

argues that elements should include all of their embedded features and functionalities so carriers can use them to provide both existing services that are already offered by incumbent LECs, and new ones that currently are not.⁵⁴⁰ GTE contends that incumbent LECs use a wide variety of databases, functions and capabilities in their networks, but the definition of a network element is limited to those databases, functions and capabilities that are employed in the transmission, routing, or other provision of a telecommunications service. Thus, GTE would exclude from the definition features used in conjunction with, but not in the actual provision of, a telecommunications service as well as features used to provide information or other non-telecommunications services.⁵⁴¹

255. AT&T asserts that vertical features (*i.e.*, custom calling or Custom Local Area Signaling Services ("CLASS")) are network elements because they constitute a function or a capability and are not by nature a jurisdictionally distinct service that can only be provided on either an inter- or intra-state basis.⁵⁴² A number of incumbent LECs argue in opposition that vertical features are not physical elements of the incumbent LEC networks, but are retail services. They further argue that, if we allow new entrants to purchase such features as unbundled elements, we would nullify section 251(c)(4).⁵⁴³ Ameritech also contends that vertical features are often priced significantly above cost, and for this reason carriers should not be allowed to obtain such services as unbundled elements.⁵⁴⁴ Sprint claims that electronic interfaces (*e.g.*, administrative databases) used for the provision of unbundled elements can be considered network elements themselves.⁵⁴⁵ A number of incumbent LECs, however, variously argue that such administrative databases, operator services, directory assistance, or electronic gateways are not network elements because new entrants do not need access to their features and functions to provide a telecommunications service. Moreover, these parties dispute claims that their features and functions are physical elements of the incumbents' networks. These parties characterize them as services. They further contend that it is not technically feasible or would be prohibitively expensive to provide access to such databases or electronic gateways and that

⁵⁴⁰ MCI comments at 27-28; *accord* Sprint comments at 22-23.

⁵⁴¹ GTE comments at 25-27; GTE reply at 16.

⁵⁴² AT&T reply at 15-16.

⁵⁴³ Ameritech reply at 24 n.38; PacTel reply at 25; Bell Atlantic reply at 6; USTA comments at 23-26; GTE comments at 25-26. Section 251(c)(4) provides that incumbent LECs have the duty "to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers that are not telecommunications carriers." 47 U.S.C. § 251(c)(4). For a further discussion of the relationship between sections 251(c)(3) and 251(c)(4), *see infra*, Section V.H.

⁵⁴⁴ Ameritech reply at 24 n.38.

⁵⁴⁵ Sprint reply at 26.

requiring incumbent LECs to provision them as unbundled elements would both risk the security of those systems and reveal proprietary information.⁵⁴⁶

256. Commenters set forth a variety of views on the issue of whether the services or facility distinction requires carriers using an unbundled element to offer all services provided with that element. CompTel and MECA contend that the statute imposes such a requirement.⁵⁴⁷ Sprint argues that a carrier purchasing an unbundled switch and loop must provide local exchange and exchange access services.⁵⁴⁸ USTA and the Department of Justice contend that carriers must purchase exclusive access to an unbundled loop, and thus, must provide all services carried over it.⁵⁴⁹ The Department of Justice notes that this interpretation is required by practicality, and is consistent with industry practice at the time the 1996 Act was adopted.⁵⁵⁰ The Department of Justice also notes that a local loop is a nontraffic sensitive facility, and thus it would be difficult to apportion the cost of such a facility among a number of different users.⁵⁵¹

257. In contrast, a number of potential local competitors, as well as the Ohio and Oregon Commissions, contend that, according to the language of the 1996 Act, a carrier is not required to offer all services that an element makes possible. These parties variously argue that such a requirement would be unenforceable and anticompetitive, would stifle creativity in service offerings, and is contrary to the market-based policies inherent in the 1996 Act.⁵⁵²

3. Discussion

258. We adopt the concept of unbundled elements as physical facilities of the network, together with the features, functions, and capabilities associated with those facilities. Carriers requesting access to unbundled elements within the incumbent LEC's network seek in effect to purchase the right to obtain exclusive access to an entire element, or some feature, function or

⁵⁴⁶ Ameritech reply at 19-20; U S West reply at 27; USTA reply at 17-18; NYNEX reply at 33-34 (while electronic gateways are not network elements, it is reasonable to request access to them); PacTel reply at 21-22; BellSouth reply at 24-30.

⁵⁴⁷ Comptel comments at 24; MECA comments at 31.

⁵⁴⁸ Sprint comments at 22-23.

⁵⁴⁹ USTA comments at 56-66; DoJ comments at 35-47.

⁵⁵⁰ DoJ comments at 35-47.

⁵⁵¹ DoJ comments at 35-47.

⁵⁵² MCI comments at 27-28; ACTA comments at 17; LDDS comments at 30; MFS comments at 36-37, 65-66; Cable & Wireless comments at 26-27; Frontier comments at 9; Ohio Commission comments at 33; Oregon Commission comments at 27; *accord* Citizens Utilities comments at 9.

capability of that element. For some elements, especially the loop, the requesting carrier will purchase exclusive access to the element for a specific period, such as on a monthly basis. Carriers seeking other elements, especially shared facilities such as common transport, are essentially purchasing access to a functionality of the incumbent's facilities on a minute-by-minute basis. This concept of network elements, as discussed *infra* at section V.G., does not alter the incumbent LEC's physical control or ability or duty to repair and maintain network elements.

259. We conclude that we should identify a particular facility or capability, for example, as a single network element, but allow ourselves and the states (where appropriate) the discretion to further identify, within that single facility or capability, additional required network elements. Thus, for example, in this proceeding, we identify the local loop as a single network element.⁵⁵³ We also ask the states to evaluate, on a case-by-case basis, whether to require access to subloop elements, which can be facilities or capabilities within the local loop.⁵⁵⁴ We agree with those commenters that argue that identifying a particular facility or capability as single network element, but allowing such elements to be further subdivided into additional elements, will allow our rules (as well as the states) to accommodate changes in technology, and thus better serve the interests of new entrants and incumbent LECs, and the procompetitive purposes of the 1996 Act.⁵⁵⁵ We are not persuaded by PacTel's argument that it is unnecessary for our rules to permit the identification of additional elements, beyond those specifically referenced in parts of the 1996 Act, because our rules must conform to the definition of a network element, and they must accommodate changes in technology. Nor are we persuaded by BellSouth that identification of network elements should be left solely to the parties. We reject this approach for the same reasons that led us to adopt national unbundling requirements.⁵⁵⁶ Finally, we agree with NYNEX and others that we should not identify elements in rigid terms, but rather by function.

260. We agree with MCI and MFS that the definition of the term network element includes physical facilities, such as a loop, switch, or other node, as well as logical features, functions, and capabilities that are provided by, for example, software located in a physical facility such as a switch.⁵⁵⁷ We further agree with MCI that the embedded features and functions within a network element are part of the characteristics of that element and may not be removed from it. Accordingly, incumbent LECs must provide network elements along with all of their

⁵⁵³ See *infra*, Section V.J.

⁵⁵⁴ *Id.*

⁵⁵⁵ See, e.g., District of Columbia Commission comments at 21-22; MFS comments at 36.

⁵⁵⁶ See *supra*, Sections II.A, II.B, V.B.

⁵⁵⁷ MCI comments at 27-28; MFS comments at 36-37.

features and functions, so that new entrants may offer services that compete with those offered by incumbents as well as new services.

261. The only limitation that the statute imposes on the definition of a network element is that it must be "used in the provision of a telecommunications service."⁵⁵⁸ Incumbent LECs provide telecommunications services not only through network facilities that serve as the basis for a particular service, or that accomplish physical delivery, but also through information (such as billing information) that enables incumbents to offer services on a commercial basis to consumers. Our interpretation of the term "provision" finds support in the definition of the term "network element." That definition provides that the type of information that may constitute a feature or function includes information "used in the transmission, routing or other provision of a telecommunications service."⁵⁵⁹ Since "transmission" and "routing" refer to physical delivery, the phrase "or other provision of a telecommunications service" goes beyond mere physical delivery.

262. We conclude that the definition of the term "network element" broadly includes all "facilit[ies] or equipment used in the provision of a telecommunications service," and all "features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service."⁵⁶⁰ This definition thus includes, but is not limited to, transport trunks, call-related databases, software used in such databases, and all other unbundled elements that we identify in this proceeding.⁵⁶¹ The definition also includes information that incumbent LECs use to provide telecommunications services commercially, such as information required for pre-ordering,⁵⁶² ordering, provisioning,⁵⁶³ billing, and maintenance and repair services. This interpretation of the definition of the term "network element" will serve to guide both the Commission and the states in evaluating further unbundling requirements beyond those we identify in this proceeding.

263. We disagree with those incumbent LECs which argue that features that are sold directly to end users as retail services, such as vertical features, cannot be considered elements

⁵⁵⁸ 47 U.S.C. § 153(29).

⁵⁵⁹ *Id.*

⁵⁶⁰ *Id.*

⁵⁶¹ *See infra*, V.J.

⁵⁶² *See infra*, Section V.J.5, for a definition of pre-ordering services.

⁵⁶³ The term "provisioning" includes installation.

within incumbent LEC networks.⁵⁶⁴ If we were to conclude that any functionality sold directly to end users as a service, such as call forwarding or caller ID, cannot be defined as a network element, then incumbent LECs could provide local service to end users by selling them unbundled loops and switch elements, and thereby entirely evade the unbundling requirement in section 251(c)(3).⁵⁶⁵ We are confident that Congress did not intend such a result. We further reject Ameritech's argument that we should not permit carriers to use unbundled elements to provide services that are priced above cost at retail. We agree with those parties that argue that competition will not develop if we find that supracompetitive pricing is protected by the 1996 Act.⁵⁶⁶

264. Moreover, we agree with those commenters that argue that network elements are defined by facilities or their functionalities or capabilities, and thus, cannot be defined as specific services. A single network element could be used to provide many different services. For example, a local loop can be used to provision inter- and intrastate exchange access services, as well as local exchange services. We conclude, consistent with the findings of the Ohio and Oregon Commissions, that the plain language of section 251(c)(3) does not obligate carriers purchasing access to network elements to provide all services that an unbundled element is capable of providing or that are typically offered over that element.⁵⁶⁷ Section 251(c)(3) does not impose any service-related restrictions or requirements on requesting carriers in connection with the use of unbundled elements.

D. Access to Network Elements

1. Background

265. In the NPRM, we observed that section 251(c)(3) requires incumbent LECs to provide "access" to network elements "on an unbundled basis."⁵⁶⁸ We interpreted these terms to mean that incumbent LECs must provide carriers with the functionality of a particular element,

⁵⁶⁴ See *infra*, Section V.J, discussing vertical features and noting that the Illinois Commission has rejected arguments that vertical features cannot be incorporated into network elements.

⁵⁶⁵ See, e.g., CompTel reply at 20-22.

⁵⁶⁶ See, e.g., DoJ reply at 23-31; CompTel reply at 13-22. For a discussion of the argument that allowing new entrants to purchase vertical features as unbundled elements would nullify section 251(c)(4), see *infra*, Section V.H.

⁵⁶⁷ Ohio Commission comments at 33; Oregon Commission comments at 27.

⁵⁶⁸ 47 U.S.C. § 251(c)(3).

separate from the functionality of other elements, and must charge a separate fee for each element. We sought comment on this interpretation and any alternative interpretations.⁵⁶⁹

2. Comments

266. A number of parties agree with our interpretation that the phrase "access to network elements on an unbundled basis" means that incumbent LECs must provide access to the functionality of different elements on a separate basis, and must charge separate fees.⁵⁷⁰ In contrast, PacTel argues that the 1996 Act does not require the provision of an element's functionality, but merely requires incumbent LECs to provide elements in a way that allows carriers to combine them and offer a telecommunications service. PacTel nevertheless acknowledges that agreements will likely allow for the provision of an element's functionality.⁵⁷¹

267. Bell Atlantic and USTA argue that "access" to unbundled elements can only be achieved by interconnecting, under the terms of section 251(c)(2), a requesting carrier's facilities to the facilities of the incumbent LEC at a particular point.⁵⁷²

3. Discussion

268. We conclude that we should adopt our proposed interpretation that the terms "access" to network elements "on an unbundled basis" mean that incumbent LECs must provide the facility or functionality of a particular element to requesting carriers, separate from the facility or functionality of other elements, for a separate fee. We further conclude that a telecommunications carrier purchasing access to an unbundled network facility is entitled to exclusive use of that facility for a period of time, or when purchasing access to a feature, function, or capability of a facility, a telecommunications carrier is entitled to use of that feature, function, or capability for a period of time. The specified period may vary depending on the terms of the agreement between the incumbent LEC and the requesting carrier. The ability of other carriers to obtain access to a network element for some period of time does not relieve the

⁵⁶⁹ NPRM at para. 86.

⁵⁷⁰ BellSouth comments at 34; MFS comments at 41; Cable & Wireless comments at 26-27; MCI comments at 12-20; Ericsson comments at 4; District of Columbia Commission comments at 22; Nextel comments at 8; USTA comments at 26; Colorado Commission comments at 27; Pennsylvania Commission comments at 24-25; GTE comments at 27; Florida Commission comments at 19; GST comments at 19.

⁵⁷¹ PacTel comments at 44-47.

⁵⁷² Bell Atlantic comments at 13; USTA comments at 62-63; *see also* GTE comments at 74-79; Letter from Antoinette Cook Bush, Counsel for Ameritech, to William F. Caton, Secretary, FCC, July 10, 1996; *cf.* DoJ comments at 45 (the requirement in section 251(c)(2) that carriers must offer either local exchange or exchange access services does not apply to the carriers offering services using unbundled elements).

incumbent LEC of the duty to maintain, repair, or replace the unbundled network element.⁵⁷³ We reject PacTel's interpretation of the terms quoted above because it is inconsistent with our definition of the term network element (*i.e.*, an element includes all features and functions embedded in it). Moreover, to the extent that PacTel's argument suggests that the 1996 Act does not require unbundled elements to be provisioned in a way that would make them useful, we find that its statutory interpretation is inconsistent with the statute's goal of providing new entrants with realistic means of competing against incumbents.

269. We further conclude that "access" to an unbundled element refers to the means by which requesting carriers obtain an element's functionality in order to provide a telecommunications service. Just as section 251(c)(2) requires "interconnection . . . at any technically feasible point," section 251(c)(3) requires "access . . . at any technically feasible point."⁵⁷⁴ We conclude, based on the terms of sections 251(c)(2), 251(c)(3), and 251(c)(6), that an incumbent LEC's duty to provide "access" constitutes a duty to provide a connection to a network element independent of any duty imposed by subsection (c)(2). Thus, such "access" must be provided under the rates, terms, and conditions that apply to unbundled elements.

270. Specifically, section 251(c)(6) provides that incumbent LECs must provide "physical collocation of equipment necessary for interconnection *or* access to unbundled network elements."⁵⁷⁵ The use of the term "or" in this phrase means that interconnection is different from "access" to unbundled elements. The text of sections 251(c)(2) and (c)(3) leads to the same conclusion. Section 251(c)(2) requires that interconnection be provided for "the transmission and routing of telephone exchange service and exchange access."⁵⁷⁶ Section 251(c)(3), in contrast, requires the provision of access to unbundled elements to allow requesting carriers to provide "a telecommunications service."⁵⁷⁷ The term "telecommunications service" by definition includes a broader range of services than the terms "telephone exchange service and exchange access."⁵⁷⁸ Subsection (c)(3), therefore, allows unbundled elements to be used for a broader range of services than subsection (c)(2) allows for interconnection. If we were to conclude that "access" to unbundled elements under subsection (c)(3) could only be achieved by means of interconnection under subsection (c)(2), we would be limiting, in effect, the uses to which

⁵⁷³ We clarify that title to unbundled network elements will not shift to requesting carriers.

⁵⁷⁴ 47 U.S.C. §§ 251(c)(2), 251(c)(3).

⁵⁷⁵ 47 U.S.C. § 251(c)(6) (emphasis added).

⁵⁷⁶ 47 U.S.C. § 251(c)(2).

⁵⁷⁷ 47 U.S.C. § 251(c)(3).

⁵⁷⁸ See 47 U.S.C. § 153(16),(46),(47).

unbundled elements may be put, contrary to the plain language of section 251(c)(3) and standard canons of statutory construction.⁵⁷⁹

E. Standards Necessary to Identify Unbundled Network Elements

1. Background

271. In the NPRM, we raised a number of issues concerning the meaning of technical feasibility in connection with unbundled elements.⁵⁸⁰ We also sought comment on the extent to which the Commission should consider the standards set forth in section 251(d)(2) in identifying required unbundled elements, and on how we ought to interpret these standards.⁵⁸¹ Subsection (d)(2) provides that "(i)n determining what network elements should be made available for purposes of subsection (c)(3), the Commission shall consider, at a minimum" the following two standards, "whether (A) access to such network elements as are proprietary in nature is necessary; and (B) the 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."⁵⁸² We further asked about the relationship between the latter standard and the requirement in section 251(c)(3) that carriers be able to use unbundled elements to provide a telecommunications service.⁵⁸³

2. Comments

272. Commenters raised two issues in interpreting the standard relating to whether access to proprietary elements is necessary. The first issue relates to whether incumbent LECs are required to provide proprietary information contained in network elements (*e.g.*, Customer Premises Network Information contained in databases); and the second to whether incumbent LECs are required to provide network elements which are proprietary (*e.g.*, elements with proprietary protocols.) As to the first issue, Ameritech, SBC, BellSouth, PacTel, Texas Statewide Telephone Cooperative, Inc. and the Wyoming Commission argue that the Commission should protect proprietary information contained in incumbent LECs' networks.⁵⁸⁴

⁵⁷⁹ See, *e.g.*, DoJ comments at 35-47.

⁵⁸⁰ NPRM at paras. 87-88. See *supra*, Section IV.D, for a discussion of these issues.

⁵⁸¹ NPRM at para. 88.

⁵⁸² 47 U.S.C. § 251(d)(2).

⁵⁸³ NPRM at para. 90.

⁵⁸⁴ Ameritech comments at 34; SBC comments at 36-37; Texas Statewide Telephone Cooperative, Inc. comments at 5-6; BellSouth comments at 35; PacTel comments at 40-44; Wyoming Commission at 24-26.

BellSouth and PacTel further argue that we should prohibit access to elements containing proprietary information unless new entrants meet a heavy burden demonstrating need.⁵⁸⁵

273. As to the second issue, a few incumbent LECs argue generally that the Commission should require unbundling of proprietary network elements only under certain limited circumstances.⁵⁸⁶ USTA argues that, if we do not grant incumbent LECs the ability to deny their competitors access to proprietary elements, we will stifle the incumbents' incentives to provide innovative services and thereby inhibit competition.⁵⁸⁷ PacTel contends that we should not require unbundling of elements with proprietary protocols unless a new entrant demonstrates a heavy burden of need.⁵⁸⁸ Ameritech and GTE assert that we should require unbundling of proprietary elements only when the failure to do so would prevent a carrier from offering a service.⁵⁸⁹ GTE adds that, if an element is available from other sources, unbundling should not be mandated. Moreover, according to GTE, if incumbent LECs do make proprietary elements available, they should be compensated for the use of their intellectual property.⁵⁹⁰ In contrast, the Consumer Federation of America asserts that, if we define proprietary elements broadly and require new entrants to demonstrate need before they may obtain them, we would significantly inhibit new entry.⁵⁹¹

274. Most BOCs and GTE contend that the general obligation imposed by section 251(c)(3) is limited by section 251(d)(2)'s standard of whether the failure to provide access to network elements would impair the ability of carriers to offer a service. They argue that this standard requires incumbent LECs to provide unbundled elements only where the failure to do so would prohibit a carrier from providing a service.⁵⁹² Commenters offer two different standards by which we may determine whether a carrier may require an incumbent LEC to provide an unbundled element in order for the carrier to offer a service. First, GTE, PacTel and BellSouth

⁵⁸⁵ BellSouth comments at 35; PacTel comments at 40-44.

⁵⁸⁶ Ameritech comments at 34-35, reply at 11; BellSouth comments at 35; PacTel comments at 40-44; GTE comments at 30-31; GTE reply at 16; *see also* USTA comments at 27-28.

⁵⁸⁷ USTA comments at 27-28.

⁵⁸⁸ PacTel comments at 40-44, reply at 16-17; *see also* BellSouth comments at 35.

⁵⁸⁹ Ameritech comments at 34-35; Ameritech reply at 11; GTE comments at 30-31; GTE reply at 16.

⁵⁹⁰ GTE comments at 30-31.

⁵⁹¹ CFA/CU reply at 25; *see also* Letter from Bruce K. Cox, Government Affairs Director, AT&T to William F. Caton, Secretary, FCC, July 11, 1996 (AT&T July 11 *Ex Parte*).

⁵⁹² BellSouth comments at 31-35; GTE comments at 30-31, GTE reply 16-17; Ameritech comments at 25-33; PacTel comments at 40-44, reply at 16-17; SBC comments at 36-37.

argue that unbundling is not required if a carrier can obtain, or provide itself, the requested element on reasonable terms and conditions.⁵⁹³ The burden of meeting this standard, according to GTE, falls on the requesting carrier.⁵⁹⁴ If a carrier fails to meet this standard, but continues to request an element, BellSouth claims, that carrier must meet a heavier burden.⁵⁹⁵ Second, PacTel and Ameritech argue that, if a carrier can offer a service by purchasing the underlying service from the incumbent LEC and reselling it, pursuant to section 251(c)(4), the carrier is not impaired in its ability to offer the service. Thus, they argue, new entrants cannot use unbundled elements exclusively to offer the same services that new entrants can obtain from an incumbent LEC under the resale provision.⁵⁹⁶

275. The Department of Justice and Comptel reject the BOCs' argument that the general obligation imposed by section 251(c)(3) is limited by consideration of whether the failure to provide access to an element would impair a carrier's ability to offer a service. They argue that the term "impair" does not mean "prevent," and that we should interpret this standard to mean that a carrier's ability to provide a service is impaired if obtaining an element from a third party is more costly than obtaining that same element from the incumbent. They also dispute the incumbent LECs' argument that the "impair" language in this standard means that new entrants cannot exclusively use unbundled elements to provide the same or similar retail services that an incumbent offers. They argue that, if similarity is enough to prevent the use of unbundled elements, then section 251(c)(3) would be nullified. They further contend that, under the BOCs' theory, incumbents could prevent new entry through the use of unbundled elements by offering unbundled loops, switching, and other elements as retail services.⁵⁹⁷ CompTel also argues that this standard refers back to the first standard in section 251(d)(2) and means that incumbents must provide proprietary elements only if the failure to do so would prevent a requesting carrier from offering a telecommunications service.⁵⁹⁸

276. AT&T argues that the plain language of section 251(c)(3) means that incumbent LECs must provide unbundled elements that new entrants request, and that the factors in section

⁵⁹³ GTE comments at 30-31; PacTel comments at 40-44, reply at 17 n.38; BellSouth comments at 35.

⁵⁹⁴ GTE reply at 17.

⁵⁹⁵ BellSouth comments at 35.

⁵⁹⁶ BellSouth comments at 31-33; Ameritech comments at 25-31; *see infra*, Section V.H, for a further discussion of the relationship between sections 251(c)(3) and 251(c)(4).

⁵⁹⁷ *See, e.g.*, DoJ comments at 48-51, reply at 23-31; CompTel reply at 13-22; *see also*, AT&T reply at 13-20.

⁵⁹⁸ CompTel comments at 24-25; *see also* AT&T July 11 *Ex Parte*.

251(d)(2) are minimum considerations and not threshold requirements.⁵⁹⁹ BellSouth and SBC agree that the "at minimum" language in section 251(d)(2) means the Commission can consider other factors not enumerated in the statute in determining what elements incumbent LECs must offer to requesting carriers.⁶⁰⁰ Similarly, several commenters suggest that, in determining which elements must be offered, we should consider a number of additional factors, including, for example, whether there is a demonstrable market demand for a particular element.⁶⁰¹

3. Discussion

277. Sections 251(c)(3) and 251(d)(2) set forth standards the Commission must consider in identifying unbundled network elements that incumbent LECs must make available in connection with arbitrations before state commissions and BOC statements of generally available terms and conditions. These standards guide the unbundling requirements we issue today as well as any different or additional unbundling requirements we may issue in the future. Similarly, the states must follow our interpretation of these standards to the extent they impose additional unbundling requirements during arbitrations or subsequent rulemaking proceedings.

278. Section 251(c)(3) requires incumbent LECs to provide requesting carriers with "nondiscriminatory access to network elements on an unbundled basis at any technically feasible point."⁶⁰² We find that this clause imposes on an incumbent LEC the duty to provide all network elements for which it is technically feasible to provide access on an unbundled basis. Because section 251(d)(1) requires us to "establish regulations to implement the requirements of" section 251(c)(3), we conclude that we have authority to establish regulations that are coextensive with the duty section 251(c)(3) imposes on incumbent LECs.

279. Section 251(d)(2), however, sets forth standards that do not depend on technical feasibility. More specifically, section 251(d)(2) provides that, in identifying unbundled elements, the Commission shall "consider, at a minimum," whether access to proprietary elements is necessary (the "proprietary standard"), and whether requesting carriers' ability to provide services would be impaired if the desired elements were not provided by an incumbent LEC (the "impairment standard.") Thus, section 251(d)(2) gives us the authority to decline to require incumbent LECs to provide access to unbundled network elements at technically feasible

⁵⁹⁹ See AT&T reply at 13-20.

⁶⁰⁰ BellSouth comments at 17, 26; SBC comments at 18.

⁶⁰¹ See, e.g., SBC comments at 25-37, 84-99; NYNEX comments at 61-64; Ameritech comments at 34; USTA comments at 23; see also Texas Public Utility Counsel comments at 9-11; CBT comments at 15; Nortel comments at 6; U S West comments at 45-47; ASCI comments at 32.

⁶⁰² 47 U.S.C. § 251(c)(3).

points if, for example, we were to conclude that access to a particular proprietary element is not necessary. To give effect to both sections 251(c)(3) and 251(d)(2), we conclude that the proprietary and impairment standards in section 251(d)(2) grant us the authority to refrain from requiring incumbent LECs to provide all network elements for which it is technically feasible to provide access on an unbundled basis. The authority we derive from section 251(d)(2) is limited, however, by our interpretation of these standards, and this section, as set forth below.

280. We agree with BellSouth, SBC, and others that the plain import of the "at minimum" language in section 251(d)(2) requires us, in identifying unbundled network elements, to "consider" the standards enumerated there, as well as other standards we believe are consistent with the objectives of the 1996 Act. We conclude that the word "consider" means we must weigh the standards enumerated in section 251(d)(2) in evaluating whether to require the unbundling of a particular element.

281. We further conclude that, in evaluating whether to impose additional unbundling requirements during the arbitration process, states must apply our definition of technical feasibility, discussed above in section IV.D. A determination of technical feasibility would then create a presumption in favor of requiring an incumbent LEC to provide the element. If providing access to an unbundled element is technically feasible, a state must then consider the standards set forth in section 251(d)(2), as we interpret them below. Similarly, the Commission will apply this analysis where we must arbitrate specific unbundling issues, under section 252(e)(5), and in future rulemaking proceedings that may consider additional or possibly different unbundling requirements.

282. Section 251(d)(2)(A) requires the Commission and the states to consider whether access to proprietary elements is "necessary." "Necessary" means, in this context, that an element is a prerequisite for competition. We believe that, in some instances, it will be "necessary" for new entrants to obtain access to proprietary elements (*e.g.*, elements with proprietary protocols or elements containing proprietary information), because without such elements, their ability to compete would be significantly impaired or thwarted.⁶⁰³ Thus, as an initial matter, we decline to adopt a general rule, as suggested by some incumbents, that would prohibit access to such elements, or make access available only upon a carrier demonstrating a heavy burden of need. We acknowledge that prohibiting incumbents from refusing access to proprietary elements could reduce their incentives to offer innovative services. We are not persuaded, however, that this is a sufficient reason to prohibit generally the unbundling of proprietary elements, because the threat to competition from any such prohibition would far

⁶⁰³ As noted *supra*, Section V.E.2, a number of commenters argue that section 251(d)(2)(A) requires us to protect proprietary information, such as CPNI information, contained in network elements. We intend to treat issues regarding CPNI in our rulemaking proceeding on CPNI information. *Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information*, CC Docket No. 96-115, Notice of Proposed Rulemaking, FCC 96-221 (rel. May 17, 1996).

exceed any costs to consumers resulting from reduced innovation by the incumbent LEC.⁶⁰⁴ Moreover, the procompetitive effects of our conclusion generally will stimulate innovation in the market, offsetting any hypothetical reduction in innovation by the incumbent LECs.

283. We further conclude that, to the extent new entrants seek additional elements beyond those we identify herein, section 251(d)(2)(A) allows the Commission and the states to require the unbundling of such elements unless the incumbent can prove to a state commission that: (1) the element is proprietary, or contains proprietary information that will be revealed if the element is provided on an unbundled basis; and (2) a new entrant could offer the same proposed telecommunications service through the use of other, nonproprietary unbundled elements within the incumbent's network. We believe this interpretation of section 251(d)(2)(A) will best advance the procompetitive purposes of the 1996 Act. It allows new entrants to obtain proprietary elements from incumbent LECs where they are necessary to offer a telecommunications service, and, at the same time, it gives incumbents the opportunity to argue, before the states or the Commission, against unbundling proprietary elements where a new entrant could offer the same service using other unbundled elements in the incumbent's network. We decline to adopt the interpretation of section 251(d)(2)(A) advanced by some incumbents that incumbent LECs need not provide proprietary elements if requesting carriers can obtain the requested proprietary element from a source other than the incumbent. Requiring new entrants to duplicate unnecessarily even a part of the incumbent's network could generate delay and higher costs for new entrants, and thereby impede entry by competing local providers and delay competition, contrary to the goals of the 1996 Act.

284. We further conclude that, to the extent new entrants do not need access to all the proprietary information contained within an element in order to provide a telecommunications service, the Commission and the states may take action to protect the proprietary information. For example, to provide a telecommunications service, a new entrant might need access to information about a particular customer that is in an incumbent LEC database. The database to which the new entrant requires access, however, may contain proprietary information about all of the incumbent LECs' customers. In this circumstance, the new entrant should not have access to proprietary information about the incumbent LEC's other customers where it is not necessary to provide service to the new entrant's particular customer. Accordingly, we believe the Commission and the states have the authority to protect the confidentiality of proprietary information in an unbundled network element, such as a database, where that information is not necessary to enable a new entrant to offer a telecommunications service to its particular customer.

⁶⁰⁴ In this proceeding, for example, we are requiring incumbent LECs to provide the local switching element which includes vertical features that some carriers contend are proprietary. See *infra*, Section V.J.

285. Section 251(d)(2)(B) requires us to consider whether the failure to provide access to an element would "impair" the ability of a new entrant to provide a service it seeks to offer. The term "impair" means "to make or cause to become worse; diminish in value."⁶⁰⁵ We believe, generally, that an entrant's ability to offer a telecommunications service is "diminished in value" if the quality of the service the entrant can offer, absent access to the requested element, declines and/or the cost of providing the service rises. We believe we must consider this standard by evaluating whether a carrier could offer a service using other unbundled elements within an incumbent LEC's network. Accordingly, we interpret the "impairment" standard as requiring the Commission and the states, when evaluating unbundling requirements beyond those identified in our minimum list, to consider whether the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost of the service a requesting carrier seeks to offer, compared with providing that service over other unbundled elements in the incumbent LEC's network.

286. We decline to adopt the interpretation of the "impairment" standard advanced by most BOCs and GTE. Under their interpretation, incumbent LECs must provide unbundled elements only when the failure to do so would prevent a carrier from offering a service. We also reject the related interpretations that carriers are not impaired in their ability to provide a service if they can obtain elements from another source, or if they can provide the proposed service by purchasing the service at wholesale rates from a LEC. In general, and as discussed above, section 251(c)(3) imposes on incumbent LECs the obligation to offer on an unbundled basis all network elements for which it is technically feasible to provide access. We believe the plain language of section 251(d)(2), and the standards articulated there, give us the discretion to limit the general obligation imposed by subsection 251(c)(3), but they do not require us to do so. The standards set forth in section 251(d)(2) are minimum considerations that the Commission shall take into account in evaluating unbundling requirements. Accordingly, we conclude that the statute does not require us to interpret the "impairment" standard in a way that would significantly diminish the obligation imposed by section 251(c)(3).

287. The interpretation advanced by most of the BOCs and GTE, described above, means that, if a requesting carrier could obtain an element from a source other than the incumbent, then the incumbent need not provide the element. We agree with the reasoning advanced by some of the commenters that this interpretation would nullify section 251(c)(3) because, in theory, any new entrant could provide all of the elements in the incumbents' networks. Congress made it possible for competitors to enter local markets through the purchase of unbundled elements because it recognized that duplication of an incumbent's network could delay entry, and could be inefficient and unnecessary.⁶⁰⁶ The interpretation proffered by the

⁶⁰⁵ See Random House College Dictionary 665 (rev. ed. 1984).

⁶⁰⁶ See LDDS comments at 37, reply at 14-15.

BOCs and GTE would inhibit new entry and thus restrict the potential for meaningful competition, which would undermine the procompetitive goals of the 1996 Act. As a practical matter, if it is more efficient and less costly for new entrants to obtain network elements from a source other than an incumbent LEC, new entrants will likely pursue the more efficient and less costly approach. Additionally, as discussed above at section IV.C, we believe that allowing incumbent LECs to deny access to unbundled elements on the grounds that an element is equivalent to a service available at resale would lead to impractical results, because incumbents could completely avoid section 251(c)(3)'s unbundling obligations by offering unbundled elements to end users as retail services.⁶⁰⁷

288. Finally, we decline at this time to adopt any of the additional criteria proposed by commenters. We conclude that none of the additional factors suggested by commenters enhances our ability to identify unbundled network elements consistent with the procompetitive goals of the 1996 Act.⁶⁰⁸ These additional considerations would limit unbundling requirements or make it administratively more difficult for new entrants to obtain additional unbundled elements beyond those identified in our minimum list of required elements. For example, we believe that the proposal that new entrants must provide detailed estimates regarding projected market demand is not necessary for incumbent LECs to efficiently plan for network growth.

F. Provision of a Telecommunications Service Using Unbundled Network Elements

1. Background

289. Section 251(c)(3) provides that an incumbent LEC must provide access to "unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide" a telecommunications service.⁶⁰⁹ In the NPRM, we sought comment on the meaning of this requirement.

2. Comments

290. The Illinois Commission and Texas Public Utility Counsel, as well as a number of potential local competitors, argue that incumbent LECs cannot limit the nature of requests for

⁶⁰⁷ See *infra*, Section V.H, for a further discussion on the relationship between sections 251(c)(3) and 251(c)(4).

⁶⁰⁸ See, e.g., Texas Public Utility Counsel comments at 9-11; Cincinnati Bell comments at 15; Nortel comments at 6 (the diversion of research and development efforts to facilities that new entrants do not really want will stifle innovation); SBC comments at 25-37, 84-99.

⁶⁰⁹ 47 U.S.C. § 251(c)(3).

required elements, restrict the sale of those elements or the manner in which carriers use them,⁶¹⁰ impose requirements on the use of unbundled elements, or require the purchase of elements that carriers do not need.⁶¹¹ The Texas Public Utility Counsel contends that carriers may combine unbundled elements with any technically-compatible equipment.⁶¹² AT&T argues that incumbent LECs should be prohibited from separating elements that are ordered in combination, or from varying the definition of an unbundled element based on the services a carrier seeks to offer (absent the consent of the requesting carrier). AT&T and Comptel also argue that, in order to enable new entrants to offer competing services, incumbent LECs must perform the functions necessary to combine elements, and they must do so in any technically feasible manner requested by a new entrant.⁶¹³ According to Comptel, incumbent LECs must provide the operational and back office systems necessary for requesting carriers to purchase and combine network elements, otherwise the new entrants' ability to compete will be impaired.⁶¹⁴ Sprint contends that this provision requires incumbents to offer different facilities and services in connection with a particular element, depending on the service a requesting carrier seeks to offer.⁶¹⁵ The Florida Commission argues, however, that, if a new entrant needs a particular variation of an element to offer a service, that element should be treated as distinct. This means, for example, that, if a requesting carrier seeks a local loop with a specific kind of conditioning, that loop should be treated as a distinct element from loops with other kinds of conditioning.⁶¹⁶

291. NYNEX contends that incumbent LECs are not obligated to connect unbundled elements either to each other or to new entrants' facilities, and that the text of section 251(c)(3) requires requesting carriers to do the combining.⁶¹⁷ BellSouth argues that section 251(c)(3) requires requesting carriers to identify network elements with sufficient specificity so that their

⁶¹⁰ Illinois Commission comments at 36-38; CompTel reply at 21; Cable & Wireless reply at 20; LDDS comments at 40 (the statute grants carriers the right to use unbundled elements to offer any telecommunications service); *accord* GCI reply at 11.

⁶¹¹ LDDS comments at 40; AT&T comments at 27; Cable & Wireless reply at 20; Texas Public Utility Counsel comments at 8-9; *see also* NCTA comments at 40-41 (new entrants must have access to elements that are necessary to provide a telecommunications service).

⁶¹² Texas Public Utility Counsel comments at 8-9.

⁶¹³ AT&T comments at 27; Comptel reply at 23-24; *see also* MCI comments at 23.

⁶¹⁴ Comptel comments at 38. Back office systems include the administrative means by which incumbent LECs, commercially provision telecommunications services to consumers. Thus, they include the means by which incumbent LECs accept orders for services, respond to requests for repairs, etc.

⁶¹⁵ Sprint comments at 30.

⁶¹⁶ Florida Commission comments at 22.

⁶¹⁷ NYNEX reply at 19.

characteristics and appropriate uses can be defined. BellSouth contends that section 251(c)(3) prohibits carriers from requesting elements to provide cable or information services.⁶¹⁸

3. Discussion

292. Under section 251(c)(3), incumbent LECs must provide access to "unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide" a telecommunications service.⁶¹⁹ We agree with the Illinois Commission, the Texas Public Utility Counsel, and others that this language bars incumbent LECs from imposing limitations, restrictions, or requirements on requests for, or the sale or use of, unbundled elements that would impair the ability of requesting carriers to offer telecommunications services in the manner they intend. For example, incumbent LECs may not restrict the types of telecommunications services requesting carriers may offer through unbundled elements, nor may they restrict requesting carriers from combining elements with any technically compatible equipment the requesting carriers own. We also conclude that section 251(c)(3) 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. 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.

293. We agree with AT&T and Comptel that the quoted text in section 251(c)(3) bars incumbent LECs from separating elements that are ordered in combination, unless a requesting carrier specifically asks that such elements be separated. We also conclude that the quoted text requires incumbent LECs, if necessary, to perform the functions necessary to combine requested elements in any technically feasible manner either with other elements from the incumbent's network, or with elements possessed by new entrants, subject to the technical feasibility restrictions discussed below. We adopt these conclusions for two reasons. First, in practice it would be impossible for new entrants that lack facilities and information about the incumbent's network to combine unbundled elements from the incumbents' network without the assistance of the incumbent. If we adopted NYNEX's proposal, we believe requesting carriers would be seriously and unfairly inhibited in their ability to use unbundled elements to enter local markets. We therefore reject NYNEX's contention that the statute requires requesting carriers, rather than incumbents, to combine elements. We do not believe it is possible that Congress, having created the opportunity to enter local telephone markets through the use of unbundled elements, intended

⁶¹⁸ BellSouth comments at 36; *see also* PacTel reply at 16-17.

⁶¹⁹ 47 U.S.C. § 251(c)(3).

to undermine that opportunity by imposing technical obligations on requesting carriers that they might not be able to readily meet.

294. Second, given the practical difficulties of requiring requesting carriers to combine elements that are part of the incumbent LEC's network, we conclude that section 251(c)(3) should be read to require incumbent LECs to combine elements requested by carriers. More specifically, section 251(c)(3) provides that incumbent LECs must provide unbundled elements "in a manner that allows requesting carriers to combine them" to provide a telecommunications service. We believe this phrase means that incumbents must provide unbundled elements in a way that *enables* requesting carriers to combine them to provide a service. The phrase "allows requesting carriers to combine them," does not impose the obligation of physically combining elements exclusively on requesting carriers. Rather, it permits a requesting carrier to combine the elements if the carrier is reasonably able to do so. If the carrier is unable to combine the elements, the incumbent must do so.⁶²⁰

295. Our conclusion that incumbent LECs must combine unbundled elements when so requested is consistent with the method we have adopted to identify unbundled network elements. Under our method, incumbents must provide, as a single, combined element, facilities that could comprise more than one element. This means, for example, that, if the states require incumbent LECs to provision subloop elements, incumbent LECs must still provision a local loop as a single, combined element when so requested, because we identify local loops as a single element in this proceeding.⁶²¹

296. We decline to adopt the view proffered by some parties that incumbents must combine network elements in any technically feasible manner requested. This proposal necessarily means that carriers could request incumbent LECs to combine elements that are not ordinarily combined in the incumbent's network. We are concerned that, in some instances, this could potentially affect the reliability and security of the incumbent's network, and the ability of other carriers to obtain interconnection, or request and use unbundled elements. Accordingly, incumbent LECs are required to perform the functions necessary to combine those elements that are ordinarily combined within their network, in the manner in which they are typically combined. Incumbent LECs are also required to perform the functions necessary to combine elements, even if they are not ordinarily combined in that manner, or they are not ordinarily combined in the incumbent's network, provided that such combination is technically feasible,⁶²²

⁶²⁰ In this context, we conclude that the term "combine" means connecting two or more unbundled network elements in a manner that would allow a requesting carrier to offer the telecommunications service it seeks to offer.

⁶²¹ See *infra*, Section V.J.

⁶²² As discussed in Section IV, effects on network reliability and security are factors to be considered in determining technical feasibility.

or such combination would not undermine the ability of other carriers to access unbundled elements or interconnect with the incumbent LEC's network. Incumbent LECs must prove to state commissions that a request to combine particular elements in a particular manner is not technically feasible, or that the request would undermine the ability of other carriers to access unbundled elements and interconnect because they have the information to support such a claim.

297. We agree with Sprint and the Florida Commission, respectively, that in some cases incumbent LECs may be required to provision a particular element in different ways, depending on the service a requesting carrier seeks to offer; and, in other instances, where a new entrant needs a particular variant of an element to offer a service, that element should be treated as distinct from other variants of the element. This means, for example, that we will treat local loops with a particular type of conditioning⁶²³ as distinct elements that are different from loops with other types of conditioning.⁶²⁴ As discussed below, we agree with CompTel that incumbent LECs must provide the operational and support systems necessary for requesting carriers to purchase and combine network elements. Incumbent LECs use these systems to provide services to their own end users, and new entrants similarly must have access to them to provide telecommunications services using unbundled elements.⁶²⁵ Finally, we agree with BellSouth that requesting carriers must specify to incumbent LECs the network elements they seek before they can obtain such elements on an unbundled basis. We do not believe, however, that it will always be possible for new entrants to do this either before negotiations (or arbitrations) begin, or before they end, because new entrants will likely lack knowledge about the facilities and capabilities of a particular incumbent LEC's network. We further believe that incumbent LECs must work with new entrants to identify the elements the new entrants will need to offer a particular service in the manner the new entrants intend.

G. Nondiscriminatory Access to Unbundled Network Elements and Just, Reasonable and Nondiscriminatory Terms and Conditions for the Provision of Unbundled Network Elements

1. Background

298. Section 251(c)(3) requires incumbent LECs to provide requesting carriers "nondiscriminatory access to network elements on an unbundled basis . . . on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."⁶²⁶ In the NPRM, we sought

⁶²³ For an explanation of what conditioning of a local loop means *see infra*, Section V.J.1.

⁶²⁴ Florida Commission comments at 22.

⁶²⁵ Incumbent LEC back-office systems are discussed in Section V.J.

⁶²⁶ 47 U.S.C. § 251(c)(3).

comment on whether we should adopt minimum national requirements governing the terms and conditions for the provision of unbundled network elements. We further asked what rules could ensure that the terms and conditions for access to unbundled network elements are just, reasonable and nondiscriminatory, and how we should enforce such rules. In particular, we sought comment on whether we should adopt uniform national rules governing provisioning, service, maintenance, technical standards and nondiscrimination safeguards in connection with the provision of unbundled network elements. We also asked whether we should consider any of the terms and conditions applicable to the provision of access to unbundled elements in evaluating BOC applications to provide in-region interLATA services under section 271(b).⁶²⁷

2. Comments

299. The Florida, Illinois and Washington Commissions, as well as a number of potential competitors, argue that we should adopt national standards governing the terms and conditions for the provision of unbundled elements to ensure that new entrants obtain nondiscriminatory access to elements. These parties contend that incumbent LECs have the incentive and ability to delay the provisioning of unbundled elements, to provide lower quality services to new entrants, and engage in other anticompetitive tactics. They further argue that it would be a tremendous barrier to entry if new entrants had to negotiate the terms and conditions for the provision of unbundled elements on a state by state basis, especially in light of the incumbent LECs' superior bargaining power. Accordingly, they argue that we should establish requirements mandating nondiscriminatory performance for ordering, installation, provisioning, maintenance, repair and billing.⁶²⁸ Cable & Wireless argues that access to unbundled network elements on a nondiscriminatory basis will assist small carriers in entering local exchange markets because small carriers cannot afford the capital necessary to build competing infrastructure.⁶²⁹

300. The parties arguing for national standards governing the terms and conditions for the provision of unbundled elements disagree, however, on the types of requirements we should establish. Teleport and Intermedia Communications argue that incumbent LECs should be required to provide installation, service and maintenance for new entrants pursuant to the same

⁶²⁷ NPRM at paras. 79, 89.

⁶²⁸ MFS comments at 16-17, 41; AT&T comments at 33-39; AT&T reply at 21-22; TCC comments at 54-60; Cable & Wireless comments at 36-37; MCI comments at 20-27; Ericsson comments at 3; Continental comments at 19; Comcast comments at 24-25; Intermedia comments at 3-13; Florida Commission comments at 21; Illinois Commission comments at 40; Washington Commission comments at 21-22; Sprint comments at 17-19; GST comments at 17; Teleport reply at 26-29; Nextel comments at 9-10; NCTA comments at 44-46; Colorado Commission comments at 27 (some general terms and conditions would be useful); Texas Commission comments at 15-16.

⁶²⁹ Cable & Wireless comments at 23; *see also* SBA comments at 14-15 (the Commission should establish terms and conditions for the provision of unbundled elements, for otherwise, the provision of unbundled elements to smaller competitors would be rendered useless).

standards they do for themselves.⁶³⁰ NCTA, MCI, and Cable & Wireless argue that we should adopt specific standards, including time limits, for implementation of requests for unbundled elements.⁶³¹ MCI, AT&T, Frontier and the Washington and Texas Commissions further argue that incumbents should be required to provide access to unbundled elements that is equal in quality to what the incumbents provide themselves.⁶³² PageNet argues that the "equal-in-quality" standard does not mean that treatment should be identical where different technology is used, but that the quality should be the same.⁶³³ Time Warner and Continental argue that we should subject incumbents to reasonable provisioning standards.⁶³⁴ The District of Columbia Commission argues that we should adopt a general rule that the incumbent must offer the same services under the same terms and conditions to all similarly situated customers.⁶³⁵ Finally, Lincoln Tel. argues that the Commission should adopt the terms and conditions established in our Expanded Interconnection and Open Network Architecture proceedings.⁶³⁶

301. A number of incumbents, including Bell Atlantic, SBC, GVNW and NYNEX, contend that we should not set specific rules, including time limits, for installation, service, maintenance and repair because incumbent LECs have different operational and administrative systems, and are subject to different state standards.⁶³⁷ GVNW further notes that specific intervals would impose an uneconomic burden on rural LECs because it would force them to purchase excess capacity in advance.⁶³⁸ The Washington and Florida Commissions, as well as SBC, GVNW, NYNEX, and AT&T, argue that we should adopt a general nondiscrimination standard and require incumbent LECs to provide network elements to new entrants according to

⁶³⁰ Teleport comments at 25, 33-34, reply at 26-29; Intermedia comments at 3-13.

⁶³¹ NCTA comments at 44-46; MCI comments at 24-30; Cable & Wireless comments at 36-37; *see also* Intermedia comments at 3-6.

⁶³² MCI comments at 23; AT&T comments at 33-39 (the Commission has imposed similar requirements in other instances where the BOCs provide competitive services that rely on monopoly inputs controlled by the BOCs); Texas Commission comments at 15-16; Washington Commission comments at 21; Frontier comments at 18; *accord* MFS comments at 17, 41; *see also* ACSI comments at 51; Ohio commission comments at 31.

⁶³³ PageNet comments at 6-9.

⁶³⁴ Time Warner comments at 44-45; Continental comments at 20.

⁶³⁵ District of Columbia Commission comments at 19-22.

⁶³⁶ Lincoln Tel. comments at 9.

⁶³⁷ Bell Atlantic comments at 31; SBC comments at 37-38; GVNW comments at 17; NYNEX reply at 32-33; *see also* Colorado Commission comments at 24-27 (certain technical standards may not be economically reasonable in all areas because of differences in technology, demography and geography).

⁶³⁸ GVNW comments at 17.

the same installation, service, and maintenance intervals that apply to LEC customers and services. The Florida Commission observes that state requirements vary by state, and therefore states are in the best position to evaluate disputes relating to installation, service and maintenance intervals.⁶³⁹ NYNEX explains that implementation of such a general standard will vary based on technology, service offering, and geographic area, and therefore states and negotiating parties are in the best position to determine specific implementation responsibilities.⁶⁴⁰ TCC argues that we should adopt a general standard prohibiting incumbents from favoring their own retail operations and that consumers should not be able to perceive a difference between services provided by incumbents and those provided by new entrants.⁶⁴¹ Bell Atlantic contends that, while we should adopt a general nondiscrimination standard, this standard should not incorporate the standards that apply to LEC customers and services because many unbundled elements are new services with which incumbent LECs have no experience.⁶⁴² The Pennsylvania Commission argues that the terms and conditions adopted herein should accommodate local variations.⁶⁴³

302. A number of potential competitors argue that, to achieve nondiscriminatory provision of unbundled elements, incumbent LECs must be required to provide pre-ordering, ordering, provisioning, billing, and maintenance and repair, and other services on a "real time" basis, which can only be done through the use of electronic ordering interfaces.⁶⁴⁴ CompTel argues that incumbents provide these types of services to themselves by automated means and therefore they should be available to competing providers through automation.⁶⁴⁵ AT&T contends that manual interfaces for the provision of unbundled elements would cause overwhelming delays that would inhibit the ability of new entrants to compete.⁶⁴⁶ AT&T further argues that we should establish national standards for gateways that would interface with incumbent LEC electronic ordering systems. According to AT&T, the Commission should

⁶³⁹ Washington Commission comments at 21-22; Florida Commission comments at 21; SBC comments at 37-38; AT&T comments at 33-39; AT&T reply at 21-22; NYNEX reply at 32-33; *accord* TCC comments at 54-60; Intermedia comments at 3-13.

⁶⁴⁰ NYNEX reply at 32-33.

⁶⁴¹ TCC comments at 54-60.

⁶⁴² Bell Atlantic comments at 31.

⁶⁴³ Pennsylvania Commission comments at 25.

⁶⁴⁴ Sprint comments at 17-22; Teleport reply at 26-29; AT&T comments at 33-39; AT&T reply at 21-22; TCC comments at 54-60; MCI comments at 23. *See infra*, Section V.J.5, summarizing the Electronic Communications Implementation Committee's definition of an electronic interface.

⁶⁴⁵ CompTel reply at 23-24.

⁶⁴⁶ AT&T comments at 33-39, reply at 21-22.

oversee the development of such gateways and incumbent LECs should be required to provide electronic ordering systems with the same level of quality that they provide in such systems for themselves.⁶⁴⁷ AT&T, MCI, and Sprint argue that we should establish deadlines for the development of electronic interface systems, and a deadline for implementation of such systems.⁶⁴⁸ TCC argues that incumbents should not delay provision of unbundled elements until automated interfaces are developed.⁶⁴⁹ Lincoln Tel. contends, however, that we should not require small and medium size incumbent LECs to provide electronic ordering interfaces.⁶⁵⁰

303. Some potential competitors argue that we should impose additional terms and conditions for the provision of unbundled elements, including all test and turn-up procedures, nondiscriminatory access to incumbent LEC databases, around-the-clock provisioning support, and processes that would make it as easy and transparent for a customer to switch local carriers as it currently is to switch long distance carriers. These parties argue that we should require incumbents to continue to participate in cooperative industry practices, such as the Centralized Message Distribution System, and that new entrants should have access to such systems.⁶⁵¹ Sprint and NCTA contend that, because incumbent LECs can obtain access to a new entrant's CPNI, through access to signaling and databases, we should prohibit incumbent LECs from using a new entrant's proprietary information for marketing purposes.⁶⁵² MFS argues that we should set minimum technical standards in connection with the provision of unbundled elements, and thus we should require incumbent LECs to offer new entrants any type of loop facilities (*e.g.*, loop upgrades and conditioning) and transmission capabilities available within its network.⁶⁵³ MCI contends we should adopt national technical standards in connection with the means to combine elements and access to information and that such technical standards should meet Bellcore and ANSI requirements. MCI further contends that, to overcome incumbent LEC incentives to engage in dilatory tactics, the Commission should require incumbent LECs to implement the terms and conditions for the provision of unbundled elements within six months after the end of negotiations or arbitrations. MCI contends that this requirement will hasten the

⁶⁴⁷ AT&T comments at 33-39; *accord* TCC comments at 54-60.

⁶⁴⁸ AT&T comments at 33-39; Sprint comments at 17-22 (the Commission should direct the industry to develop standards for electronic bonding within 12 months, and should require incumbents to implement these standards within 12 months); MCI comments at 20-27; MCI reply at 28-30.

⁶⁴⁹ TCC comments at 54-60.

⁶⁵⁰ Lincoln Tel. comments at 9.

⁶⁵¹ *See, e.g.*, MCI comments at 23; AT&T comments at 33-39; Continental comments at 23.

⁶⁵² Sprint comments at 17-22; NCTA comments at 43.

⁶⁵³ MFS reply at 18-19.

development of the technical standards and operational support systems that are necessary to provide unbundled elements in a nondiscriminatory manner.⁶⁵⁴ AT&T argues that the terms and conditions for pre-ordering, ordering, provisioning, billing, and maintenance and repair should be the same under sections 251(c)(3) and 251(c)(4).⁶⁵⁵

304. PacTel and USTA argue that we should not establish national standards for installation, service, and maintenance and repair in connection with the provision of unbundled elements. PacTel contends that we should merely establish guidelines. USTA argues that the 1996 Act does not authorize the Commission to establish such standards, and the advantages of rules for the provision of unbundled elements are more than offset by the impingement on voluntary negotiations.⁶⁵⁶ USTA and the California Commission further argue that we should not adopt technical standards to insure interoperability between networks because this function is performed by standards bodies, and the differences in operational and administrative systems between LEC networks result in different provisioning and service intervals. They further argue that any requirements on technical standards would hinder efficiency.⁶⁵⁷ PacTel argues that there is very little opportunity for discrimination against competing providers because few elements are dedicated to specific new entrants. PacTel further contends that we should not establish rules to insure nondiscriminatory provision of network elements because such rules will encourage litigation and the 1996 Act is self-effectuating. PacTel argues that we should consider claims of discrimination on a case-by-case basis through adjudication of complaints.⁶⁵⁸ Both PacTel and USTA argue that the terms and conditions for the provision of unbundled elements should be resolved by private parties, the states, and industry fora.⁶⁵⁹ The California Commission argues that the states are best situated to determine the terms and conditions for the provision of unbundled elements because they can best accommodate unique circumstances. The California Commission also argues that the Commission can determine whether the terms and conditions

⁶⁵⁴ MCI comments at 20-27; MCI reply at 28-30.

⁶⁵⁵ AT&T comments at 33-39.

⁶⁵⁶ PacTel comments at 40-44; USTA comments at 21-22; *see also* GTE comments at 24.

⁶⁵⁷ USTA comments at 21-22; California Commission comments at 26-28; *see also* Colorado Commission comments at 27 (national technical standards are a laudable goal but should be carefully considered because of differences between incumbent LEC networks); Oregon commission comments at 24.

⁶⁵⁸ PacTel comments at 30, 50-52; *accord* GVNW comments at 23-24 (requiring incumbent LECs to provide equivalent service is a negative incentives approach; the FCC will achieve nondiscriminatory provision of unbundled elements if it insures that incumbents are adequately compensated for such services).

⁶⁵⁹ PacTel comments at 30, 40-44; USTA comments at 21-22.

for the provision of unbundled elements are appropriate when the Commission evaluates BOC section 271 applications.⁶⁶⁰

305. Teleport argues that we must impose some method of enforcing terms and conditions applicable to unbundled elements, otherwise such regulations will not achieve their desired effect.⁶⁶¹ Thus, Teleport and a number of other potential competitors argue that we should impose penalties on incumbent LECs who fail to meet our standards.⁶⁶² MFS and NCTA argue that new entrants should be entitled to damages, and NCTA further contends that new entrants should be entitled to a reduction in rates for violations of our rules.⁶⁶³ AT&T and Intermedia Communications argue that incumbents should be required to file reports demonstrating compliance with the terms and conditions established herein.⁶⁶⁴ AT&T and others specifically request that the Commission require each incumbent LEC to file quarterly reports identifying the time intervals under which the incumbents have performed ordering, provisioning, and maintenance functions for competitors and for the incumbents' end-user customers.⁶⁶⁵ MCI and Cable & Wireless argue that we should maintain oversight of the process by which incumbent LECs implement requests for unbundled elements.⁶⁶⁶ PacTel opposes the imposition of penalties for failure to meet performance standards on the grounds that this will foster litigation and unwarranted claims of breach.⁶⁶⁷

306. A number of potential entrants argue that the Commission should condition BOC entry into the in-region long distance market on fulfillment of the terms and conditions for the provision of unbundled elements.⁶⁶⁸ Teleport argues that once the BOCs get into the in-region

⁶⁶⁰ California Commission comments at 26-28; *see also* Oregon commission comments at 27.

⁶⁶¹ Teleport reply at 26-29.

⁶⁶² Teleport comments at 25-34, reply at 26-29; MCI comments at 20, reply at 28-30; NCTA comments at 44-46; Comcast comments at 24-25; Continental comments at 20.

⁶⁶³ MFS comments at 16-17, 41; NCTA comments at 45-46.

⁶⁶⁴ AT&T comments at 33-39; Intermedia comments at 3-6.

⁶⁶⁵ *See, e.g.*, AT&T comments at 38; GCI comments at 9; Intermedia comments at 4-5; ACTA comments at 15.

⁶⁶⁶ MCI comments at 21-27; Cable & Wireless comments at 36-37.

⁶⁶⁷ Pactel comments at 30.

⁶⁶⁸ MCI comments at 21-27; Teleport comments at 25-34 (arguing that it is already experiencing service quality problems); Cable & Wireless comments at 36-37; TCC comments at 54-60; CompTel comments at 23-24; LDDS comments at 27.