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## I. INTRODUCTION

1. In this proceeding, we respond to the Supreme Court's January 1999 decision that directs us to reevaluate the unbundling obligations of section 251 of the Telecommunications Act of 1996 (1996 Act).<sup>1</sup> The Supreme Court's decision removed many of the uncertainties surrounding the requirements of section 251 by upholding the majority of the Commission's rules implementing that section of the Act, including the Commission's jurisdiction to implement sections 251 and 252 of the Act, the Commission's definitions of network elements, and the Commission's rule requiring incumbent local exchange carriers (LECs) to offer combinations of unbundled network elements that are already combined. The Court has directed us, however, to revise the standards under which the unbundling obligations of section 251(c)(3) are determined. Specifically, the Court has required us to give some substance to the "necessary" and "impair" standards in section 251(d)(2), and to develop a limiting standard that is "rationally related to the goals of the Act." In addition, as we develop the "necessary" and "impair" standards, the Court has required us to consider the availability of alternative network elements outside the incumbent's network.<sup>2</sup>

2. In passing the 1996 Act, Congress overhauled many aspects of federal regulation of telecommunications services by establishing a pro-competitive and deregulatory framework designed to benefit "all Americans by opening all telecommunications markets to competition."<sup>3</sup> Two of the fundamental goals of the 1996 Act are to open the local exchange and exchange access markets to competition and to promote innovation and investment by all participants in the telecommunications marketplace.<sup>4</sup> Congress sought to foster this competition by fundamentally changing the conditions and incentives for market entry and by attempting to open any remaining local service bottlenecks.<sup>5</sup> As a result, the provisions of the 1996 Act set the stage for a new competitive paradigm in which carriers in previously segmented markets are able to compete in a dynamic and integrated telecommunications market that promises lower prices and more innovative services to consumers.

3. Central to the new statutory scheme is section 251 of the Act, which seeks generally to reduce inherent economic and operational advantages possessed by incumbent local exchange carriers. Toward this end, section 251 imposes specific

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<sup>1</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, codified at 47 U.S.C. §§ 151 et seq. (1996 Act).

<sup>2</sup> *AT&T v. Iowa Utils. Bd.*, 119 S. Ct. 721, 734-36 (1999) (*Iowa Utils. Bd.*).

<sup>3</sup> Joint Statement of Managers, S. Conf. Rep. No. 104-230, 104<sup>th</sup> Cong., 2d Sess., at 1 (1996) (*Joint Explanatory Statement*).

<sup>4</sup> *Joint Explanatory Statement* at 1.

<sup>5</sup> See *BellSouth Corp. v. FCC*, 144 F.3d 58, 61 (D.C. Cir. 1998) ("The 1996 Act rescinded the [Modified Final Judgment] . . . and changed the entire telecommunications landscape.").

market-opening mechanisms, such as mandatory interconnection, unbundling, and resale requirements on incumbent LECs, in order to break the incumbents' control over local facilities.<sup>6</sup> Congress directed the Commission to implement the provisions of section 251, and to specifically determine which network elements should be unbundled pursuant to section 251(c)(3).<sup>7</sup>

4. Pursuant to our statutory mandate and the directives of the Supreme Court, we reevaluate the unbundling obligations of incumbent LECs, pursuant to sections 251(c)(3) and 251(d)(2). The new standards and framework we adopt in this Order for determining which network elements incumbent LECs must make available on an unbundled basis will remove the uncertainties surrounding the incumbents' unbundling obligations since passage of the Act. More importantly, however, they will define the competitive landscape of telecommunications markets for the foreseeable future.

5. The standards and unbundling obligations that we adopt in this Order are designed to create incentives for both incumbent and competitive LECs to innovate and invest in technologies and services that will benefit consumers through increased choices of telecommunications services and lower prices. We recognize that there will be a continuing need for all three of the arrangements Congress set forth in section 251 to remain available to competitors so that they can serve different types of customers in different geographic areas.<sup>8</sup> We continue to believe that the ability of requesting carriers to use unbundled network elements, including various combinations of unbundled network elements, is integral to achieving Congress' objective of promoting rapid competition to all consumers in the local telecommunications market.<sup>9</sup> Moreover, in some areas, we believe that the greatest benefits may be achieved through facilities-based competition, and that the ability of requesting carriers to use unbundled network elements, including various combinations of unbundled network elements, is a necessary precondition to the subsequent deployment of self-provisioned network facilities.

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<sup>6</sup> 47 U.S.C. §§ 251(c)(3) and (d)(2). The Act also encourages new entrants to construct their own competitive facilities. In particular, it requires incumbent LECs to interconnect competitive LECs' facilities and equipment with their networks. 47 U.S.C. § 251(c)(2).

<sup>7</sup> Section 251(d)(2) states that "in determining what network elements should be made available for purposes of subsection (c)(3), *the Commission shall consider, at a minimum whether [the elements meet the "necessary" and "impair" standards].* 47 U.S.C. § 251(d)(2) (emphasis added).

<sup>8</sup> *See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499, 15509, para. 12 (1996) (*Local Competition First Report and Order*), aff'd in part and vacated in part sub nom., *Competitive Telecommunications Ass'n v. FCC*, 117 F.3d 1068 (8<sup>th</sup> Cir. 1997) (*CompTel v. FCC*) and *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8<sup>th</sup> Cir. 1997) (*Iowa Utils. Bd. v. FCC*), aff'd in part and remanded, *AT&T v. Iowa Utils. Bd.*, 119 S. Ct. 721 (1999); Order on Reconsideration, 11 FCC Rcd 13042 (1996), Second Order on Reconsideration, 11 FCC Rcd 19738 (1996), Third Order on Reconsideration and Further Notice of Proposed Rulemaking, 12 FCC Rcd 12460 (1997), further recons. pending.

<sup>9</sup> *See Local Competition First Report and Order*, 11 FCC Rcd at 15509, para. 12.

6. Although Congress did not express explicitly a preference for one particular competitive arrangement, it recognized implicitly that the purchase of unbundled network elements would, at least in some situations, serve as a transitional arrangement until fledgling competitors could develop a customer base and complete the construction of their own networks. In particular, Congress stated: “[I]t is unlikely that competitors will have a fully redundant network in place when they initially offer local service because the investment necessary is so significant. Some facilities and capabilities . . . will likely need to be obtained from the incumbent [LEC] as network elements pursuant to new section 251.”<sup>10</sup> Implicit in this recognition, and in section 271’s requirement that the Bell Operating Companies (BOCs) provide access and interconnection to their network facilities in accordance with the requirements in the competitive checklist, is Congress’s expectation that new competitors would use unbundled elements from the incumbent LEC until it was practical and economically feasible to construct their own networks.<sup>11</sup>

7. We fully expect that over time competitors will prefer to deploy their own facilities in markets where it is economically feasible to do so, because it is only through owning and operating their own facilities that competitors have control over the competitive and operational characteristics of their service, and have the incentive to invest and innovate in new technologies that will distinguish their services from those of the incumbent. Unbundling rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate, and will allow the Commission and the states to reduce regulation once effective facilities-based competition develops.<sup>12</sup> Accordingly, the unbundling rules we adopt in this proceeding seek to promote the development of facilities-based competition.

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<sup>10</sup> *Joint Explanatory Statement* at 148.

<sup>11</sup> *See* 47 U.S.C. § 271(c)(2)(B).

<sup>12</sup> *See Promotion of Competitive Networks in Local Telecommunications Markets*, Notice of Proposed Rulemaking and Notice of Inquiry in WT Docket No. 99-217 and Third Further Notice of Proposed Rulemaking in CC Docket No. 96-98, FCC 99-141, paras. 4, 23 (rel. July 7, 1999) (*Competitive Networks Notice*) (“We believe that, in the long term, the most substantial benefits to consumers will be achieved through facilities-based competition, because only facilities-based competitors can break down the incumbent LECs’ bottleneck control over local networks and provide services without having to rely on their rivals for critical components of their offerings. Moreover, only facilities-based competition can fully unleash competing providers’ abilities and incentives to innovate, both technologically and in service development, packaging, and pricing. . . . In order for competitive networks to develop, the incumbent LECs’ bottleneck control over interconnection must dissipate. As the market matures and the carriers providing services in competition with the incumbent LECs’ local exchange offerings grow, we believe these carriers may establish direct routing arrangements with one another, forming a network of networks around the current system. In time, it is likely that the incumbent LECs will cease to be viewed as the presumptive primary providers of interconnection, and indeed they will begin to seek interconnection and other arrangements with their challengers. These circumstances would strengthen the case for substantial deregulation of the incumbent LECs.”).

8. We believe that the “necessary” and “impair” standards we adopt below address the Supreme Court’s mandate and implement the statutory language and goals of the Act. The standards we adopt take into consideration alternatives outside the incumbent LEC’s network, and whether those alternatives are actually available to the requesting carrier as a practical, economic, and operational matter. We consider not only the direct costs, but also other costs and impediments associated with using alternative elements that may constitute barriers to entry. We believe the Commission must assess these factors to determine the availability of alternatives, and whether access to the incumbent’s network element thereby satisfies the “necessary” and “impair” standards of section 251(d)(2).

9. The unbundling standards we adopt in this Order also seek to encourage the rapid introduction of competition in all markets, including residential and small business markets. They seeks to create incentives for both incumbents and requesting carriers to invest and innovate in new technologies by establishing a mechanism by which regulatory obligations to provide access to network elements will be reduced as alternatives to the incumbent LECs’ network elements become available in the future. In addition, the standards provide reasonable certainty regarding the availability of unbundled elements, thereby allowing requesting carriers to attract investment capital and move forward with implementing national and regional business plans that will allow them to serve the greatest number of consumers

10. To date, we have seen the development of facilities-based competition among providers of particular services in certain sectors of the market. For example, as discussed in more detail below, competitors have deployed their own fiber rings and approximately 700 circuit switches to provide local exchange and exchange access services primarily to medium and large business customers in high-density metropolitan areas.<sup>13</sup> In addition, the record in this proceeding suggests that a growing number of carriers are deploying packet switches to provide data services in a number of markets, particularly for end users with substantial telecommunications needs.<sup>14</sup>

11. Other local markets, however, particularly the residential and small business markets, and geographic markets outside of major metropolitan areas, have seen minimal competition. This may be due to the uncertainty surrounding the ability of competitive LECs to use reasonably priced unbundled network elements to serve these areas as a result of litigation concerning the Commission’s unbundling rules.<sup>15</sup> Because unbundled network elements have not been made fully available to requesting carriers as the Commission expected in 1996, we do not yet know the extent to which competition will develop once all of the unbundling rules are actually implemented by incumbent LECs.

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<sup>13</sup> See *infra* Section V(D)(1).

<sup>14</sup> See *infra* Section V(D)(2).

<sup>15</sup> See MCI WorldCom Comments, Tab 1, Decl. of Judith R. Levine/Ronald J. McMurtrie, at para. 7.

12. Only recently have incumbent LECs provided access to combinations of unbundled loops, switches, and transport elements, often referred to as “the platform.” Since these combinations of unbundled network elements have become available in certain areas, competitive LECs have started offering service in the residential mass market in those areas. For example, in January of this year, Bell Atlantic, as part of an agreement with the New York Public Service Commission, began offering the unbundled network element platform out of particular end offices in New York City. As a result, MCI WorldCom had acquired upwards of 60,000 new local residential customers in New York as of June 1999.<sup>16</sup> AT&T also plans to serve local residential customers over the platform in Texas.<sup>17</sup>

13. For effective competition to develop as envisioned by Congress, competitors must have access to incumbent LEC facilities in a manner that allows them to provide the services that they seek to offer, as contemplated in section 251(d)(2) of the Act. Despite the development of competition in some markets, incumbents still control the vast majority of the facilities that comprise the local telecommunications network, giving them advantages of economies of scale and scope not enjoyed by competitive LECs.<sup>18</sup> Because competitors do not yet enjoy the same economies of scale, scope and ubiquity as the incumbent, they may be impaired if they do not have access, at least initially, to certain network elements supplied by the incumbent LEC.<sup>19</sup> For example, without access to unbundled network elements, a competitive LEC may choose not to enter a particular market because the cost and delays associated with deploying its own facilities would be too high given the revenues obtainable from that market and the relative attractiveness of other potential new markets. Similarly, a competitive LEC may decline to enter a market because certain of their facilities are subject to economies of scale and scope such that the competitor would need a larger market share than it is likely to have initially. In such cases, competitors may choose to enter a certain market if they can obtain access to particular unbundled network elements on sufficiently favorable

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<sup>16</sup> *Id.* at para. 17.

<sup>17</sup> Letter from Frank S. Simone, Government Affairs Director, AT&T, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, Attachment at 4-5 (filed June 25, 1999).

<sup>18</sup> *Local Competition: August 1999*, Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, at 23 (August 1999) (*FCC Local Competition Report*) (explaining that investment analysts’ estimate of total switched lines owned by competitive LECs is in the range of two to three percent of nationwide switched access lines). *See also* Texas PUC Comments at 14 (stating that in Texas, for example, incumbent LECs own 98 percent of all access lines and have deployed 1538 switches throughout the state).

<sup>19</sup> *See, e.g.*, MCI WorldCom Comments, Tab 3, Decl. of Mark T. Bryant, at paras. 2-20 (describing the economies of scale to which all loop, transport and switching unbundled network elements are subject); Covad Comments at iii-iv; Prism Comments at 5-6; Qwest Comments at 8-9; AT&T Reply Comments at 45-46.

terms that such scale economies are overcome, and other potential markets no longer appear more attractive.

14. The standards and rules we adopt in this Order seek to build on industry experience and technological changes that have occurred in the telecommunications marketplace since the 1996 Act was enacted three years ago. Today, both incumbent LECs and requesting carriers are at the early stages of deploying innovative technologies to meet the ever-increasing demand for high-speed, high-capacity advanced services. To encourage competition among carriers to develop and deploy new advanced services, the marketplace for these services must be conducive to investment, innovation, and meeting the needs of consumers. Accordingly, our unbundling rules are designed to facilitate the rapid and efficient deployment of all telecommunications services, including advanced services. Specifically, unbundling rules that are based on a preference for development of facilities-based competition in the long run will provide incentives for both incumbents and competitors to invest and innovate, and should allow the Commission to reduce regulation once true facilities-based competition develops.

15. The unbundling standards we adopt in this order also are designed to be administratively practical and respond to changes in the marketplace as alternatives to the incumbent LECs' network elements become available. We are committed to reviewing the unbundling obligations in three years, and as the marketplace changes with the development of new technologies and increased facilities-based competition, we will modify the list of unbundled elements, as warranted.

## II. EXECUTIVE SUMMARY

**Section 251(d)(2)'s "Necessary" and "Impair" Standards.** Section 251(d)(2)(A)'s "necessary" standard is a stricter standard that applies to proprietary network elements. Section 251(d)(2)(B)'s "impair" standard applies to non-proprietary network elements. Applying a stricter standard to proprietary network elements is consistent with Congress' intention to spur innovation and investment by both incumbent and competitive LECs. In applying these standards, we look first to what is occurring in the marketplace today.

- **Necessary.** A proprietary network element is "necessary" within the meaning of section 251(d)(2)(A) if, taking into consideration the availability of alternative elements outside the incumbent's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third party supplier, lack of access to that element would, as a practical, economic, and operational matter, *preclude* a requesting carrier from providing the services it seeks to offer. There are limited circumstances under which we may unbundle proprietary information or functionalities even if those elements are not strictly "necessary," as long as the "impair" standard is met. These circumstances are: (1) where an incumbent LEC, for the primary purpose of causing a particular network to be evaluated under the stricter "necessary" standard in order to avoid its unbundling obligation, implements only a minor modification to the network element to make the element proprietary; (2) where an incumbent LEC cannot demonstrate that the information or functionality that

it claims is proprietary differentiates its services from its competitors' services, or is otherwise competitively significant; or (3) where lack of access to the proprietary element would jeopardize the goal of the 1996 Act to bring rapid competition to the greatest number of consumers.

- Impair. The incumbent LECs' failure to provide access to a non-proprietary network element "impairs" a requesting carrier within the meaning of section 251(d)(2)(B) if, taking into consideration the availability of alternative elements outside the incumbent's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third-party supplier, lack of access to that element *materially diminishes* a requesting carrier's ability to provide the services it seeks to offer. In order to evaluate whether there are alternatives actually available to the requesting carrier as a practical, economic, and operational matter, we look at the totality of the circumstances associated with using an alternative. In particular, our "impair" analysis considers the cost, timeliness, quality, ubiquity, and operational issues associated with use of the alternative.

**Goals of the Act.** We also interpret the obligations imposed in section 251(d)(2) within the larger statutory framework of the 1996 Act. Congress apparently contemplated that we would consider additional factors by directing the Commission, in section 251(d)(2), to "consider *at a minimum*" the "necessary" and "impair" standards. The Supreme Court decision requires us to apply a limiting standard "rationally related to the goals of the Act." Accordingly, in addition to the factors set forth above, we may consider the following factors:

- Rapid Introduction of Competition in All Markets. We may consider whether the availability of an unbundled network element is likely to encourage requesting carriers to enter the local market in order to serve the greatest number of consumers as rapidly as possible. We also note that Congress required Bell Operating Companies to demonstrate that they are providing loops, switching, transport, signaling and databases, and operator services/directory assistance in order to obtain in-region, interLATA approval. While the section 271 checklist does not determine definitively which elements all incumbent LECs are required to unbundle pursuant to section 251, it sheds some light on what Congress believed was required to open local markets to competition. Accordingly, we believe that we may consider whether requiring all incumbent LECs to unbundle these same elements would promote the rapid introduction of competition on a nationwide basis.
- Promotion of Facilities-Based Competition, Investment, and Innovation. We may consider the extent to which the unbundling obligations we adopt will encourage the development of facilities-based competition by competitive LECs, and innovation and investment by both incumbent LECs and competitive LECs, especially for the provision of advanced services.

- Reduced Regulation. We may consider the extent to which we can encourage investment and innovation by reducing regulatory obligations to provide access to network elements, as alternatives to the incumbent LECs' network elements become available in the future.
- Certainty in the Market. We may consider how the unbundling obligations we adopt can provide the uniformity and predictability that new entrants and fledgling competitors need to develop national and regional business plans. We also consider whether the rules we adopt provide financial markets with reasonable certainty so that carriers can attract the capital they need to execute their business plans to serve the greatest number of consumers.
- Administrative Practicality. We may consider whether the unbundling obligations we adopt are administratively practical to apply.

#### **Modification of the National List.**

- The Order recognizes that rapid changes in technology, competition, and the economic conditions of the telecommunications market will require a reevaluation of the national unbundling rules periodically. In order to encourage a reasonable period of certainty in the market, the Commission expects to reexamine the national list of unbundled network elements in three years.
- Section 251(d)(3) permits state commissions to require incumbent LECs to unbundle additional elements as long as the obligations are consistent with the requirements of section 251 and the national policy framework instituted in this Order.
- Removal of elements from the national list on a state-by-state basis would not be consistent with section 251 and the goals of the Act.

**Network Elements that Must be Unbundled.** Applying the above factors, the Order concludes that the following network elements must be unbundled:

- Loops. Incumbent local exchange carriers (LECs) must offer unbundled access to loops, including high-capacity lines, xDSL-capable loops, dark fiber, and inside wire owned by the incumbent LEC. The unbundling of the high frequency portion of the loop is being considered in another proceeding.
- Subloops. Incumbent LECs must offer unbundled access to subloops, or portions of the loop, at any accessible point. Such points include, for example, a pole or pedestal, the network interface device, the minimum point of entry to the customer premises, and the feeder distribution interface located in, for example, a utility room, a remote terminal, or a controlled environment vault. The Order establishes a rebuttable presumption that incumbent LECs must offer

unbundled access to subloops at any accessible terminal in their outside loop plant.

- To the extent there is not currently a single point of interconnection that can be feasibly accessed by a requesting carrier, we encourage parties to cooperate in any reconfiguration of the network necessary to create one. If parties are unable to negotiate a reconfigured single point of interconnection at multi-unit premises, we require the incumbent to construct a single point of interconnection that will be fully accessible and suitable for use by multiple carriers.
- Network Interface Device (NID). Incumbent LECs must offer unbundled access to NIDs. The NID includes any potential means of interconnection with customer premises inside wiring at the point where the carrier's local loop facilities end, such as at a cross connect device used to connect the loop to customer-controlled inside wiring. This includes all features, functions, and capabilities of the facilities used to connect the loop to premises wiring, regardless of the specific mechanical design.
- Circuit Switching. Incumbent LECs must offer unbundled access to local circuit switching, except for local circuit switching used to serve end users with four or more lines in access density zone 1 in the top 50 Metropolitan Statistical Areas (MSAs), provided that the incumbent LEC provides non-discriminatory, cost-based access to the enhanced extended link throughout zone 1. (An enhanced extended link (EEL) consists of a combination of an unbundled loop, multiplexing/concentrating equipment, and dedicated transport. The EEL allows new entrants to serve customers without having to collocate in every central office in the incumbent's territory.) Local circuit switching includes the basic function of connecting lines and trunks on the line-side and port-side of the switch. The definition of the local switching element encompasses all of the features, functionalities, and capabilities of the switch.
- Packet Switching. Incumbent LECs must offer unbundled access to packet switching only in limited circumstances in which the incumbent has placed digital loop carrier systems in the feeder section of the loop or has its Digital Subscriber Line Access Multiplexer (DSLAM) in a remote terminal. The incumbent will be relieved of this obligation, however, if it permits a requesting carrier to collocate its DSLAM in the incumbent's remote terminal on the same terms and conditions that apply to its own DSLAM. Packet switching is defined as the function of routing individual data message units based on address or other routing information contained in the data units, including the necessary electronics (*e.g.*, DSLAMs).
- Interoffice Transmission Facilities. Incumbent LECs must offer unbundled access to dedicated interoffice transmission facilities, or transport, including dark fiber. Dedicated interoffice transmission facilities are defined as incumbent LEC transmission facilities dedicated to a particular customer or

carrier that provide telecommunications between wire centers owned by the incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers. State commissions are free to establish reasonable limits governing access to dark fiber if incumbent LECs can show that they need to maintain fiber reserves.

- Incumbent LECs must also offer unbundled access to shared transport where unbundled local circuit switching is provided. Shared transport is 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's network.
- Signaling and Call-Related Databases. Incumbent LECs must offer unbundled access to signaling links and signaling transfer points (STPs) in conjunction with unbundled switching, and on a stand-alone basis. The signaling network element includes, but is not limited to, signaling links and STPs. Incumbent LECs must also offer unbundled access to call-related databases, including, but not limited to, the Line Information database (LIDB), Toll Free Calling database, Number Portability database, Calling Name (CNAM) database, Operator Services/Directory Assistance databases, Advanced Intelligent Network (AIN) databases, and the AIN platform and architecture. We do not require incumbent LECs to unbundle access to certain AIN software that qualify for proprietary treatment.
- Operations Support Systems (OSS). Incumbent LECs must offer unbundled access to their operations support systems. OSS consists of pre-ordering, ordering, provisioning, maintenance and repair, and billing functions supported by an incumbent LEC's databases and information. The OSS element includes access to all loop qualification information contained in any of the incumbent LEC's databases or other records, including information on whether a particular loop is capable of providing advanced services.

**Network Elements that Need Not be Unbundled.** The following network elements need not be unbundled:

- Operator Services and Directory Assistance (OS/DA). Incumbent LECs are not required to unbundle their OS/DA services pursuant to section 251(c)(3), except in the limited circumstance where an incumbent LEC does not provide customized routing to a requesting carrier to allow it to route traffic to alternative OS/DA providers. Operator services are any automatic or live assistance to a consumer to arrange for billing or completion of a telephone call. Directory assistance is a service that allows subscribers to retrieve telephone numbers of other subscribers. Incumbent LECs, however, remain obligated under the non-discrimination requirements of section 251(b)(3) to comply with the reasonable request of a carrier that purchases the incumbents' OS/DA

services to rebrand or unbrand those services, and to provide directory assistance listing updates in daily electronic batch files.

- Shared Transport where Circuit Switching is not Unbundled. Incumbent LECs are not required to unbundle shared transport where they are not required to offer unbundled local circuit switching, as described above.
- Packet Switching. Incumbent LECs are not required to unbundle packet switching, except in a limited circumstance. Competitive LECs are actively deploying packet switches to serve high-volume customers, and are not impaired in their ability to offer service to such customers without access to the incumbent LEC's facilities. Competitive LECs are impaired, however, in their ability to provide services to small-volume users without access to unbundled packet switching. Nonetheless, we consider the other goals of the Act in making our unbundling determination, and conclude that given the nascent nature of the advanced services market and the Act's goal to provide incentives to all carriers to invest and innovate, incumbent LECs are generally not required to unbundle packet switching.

#### **Section 271-Related Issues.**

- If a network element on the section 271 competitive checklist is not required to be unbundled pursuant to section 251(c)(3) (*i.e.*, local circuit switching and shared transport in certain circumstances), Bell Operating Companies are not required to offer unbundled access to any such checklist items in compliance with the Commission's pricing rules. Rather, the applicable price, terms, and conditions for that element are determined by applying sections 201(b) and 202(a) of the Act.

#### **Combinations of Network Elements.**

- Given the pendency of litigation in the Court of Appeals for the Eighth Circuit, the Order declines to define the enhanced extended link as a separate network element, nor does it address whether an incumbent LEC must combine network elements that are not already combined in the network.

#### **Further Notice of Proposed Rulemaking: Use of Unbundled Network Elements to Provide Exchange Access Service.**

- The Further Notice seeks comment on whether there is any basis in the statute or our rules under which incumbent LECs could decline to provide entrance facilities (the link between an interexchange carrier's point of presence and an incumbent's switch or serving wire center) at unbundled network element prices.
- The Further Notice also invites parties to refresh the record on whether requesting carriers may use unbundled dedicated or shared transport facilities in

conjunction with unbundled switching to originate or terminate interstate toll traffic to customers to whom the requesting carrier does not provide local exchange service.

### III. BACKGROUND

16. On August 8, 1996, the Commission adopted the *Local Competition First Report and Order*, implementing the local competition provisions of the 1996 Act. In that order, the Commission established rules governing the obligations of incumbent LECs to open their local networks to competition pursuant to the requirements of section 251 of the 1996 Act. Among other things, the order adopted rules implementing the network unbundling requirements of sections 251(c)(3) and 251(d)(2) of the 1996 Act. Section 251(c)(3) imposes a duty on all incumbent LECs to provide to competitors access to network elements on an unbundled basis.<sup>20</sup> Section 251(d)(2) provides that, in determining which network elements should be unbundled under section 251(c)(3), the Commission shall consider, “at a minimum, whether -- (A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network element would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.”<sup>21</sup>

17. In the *Local Competition First Report and Order*, the Commission applied its interpretation of the “necessary” and “impair” standards of section 251(d)(2) to the unbundling requirements of section 251(c)(3). Specifically, the Commission defined “necessary” to mean “an element is a prerequisite for competition,”<sup>22</sup> and it defined “impair” to mean “to make or cause to become worse; diminish in value.”<sup>23</sup> The Commission also determined that a requesting carrier’s ability to offer service is “impaired” or “diminished in value” if “the quality of the service the entrant can offer, absent access to the requested element, declines” or if “the cost of providing the service rises.”<sup>24</sup>

18. After addressing the “necessary” and “impair” standards, the Commission adopted rule 51.319, which sets forth the network elements that incumbent LECs were required to make available to requesting carriers on an unbundled basis.<sup>25</sup> Section 51.319 of the Commission’s rules required incumbent LECs to offer unbundled access to the

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<sup>20</sup> Certain rural telephone companies may be exempt from the unbundling provisions of section 251. See 47 U.S.C. § 251(f).

<sup>21</sup> 47 U.S.C. § 251(d)(2).

<sup>22</sup> *Local Competition First Report and Order*, 11 FCC Rcd at 15641-42, para. 282.

<sup>23</sup> *Id.* at para. 285 (quoting Random House College Dictionary 665 (rev. ed. 1984)).

<sup>24</sup> *Local Competition First Report and Order*, 11 FCC Rcd at 15643, para. 285.

<sup>25</sup> *Id.* at 15683, para. 366.

following network elements: (1) local loops; (2) network interface devices; (3) local switching; (4) interoffice transmission facilities; (5) signaling networks and call-related databases; (6) operations support systems; and (7) operator services and directory assistance.<sup>26</sup> Section 51.317 of the Commission's rules allowed states to impose additional unbundling requirements pursuant to the Commission's interpretation of section 251(d)(2).<sup>27</sup>

19. Following adoption of the *Local Competition First Report and Order*, incumbent LECs and state commissions filed various challenges to the Commission's rules; these appeals were consolidated in the Eighth Circuit. The Eighth Circuit, among other holdings, rejected the incumbent LECs' argument that, in determining which elements were subject to the unbundling requirements, the Commission had not properly applied the "necessary" and "impair" standards of section 251(d)(2).<sup>28</sup> Accordingly, the Eighth Circuit upheld section 51.319. The Supreme Court granted several parties' requests to review the Eighth Circuit's decision.

20. In its January 25, 1999 opinion, the Supreme Court reversed the Eighth Circuit's decision on this issue, stated that section 51.319 should be vacated, and remanded the matter for further proceedings.<sup>29</sup> While the Court affirmed that the Commission has jurisdiction to implement the local competition provisions of the 1996 Act, including the unbundling requirements in section 251, it concluded that the Commission had not adequately considered the "necessary" and "impair" standards of section 251(d)(2).<sup>30</sup> The Court found, among other things, that the Commission, in deciding which elements must be unbundled, did not adequately take into consideration

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<sup>26</sup> 47 C.F.R. § 51.319. *Local Competition First Report and Order*, 11 FCC Rcd at 15641-42, paras. 281-83.

<sup>27</sup> 47 C.F.R. § 51.317.

<sup>28</sup> *Iowa Utils. Bd. v. FCC*, 120 F.3d at 808-10.

<sup>29</sup> *Iowa Utils. Bd.*, 119 S. Ct. at 733-36. As already noted, the Supreme Court upheld all but one of the local competition rules that had been challenged. The Supreme Court held that the Commission has general jurisdiction to implement the 1996 Act's local competition provisions, and that the Commission's rulemaking authority extends to sections 251 and 252. The Court further found that: (1) the Commission's interpretation of "network element," as including operator services and directory assistance, operational support systems, and vertical switching functions such as caller I.D., call forwarding, and call waiting, is reasonable; (2) the Commission reasonably omitted a facilities-ownership requirement; (3) the Commission's rule 51.315(b), which forbids incumbents from separating already-combined network elements before leasing them to competitors, reasonably interprets section 251(c)(3) of the 1996 Act; and (4) the Commission's "pick and choose" rule that requires an incumbent LEC to make available to any requesting carrier any individual interconnection, service, or network element arrangement contained in any state-approved agreement "upon the same rates, terms, and conditions as those provided in the agreement" is a reasonable interpretation of section 252(i) of the 1996 Act. *Id.* at 729-34.

<sup>30</sup> *Id.* at 730-36.

the “availability of elements outside the incumbent’s network.”<sup>31</sup> The Court also faulted the Commission’s “assumption that *any* increase in cost (or decrease in quality) imposed by a denial of a network element renders access to that element ‘necessary,’ and causes the failure to provide that element to ‘impair’ the entrant’s ability to furnish its desired services. . . .”<sup>32</sup> In addition, the Court criticized the Commission’s interpretation of section 251(d)(2) because it “allows entrants, rather than the Commission, to determine” whether the requirements of that section are satisfied.<sup>33</sup> On April 16, 1999, we released a Second Further Notice in this docket seeking comment on the appropriate unbundling standard, and which network elements should be unbundled.<sup>34</sup>

#### IV. FRAMEWORK FOR DECIDING WHAT NETWORK ELEMENTS MUST BE UNBUNDLED PURSUANT TO SECTION 251

##### A. Overview

21. In this section, we discuss our framework for determining whether a particular network element should be unbundled. We interpret the terms “necessary,” “impair,” and “proprietary” in section 251(d)(2) in a manner that gives substance to those terms. We then discuss how we will evaluate alternative elements that are available through self-provisioning or from third-party suppliers. In considering whether to unbundle a particular network element, we look first to what is occurring in the marketplace today. For some network elements, we are beginning to see competitors using alternatives in discrete situations. In order to determine whether these alternative sources of network elements are actually available as a practical, economic, and operational matter, so that incumbents should be free of any unbundling obligations for that element, we look at several factors, including cost, ubiquity, quality, timeliness, and operational impediments.

22. We acknowledge that given the complexity associated with a competitive LEC’s decision to enter a certain market, it is extremely difficult to identify one particular factor that is dispositive of whether or not a competitor will seek to offer a particular service in any given market. For example, even where a competitive LEC’s costs to provide a service may be comparable to the incumbent’s costs to provide a similar service, the competitive LEC, because it cannot enter all markets simultaneously, may choose not to enter a particular market at a particular time because there are other markets that are relatively more profitable to serve. The competitive LEC might also be dissuaded from entering a market because of subsidy distortions or other regulatory factors.

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<sup>31</sup> *Id.* at 735.

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *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 (rel. Apr. 16, 1999) (*Notice*). A list of parties submitting Comments and Reply Comments is provided in Appendix A.

Conversely, notwithstanding the fact that a competitive LEC's infrastructure costs in a particular market may be materially different from the incumbent LECs' costs, the competitive LEC may still choose to enter that market if it can provide more services over its network infrastructure, or offer marketing, service, or technical innovations for which customers will pay a premium.

23. Although we may not be able to identify with precision a competitor's incentives, or lack of incentives to enter a particular market, we nonetheless find that evidence demonstrating the lack of competition in certain areas of the country and among certain classes of customers is a strong indicator that there may exist economic and other types of barriers that may, at a minimum, impair a competitor's ability to compete vis-à-vis the incumbent. Accordingly, based on evidence provided in the record, we use our administrative judgment to identify several factors, including cost, ubiquity, quality, timeliness, and operational impediments, that we find particularly helpful in explaining whether a competitor's ability to provide the service it seeks to offer is impaired without access to a particular unbundled network element. Based on the actual state of competition, we look at these factors and their relationship to alternative sources of network elements to determine whether the alternatives are actually available as a practical, economic, and operational matter.

24. In particular, we examine both the direct and other costs a carrier incurs to substitute the alternative network element for the incumbent LEC's network element. We also consider whether self-provisioning or purchasing a network element from a third-party supplier would prevent a requesting carrier from entering the market within a reasonable time, or from expanding its operations to meet promptly the demand of its customers. In addition to costs and delays, we consider whether using alternative sources of network elements introduces quality differences or operational or technical impediments that may impair a requesting carrier's ability to provide the services that it seeks to offer. Specifically, we assess whether use of an alternative source of the network element would cause a requesting carrier's customers to experience degraded service.

25. We also consider the extent to which a requesting carrier can compete for customers on a wide-spread basis using alternative sources of the elements outside the incumbent's network. In some cases, to compete effectively with the incumbent LEC for the same customers, competitive LECs must be able to attain similar economies of scale that can only be achieved by serving a broad base of customers within a geographic area. Although theoretically, all or part, of an incumbent LEC's network can be replicated at some cost, as a practical matter, replication of elements in a ubiquitous manner may impair a requesting carrier's ability to compete vis-à-vis the incumbent. If the competitive LEC must deploy multiple facilities in order to be able to bring competition to a broad base of customers within a geographic area, the costs and delays associated with deploying facilities will likely be magnified, and could "materially diminish" that competitor's ability to provide the services that it seeks to offer.

26. We find that the language of section 251(d)(2) and the Supreme Court decision suggest that we should consider, in addition to the "necessary" and "impair" standards, the overall goals of the 1996 Act. Section 251(d)(2) states that the

Commission shall “consider, *at a minimum*,” the “necessary” and “impair” standards, thus leaving the Commission free to consider other relevant factors.<sup>35</sup> In addition, the Supreme Court decision requires us to apply a limiting standard “rationally related to the goals of the Act.” Moreover, as a policy matter, we believe that we may consider additional factors to ensure that the unbundling requirements promote the goals of the Act.

27. Accordingly, we may consider, in addition to the “necessary” and “impair” standards, whether the unbundling obligations we adopt are likely to: (1) encourage competitive LECs to rapidly enter the local market and serve the greatest number of consumers; (2) advance the development of facilities-based competition by competitive LECs, and encourage investment and innovation in new technologies and new services by both incumbent and competitive LECs; (3) reduce regulation of unbundled network elements as alternatives to the incumbent LECs’ network elements become available in the future, (4) provide certainty in the marketplace that will allow new entrants and fledgling competitors to develop national and regional business plans and bring the benefits of competition to the greatest number of consumers; and (5) be administratively practical to apply. We conclude that these important policy goals can only be furthered by adoption of a national list of unbundled elements that takes into consideration, where appropriate, discrete geographic and product market variations that create exceptions to the incumbent LECs’ general duty to unbundle the elements on the list.<sup>36</sup>

28. We do not assign any particular weight to the factors we identify above. Rather, we consider the relationship among the various factors to determine whether an incumbent LEC’s network element should be unbundled. Indeed, there may be circumstances in which there is significant evidence that competitors are impaired without unbundled access to a particular element, but requiring incumbent LECs to unbundle that element would be inconsistent with the goals of the Act.

**B. The “Necessary” and “Impair” Standards of Section 251(d)(2)**

**1. Application of the “necessary” and “impair” standards to proprietary and non-proprietary elements under Section 251(d)(2)**

**a. Background**

29. In the *Local Competition First Report and Order*, the Commission concluded that section 251(d)(2) establishes separate standards that apply to proprietary and non-proprietary network elements. Specifically, the Commission determined that the “necessary” standard of section 251(d)(2)(A) applies to proprietary elements, and that the

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<sup>35</sup> 47 U.S.C. § 251(d)(2).

<sup>36</sup> See *infra* Section V(D).

“impair” standard in section 251(d)(2)(B) applies to non-proprietary elements.<sup>37</sup> In the *Notice*, we sought comment on this interpretation of section 251(d)(2). In particular, we asked parties to comment on the difference between the “necessary” and “impair” standards. Noting that the Act employs two different terms, we asked if the Commission must apply different criteria to determine whether a network element meets these standards.<sup>38</sup>

30. Only a couple of commenters dispute the Commission’s previous decision to apply the “necessary” standard to proprietary elements and the “impair” standard to non-proprietary elements.<sup>39</sup> In particular, Sprint argues that the “necessary” and “impair” standards apply only to proprietary elements and thus, all non-proprietary elements must be unbundled.<sup>40</sup>

#### b. Discussion

31. We find no reason to change our framework for analyzing network elements under section 251(d)(2). In subpart (A) of section 251(d)(2), “necessary” modifies elements that are “proprietary in nature” while in subpart (B), “impair” modifies all other network elements. We agree with the majority of commenters that the “necessary” standard of section 251(d)(2)(A) is a higher standard that applies to proprietary network elements or to proprietary functions within an element.<sup>41</sup> We believe that our conclusion that section 251(d)(2) establishes a higher standard for proprietary network elements than for non-proprietary elements is consistent with both the language of the statute and the

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<sup>37</sup> *Local Competition First Report and Order*, 11 FCC Rcd at 15641-43, paras. 283-85.

<sup>38</sup> *Notice* at para. 18.

<sup>39</sup> Rhythms Comments at 5-6; Sprint Comments at 9-12.

<sup>40</sup> Sprint Comments at 11-12. *See also* Letter from Kathy D. Smith, Acting Chief Counsel, National Telecommunications and Information Administration (“NTIA”), to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 96-98, Attachment at 21 (filed Aug. 2, 1999) (“NTIA Comments”) (“NTIA agrees with Sprint that one reasonable construction of the statutory language is that the ‘necessary’ and ‘impair’ standards were meant to apply only to proprietary network elements. We nonetheless recognize that the Commission adopted (and the reviewing court implicitly accepted) a different construction of the statute in the Local Competition Report, and that there are legitimate reasons why the Commission would be reluctant to reject that construction now.”) (citation omitted).

<sup>41</sup> *See, e.g.*, Illinois Commission Comments at 5; Texas PUC Comments at 8; Ameritech Comments at 36-40; GTE Comments at 11-12; SBC Comments at 12-14 (These incumbent LECs agree that network elements with proprietary features must be evaluated under the “necessary” standard, but state that the “impair” standard applies to all network elements. As explained herein, we adopt two distinct limiting standards in order to give substance to Congress’ use of the term “necessary.”); ALTS Comments at 14-15; Cable & Wireless Comments at 16-17; Choice One Joint Comments at 11; CompTel Comments at 16-17; Corecomm Comments at 13-14; Cox Comments at 19-20; e.spire Joint Comments at 5; Excel Comments at 4; MCI Comments at 20; NEXTLINK Comments at 9; Pilgrim Comments at 6-7; TRA Comments at 15. *But see* Sprint Comments at 9-13, Rhythms Comments at 5-6 (arguing that the “impair” standard applies to both proprietary and non-proprietary rate elements).

goals of the 1996 Act to encourage incumbent LECs and competitive LECs to innovate and invest in new technologies. Specifically, incumbent LECs will have an on-going incentive to innovate if we ensure that their investment in the proprietary portions of their network is protected. While competitive LECs will have access to the incumbent LEC's proprietary network elements where necessary, they will not have unlimited access to those elements. We believe that this balanced approach provides competitive LECs with an incentive to innovate and invest in new technologies that will differentiate their services from the incumbents' services. We note that applying the "necessary" standard to proprietary elements, and the "impair" standard to non-proprietary elements is also consistent with the Commission's previous interpretation of this section that was implicitly adopted by the Supreme Court.<sup>42</sup>

## 2. Definition of "Proprietary in Nature"

### a. Background

32. Section 251(d)(2)(A) states that "[i]n determining what network elements should be made available for purposes of subsection (c)(3), the Commission shall consider, at a minimum, whether . . . access to such network elements as are proprietary in nature is necessary." In the *Local Competition First Report and Order*, the Commission referred to proprietary network elements as including, for example, "those elements with proprietary protocols or elements containing proprietary information." The Commission found in the *Local Competition First Report and Order* that for most network elements subject to the unbundling obligations of section 51.319, parties had not identified any proprietary concerns. For those network elements where parties did identify proprietary concerns, the Commission found that access to those network elements was "necessary."<sup>43</sup>

33. In the *Notice*, we sought comment on whether we should consider network elements as non-proprietary if the interfaces, functions, features and capabilities of the elements sought by the requesting carrier are defined by recognized standard-setting bodies (e.g. ITU, ANSI, or IEEE), are defined by Bellcore requirements, or otherwise are

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<sup>42</sup> Referring to the Commission's decision to limit its section 251(d)(2) inquiry to the incumbent's own network, the Court stated that "that judgment allows entrants, rather than the Commission, to determine whether access to *proprietary* elements is *necessary*, and whether the failure to obtain access to *nonproprietary* elements would *impair* the ability to provide services." *Iowa Utils. Bd.*, 119 S. Ct. at 735 (emphasis added).

<sup>43</sup> *Local Competition First Report and Order*, 11 FCC Red at 15694, 15697, 15710, 15720, 15739, 15744-45, 15748, 15766, 15774, paras. 388, 393, 419, 446, 481, 490, 497, 521, 539. In this Order, certain parties stated that channel banks and remote terminal equipment used with unbundled loops are often proprietary, that vertical switching features are proprietary, and that there are proprietary interfaces associated with operations support systems. The Commission found that the proprietary concerns did not justify denying requesting carriers access to these elements. Several parties also identified proprietary concerns regarding access to the service creation environment interface and service management system used in the incumbent LECs' advanced intelligent networks. The Commission concluded that access to advanced intelligent networks, including those elements that may be proprietary, was "necessary.").

widely available from vendors.<sup>44</sup> We further requested comment on whether the term “proprietary” should be limited to information, software, or technology that can be protected by patents, copyright or trade secret laws.<sup>45</sup> There is general agreement among the parties that the Commission should define proprietary, under section 251(d)(2)(A), consistent with intellectual property categories.<sup>46</sup> Several competitive LECs maintain that we must define the term “proprietary” narrowly so as not to create incentives for incumbent LECs to attempt to deny access to unbundled network elements on proprietary grounds.<sup>47</sup>

#### b. Discussion

34. In this Order, we adopt a limited definition of the phrase “proprietary in nature” that tracks the intellectual property categories of patent, copyright, and trade secrets. The majority of parties addressing this issue support using intellectual property law as a basis for defining “proprietary in nature.”<sup>48</sup> We agree, and find that the intellectual property laws governing patent, copyright and trade secrets find a common purpose in Congress’ intention to protect proprietary interests under section 251(d)(2). The intellectual property laws are designed to protect the incentives of authors and inventors to innovate.<sup>49</sup> Similarly, Congress recognized that an incumbent LEC’s incentive to innovate could be adversely affected by requiring incumbent LECs to unbundle proprietary portions of network elements to requesting carrier-competitors. Congress therefore required the Commission to consider whether unbundling in such instances is “necessary.”<sup>50</sup>

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<sup>44</sup> Notice at para. 15.

<sup>45</sup> *Id.*

<sup>46</sup> See, e.g., Iowa Comments at 4; Allegiance Comments at 4-6; ALTS Comments at 16; Ameritech Comments at 40-45; MCI WorldCom Comments at 21-22; NorthPoint Comments at 4; SBC Comments at 11-12; Sprint Comments at 9-10; US WEST Comments at 25; Waller Creek Comments at 12.

<sup>47</sup> See Cable & Wireless Comments at 17-18; Choice One Joint Comments at 11-12; CompTel Comments at 18; Corecomm Comments at 14-17; KMC Comments at 11.

<sup>48</sup> See Ameritech Comments at 42; ALTS Comments at 16; CompTel Comments at 19; GSA Comments at 8; RCN Comments at 10; SBC Comments at 12-15.

<sup>49</sup> See *Feist Publications v. Rural Telephone Service Company, Inc.*, 499 U.S. 340, 348 (1991) (arguing that the primary objective of copyright is to compensate authors and “advance the progress of science and art.”).

<sup>50</sup> *Implementation of the Telecommunications Act of 1996: Telecommunications Carriers’ Use of Customer Proprietary Network Information and Other Customer Information and Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as amended*, CC Docket Nos. 96-115 and 96-149, Second Report and Order and Further Notice of Proposed Rulemaking, 13 FCC Rcd 8061 (1998) (*CPNI Order*), on recon. FCC 99-223 (rel. Sept. 3., 1999), vacated sub nom. *US West v. FCC*, File No. 98-9518 (10<sup>th</sup> Cir., Aug. 18, 1999).

35. We find that if an incumbent LEC can demonstrate that it has invested resources (time, material, or personnel) to develop proprietary information or network elements that are protected by patent, copyright, or trade secret law, the product of such an investment is “proprietary in nature” within the meaning of section 251(d)(2)(A). This definition is consistent with the 1996 Act’s policy of preserving the incumbent LECs’ innovation incentives. It is also consistent with the Commission’s conclusion, in the *Local Competition First Report and Order*, that in some instances it will be “necessary” for new entrants to obtain access to proprietary elements.<sup>51</sup> Finally, our decision to define interests that are “proprietary in nature” along established intellectual property categories is consistent with the Department of Justice and Federal Trade Commission *Guidelines for the Licensing of Intellectual Property*.<sup>52</sup>

36. Our definition excludes elements that are based on widely accepted industry documents or on standards commonly used by a standards-setting body (e.g. ITU, ANSI, IEEE) or by vendors. There are few innovation incentives associated with elements that are based on well-recognized standards that are widely available in the market, and we therefore are not required to scrutinize such elements under the higher “necessary” standard.

37. Section 251(d)(2) directs the Commission to “consider, at a minimum” whether access to proprietary elements is necessary.<sup>53</sup> As discussed below, this discretionary language permits us to consider other factors, in addition to the “necessary” standard, in making our unbundling determination. We find that there are several circumstances which, if they exist with regard to information or functionalities that the incumbent LEC claims are proprietary, will permit us to order unbundling of the proprietary information or functionalities even if unbundled access to the element is not strictly “necessary,” as long as the “impair” standard is met. The first circumstance is where an incumbent LEC, for the primary purpose of causing a particular network to be evaluated under the stricter “necessary” standard in order to avoid its unbundling obligation, implements only a minor modification to the network element to make the element “proprietary in nature.”<sup>54</sup> Denying a requesting carrier access to the element in this circumstance would not encourage innovation and investment by the incumbent LEC,

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<sup>51</sup> *Local Competition First Report and Order*, 11 FCC Rcd at 15641, para. 282.

<sup>52</sup> U.S. Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property* (issued Apr. 6, 1995). The Guidelines are limited to patents, copyrights and trade secrets and, like the instant rulemaking, address the potential anticompetitive effects that may accrue to holders of patents, copyrights or trade secrets.

<sup>53</sup> 47 U.S.C. § 251(d)(2).

<sup>54</sup> Some commenters have expressed concern that the definition of “proprietary in nature” should not provide a vehicle for incumbent LECs to make minor modifications to network technology to claim that the element must then be analyzed under the more restrictive “necessary” standard. See *Cable & Wireless Comments* at 17-18; *GSA Comments* at 8.

which is one of the goals of the 1996 Act,<sup>55</sup> and would reduce consumer benefits by failing to facilitate rapid deployment of competitive services. The second circumstance is where an incumbent LEC cannot demonstrate that the information or functionality that it claims is proprietary differentiates its services from its competitors' services, or is otherwise competitively significant.<sup>56</sup> Information or functionalities that do not distinguish an incumbent LEC's service from that of its competitors are unlikely to be the focus of an incumbent LEC's efforts to innovate, and therefore do not require the high level of protection normally afforded to proprietary elements under the "necessary" standard. The third circumstance is where we find that lack of access to the proprietary element would jeopardize the goal of the 1996 Act to bring rapid competition to the greatest number of customers.<sup>57</sup> In such a circumstance, we may find that the incumbent LEC's asserted proprietary interest is outweighed by the benefits of facilitating more rapid deployment of competition for the greatest number of consumers. Given the significance of the incumbent LECs' proprietary interests, and our commitment to do nothing to discourage innovation and investment by all carriers, we do not envision, outside of these limited circumstances, unbundling a proprietary network element unless the "necessary" standard is satisfied. Moreover, we cannot imagine a situation where we would order unbundling of a proprietary element unless the "impair" standard has been met.

38. We agree with those commenters that argue that "proprietary in nature" applies only to the proprietary interests of the incumbent LEC and not to proprietary interests of third parties.<sup>58</sup> Limiting the definition of "proprietary" to interests held by the incumbent LEC is consistent with section 251(d)(2)(A)'s goal of preserving the incumbent LECs' incentives to innovate. Moreover, sections 251(c) and 251(d)(2), by their terms, apply only to the proprietary interests of those parties subject to the Act's unbundling obligations -- incumbent LECs. Thus, section 251(d)(2) only indirectly affects, if at all, the innovation incentives of third parties.<sup>59</sup>

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<sup>55</sup> *Joint Explanatory Statement* at 1 (The 1996 Act provides for "a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition. . .").

<sup>56</sup> Significant differences in the incumbent LEC's service may be derived from characteristics of the service that better satisfy consumer preferences in terms of price, quality or features that are unavailable elsewhere. See Lancaster, *Allocation and Distribution Theory: Technological Innovation and Progress*, 56 *Amer. Econ. Rev. : Papers & Proc.* 14, 20-22 (1966). See generally *A New Approach to Consumer Theory*, 74 *J. Pol. Econ.* 132 (1966); Tirole, *The Theory of Industrial Organization* 99 (1988) (discussing Lancaster approach to product characteristics).

<sup>57</sup> See *Joint Explanatory Statement* at 1.

<sup>58</sup> ALTS Comments at 17-18; Qwest Comments at 37. The Commission is currently considering the related question of third-party proprietary interests in a separate proceeding. See *Petition of MCI for Declaratory Ruling*, CC Docket No. 96-98, File No. CCBPol. 97-4 (March 14, 1997) (*MCI Petition*).

<sup>59</sup> Third-party innovation investment incentives are unlikely to be adversely affected by

39. Finally, we reject CompTel's argument that we should limit the application of proprietary network elements to those circumstances in which the incumbent LEC "discloses" proprietary information.<sup>60</sup> CompTel argues that if unbundling merely provides a requesting carrier with the "use" of a proprietary methodology, but does not "disclose" or access the proprietary information itself, the element is not proprietary.<sup>61</sup> We find that the "use" or "disclosure" rationale does not promote the goal of the Act to encourage investment and innovation, and thus is at odds with our decision to define "proprietary" along intellectual property categories.

40. Pursuant to patent law, patent holders trade monopoly rights in their inventions in exchange for a requirement that they disclose the technical details underlying the patent. Patent holders thus recover their investments by obtaining a monopoly on the "use" of their protected intellectual property. We agree with Ameritech that limiting the definition of "proprietary" to requests that would reveal proprietary information would turn intellectual property law and incentives to innovate on their head; "instead of granting exclusivity in exchange for disclosure, it would withhold exclusivity unless needed to avoid disclosure."<sup>62</sup> Similarly, under copyright laws, an illegal copy or "use" of a protected work can damage an author's incentive to produce the work.<sup>63</sup> We note, however, that the disclosure of sensitive customer information contained in unbundled network element must be consistent with the requirements of section 222.

### 3. The "Necessary" Standard of Section 251(d)(2)(A)

#### a. Background

41. In the *Local Competition First Report and Order*, the Commission defined a "necessary" network element as one that is a "prerequisite" to competition. The Commission stated that "in some instances it will be 'necessary' for requesting carriers to

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incumbent LEC sharing of proprietary information because third parties recover their innovation investments through fees paid to them by the incumbent LEC. Other third party issues are addressed in the pending *MCI Petition*.

<sup>60</sup> CompTel Comments at 19. See also RCN Comments at 10.

<sup>61</sup> CompTel Comments at 19. See also ALTS Comments at 16. The Commission concluded in the *Local Competition First Report and Order* that concerns about the proprietary nature of a network element would arise only if the proprietary information would be revealed. Specifically, it concluded that loops are, in general, not proprietary in nature because parties did not contend that proprietary information associated with certain loop equipment would be revealed if loops using such equipment were unbundled. *Local Competition First Report and Order*, 11 FCC Rcd at 15694, para. 388.

<sup>62</sup> Ameritech Comments at 44.

<sup>63</sup> Under CompTel's proposal (CompTel Comments at 19), the Commission would be required to find that Ameritech's incentive to create proprietary functionalities like Privacy Manager would not be adversely affected even though Ameritech would be subject to forced sharing of Privacy Manager, and requesting carrier customers could obtain the benefits of Privacy Manager without appropriating the underlying software.

obtain access to proprietary elements (e.g., elements with proprietary protocols or elements containing proprietary information) because without such elements, the ability of requesting carriers to compete would be significantly impaired or thwarted.”<sup>64</sup> It also acknowledged that prohibiting incumbents from refusing access to proprietary elements could reduce their incentives to offer innovative services.<sup>65</sup> The Commission did not identify any proprietary elements subject to unbundling in the *Local Competition First Report and Order*, except that it acknowledged the claims of several parties that access to the incumbent LECs’ advanced intelligent network (AIN) may raise proprietary concerns. It nevertheless concluded that access to AIN is “necessary” within the meaning of section 251(d)(2)(A).<sup>66</sup>

42. In the *Notice*, the Commission sought comment on the definition of “necessary” for the purpose of determining proprietary network elements that must be unbundled pursuant to the requirements of section 251(d)(2)(A), as well as on what factors or criteria the Commission should apply in determining whether access to a network element is “necessary.”<sup>67</sup>

43. Several competitive LECs assert that in determining whether unbundling of a proprietary network element is “necessary,” the Commission must evaluate whether the requesting carrier can obtain comparable functionality from an alternative network element. They maintain that if the requesting carrier would experience a material loss in functionality without the network element that the incumbent LEC claims is proprietary, then the incumbent LEC’s network element is “necessary” within the meaning of section 251(d)(2)(A).<sup>68</sup> The incumbent LECs assert generally that both the “necessary” and “impair” standards require an analysis of whether lack of access to their networks elements, taking into consideration alternatives outside the incumbent’s network, would *deny* an efficient competitor a meaningful opportunity to compete. These commenters argue that the “necessary” standard requires the Commission to accept a higher degree of proof that alternatives to the element are not available.<sup>69</sup>

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<sup>64</sup> *Local Competition First Report and Order*, 11 FCC Rcd at 15641, para. 282.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.* at 15748, para. 497.

<sup>67</sup> *Notice* at paras. 16, 20.

<sup>68</sup> Cable & Wireless Comments at 19; Net2000 Comments at 9-10. *See also* NEXTLINK Comments at 11.

<sup>69</sup> *See, e.g.*, Ameritech Comments at 37-40; SBC Comments at 14; US West Comments at 23-26.