

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )

Deployment of Wireline Services Offering )  
Advanced Telecommunications Capability )

CC Docket No. 98-147

COMMENTS OF BELLSOUTH CORPORATION

**BELLSOUTH CORPORATION**

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SUMMARY

In this proceeding the Commission proposes a concept of line sharing that potentially encompasses a very broad number of technical and commercial possibilities. This extreme range of possibilities renders the concept so broad as to be virtually meaningless. For example, the possibilities include not only BellSouth's current asymmetrical digital subscriber line ("ADSL") offering but also the treatment of the spectrum as a network element that must be unbundled ("spectrum unbundling").

BellSouth, of course, does not oppose the concept of line sharing to the extent it contemplates the sharing of lines consistent with its ADSL service. Spectrum unbundling, however, is a deeply troublesome concept that is not ripe for discussion. Moreover, it has been previously considered and rejected by the Commission.

In its *Interconnection Order*, the Commission rejected the notion of spectrum unbundling, finding that carriers should have exclusive control of the entire loop that is dedicated to an end user. The *Notice* not only failed to explain why the Commission tentatively concluded to reverse its positions on this matter, but does not even acknowledge the change. The Commission cannot simply choose to change positions on past decisions without providing sufficient explanation. Notwithstanding this fact, the Commission should not adopt line sharing as proposed in the *Notice*, because (1) the *Notice* is premature; (2) spectrum unbundling is not needed; and (3) spectrum unbundling raises serious technical, operational, and pricing issues that have not been properly considered by the Commission.

The *Notice* is premature because it does not set forth a specific legal rationale to authorize line sharing. It merely suggests that the Commission has authority to require line sharing pursuant to sections 251 and 252 of the Telecommunications Act of 1996 ("1996 Act").

The *only* basis to support the Commission's authority under these sections of the 1996 Act is to define spectrum as a network element that must be unbundled by the incumbent LEC. The *Notice*, however, makes no reference to spectrum being a network element or why it should be unbundled. It merely makes a causal reference to the fact that the Commission must reevaluate the definition of the loop in the light of the Supreme Court decision in *AT&T Corp. v. Iowa Utilities Board*, but summarily dismisses this by stating that if the redefinition of the loop "affects any conclusions drawn from this proceeding, [it] will revise [its] analysis and conclusions accordingly." This statement is illogical. The Commission cannot even determine if spectrum is a network element that must be unbundled until after it defines the standard for requiring such unbundling. Such standard will not be defined until the Commission has completed the *UNE Proceeding*. The Commission must define what the standard for unbundling network elements will be before reaching any tentative conclusions or seeking discussion on line sharing as proposed in the *Notice*. Accordingly, the *Notice* is premature.

Given the current status of the advanced services market and changes in technology, line sharing is an unnecessary requirement. The *Notice* indicates that the Commission believes that by mandating line sharing, it will "help the advanced services market grow more rapidly." The advanced services market, however, is growing as rapidly as any market in the country. Recent mergers and acquisitions of cable companies by AT&T leave the market poised to explode. Moreover, technology advancements, in the form of packet based networks that deliver both voice and data over a single form of switching will soon render the CLECs reasoning for obtaining line sharing – a loop at a reduced price because they are only providing data services and not both voice and data – moot. The development of rules and regulation, and network and operation systems necessary to implement line sharing will be significant for the Commission

and incumbent LECs. Considering the current market and technology status, especially in the light of the cost and resources needed for implementation, the Commission should not require line sharing as proposed in the *Notice*.

Implementation of spectrum unbundling presents complex technical, operational and pricing problems to be faced by both the incumbent LECs and the CLECs. While single-carrier line sharing allows the control of the spectrum to remain with the party that has control of the loop, spectrum unbundling would place it in the hands of multiple carriers simultaneously. This introduces a host of problems, some of which are (i) how will the spectrum be divided among multiple carriers, (ii) how will it be used (*e.g.*, only for advanced services or for any services the CLEC wishes), (iii) how can it be structured so that multiple carrier's use of the spectrum does not interfere with other carrier's services, (iv) how will "split-spectrum loops" be defined and inventoried, (v) what are the standards to specify how the spectrum will be created and how discrete segments of the spectrum will be available over a loop, (vi) how will an appropriate barrier be created between the spectrum segments, (vii) how will service problems be identified, and (viii) how will responsibility of copper be defined, including how will the loop be priced. All of these things must be resolved before line sharing as the Commission contemplates could work.

Based on the uncertainty surrounding the *Notice*, BellSouth urges the Commission not to adopt such a broadly and vaguely defined line sharing requirement. Additionally, if it does adopt requirements for line sharing, the Commission should not adopt any requirement that encompasses spectrum unbundling or any concept that would allow the interpositioning of CLECs between the incumbent LEC and the incumbent LEC's customers. Moreover, the Commission should suspend the proceeding triggered by the *Notice* until the *UNE Proceeding* is

completed and the standards for determining when network elements must be unbundled have been defined in a consistent manner with the Supreme Court's decision.

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**COMMENTS OF BELL SOUTH CORPORATION**

BellSouth Corporation, for itself and its affiliated companies (collectively "BellSouth"), submits the following comments in response to the Further Notice of Proposed Rulemaking ("*Notice*") released in the above-captioned proceeding.<sup>1</sup>

**I. Introduction and Summary**

In the *Notice*, the Commission has reached tentative conclusions and requested comments on numerous issues related to the spectrum on a local telephone line that extends from the local exchange carrier's ("LEC") central office to the customer's premises ("local loop" or "loop"). Although the *Notice* makes tentative conclusions and requests comments on numerous issues,<sup>2</sup> the most significant relates to the Commission's proposal to implement "line sharing" on the local loop.

The *Notice* does not provide a clear definition of "line sharing." Indeed, its tentative conclusion regarding its implementation merely states that "incumbent LECs must provide requesting carriers with access to the transmission frequencies above that used for analog voice

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<sup>1</sup> *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Dkt. No. 98-147, First Report and Order and Further Notice of Proposed Rulemaking, FCC 99-48 (rel. Mar. 31, 1999) ("*Notice*").

<sup>2</sup> Such issues include the development of standards for spectrum management and compatibility.

service....”<sup>3</sup> This concept of line sharing is so broad it is meaningless. It encompasses an unlimited number of technical and commercial possibilities, some of which may be unobjectionable, some of which are extremely troubling.

For example, BellSouth’s wholesale asymmetrical digital subscriber line (“ADSL”) tariff offering enables competitive local exchange carriers (“CLECs”) to provide data services over the same loops that BellSouth uses to provide voice services. Obviously, BellSouth finds that form of “line sharing”<sup>4</sup> acceptable.

The concept of line sharing as stated in the *Notice*, however, also encompasses “spectrum unbundling” and interpositioning of a CLEC between an incumbent LEC and its voice customer.<sup>5</sup> These forms of “line sharing” would prove extremely troublesome, as these comments will demonstrate.

Moreover, spectrum unbundling constitutes a departure from the Commission’s conclusion in the *Interconnection Order* that “competing providers” should be given “exclusive control” of unbundled network elements used to serve a particular end user. In addressing this issue in the *Interconnection Order* the Commission concluded correctly:

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<sup>3</sup> *Notice* ¶ 99. Another paragraph of the *Notice* describes line sharing as “two different service providers ... [offering] services over the same line with each provider utilizing different frequencies to transport voice or data over that line.” *Id.* ¶ 92.

<sup>4</sup> BellSouth refers to this form of line sharing as “single-carrier line sharing” throughout these comments.

<sup>5</sup> The positioning of the CLEC between the incumbent LEC and the incumbent LEC’s customers presents significant problems to the incumbent LEC. Unlike the incumbent LEC, CLECs are under no legal obligations regarding provisioning, maintenance, and repair of circuits. Thus, if an incumbent LEC is ever positioned between a CLEC and its customers, the CLEC is protected by the force of law set forth in the numerous rules and regulations regarding interconnection and provisioning of services to the CLEC. The incumbent LEC does not enjoy these same protections. Unless the Commission is prepared to place the same obligations on CLECs, it must not implement any rules that will allow for the CLEC to be interpositioned between the incumbent LEC and its customers.

We decline to define a loop element in functional terms rather than in terms of the facility itself. Some parties advocate defining a loop element as merely a functional piece of shared facility, similar to capacity purchased on a shared transport trunk [(i.e. spectrum unbundling)]. ... While such a definition, based on the types of traffic provided over a facility, may allow for the separation of costs for a facility dedicated to one end user, we conclude that such treatment is inappropriate. *Giving competing providers exclusive control over network facilities dedicated to particular end users provides such carriers the maximum flexibility to offer new services to such end users.* In contrast, a definition of a loop element that allows simultaneous access to the loop facility would preclude the provision of certain services in favor of others.<sup>6</sup>

If the Commission mandates the broad concept of line sharing proposed in the *Notice*, which includes spectrum unbundling, this will be a major shift in its policy regarding control of the loop. The Commission established its original policy in the *Interconnection Order* based on a lengthy proceeding with numerous entities providing comments. The adoption of line sharing as proposed in the *Notice* would clearly be a significant change from the above quoted language. The Commission cannot simply make such changes without providing reasoned explanation for the change. The *Notice* fails in this regard and does not allow for adequate comment on these matters.

**A. The *Notice* is Premature.**

The *Notice* does not set forth a specific legal rationale to authorize line sharing. It merely suggests that the Commission has authority to require line sharing pursuant to sections 251 and 252 of the Telecommunications Act of 1996 ("1996 Act"). The *only* basis to support the Commission's authority under these sections of the 1996 Act is to define spectrum as a network

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<sup>6</sup> *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, *First Report and Order*, 11 FCC Rcd 15499, 15693 ¶ 385 (1996) ("*Interconnection Order*"), *modified on reconsideration*, 11 FCC Rcd 13042 (1996), *vacated in part*, *Iowa Utilities Bd v. FCC*, 120 F.2d 753 (8<sup>th</sup> Cir. 1997), *aff'd in part and rev'd in part sub nom. AT&T Corp. v. Iowa Utilities Board*, 119 S. Ct. 721 (1999) (emphasis added).

element that must be unbundled by the incumbent LEC. The *Notice*, however, makes no reference to spectrum being a network element or why it should be unbundled. It merely makes a casual reference to the fact that the Commission must reevaluate the definition of the loop in the light of the Supreme Court decision in *AT&T Corp. v. Iowa Utilities Board*,<sup>7</sup> but summarily dismisses this by stating that if the redefinition of the loop “affects any conclusions drawn from this proceeding, [it] will revise [its] analysis and conclusions accordingly.” This statement is illogical. The Commission cannot even determine if spectrum is a network element that must be unbundled until after it defines the standard for requiring such unbundling. Such standard will not be defined until the Commission has completed the *UNE Proceeding*.<sup>8</sup> The Commission must define what the standard for unbundling network elements will be before reaching any tentative conclusions or seeking discussion on line sharing. Accordingly, the *Notice* is premature.

**B. There is No Need to Mandate Line Sharing as Defined in the *Notice*.**

Given the current status of the advanced services market and changes in technology, line sharing is an unnecessary requirement. The *Notice* indicates that the Commission believes that by mandating line sharing, it will “help the advanced services market grow more rapidly.” The advanced services market, however, is growing as rapidly as any market in the country. Recent mergers and acquisitions of cable companies by AT&T leave the market poised to explode. Moreover, technology advancements, in the form of packet-based networks that deliver both voice and data over a single form of switching will soon render the CLEC’s reasoning for

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<sup>7</sup> *AT&T Corporation, et al. v. Iowa Utilities Board, et al.*, 119 S.Ct. 721 (1999).

<sup>8</sup> *See In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, *Second Further Notice of Proposed Rulemaking*, FCC 99-70, released April 16, 1999 (“*UNE Proceeding*”).

obtaining line sharing – a loop at a reduced price because they are only providing data services and not both voice and data – moot. Rules and regulations, and network and operation systems necessary to implement line sharing will be significant for the Commission and incumbent LECs. Considering the current market and technology status, especially in the light of the cost and resources for implementation, the Commission should not require line sharing as proposed in the *Notice*.

**C. Significant Technical, Operational, and Pricing Problems Complicate the Implementation of any Rules Regarding Line Sharing.**

Implementation of spectrum unbundling presents complex technical, operational and pricing problems to be faced by both the incumbent LECs and the CLECs. While single-carrier line sharing allows the control of the spectrum to remain with the party that has control of the loop, spectrum unbundling would place it in the hands of multiple carriers simultaneously. This introduces a host of problems, some of which are (i) how will the spectrum be divided among multiple carriers, (ii) how will it be used (*e.g.*, only for advanced services or for any services the CLEC wishes), (iii) how it can be structured so that multiple carriers' use of the spectrum does not interfere with other carriers' services, (iv) how will "split-spectrum loops" be defined and inventoried, (v) what are the standards to specify how the spectrum will be created and how discrete segments of the spectrum will be available over a loop, (vi) how will an appropriate barrier be created between the spectrum segments, (vii) how will service problems be identified, and (viii) how will responsibility of copper be defined, including how will the loop be priced. All of these things must be resolved before line sharing as the Commission contemplates could work.

Based on the uncertainty surrounding the *Notice*, BellSouth urges the Commission not to adopt such a broadly and vaguely defined line sharing requirement. Additionally, if it does adopt requirements for line sharing, the Commission should not adopt any requirement that encompasses spectrum unbundling or the interpositioning of CLECs between the incumbent LEC and the incumbent LEC's customers. Moreover, the Commission should suspend the proceeding triggered by the *Notice* until the *UNE Proceeding* is completed and the standards for determining when network elements must be unbundled have been defined in a consistent manner with the Supreme Court's decision.

Of necessity, these comments assume that the *Notice* proposes to require every conceivable form of line sharing that can be shoehorned into its broad definition, regardless of the cost of implementing, the likelihood of full cost recovery from CLECs, or the operational difficulties created. Therefore the comments focus on spectrum unbundling, the most extreme among the forms of line sharing that the *Notice* contemplates.

**II. To Mandate Spectrum Unbundling, the Commission Must Meet Legal Requirements and Standards Prescribed by the 1996 Act as Interpreted by the United States Supreme Court**

The *Notice* does not articulate a specific legal rationale to support the Commission's authority to mandate line sharing as proposed. It merely states a vague assertion that because the Commission has "jurisdiction to implement the local competition provisions of the Act and that [its] rulemaking authority extends to sections 251 and 252, ... [it therefore has] authority to require line sharing." The only basis to support its authority under these sections of the 1996 Act is to conclude that spectrum on the loop is a network element that should be unbundled.<sup>9</sup> Before

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<sup>9</sup> The *Notice* also tentatively concludes that "incumbent LECs must provide requesting carriers with access to the transmission frequencies above that used for analog voice service on any lines that LECs use to provide exchange service when the LEC itself provides both exchange

the Commission can make such a determination, it must define what the standard for unbundling network elements will be.

Section 251 of the 1996 Act requires that incumbent LECs provide access to unbundled network elements for CLECs. This section also established the standard that the Commission must consider in determining what elements must be unbundled, § 251(d)(2). The standard set forth in section 251(d)(2) states that before a network element is required to be unbundled it must be shown that “failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer” (the “impairment standard”).<sup>10</sup>

The Commission had previously established rules for unbundling network elements in the *Interconnection Order*. These rules essentially allowed for pervasive unbundling of network elements, which the United States Supreme Court ruled did not match the terms of the 1996 Act or Congress’ intent. Accordingly, the Supreme Court vacated the rules set forth in the *Interconnection Order* because the Commission misapplied section 251(d)(2)’s standards for unbundling. The Court explained that “if Congress had wanted to give blanket access to incumbents’ networks on a basis as unrestricted as the scheme the Commission has come up with, it would not have included § 251(d)(2) in the statute at all.”<sup>11</sup> The Court then held that

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and advanced services over a single line.” *Notice* ¶ 99. This conclusion suggests that the Commission would require only those incumbent LECs that provide advanced services over a single line to provide line sharing, as proposed in the *Notice*, to requesting CLECs. Nothing in sections 251 and 252 of the 1996 Act gives the Commission the authority to selectively require unbundling of network elements, which line sharing as proposed would do, on a sub-set of incumbent LECs. If it is the Commission’s intention to make this part of the definition of the impaired standard, it has acted prematurely and must wait until the standard is defined by the *UNE Proceeding*.

<sup>10</sup> Section 251 also sets forth a standard that access to a proprietary element in the network is necessary, however, that standard does not apply to line sharing.

<sup>11</sup> *Iowa Utilities Board*, 119 S. Ct. at 735.

section 251(d)(2) was intended to impose a limiting standard on unbundling, and that the Commission must “apply *some* limiting standard, rationally related to the goals of the Act, which it has simply failed to do.”<sup>12</sup> As required by the Supreme Court’s ruling, the Commission is currently re-evaluating the elements that an incumbent LEC must provide to CLECs on an unbundled basis.<sup>13</sup>

**A. Spectrum Unbundling Should be Analyzed as the Establishment of a New Network Element**

If the Commission adopts its tentative conclusions regarding line sharing, it will be defining the loop in such a way that segregates the spectrum from the physical copper wire; the spectrum becomes an element of the network.<sup>14</sup> To the extent that the Commission requires a CLEC to have access to that spectrum, it is requiring that the loop be further unbundled. Based upon the requirements of the 1996 Act, the Supreme Court has made it very clear that before the Commission can require an incumbent LEC to unbundle a network element, access to that element must meet the impairment standard. This standard has yet to be defined by the Commission. Indeed, until the Commission defines the impairment standard, it cannot determine what elements of the network should be required to be unbundled and those which it should not.

**B. The Commission Cannot Require the Unbundling of Spectrum as a Network Element Until It Defines what Constitutes the Impairment Standard**

If spectrum is a network element, any requirement that it be unbundled prior to the Commission’s completion of the *UNE Proceeding* is premature. It is untenable for the

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<sup>12</sup> *Id.* at 734-735 (emphasis in original).

<sup>13</sup> *See UNE Proceeding.*

<sup>14</sup> The 1996 Act defines a network element as “a facility or equipment used in the provision of telecommunications service... [and] includes features, functions, and capabilities that are provided by means of such facility or equipment.” 47 U.S.C. § 3(29).

Commission to propose that spectrum, as a network element, be unbundled before the Commission has even defined the criteria that constitutes the impairment standard. The Commission's position to begin its analysis of line sharing, which includes spectrum unbundling, with plans to revise any conclusions it reaches based on the outcome of the *UNE Proceeding* is especially unreasonable considering that the impairment standard, once defined, will likely show that spectrum is not required to be unbundled.<sup>15</sup> Accordingly, any analysis of line sharing is unripe.

Indeed, this is exactly the position held by Commissioner Powell and Commissioner Furchtgott-Roth. In a separate statement to the *Notice* Commissioner Powell stated "I think the tentative conclusions we adopt today are premature. First and foremost, I find it virtually impossible to separate this issue from that which is the subject of our unbundled network element Rule 319 (*UNE Proceeding*)."<sup>16</sup> He went on to say "[s]imply put, I believe that we must first establish and apply the section 251(d)(2) standard to determine whether loops must be unbundled before we make even tentative conclusions about whether some portion of that loop must also be unbundled or 'shared'."<sup>17</sup> Commissioner Furchtgott-Roth echoed these conclusions stating, "I believe the Commission should first address the standard for unbundling network elements consistent with the Supreme Court's remand, prior to concluding, even tentatively, that

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<sup>15</sup> For example, line sharing as provided by BellSouth in its current ADSL offering is not a network element but is a tariffed service offering. CLECs wishing to provide advanced services only may purchase BellSouth's ADSL service from a wholesale tariff that provides volume and term discounts to the CLEC. Such offerings clearly demonstrate that failure to obtain access to the data spectrum network element will not impair its ability to provide advanced services. *See also*, Comments filed by BellSouth in the *UNE Proceeding* at 45 – 47.

<sup>16</sup> Separate Statement of Commissioner Powell attached to the *Notice*.

<sup>17</sup> *Id.*

we have the authority to require line sharing when one of the bases to make such a conclusion is that it is an unbundled network element.”<sup>18</sup> BellSouth agrees with Commissioner Furchtgott-Roth’s conclusion that in adopting the *Notice* “the Commission has put the cart before the horse....”<sup>19</sup> The Commission should therefore suspend the proceeding triggered by this *Notice* until the Commission has completed the work in the *UNE Proceeding*.

### III. There is No Need to Require Spectrum Unbundling

In the *Notice*, the Commission states it proposed line sharing because it believes that line sharing will allow “competition for advanced services [to] grow more rapidly....”<sup>20</sup> Spectrum unbundling, however, is not needed to accelerate the growth of the advanced services market for at least two reasons. First, although mass markets have not seen the benefits of advanced services as rapidly as the business market, the deployment of advanced services to the mass residential and small business markets is occurring at a timely pace.<sup>21</sup> This deployment is being provided by incumbent LECs and CLECs<sup>22</sup> and by numerous other entities over facilities other than traditional telephone loops.

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<sup>18</sup> Separate Statement of Commissioner Furchtgott-Roth attached to the *Notice*.

<sup>19</sup> *Id.*

<sup>20</sup> *Notice* ¶ 96.

<sup>21</sup> See *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Dkt. No. 98-146, *Report*, FCC 99-5, released February 2, 1999, (“*Advanced Services Report*”), ¶ 6 (“we are encouraged that the deployment of advanced telecommunications generally appears, at present, reasonable and timely.”)

<sup>22</sup> See e.g., Covad Communications has plans to offer nationwide ADSL in 51 metro areas by year-end. Telecommunications Reports, April 5, 1999, page 37; ICG New Release, “ICG Offers High-Speed Data Services,” March 25, 1998; (ICG announced it will offer DSC service to 100 central offices by end of 1998); NorthPoint Press Release, “NorthPoint Communications Will Surpass Combined Bells’ DSL Deployment,” December 15, 1998. (NorthPoint plans to offer DSL service to 20% of all residents by third quarter 1999); Rhythms News Release, “Rhythms Deploys DSL-Based Solutions in 11 Markets in First Year. Expands to 35 by End of

It is not by coincidence that the deployment of mass-market advanced services is occurring more rapidly by entities – cable modem providers – outside the draconian regulation endured by incumbent LECs. Spectrum unbundling, however, would only further mire incumbent LECs in rules and regulations that would require them to divert resources for compliance purposes instead of using such resources to bring advanced services to consumers in a more timely manner.<sup>23</sup>

Second, technology is changing so rapidly that any need for spectrum unbundling that the Commission has imagined will soon be obsolete. One example of this technology is networks that allow CLECs to pass both voice and data through a single packet-based transmission, and thus, eliminate the concern that a CLEC must deploy circuit switches to provide voice service. The Commission must, therefore, consider the unfavorable ramifications of requiring the resources that will be needed to implement spectrum unbundling if technology will soon render it outmoded.

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1999,” December 16, 1998. (Rhythms plans to offer DSL service in 35 largest Metropolitan areas by end of 1999 and the 50 largest cities by the end of 2000).

<sup>23</sup> See *infra*, Section IV.

**A. Advanced Services Market**

The Commission reasons that advanced services will be deployed more rapidly if CLECs do not have to invest in circuit switch equipment needed to provide voice service.<sup>24</sup> While it supports a robust competitive advanced services market, BellSouth believes the Commission has failed to act in a way consistent with its acknowledgement that advanced services market is a developing market in which no provider enjoys any form of dominance.

The Commission should not be seeking to further regulate one provider of advanced services, by requiring only incumbent LECs to expend expansive resources in order to comply with spectrum unbundling requirements, while all other providers of such services are virtually free of any regulation. This is especially true in light of recent mergers and acquisitions in the cable industry – which is the leading provider of advanced services today. This leads BellSouth to question the wisdom of forcing spectrum unbundling on incumbent LECs when the activities of other providers of advanced services are currently limited only by market conditions.

**1. The Provision of Advanced Services Must be Analyzed in Connection with the Entire Market and Not Just Local Phone Loops**

In the advanced services market, different providers offer services over different media. No provider dominates in this nascent market, especially not the incumbent LECs. Indeed, customers for cable modems far outpace those for ADSL. In the *Advanced Services Report*, the Commission recently stated:

The fact that different companies are using different technologies to bring broadband to residential consumers and that each existing broadband technology has advantages and disadvantages as a means of delivery to millions of customers opens the possibility of intermodal competition, like that between trucks, trains and planes in transportation. By the standards of traditional residential telecommunications, there are, or likely will soon

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<sup>24</sup> See Notice ¶ 99.

be, a large number of actual participants and potential entrants in this market.<sup>25</sup>

The development of cable modems and the subsequent activity in the cable industry illustrates this point. The development and deployment of cable modems to provide advanced services have occurred more rapidly because providers of these services do not face the uncertainties of unknown regulation. Existing rules do not require cable companies to make risky investment and then allow their competitors risk free access to that investment. Moreover, existing rules do not dilute the value of investment in that technology. Accordingly, the Commission should take the same approach in regulating advanced services for incumbent LECs as it does for the cable industry.

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<sup>25</sup> *Advanced Services Report* ¶ 48.

**2. Spectrum Unbundling Could Set a Precedent that will have a Chilling Effect on Future Investment**

Although the *Notice* only speaks in terms of line sharing on the copper loop, implementation of such rules for copper will signal a very troubling message to the industry that the Commission could consider similar rules for fiber. Fiber is a very costly investment. Because of this cost, only recently have advancements in the capabilities of providing various services over fiber provided incumbent LECs incentive to begin deploying fiber closer to the customer's premises. When the incumbent LECs can reap the full range of revenue from the multiple services that can be provided over fiber, then the economics of deploying fiber to customer premises remains an incentive. If after incurring all the risk of deploying this fiber, the incumbent LEC is required to unbundle the spectrum and give a portion to its competitor, who shares none of the risk of deployment, then the incumbent LECs' incentive is drastically reduced. The Commission must therefore recognize that because of the threatening precedent that implementation of line sharing, including spectrum unbundling, will set for the industry, such implementation may have a very stifling effect on the future investment in fiber facilities.

**B. Imminent Market Developments in the Provision of Advanced Services**

In its *Advanced Services Report*, the Commission stated "it is very likely that the imperfections of existing broadband technologies will lead to new technologies that will improve broadband."<sup>26</sup> Many of these new technology changes are no longer on the drawing boards, but are being deployed daily. These technological changes are allowing even greater capabilities in all forms of telecommunications, including voice and advanced services. Innovations such as new transfer modes that transport voice as well as data over digital paths are becoming more

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<sup>26</sup> *Advanced Services Report* ¶ 49.

prevalent in networks. Deployment of these technologies eliminates the need for circuit switching because they can transport both voice and data.

These types of networks do not require a direct path between voice customers as required by circuit switches, but use a protocol that converts voice to digital and transports both voice signals and data over the digital network. Examples include integrated digital networks (“IDN”) and voice over the Internet Protocol (“VoIP”). IDNs offer a fully integrated packet based network over which a carrier can provide local, long distance, data, video, and Internet/intranet services. VoIP allows voice to be converted to a packet format and transferred on a single line along with data. These types of networks are no longer a dream in the distant future but are a current reality today.<sup>27</sup> If the Commission forces spectrum to be unbundled, under this scenario a split-spectrum data loop can provide all the services to a customer, both voice and data. Accordingly, a CLEC could take over all of a customer’s services on the spectrum the CLEC obtained ostensibly only for advanced services. Indeed, BellSouth contends that CLECs intend to move to such a network and their support for spectrum unbundling is a strategic move to gain access to loops at a price less than the price of a full loop. This is evident by recent statements made by Covad discussing the capability of simultaneous data and voice service over single line. It stated:

Covad plans to initiate market trials with customers in 1999. Originally designed to support both voice and data, Covad’s voice service will utilize the existing network’s digital subscriber lines access multiplexer (DSLAM) and end-to-end ATM network infrastructure.<sup>28</sup>

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<sup>27</sup> See Sprint Internet site <<http://www.sprint.com/ion/>>. See also, Press Release “Covad Successfully Executes Trials of Combined Voice and Data Over DSL” June 7, 1999 (“Covad Press Release”). Available at <[http://www.covad.com/about/press\\_releases](http://www.covad.com/about/press_releases)>.

<sup>28</sup> See Covad Press Release.

If spectrum unbundling is implemented, once CLECs begin providing voice over a packetized digital format they should not be allowed to receive the loop at the reduced price. The Commission must ensure that all services add up to 100% of the loop, whether provided over a portion of the spectrum or all of it.

**C. Cost Benefit for a Potentially Short Lived Technology**

Considering that the market is progressing on a timely basis and the current technology that would support the use of spectrum unbundling is probably short lived, BellSouth questions the wisdom of a spectrum unbundling policy. This doubt is heightened by the fact that spectrum unbundling will require (i) carriers to dedicate extensive resources to implement the policy, both technically and operationally, and (ii) the Commission to dedicate many of its scarce resources to develop and implement related policy and procedures.

**IV. Spectrum Unbundling is Extremely Complex and Raises Many Questions Beyond the Scope of Those Proposed in the Notice.**

The *Notice* states that the Commission finds “nothing in the existing record to persuade us that line sharing is not technically feasible.”<sup>29</sup> The *Notice* then discusses single-carrier line sharing that many incumbent LECs, including BellSouth, are providing today through their ADSL offerings. The *Notice* concludes that there appears to be no difference between this form of line sharing and the form the Commission proposes to mandate. Single-carrier line sharing, however, does not introduce the complexities that are associated with spectrum unbundling, and so the two do not present an apt comparison. BellSouth does not dispute that from a purely technical perspective spectrum unbundling can be performed. Such unbundling, however, introduces many more technical, operational, and price/cost complexities than the *Notice* has

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<sup>29</sup> *Notice* ¶ 103.

acknowledged. Accordingly, before the Commission embarks on implementing a concept of line sharing that includes spectrum unbundling, BellSouth urges the Commission first to consider all of the issues that must be resolved prior to successful implementation.

BellSouth raises these implementation and cost issues for two reasons. First, based on the limited information and the broad definition assigned to line sharing in the *Notice*, BellSouth believes that although it asked general questions about the effect of line sharing on technical and operational systems, the Commission did not consider the complex issues that must be resolved before line sharing as contemplated in the *Notice* could be implemented successfully. Many of these issues have no easy solutions. Accordingly, significant effort and resources would have to be expended by the Commission, incumbent LECs and CLECs to resolve these issues.

Second, for line sharing, as defined in the *Notice*, to succeed, incumbent LECs will incur significant costs in implementing the network and operational systems, not to mention resolving pricing and cost allocation issues. The amount of these costs are unknown and in fact cannot be determined until standards indicating how spectrum is to be created and segmented on the loop are developed. The Commission would need to require cost studies to determine how much it would cost to implement the necessary systems. Indeed, BellSouth asserts there is a strong possibility that once all costs are identified for the implementation of the many technical and operational changes that will be needed, any potential gain a CLEC believes it will obtain from spectrum unbundling will be diluted beyond its perceived value. Finally, because of the potential short life of line sharing<sup>30</sup> the Commission must allow incumbent LECs to recover their costs upfront, instead of over time.

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<sup>30</sup> See *supra*, III.B.

**A. Technical Issues**

ADSL is provided in a band of frequencies above the voiceband. Despite its use of frequencies above the voiceband, filtering is necessary to ensure that the ADSL signal does not interfere with the voice signal, and vice-versa. In ADSL, low-pass filters are employed in the voice circuit.

At the customer's premises, a low-pass filter is used to isolate the voice signal from the data signal. Thus, both the data signal and the voice signal pass to the ADSL transceiver units – remote (“ATU-R”) where the ADSL signal is used. Only the voice signal, however, passes through the low-pass filter, into the customer premises voice wiring, and into the customer’s phone.

At the central office, another low-pass filter is used to separate the data signal from the central office voice-band line equipment. In the ADSL implementation, the filter is integrated into the digital subscriber line access multiplexer (“DSLAM”). The central office voiceband line equipment is connected to a port on the DSLAM, and another port on the DSLAM is connected to the cable pair. To use this architecture, the voice provider must handoff the circuit (from the voice-band line equipment) to the data provider (who would have the DSLAM), who must then hand it off to the loop plant owner. In this environment, the CLEC would control the spectrum, without any regulatory controls, over which the incumbent LEC provides voice service to its customers. This presents serious concerns for BellSouth. A voice circuit can be degraded, without degrading the data circuit. One way this can occur is if there is a short across the line conductors between the DSLAM and the voice switch. The data provider’s activities at the remote end can also expose the voice circuit to line faults. Trouble and maintenance problems could also cause the customer’s voice service to suffer. Such maintenance concerns include, but

are not limited to, difficulty in isolating trouble sources in a multi-vendor environment; alarm correlation between multiple vendors; non-invasive testing on one part of the circuit impacting the other. And if the advanced services provided by the CLEC are not the services that are experiencing trouble, the CLEC, operating under no section 251(c) obligations, has no motivation to help in isolating these problems. Thus, in order for spectrum unbundling to be equitable to the incumbent LECs, under the current ADSL architecture the Commission would have to impose upon the CLECs the same obligations for provisioning, maintenance and repairs of the network that are in place for incumbent LECs. Without such obligations, incumbent LECs will be at the mercy of any unscrupulous CLEC.

If the Commission does not impose the same obligations on CLECs as those currently imposed on incumbent LECs, the current equipment used for ADSL must be replaced by true three-port splitter devices at both the central office and customer's premises. These splitters need to contain both low-pass (in the voice to cable path) and high-pass (in the data equipment to cable path) filters. These devices will be more expensive than the equipment used today to provide ADSL in a single-carrier line sharing context and will increase the cost of providing unbundled spectrum over a single loop. Moreover, a system would have to be developed to inventory and assign such devices. This would not only require significant time to produce, but would also add to the cost.

Even deploying these three-way splitters will not be the panacea for spectrum unbundling. Many questions would still have to be answered. How is available bandwidth to be determined and how is it to be split? The *Notice* appears to assume that the voice service, or channel, is plain old telephone service ("POTS"). Does this mean that the advanced service, or channel, is to include all spectrums over POTS or only a portion of that spectrum? Who will

perform the spectrum splitting? BellSouth contends it must be the incumbent LEC. No matter who performs the spectrum splitting, however, splitting will require the placement of true band splitting filters (three-port devices, not simply low-pass filters) at each end of the loop – the central office and the customer premises. Such devices are needed to minimize – as much as possible – the impact of one channel on the other. The entity performing the splitting must effectively determine how much bandwidth is allocated to the voice channel and how much to the advanced services channel and what the crossover characteristics are. Because no amount of filtering will achieve an impenetrable barrier between the voice and advanced services spectrum, some guard band between the two will be required. Such a guard band must be developed and accepted by industry.

The issues associated with how to split the spectrum are only some of the questions that raise technical concerns. Others include how will spectrum allocation between/among voice and data spectrum splits be governed? How will the spillover characteristics of each voice and data spectrum band into the other, including harmonics and intermodulation products, be specified and adjudicated?<sup>31</sup> How are problems caused by the terminal equipment, wiring, or both, used for one service be to isolated from the others? Will cost recovery be allowed for unnecessary dispatches? If so, who is billed - the CLEC or the customer? All of these questions, which are certainly not exhaustive, must be answered before the Commission requires incumbent LECs to unbundle loop spectrum.

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<sup>31</sup> See *infra*, Section V.C., BellSouth contends that a dispute resolution process as proposed in the *Notice* is too-little-too-late.

**B. Operational Issues**

Implementing spectrum unbundling will also require major operational and support systems development and overhaul of current systems. To understand these operational challenges fully, the anatomy of the operational support required for copper loops should be examined. BellSouth currently inventories its loops used to provide services to customers by the loop itself and not by the spectrum available on, or the services provided over, the loop. If spectrum unbundling is required, the current inventory system for the loops would no longer be acceptable because spectrum, and not the loop itself, would have to be associated with specific services and the providers of those services. BellSouth's current systems cannot identify for a single copper pair its different bands of spectrum and associate them with different services and different providers.

**1. Inventory of Loops Will Require the Development of a New Operations Support System**

In order for the spectrum to be inventoried so that it could be assigned to specific services and multiple carriers, each copper pair would have to be established as a carrier system. The POTS spectrum then would be provisioned as a telephone number-identified ("TN-Identified") circuit and the advanced services spectrum (or other xDSL spectrum divisions/services) would be provisioned as a special service circuit. This will require a massive rebuilding of BellSouth's loop inventory system.

The separation, or segmentation, that would require the rebuilding of the inventory system is needed for provisioning, trouble isolation and repair. In order to establish and assign spectrum segments, provision individual services for individual users over those spectrum segments, isolate trouble conditions, and to maintain both the physical facility and its spectrum

segments properly, an entirely new operations support system (“OSS”), based on spectrum division multiplexing (“SDM”), would have to be created. Such an OSS would be roughly analogous to those currently used to inventory, assign, provision and maintain time division multiplexed (“TDM”) systems (*e.g.*, channelized T1s).

One of the biggest challenges with unbundling the spectrum, which would pervade the OSS, would be customer identification. The ADSL spectrum could not be identified with the POTS telephone number (“TN”), however, because the POTS service would have one customer of record (“COR”), the end user, and the data service would have another COR, the CLEC. Accordingly, the spectrum segment for the ADSL data connection to the CLEC would require a separate special services circuit identification (“ID”) created by a special services service order.<sup>32</sup> Because both the POTS and data services would exist on the same two wire loop, but would be in two different line records, a process would have to be developed to associate the POTS telephone numbers with the data special services circuit ID. This process would affect order taking, service provisioning, maintenance, trouble reports and other systems. For example, trouble reporting for ADSL provided by a CLEC, would have to be reported by the CLEC using a special service circuit ID. Such an identification process would be an immense project to build and, along with other OSS development described above, would be extremely costly to implement.

## **2. Standards Must Be Developed**

Before a SDM OSS could even be developed, standards must be established that: (a) completely specify how the total spectrum (or each individual division) is created; and (b)

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<sup>32</sup> The data service could not be added as an element of the POTS service because it would have a different COR. This would also double the service order requirements which will affect the OSS.

identify the discrete segments into which the spectrum available over a copper pair is to be divided.<sup>33</sup> Moreover, the electrical attenuation characteristics of a copper pair will require that these standards also define both the frequency boundaries in which SDM can exist and the characteristics of the copper loop, *i.e.*, by length, gauge, combinations, bridged tap, repeaters, amplifiers, binder groups, etc., over which SDM can exist. Additionally, each potential use of a given division of the spectrum must have a defined ingress, *i.e.*, connections in a serving wire center, and egress point, *i.e.*, an end user demarcation point, which must also be defined in the new standards. The defined ingress and egress points must be incorporated into the new OSS in order to generate the correct work activities for the correct organization, either BellSouth or the CLEC.

The specifics for the new OSS, such as cost, development time, interfaces to existing OSSs, impacts on existing work centers, cannot be identified until the standards for such an OSS have been developed. It is possible that this new OSS would have to contain, in total, the inventory of all copper loops owned by BellSouth, and the spectrum divisions of each. The OSS would have to handle the loop pairs as carrier systems with associated spectrum segments and individually identified services within those segments. That is, the new OSS would have to handle a combination of POTS services and special services circuits and a separation of records for each service, *e.g.*, line records, trouble histories, billing.

### **3. Testing and Maintenance**

Just as with the OSS, new SDM standards would also be required to design and produce any test equipment necessary to install, test, and maintain services over the various spectrum

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<sup>33</sup> For TDM systems there are standards that specify (and create) those discrete segments (*e.g.*, 24 Channels for a T1).

segments with no (or minimal) interference with services on the other segments. Currently, BellSouth's maintenance systems cannot distinguish data from POTS over a single copper pair. If a loop's spectrum is unbundled and separate, distinct services ride that same copper pair, BellSouth is uncertain how ownership will be established for trouble isolation and maintenance or the individual services, or both, that exists on that pair.

### C. Pricing Issues – Cost Allocation

It cannot be disputed that the driver behind the push for spectrum unbundling is price of an unbundled loop. A certain set of CLECs have mounted a campaign before the Commission based on the principle that they only want to be “data (or advanced services) CLECs” and do not want to provide voice services to the end user. They argue that unless line sharing is implemented, the only way they can provide advanced services is to buy an additional loop from the incumbent LEC.<sup>34</sup> The purchase of an additional loop, they claim, puts them at an economic disadvantage to the incumbent LEC because the incumbent LEC can provide advanced services over the existing voice loop. Thus, these CLECs contend that the incumbent LEC can recover the cost of the loop through the voice service that it offers and reduce the price of its advanced services to the end user below what the CLEC can provide, *i.e.*, a price squeeze.<sup>35</sup> Relying on this price squeeze argument, the goal of the CLECs seeking line sharing is to obtain access to a portion of the loop and pay only a portion of the loop price. Simply put, CLECs want to unbundle the spectrum solely to obtain the benefit of the entire loop at a fraction of the cost.<sup>36</sup>

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<sup>34</sup> An additional loop to the voice loop.

<sup>35</sup> Notice ¶106, n.226.

<sup>36</sup> See *supra*, Section III.B.

There are several fundamental flaws in their argument. First, the Commission appears to accept the CLECs' argument based on a new concept of parity. The Commission seems to reason that because the incumbent LECs can provide advanced services at an incremental cost, the CLECs too are entitled to the same economies of scope. Like incumbent LECs, the CLECs have the option to offer both voice and advanced services over the same loop and achieve the same economies of scope the incumbent LECs do. The CLECs claim to have made a business decision not to provide voice services; not because they can't, but because they simply choose not to do so. Moreover, the CLECs' protestations about not wanting to provide voice service are disingenuous considering their interest in an integrated voice and data service. None of this, however, has anything to do with a price squeeze.

Second, to evaluate the price squeeze argument, the Commission would be forced to allocate loop and central office costs, among all the services using these facilities, including ADSL and voice service provided using the loop facilities. For good reason, the Commission has already rejected starting down this long and slippery allocation slope to micro-regulation of service prices and costs. Neither is there any support in antitrust cases or competitive thinking for the singular notion advanced here, that anticompetitive price squeezes can be created by a firm's choosing to produce less than a full range of products with the inputs provided to it. Instead, antitrust law and competition policy dictate that competitive protections be extended only to efficient firms.

Although the theory of a price squeeze may suggest sub-dividing the local loop costs among various services, the Commission has already decided that a loop is a loop, and that when a CLEC takes an unbundled loop from an incumbent LEC, the CLEC obtains exclusive use of

the entire loop facility for all services.<sup>37</sup> The Commission requires incumbent LECs “to provide requesting carriers with all of the functionalities of a particular element, so that requesting carriers can provide any telecommunications services that can be offered by means of the element.”<sup>38</sup> The Commission specifically rejected the notion that loops be “sub-divided” between voice and “digital service, such as ISDN or ADSL.”<sup>39</sup> The Commission adopted this position to foster competition.<sup>40</sup> Thus, a CLEC that takes an unbundled loop from BellSouth is entitled to the entire telecommunications revenue flow from that loop. The line sharing proposed in the *Notice*, however, denies the same right to the incumbent LEC.

No doubt underlying the Commission’s initial decision not to split the local loop by service is the difficulty and arbitrariness of the task. There is no logical distinction between ADSL service and the many other services that can be provided over the local loop. Allocating a share of the loop costs to ADSL would only start a process under which firms wishing to provide only local service, or particular enhanced services such as alarm monitoring, or limited combinations, could call for allocating loop costs among all these uses.<sup>41</sup> Given the inherent

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<sup>37</sup> *Interconnection Order* at 15646-15647 and 15693.

<sup>38</sup> *Id.* at 15647.

<sup>39</sup> *Id.* at 15693.

<sup>40</sup> *Id.* at 15647. (“We believe this interpretation provides new entrants with the requisite ability to use unbundled elements flexibly to respond to market forces, and thus is consistent with the procompetitive goals of the 1996 Act”).

<sup>41</sup> Added to the complexity of allocating costs among services is the fact that there is no way an incumbent LEC can determine the services for which the spectrum would be used. For example, once a CLEC is allowed to connect the loop to its equipment and obtain access to spectrum above the voice spectrum, BellSouth would have no way to determine how that bandwidth is being used. For example, the loop could extend to an apartment complex in which the CLEC could install T1 electronics and provide 24 voice grade channels to various customers. Moreover, as CLECs move toward networks that allow voice to be digitized and carried in packetized format they can carry both advanced services and voice services over the advanced services spectrum thereby eliminate the incumbent LECs’ voice service, but avoid having to purchase the entire loop. *See supra*, Section III.B.

arbitrariness of allocating joint and common costs, the end result would be a series of nonsensical price floors propping up consumer prices. The Commission's rejection of this approach in the *Interconnection Order* continues to make obvious sense.

The Commission's decision to assign competing carriers full use of unbundled network elements, such as local loops, accords with competition policy. The CLECs argue, however, that the unbundled element prices they must pay to provide ADSL service using BellSouth loops exceed BellSouth's current ADSL retail price. The CLECs are just as able as BellSouth to make a profit with the inputs provided. Although they may wish to restrict their use of the local loop, the CLECs are under no compulsion to refuse the additional revenues that the loop can bring them. As noted above, when a CLEC takes an unbundled loop from BellSouth, that CLEC is entitled to reap the entire telecommunications revenue stream from that loop. The total revenue stream available from the local loop, and any other unbundled network elements involved, will generally equal or exceed the unbundled network element costs involved. Nothing in the *Notice* suggests otherwise.

The oddity of the CLECs' argument is that it reverses the whole notion of a price squeeze. Rather than a monopolist creating a price squeeze, here, the competing firms are creating the squeeze by lowering their own revenues. There is no reason for the Commission to implement rules to protect the particular business strategies of these providers. The Commission need only take action concerning price squeezes where the squeeze threatens to preclude equally efficient firms.<sup>42</sup> BellSouth uses the local loop efficiently in providing both voice and ADSL over the facility. This competitive opportunity is equally available to other firms.

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<sup>42</sup> See *United States v. Aluminum Co. of America (Alcoa)*, 148 F.2d 416 (2d Cir. 1945), (Alcoa's test for identifying anticompetitive price squeezes also requires that the price for the monopoly input be higher than a "fair price." Since prices for the elements sought by the ADSL

**V. Spectrum Compatibility and Management Issues – Discussion of specific points raised in the *Notice***

In addition to a request for comments about spectrum unbundling, the *Notice* seeks comments regarding spectrum compatibility and spectrum management issues. The *Notice* makes a distinction between Spectrum Compatibility and Spectrum Management.<sup>43</sup> BellSouth finds this to be a distinction without a difference. In practice, the issue distills into the degree of management required.

For example, some CLECs have requested that BellSouth examine binder groups<sup>44</sup> in which they are interested in obtaining an unbundled loop to determine whether potential disturbers might be present. Others believe that T1E1.4 should favor the creation of a nationwide database of all binder groups that would include the number and type of services in each.<sup>45</sup> Some have even proposed that BellSouth rearrange the assignment of services so as to group all similar services into unique binder groups.

BellSouth does not have the administrative tools in place to administer cable in this manner. A system to meet these types of administrative burdens would overwhelmingly tax

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complaints are set by state commissions at cost-based rates, the prices are inherently “fair” under Alcoa, and no anticompetitive price squeeze can be involved).

<sup>43</sup> Spectrum compatibility is the process to determine if a particular system is compliant with another system or set of systems. Spectrum management refers to the administration of the loop plant in such a manner as to avoid incompatibilities.

<sup>44</sup> A binder group is a group of cable pairs within a cable sheath. Contrary to the implication of footnote 150 in the *Notice*, except in the smallest of cables, a cable sheath comprises more than one binder group. It should be noted that a cable pair does not traverse one uniform, continuous, binder group. Instead, as cables of different sizes are spliced together, a cable pair may be routed through many different binder groups. Generally, the crosstalk coupling between binder groups is less (less noise power is transferred) than that within a binder group. For this reason, crosstalk analyses are typically only concerned with the noise power (coupled via crosstalk) that might be introduced into a disturbed system by disturbers within the same binder group.

<sup>45</sup> See T1E1.4 Contribution, T1E1.4/99-023

BellSouth. Instead, BellSouth favors a “mix and match” approach, where any compatible system may be connected via any cable pair.<sup>46</sup> This is the system BellSouth currently has in place and uses for its own services.

#### A. Spectrum Compatibility

In the *Notice*, the Commission proposes that T1E1.4 be the forum that develops future power density (“PSD”) masks. BellSouth supports the Commission’s proposal. Since the inception of Basic Rate integrated services digital network (“ISDN”) standards in the late 1980’s, this group has been resolving spectrum management issues. Moreover, this group has devoted substantial time and work to the area in the development of high-bit-rate digital subscriber lines (“HDSL”), ADSL, and now very-high-data-rate digital subscriber lines (“VDSL”). This experience should be invaluable in the development of PSD masks.

The *Notice* indicates that incumbent LECs dominate T1E1.4. While a number of representatives of incumbent LECs participate in T1E1.4, they do not dominate the group. At the November-December meeting of T1E1.4<sup>47</sup> only 17 of the 124 attendees represented large incumbent LEC interests.<sup>48</sup> The *Notice* also indicates that large manufacturers are a dominant group on T1E1. While it is not clear what constitutes a large manufacturer, it should be noted that manufacturers, by their nature, compete with one another. It is true that many manufacturers

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<sup>46</sup> The one exception is repeatered T1 lines. These lines were designed especially for this use. The pairs are typically administered as whole binder groups, and the entire binder groups are spliced into each repeater housing, thus making the pairs unavailable for normal use.

<sup>47</sup> The meeting was held in November-December, 1998. While there have been subsequent meetings, these figures were taken from the latest set of meeting notes available on the T1E1 Web site.

<sup>48</sup> Those having large incumbent LEC interests are assumed to be representatives from Ameritech, Bell Atlantic, Bellcore (now Telcordia), BellSouth, GTE, SBC, Sprint-Local, and US West.

attend T1E1.4, but that is probably because the xDSL standards under discussion relate to an attractive, growing industry.

In addition to proposing that T1E1.4 develop future PSD masks, the *Notice* also seeks comment on whether “a calculation-based approach, in addition to a spectral density mask-based approach, provides a better tool for defining spectral compatibility.” BellSouth asserts that a calculation-based approach for defining spectral compatibility is not the better approach. The xDSL standards developed in T1E1.4 use PSD masks to control the noise generated via crosstalk. While the emerging spectrum management standard in T1E1.4 permits either PSD masks or a calculation-based approach, BellSouth has significant concerns with the calculation-based approach. BellSouth is specifically concerned with the lack of oversight when the calculations will be performed. The calculations are lengthy and considerably complex and there is no independent assurance that the calculations have been performed accurately. The PSD mask, however, permits a third party to make independent measurements to verify a CLEC's or an incumbent LEC's claim of compatibility. BellSouth is unaware of any similar mechanism to verify the calculation-based approach.

#### **B. Spectrum Management**

In the *Notice*, the Commission seeks comments on “encouraging the industry to develop fair and open practices for the development of advanced services technologies.” It proposes that T1E1.4 be the forum to develop such practices. The *Notice* does not define the term “development practices.” Additionally, the term is not used in a context from which a clear meaning can be implied. In an abundance of caution, however, BellSouth states that it vigorously opposes to the development of any practices that would vest in such a forum the process for deciding the placement of new facilities or technologies. Such practices are not an

industry oversight function, but a business decision. There should be no rules that empower oversight committees to interfere with any carrier's infrastructure and network deployment or force the maintenance of otherwise obsolete facilities. Moreover, the scope of T1E1's mandate is limited to developing interface specifications. Consequently, T1E1 does not appear to be the proper forum to accommodate the development of practices, no matter what meaning the Commission intended.

The *Notice* also seeks comment on whether carriers should be required to replace AMI (Alternate Mark Inversion) T1 services with "new and less interfering technologies." AMI T1 services may be provided using fiber multiplexers, HDSL or repeatered T1 lines. Only repeatered T1 lines, however, are particularly troublesome to DSL. For DS1 customers requiring only a few circuits, a fiber multiplexer is generally not economically attractive. If these customers are located beyond the limits of HDSL, repeatered T1 lines are the only economically viable way to provide the service. Accordingly, the Commission should not eliminate this option for T1 services for this group of customers.

### **C. Dispute Resolution**

The *Notice* seeks comments on the prospect of "developing a dispute resolution process for the existence of disturbers in shared facilities." Such a concept is meaningless in today's competitive environment. In reality, simply finding the offending disturber is a lengthy and involved process. Making the necessary measurements at that point to determine compliance becomes a low priority relative to restoring the disturbed customer's service. In today's competitive marketplace, most customers will not tolerate degraded service for any length of time. This consideration is why, historically, the industry has made technical standards very conservative, and thus sought to minimize occasions of lengthy service interruption.

Many existing (and potentially disturbed) products are more susceptible to noise than the theory would predict. This is simply because with any technology, products deployed early are usually not as refined as those deployed later. Thus, the party potentially suffering the most harms (in terms of degraded services to its customer base) is the incumbent LEC. Accordingly, in resolving disputes, the primary emphasis should be on maintaining acceptable service to the largest number of customers, even though perhaps the installed base of products is more susceptible to noise than theoretically predicted. The dispute resolution, therefore, should not consider only standards conformance, but also the number of embedded systems that, while also compliant with the standard in terms of their transmitted signal, do not provide the noise immunity assumed in the spectrum management standard under development.<sup>49</sup>

The *Notice* seeks comments on whether a third party should be used in developing loop spectrum management policies. BellSouth does not see the benefit of introducing a third party in the development of such policies. BellSouth reiterates that it strongly opposes any practices regarding binder-group administration, no matter who is solicited to help in such development. Because there is no uniform, continuous binder group that can be identified and used with such practices, it is difficult to see how an operations system can be developed to administer such practices or how a third party would help solve this problem.

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<sup>49</sup> Standards often assume ideal implementations of products. It could be the case, however, that some xDSL products in the field perform more poorly *i.e.*, let in more noise than the standard assumes. A scenario could exist where these products would fail to operate after other xDSL products, which all meet the standard, were added to the cable.

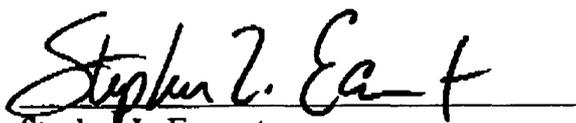
**VI. Conclusion**

The *Notice* has proposed a very broad concept of line sharing. This concept appears to include not only BellSouth's wholesale ADSL tariff offering to CLECs and ISPs, but also spectrum unbundling. In these comments, BellSouth has demonstrated that prescription of such a broad concept of line sharing is at best premature, and given the validity of the arguments against line sharing should not ever be adopted by the Commission. BellSouth urges the Commission to reconsider its tentative conclusions in the *Notice* and not to issue any rules or regulations that would attempt to implement such a broad and vague concept. In particular BellSouth urges the Commission completely to reject spectrum unbundling. Spectrum unbundling will never come close to reaping benefits that equal or exceed its cost of implementation. Accordingly, BellSouth urges the Commission to reconsider its tentative conclusions in the *Notice* and not adopt line sharing as proposed.

Respectfully submitted,

**BELLSOUTH CORPORATION**

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Date: June 15, 1999

**CERTIFICATE OF SERVICE**

I do hereby certify that I have this 15th day of June, 1999, served the following parties to this action with a copy of the foregoing *COMMENTS OF BELLSOUTH CORPORATION*, reference CC Docket No. 98-147, by hand delivery or by placing a true and correct copy of the same in the United States Mail, postage prepaid, addressed to the parties as set forth on the attached service list.

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