS -- since failure to provide these three elements would "impair" the ability of CLECs to provide DSL service. Second, we show that ILECs should be required to provide one non-proprietary UNE not defined in the FCC's vacated rule -- Frequency Unbundled DSL Loops -- because failure to provide that UNE also "impairs" the ability of CLECs to provide DSL service. Third, we show that ILECs should be required to provide another non-proprietary

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3. *Id.*, 119 S. Ct. at 725.

4. *See, e.g.,* Letter from Edward D. Young, III to Lawrence Strickling (Feb. 8, 1999), *reprinted in* Public Notice, DA 99-532 (rel. Mar. 17, 1999) ("during the FCC proceeding on remand from the Supreme Court, Bell Atlantic will continue to make available each of the individual network elements defined in the now-vacated FCC rules and our existing interconnection agreements").

UNE not defined in the vacated rule -- a combined loop/transport/packet switching UNE -- since failure to provide that UNE also "impairs" the ability of CLECs to provide DSL service. However, the Commission should mandate provision of this latter UNE only in the narrow circumstance where a CLEC desires to provide DSL service over a loop provisioned through a digital loop carrier ("DLC") system. Fourth, we show that ILECs should be required to provide another non-proprietary network feature as a UNE -- DSLAM functionality -- in the (hopefully) rare situation where an ILEC either declines to let CLECs collocate their own DSLAMs under a physical collocation arrangement or allows physical DSLAM collocation only on uneconomic terms. ILEC provision of DSLAM functionality as a UNE is required in this limited situation since failure to provide that functionality also would "impair" the ability of CLECs to provide DSL service. Finally, we request that the Commission clarify in reinstating the OSS UNE that this UNE requires ILECs to provide CLECs with online access to loop makeup information when CLECs desire to use a loop for DSL service since this information is an essential part of the OSS functionality that CLECs need in order to provide that service.

I. Section 251(d)(2) of the Act Requires that the Commission Mandate ILEC Provision of Three Network Elements Defined in the Agency's Vacated Rule -- Loops, Interoffice Transmission and OSS -- that CLECs Use in Providing DSL Service

In Part A of this Section, we set forth the analysis that we believe should guide the Commission's decision about which features of ILEC networks to require that ILECs make available to CLECs as UNEs for the provision of DSL service. Applying this analysis, we then show in Part B that the Commission should require ILECs to provide three UNEs that are defined in the agency's vacated rule and are used in the provision of DSL service -- loops, interoffice transmission, and OSS.

A. Defining the Terms"Necessary" and "Impair"

The Commission may require that ILECs provide CLECs with a given network feature as a UNE only after the agency considers whether requiring provision of that feature is consistent with Section 251(d)(2) of the Act. For a network feature that is "proprietary in nature," Section 251(d)(2) requires that the FCC consider whether the feature is "necessary" to CLECs in providing the telecommunications service for which the feature is sought. For any other network feature, the statute requires that the agency consider whether failure to provide the feature would "impair" the ability of CLECs to provide the service.

In determining whether a given proprietary feature is "necessary" to CLECs or whether failure to provide a given non-proprietary feature would "impair" CLECs, the Supreme Court has held that it is improper for the FCC to "blind itself to the availability of . . . [comparable features] outside the . . . [ILEC's] network."[5] The Court also has instructed the agency not to require ILECs to provide a given feature as a UNE if failure to do so would cause CLECs to experience only a *minor* increase in cost or a *minor* decrease in quality.[6]

Although Section 251(d)(2) requires the Commission to consider whether failure to provide CLECs with a given non-proprietary network feature would "impair" CLECs and whether a given proprietary feature is "necessary" to CLECs, the statute does *not* mandate that the agency require

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5. *AT&T Corp. v. Iowa Util. Bd., supra*, 119 S. Ct. at 725.

6. *Id.*; NPRM at ¶¶ 16-28. Since the Supreme Court did *not* take issue with the Commission's existing interpretation of which elements are "proprietary in nature," no change in current definition of the term "proprietary element" is necessary. *See Implementation of the Local Comp. Provisions in the Telecom. Act of 1996, First Report and Order*, 11 FCC Rcd 15499, 15641-42 (1996) (*"First Report and Order"*) (defining proprietary elements as "elements with proprietary protocols or elements containing proprietary information").

ILECs to provide a given feature based *solely* on whether that feature meets these standards. Instead, by its terms the statute instructs the Commission to consider whether a given feature meets these standards "at a minimum," thereby permitting the agency to consider additional factors too.[7] If a given proprietary feature is "necessary" or if denial of a given non-proprietary feature "impairs" the ability of a CLEC to offer service, ILECs *must* make that feature available to CLECs as a UNE. But even if a proprietary feature is *not* necessary or denial of a non-proprietary feature does *not* impair, Section 251(d)(2) makes clear that the Commission still has authority to determine, after considering *additional* factors, that the feature should be provided as a UNE.

1. The "Impair" Standard

We believe that the Commission should hold that the inability of CLECs to obtain a given non-proprietary network feature from an ILEC would "impair" the ability of CLECs to provide the telecommunications service for which that feature is sought if the result would be a material increase in the cost to CLECs of providing that service. The decision about whether a cost increase is "material" should be based on the extent to which other potential sources for the functionality provided by the network feature exist, including (i) self-provisioning, (ii) purchase from another provider, and (iii) obtaining another network feature from the ILEC that can substitute for the feature at issue. This proposed definition addresses the Supreme Court's mandate that the Commission not blind itself to the availability of alternative sources for comparable features. It does so by requiring the Commission to compare the cost to CLECs of providing a service *with* a given ILEC network feature to the cost of providing the same service *without* obtaining that feature from the ILEC.

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7. *See* 47 U.S.C. § 251(d)(2) ("the Commission shall consider, *at a minimum* . . .") (emphasis added).

The proposed definition also addresses the Court's requirement that the Commission avoid holding that *any* increase in cost, however small, resulting from denial of a network feature would impair the ability of CLECs to provide the desired service. The proposed definition does not suffer from this fault since it requires the cost increase to be *material.*

If an ILEC's failure to provide a given network feature requires CLECs to spend more money in order to provide the telecommunications service for which the feature is sought, the Commission should hold that the incremental expenditure is "material" if it raises the CLECs' cost to provide the service by five percent or more. Defining a material increase in economic cost as material if the result is an increase of at least five percent in CLECs' cost to provide the subject service would be consistent with the Department of Justice's Horizontal Merger Guidelines.[8] There, an economic cost increase imposed by a monopolist is considered material if it increases the purchaser's economic costs by at least five percent. The Merger Guidelines are relevant because they are concerned, just as the FCC is in this case, with the ability of a monopolist to impose a significant price increase in the downstream market if regulatory action is not taken to prevent it.

Even if CLECs can provide the service for which a given network feature is requested without a material increase in economic cost in the absence of the feature they seek, the Commission *still* should hold that failure to provide the requested feature would result in a material increase in cost if failure to provide the feature would materially decrease service quality, time to market, or geographic scope of the service. Considering each of these factors is relevant since each measures the extent to which CLEC costs are increased in a non-economic way.

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8. U.S. Dep't of Justice and FTC, Horizontal Merger Guidelines at § 1.11.

While ILECs have urged the FCC to hold that failure to provide a given network feature would "impair" the ability of CLECs to provide service only if that feature is an "essential facility" as defined in antitrust law,[9] the agency should not do so since antitrust law and Section 251(d)(2) are designed to accomplish different objectives. An "essential facility" under antitrust law is one without which competition in a given product or geographic market cannot exist.[10] It is appropriate to require provision of a specific facility under antitrust law only if it is one without which competition cannot exist in a given market since the purpose of antitrust law is to prevent harm to competition.[11] By contrast, it is appropriate to require that ILECs provide a given network feature to CLECs if failure to do so would materially increase CLEC costs even if competition in the relevant market can exist without CLEC involvement since the purpose of Section 251(d)(2) is to prevent harm to ILEC *competitors* desiring to compete with ILECs by using UNEs.[12] For example, even if an antitrust court were to conclude that a given feature of an ILEC network is not an essential facility because the ILECs' own retail DSL offerings compete directly with the cable TV industry's high speed modem service and ILEC failure to provide CLECs with that feature would not eliminate the cable industry's ability to compete even though it would eliminate CLECs as a competitor,

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9. *See e.g.,* Attachment to Letter from Lynn Starr on behalf of Ameritech to Magalie Salas in CC Docket No. 96-98 (Feb. 18, 1999) (*Ameritech Ex Parte*).

10. 3A *P. Areeda & H. Hovenkamp, Antitrust Law* ¶ 773a ("A monopolist's facility is essential to rivals only where vital to their competitive vitality. It must be not only desirable but critical").

11. *Id.*

12. *See* 47 U.S.C. § 251(d)(2)(B) (Commission shall consider whether "failure to provide access would impair the ability *of the telecommunications carrier seeking access* to provide the services that it seeks to offer") (emphasis added).

ILECs still should provide that feature to CLECs for the provision of DSL service if failure to do so would materially increase CLEC costs.

2. The "Necessary" Standard

In deciding whether a given network feature that is proprietary in nature is "necessary" to provide the service for which the feature is sought, we believe that the Commission should rule that the feature is "necessary" if denying CLECs access to proprietary information contained within the feature would both (i) result in a material loss of functionality and (ii) "impair" the ability of CLECs to provide service as that term is defined above. Proceeding in this fashion would require the Commission to engage in a two-step process with respect to any proprietary network feature before requiring that feature to be offered to CLECs as a UNE. First, the Commission would identify the proprietary aspects of the feature and determine whether the functionality of the feature without those proprietary aspects would be materially degraded. If not, then access to the network feature with proprietary aspects is not "necessary." By contrast, if the feature's functionality would be materially degraded without the proprietary aspects, the "impair" standard then would be applied to the feature with the proprietary aspects to determine if the cost to CLECs of providing service would be materially increased, taking into account substitutes within the ILEC's network, self-provisioning, and potential substitutes from other providers. If CLECs would not suffer a material cost increase under those circumstances, the proprietary element also is not "necessary."

This definition of "necessary" satisfies the Supreme Court's instruction that the Commission deem a given network feature to be "necessary" only if failure to provide that feature would result in more than a "minor" cost increase since it applies the same limiting standard as is applicable to the definition of "impair." In addition, the proposed definition maintains an appropriate distinction

between the "necessary" and "impair" standards. In each case, the focus is on the ILEC's ability to impose a material increase in cost on CLECs by denying access to a given network feature. However, in the case of proprietary elements, the ILEC is entitled to an additional check against the unwarranted disclosure of proprietary information. Proprietary information associated with a network feature must not be disclosed unless the network feature suffers a material loss of functionality when the proprietary aspects are removed *and* no reasonable non-proprietary substitutes are available. In effect, this two-tiered approach gives preference to non-proprietary elements when those elements are reasonable substitutes for proprietary elements.

B. Failure to Require that ILECs Provide CLECs with Loops, Interoffice Transmission and OSS Would Impair the Ability of CLECs to Provide DSL Service

Like all other facilities-based CLECs, NAS is dependent upon ILECs for four business inputs in order to provide DSL service: DSL-capable loops, collocation, transport, and OSS. With the exception of collocation, we show below that each of these inputs -- DSL-capable loops, transport, and OSS -- should be included on the list of UNEs that ILECs must provide to CLECs. It is not necessary for the FCC to define collocation as a UNE since Section 251(c)(6) of the Act requires ILECs to provide CLECs with collocation without declaring collocation to be a UNE.[13]

DSL-capable loops. First, CLECs desiring to provide DSL service need DSL-capable loops from the ILEC operating in the area where CLECs offer their DSL service. The FCC has defined

13. A CLEC needs collocation in order to provide DSL service so that the CLEC can cross-connect subscribers' DSL-capable loops to the CLEC's DSLAM located in its collocation space. A DSLAM is a combination modem and multiplexer that aggregates, into a single multiplexed packet data stream, the DSL transmissions on all loops running through that collocation space on which the CLEC provides DSL service.

a loop as "a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and an end user customer premises."[14] The Commission should retain this definition.[15] "DSL-capable" loops are that subset of loops which are technologically capable of supporting DSL signaling.[16] For most types of DSL service, a loop is DSL-capable only if the copper loop length is less than 18,000 feet and is free of load coils, repeaters, and excessive bridged taps.

A DSL-capable loop clearly qualifies as a "network element." By statute, the term "network element" includes "a facility . . . used in the provision of a telecommunications service."[17] A DSL-capable loop is a network element since (i) DSL service is a telecommunications service and (ii) a DSL-capable loop is a facility used in the provision of that service.

Not only is a DSL-capable loop a network element, it also is an element that the Commission should require ILECs to provide to CLECs as a UNE for the provision of DSL service since failure to do so would "impair" their ability to provide that service. The question of whether failure to provide DSL-capable loops would "impair" CLECs' ability to provide DSL service is the appropriate standard in determining whether a DSL-capable loop is a UNE since a DSL-capable

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14. 47 C.F.R. § 51. 319(a) (1998).

15. Although the Supreme Court invalidated Section 51.319, it did so, as discussed above, because the FCC had required ILECs to provide loops based on an improper analysis of whether requiring ILECs to provide loops would "impair" CLECs rather than because the agency had misdefined the term "loop" or had improperly held that loops are a network element.

16. *First Report and Order, supra,* 11 FCC Rcd. at 15691.

17. 47 U.S.C. § 153(29).

loop contains no proprietary aspects.[18] ILECs' refusal to provide DSL-capable loops would impair CLECs' ability to provide DSL service by raising their economic cost to provide DSL service in a material way. Indeed, CLECs' economic costs would be increased so substantially in the absence of DSL-capable loops that, as a practical matter, they would be unable to provide DSL service on a facilities basis since ILECs' DSL-capable loops are the *only* existing local transmission infrastructure passing substantially all residences and business addresses that is capable of supporting DSL service. While cable TV companies own local transmission networks that pass substantially all residential addresses, cable TV networks are not an alternative source for DSL-capable loops since cable TV transmission facilities consist largely of coaxial cable whereas DSL service requires copper wire as the transmission medium.

Nor can CLECs economically deploy their own DSL-capable loops without a material increase in cost because self-provisioning would subject CLECs both to enormous up-front economic costs and unacceptable non-economic costs in the form of a delay in providing service. Even if the eventual creation of an overlay copper wire transmission network is appropriate in certain geographic markets, competition cannot take hold unless CLECs are allowed to build a customer base through access to ILEC loop plant pending establishment of an overlay network in that market.

Even if the Commission were to assume that the provision of DSL service by CLECs is unnecessary to preserve competition in any relevant geographic or product market because the ILECs' own retail DSL offerings and the cable TV industry's cable modem service are part of a single, intensely competitive market, the agency *still* should require that ILECs provide DSL-capable

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18. *See First Report and Order, supra,* 11 FCC Rcd at 15694.

loops to CLECs since failure to do so would impair CLECs' ability to provide DSL service. As indicated above, Section 251(d)(2) requires that ILECs provide DSL-compatible loops as a UNE if failing to do so would impair the CLECs' ability to provide DSL service, even if it would not undermine competition in any market.

Interoffice transmission facilities. The second network feature that CLECs need from ILECs in order to provide DSL service is interoffice transmission facilities. The FCC has defined interoffice transmission facilities as consisting of both dedicated transport and shared transport.[19] Dedicated transport is defined as "incumbent LEC transmission facilities dedicated to a particular customer or carrier that provide telecommunications between wire centers owned by incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers."[20] The Commission should retain this definition.[21]

Interoffice transmission facilities qualify as a network element for the same reason that loops qualify as a network element. As indicated above, a "network element" is "a facility . . . used in the provision of a telecommunications service." DSL service is a telecommunications service, and

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19. 47 C.F.R. § 51.319(d)(1) (1998). Shared transport, defined as "transmission facilities shared by more than one carrier, including the incumbent LEC, between end office switches, between end office switches and tandem switches, and between tandem switches, in the incumbent LEC network," is not used by DSL CLECs, since they do not need to transmit data between ILEC central offices. Accordingly, we do not address this network element.

20. 47 C.F.R. § 51.319(d)(1)(i) (1998).

21. Although the Supreme Court invalidated Section 51.319, it did so, as discussed above, because the FCC had required ILECs to provide interoffice transmission based on an improper analysis of whether failure to provide interoffice transmission would "impair" CLECs rather than because the agency had misdefined interoffice transmission or had improperly held that it is a network element.

interoffice transmission facilities are used in providing that service. Moreover, since dedicated transport does not contain proprietary aspects, the relevant standard for determining whether it is a UNE is the "impair" standard.[22]

The Commission should require that ILECs provide dedicated transport as a UNE for the provision of DSL service since failure to provide dedicated transport would impair the ability of CLECs to provide that service. Denying access to dedicated transport where no competitive alternative exists impairs the ability of a requesting DSL carrier to provide telecommunications service by materially increasing both the cost of providing service and the time to market. Self-provisioning rarely is a viable alternative because of the delay caused by the need to obtain rights-of-way. And even if delay were not an issue the self-provisioning CLEC's economic costs would be material due to the substantial capital expenses necessary to construct transport links. Instead, where ILEC facilities exist, obtaining transport from the ILEC is by far the more cost-effective solution.

While adequate substitutes for dedicated transport may be available outside an ILEC's network in some geographic areas, the Commission should require that ILECs provide dedicated transport on a nationwide basis until the Commission determines the specific geographic areas where adequate substitute supply exists. The reason it should do so is that the only present alternative for the short term is to allow ILECs to escape their unbundling obligations on a route-by-route basis depending upon the existence of competition. Given the history of ILEC behavior towards CLECs, ILECs almost certainly would take advantage of such an option by tying up requesting CLECs in costly and lengthy administrative proceedings aimed at determining whether effective competition

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22. *See First Report and Order, supra*, 11 FCC Rcd. at 15720.

exists for requested transport facilities. Therefore, anything other than a nationwide unbundling requirement for dedicated transport would impair the ability of requesting carriers to provide service by imposing on them the costs of such administrative proceedings and the material delays in service that inevitably would result while the status of competition on each requested transport route is resolved.

However, since some recognition of competitive alternatives must be made both to comply with the "impair" standard and to avoid stifling incentives for competitive markets to develop, we recommend that the Commission issue a further notice of proposed rulemaking aimed at identifying the geographic areas in which effective competition for dedicated transport exists. The proceeding also would establish an administrative framework that would permit adjustments to these findings as competitive circumstances change. The goals of such a framework would be to minimize administrative overhead and provide certainty to the industry while maintaining sufficient flexibility to respond to developing markets.

Even if the FCC were to find that denial of access to dedicated transport in certain specific geographic areas would not impair the ability of CLECs to offer DSL service in those areas because of the existence of competitive alternatives, it still should require ILECs to make dedicated transport available as a UNE on a nationwide basis. The agency has the authority to require unbundling of network elements even absent a finding that the "impair" standard is not met since, as discussed above, the "impair" standard is only a minimum consideration, and the Commission may take other compelling public interests benefits into account in ordering ILECs to make UNEs available. It should exercise this authority in the case of dedicated transport because of the substantial benefit to

the public in avoiding the costs and delay of the administrative proceedings that will be necessary to identify the specific areas in which effective competition for dedicated transport exists.

Operations Support Systems. The final network feature that CLECs need from ILECs in order to provide DSL service is OSS. The Commission has defined OSS as "pre-ordering, ordering, provisioning, maintenance and repair, and billing functions supported by an incumbent LEC's databases and information."[23] The agency should retain this definition, and it should require that ILECs provide OSS to CLECs as a UNE for provisioning of DSL service since denial of OSS would impair the ability of CLECs to provide that service by adding substantial uncertainty and delay in their ability to order, provision, maintain, repair and bill for their DSL services.[24] The "impair" standard is the correct standard to apply in deciding whether to mandate provision of OSS to CLECs that offer DSL service since the provision of OSS functionality to a CLEC does not require an ILEC to give that CLEC access to any proprietary systems. Although an ILEC's OSS systems may contain proprietary aspects (*e.g.*, computer software source code), the provision of OSS requires that ILECs provide access to the data entry screens and communications protocols upon which the proprietary systems operate, rather than to the proprietary systems themselves.

Not only should the Commission require that ILECs provide OSS to CLECs as a UNE for the provision of DSL service, it also should make clear that ILECs must offer CLECs who provide DSL service with on-line access to a loop qualification database as part of OSS that contains

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23. 47 C.F.R. § 51.319(f)(1) (1998).

24. While the Supreme Court invalidated Section 51.319, it did so, as discussed above, because the FCC had required ILECs to provide OSS based on an improper analysis of whether failure to provide OSS would "impair" CLECs rather than because the agency had misdefined OSS or had improperly held that OSS is a network element.

information regarding the make-up of each loop. This information must include loop length, wire gauge, location and length of bridged taps, and the presence of load coils, repeaters, and digital loop carriers because without access to this information a CLEC's ability to provide DSL service is impaired since the CLEC is unable to determine whether a given loop is DSL-capable without significant delay and the added expense of testing. Even if a loop already has been determined to be DSL-capable, a CLEC still needs loop makeup information since the type of DSL technology that the loop will support and the speed at which it will operate depend upon loop make-up. Without on-line access to loop make-up information, the CLEC suffers a material loss in quality of service because of the delay in ascertaining whether it can serve a prospective customer and what transmission speed it can provide. Just as a prospective customer of exchange service would not tolerate a lengthy delay in responding to the customer's request for a firm quote of the terms on which the exchange carrier will provide the customer with exchange service, a prospective customer of DSL service will not tolerate a lengthy delay in providing a firm quote of the terms at which DSL service will be provided.

II. An ILEC's Failure to Provide Frequency Unbundled Loops Also Impairs the Ability of CLECs to Provide DSL Service

Not only should the Commission reinstate the requirement that ILECs provide DSL-capable loops as discussed above, it also should establish two new loop UNEs. The first would consist of frequencies on a DSL-capable loop above 4 kHz ("Frequency Unbundled DSL Loop"), and the second would consist of frequencies on a loop below 4 kHz ("Frequency Unbundled Voice Loop"). CLECs could subscribe to a Frequency Unbundled DSL Loop to provide any service in which data is transmitted digitally as long as the ILEC uses other frequencies on that same loop to provide other

services to the same user. CLECs could subscribe to a Frequency Unbundled Voice Loop to serve a given end user as long as the ILEC uses the other frequencies on that loop to provide a digital transmission service to that same user.

The Commission should require that ILECs provide Frequency Unbundled DSL Loops and Frequency Unbundled Voice Loops since failure to do so would impair the ability of CLECs to provide facilities-based competition in the residential DSL market by making it virtually impossible for CLECs to compete with ILECs in that market.[25] Several ILECs have filed tariffs with the FCC to use frequencies above 4 kHz to provide DSL service to residential customers while using frequencies below 4 kHz on the same loops to provide those same customers with exchange service. In no case does the ILEC's price for DSL service purport to recover *any* loop costs. Instead, the ILEC attributes all loop costs to the exchange service it provides over those loops, and it recovers all of these costs from its exchange offerings.[26] Rather than permitting CLECs to provide DSL service to a given end user over the same loop that the ILEC uses to provide exchange service to that same user, ILECs instead require CLECs to provide DSL service to that user over a separate DSL-capable loop. The price that CLECs charge for DSL service must recover the full price of the DSL-capable loop UNE, which typically ranges between $12 and $18 per month and represents between 30 and 50 percent of the CLEC's total cost to provide DSL service. By contrast, as discussed above,

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25. *See* "A Competitive Call to Arms" at 3, prepared for delivery by FCC Chairman William E. Kennard before Ass'n. of Local Telecom. Services Convention (May 3, 1999). ("We must redouble our efforts to bring choice to residential subscribers -- choice in local phone service and choice in broadband service").

26. *See, e.g.,* Pet. by Network Access Solutions to Reject or Suspend Bell Atlantic Transm. No. 1081 (Sept. 8, 1998) (noting that Bell Atlantic had admitted in workpapers which accompanied its DSL transmittal that its DSL prices do not recover *any* loop costs).

the price that the ILEC charges for DSL service does not recover *any* loop costs. This very substantial cost advantage for ILECs makes it virtually impossible for CLECs to compete with ILECs on a facilities basis in the residential DSL market.[27]

Even if a CLEC could substantially reduce the loop costs applicable to its DSL offering by paying for a DSL-capable loop using frequencies below 4 kHz to provide exchange service to its DSL customers, CLECs still could not compete effectively with ILECs in the residential retail DSL market. While an ILEC can capture a residential end user as a DSL customer by convincing that user to subscribe to the ILEC's DSL offering *alone*, a CLEC desiring to compete in the residential DSL market under these terms would have to convince prospective DSL customers not only to subscribe to the CLEC's DSL service but *also* to subscribe to its *exchange service.* Requiring that CLECs convince end users to subscribe to both exchange service *and* DSL service in order to compete with ILECs in the retail DSL market *alone* would impair the ability of CLECs to compete with ILECs in the retail DSL market by raising CLEC costs to compete in a material way.[28]

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27. Some ILECs also are seeking to prevent CLECs from competing with ILECs in the residential DSL market by resale. The are doing this by asking the FCC to exempt them from the requirement imposed by Section 251(c)(4)(A) of the Act. That statute requires an ILEC to sell to CLECs at a reduced price any retail telecommunications service that the ILEC markets to customers other than carriers. *See, e.g.*, attachment to letter dated March 12, 1999 from Susanne Guyer, Bell Atlantic, to Magalie Roman Salas, filed in CC Dkt. No. 98-147. Granting ILECs the exemption they seek would be illegal and would make resale competition in the DSL market nearly impossible for reasons that NAS has explained. *See* "A White Paper, Comp. in the Resid. DSL Market will be Jeopardized Unless the FCC Requires Incumbent LECs to Provide DSL Volume Discount Plans to Carriers at a Wholesale Price", prepared by NAS and filed in CC Dkt. No. 98-147 (May 5, 1999).

28. Section 251(d)(2) permits the agency to require that ILECs provide these two new frequency unbundled loop types even if the Commission were to assume that the inability of CLECs to compete with ILECs in the residential DSL market would not reduce competition in that

(continued...)

The Commission already has held that there are no technological obstacles that prevent the agency from requiring that ILECs provide CLECs with the new frequency unbundled loop types described above.[29] And the fact that ILECs already provide DSL and voice services to a given end user over discrete frequencies in the user's loop demonstrates conclusively an absence of technological impediments.

Nor are there insurmountable operational problems. While ILECs will need to develop systems to ensure smooth functioning of provisioning, repair, maintenance, and billing in an environment where an ILEC and CLEC use the same loop to provide different services to the same end user, Bell Atlantic's recently filed volume DSL plan proves that these operational issues can be resolved satisfactorily. Under that plan, Bell Atlantic proposes to sell its DSL offering to ISPs in bulk for resale to any end user that subscribes to Bell Atlantic's exchange service over the same loop.[30] Bell Atlantic obviously believes that it can develop the systems necessary to ensure smooth functioning in an environment where Bell Atlantic and ISPs each use the same loop to provide different service to a given end user since the Bell Atlantic tariff makes clear that an ISP who

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28. (...continued)
market given that the cable TV industry's high speed modem service competes effectively with the ILECs' retail DSL offerings. As shown above, Section 251(d)(2) requires the Commission to require that ILECs provide CLECs with a given non-proprietary network feature if failure to do so would impair the ability of CLECs to provide DSL service even if CLEC participation in the DSL market is not necessary to ensure competition in any relevant product market.

29. Deployment of Wireline Services Offering Advanced Telecom. Capability, *First Report and Order and Further Notice of Proposed Rule Making,* CC Dkt. No. 98-147 at ¶ 97 (rel. Mar. 31, 1999) ("*Advanced Services Order and FNPRM*").

30. *See* the Bell Atlantic Teleph. Cos., Tariff FCC No. 1 at § 16.8.F.4 (Transmittal No. 1138, filed May 19, 1999).

subscribes to the volume DSL plan will be solely responsible for marketing, ordering, installing, maintaining, repairing and billing end users for the DSL service that the ISP provides to these users and that Bell Atlantic will be solely responsible for performing these same tasks with respect to the exchange service that Bell Atlantic provides these same users over the same loop.[31]

Although new procedures must be developed to permit a CLEC and ILEC to provide different services to a given end user over a single loop, it is appropriate for the Commission to instruct ILECs to develop all necessary procedures rather than seeking itself to define the required procedures.[32] Proceeding in this fashion would be consistent with the way the Commission has dealt with operational issues that result from other aspects of the ILEC/CLEC business relationship. For example, although the agency recognized that ILECs might face a variety of operational issues in providing CLECs with telephone number portability, the agency mandated that ILECs take whatever steps are necessary to provide portability rather than prescribing a specific method for providing portability.[33] Similarly, although the Commission recognized that ILECs might face operational issues in providing CLECs with reasonable and nondiscriminatory OSS functionality for UNE pre-ordering, ordering, provisioning, maintenance and repair service, the agency required that LECs identify and solve all operational issues rather than assume these responsibilities for itself.[34]

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31. *Id.* at § 16.8.F.4.a.

32. *Advanced Services Order and FNPRM, supra,* at ¶ 97 (rel. Mar. 31, 1999) (asking commenters to help the FCC define operational issues).

33. Telephone Number Portability, *First Report and Order*, 11 FCC Rcd 8352, 8377, 8393-94 (1996).

34. *See First Report and Order, supra*, 11 FCC Rcd. at 15767-68.

In establishing the frequency Unbundled DSL and Frequency Unbundled Voice UNEs, the Commission should require that the combined costs of these two new UNEs be attributed to whatever carrier (ILEC or CLEC) uses the frequencies below 4 kHz unless rules that regulate the manner in which an ILEC must recover loop costs from those who subscribe to switched access service are amended to ensure that customers of that service get the benefit of any offloading of loop costs to the carrier using the Frequency Unbundled DSL UNE. Upon adoption of any such amendment, a portion of the combined costs of these two UNEs would be attributed to whatever carrier uses frequencies below 4 kHz for a given loop (whether the ILEC or the CLEC) and the remaining portion of the combined costs would be attributed to whatever carrier uses frequencies above 4 kHz.[35]

Requiring the Frequency Unbundled Voice UNE to bear all costs attributed to the loop at this time also is consistent with the ILECs' present practice. As explained below, when an ILEC uses frequency sharing to provide both retail DSL service and other services to a given end user over the same loop, the ILEC attributes no loop costs to its revenue requirement for DSL service.

Requiring that the Frequency Unbundled Voice Loop bear the entire cost of the DSL-compatible loop UNE unless the rules governing interstate access charges are amended also is consistent with the pricing standard set forth in Section 252(d)(1) of the Act. That statute requires that the price of a UNE be both "nondiscriminatory" and "based on cost." The proposed pricing

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35. For example, it may be necessary to amend Section 36.154 of the separations rules before ILECs offload some portion of loop costs to CLECs who subscribe to the Frequency Unbundled Loop UNE since that rule requires an ILEC to recover 25 percent of total loop costs from interstate access charges. If ILECs were to allocate some portion of loop costs to the Frequency Unbundled DSL UNE, this 25 percent allocator might need to be reduced in order to help ensure that ILECs reduce interstate switched access rates.

regime is nondiscriminatory because it ensures that CLECs and ILECs use each loop UNE on the same terms. It is "based on cost" because it ensures that ILECs recover their full loop costs. It is true that CLECs subscribing to the discrete Frequency Unbundled DSL Loop would not be charged for that UNE (unless rules affecting the price of switched access service are changed), but this is consistent with Section 252(d)(1) since the ILEC incurs no incremental cost in providing that UNE given that it would recover the full cost of the Loop through the services it provides on the voice frequencies of the same loop.

III. The Commission Should Require ILECs to Provide a Combined Loop/Transport/Packet Switching UNE for Loops Provisioned Through DLCs

In this Section, we discuss two steps that the FCC should take in order to ensure that CLECs can provide DSL service to end users whose loops are provisioned through DLC systems. As discussed below, the agency first should make clear that an ILEC must provide use of an ILEC's DSLAM through which the ILEC provides retail DSL service to those end users whose loops are provisioned through a DLC. Second, it should require that ILECs provide a combined UNE consisting of the loop, transport, and packet switching in these cases. As we show, failure to require provision of this UNE where loops are provisioned through DLCs will impair the ability of CLECs to provide DSL service to end users whose loops are provisioned through a DLC since it would not then be technologically possible to provide DSL service to these users. Between 15 and 20 percent of all loops are provisioned thorough DLC systems.[36]

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36. Since ILECs often deploy DLC systems along routes that also contain copper transmission facilities, it occasionally may be possible for an ILEC to provision an all-copper loop to a CLEC desiring to provide DSL service to a given end user location to which exchange (continued...)

Before we discuss the need for the two actions set forth above in order to ensure that CLECs can provide DSL service to end users whose loops are provisioned through DLCs, some background is helpful. A DLC system permits the multiplexing of telecommunications signals at a remote terminal ("RT") located between the two ends of a loop. The portion of the loop located between an end user premise and the RT is called the distribution pair, and the portion of the loop between the central office and the RT is called the feeder cable. Signals are transmitted over the feeder cable on a multiplexed basis. Typically, the feeder is fiber optic cable, and the distribution cable is copper wire.

ILECs provision loops through DLC systems in order to save money on loop costs. Loop costs are lower since fiber transmission facilities carrying multiplexed signals often are less expensive than individual copper loops. Loop costs also are lower since a shorter copper run length reduces the need for load coils or other loop conditioning equipment.

Unfortunately, most types of DSL service cannot be provided technologically through a DLC-provisioned loop unless DSL multiplexing equipment -- the DSLAM -- is cross-connected to the feeder pair and distribution cable at the point where they come together. This point is called the feeder/distribution interface or FDI. The FDI normally is located in a controlled environmental vault

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36. (...continued)
service is provided over a DLC-provisioned loop. But this is no solution in many cases since end user locations served by DLC systems often are further from the central office where their loops terminate than the maximum distance that DSL signals can be transmitted over copper cable without severe degradation in transmission speed (18,000 feet in the case of most forms of DSL). It also is no solution where a CLEC desires to provide DSL service to a given customer over the same loop that the ILEC uses to provide the customer with exchange service unless the ILEC transfers the customer's exchange service to the same all-copper loop.

or other enclosure ("CEV"). The CEV houses the multiplexing and cross connect equipment as well as one or more DSLAMs.[37] While a carrier may provide DSL service over an all-copper loop by collocating the DSLAM at the central office at which the loop terminates, it may provide DSL service of greater than 128 kbs over a loop provisioned through a *DLC only* by placing the DSLAM at the FDI since the DSLAM must be placed at the point where the copper distribution loop ends.

The FCC recently took two steps to facilitate the ability of CLECs to collocate DSLAMs in (or near) CEVs. First, it affirmed that ILECs have a duty to permit CLECs to collocate DSLAMs inside of a CEV where space is available.[38] Where space is not available, the agency made clear that ILECs must permit a CLEC to deploy a CEV adjacent to the ILEC's CEV and to cross connect DSLAMs in that adjacent CEV with the ILECs feeder and distribution cable.[39]

Although these two recent actions should help ensure that CLECs have the ability to provide DSL service over DLC-provisioned loops in the *long* term, the FCC should help ensure that CLECs have the ability to provide DSL service to users in the *short term*. It can do this by making clear that an ILEC must permit CLECs to use the functionality of any DSLAM that the ILEC has deployed in a CEV and by requiring that the ILEC provide CLECs with a loop/transport/packet switch combination UNE. The FCC's recent actions do not provide a short-term solution since no ILEC has yet adopted the numerous policies and procedures necessary to implement these new requirements, and doing so is likely to take many months even if the FCC seeks to expedite this

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37. A typical DSLAM contains sufficient ports to serve up to 336 loops.

38. *Advanced Services Order and FNPRM, supra,* at ¶ 44.

39. *Id.*

process. For example, no ILEC has proposed either a space rental charge for collocation of a CLEC's DSLAM in an ILEC CEV or the procedures by which a CLEC may access its collocated DSLAMs. Nor has any ILEC proposed standards for determining whether collocation space is available in a given ILEC CEV. Likewise, no ILEC has proposed procedures for providing cross connects between adjacent ILEC and CLEC CEVs.

The Commission should clarify that Section 251(c)(3) of the Act requires an ILEC to permit CLECs to use the ILEC's DSLAM functionality to provide DSL service over loops provisioned through a DLC. That section states that an ILEC must permit a CLEC to access a UNE at any "technically feasible point." For reasons described above, the only technically feasible point at which a CLEC desiring to provide DSL service over a DLC-provisioned loop may access that loop is at the ILEC's DSLAM if the ILEC has not implemented the policies and procedures necessary for the CLEC to deploy and cross connect its own DSLAMs within or near the ILEC's RT.

The Commission also needs to require that, where a CLEC obtains DSLAM functionality from an ILEC in order to provide DSL service over a given DLC-provisioned loop, the ILEC must provide the CLEC with a combined loop/transport/packet switching UNE. An ILEC's failure to make available a combined loop/transport/packet switching UNE to the CLEC would impair the ability of CLECs to provide DSL service to end users whose loops are provisioned through a DLC since it is not possible technologically at present for a DSLAM to separate one carrier's data traffic from another carrier's data traffic until *after* that traffic has passed through a packet switch.[40]

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40. The Commission also should require that ILECs install DSLAMs that are capable of separating the data traffic of two or more carriers by no later than June 30, 2000. DSLAM manufacturers have stated that they could develop inexpensive multi-hosting DSLAMs (and (continued...)

Requiring that ILECs provide a combined loop/transport/packet switching UNE in this circumstance is consistent with Section 51.315(b) of the Rules. That rule gives CLECs a right to order element combinations from an ILEC that the ILEC combines for its own purposes. An ILEC necessarily uses the loop, transport and packet switching in providing its own DSL service over a loop provisioned through a DLC.

IV. Section 251(d)(2) Also Requires that ILECs Provide DSLAM Functionality As a UNE, But Only in One Narrow Situation

Finally, the Commission should require that an ILEC provide DSLAM functionality as a UNE in a given central office in a (hopefully rare) case where no form of physical collocation is possible in that office on economic terms. Under Section 251(d)(2) of the Act, the Commission's decision about whether to require an ILEC to provide DSLAM functionality as a UNE must be based on whether an ILEC's failure to provide that functionality would impair the ability of CLECs to provide DSL service since the provision of DSLAM functionality plainly does not require an ILEC to give CLECs access to any proprietary elements. Failure to require an ILEC to provide DSLAM functionality as a UNE in a central office where physical collocation is not available on economic terms would impair the ability of CLECs to provide DSL service since the only way for CLECs then

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40. (...continued)
multi-hosting retrofits for existing DSLAMS) within a short period if there were demand for such products. In the absence of an FCC order requiring ILECs to use multi-hosting DSLAMs, it is unlikely that there will be significant demand for such DSLAMs for several years since ILECs are likely to be by far the biggest DSLAM purchasers for at least that amount of time and since they have no incentive to ask vendors to develop multi-hosting capability. Requiring that ILECs deploy multi-hosting DSLAMs by a date certain would be analogous to the Commission's requirement that ILECS implement telephone number portability by a date certain. In that case, the FCC ordered ILECs to work with their vendors to devise a technology by a date certain that would support number portability. Telephone Number Portability, *First Report and Order*, 11 FCC Rcd 8352, 8377, 8393-94 (1996).

to provide service to any customer served by loops terminating in that office would be through virtual collocation.[41] Providing service *via* a virtual collocation arrangement as compared to a physical collocation arrangement impairs the ability of a CLEC to provide service efficiently since a CLEC using virtual collocation must depend on the ILEC to operate, manage and repair the CLEC's collocated equipment whereas the CLEC performs these tasks itself in a physical collocation arrangement. Requiring a CLEC to depend on an ILEC to control the CLEC's collocated equipment is materially less efficient for the CLEC than controlling this equipment itself since the ILEC has less incentive to operate, manage and repair the equipment in an efficient and cost-effective way than the CLEC given that the equipment is used solely in connection with DSL services provided by the CLEC.

CLECs should need to rely only rarely on a rule giving them a right to access an ILEC's DSLAM functionality given the various options that CLECs now have to deploy their own DSLAMs in ILEC central offices. Whereas ILECs in the past often have rejected CLEC applications to physically collocate DSLAM equipment in ILEC central offices by claiming an absence of collocation space in that office, the FCC recently attempted to eliminate the ability of ILECs to make such claims in the future by giving CLECs a right to collocate equipment in ways that require far less space and are far less costly than the physical collocation arrangements that ILECs have insisted upon in the past.[42]

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41. The Commission likewise should make clear that a CLEC has a right to order the DSLAM as a UNE upon showing that it is uneconomic for the CLEC to collocate its own DSLAMs in the ILEC's central office or under which the ILEC permits collocation.

42. *See Advanced Services Order and FNPRM, supra,* at ¶¶ 40-44.

CONCLUSION

For the reasons set forth herein, the Commission should retain its existing definitions of three network elements required for the provision of DSL service -- loops, interoffice transmission, and OSS -- and require ILECs to offer those elements as UNEs. The Commission should clarify that the OSS UNE requires ILECs to provide CLECs with online access to loop makeup information at the pre-ordering stage. In addition, the Commission should define three new network elements required for the provision of DSL service -- frequency unbundled DSL loops, a combined loop/transport/packet switching element, and DSLAM functionality -- and order ILECs to offer those elements as UNEs under certain circumstances as described herein.

Respectfully submitted,

NETWORK ACCESS SOLUTIONS CORPORATION

Rodney L. Joyce
J. Thomas Nolan
Shook, Hardy & Bacon LLP
600 14th Street, N.W., Suite 800
Washington, D.C. 20005-2004
Its Attorneys

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