October 7, 2025

FCC FACT SHEET[*]
Advancing IP Interconnection
Notice of Proposed Rulemaking – WC Docket Nos. 25-304, 25-208, 17-97

Background: Although only a small fraction of consumers today subscribe to legacy stand-alone copper-based voice service, the Commission's interconnection requirements force incumbent local exchange carriers (LECs) to maintain costly, outdated infrastructure installed across the nation to facilitate interconnection with other carriers using legacy time-division multiplexing (TDM) equipment. This *Notice of Proposed Rulemaking*, if adopted, would initiate the next step in the Commission's efforts to accelerate the transition of communications networks to all-Internet Protocol (IP) technology by examining our incumbent LEC-specific interconnection requirements. At the same time, the *Notice of Proposed Rulemaking* would seek comment on ways the Commission can facilitate a successful transition to all-IP interconnection for voice services while retaining critical oversight in areas of public safety and consumer protection.

What the Notice of Proposed Rulemaking Would Do:

- Seek comment on the current state of TDM and IP interconnection for voice services.
- Propose to forbear from interconnection and related obligations imposed on incumbent LECs under sections 251(c)(2) and (c)(6) of the Communications Act of 1934, as amended, and the Commission's rules implementing those provisions by a sunset date of December 31, 2028.
- Seek comment on whether and to what extent eliminating the incumbent LEC-specific interconnection regulatory framework may affect other statutory frameworks or Commission rules, and whether the Commission should revisit any other provisions or rules that are rendered redundant by the elimination of incumbent LECs' interconnection obligations in section 251(c)(2).
- Seek comment on what, if any, regulatory framework for IP interconnection should replace the current interconnection framework under section 251(c)(2), and on the scope of the Commission's authority to regulate IP interconnection under any such framework.
- Seek comment on ways the Commission can facilitate a successful transition to all-IP interconnection for voice services while retaining critical oversight in areas of public safety and consumer protection.
- While this Notice focuses on interconnection obligations for incumbent LECs, it would state that the Commission intends to address issues related to tariffing and access charge requirements stemming from the legacy TDM framework in separate future items.

[*]This document is being released as part of a "permit-but-disclose" proceeding. Any presentations or views on the subject expressed to the Commission or its staff, including by email, must be filed in WC Docket Nos. 25-304, 25-208, and 17-97 which may be accessed via the Electronic Comment Filing System (https://www.fcc.gov/ecfs). Before filing, participants should familiarize themselves with the Commission's *ex parte* rules, including the general prohibition on presentations (written and oral) on matters listed on the Sunshine Agenda, which is typically released a week prior to the Commission's meeting. *See* 47 CFR § 1.1200 *et seq*.

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Advancing IP Interconnection	)	WC Docket No. 25-304
	)	
Accelerating Network Modernization	)	WC Docket No. 25-208
	)	
Call Authentication Trust Anchor	)	WC Docket No. 17-97

NOTICE OF PROPOSED RULEMAKING*

Adopted: [] **Released: []**

Comment Date: [30 days after Federal Register Publication]
Reply Comment Date: [60 days after Federal Register Publication]

By the Commission:

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Heading Paragraph #

* This document has been circulated for tentative consideration by the Commission at its October open meeting. The issues referenced in this document and the Commission's ultimate resolutions of those issues remain under consideration and subject to change. This document does not constitute any official action by the Commission. However, the Chairman has determined that, in the interest of promoting the public's ability to understand the nature and scope of issues under consideration, the public interest would be served by making this document publicly available. The Commission's *ex parte* rules apply and presentations are subject to "permit-but-disclose" *ex parte* rules. *See, e.g.*, 47 CFR §§ 1.1206, 1.1200(a). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules, including the general prohibition on presentations (written and oral) on matters listed on the Sunshine Agenda, which is typically released a week prior to the Commission's meeting. *See* 47 CFR §§ 1.1200(a), 1.1203.

I. INTRODUCTION

1. Today, we initiate the next step in our efforts to accelerate the transition of our communications networks to all-Internet Protocol (IP) technology by examining our incumbent local exchange carrier (LEC)-specific interconnection requirements. Only a small fraction of consumers today subscribe to legacy stand-alone copper-based voice service,[1] and many providers already rely on packet-based IP networks to deliver high-speed voice and data services.[2] And yet, despite increasingly widespread adoption of IP technology by consumers and businesses, our current interconnection regulatory framework for local voice service has delayed the promise of ubiquitous next-generation networks. The Commission's incumbent LEC-specific interconnection requirements—mandated under the Telecommunications Act of 1996 (1996 Act)[3] to promote competition—force providers to maintain costly, outdated infrastructure installed across the nation to ensure interconnection with other carriers using legacy time-division multiplexing (TDM) equipment. We believe this mandate is impairing investment in modern services for consumers and has become unnecessary in a communications market where the majority of voice traffic is now IP-based.[4]

2. The Commission has already acted quickly in 2025 to hasten the transition to next-generation communications networks by cutting red tape and easing unnecessary regulatory burdens.[5]

[1] As of June 30, 2024, only 9.2% of all fixed residential voice connections are delivered over traditional switched-access technology. FCC, Office of Economics and Analytics, Voice Telephone Services: Status as of June 30, 2024, at 8, Tbl. 1 (2025), https://docs.fcc.gov/public/attachments/DOC-411462A1.pdf (*May 2025 Voice Telephone Services Report*).

[2] *See May 2025 Voice Telephone Services Report* at 6, Fig. 4 (showing that 73% of incumbent LEC retail subscriptions are for VoIP and 98.5% of non-incumbent LEC retail subscriptions are for VoIP); *see also* Letter from Michael Romano, Executive Vice President, NTCA, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 17-97 et al., at 1 (filed July 2, 2025) (noting that 86% of NTCA members' customers are connected by fiber-to-the-premise networks and 83% of NTCA members have IP-enabled switching capabilities within their networks) (NTCA July 2 *Ex Parte*).

[3] The Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified at 47 U.S.C. § 151 *et seq.*) (1996 Act).

[4] *See May 2025 Voice Telephone Services Report* at 3, Fig. 2 (showing that 74.5% of residential and 80.3% of business wireline voice service is IP-based). We note that the Commission's rules related to tariffing and access-charge requirements stem directly from the legacy TDM framework; we intend to address those provisions in a separate proceeding.

[5] *See, e.g.*, *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment; Technology Transitions*, WC Docket Nos. 17-84 and 13-5, Order, 40 FCC Rcd 3357 (WCB 2025) (streamlining the grandfathering process for VoIP services provisioned over copper lines); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Order, 40 FCC Rcd 2026 (continued….)

Most recently, the Commission launched the instant proceeding to accelerate network modernization,[6] and in July proposed several actions to reduce regulatory barriers that hinder the transition to all-IP networks by preventing much-needed investment in and deployment of next-generation networks.[7] We continue those efforts today by proposing to eliminate burdensome legacy interconnection regulations that distort competition in the voice market and prevent providers of modern, IP-based networks from interconnecting efficiently. At the same time, we seek comment on ways the Commission can facilitate a successful transition to all-IP interconnection for voice services while retaining critical oversight in areas of public safety and consumer protection.

3. Below, we seek comment on the current state of TDM and IP interconnection for voice services. We propose to forbear from incumbent LEC-specific interconnection and related obligations in sections 251(c)(2) and (c)(6) of the Communications Act of 1934, as amended (the Act),[8] and to eliminate the Commission's rules implementing those provisions,[9] by December 31, 2028. We also seek comment on whether and to what extent eliminating the incumbent LEC-specific interconnection regulatory framework may affect other statutory frameworks or Commission rules, and whether we should revisit any other provisions or rules that are rendered redundant by the elimination of incumbent LECs' interconnection obligations in section 251(c)(2). Finally, we seek comment on what, if any, regulatory framework for IP interconnection should replace the current interconnection framework under section 251(c)(2), and on the scope of the Commission's authority to regulate IP interconnection under any such framework.

II. BACKGROUND

4. Congress has long authorized the Commission to mandate interconnection between common carriers.[10] Specifically, section 201(a) requires every common carrier engaged in interstate or foreign communication by wire or radio "to furnish such communication service upon reasonable request," and, when the Commission finds it necessary after a hearing,[11] "to establish physical

(Continued from previous page)
(WCB 2025) (streamlining the process for network change disclosures and copper retirements); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Order, 40 FCC Rcd 2019 (WCB 2025) (streamlining the grandfathering process for technology transitions).

[6] *Wireline Competition Bureau Establishes WC Docket Nos. 25-208 and 25-209*, WC Docket Nos. 25-208 and 25-209, Public Notice, 40 FCC Rcd 4382 (WCB 2025).

[7] *See Reducing Barriers to Network Improvements and Service Changes; Accelerating Network Modernization*, WC Docket Nos. 25-209 and 25-208, Notice of Proposed Rulemaking, FCC 25-37 (rel. July 25, 2025) (seeking comment on deregulatory options to encourage providers to build, maintain, and upgrade their networks) (*Accelerating Network Modernization Notice of Proposed Rulemaking*).

[8] 47 U.S.C. §§ 251(c)(2), (c)(6).

[9] *See* 47 CFR § 51.305 (Interconnection); *id.* § 51.321 (Methods for obtaining interconnection and access to unbundled elements); *id.* § 51.323 (Standards for physical collocation and virtual collocation).

[10] *See Access Charge Reform; Reform of Access Charges Imposed by Competitive Local Exchange Carriers; Petition of Z-Tel Communications, Inc. for Temporary Waiver of Commission Rule 61.26(d) To Facilitate Deployment of Competitive Service in Certain Metropolitan Statistical Areas*, CC Docket No. 96-262, Eighth Report and Order and Fifth Order on Reconsideration, 19 FCC Rcd 9108, 9137-38, paras. 60-61 (2004) (*Eighth Access Charge Reform Order*).

[11] The Commission's previous use of notice and comment procedures to satisfy the section 201(a) hearing requirement was expressly affirmed by the U.S. Court of Appeals for the Third Circuit. *See Bell Telephone Co. v. FCC*, 503 F.2d 1250, 1265 (3rd Cir. 1974) (holding that section 201(a) permits procedures less formal and adversarial than an evidentiary hearing because, among other things, courts have come to favor rulemaking over adjudication for the formulation of new policy), *cert. denied*, 422 U.S. 1026 (1974).

connections with other carriers" and through routes for traffic.[12] This provision was grounded in the era's philosophy of universal service via regulated monopoly, and imposed common-carrier duties of interconnection and non-discrimination to promote ubiquitous connectivity.[13]

5. *Section 251 Interconnection Framework.* The 1996 Act established a procompetitive, deregulatory policy framework designed to open local telecommunications markets "and bring new packages of services, lower prices and increased innovation to American consumers."[14] Section 251 of the Act has been central to this framework: it provided a graduated set of interconnection requirements and other obligations on different categories of telecommunications carriers in order to foster competition in telecommunications markets, particularly local markets that has been dominated by legal monopolies before the Act's passage.[15]

6. Section 251(a) sets forth the most important requirement, imposing on all "telecommunications carriers" the duty "to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers."[16] Notably, the Commission has found this obligation to be "technology neutral"[17] and made clear that "VoIP providers may obtain access to and interconnection with the local exchange network through competitive carriers."[18] Section 251(b) sets forth duties for all LECs, pertaining to resale of services, number portability, dialing parity, access to rights-of-way, and reciprocal compensation.[19]

7. Section 251(c) sets forth additional detailed obligations that apply only to a subset of incumbent LECs, the group of local telephone companies that, prior to the 1996 Act, generally had been subject to little or no competition.[20] Section 251(c)(1) requires incumbent LECs and telecommunications carriers requesting interconnection to "negotiate in good faith in accordance with section 252 the particular terms and conditions of agreements" to fulfill the section 251(b) and (c) requirements.[21]

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[12] 47 U.S.C. § 201(a).

[13] *See Eighth Access Charge Reform Order*, 19 FCC Rcd at 9138, para. 61 (interpreting the public interest standard in section 201(a) as designed to protect universal connectivity and universal service).

[14] *See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, CC Docket Nos. 96-98, 95-185, First Report and Order, 11 FCC Rcd 15499, 15505, para. 4 (1996) (*First Local Competition Order*).

[15] *See id.* at 15506, para. 4.

[16] 47 U.S.C. § 251(a)(1).

[17] *See Connect America Fund, et al.*, WC Docket Nos. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 18139, para. 1381 (*USF/ICC Transformation Order and FNPRM*).

[18] *Petition of CRC Communications of Maine, Inc. and Time Warner Cable Inc. for Preemption Pursuant to Section 253 of the Communications Act, as Amended, et al.*, WC Docket No. 10143, CC Docket No. 01-92, GN Docket No. 09-51, Declaratory Ruling, 26 FCC Rcd 8259, 8274, para. 27 (2011).

[19] 47 U.S.C. § 251(b).

[20] 47 U.S.C. § 251(c); *see also id.* §§ 251(h), 252(j) (defining incumbent LEC), 251(f) (generally exempting rural telephone companies from the ambit of section 251(c), even if they are incumbent LECs); *First Local Competition Order*, 11 FCC Rcd at 15508-09, paras. 10-11 (describing the economic barriers to entry into the local exchange and exchange access markets prior to the 1996 Act).

[21] 47 U.S.C. § 251(c)(1). Under section 252(a), when an incumbent LEC receives a request for "interconnection, services, or network elements pursuant to section 251," and enters into voluntary negotiations, the incumbent LEC may negotiate without regard to the standards set forth in sections 251(b) and (c). 47 U.S.C. § 252(a)(1). Any party voluntarily negotiating such an interconnection agreement may ask a state commission to mediate any differences. *See* 47 U.S.C. § 252(a)(2). Section 252 provides for state commissions to mediate and arbitrate interconnection disputes involving an incumbent LEC, 47 U.S.C. §§ 252(a)(2), (b)(1), as well as to approve or reject interconnection agreements arrived at "by negotiation and arbitration." 47 U.S.C. § 252(e)(1).

Section 251(c)(2) imposes on incumbent LECs the duty to provide, for the facilities and equipment of any requesting "telecommunications carrier,"[22] direct interconnection with its network "for the transmission and routing of telephone exchange service and exchange access"[23] at "any technically feasible point within the carrier's network" that is at least equal in quality to that provided by the LEC to itself or its subsidiaries, on rates, terms, and conditions that are just, reasonable, and nondiscriminatory.[24] Section 251(c)(6) imposes on incumbent LECs the duty to provide for "physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the local exchange carrier," on rates, terms, and conditions that are just, reasonable, and nondiscriminatory.[25]

8. These additional interconnection obligations are to any requesting "telecommunications carrier" for the transmission and routing of "telephone exchange service" and "exchange access," terms that have traditionally encompassed telephone service provisioned over legacy TDM networks.[26] The Commission has not applied section 251(c) to VoIP networks, and today incumbent LECs are not required to offer direct interconnection under section 251(c)(2) for VoIP traffic.[27] What is more, the Commission has found that interexchange carriers (i.e., long-distance carriers) are not entitled to take advantage of section 251(c)(2) interconnection for the purpose of originating or terminating interexchange traffic.

9. Thus, while sections 201 and 251(a) establish an overarching duty for all carriers to interconnect, section 251(c) applies only to some incumbent LECs and imposes direct interconnection obligations and processes designed to break open the local markets that had previously been closed to new entrants.[28] Or to put it differently, when Congress passed the Telecommunications Act of 1996 and adopted section 251(c), incumbent LECs controlled 99.7% of the local telephone service market,[29]

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[22] The Act defines "telecommunications carrier" as any provider of "telecommunications services," which is in turn defined as "the offering of telecommunications for a fee directly to the public . . . regardless of the facilities used." 47 U.S.C. § 153(51), (53).

[23] The Act defines "telephone exchange service" as "service within a telephone exchange, or within a connected system of telephone exchanges within the same exchange area, operated to furnish to subscribers intercommunicating service of the character ordinarily furnished by a single exchange and covered by the exchange service charge," or "comparable service provided through a system of switches, transmission equipment, or other facilities (or combination thereof) by which a subscriber can originate and terminate a telecommunications service." 47 U.S.C. § 153(54). The term "exchange access" is defined as "the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll services." 47 U.S.C. § 153(20). Telephone toll service "means telephone service between stations in different exchange areas for which there is made a separate charge not included in contracts with subscribers for exchange service." 47 U.S.C. § 153(55).

[24] 47 U.S.C. § 251(c)(2).

[25] 47 U.S.C. § 251(c)(6). An incumbent LEC may provide for virtual collocation if the LEC demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations. *Id.*

[26] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18139, para. 1380 (noting that the section 251 statutory framework for interconnection historically applied to TDM traffic; *First Local Competition Order*, 11 FCC Rcd at 11514, para. 26 (identifying interconnection points only in the traditional TDM architecture, e.g., circuit-switched trunk interfaces and signaling points).

[27] *First Local Competition Order*, 11 FCC Rcd at 11514, para. 26 (identifying interconnection points only in the traditional TDM architecture, e.g., circuit-switched trunk interfaces and signaling points); *see also USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18140-46, paras. 1385-93 (seeking comment on whether the Commission should, in the future, impose section 251(c)(2) interconnection obligations on VoIP networks through a rulemaking proceeding).

[28] *See First Local Competition Order*, 11 FCC Rcd at 15508-09, paras. 10-11.

[29] *See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, Notice of Proposed Rulemaking, 11 FCC Rcd 14171, 14174-75, para. 6 (1996) (*First Local Competition*

(continued….)

meaning that Congress reasonably expected that almost all local interconnection to fall under section 251(c)(2) in the near term. Today, incumbent LEC switched access lines encompass only 3.1% of the voice telephony market.[30]

10. Interconnection is further complicated by the technical reality of today's networks. The Act defines "Interconnected VoIP" as a VoIP service that, among other things, "[p]ermits users generally to receive calls that originate on the Public Switched Telephone Network [(PSTN)] and to terminate calls to the [PSTN],"[31] meaning that a VoIP call may traverse both IP and TDM portions of the network via interconnection with the legacy PSTN. As a result, an incumbent LEC's network might carry VoIP-originated traffic over TDM trunks, and competitive LECs often deploy media gateways to convert IP voice packets to TDM format (and vice versa) for interconnection with incumbents.[32] The presence of such hybrid arrangements means that the operational and engineering reality of interconnection does not always segregate neatly by protocol. Indeed, IP-based networks and TDM networks are often interdependent during the ongoing transition to all-IP networks, and interconnection obligations are generally intended to ensure seamless connectivity across these platforms.[33]

11. *Benefits of a Modernized, High-Speed, All-IP Network.* Since the passage of the 1996 Act, the communications marketplace has undergone profound changes. Consumers and businesses have migrated away from traditional TDM-based voice services to next generation VoIP service delivered over cable, fiber, or wireless infrastructure.[34] Recognizing these trends, the Commission has, for more than a decade, been taking regulatory action to encourage the transition to all-IP networks and promote new and innovative product offerings to customers.[35] Through these initiatives, the Commission has recognized

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NPRM); *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks*, WC Docket No. 18-141 et al., Report and Order on Remand and Memorandum Opinion and Order, 34 FCC Rcd 5767, 5768-69, para. 9 (2019) (*UNE Transport Forbearance Order*); *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks*, WC Docket No. 18-141, Memorandum Opinion and Order, 34 FCC Rcd 6503, 6504, para. 4 (2019) (*UNE Analog Loop and Avoided-Cost Resale Forbearance Order*) *see also First Local Competition Order*, 11 FCC Rcd at 15505, para. 1.

[30] FCC, Voice Telephone Services: Status of June 30, 2024, Tbl. 1, Voice Subscriptions (in Thousands) – Total for US, Reference Lines 1, 4, and 14.

[31] 47 CFR § 9.3.

[32] *See* Joseph Gillan and David Malfara, The Transition to an All-IP Network: A Primer on the Architectural Components of IP Interconnection at 7-10 (2012), https://pubs.naruc.org/pub/FA866A60-BB97-47F1-16BE-8520597FF45F (*IP Interconnection Primer*).

[33] See *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18123-24, para. 1336 (describing purpose and importance of interconnection to ensuring a carrier's subscribers can complete calls to subscribers on other carriers' networks).

[34] *See Technology Transitions et al*., GN Docket No. 13-5 et al., Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 30 FCC Rcd 9372, 9373, para. 1 (2015) (*2015 Technology Transitions Order*).

[35] *See, e.g.*, *Accelerating Network Modernization Notice of Proposed Rulemaking*, FCC 25-37 (seeking comment on deregulatory options to encourage providers to build, maintain, and upgrade their networks); *Modernizing Unbundling and Resale Requirements in an Era of Next-Generation Networks and Services*, WC Docket No. 19-308, Report and Order, 35 FCC Rcd 12424 (2020) (relieving incumbent LECs of various unbundled network and avoided-cost resale requirements) (*UNE Modernization Order*); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Second Report and Order, 33 FCC Rcd 5660 (2018) (streamlining the discontinuance process for technology transitions); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 32 FCC Rcd 11128, 11142, para. 33 (2017) (streamlining the copper retirement process); *Technology Transitions et al*., GN Docket No. 13-5, WC Docket No.
(continued….)

that the transition to an all-IP network—one that supports voice, video, and data on a unified, packet-based platform—will unlock substantial public interest benefits for consumers, businesses, and the broader economy.

12. All-IP networks are more resilient, flexible, and reliable compared to their legacy counterparts, offering improved service quality and fewer outages compared to legacy TDM platforms.[36] Moreover, the nationwide migration from legacy TDM networks to all-IP networks has intensified intermodal competition in the communications marketplace,[37] and it has enabled consumers to choose among an unprecedented range of providers and advanced services, including video conferencing, telehealth, cloud computing, and enterprise-grade connectivity—services on which the American public has increasingly come to rely since the onset of the COVID-19 pandemic.[38] All-IP networks can also bolster public safety by enabling more resilient, interoperable, and flexible emergency communications.[39] Next Generation 911 (NG911), for example, depends on an IP-based backbone to support multimedia inputs (e.g., text, video, data) and to improve call delivery and emergency response times, the availability of location information, and real-time call routing flexibility.[40] The IP transition also provides opportunities to improve the security of 911 networks by integrating robust cybersecurity features, such as encryption, software-based monitoring, automated threat detection, and rapid patching.[41]

13. And yet, section 251(c)(2) of the Act has appeared to stymie the continued transition to all-IP networks by forcing incumbent LECs to maintain legacy, circuit-switched infrastructure in order to fulfill their statutory obligation to interconnect with other telecommunications carriers that request

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13-3, Declaratory Ruling, Second Report and Order, and Order on Reconsideration, 31 FCC Rcd 8283, 8304-8305, paras. 64-65 (2016) (adopting the adequate replacement test for technology transitions); *Technology Transitions et al.*, GN Docket No. 13-5 et al., Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, 29 FCC Rcd 1433, 1435, para. 1 (2014) (seeking proposals for service-based experiments in connection with technology transitions) (*Technology Transitions Order*).

[36] *See, e.g.*, *Facilitating Implementation of Next Generation 911 Services (NG911); Location-Based Routing for Wireless 911 Calls*, PS Docket Nos. 21-479 and 18-64, Report and Order, 39 FCC Rcd 8137, 8138, para. 1 (2024) ("IP-based technologies and applications . . . provide new capabilities and improved interoperability and system resilience.") (*NG911 Order*); *2015 Technology Transitions Order*, 30 FCC Rcd at 9373, para. 1 ("[All-IP networks] offer the prospect of innovative and improved services to consumers and businesses alike.").

[37] *See, e.g.*, *UNE Modernization Order*, 35 FCC Rcd at 12426, para. 2 ("Former monopolist incumbent LECs are now one of many intermodal competitors, facing fierce competition from competitive LECs, cable providers, and wireless providers, among others."); *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 17669, para. 9 (noting emerging competition in the voice marketplace among telephone companies, cable companies, and wireless providers); *see also Communications Marketplace Report*, GN Docket No. 24-119, 2024 Communications Marketplace Report, 39 FCC Rcd 14116, 14119, para. 3 (2024) (observing that "new technologies, in particular 5G fixed wireless and low-Earth orbit (LEO) satellites provide additional intermodal options, especially for consumers in rural areas") (*2024 Communications Marketplace Report*).

[38] *See, e.g.*, *Access to Video Conferencing; Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010, et al.*, CG Docket No. 23-161 et al., Report and Order, Notice of Proposed Rulemaking, and Order, 38 FCC Rcd 6300, 6303-04, paras. 6-7 (2023); *2024 Communications Marketplace Report*, 39 FCC Rcd at 14232, para. 154.

[39] *See NG911 Order*, 39 FCC Rcd at 8138, para. 1.

[40] *See id.* at 8144 and 8220 paras. 14 and 182.

[41] *See* Communications Security, Reliability, and Interoperability Council VII, Report on Security Risks and Best Practices for Mitigation in 9-1-1 in Legacy, Transitional, and NG 9-1-1 Implementations at 51-55 (2020), https://www.fcc.gov/sites/default/files/csric7_report_secuirtyrisk-bestpracticesmitigation-legacytransitionalng911.pdf.

interconnection in TDM. As a result, consumers and businesses have been unable to realize the full scale of benefits that a complete transition to next-generation networks has to offer. Indeed, providers have reported that maintaining parallel legacy facilities alongside newer fiber or IP infrastructure results in unnecessary costs and technical inefficiencies,[42] reducing capital available for investment in new, modernized networks.[43] The Commission has previously found that maintaining legacy 911 infrastructure alongside IP-based NG911 results in increased costs for state and 911 authorities and "may also result in increased vulnerability and risk of 911 outages."[44] Moreover, the economic and operational burdens of sustaining legacy TDM systems are compounded by practical difficulties—TDM switches are increasingly obsolete, spare parts are scarce, and technicians with legacy expertise are retiring, forcing providers into an expensive, stop-gap maintenance cycle.[45]

14. The continued presence of non-IP technology also leaves the public more vulnerable to illegal robocalling campaigns.[46] One of the key tools at the Commission's disposal to combat illegal robocalls, the STIR/SHAKEN caller ID authentication framework,[47] works only in IP networks using the Session Initiation Protocol (SIP) for call signaling—non-IP technology at any point in the call path creates a gap in the caller ID authentication scheme that bad actors can exploit.[48] Completing the IP transition thus remains the surest path to ensuring that consumers and businesses can take full advantage of the tremendous benefits, efficiencies, and increased reliability and security of next-generation

[42] For example, AT&T has stated that it spends more than $6 billion annually in direct costs to maintain its legacy copper networks, resources it argues "would be much better spent connecting more Americans to newer networks." AT&T Reply, WC Docket No. 25-45, at 5 (filed Feb. 25, 2025); *see also* CTIA Comments, WC Docket No. 17-97, at 5, 19 (filed July 16, 2025) (identifying TDM interconnection requirements as an obstacle to the IP transition); USTelecom Reply, WC Docket No. 19-308, at 36 (filed Mar. 20, 2020) (arguing that an overly long transition will cause "wasteful and inefficient expenditures and push back investment . . . in next-generation networks" (citation omitted) (internal quotation marks omitted)).

[43] *See* Digital Progress Institute Comments, GN Docket No. 25-133, at 3 (filed Apr. 11, 2025) ("Maintaining parallel TDM and IP networks imposes excessive operational costs and discourages investment in next-generation networks by tying up capital in legacy systems that serve fewer and fewer users."); American Consumer Institute Reply, GN Docket No. 25-133, at 3 (filed Apr. 28, 2025) ("[R]edundant and wasteful network requirements . . . divert investments from state-of-the-art network technologies to outdated legacy technologies.") (American Consumer Reply); *Technology Transitions Order*, Statement of Commissioner Ajit Pai, 29 FCC Rcd at 1543 ("Every dollar that is spent maintaining the networks of yesterday is a dollar that can't be invested in the networks of tomorrow.").

[44] *NG911 Order*, 39 FCC Rcd at 8153, para. 29.

[45] *See, e.g.*, Section 63.71 Application of Lumen Competitive Local Exchange Carrier and Interexchange Carrier Affiliates for Authority Pursuant to Section 214 of the Communications Act of 1934, as Amended, to Grandfather the Provision of Low-Bandwidth Interstate Private Line Services, WC Docket No. 25-158, at 3 (filed Apr. 3, 2025) ("CenturyLink is grandfathering these [legacy] services because they are at the end of their product life cycle, as circuit demand has declined significantly. In many cases, the electronic equipment needed to support these services is no longer manufactured."); *see also Accelerating Network Modernization Notice of Proposed Rulemaking*, FCC 25-37 at 2, para. 1 ("[P]roviders whose resources are tied up maintaining outdated and deteriorating legacy networks and obsolete services will not be as focused on developing and deploying . . . next-generation networks . . . .").

[46] *Call Authentication Trust Anchor*, WC Docket No. 17-97, Notice of Proposed Rulemaking, 40 FCC Rcd 3467, 3469, para. 5 (2025) (*Non-IP Caller ID Authentication Notice of Proposed Rulemaking*). Wasted time, nuisance, and fraud due to illegal and unwanted robocalls altogether drained an estimated $13.5 billion out of the U.S. economy in 2020 alone. *Call Authentication Trust Anchor, Implementation of TRACED Act Section 6(a)—Knowledge of Customers by Entities with Access to Numbering Resources*, WC Docket Nos. 17-97 and 20-67, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 3241, 3263, paras. 47-48 (2020).

[47] Caller ID authentication, including the STIR/SHAKEN caller ID authentication framework, reduces fraud by enabling providers to verify that a caller's number matches the caller ID information transmitted with a call. *Non-IP Caller ID Authentication Notice of Proposed Rulemaking*, 40 FCC Rcd at 3470, paras. 6-7.

[48] *Id.* at 3469, para. 3.

networks.

15. The Commission has long recognized that IP-to-IP interconnection is a fundamental part of facilitating industry progression to all-IP networks.[49] In the *USF/ICC Transformation Order and FNPRM*, the Commission asserted that "[t]he duty to negotiate in good faith has been a longstanding element of interconnection requirements under the Communications Act and does not depend upon the network technology underlying the interconnection, whether TDM, IP, or otherwise."[50] The Commission continued that it "expect[ed] all carriers to negotiate in good faith in response to requests for IP-to-IP interconnection for the exchange of voice traffic."[51] In that same item, the Commission sought comment on IP-to-IP interconnection, including the appropriate legal framework and implementation of good faith negotiation.[52] Although commenters agreed that future interconnection for voice traffic would occur using Internet Protocol,[53] commenters disagreed about the appropriate policy framework for VoIP interconnection,[54] and whether there was a need for technical and industry standards.[55]

III. EXPEDITING IP-TO-IP INTERCONNECTION FOR VOICE SERVICES

16. Voice service continues to transition from TDM networks to all-IP architecture, and carriers today increasingly exchange voice traffic over IP networks rather than legacy circuit-switched trunks.[56] It has been more than a decade since the Commission last received detailed comment on IP interconnection, and we find that it is appropriate to seek updated comment on the state of IP interconnection. Below, we seek comment on current carrier practices and arrangements for interconnection for voice services, and we propose and seek comment on ending incumbent LECs' additional interconnection obligations under section 251(c). Specifically, we propose to forbear from

[49] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18123, para. 1335.

[50] *Id.* at 18045, para. 1011.

[51] *Id*. The Commission also indicated that it "expect[s] such good faith negotiations to result in interconnection arrangements between IP networks for the purpose of exchanging voice traffic." *Id*.

[52] *See id.* at 18123-47, paras. 1335-398.

[53] *See, e.g.*, AT&T Comments, WC Docket No. 10-90, at 1 (filed Feb. 24, 2012); Bandwidth.com Comments, WC Docket No. 10-90, at 6 (filed Feb. 24, 2012); Comcast Comments, WC Docket No. 10-90, at 19 (filed Feb. 24, 2012); Google Comments, WC Docket No. 10-90, at 2, 4 (filed Feb. 24, 2012); Time Warner Comments, WC Docket No. 10-90, at 5 (filed Feb. 24, 2012); T-Mobile Comments, WC Docket No. 10-90, at 3 (filed Feb. 24, 2012); Verizon Comments, WC Docket No. 10-90, at 3, 12–14 (filed Feb. 24, 2012).

[54] *Compare, e.g.*, CenturyLink Comments, WC Docket No. 10-90, at 43–47 (filed Feb. 24, 2012) (stating that the Commission should allow carriers to establish efficient solutions for exchanging IP voice traffic through good faith negotiations, but no additional regulation is necessary or beneficial); Leap & Cricket Comments, WC Docket No. 10-90, at 12 (filed Feb. 24, 2012) (arguing that there is no reasonable basis to apply the interconnection framework developed for legacy PSTN networks when Internet exchange points are a good model) *with* MetroPCS Comments, WC Docket No. 10-90, at 17–18 (filed Feb. 24, 2012) (commenting that the Commission should not leave IP interconnection unregulated); Bandwidth.com Comments, WC Docket No. 10-90, at 7 (filed Feb. 24, 2012) (stating that because there remain disproportionate levels of negotiating power centered upon the PSTN today, the Commission cannot prod the industry along with a completely hands-off approach).

[55] *See, e.g.*, CenturyLink Comments, WC Docket No. 10-90, at 38 (filed Feb. 24, 2012) (stating that standards for IP voice traffic are still developing); Nebraska Rural Independent Carriers Comments, WC Docket No. 10-90, at 30 (filed Feb. 24, 2012) (recommending that the Commission adopt overall IP technical standards after review and consultation with industry technical standards working groups); Verizon Comments, WC Docket No. 10-90, at 23–25 (filed Feb. 24, 2012) (stating that industry cooperation is the best place to resolve the complicated technical issues surrounding IP interconnection); Google Comments, WC Docket No. 10-90, at 6 (filed Feb. 24, 2012) (stating that multi-stakeholder groups that span a full cross section of interested players can provide targeted and timely input and direction on technical issues).

[56] *See supra* notes 1, 2.

section 251(c)(2) of the Act, to partially forbear from section 251(c)(6) of the Act to the extent that it obligates collocation of interconnection equipment, and to eliminate the Commission's rules implementing those provisions, sections 51.305, 51.321, and 51.323, by the end of 2028. We seek comment on whether doing so would hasten the IP transition and on what protections may be necessary to ensure the continuity of service to critical infrastructure and public safety entities, including 911 service. We also seek comment on what regulatory framework, if any, the Commission can and should adopt for IP-to-IP interconnection.

A. Current State of Interconnection

1. Current Arrangements for TDM Interconnection for Voice Services

17. We seek comment on the TDM-based interconnection arrangements that remain in place today for all types of providers. What types of carriers continue to require or employ TDM-based interconnection—for example, large incumbent LECs, small or rural incumbent LECs, competitive LECs, or access tandem operators—and for what services? To what extent are IP-based providers today required to interconnect with incumbent LECs in TDM, even when traffic originates and/or terminates in IP? Are calls still aggregated at TDM access tandems or central offices for routing and transit? Are tandems necessary for routing, or are they an artifact of existing routing arrangements that rely on databases such as the Local Exchange Routing Guide (LERG)? How do carriers exchange TDM traffic today, and do any alternate (non-tandem) interconnection arrangements exist? We ask commenters to describe the typical TDM network topology in use (e.g., local switches, tandems, SS7 signaling points, 911 selective routers[57]), including any legacy functions that depend on TDM interconnection and the classes of providers and categories of service recipients that rely on those arrangements.

18. How do interconnection arrangements between LECs for local traffic differ from arrangements between incumbent LECs and interexchange carriers for long-distance traffic? How do interconnection agreements between other types of providers work, and how do they differ from those governed by section 251(c)? For example, how do competitive LECs interconnect with other competitive LECs? How do competitive LECs interconnect with mobile carriers? How do competitive LECs interconnect with rural telephone companies? How do mobile carriers interconnect with each other or with rural telephone companies? How do interexchange carriers interconnect with mobile carriers or rural telephone companies? Are there subgroups of carriers that should be examined differently? For example, are there some competitive LECs that function as interconnection points, similar to the tandems of incumbent LECs, and are their interconnection arrangements different from competitive LECs that serve a local market? Recognizing that incumbent LEC switched access lines encompass only 3.1% of the voice telephony market,[58] we seek further comment how often interconnection arrangements are actually facilitating the origination or termination of traffic on the legacy public switched telephone network and how often section 251(c)(2) interconnection arrangements are leveraged for the transit of calls to other networks.

19. We also seek comment on where TDM interconnection actually occurs. Currently, under

[57] In legacy 911 networks and some transitional NG911 networks, selective routers receive 911 calls from various providers and forward those calls to the particular PSAP that serves the caller's area. *See* Letter from Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, to Marlys R. Davis, E911 Program Manager, Department of Information and Administrative Services, King County, Washington at 3 (May 7, 2001). Historically, state and federal statutes or regulations regarding TDM network interconnection to a legacy 911 selective router in a particular LATA by small carriers has often been based on the process for interconnecting with the largest incumbent LEC in an area. *NG911 Order*, 39 FCC Rcd at 8148, n.72 (citing CSRIC VI Working Group 1, Transition Path to NG9-1-1 Final Report - Small Carrier NG9-1-1 Transition Considerations (Sept. 2018), https://www.fcc.gov/sites/default/files/csric6wg1sept18ng911report.docx).

[58] FCC, Voice Telephone Services: Status of June 30, 2024, Tbl. 1, Voice Subscriptions (in Thousands) – Total for US, Reference Lines 1, 4, and 14.

section 251(c)(2)(B), an incumbent LEC must allow a requesting telecommunications carrier to interconnect at any technically feasible point.[59] The Commission has interpreted this provision to mean that competitive LECs have the discretion to interconnect at multiple points or just at a single point of interconnection (POI) in a given local access and transport area (LATA).[60] We seek comment on where these TDM POIs are located within the network, and how are they geographically distributed. How many TDM POIs are still in use, and how concentrated are these POIs among networks? Do different categories of providers tend to use different types of POIs? For instance, do large incumbent LECs primarily interconnect at their tandems, while smaller competitive and rural LECs rely on third-party tandem hubs or other arrangements? We invite commenters to detail how many POIs exist in a given region and how they are used. For example, how many TDM tandems are active, how many end offices interconnect directly, and to what extent are carrier hotels and other centralized POIs used? Finally, are most, if not all, TDM POIs resident in facilities that do not have SIP POIs? And if so, does this place a burden for providers in transitioning to an all-IP SIP interconnection point with one or more providers?

20. What are the operational or financial impacts of TDM interconnection arrangements on competitive carriers, particularly rural and small LECs, and those that have already transitioned to all-IP networks? We note concerns that ending incumbent LECs' section 251(c)(2) interconnection obligations could shift new cost among carriers.[61] We therefore seek comment regarding current TDM interconnection practices of small and rural carriers. Do rural telephone companies currently avail themselves of section 251(c)(2)? What interconnection costs do these providers face under existing rules? Are there potential system-wide efficiencies and cost savings from an all-IP network? Are any small and rural carriers now required to interconnect at an IP POI, and if so, under what cost arrangements? What interconnection arrangements do carriers subject to the rural exemption under section 251(f)(1) or (f)(2) have for TDM or IP voice services?[62] Given that such carriers, despite being incumbent LECs, are largely exempt from section 251(c)(2), how do those arrangements with competitive LECs differ from other such interconnection arrangements?

21. We also seek comment on the architecture of hybrid connections between IP networks and legacy TDM networks, and on the effect of such network arrangements on interconnection agreements. In a typical scenario, an IP-originated call is handed off to a TDM network, or vice versa, requiring media and signaling gateways at the IP-TDM boundary to handle protocol conversions.[63] How often are calls that originate or terminate on the PSTN converted to VoIP for transport and interconnection, and vice versa? Where in the network is the IP-to-TDM or TDM-to-IP conversion occurring? Which providers deploy VoIP-to-TDM and TDM-to-VoIP gateways when calls are exchanged between networks, which providers are responsible for the protocol conversions, and where

[59] 47 U.S.C. § 251(c)(2)(B).

[60] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18116, para. 1316 (citing *Application of SBC Communications Inc., Southwestern Bell Tel. Co, and Southwestern Bell Communications Service, Inc., d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Texas*, CC Docket No. 00-65, Memorandum Opinion and Order, 15 FCC Rcd 18354, 18390, para. 78, n.174 (2000)); 47 U.S.C. § 153(31) (defining LATA).

[61] *See, e.g.*, NTCA July 2 *Ex Parte* at 2-3 (raising concerns that their interconnection costs could increase "if a small rural provider is compelled to interconnect in IP with multiple large national operators at different locations all around the country").

[62] 47 U.S.C. § 251(f)(1) (exempting rural telephone companies from 251(c) until the rural telephone company receives a bona fide request for interconnection, services, or network elements and the State commission determines that such request is "not unduly economically burdensome, is technically feasible, and is consistent with section 254"); *id.* at 251(f)(2) (permitting LECs with fewer than 2 percent of the Nation's subscriber lines to petition a State commission for a suspension or modification of the application of the section 251(b) or (c) requirements). These carriers exchange traffic with other service providers pursuant to sections 201 and 251(a).

[63] *See IP Interconnection Primer* at 7-10.

are these gateways located? What carriers own and operate those gateways, including emergency services gateways that connect to selective routers, and signaling links? How is traffic routed through the TDM portion (e.g., via which tandem switches or trunks), and who bears the costs of these conversions and transport? Do certain incumbent LECs offer interconnection in both TDM and IP, and if so, at what frequency?

22. We seek comment on the volume of voice traffic still transiting legacy TDM networks. We ask commenters to quantify the remaining TDM usage that providers carry or expect to carry in the near term. For example, what percentage of calls or trunks in providers' networks remain on TDM switches? What service categories (e.g., legacy telephone lines, business T-1/PRI,[64] alarm and elevator lines, 911 services) are still provisioned via TDM, and why have they not yet transitioned to modern alternatives? To what extent do carriers still offer stand-alone local exchange and/or long-distance service? How relevant is the distinction between local exchange and long-distance service to today's consumers? How often do voice service customers choose a long-distance carrier that is unaffiliated with their local exchange carrier? We ask that commenters provide any data or studies on TDM traffic volumes by category, if possible.

23. We seek comment on the technical, financial, and regulatory factors that account for the persistence of TDM architectures in our nation's networks. Are there statutory or public safety-related mandates that have effectively required maintaining circuit-switched networks? To what extent do state-level regulatory requirements compel certain carriers to maintain legacy TDM infrastructure or continue offering TDM-based service? To what extent do the costs associated with upgrading networks to IP account for providers' continued reliance on TDM interconnection arrangements? To what extent do certain providers operate IP networks for their own services but rely on TDM solely for interconnection? We seek comment on the contexts and services for which carriers, utilities, and government agencies assert TDM must be maintained alongside IP to prevent disruption to critical services. Despite significant industry progress in transitioning to all-IP networks, some observers have previously noted that certain critical services still depended on existing TDM infrastructure to function, and that complex issues related to these services must be addressed before the IP transition can be completed.[65] For example, the Department of Transportation has emphasized that the Federal Aviation Administration's Telecommunications Infrastructure (FTI) network "is heavily dependent on obsolete 1960s TDM technology across over 30,000 services at 4,600 sites."[66] To what extent do infrastructure or emergency services currently continue to rely on TDM circuits for critical applications like aviation communications, railway operations, industrial process control, infrastructure monitoring, rural call completion, public safety radio backhaul, or selective routing for legacy 911 networks? Are there other known over-the-top services, such as medical monitors, security alarms, or point of sale terminals, that still use and/or require TDM facilities? Are there commercially available alternatives that could be used, should TDM interconnection become unavailable? We ask that commenters provide detailed examples of such TDM-reliant services, as well as traffic volume estimates, to the extent possible. Are there technical, financial, security, or other practical reasons to maintain certain technologies, in an all-IP world?

2. Current Arrangements for IP Interconnection for Voice Services

24. We seek comment on current carrier practices and arrangements for IP-to-IP interconnection for voice services. Today's IP-based voice networks often use managed IP cores and

[64] "T-1" refers to a physical transmission line standard in North America for digital voice and data services. Newton's Telecom Dictionary 1299-1300 (32nd ed. 2022). "PRI," or "Primary Rate Interface," refers to a high capacity digital voice and data service delivered over a T-1 line. *Id.* at 1058.

[65] *See, e.g.*, Trevor R. Roycroft, Ph.D., The IP/Broadband Transition – Public Policy Still Matters at 12 (2013), https://nasuca.org/wp-content/uploads/2013/11/01-13-2014-NASUCA-2-of-2.pdf.

[66] Department of Transportation, Brand New Air Traffic Control System, at 3, available at Brand New Air Traffic Control System Plan.pdf.

session border controllers (SBCs) to carry VoIP calls end-to-end.[67] We seek comment on the current network architecture underlying IP interconnection for interconnected VoIP services[68]—how has it evolved since the Commission first took action to promote IP-to-IP interconnection for voice services?[69] For example, do carriers exchange traffic via Session Initiation Protocol (SIP) trunks, public Internet gateways,[70] or private IP networks? How often do carriers use IP-to-IP peering to interconnect directly in IP versus indirectly via IP "tandems" or intermediate providers? How are commercial arrangements for direct IP voice interconnection structured? Do carriers need to individually negotiate each direct connection agreement? What are the costs associated with interconnecting directly over IP compared to exchanging voice traffic over existing Internet connections? What protocols and quality-of-service (QoS) mechanisms ensure voice quality?

25. Some stakeholders have previously noted that voice traffic can be routed and exchanged over the public Internet—is the "best efforts" QoS model sufficient to preserve existing voice quality?[71] What mechanisms, protocols, or redundancies are available or in place to prevent voice service disruption when there are network outages or unusual strain on a network's capacity, such as during a natural disaster? How does call routing work when voice traffic is exchanged over the public Internet? How are IP addresses and routing handled at IP POIs? Is the Domain Name Service (DNS) used within or between providers in support of SIP? Or, are IP addresses manually set for static routes between points set by a provider? Are there concerns about hijacking of IP address prefixes used for border gateway protocol (BGP) routing? We seek comment on any QoS, latency, or interoperability issues that have arisen in current IP voice interconnection. Are there technical barriers to IP interconnection that the Commission should address and what types of providers are impacted? Commenters should describe in detail the network layers and equipment used in VoIP interconnection today.

26. We also seek comment on how interconnection practices vary by size, type of provider, and network technology. For example, are small or rural incumbent LECs offering direct IP interconnection at the same frequency as larger incumbent LECs? What percentage of rural carriers have deployed IP facilities and services in their networks, and are they currently providing, or capable of providing, VoIP services? Have competitive LECs and cable operators generally adopted IP-to-IP interconnection, and if so, what models do they use? How do wireless carriers interconnect for Voice

[67] *See IP Interconnection Primer* at 19-20. When an IP-initiated call must transit a TDM network, the VoIP call is handed off via a media gateway to TDM at the network edge. *Id.* at 9.

[68] In referring to "interconnected VoIP service," we include those services elsewhere deemed "IP-enabled voice service." For example, the NET 911 Act, which amended 47 U.S.C. § 615b, uses the term "IP-enabled voice service" and defines it coterminously with the definition of "interconnected VoIP service" found in our rules. New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (*NET 911 Act*); 47 U.S.C. § 615b(8). The Commission's rules define "interconnected VoIP service" as a service that "[e]nables real-time, two-way voice communications"; [r]equires a broadband connection from the user's location"; "[r]equires internet protocol-compatible customer premises equipment (CPE)"; and "[p]ermits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network." 47 CFR § 9.3.

[69] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18044-45, 18123-47, paras. 1009-11, 1335-98 (stating that carriers should begin planning for the transition to IP-to-IP interconnection and seeking comment regarding specific elements of the policy framework for IP-to-IP interconnection).

[70] *See* ATIS, VoIP Interconnection over the Public Internet, ATIS-1000100 (2022), https://access.atis.org/higherlogic/ws/public/download/69420/ATIS-1000100.pdf. In the *USF/ICC Transformation Order and FNPRM*, the Commission found that the Internet gateway is the "peering point between the broadband provider and the public Internet." *USF/ICC Transformation Order*, 26 FCC Rcd at 17706, para. 111.

[71] *See, e.g.*, NTCA Comments, PS Docket No. 21-479 (filed Aug. 9, 2023) (raising concerns about routing 911 traffic over the public Internet due to unspecified bit rate, latency, and packet loss associated with the "best efforts" service model).

over LTE (VoLTE) traffic, and do they require special gateways? Do VoIP providers interconnect directly, or do they rely on their carrier partners? Do large incumbent LECs and rural incumbent LECs also currently offer IP interconnection? What types of providers currently have direct IP interconnection agreements, and how do these agreements account for different network architectures and regulatory status? For cases involving intermediaries, such as third-party IP tandems or transit providers, what role do these intermediaries play, and how widely are such services used?

27. We also seek comment on the types and number of IP interconnection agreements for interconnected VoIP service that exist today, and how parties to those agreements treat technical and financial issues. For example, in past proceedings, some parties have noted that carriers historically have relied primarily on the LERG and local number portability database (Number Portability Administration Center – NPAC) to route calls, but these databases cannot identify SIP endpoints.[72] Additionally, other parties have previously noted that the preference to route calls to the VoIP provider's competitive LEC partner via PSTN trunks, rather than to the VoIP provider directly, has hampered the implementation of VoIP interconnection.[73] Are these issues still relevant in the context of current IP interconnection arrangements, and if so, how have parties responded to these challenges? How do providers allocate the cost burdens of exchanging IP traffic? How do interconnection arrangements accommodate features like number portability, caller ID authentication, and emergency calling (911)? Are there regulatory burdens or other transaction costs that have stymied the growth of such arrangements in the voice market?[74] Are carriers negotiating new IP interconnection contracts, or modifying existing TDM agreements? How do state requirements regarding TDM interconnection affect the negotiation and implementation of IP interconnection agreements? Are there other factors affecting negotiations that the Commission has not considered? What lessons can be drawn from providers or states that have made substantial progress toward IP-only infrastructure?

28. In a legacy TDM world, carriers tend to interconnect at many local central offices and tandems. By contrast, IP networks can span larger regions and aggregate traffic at fewer POIs, such as carrier hotels and internet exchanges.[75] We seek comment on where interconnection for interconnected VoIP traffic is happening today and between which types of carriers. One industry report notes that national carriers have negotiated traffic exchange at a small number of POIs, such as carrier hotels, rather than on a per-LATA basis.[76] Is this the current trend, and if so, why? How do parties negotiate the POIs? Do the location and use of POIs vary with the size and type of provider or modality (e.g., wireline or wireless)? At how many physical POIs do VoIP providers currently exchange traffic with other voice providers and where are these POIs located? Are IP voice POIs co-located with TDM POIs, or are they separate? Are there regional interconnection hubs or multiple local interconnects per area? To what extent are carriers exchanging traffic over the public Internet, and where are the POIs located in such

[72] *See, e.g.*, Letter from Richard Shockey, Principal, Shockey Consulting, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 99-200 et al., attach. at 7-9 (filed Sept. 4, 2012).

[73] *See, e.g.*, Letter from Robert W. Quinn, Jr., Senior Vice President, Federal Regulatory, AT&T, to Marlene H. Dortch, Secretary, FCC, CC Docket No. 99-200, at 2-3 (filed May 29, 2012); Vonage Holdings Corp. Comments, CC Docket No. 99-200, at 6-8 (filed Jan. 25, 2012).

[74] *See, e.g.*, NTCA July 2 *Ex Parte* at 1 (arguing that an absence of clear "rules of the road" for IP interconnection—particularly regarding cost allocation—operates as a deterrent to such interconnection). We recognize that IP interconnection implicates certain regulatory issues stemming directly from the legacy TDM framework, including intercarrier compensation, access charges, and universal service. While this item is focused on the technological and regulatory frameworks for interconnection the Commission will address other issues as appropriate in separate items.

[75] *See IP Interconnection Primer* at 22.

[76] ATIS, Technical Report on a Nationwide Number Portability Study, at 26 (2016), https://docs.fcc.gov/public/attachments/DOC-340865A1.pdf.

arrangements? We ask that comments provide data or estimates on the number and location of current IP POIs.

29. We also seek comment, specifically, on the effect of recent Commission efforts to facilitate the NG911 transition on current IP interconnection arrangements and the role of TDM architecture during the NG911 transition. In the 2024 *NG911 Order*,[77] the Commission adopted rules requiring originating service providers (OSPs)[78] to take steps to transition from legacy analog 911 technology to the IP-based NG911 system.[79] Pursuant thereto, OSPs, upon a "valid request" for delivery of 911 traffic in IP-based format by a 911 Authority,[80] must follow a two-phase process for transitioning to NG911.[81] In jurisdictions that have submitted valid requests under the Commission's NG911 transition framework, would NG911 Delivery Points[82] for the delivery of 911 traffic in an IP format to ESInet or other NG911 network facilities play a role in facilitating the IP transition? Has the ongoing transition to NG911 impacted providers' existing interconnection arrangements, and if so, how? How do IP interconnection agreements for interconnected VoIP account for providers' obligations to implement NG911? To what extent does deployment of NG911 promote IP interconnection arrangements? Do any providers rely on existing TDM interconnection to prevent disruption to emergency communications pending completion of the NG911 transition, and what alternative arrangements can be used in these situations? Commenters should address the interplay between any continuing TDM needs for jurisdictions that have not begun or completed the transition to NG911 and interconnection agreements. In what other ways has the NG911 transition affected IP interconnection arrangements for voice service? Commenters should explain in detail the interplay between the NG911 transition and the current state of IP interconnection for interconnected VoIP.

B. Eliminating Interconnection Obligations under Section 251(c)(2)

1. Effects of Burdensome Interconnection Obligations on the Transition to an all-IP Network

30. We invite comment on the costs to incumbent LECs of complying with sections 251(c)(2) and (c)(6) of the Act and our rules implementing those provisions, sections 51.305, 51.321, and 51.323, and their impact on the IP transition. We observe that the additional interconnection obligations imposed under section 251(c) of the Act can create heavy burdens for incumbent LECs. These costs can in turn divert resources away from investments in high-speed communications infrastructure, slowing the transition to all-IP networks. Consequently, we believe that forbearance from these additional requirements will speed the move away from TDM-based technologies. We seek comment on these observations.

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[77] *NG911 Order*, 39 FCC Rcd 8137. The *NG911 Order* took effect on November 25, 2024.

[78] OSPs are providers that originate "911 traffic," i.e., "[t]ransmissions consisting of all 911 calls . . . and/or 911 text messages." 47 CFR § 9.28. These include wireline providers, CMRS providers, covered text providers, providers of interconnected VoIP services, and providers of Internet-based TRS. *Id.*; *NG911 Order*, 39 FCC Rcd at 8138, para. 2.

[79] *NG911 Order*, 39 FCC Rcd at 8167, para. 59.

[80] A "911 Authority" is a "state, territorial, regional, Tribal, or local governmental entity that operates or has administrative authority over all or any aspect of a communications network for the receipt of 911 traffic at NG911 Delivery Points and for the transmission of such traffic from that point to [Public Safety Answering Points]." *NG911 Order*, 39 FCC Rcd at 8138, para. 2 n.2; 47 CFR § 9.28.

[81] *NG911 Order*, 39 FCC Rcd at 8167, para. 59. Compliance deadlines for OSPs differ depending on their type: For example, interconnected VoIP providers receive six months per phase to complete their transition, while Internet-based TRS providers have one year to do so. *NG911 Order*, 39 FCC Rcd at 8189-93, paras. 115-22.

[82] 47 CFR §§ 9.28; 9.34. As of August 27, 2025, 68 911 Authorities have filed valid requests for NG911 service with the Commission covering 1,169 PSAPs, which amounts to approximately 20% of PSAPs in the U.S.

31. What kinds of expenses—capital, operating, or otherwise—do the additional interconnection mandates found in section 251(c) of the Act impose? On whom, and to what extent? Does the asymmetry in regulatory duties between competing carriers and incumbent LECs encourage investments in outmoded TDM technologies?[83] For example, Digital Progress Institute contends that section 251(c)'s requirements necessitate that incumbent LECs design and maintain outdated TDM facilities, facilities in which they claim competing carriers invest further to gain a regulatory advantage.[84] At the same time, CCA argues that smaller carriers' dependency on incumbent LECs to route their calls stymies IP network investments because smaller carriers must "subtend[] [incumbent LECs'] non-IP tandem facilities."[85] We seek comment on what burdens carriers, particularly small and rural carriers, face as a result of section 251(c)'s requirements. For example, what costs must carriers bear in converting IP voice traffic to TDM?[86] From TDM to IP? What costs must competing carriers bear in having to interconnect in TDM?[87] How should the Commission evaluate competing costs among different categories of providers? Do these costs for carriers impede the IP transition? How would carriers otherwise allocate resources associated with section 251(c)'s additional interconnection obligations for incumbent LECs? To the extent that resources would be otherwise allocated towards speeding up a carrier's IP transition, how much more quickly could a move to all-IP networks occur? Do these requirements inhibit certain types of commercial agreements that could benefit consumers?[88] Would a determination that interconnection for the exchange of VoIP traffic is not subject to the requirements of section 251(c) facilitate the negotiation of VoIP interconnection agreements? Finally, what kinds of state and local laws and regulations exist for interconnection, and what kinds of costs do they impose?[89]

2. Forbearance from Incumbent LECs' Additional Interconnection and Related Obligations

32. We propose to forbear, as of the adopted sunset date, from section 251(c)(2) of the Act, forbear from section 251(c)(6) of the Act to the extent it requires incumbent LECs to provide for physical collocation of interconnection equipment, and eliminate our rules implementing those statutory

[83] *See* Digital Progress Institute Comments, GN Docket No. 25-133, at 3 (rec. Apr. 14, 2025) (Digital Progress Institute Delete Comments).

[84] *Id.* at 3-4.

[85] Competitive Carriers Association Reply, WC Docket No. 17-97, at 3-4 (rec. Aug. 15, 2025) (CCA Non-IP Caller ID Authentication NPRM Reply); *see also* NTCA–The Rural Broadband Association Comments, WC Docket No. 17-97, at 5-6 (rec. July 16, 2025) (claiming that "many small rural providers, even if they are entirely IP-capable within their own networks, subtend upstream non-IP tandem facilities owned and operated by larger and regional operators").

[86] *See* NTCA July 2 *Ex Parte* at 1 (highlighting that small rural providers must "subtend larger operators' tandems that have not been updated and thus continue to require TDM trunking and interconnection").

[87] *See* NCTA Reply, GN Docket No. 25-133, at 15 (rec. Apr. 29, 2025) (NCTA Delete Reply) (explaining that NCTA members and others operating IP-based networks "have encountered difficulty obtaining agreements from major LECs to enable a . . . [move] away from TDM-based traffic exchanges" and reporting that incumbent LECs refuse to exchange traffic in IP); CCA Non-IP Caller ID Authentication NPRM Reply at 4 (arguing that smaller carriers' "continued need to use TDM equipment . . . imposes ongoing and unnecessary costs and inefficiencies on IP-based network providers by requiring them to either maintain their own TDM equipment or use a third party to facilitate the TDM interconnection").

[88] *See* Digital Progress Institute Delete Comments at 3.

[89] *See* Verizon Reply, WC Docket No. 17-97, at 1-3 (rec. Aug. 15, 2025) (Verizon Non-IP Caller ID Authentication NPRM Reply) (claiming that "state laws and regulations requiring continued provision of TDM-based legacy telephone service hold[] back the IP transition").

provisions.[90] Below, we seek comment on whether the forbearance criteria outlined in section 10 of the Act have been met. Additionally, we seek comment on the extent to which we should forbear from section 251(c) of the Act, how the Commission should potentially modify its rules, and what steps could be taken to mitigate any potential harm to critical infrastructure services that may result from forbearance.

33. Section 10 of the Act requires the Commission to forbear from applying any requirement of the Act or of our regulations to a telecommunications carrier or telecommunications service, or class of telecommunications carriers or telecommunications services, if the Commission determines that: (1) enforcement of the requirement "is not necessary to ensure that the charges, practices, classifications, or regulations by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory"; (2) enforcement of that requirement "is not necessary for the protection of consumers"; and (3) "forbearance from applying such provision or regulation is consistent with the public interest."[91] Satisfaction of all three criteria mandates forbearance.[92] With respect to the third prong, the Commission must consider "whether forbearance from enforcing the provision or regulation will promote competitive market conditions."[93]

34. *Ensuring practices are just and reasonable (section 10(a)(1))*. Were we to forbear from section 251(c)(2) and section 251(c)(6) (to the extent it requires incumbent LECs to provide for physical collocation of interconnection equipment) and eliminate the Commission's implementing rules, incumbent LECs would no longer be subject to additional interconnection requirements not imposed on other kinds of carriers. We believe that these requirements are no longer necessary to ensure that interconnection practices for voice services are just and reasonable and not unreasonably discriminatory. Changes in the marketplace since the passage of the 1996 Act's monopoly-ending provisions have reduced competing providers' reliance on incumbent LECs in provisioning service to their customers. In the span of a little over 20 years, reliance on legacy networks has dropped precipitously: the number of reported end-user switched access lines declined from 181 million to just 18 million, far fewer than the 64.5 million interconnected VoIP subscriptions or 288.3 million mobile subscriptions reported in June 2024.[94] Simultaneously, the share of local voice telephone service connections attributed to incumbent LEC switched access lines decreased from 99.7% at the passage of the Telecommunications of 1996 to 3.1% in June 2024.[95] Consequently, we believe that incumbent LECs have neither the ability nor the incentive to engage in the kinds of harmful practices typically associated with a monopoly power with respect to retail voice service. We therefore believe it is unnecessary to differentiate incumbent LECs from other carriers with regard to interconnection. We also believe that interconnection needs could be met pursuant to sections 201 and 251(a).

35. Do commenters agree? To what extent, if any, are these additional requirements for incumbent LECs still necessary to ensure providers' practices remain just and reasonable? Assuming

[90] 47 CFR § 51.305 (interconnection); 47 CFR § 51.321 (methods for obtaining interconnection and access to unbundled elements); 47 CFR § 51.323 (standards for physical collocation and virtual collocation).

[91] 47 U.S.C. § 160(a).

[92] *Id*.

[93] 47 U.S.C. § 160(b).

[94] FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, Local Telephone Competition: Status as of December 31, 2004, at 1 & tbl.1 (July 8, 2005), https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/lcom0604.pdf (*Local Telephone Competition Report*); FCC, Industry Analysis Division, Office of Economics and Analytics, Voice Telephone Services: Status as of June 30, 2024, at 3 fig.2 (May 2025) (*May 2025 Voice Telephone Services Report*).

[95] *See First Local Competition NPRM*, 11 FCC Rcd at 14174-75, para. 6; *UNE Transport Forbearance Order*, 34 FCC Rcd at 5768-69, para. 9; *UNE Analog Loop and Avoided-Cost Resale Forbearance Order*, 34 FCC Rcd at 6504, para. 4; *Local Telephone Competition Report* at 1 & tbl.1; *May 2025 Voice Telephone Services Report* at 3 fig.2.

carriers cannot avoid interconnecting with incumbent LECs, would incumbent LECs have incentive to take advantage of that?[96] Do incumbent LECs still exert sufficient control over the marketplace to do so? Absent Commission regulations, would disputes arise between incumbent LECs and competing carriers that could lead to access issues, such as for terminating access or selective router access for 911? Do the Commission's 911 service rules affect LECs' pricing power over facilities used to route 911 calls? How does the Act's collocation requirement ensure just and reasonable practices, if at all? How does the transition of providers' networks to IP affect the necessity of the Act's collocation mandate? Are there any cost savings for incumbent LEC from not having to collocate equipment?

36. *Ensuring protection of consumers (section 10(a)(2))*. We seek comment on whether enforcement of these statutes and regulations is necessary for the continued protection of consumers. We believe that the Act's additional interconnection requirements for incumbent LECs are no longer necessary for consumers' protection given the explosive growth in competition from competitive carriers and interconnected VoIP service providers. We believe that such competition renders the kinds of consumer protections afforded by sections 251(c)(2) and (c)(6) unnecessary. We seek comment on this belief. With incumbent LECs' need to compete on more even grounds as a result of their eroded market dominance, we do not anticipate rate increases by incumbent LECs or that other costs would otherwise be absorbed by consumers. Do commenters agree? Does forbearance risk stranding consumers, as alleged by NCTA?[97] Would forbearance expose consumers to disruptions or otherwise affect carriers' ability to provide service? Are there concerns specific to customers of small and rural carriers? What role does our collocation requirement play, if any, in continuing to protect consumers?

37. *Consistent with the public interest (section 10(a)(3))*. We believe that forbearance from the Act's additional interconnection requirements for incumbent LECs would be consistent with the public interest, in part by improving market competition and ultimately encouraging the transition to modernized networks and services. As outlined above, we do not believe that burdening incumbent LECs alone with direct interconnection obligations for retail voice service continues to make sense given their lack of dominance in the market. Rather, we believe that incumbent LECs no longer possess especial leverage in negotiating with competitive LECs or in competing for customers. We believe that competitive carriers' stronger market position today enables them to negotiate agreements to interconnect and collocate their equipment in the absence of rules requiring as much. We thus believe that the Act's current requirements distort the market unnecessarily by shifting costs almost entirely to incumbent LECs rather than allowing the parties to negotiate their distribution. By forbearing, we would seek to remedy this distortion and in turn improve market competition. Do commenters agree with our assessment? Do competitive carriers today face challenges in interconnecting with incumbent LECs, particularly in IP?[98] Do incumbent LECs ever refuse outright to interconnect in IP or otherwise resist interconnecting outside of TDM?[99] If so, to what extent is this the result of incumbent LECs' additional interconnection obligations under 251(c)? Would forbearance encourage interconnection in IP? What incentives exist for incumbent LECs to interconnect with competitive LECs and other competing providers in TDM versus IP?

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[96] *See* NCTA Delete Reply at 14-16 (alleging that eliminating such requirements "risks leaving certain providers and consumers stranded" by enabling incumbent LECs to increase rates or engage in "other behavior that would make traffic exchange . . . less efficient").

[97] *See id.* at 15-16.

[98] *See* Letter from Tamar Finn, Counsel to Bandwidth, Inc., Cooley LLP, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 25-45 (filed Feb. 28, 2025) (arguing that "AT&T, with whom Bandwidth is obligated to interconnect, will only support TDM interconnection for the exchange of voice traffic with customers of its incumbent local exchange carriers" and "AT&T has not made IP interconnection available to Bandwidth for the exchange of voice calls with AT&T's customers who remain on TDM services or delivery of calls to a selective router. Instead, AT&T requires Bandwidth to interconnect in TDM")

[99] *See* CCA Non-IP Caller ID Authentication NPRM Reply at 3-4.

38. We also believe that forbearing from the Act's additional interconnection requirements for incumbent LECs would free up resources for use in development and deployment of next-generation networks, promoting the public interest and counseling in favor of forbearance. Do commenters agree? Would forbearance assist in ending the digital divide, whether through hastening the IP transition or otherwise? What other benefits might inure to the public as a result of forbearance? Would forbearance need to be tailored in any way to accommodate the particular needs of small or rural carriers, and if so, how? What harms to the public interest do commenters anticipate, if any, and are they outweighed by the benefits resulting from increased competition, more efficient networks, and availability of additional resources for next-generation high-speed networks?

39. *Extent of forbearance*. We further seek comment on whether the Commission should forbear from section 251(c)(2) entirely or whether we should only partially forbear to the extent that section 251(c)(2) imposes obligations on incumbent LECs interconnecting in TDM, specifically. That is, to the extent that section 251(c)(2) imposes additional requirements on incumbent LECs when they interconnect with other carriers for the exchange of IP voice traffic, we seek comment on whether the Commission should maintain those obligations. As outlined above, we believe that incumbent LECs do not hold a specially advantaged position in the market relative to their competitors in the exchange of IP-based traffic. How does any of the foregoing forbearance analysis differ if we were to only partially forbear from section 251(c)(2)? Are there other reasons the Commission should maintain any additional obligations for incumbent LECs in the IP context? Do carriers rely on our rules implementing section 251(c)(2) when they interconnect for the exchange of VoIP traffic? Absent section 251(c)(2), what would happen to interconnection arrangements reliant thereon? If the Commission were to only partially forbear, how should the Commission approach making any changes to our implementing rules?

40. *Commission rules*. We seek comment on how the Commission should address its implementing rules in light of the proposed forbearance. Could the Commission delete sections 51.305, 51.321, and 51.323 outright? Are there reasons to maintain those rules, whether in whole or in part? If the Commission partially forbore from sections 251(c)(2) and (6) of the Act, and did not eliminate its rules implementing those sections, would any changes need to be made? Would other sections of the Commission's rules require reevaluation or amendment in light of their deletion or modification?[100]

41. *Interruptions to 911 service*. We also seek comment whether forbearing from the interconnection and collocation requirements in section 251(c)(2) and (6) create any risk of interruptions to 911 service. As we noted recently, there are areas where 911 authorities and OSPs have either not begun or have not yet completed the transition to NG911 and continue to rely on legacy selective routers and other TDM-based infrastructure for delivery of 911 calls to public safety answering points (PSAPs).[101] Some commenters have suggested that delivery of 911 calls could be disrupted if carriers of 911 traffic lose access to critical TDM circuits in the 911 call path and are not provided sufficient opportunity to establish alternate IP connections to those facilities.[102] To what extent do carriers rely on the interconnection and collocation rights in sections 251(c)(2) and (6) to obtain access to selective routers and other critical 911 circuits? Is there a risk that incumbent LECs may refuse access or charge unfair prices if we exercise forbearance? If we sunset incumbent LEC interconnection and collocation obligations under sections 251(c)(2) and (6) on December 31, 2028—as we propose below—will that provide carriers sufficient time to secure long-term access to alternative facilities that support routing and delivery of 911 calls? We seek comment on whether any additional safeguards are needed to ensure the continuity of 911 service. For example, should we carve out an exception to our forbearance for interconnections and collocations at a selective router? Should the Commission, on a case-by-case basis,

[100] *See, e.g.*, 47 CFR § 51.319(b)(1)(ii) (subjecting unbundled access to copper subloops to the Commission's collocation rules at sections 51.321 and 51.323).

[101] *Accelerating Network Modernization Notice of Proposed Rulemaking*, FCC 25-37 at 9, para. 20.

[102] *Id*.

direct incumbent LECs to interconnect or allow collocation when necessary to preserve 911 service? On what basis would the Commission have the authority to do so?

42. *Mitigating harm to critical infrastructure services*. We seek comment on how the Commission can avoid any harm to critical infrastructure services in forbearing from interconnection and collocation obligations specific to incumbent LECs. Would forbearance affect the ability of critical infrastructure industries, government agencies, or public safety entities to maintain operations and services? If so, how and to what extent? Can the Commission take steps to mitigate any potential harms? For example, should forbearance from these obligations be conditional, or include a carveout for interconnection and collocation arrangements that are used to provide services to public safety entities or critical infrastructure purposes?

43. *Full implementation of section 251(c) of the Act (section 10(d))*. Section 10(d) of the Act requires the Commission to determine whether the requirements in section 251(c) of the Act "have been fully implemented" before forbearing from its provisions.[103] We believe that section 251(c) of the Act has been fully implemented, and seek comment on this view. The Commission has previously concluded that full implementation occurred when its implementing rules went into effect.[104] The D.C. Circuit upheld this conclusion in *Qwest Corp. v. FCC.*[105] We seek comment on any current and relevant aspects of the fully implemented requirement. We further seek comment on whether the Commission's determination in the *Qwest Forbearance Order* that section 251(c) has been fully implemented constitutes the best reading of the statute, consistent with the Supreme Court's decision in *Loper Bright*.[106]

3. Establishing a Date Certain

44. We propose to forbear from the interconnection obligations specific to incumbent LECs under sections 251(c)(2) and (6) of the Act, as well as our rules implementing those provisions, as of December 31, 2028. We seek comment on our proposal. We believe that this date provides sufficient time for affected parties to make any necessary alternative arrangements. Importantly, we note that sunsetting incumbent LEC-specific interconnection obligations is not tantamount to a prohibition on TDM interconnection. Incumbent LECs, like other providers, could continue interconnecting in TDM, and all telecommunications carriers would still bear the duty to interconnect pursuant to sections 201 and 251(a) of the Act.

45. Do commenters agree with our proposal? We seek comment on the costs and benefits of establishing December 31, 2028 as the sunset date. If commenters believe that a different date would be more appropriate, what criteria should the Commission use in evaluating the feasibility of a given date? Should there be a single date by which all incumbent LECs' additional interconnection obligations under section 251(c)(2) and (6) are sunset, or should the Commission stagger its sunsetting of these requirements? Do the particular challenges of small and rural carriers necessitate a different or tailored approach? What other dates do commenters propose, and what are the costs and benefits associated with those dates? What other factors or issues should the Commission take into account when determining a sunset date's feasibility? Is this timeframe feasible for seamless accessibility-related transitions?

46. We seek comment on what changes carriers will need to make to their networks prior to

[103] 47 U.S.C. § 160(d).

[104] *Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, WC Docket No. 04-223, 20 FCC Rcd 19415, 19440-42, paras. 53-56 (2005) (*Qwest Forbearance Order*).

[105] *Qwest Corp. v. FCC*, 482 F.3d 471, 477-78 (D.C. Cir. 2007).

[106] *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369, 395, 400 (2024) (citing *Chevron U.S.A. Inc. v. Natural Resources Defense Council*, 467 U.S. 837 (1984)). We note that the Court in *Loper Bright* did "not call into question prior cases that relied on the *Chevron* framework," explaining that such cases "are still subject to statutory *stare decisis* despite [the] change in interpretive methodology" and that a holding's "[m]ere reliance on *Chevron*" is "not enough to justify overruling a statutory precedent." *Id.* at 412.

our proposed date of December 31, 2028, for forbearance. What steps must be taken, both by incumbent LECs and the providers with which they interconnect? What steps do small and rural carriers, specifically, need to take, and what are the associated costs? What steps would other relevant parties, such as those that provide critical infrastructure services, need to take? Should the Commission establish intermediate deadlines by which certain benchmarks must be met, e.g., if we imposed requirements on establishing new or modified agreements? Are there any kinds of benchmarks we should establish after the sunset date?

47. We also seek comment on how existing agreements might be affected. For example, change-in-law provisions of a contract might allow for renegotiation of terms or establish the means by which to resolve disputes. Do providers anticipate modifying existing interconnection agreements or entering into new agreements? What opportunities or challenges might arise? Would forbearance from certain requirements be likely to necessitate renegotiation of existing agreements, or are those agreements likely to remain unaffected by forbearance? Do small and rural carriers anticipate particular challenges with making arrangements following the elimination of our additional interconnection requirements for incumbent LECs, such as by needing to lease third-party networks or services?[107] Are there any steps the Commission should take to prevent unnecessary disruption and costs to providers while they make preparations to transition their networks and agreements?

48. *Other Commission timelines*. Additionally, we seek comment on whether and how setting December 31, 2028 as the date certain for ending incumbent LEC-specific interconnection obligations will affect other related and adjacent timeframes adopted or being considered by the Commission. As discussed below, the Commission has previously established or proposed timelines for matters that may affect providers' transitions of their networks to IP. Simultaneously, we recognize that the additional interconnection obligations imposed on incumbent LECs under sections 251(c)(2) and (6) may affect the parties' willingness or ability to interconnect in IP. How should the timeframe for forbearance account for our other timeframes? We specifically seek comment in the context of NG911, caller ID authentication, and technology transitions.

49. First, we seek comment on the effect of our NG911 requirements[108] on any proposed date certain for ending incumbent LEC-specific interconnection obligations. We note that although the Commission declined to "reference any specific standard or set of standards as part of the codified definition of NG911,"[109] at least one of the commonly accepted standards envisions an end-state NG911 as contingent on ubiquitous IP networks.[110] Would forbearing from sections 251(c)(2) and (6) to the extent described above impact changes being made to upgrade networks to IP and deploy NG911 systems? How else might deployment of NG911 affect the feasibility of our proposed sunset date for additional interconnection obligations for incumbent LECs, or vice versa?

50. Second, we seek comment on extending the two-year timeframe proposed in the *Non-IP Caller ID Authentication NPRM*, which would give providers two years to either upgrade their networks to IP or to implement a non-IP caller ID authentication solution, to December 31, 2028, or whatever sunset date we ultimately adopt.[111] We believe that aligning the dates of our proposals in this manner best facilitates the goals of each item and avoids any inconsistencies or redundancies that might otherwise arise. Do commenters agree? What other considerations should we take into account in light of the *Non-*

[107] *See* NTCA July 2 *Ex Parte* at 2-3.

[108] *See* 47 CFR §§ 9.27-.34.

[109] *NG911 Order*, 39 FCC Rcd at 8160, para. 40.

[110] *See id.* at 8146, para. 17 ("The i3 standard envisions that NG911 will reach a mature 'end state' after all PSAPs have migrated from legacy E911 systems based on TDM circuit-switched telephony to all-IP systems that operate over ESInets and provide the full array of [NG911 Core Services].").

[111] *Non-IP Caller ID Authentication NPRM* at 24, para. 47.

IP Caller ID Authentication NPRM's proposals?

51. Third, we seek comment on the effect our proposals in the *Technology Transitions NPRM* would have on sunsetting additional interconnection obligations for incumbent LECs. Do these proposals bear on our proposed date of December 31, 2028? Or vice versa? Specifically, how does the timing of our streamlining or forbearance proposals in the *Technology Transitions NPRM* affect setting a date for ending incumbent LECs' additional interconnection obligations? What are the implications of forbearing from section 251(c)(5) before, concurrently, or after forbearing from sections 251(c)(2) and (6)? Are there other considerations about which the Commission should be mindful?

4. Other Regulatory Frameworks and Rules Affected by Eliminating the Incumbent LEC-Specific Interconnection Obligations

52. We seek comment on whether forbearing from section 251(c)(2) and from section 251(c)(6) (to the extent it requires incumbent LECs to provide for physical collocation of interconnection equipment) and eliminating the Commission rules implementing those provisions would require updating other Commission rules or bear on other statutory frameworks. For example, our numbering rules require an interconnected VoIP provider that has obtained an authorization for direct access to numbering resources from the Commission to demonstrate that the applicant is or will be capable of providing service to the area within sixty (60) days of the numbering resources activation date—often referred to as "facilities readiness"—before obtaining North American Numbering Plan (NANP) numbers.[112] The Commission has explained that an interconnected VoIP provider can satisfy that requirement by providing (1) a combination of an agreement between the interconnected VoIP provider and its carrier partner and an interconnection agreement between that carrier and the relevant LEC, or (2) proof that the interconnected VoIP provider obtains interconnection with the PSTN pursuant to a tariffed offering or a commercial arrangement (such as a TDM-to-IP or VoIP interconnection agreement) providing access to the PSTN.[113] We seek comment on whether an IP-to-IP interconnection agreement for local call exchange should be sufficient under section 52.15(g)(2), if the Commission were to adopt its proposal to forbear from interconnection and related obligations under sections 251(c)(2) and (6) of the Act. We note that in 2023 the Commission declined to revise section 52.15(g)(2) to specify additional documentation, instead retaining flexibility to consider each application.[114] Is that approach still appropriate now, or should our rules explicitly recognize IP-based interconnection as fulfilling the requirement? Would interconnection to the PSTN still be necessary? Are there other numbering administration matters that providers would need to address before and after a transition to IP interconnection, such as call routing, number assignments, and toll-free routing?

53. Do LECs leasing remaining UNEs pursuant to section 251(c)(3) require interconnection pursuant to section 251(c)(2) and section 51.323 of our rules? To what extent would ending such interconnection obligations have the practical effect of eliminating remaining incumbent LEC UNE obligations? If they do, is this a desirable result? We invite comment on whether our rules governing UNE loops, subloops, network interface devices, or other legacy elements would need to be revised or forborne from.

54. While the Notice we adopt today focuses on interconnection obligations for incumbent LECs and immediately related issues, we note that the Commission's rules related to tariffing and access charge requirements stem directly from the legacy TDM framework; we intend to address any such

[112] *See* 47 CFR §§ 52.15(g)(2), (g)(3)(ii)(H).

[113] *Numbering Policies for Modern Communications et al.*, WC Docket Nos. 13-97 et al., Report and Order, 30 FCC Rcd 6839, 6856-57, para. 37 (2015), *appeal dismissed*, *NARUC v. FCC*, 851 F.3d 1324 (D.C. Cir. 2017).

[114] *See Numbering Policies for Modern Communications et al.*, WC Docket Nos. 13-97 et al., Second Report and Order and Second Further Notice of Proposed Rulemaking, 38 FCC Rcd 8951, 8980-81, para. 57 (2023) (*Second VoIP Direct Access Order and FNRPM*).

related issues as needed in separate future items. In this item, however, we welcome commenters' views on any other rules or sections of the Act that might be rendered obsolete or redundant by the elimination of incumbent LEC-specific interconnection obligations. We ask commenters to identify any provisions (for example, in sections 251(b)(1)-(4) or 252 of the Act, Parts 51 or 52 of our rules, or elsewhere) that should be updated or clarified, or from which we should forbear. For example, should we eliminate any requirement that local exchange carriers offer presubscribed interexchange providers and the information-sharing requirements associated with that requirement?[115] Does the strict distinction between local and long-distance service, and associated concepts like presubscribed interexchange carriers and LATAs continue to make sense in an all-IP world?

C. Appropriate Regulatory Framework for Interconnection for IP Voice Services

55. We seek comment on whether and how the Commission should modify its regulatory framework for interconnection to account for IP voice services. As the Commission has previously stated, "[i]t is important that any IP-to-IP interconnection policy framework adopted by the Commission be narrowly tailored to avoid intervention in areas where the marketplace will operate."[116] Today, carriers can freely negotiate how IP-to-IP interconnection occurs absent heavy-handed Commission regulation. We seek comment on whether there has been any demonstrated need for Commission intervention. Have market incentives proved sufficient to meet the needs contemplated by Congress and the Act?[117] Do any carriers possess sufficient market power to pressure other carriers into accepting unfavorable interconnection terms?

56. Does the regulatory framework established for traffic exchange under section 251(a) continue to make sense for IP-to-IP interconnection for voice services, or should it more closely resemble the light-touch regulatory approach taken in other areas, including Internet traffic exchange?[118] Should any framework be limited to calls that use NANP resources to avoid impacting other IP services? How does the network architecture for interconnected VoIP differ from that of best-efforts Internet?[119] Do any particular technical characteristics counsel toward or away from the need for Commission oversight of interconnection for VoIP service? To what extent might the current dynamics of the IP-to-IP voice interconnection marketplace change if we forbore from the TDM interconnection obligations for incumbent LECs under sections 251(c)(2) and (6)? Are there aspects of section 251(c)(2)'s framework that are needed in an IP interconnection environment, and if so, who should those aspects apply to? For example, is the incumbent LECs' responsibility to exchange TDM traffic within existing LATA boundaries appropriate for VoIP traffic today? If so, given that incumbent LECs serve approximately one fourth of all wireline subscriptions,[120] should that burden fall exclusively on one part of the market (such as today's incumbent LECs or comparable carriers) or on all VoIP operators?[121] What protections are needed to ensure secure and efficient delivery of VoIP calls? How should any IP interconnection framework for general voice traffic account for the existing NG911 framework and its requirement for

[115] *See, e.g.*, 47 CFR Part 64.

[116] *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18127, para. 1344.

[117] 47 U.S.C. § 151 (outlining the need for a "rapid, efficient, Nation-wide, and world-wide . . . communication service" for "all the people of the United States").

[118] *See* NTCA July 2 *Ex Parte* at 3 (arguing that the Commission should adopt a "clear light-touch regulatory backstop" that acts as "'rules of the road' to help facilitate IP interconnection transitions").

[119] "Best-efforts Internet access services describe basic Internet access as generally marketed to residential and small business subscribers." *Business Data Services et al.*, WC Docket Nos. 16-143 and 05-25, GN Docket No. 13-5, and RM-10593, Report and Order, 32 FCC Rcd 3459, 3474, para. 30 (2017).

[120] *Local Telephone Competition Report* at tbl.1.

[121] *See* 47 U.S.C. § 251(h)(2).

carriers to hand off 911 traffic in IP at designated points of connection within each state?[122] To what extent would a transition to an all-IP infrastructure affect accessibility for people with disabilities? Are there still devices or services, such as TTY or speech-to-speech, that require TDM technology? We invite detailed comment on how the Commission should account for these issues and those raised below.

57. *Scope of traffic and services*. We seek comment on the scope of traffic and services that a framework specific to IP-to-IP interconnection for voice traffic should encompass. Should the Commission distinguish between managed or facilities-based VoIP and over-the-top VoIP?[123] Should the Commission's framework encompass all U.S. domestic voice providers that use NANP resources? Are there any definitional or other challenges that exist in attempting to categorize the different types of VoIP traffic? How can we avoid any regulatory asymmetries that could distort the market or otherwise harm consumers? Would adopting an IP interconnection framework for interconnected VoIP traffic compel providers to exchange VoIP traffic under different technological or legal arrangements from those that providers use to exchange other IP traffic?[124] Could the interconnection framework be structured to provide certain interconnection rights with respect to the exchange of VoIP traffic, or certain types of VoIP traffic, while giving providers the freedom to exchange other IP traffic as they are doing now?[125] What impact, if any, would such an approach have on any preexisting arrangements for the exchange of voice or non-voice IP traffic?

58. We also seek comment on whether any such regulatory framework should distinguish between different types of carriers. For example, should our rules differentiate between incumbent LECs, rural LECs, competitive LECs, or interconnected VoIP providers, particularly if providers interconnect through the Internet and not through individual incumbent LEC switches in multiple LATAs? Do other classes of providers, such as originating versus terminating, require specific rule subsets? Does the type of VoIP service provided—e.g., facilities-based versus over-the-top—warrant or necessitate different regulatory schemes?

59. *Duty to interconnect*. We seek comment on whether the Commission should adopt rules to require carriers to interconnect in IP, specifically, for voice traffic. Should the Commission mandate that carriers provide direct IP-to-IP interconnection?[126] Alternatively, should the Commission require IP-to-IP interconnection but permit carriers to do so indirectly?[127] Should the Commission require carriers to make an IP address available on public Internet at which it will receive voice traffic, and should such a requirement be instead of or in addition to a direct interconnection requirement? Should the Commission prohibit incumbent LECs from requesting that other carriers or VoIP providers exchange traffic in TDM, or alternatively, require the provider requesting TDM interconnection to bear the costs of conversion of IP traffic? Should the Commission prohibit carriers from distinguishing between different types of traffic or providers in its receipt of voice traffic? What requirements would the Commission need to specify if it undertook any such approach? What are the benefits and drawbacks of these various alternatives?

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[122] *See* 47 CFR § 9.27 *et seq.*

[123] *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18127, para. 1345.

[124] *See id.* at 18127, para. 1345.

[125] *See id.* at 18128, para. 1347 (acknowledging comments that "IP interconnection policies could encompass IP traffic other than voice" and noting that the Commission does not "regulate[] interconnection among Internet backbone providers").

[126] *See id.* at 18137, para. 1373 (addressing a proposal to "require every telecommunications carrier to provide IP-based carrier-to-carrier interconnection . . . within [five] years"); *see also* Voice on the Net Coalition Reply, WC Docket No. 17-97, at 3 (filed Aug. 15, 2025) (supporting an "FCC directive" for all carriers to support IP interconnection).

[127] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18136, para. 1371.

60. We seek comment whether the Commission should impose certain baseline requirements, such as particular terms and conditions, on IP-to-IP interconnection agreements.[128] Does the application of terms like "just and reasonable" under section 201 and "not unjust or unreasonably discriminatory" under section 202 of the Act differ in an all-IP context? If so, how? How otherwise might any VoIP interconnection obligation differ from that currently imposed on incumbent LECs and other telecommunications carriers in the TDM context? Would incumbent LECs and interconnecting carriers need to specify a date by which there could no longer be changes to existing TDM interconnection arrangements, or to certain terms in those agreements, in preparation of a proposed sunset date? Would a numbering directory similar to that required for telecommunications relay services (TRS) under section 64.613 of our rules[129] allow IP-to-IP traffic to be easily routed in the absence of direct interconnection agreements?[130] What would the costs and benefits of any of the approaches outlined above be? For small and rural carriers, specifically?

61. *Duty to negotiate in good faith*. We also seek comment on whether the Commission should impose additional or specific requirements for IP-to-IP interconnection for voice service related to a carrier's duty to negotiate in good faith. The Commission has previously recognized that the "duty to negotiate in good faith has been a longstanding element of interconnection requirements under the Communications Act," irrespective of the "network technology underlying the interconnection, whether TDM, IP, or otherwise."[131] The Commission in 2011 espoused its expectation that all carriers negotiate in good faith in response to requests for IP-to-IP interconnection for the exchange of voice traffic and that such good faith negotiations will result in interconnection arrangements between IP networks.[132] We seek comment on whether the Commission's expectation has been realized in the past decade and a half. Was the Commission's stated expectation sufficient to ensure that IP interconnection arrangements for the exchange of voice traffic came to fruition in a timely manner? If not, how can the Commission ensure that all providers of voice services negotiate in good faith in response to requests for IP-to-IP interconnection for the exchange of voice traffic?

62. *IP voice traffic POIs*. We seek comment on whether the Commission should determine POIs for VoIP in an all-IP world. If so, how would the Commission do so? Could or should the Commission require POIs in each state, region, or tandem, or at certain "technically feasible" points? How does the concept of technical feasibility apply in end-to-end IP networks?[133] Does the concept of LATAs continue to make sense in an all-IP world? By comparison, how many interconnection points do providers use to interconnect with the Internet? Should the Commission limit the number of required POIs?[134] We seek comment on what role, if any, the Commission should play in developing a POI framework for IP interconnection for voice services, and on approaches that do not impose overly prescriptive regimes that detract from the efficiencies of IP networks. Could or should the Commission

[128] *See id.* at 18134, para. 1366.

[129] 47 CFR § 64.613.

[130] *See, e.g.*, North American Numbering Council, Interoperable Video Calling Working Group, Report on Interoperable Video Calling (2020), https://nanc-chair.org/docs/IVCFinalReport7-28-20(002).pdf.

[131] *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18123, para. 1335.

[132] *Id.* at 18126, para. 1341.

[133] 47 U.S.C. § 251(c)(2)(B) (requiring incumbent LECs to allow a requesting telecommunications carrier to interconnect at any technically feasible point); *see also* 47 CFR § 51.5 ("Interconnection . . . shall be deemed technically feasible absent technical or operational concerns that prevent the fulfillment of a request by a telecommunications carrier for such interconnection, access, or methods. A determination of technical feasibility does not include consideration of economic, accounting, billing, space, or site concerns, except that space and site concerns may be considered in circumstances where there is no possibility of expanding the space available.").

[134] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18136, para. 1372 (addressing a proposal by T-Mobile that "each service provider establish no more than one POI in each state").

require interconnection at existing NG911 Delivery Points where they exist?[135] Would doing so interfere with a state's ability to determine the configuration of their emergency services networks? What call routing requirements are needed, if any, to ensure continued functionality of services such as E911 or 988?[136] Should the Commission require certain categories of voice traffic be managed? What should be the role of technical standards-setting bodies in developing a framework for IP interconnection?

63. *Exchanging VoIP traffic over the public Internet.* We seek comment on whether the Commission can and should encourage the exchange of IP voice traffic over the public Internet. What efficiencies could be derived through exchanging IP-based voice traffic over the Internet? Would individually-negotiated contracts be needed? Are there voice carriers today that do not have existing connections to the Internet for the provision of consumer Internet connectivity to their customers? We seek comment on what tools would need to be developed to efficiently implement such a solution. For example, how would call routing work? Would a database connecting phone numbers to a carrier gateway's IP address need to be developed? Would such a database require technical standards work, and are there any efforts on this front already underway?

64. *Role of states*. Finally, we seek comment on what role states should play, if any, in VoIP interconnection and on the landscape of state regulation of IP-to-IP interconnection today. Has any state role been necessary for the establishment of IP interconnection agreements for voice traffic to date? What equities do the states have in ensuring efficient interconnection of intrastate and interstate voice traffic? What role should the Commission play in overseeing any state regulation of VoIP interconnection? Have state actions with respect to VoIP interconnection been consistent with federal policy? Have they been helpful, or a hindrance, to promoting the IP transition? We seek comment whether the Commission should exercise preemption authority over matters related to interconnected VoIP interconnection. If the Commission adopts rules for a framework for IP-to-IP interconnection, should those rules limit the states' role in IP-to-IP interconnection, or prohibit states from attaching certain conditions to IP interconnection negotiations and agreements?

D. Commission Authority over VoIP Interconnection

65. To the extent that a regulatory framework governing interconnection for IP voice services is necessary, we seek comment on the best authority under which the Commission could or should adopt rules or requirements to govern IP interconnection for voice services. We also seek comment on which authority is most consistent with our statute as a whole. Specifically, we seek comment on the particular statutory authority that would provide the strongest basis for any interconnected VoIP interconnection framework we might adopt. We also seek comment on how to carefully circumscribe the scope of traffic or services subject to any such framework to leave issues to the marketplace that appropriately can be resolved there.

66. However, the Commission has not broadly determined whether Voice over Internet Protocol (VoIP) providers are "telecommunications carriers,"[137] whether VoIP services, including

[135] *See* 47 CFR § 9.29.

[136] *See, e.g.*, 47 CFR §§ 9.1 *et seq*. (E911), 52.200 *et seq*. (988).

[137] Under Commission rules and precedent, providers of interconnected VoIP service may in certain circumstances be treated as telecommunications carriers. For example, the Commission and states have recognized that interconnected VoIP providers may seek designation as Eligible Telecommunications Carriers (ETCs) to participate in universal service programs, so long as they voluntarily hold themselves out as common carriers and meet the applicable requirements. *See, e.g.*, *Restoring Internet Freedom et al.*, WC Docket No. 17-108 et al., Order on Remand, 35 FCC Rcd 12328, 12382 n.358 (2020) ("While the Commission has not classified VoIP service as a telecommunications service, it has consistently recognized that a provider may offer VoIP on a Title II basis if it voluntarily holds itself out as a telecommunications carrier and complies with appropriate federal and state requirements.") (internal quotations omitted)); *IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, WC Docket No. 04-36, WC Docket No. 05-196, First Report and Order and Notice of Proposed

(continued….)

interconnected VoIP, are "telecommunications services" or "information services," or whether VoIP services constitute "telephone exchange service" or "exchange access"[138] for the purposes of interconnection rights under sections 201 and 251.[139] Commission precedent suggests that the statutory terms defining section 251's scope are not confined to legacy TDM-based offerings, but rather turn on the functional nature of the service regardless of protocol.[140] The Commission's technology-neutral reading of these definitions is also consistent with how the Commission has approached interconnection rights under section 251 in the context of IP-based voice services. In the *USF/ICC Transformation Order*, the Commission observed that "interconnection requirements [under section 251] are technology neutral—they do not vary based on whether one or both of the interconnecting providers is using TDM, IP, or another technology in their underlying networks."[141] Although the Commission refrained from explicitly ruling that IP-to-IP interconnection is mandated under section 251, it found that the statutory language was neutral on its face as to the underlying network technology,[142] and encouraged parties to negotiate such arrangements in good faith.[143]

67. *Section 251(a)(1).* Section 251(a)(1) requires all telecommunications carriers to interconnect either directly or indirectly. The requirements of this provision extend broadly to all telecommunications carriers, and are technology neutral on their face with respect to the transmission protocol used for purposes of interconnection. Can the Commission require providers of voice service to interconnect in IP under section 251(a)? Could the Commission rely on section 251(a)(1) to require IP interconnection between facilities-based interconnected VoIP providers that have not been classified as either a telecommunications service or an information service under the Act?

68. We seek comment whether section 251(a) provides the Commission authority to adopt rules, if necessary, requiring providers of voice service to make interconnection arrangements for the exchange of voice traffic in IP, and to negotiate good faith arrangements for the same.

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Rulemaking, 20 FCC Rcd 10245, 10268, para. 38 n.128 (2005), *aff'd sub nom. Nuvio Corp. v. FCC*, 473 F.3d 302 (D.C. Cir. 2006) (recognizing that an interconnected VoIP provider can obtain the rights available to "telecommunications carriers" under Title II of the Act if it voluntarily "holds itself out as a telecommunications carrier and complies with appropriate federal and state requirements"). In the public safety context, the Commission requires interconnected VoIP providers to meet the same Enhanced 911 (E911) obligations as traditional telecommunications carriers. *See* 47 CFR § 9.5(b); *IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, 20 FCC Rcd at 10256, para. 22.

[138] *See, e.g.*, *Connect America Fund; Developing a Unified Intercarrier Compensation Regime*, WC Docket No. 10-90, CC Docket No. 01-92, Order on Remand and Declaratory Ruling, 34 FCC Rcd 12692, 12698-99, paras. 18-20 (2019) (reaffirming that LECs can charge traditional switched access rates for VoIP-PSTN traffic that is "functionally equivalent" to traditional access services, regardless of the underlying technology); *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18143-44, para. 1389 ("Other providers of retail VoIP services assert that, regardless of the classification of the retail VoIP service, their carrier partners are providing 'telephone exchange service' and/or 'exchange access' . . . . [W]e do not believe that their regulatory status should change if they simply performed the same or comparable functions using a different protocol, such as IP."); *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 98-147 et al., Order on Remand, 15 FCC Rcd 385, 386, paras. 2-3 (1999) (affirming that advanced services employing packet-switched technology, such as xDSL broadband loops, could constitute telephone access exchange service or exchange access).

[139] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18141-42, para. 1387.

[140] *See supra* note 138.

[141] *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18126, para. 1342.

[142] *Id.* at 18139-40, para. 1381. ("We agree with commenters that 'nothing in the language of [s]ection 251 limits the applicability of a carrier's statutory interconnection obligations to circuit-switched voice traffic' and that the language in in fact technology neutral." (footnote omitted)).

[143] *See id.* at 18045, para. 1011.

69. To that end, we seek comment whether providers of interconnected VoIP service are or could be telecommunications carriers (or common carriers). As the D.C. Circuit Court of Appeals explained in *NARUC II*, "the primary sine qua non of common carrier status is a quasi-public character, which arises out of the undertaking 'to carry for all people indifferently.'"[144] The court went on to explain that the second prerequisite to common carrier status, "formulated by the FCC with peculiar applicability to the communications field," is that the system be such that customers transmit intelligence of their own design and choosing.[145] We seek comment on whether providers of interconnected VoIP service are common carriers under this test.

70. While the Commission has not affirmatively classified *all* VoIP offerings as either a telecommunications service or information service, it has nonetheless recognized that providers may elect to offer interconnected VoIP as a telecommunications service.[146] We thus seek comment on whether the Commission must classify all interconnected VoIP as a telecommunications service in order to regulate interconnected VoIP providers as telecommunications carriers, given that the Act states that a "telecommunications carrier shall be treated as a common carrier under this chapter only to the extent that it is engaged in providing telecommunications services."[147] Can providers of interconnected VoIP service avail themselves of section 251(a) by offering interconnected VoIP service on a common carrier basis? If so, do both sides of IP-to-IP interconnection need to be offering VoIP on a common carrier basis for the section 251(a) interconnection obligations to apply? Do both sides need to agree that the VoIP service is being offered as a common carrier service? To ensure that any carrier seeking the benefits of such a classification also accepts the accompanying burdens (such as the section 251(a) duty to accept interconnections from others), should we require a carrier seeking to offer VoIP on a common carrier basis to do so throughout their territory or throughout an entire state? We also seek comment whether, if a carrier elects to offer such VoIP services as telecommunications services, and does so without changing the rates, terms, or conditions of service for the customer, it should be viewed "as a transition of underlying network technology, analogous to a provider undertaking a switch migration."[148]

71. *Section 201.* The Commission has historically imposed interconnection obligations

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[144] *National Assoc. of Regulatory Utility Comm'rs v. FCC*, 533 F.2d 601, 608-09 (D.C. Cir. 1976) (*NARUC II*) ("[A] carrier will not be a common carrier where its practice is to make individualized decisions in particular cases whether and on what terms to serve."); *see also, e.g.*, *Telesaurus VPC, LLC v. Power*, 623 F.3d 998, 1005 (9th Cir. 2010) (quoting *Sw. Bell Tel. Co. v. FCC*, 19 F.3d 1475, 1481 (D.C. Cir. 1994)) ("Whether an entity in a given case is to be considered a common carrier or [not] turns on the particular practice under surveillance."); *Eagleview Techs., Inc. v. MDS Assocs.*, 190 F.3d 1195, 1197 (11th Cir. 1999) (per curiam) (interpreting common carriers under the Communications Act to be "entities that are engaged in providing communication services.") (internal quotation marks omitted).

[145] *NARUC II*, 533 F.2d at 609.

[146] *See Lifeline and Link Up Reform and Modernization et al*., WC Docket No. 11-42, Third Report and Order, Further Report and Order, and Order on Reconsideration, 31 FCC Rcd 3962, 4059 n.709 (2016); *IP-Enabled Services; E9-1-1 requirements for IP-Enabled Service Providers*, WC Docket No. 04-36, WC Docket No. 05-196, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245, 10268, para. 38 n.128 (2005), *aff'd sub nom. Nuvio Corp. v. FCC*, 473 F.3d 302 (D.C. Cir. 2006) (recognizing that an interconnected VoIP provider can obtain the rights available to "telecommunications carriers" under Title II of the Act if it voluntarily "holds itself out as a telecommunications carrier and complies with appropriate federal and state requirements"); *see also USF/ICC Transformation FNPRM*, 27 FCC Rcd at 18143-44, para. 1389 ("We note in this regard that some providers of facilities-based retail VoIP services state that they are providing those services on a common carrier basis, and expect that those services would include the provision of 'telephone exchange service' and/or 'exchange access' to the same extent as comparable services provided using TDM or other transmission protocols.") (footnote omitted).

[147] *See* 47 U.S.C. § 3(51).

[148] NCTA July 2 *Ex Parte* Letter at 2.

pursuant to section 201 of the Act.[149] We seek comment on whether section 201 provides the Commission authority to mandate IP interconnection obligations for voice traffic, including for intrastate traffic—either alone, or in conjunction with, other provisions of the Act—under the interconnection frameworks we explore today.[150] Section 201(a) imposes a duty on "common carrier[s]" engaged in "interstate or foreign communication by wire or radio" to "establish physical connections with other carriers" in cases where the Commission finds it necessary or desirable in the public interest.[151] Section 201(b) further requires that all "charges, practices, classifications, and regulations for or in connection with common carrier service" be just and reasonable and not unjust or unreasonable.[152] Section 201(b) also permits the Commission to "prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of" the Communications Act. We seek comment whether these provisions provide the Commission authority to adopt rules, if necessary, requiring providers of voice service to make interconnection arrangements for the exchange of voice traffic in IP, and to negotiate good faith arrangements for the same. Is this approach most consistent with the best reading of the statute?[153] Does the fact that section 251 specifically governs interconnection bear on whether section 201 can authorize regulations governing IP interconnection? We observe that section 251 includes a savings provision specifying that nothing in section 251 "shall be construed to limit or otherwise affect the Commission's authority under section 201."[154] What is the import of this provision in evaluating our authority of section 201(a) with respect to IP interconnection? Could regulations addressing VoIP interconnection be grounded in our authority that "[a]ll charges, practices, classifications, and regulations for or in connection with [common carrier] service shall be just and reasonable"?[155] Would a section 201 approach be limited only to interstate and foreign communications?

72. *Section 251(c)(2).* Were the Commission to forbear from 251(c)(2) with respect to TDM services, we seek comment whether section 251(c)(2) could provide the Commission the authority to address IP-to-IP interconnection.[156] First, we observe that section 251(c)(2)'s direct interconnection obligations only extend to some incumbent LECs (not rural telephone companies nor mobile carriers nor

[149] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18146, para. 1394; 47 U.S.C. § 201(a); *Access Charge Reform, Reform of Access Charges Imposed by Competitive Local Exchange Carriers*, Eighth Report and Order and Fifth Order on Reconsideration, 19 FCC Rcd 9108, 9137-38, paras. 59-61 (2004); *see also* 47 U.S.C. § 251(i) ("Nothing in this section shall be construed to limit or otherwise affect the Commission's authority under section 201.").

[150] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18146, para. 1394.

[151] 47 U.S.C. § 201(a). We observe that the Commission found interconnected VoIP to a be a jurisdictionally mixed use service in the *Vonage Order*, and determined that it was not possible to separate out the purely intrastate uses from the interstate uses. *See Vonage Holdings Corp. Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, WC Docket No. 03-211, Memorandum Opinion and Order, 19 FCC Rcd 22404, 22411, para. 14 (2004) (*Vonage Order*).

[152] 47 U.S.C. § 201(b).

[153] *See Loper Bright Enterprises v. Raimondo*, 603 U.S. 369, 412-413 (2024) (*Loper Bright*) ("Courts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority, as the APA requires. . . . But courts need not and under the APA may not defer to an agency interpretation of the law simply because a statute is ambiguous.").

[154] 47 U.S.C. § 251(i).

[155] 47 U.S.C. § 201(b).

[156] 47 U.S.C. § 251(c)(2) (requiring incumbent LECs to provide interconnection with its network "for the transmission and routing of telephone exchange service and exchange access;" "at any technically feasible point within the carrier's network;" "that is at least equal in quality to that provided by the [LEC] to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection;" and "on rates, terms, and conditions that are just, reasonable, and nondiscriminatory . . .").

competitive LECs) and requesting telecommunications carriers (other than interexchange carriers) seeking interconnection with them. Given this framework, would it be appropriate to ground any IP-to-IP interconnection obligations for voice services in the Commission's authority under section 251(c)(2)? If so, would the Commission need to classify VoIP services as telecommunications services for section 251(c)(2) to govern interconnection for IP voice services under this provision? Or would it be sufficient that a VoIP provider held itself out as providing its service on a common carrier basis? Relatedly, we also seek comment whether interconnection for the exchange of VoIP traffic would be "for the transmission and routing of telephone exchange service and exchange access."[157] Or to put it differently, if the Commission did classify VoIP as a telecommunications service, would section 251(c)(2) apply, if so, to whom and in what respect? And assuming it did apply, should the Commission nonetheless forbear from applying section 251(c)(2) to VoIP?

73. *Section 256.* We also seek comment on whether section 256 of the Act provides the Commission authority to regulate IP interconnection for voice service. Section 256(a) states that the purpose of the section is "to ensure the ability of users and information providers to seamlessly and transparently transmit and receive information between and across telecommunications networks."[158] The Commission "shall establish procedures for Commission oversight of coordinated network planning by telecommunications carriers and other providers of telecommunications service for the effective and efficient interconnection of public telecommunications networks used to provide telecommunications service."[159] To what extent does this section provide a source of authority for regulation of IP interconnection given the statement in section 256(c) that "[n]othing in this section shall be construed as expanding or limiting any authority that the Commission may have under law in effect before February 8, 1996"?[160]

74. *Section 227b.* We seek comment on whether section 227b provides authority for rules governing IP interconnection for voice services. Pursuant to section 227b(b)(1), all voice service providers are required to implement the STIR/SHAKEN caller ID authentication framework in their IP networks,[161] and the Commission has extended that obligation to intermediate providers.[162] Providers must also take reasonable measures to implement an effective caller ID authentication framework in their non-IP networks,[163] but are not required to do so until a non-IP caller ID authentication framework has been developed and is reasonably available.[164] In applying these provisions, the Commission requires voice service providers to either upgrade their entire networks to IP and fully implement STIR/SHAKEN or participate in efforts to develop a non-IP caller ID authentication framework.[165] Section 227b(b)(5)(D) requires the Commission to "take reasonable measures to address any" burdens or barriers to the implementation of STIR/SHAKEN or a non-IP caller ID authentication framework, and to "enable as promptly as reasonable full participation of all classes of providers of voice service and types of voice calls" in these frameworks.[166] We seek comment on whether regulating IP interconnection would be a

[157] 47 U.S.C. § 251(c)(2)(A).

[158] 47 U.S.C. § 256(a)(2).

[159] 47 U.S.C. § 256(b)(1).

[160] 47 U.S.C. § 256(c); *see also Comcast Corp. v FCC*, 600 F.3d 642, 659 (D.C. Cir. 2010) (*Comcast*) (acknowledging section 256's objective, while adding that section 256 does not "'expand[] . . . any authority that the Commission' otherwise has under law").

[161] 47 U.S.C. § 227b(b)(1); 47 CFR § 64.6301.

[162] 47 CFR § 64.6302.

[163] 47 U.S.C. § 227b(b)(1).

[164] 47 U.S.C. § 227b(b)(5)(B).

[165] 47 CFR § 64.6303.

reasonable measure to address the burdens and barriers of STIR/SHAKEN implementation as necessary to enable full participation in the framework as promptly as reasonable.

75. *Ancillary Authority.* We seek comment whether the Commission can rely upon ancillary authority as a basis for an IP interconnection regulatory framework. The Commission may exercise ancillary jurisdiction only when two conditions are satisfied: (1) the Commission's general jurisdictional grant under Title I of the Act covers the regulated subject and (2) the regulations are reasonably ancillary to the Commission's effective performance of its statutorily mandated responsibilities.[167] Regarding the first prong, because interconnected VoIP services are "communications by wire or radio,"[168] the Commission has subject matter jurisdiction over IP traffic such as packetized voice traffic. With regard to the second prong, the D.C. Circuit in *Comcast* held that the Commission's use of ancillary authority must be linked to express delegations of regulatory authority.[169] The Commission has previously relied in part—though not exclusively[170] —on ancillary authority to apply certain of Title II's obligations to interconnected VoIP service—including obligations pertaining to section 222 customer proprietary network information (CPNI), local number portability, USF contribution, Form 499 regulatory fees, section 255 disability access and TRS, section 214 discontinuance, outage reporting, truth-in-billing, and Form 477 reporting.[171]

76. We seek comment whether any requirements the Commission might adopt to regulate interconnected VoIP interconnection would be reasonably ancillary to the Commission's exercise of its authority under a statutory provision, such as sections 201, 251(a), (e), 254, 615a-1(b), 617(d), or other authority. For example, would the failure to make arrangements to interconnect, directly or indirectly, for the exchange of voice traffic in IP be reasonably ancillary to the Commission's authority to ensure that all practices in connection with common carrier services be just and reasonable under section 201?[172] Would adopting an IP interconnection regulatory framework be ancillary to the Commission's obligation to enforce telecommunications carriers' duty to "interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers?"[173] Is maintaining Commission oversight over interconnection for exchange of voice traffic ancillary to the Commission's authority over 911 emergency access?[174] Similarly, under the New and Emerging Technologies 911 Improvement Act of 2008 (NET911

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[166] 47 U.S.C. §§ 227b(b)(5)(A), 227(b)(5)(D).

[167] *American Library Ass'n v. FCC*, 406 F.3d 689, 691-92 (D.C. Cir. 2005).

[168] 47 U.S.C. § 152(a).

[169] *Comcast*, 600 F.3d at 654.

[170] *See, e.g.*, *IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, WC Docket Nos. 04-36, 05-196, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245, 10265, para. 33 (2005), affirmed *Nuvio Corp. v. FCC*, 473 F.3d 302 (D.C. Cir. 2006) (relying on plenary numbering authority in 251(e) of the Act, in addition to ancillary authority, to impose E911 requirements on interconnected VoIP providers); *Universal Service Contribution Methodology et al.*, WC Docket No. 06-122 et al., Report and Order and Notice of Proposed Rulemaking, 21 FCC Rcd 7518, 7538-40, paras. 38-42 (2006), *affirmed Vonage Holdings Corp. v. FCC*, 489 F.3d 1232 (2007) (relying on permissive authority under section 254(d), in addition to ancillary authority, to impose USF contribution requirements on interconnected VoIP providers); *Communications Assistance for Law Enforcement Act and Broadband Access Services*, ET Docket No. 04-295, RM-10865, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd 14989 (2005) (concluding that CALEA applies to providers of interconnected VoIP service under the Substantial Replacement Provision of that statute).

[171] The D.C. Circuit has made clear that the exercise of ancillary authority must be ancillary to some explicit authority provided under Title II, III, or IV (or other clear statutory authority).

[172] 47 U.S.C. § 201.

[173] 47 U.S.C. § 251(a)(1).

[174] *See*, *e.g.*, 47 U.S.C. § 251(e)(3).

Act), IP-enabled voice service providers are required to provide 911 service and enhanced 911 (E911) service in accordance with Commission requirements, and have a right to interconnect with entities that provide such capabilities on the same rates, terms, and conditions as that provided to CMRS providers.[175] Further, the Twenty-First Century Communications and Video Accessibility Act of 2010 (CVAA) authorizes the Commission to implement regulations necessary to achieve reliable and interoperable communication that ensures access to an IP-enabled emergency network by individuals with disabilities, where achievable and technically feasible.[176] We seek comment on whether oversight over IP interconnection arrangements for voice service would be ancillary to the Commission's authorities for 911, including its obligation under the CVAA and its obligations to modify regulations implementing the NET911 Act "from time to time, as necessitated by changes in the market or technology, to ensure the ability of an IP-enabled voice service provider to comply with its obligations"[177] under the statute, observing that "[n]othing in this section shall be construed to permit the Commission to issue regulations that require or impose a specific technology or technological standard."[178]

77. Alternatively, or in addition, we seek comment on whether the Commission should adopt regulations pertaining to interconnection for VoIP services by relying on ancillary authority in conjunction with its authority under section 254. Section 254 provides that "[a]ccess to advanced telecommunications and information services should be provided in all regions of the Nation,"[179] and that the Commission's universal service programs "shall" be based on this and other enumerated principles.[180] Section 254(c)(1) states that "[u]niversal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section."[181] Section 254(b) requires the Commission to base policies for the preservation and advancement of universal service on access to "advanced telecommunications and information services."[182] We seek comment whether rules to ensure interconnection of networks for the exchange of IP voice traffic would be ancillary to the Commission's obligation to enable advanced telecommunications services to be provided in all regions of the nation. Are there other sources of statutory authority to which interconnected VoIP interconnection obligations are ancillary? Finally, if the Commission were to rely on ancillary authority to impose requirements, would it also need to adopt associated complaint procedures, or could the existing informal and formal complaint processes, which derive from section 208,[183] be interpreted to extend more broadly than alleged violations of Title II duties?

78. *Classification of Interconnected VoIP Service.* For any proposed IP interconnection framework, we also seek comment on whether it is necessary, or appropriate, to address classification issues associated with facilities-based or over-the-top interconnected VoIP service. In particular, to the extent that an entity that historically was classified as an incumbent LEC or other telecommunications carrier ceased offering circuit-switched voice telephone service, and instead offered only interconnected

[175] 47 U.S.C. § 615a-1(b)(a), (b).

[176] 47 U.S.C. § 615c(g).

[177] 47 U.S.C. § 615a-1(b)(c)(3).

[178] 47 U.S.C. § 615a-1(b)(e)(3).

[179] 47 U.S.C. § 254(b)(2).

[180] 47 U.S.C. § 254(b).

[181] 47 U.S.C. § 254(c)(1).

[182] 47 U.S.C. § 254(b)(2).

[183] *See generally* 47 U.S.C. § 208.

VoIP service, we seek comment on whether that entity would remain a "local exchange carrier"[184] or "telecommunications carrier."[185] The Act defines a "local exchange carrier" as "any person that is engaged in the provision of telephone exchange service or exchange access."[186] In the universal service context, the Commission has found that, insofar as a carrier elected to offer VoIP on a common carrier basis, it "did not see a reason why such service would not also be classified as telephone exchange service and exchange access to the same extent as traditional voice telephone service."[187] Would this same reasoning apply in the context of interconnection for VoIP services?

79. As mentioned above, the Commission has not determined whether interconnected VoIP services are "telecommunications services" or "information services."[188] To what extent would the Commission need to classify interconnected VoIP service as a "telecommunications service" under the Act to require voice providers to negotiate IP interconnection agreements for interconnected VoIP services or set other rules or requirements for IP-to-IP interconnection for VoIP services? The Act defines "telecommunications service" as the "offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used,"[189] and defines "telecommunications" as "the transmission, between or among points specified by the user, of information of the user's choosing, without any change in the form or content of the information as sent and received."[190] We seek comment whether interconnected VoIP service is most appropriately classified as a "telecommunications service" under the best reading of the Act.[191] Should all VoIP services be subject to Title II classification, or should we limit our actions to interconnected VoIP services? If so, why? Alternatively, are some offerings of VoIP (or interconnected VoIP) provided on a common carrier basis and others provided on a private carriage basis? If so, how should we distinguish them, both as a matter of law and as to what legal obligations should be imposed on each?

80. Were the Commission to classify interconnected VoIP service as a telecommunications service, from what provisions of Title II should the Commission forbear with respect to interconnected

[184] *USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18141, para. 1387. As the Commission previously noted, the provider might continue to offer special access services, for example, and thus remain a local exchange carrier on that basis. *Id.* at n.2526.

[185] 47 U.S.C. § 153(51) (defining "telecommunications carrier" as any provider of telecommunications services).

[186] 47 U.S.C. § 153(32). The Act defines the term "telephone exchange service" as "(A) service within a telephone exchange, or within a connected system of telephone exchanges within the same exchange area operated to furnish to subscribers intercommunicating service of the character ordinarily furnished by a single exchange, and which is covered by the exchange service charge, or (B) comparable service provided through a system of switches, transmission equipment, or other facilities (or combination thereof) by which a subscriber can originate and terminate a telecommunications service." *Id.* § 153(54). The term "exchange access" means the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll services. *Id.* § 153(20).

[187] *See, e.g.*, *USF/ICC Transformation Order and FNPRM*, 27 FCC Rcd at 18141-42, para. 1387 ("Under the reasoning of prior Commission decisions, we do not believe that a retail service must be classified as a 'telecommunications service' for the provider carrying that traffic (whether the provider of the retail service or a third party) to be offering 'telephone exchange service' or 'exchange access.'") (footnotes omitted).

[188] *See, e.g.*, 47 U.S.C. § 153.

[189] 47 U.S.C. § 153(53).

[190] 47 U.S.C. § 153(50).

[191] *Compare, e.g.*, Public Knowledge et al., Petition for Declaratory Ruling That Facilities-Based Interconnected VoIP Is a Title II Service (filed Mar. 2, 2022, amended Aug. 11, 2022) *with* Cloud Communications Alliance and Cloud Voice Alliance, Petition for Declaratory Ruling Regarding State Regulatory Framework for Interconnected VoIP Services Established by the California Public Utilities Commission in Decision 24-11-003 (filed Jan. 27, 2025).

VoIP service? Should the Commission forbear from provisions of Title II that it has thus far not found necessary to impose on interconnected VoIP service? We seek comment on whether there is any evidence of market failure in the provision of such VoIP services, or whether broader Title II regulation of VoIP services is otherwise necessary to protect consumers or ensure that rates, terms, and conditions are just and reasonable. If there is no evidence of market failure, we seek comment whether it would be in the public interest to forbear from all Title II requirements other than those the Commission currently applies to VoIP service. Alternatively, we seek comment on whether the Commission should align any forbearance for VoIP services with the forbearance granted to commercial mobile radio services.[192]

81. *Other Sources of Authority.* Finally, we seek comment on any other sources of Commission authority for adopting a policy framework for IP interconnection for interconnected voice services. What would be the scope and substance of the Commission's authority to address IP interconnection under that authority?[193]

E. Cost Benefit Analysis

82. *Benefits*. We seek comment on the benefits of forbearing from our specific interconnection obligations for incumbent LECs and on any potential regulatory framework for IP interconnection. As outlined above, the Commission believes that its current regulatory scheme imposes various costs on providers, whether on incumbent LECs or otherwise.[194] We also anticipate that elimination of these burdens will, among other things, speed deployment of next-generation networks and services.[195] We seek comment on the likely benefits of eliminating these costs, as well as any other benefits resulting from sunsetting our additional interconnection obligations for incumbent LECs.

83. What regulatory costs will incumbent LECs avoid as a result of such deregulation? Carriers in general? What effect would the absence of Commission intervention have on market competition? Does our current interconnection regime promote anticompetitive conduct, and would its elimination promote affordability of voice services or improved service offerings?[196] How might small and rural carriers and their customers, in particular, benefit? What other benefits will inure to the public as a consequence? Do commenters believe, as the Commission anticipates, that eliminating incumbent LECs' additional interconnection obligations will hasten the IP transition? How should the Commission account for increased investment in next-generation networks in evaluating the benefits of forbearance? How will providers and the public benefit from ending carriers' reliance on expensive (and frequently stolen) copper, as well as TDM equipment that may be difficult to source? How does the cost of maintaining copper, TDM, and legacy facilities generally compare with the cost of maintaining a modern all-IP network, and does that analysis have implications for high-cost universal service programs? Are there national security implications from ongoing sourcing of second-hand TDM equipment from potentially unsecure supply chains, and how should the Commission evaluate the benefits of transitioning toward an all-IP world? Are there other security benefits to an all-IP world, or ending legacy protocols such as SS7, that would benefit consumers? Specifically, how should the Commission account for the potential benefits of faster adoption of IP-based NG911 and improved implementation of STIR/SHAKEN for the reduction robocalls? Would any state and local laws and regulations undermine these benefits?[197]

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[192] *See* 47 U.S.C. § 332(c)(1)(A) ("A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this chapter, except for such provisions of subchapter II as the Commission may specify by regulation as inapplicable to that service or person.").

[193] *See USF/ICC Transformation Order and FNPRM*, 26 FCC Rcd at 18147, para. 1398.

[194] *Supra* section III.B.1.

[195] *Id.*

[196] *See* CCA Non-IP Caller ID Authentication NPRM Reply at 4.

[197] *See* Verizon Non-IP Caller ID Authentication NPRM Reply at 1-3.

What kinds of new technologies or services might emerge, and how should the Commission measure the resulting benefits? In addition to enhanced services, do commenters expect carriers to pass along cost savings to customers in the form of reduced prices? What other parties may benefit from our forbearance from incumbent LEC's additional interconnection obligations, and in what ways? We seek quantifications of any expected benefits.

84. *Costs*. We recognize that there may be potential costs resulting from forbearance from incumbent LECs' specific section 251(c) interconnection obligations, including the potential to strand customers where service may no longer be practicable for carriers.[198] Additionally, we acknowledge that forbearance from our collocation requirements for incumbent LECs may impose costs on competitive LECs that previously were borne by the former. These costs may include incurring both capital and operating expenditures. We seek comment on the extent of these costs and any others that may result from the elimination of our additional interconnection rules for incumbent LECs. We also seek comment on whether there any technical or policy issues the Commission should be aware of that could arise as carriers transition from TDM to IP as a result of our proposals. For example, for carriers that have not fully converted to IP calling, would there be a need to convert their existing TDM traffic to IP? What would the burdens of such conversion be? What are the costs and burdens imposed on other carriers by those that have not converted their traffic to IP? What costs would be associated with any potential regulatory framework for IP interconnection? What costs might this order place on emergency services that currently continue to rely on TDM circuits for critical applications? In particular, we seek comment on the potential costs to small and rural carriers and their customers. We also seek analysis that includes quantification of these risks.

IV. PROCEDURAL MATTERS

A. *Ex Parte* Rules

85. The proceeding this Notice initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.[199] Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.[200]

[198] *See supra* para. 35 & note 96. (citing NCTA Delete Reply at 15-16).

[199] 47 CFR § 1.1206.

[200] *Id.* §§ 1.1200-1216.

B. Paperwork Reduction Act Analysis

86. This Notice may contain proposed new and revised information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C § 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

C. Providing Accountability Through Transparency Act

87. Consistent with the Providing Accountability Through Transparency Act, Public Law 118-9, a summary of this document will be available on https://www.fcc.gov/proposed-rulemakings.

D. Regulatory Flexibility Act

88. The Regulatory Flexibility Act of 1980, as amended (RFA),[201] requires that an agency prepare a regulatory flexibility analysis for notice-and-comment rulemaking proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."[202] Accordingly, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) concerning potential rule and policy changes contained in this Notice. The IRFA is set forth in Appendix B. The Commission invites the general public, in particular small businesses, to comment on the IRFA. Comments must be filed by the deadlines for comments on the Notice indicated on the first page of this document and must have a separate and distinct heading designating them as responses to the IRFA.

E. Filing of Comments and Reply Comments

89. Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).

- *Electronic Filers*: Comments may be filed electronically using the Internet by accessing the ECFS: https://www.fcc.gov/ecfs.
- *Paper Filers*: Parties who choose to file by paper must file an original and one copy of each filing.
    - Filings can be sent by hand or messenger delivery, by commercial courier, or by the U.S. Postal Service. **All filings must be addressed to the Secretary, Federal Communications Commission.**
    - Hand-delivered or messenger-delivered paper filings for the Commission's Secretary are accepted between 8:00 a.m. and 4:00 p.m. by the FCC's mailing contractor at 9050 Junction Drive, Annapolis Junction, MD 20701. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
    - Commercial courier deliveries (any deliveries not by the U.S. Postal Service) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.

[201] 5 U.S.C. §§ 601 *et seq*., as amended by the Small Business Regulatory Enforcement and Fairness Act (SBREFA), Pub. L. No. 104-121, 110 Stat. 847 (1996).

[202] *Id.* § 605(b).

- Filings sent by U.S. Postal Service First-Class Mail, Priority Mail, and Priority Mail Express must be sent to 45 L Street NE, Washington, DC 20554.

90. *People with Disabilities*: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530.

F. Contact Person

91. For further information about this proceeding, please contact Benjamin (Jesse) Goodwin, Competition Policy Division, Wireline Competition Bureau, at (202) 418-0958, or benjamin.goodwin@fcc.gov, or Erik Beith, Competition Policy Division, Wireline Competition Bureau, at erik.beith@fcc.gov, or (202) 418-0756.

V. ORDERING CLAUSES

92. Accordingly, IT IS ORDERED that pursuant to sections 1-4, 201, 251(a), 251(c)(2), 251(c)(6) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-54, 201, 251(a), 251(c)(2), 251(c)(6) the Notice of Proposed Rulemaking hereby IS ADOPTED.[203]

93. IT IS FURTHER ORDERED that, pursuant to applicable procedures set forth in sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments on this Notice of Proposed Rulemaking on or before 30 days after publication in the Federal Register, and reply comments on or before 60 days after publication in the Federal Register.

94. IT IS FURTHER ORDERED that the Commission's Office of the Secretary, SHALL SEND a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

[203] Pursuant to Executive Order 14215, 90 Fed. Reg. 10447 (Feb. 20, 2025), this regulatory action has been determined to be not significant under Executive Order 12866, 58 Fed. Reg. 68708 (Dec. 28, 1993).

APPENDIX A

Proposed Rules

For the reasons set forth above, Part 51 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 51 – INTERCONNECTION

1. The authority for part 51 continues to read as follows:

AUTHORITY: 47 U.S.C. 151-55, 201-05, 207-09, 218, 225-27, 251-52, 271, 332 unless otherwise noted.

2. 51.305 [Removed]

Remove § 51.305.

3. § 51.321 [Removed]

Remove § 51.321.

4. § 51.323 [Removed]

Remove § 51.323.

APPENDIX B

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA)[1] the Federal Communications Commission (Commission) has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the policies and rules proposed in the *Notice of Proposed Rulemaking* (*Notice*) assessing the possible significant economic impact on a substantial number of small entities. The Commission requests written public comments on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments specified on the first page of the *Notice*. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).[2] In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.[3]

A. Need for, and Objectives of, the Proposed Rules

2. The *Notice* seeks to accelerate the transition of our Nation's communications networks to all-Internet Protocol (IP) technology by examining our incumbent local exchange carrier (LEC)-specific interconnection requirements. Changes in the communications marketplace have altered how providers deliver services to consumers. To reduce regulatory burdens that hinder providers from investing in and deploying next-generation networks, the *Notice* seeks comment on the current state of time division multiplexing (TDM) and IP interconnection for voice services,[4] and on the costs to telecommunications carriers of complying with sections 251(c)(2) and (c)(6) of the of the Communications Act of 1934, as amended (the Act), and the Commission's rules implementing those provisions, and their impact on the IP transition.[5] The *Notice* proposes to forbear from incumbent LEC-specific interconnection and related obligations in sections 251(c)(2) and (c)(6), and to eliminate the Commission's rules implementing those provisions,[6] by December 31, 2028.[7] The *Notice* also seeks comment on whether forbearing from sections 251(c)(2) and (c)(6) would require updating other Commission rules or statutory frameworks.[8] The *Notice* seeks comment on whether and how the Commission should modify its regulatory framework for interconnection to account for IP voice services,[9] and on the scope of the Commission's authority to regulate IP interconnection under any such framework.[10] The *Notice* further seeks comment on the benefits of forbearing from the Commission's specific interconnection obligations for incumbent LECs and on any potential regulatory framework for IP interconnection.[11] Finally, the *Notice* seeks comment on the potential costs that may result from the elimination of the Commission's additional interconnection rules for incumbent LECs, including the costs to small and rural carriers and their customers.[12]

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[1] 5 U.S.C. §§ 601 *et seq*., as amended by the Small Business Regulatory Enforcement and Fairness Act (SBREFA), Pub. L. No. 104-121, 110 Stat. 847 (1996).

[2] *Id.* § 603(a).

[3] *Id*.

[4] *Notice* Section III.A.

[5] *Notice* Section III.B.1

[6] *Notice* Section III.B.2.

[7] *Notice* Section III.B.3.

[8] *Notice* Section III.B.4.

[9] *Notice* Section III.C.

[10] *Notice* Section III.D.

[11] *Notice* Section III.E.

[12] *Id.*

B. Legal Basis

3. The proposed action is authorized pursuant to sections 1-4, 201, 251(a), 251(c)(2), 251(c)(6) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151-54, 201, 251(a), 251(c)(2), 251(c)(6).

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply

4. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.[13] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[14] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act."[15] A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.[16] The SBA establishes small business size standards that agencies are required to use when promulgating regulations relating to small businesses; agencies may establish alternative size standards for use in such programs, but must consult and obtain approval from SBA before doing so.[17]

5. Our actions, over time, may affect small entities that are not easily categorized at present. We therefore describe three broad groups of small entities that could be directly affected by our actions.[18] In general, a small business is an independent business having fewer than 500 employees.[19] These types of small businesses represent 99.9% of all businesses in the United States, which translates to 34.75 million businesses.[20] Next, "small organizations" are not-for-profit enterprises that are independently owned and operated and not dominant their field.[21] While we do not have data regarding the number of non-profits that meet that criteria, over 99 percent of nonprofits have fewer than 500 employees.[22] Finally, "small governmental jurisdictions" are defined as cities, counties, towns, townships, villages, school districts, or special districts with populations of less than fifty thousand.[23] Based on the 2022 U.S. Census of Governments data, we estimate that at least 48,724 out of 90,835 local government jurisdictions have a population of less than 50,000.

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[13] 5 U.S.C. § 603(b)(3).

[14] *Id.* § 601(6).

[15] *Id*. § 601(3) (incorporating by reference the definition of "small-business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

[16] 15 U.S.C. § 632.

[17] 13 CFR § 121.903.

[18] 5 U.S.C. § 601(3)-(6).

[19] *See* SBA, Office of Advocacy, *Frequently Asked Questions About Small Business* (July 23, 2024), https://advocacy.sba.gov/wp-content/uploads/2024/12/Frequently-Asked-Questions-About-Small-Business_2024-508.pdf.

[20] *Id*.

[21] 5 U.S.C. § 601(4).

[22] *See* SBA, Office of Advocacy, *Small Business Facts, Spotlight on Nonprofits* (July 2019), https://advocacy.sba.gov/2019/07/25/small-business-facts-spotlight-on-nonprofits/.

[23] 5 U.S.C. § 601(5).

6. The rules proposed in the *Notice* will apply to small entities in the industries identified in the chart below by their six-digit North American Industry Classification System (NAICS)[24] codes and corresponding SBA size standard.[25]

Regulated Industry (NAICS Classification)	NAICS Code	SBA Size Standard	Total Firms[26]	Small Firms[27]	% Small Firms in Industry
Wired Telecommunications Carriers[28]	517111	1,500 employees	3,054	2,964	97.05
Wireless Telecommunications Carriers (except Satellite)[29]	517112	1,500 employees	2,893	2,837	98.06
All Other Telecommunications[30]	517810	$40 million	1,079	1,039	96.29

7. Based on currently available U.S. Census data regarding the estimated number of small firms in each identified industry, we conclude that the proposed rules will impact a substantial number of small entities. Where available, we also provide additional information regarding the number of potentially affected entities in the above identified industries.

2024 Universal Service Monitoring Report Telecommunications Service Provider Data [31] **(Data as of December 2023)**	**SBA Size Standard (1500 Employees)**

[24] The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. *See* www.census.gov/NAICS for further details regarding the NAICS codes identified in this chart.

[25] The size standards in this chart are set forth in 13 CFR § 121.201, by six digit NAICS code.

[26] *See* U.S. Census Bureau, *2017 Economic Census of the United States*, *Employment Size of Firms for the U.S.: 2017,* Table ID: EC1700SIZEEMPFIRM, *and 2017 Economic Census of the United States*, *Selected Sectors: Sales, Value of Shipments, or Revenue Size of Firms for the U.S.: 2017,* Table ID: EC1700SIZEREVFIRM.

[27] *Id.*

[28] Affected Entities in this industry include Competitive Local Exchange Carriers (CLECs), Incumbent Local Exchange Carriers (Incumbent LECs), Interexchange Carriers (IXCs), Local Exchange Carriers (LECs), Operator Service Providers (OSPs), Other Toll Carriers, and Wired Broadband Internet Access Service Providers.

[29] Affected Entities in this industry include Wireless Communications Services and Wireless Telephony.

[30] Affected Entities in this industry include Internet Service Providers (Non-Broadband).

[31] Federal-State Joint Board on Universal Service, Universal Service Monitoring Report at 26, Table 1.12 (2024), https://docs.fcc.gov/public/attachments/DOC-408848A1.pdf.

Affected Entity	Total # FCC Form 499A Filers	Small Firms	% Small Entities
Competitive Local Exchange Carriers (CLECs)[32]	3,729	3,576	95.90
Incumbent Local Exchange Carriers (Incumbent LECs)	1,175	917	78.04
Interexchange Carriers (IXCs)	113	95	84.07
Local Exchange Carriers (LECs)[33]	4,904	4,493	91.62
Operator Service Providers (OSPs)	22	22	100
Other Toll Carriers	74	71	95.95
Wired Telecommunications Carriers[34]	4,682	4,276	91.33
Wireless Telecommunications Carriers (except Satellite)[35]	585	498	85.13

D. Description of Economic Impact and Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

8. The RFA directs agencies to describe the economic impact of proposed rules on small entities, as well as projected reporting, recordkeeping and other compliance requirements, including an estimate of the classes of small entities which will be subject to the requirements and the type of professional skills necessary for preparation of the report or record.[36]

9. The *Notice* seeks comment on proposals that, if adopted, we expect will reduce reporting, recordkeeping, and other compliance requirements, as small and other carriers would then be subject to fewer regulatory burdens. In the *Notice*, we first propose to end incumbent LECs' interconnection obligations under section 251(c)(2) and (c)(6) of the Act, as well as our rules implementing those provisions on December 31, 2028.[37] We propose to forbear, as of the sunset date, from section 251(c)(2) of the Act, partially forbear from section 251(c)(6) of the Act, and eliminate our rules implementing those statutory provisions,[38] by which incumbent LECs would no longer be required to meet additional interconnection obligations or provide collocation of interconnection equipment. The *Notice* seeks comment on the costs and benefits of these proposals, or of commercial or other arrangements, needed for providers that may require additional time to transition to IP technology, and whether small carriers face specific challenges resulting from eliminating interconnection requirements, such as needing to lease

[32] Affected Entities in this industry include all reporting local competitive service providers.

[33] Affected Entities in this industry include all reporting fixed local service providers (competitive LECs and incumbent LECs).

[34] Local Resellers fall into another U.S. Census Bureau industry (Telecommunications Resellers) and therefore data for these providers is not included in this industry.

[35] Affected Entities in this industry include all reporting wireless carriers and service providers.

[36] 5 U.S.C. § 603(b)(4).

[37] *Notice* Section III.B.3.

[38] *Notice* Section III.B.2.

third-party networks or services to interconnect in IP.[39] For example, through comments received in response to the *Notice*, we seek to ascertain the potential cost of forbearance to small and rural competitive LECs from our collocation requirements previously borne by incumbent LECs. We then seek comment on whether forbearing from sections 251(c)(2) and (c)(6) would require updating other Commission rules that might be rendered obsolete or redundant by the elimination of incumbent LECs' interconnection obligations.[40] The *Notice* also seeks comment on whether the Commission should establish a regulatory framework for IP-to-IP interconnection for voice traffic and what such a framework would look like, and any related costs and benefits for small carriers.

10. We expect that the proposals in the *Notice* will decrease regulatory burdens on small and other carriers, and also free up resources for use in development and deployment of next-generation networks. This would reduce costs and technical complexity associated with maintaining parallel TDM and IP-based networks, and reduce reporting and recordkeeping requirements associated with legacy networks, such as the requirement to file notices of network change. While we do not anticipate that these carriers will need to hire professionals to comply with the proposals herein, we request comments specific to any potential burdens or costs small entities may incur in connection with these requirements.

E. Discussion of Significant Alternatives Considered That Minimize the Significant Economic Impact on Small Entities

11. The RFA directs agencies to provide a description of any significant alternatives to the proposed rules that would accomplish the stated objectives of applicable statutes, and minimize any significant economic impact on small entities.[41] The discussion is required to include alternatives such as: "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities."[42]

12. The *Notice* seeks comment on proposals and alternatives that we expect will positively impact small entities. We propose to eliminate the obligation under section 251(c)(2) of the Act that incumbent LECs provide direct interconnection upon request on December 31, 2028. This proposal reflects the ongoing transition to IP-based network architecture and the declining relevance of legacy TDM interconnection in an environment increasingly dominated by packet-switched technologies. In addition, the *Notice* seeks comment on other factors that may determine the feasibility of the December 31, 2028 sunset date and any alternative benchmarks that should be met by small and other carriers in the interim. We seek comment on whether removing this requirement would eliminate unnecessary operational burdens and allow carriers, including small entities, to redirect resources away from maintaining outdated switching and signaling infrastructure and toward investment in modern, efficient, all-IP networks. Small entities may benefit if the Commission adopts proposed rules or other alternatives that facilitate the retirement of legacy equipment and the streamlining of interconnection arrangements through modern, IP-based alternatives. We seek comment on whether any of the burdens associated with alternatives that alter current filing, recordkeeping, and reporting requirements described in the *Notice* can be further minimized to lessen economic impact on small entities.

13. The Commission will fully consider the economic impact on small entities as it evaluates the comments filed in response to the *Notice*, including comments related to costs and benefits. Alternative proposals and approaches from commenters will further develop the record and could help the

[39] *Notice* Section III.B.3.

[40] *Notice* Section III.B.4.

[41] 5 U.S.C. § 603(c).

[42] *Id.* § 603(c)(1)-(4).

Commission further minimize the economic impact on small entities. The Commission's evaluation of the comments filed in this proceeding will shape the final conclusions it reaches, the final alternatives it considers, and the actions it ultimately takes to minimize any significant economic impact that may occur on small entities from the final rules.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

None.