

DOCKET FILE COPY ORIGINAL Before the
Federal Communications Commission
Washington, D.C. 20554

MAILED

OCT 24 2008

In the Matter of)
)
Implementation of the NET 911) WC Docket No. 08-171
Improvement Act of 2008)
FCC main room

REPORT AND ORDER

Adopted: October 21, 2008

Released: October 21, 2008

By the Commission: Chairman Martin and Commissioners Copps, Adelstein, Tate, and McDowell issuing separate statements.

TABLE OF CONTENTS

	Para.
I. INTRODUCTION	1
II. BACKGROUND	2
A. NET 911 Act	3
B. NET 911 Notice	5
C. 911 and E911 Network Architectures	6
D. Entities That Own or Control Interconnected VoIP 911 or E911 Capabilities	14
III. DISCUSSION	20
A. Access to 911 and E911 Capabilities	21
B. Rates, Terms, and Conditions.....	30
C. Technical, Network Security, and Information Privacy Requirements.....	35
IV. PROCEDURAL MATTERS	40
A. Final Regulatory Flexibility Act Analysis.....	40
B. Paperwork Reduction Act Analysis	41
C. Congressional Review Act	42
D. Accessible Formats.....	43
V. ORDERING CLAUSES	44
APPENDIX A – List of Commenters	
APPENDIX B – Final Rules	
APPENDIX C – Final Regulatory Flexibility Analysis	

I. INTRODUCTION

1. In this Order, we adopt rules implementing certain key provisions of the New and Emerging Technologies 911 Improvement Act of 2008 (NET 911 Act), which was enacted on July 23, 2008.¹ Congress directed the Commission to issue rules implementing certain key provisions of the NET

¹ New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (2008) (NET 911 Act) (amending Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (1999) (Wireless 911 Act)).

911 Act no later than October 21, 2008.² In particular, to effectuate the statutory requirement that providers of interconnected voice over Internet Protocol (interconnected VoIP) service provide 911 and enhanced 911 (E911) service in full compliance with our rules, Congress mandated that the Commission issue regulations in this time frame that, among other things, ensure that interconnected VoIP providers have access to any and all capabilities they need to satisfy that requirement.³ Today, we fulfill that duty and take steps to ensure that interconnected VoIP providers will, in fact, use the capabilities they gain as a result of this Order to provide 911 and E911 service without exception. Specifically, we issue rules that give interconnected VoIP providers rights of access to any and all capabilities necessary to provide 911 and E911 service from entities that own or control those capabilities. We also take steps to ensure that the nation's E911 network remains secure as an expanded number of entities are granted rights to access this system.

II. BACKGROUND

2. As communications technology develops, new challenges and opportunities emerge for the E911 system. Congress recognized this in 1999 when it passed the Wireless 911 Act, which encouraged the construction and operation of seamless, ubiquitous, and reliable 911 networks for wireless devices.⁴ On July 23, 2008, the President signed into law the NET 911 Act, which amends the Wireless 911 Act, to promote and enhance public safety by facilitating the rapid deployment of interconnected VoIP 911 and E911 services, encourage the Nation's transition to a national IP-enabled emergency network, and improve 911 and E911 access to those with disabilities.⁵

A. NET 911 Act

3. The NET 911 Act explicitly imposes on each interconnected VoIP provider the obligation to provide 911 and E911 service in accordance with Commission existing requirements.⁶ The NET 911 Act also grants each interconnected VoIP provider rights with respect to "capabilities" to provide 911 and E911 services.⁷ Specifically, section 101 of the NET 911 Act adds a new section 6 to the Wireless 911 Act that states in relevant part:

(a) DUTIES. – It shall be the duty of each IP-enabled voice service provider to provide 9-1-1 service and enhanced 9-1-1 service to its subscribers in accordance with the requirements of the Federal Communications Commission, as in effect on the date of enactment of the New and Emerging Technologies 911 Improvement Act of 2008 and as such requirements may be modified by the Commission from time to time.

² The NET 911 Act requires the Commission to issue regulations implementing certain provisions of the NET 911 Act within 90 days after its enactment date. The Commission therefore must issue regulations no later than October 21, 2008. See NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1).

³ The NET 911 Act uses the term "IP-enabled voice service," which is given the same meaning as "interconnected VoIP service" as defined by section 9.3 of the Commission's rules. See NET 911 Act § 101(3); Wireless 911 Act § 7(8). For the purposes of this Order, the terms "IP-enabled voice services" and "interconnected VoIP" are used synonymously. An interconnected VoIP service is a service that: (1) enables real-time, two-way voice communications; (2) requires a broadband connection from the user's location; (3) requires IP-compatible customer premises equipment; and (4) permits users generally to receive calls that originate on the public switched telephone network (PSTN) and to terminate calls to the PSTN. See 47 C.F.R. § 9.3.

⁴ Wireless 911 Act, Preamble.

⁵ NET 911 Act, Preamble.

⁶ See NET 911 Act § 101(2); Wireless 911 Act § 6(a). The Commission regulations imposing 911 and E911 service obligations on interconnected VoIP providers are codified at 47 C.F.R. §§ 9.1 *et seq.*

⁷ See NET 911 Act § 101(2); Wireless 911 Act §§ 6(b), 6(c)(1)(C).

(b) **PARITY FOR IP-ENABLED VOICE SERVICE PROVIDERS.**—An IP-enabled voice service provider that seeks capabilities to provide 9–1–1 and enhanced 9–1–1 service from an entity with ownership or control over such capabilities, to comply with its obligations under subsection (a), shall, for the exclusive purpose of complying with such obligations, have a right of access to such capabilities, including interconnection, to provide 9–1–1 and enhanced 9–1–1 service on the same rates, terms, and conditions that are provided to a provider of commercial mobile service . . . , subject to such regulations as the Commission prescribes under subsection (c).

(c) **REGULATIONS.**—The Commission—

(1) within 90 days after the date of enactment of the [NET 911 Act] shall issue regulations implementing such Act, including regulations that—

(A) ensure that IP-enabled voice service providers have the ability to exercise their rights under subsection (b);

(B) take into account any technical, network security, or information privacy requirements that are specific to IP-enabled voice services; and

(C) provide, with respect to any capabilities that are not required to be made available to a commercial mobile service provider but that the Commission determines under subparagraph (B) of this paragraph or paragraph (3)⁸ are necessary for an IP-enabled voice service provider to comply with its obligations under subsection (a), that such capabilities shall be available at the same rates, terms, and conditions as would apply if such capabilities were made available to a commercial mobile service provider.

(2) shall require IP-enabled voice service providers to which the regulations apply to register with the Commission and to establish a point of contact for public safety and government officials relative to 9–1–1 and enhanced 9–1–1 service and access; and

(3) may modify such regulations 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 under subsection (a) and to exercise its rights under subsection (b).⁹

4. The “requirements of the Federal Communications Commission, as in effect on the date of enactment of the [NET 911 Act]”¹⁰ referenced in the legislation are set forth in Part 9 of the

⁸ On October 8, 2008, Public Law 110-368 was enacted, which brings section 6(c)(3) of the Net 911 Act within the scope of the 90-day rulemaking requirement, rather than section 6(c)(2). *See also* H.R. 6946, 110th Cong. § 1 (2008) (“Section 6(c)(1)(C) of [the Wireless 911 Act] is amended by striking ‘paragraph (2)’ and inserting ‘paragraph (3)’.”). We have made that correction in the text of the act quoted above.

⁹ NET 911 Act § 101(2); Wireless 911 Act §§ 6(a)–(c). For purposes of the NET 911 Act, Congress specifically defined “commercial mobile service” or “CMS” by reference to section 332(d)(1) of the Communications Act of 1934, as amended (Communications Act), 47 U.S.C. § 332(d)(1) (stating that the term “commercial mobile service” means any mobile service that is provided for profit and makes interconnected service available to the public or to such classes of eligible users as to be effectively available to a substantial portion of the public, as specified by regulation by the Commission). *See also* NET 911 Act § 101(2); Wireless 911 Act § 6(b). In this Order, we use the terms “CMS,” “commercial mobile radio service” or “CMRS,” and “wireless service” interchangeably.

¹⁰ NET 911 Act § 101(2); Wireless 911 Act § 6(a).

Commission's rules and the Commission's *VoIP 911 Order*.¹¹ In that order, the Commission required providers of "interconnected VoIP service" – referred to as "IP-enabled voice services" in the *NET 911 Act* – to provide E911 service using the existing wireline 911 infrastructure. Congress has specified that "[n]othing in the [NET 911 Act] shall be construed as altering, delaying, or otherwise limiting the ability of the Commission to enforce the Federal actions taken or rules adopted obligating an IP-enabled voice service provider to provide 9-1-1 or enhanced 9-1-1 service as of the date of the enactment of the [NET 911 Act]."¹²

B. NET 911 Notice

5. We released a notice of proposed rulemaking on August 25, 2008 seeking comment regarding the specific duties imposed by the NET 911 Act and the regulations that we are required to adopt.¹³ We sought comment, for example, on what 911 and E911 capabilities must be made available to interconnected VoIP providers, and how such capabilities could be made available on the same rates, terms, and conditions afforded to wireless providers.¹⁴ We also sought comment on what technical, network security, or information privacy requirements regarding 911 and E911 calls are specific to interconnected VoIP service.¹⁵

C. 911 and E911 Network Architectures

6. We begin by describing the nation's 911 network architecture with particular focus on interconnected VoIP services. As the design and operation of 911 architectures have developed on a localized basis, there is substantial variation in how these systems are built and operated.¹⁶ Throughout this Order, we attempt to describe typical network architectures in broad enough fashion so as to include these many variations, but we recognize that there may be local variations not included by our descriptions. We nonetheless intend for our rules to address those variations, as explained in more detail below.¹⁷

7. As the Commission indicated in the *VoIP 911 Order*, 911 service generally falls into two categories – basic and enhanced. Basic 911 service delivers 911 calls to an appropriate PSAP or public safety agency without the information regarding the caller's location or, in some cases, a call back number.¹⁸ E911 service expands basic 911 service by not only delivering 911 calls to an appropriate PSAP, or public safety agency, but also providing the call taker with the caller's call back number, referred to as Automatic Numbering Identification (ANI), and location information — a capability

¹¹ 47 C.F.R. Part 9; *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 (2005) (*VoIP 911 Order*), *aff'd sub nom. Nuvio Corp. v. FCC*, 473 F.3d 302 (D.C. Cir. 2006).

¹² NET 911 Act § 101(2); Wireless 911 Act § 6(i).

¹³ *Implementation of the NET 911 Improvement Act of 2008*, WC Docket No. 08-171, Notice of Proposed Rulemaking, FCC 08-195 (rel. Aug. 25, 2008) (*NET 911 Notice*).

¹⁴ *Id.* at paras. 6-10.

¹⁵ *Id.* at para. 11.

¹⁶ As the Commission has noted previously, there are a variety of situations existing in the more than 6,000 public safety answering points (PSAPs) across the nation, including differences in state and local laws and regulations governing the provision of 911 services, the configuration of wireless systems, the technical sophistication of 911 network components, and the nature of agreements between service providers and PSAPs. *See, e.g., VoIP 911 Order*, 20 FCC Rcd at 10251, para. 14 n.34.

¹⁷ *See infra* part III.

¹⁸ *See VoIP 911 Order*, 20 FCC Rcd at 10250-51, para. 12.

referred to as Automatic Location Identification (ALI).¹⁹ Most areas of the country have now implemented E911 service.²⁰ 911 calls and E911 service are processed and delivered over a dedicated network architecture that is separate from but interconnected with the PSTN. Below, we describe the typical Wireline, Wireless, and interconnected VoIP E911 networks.

8. *Wireline E911 Network.* The core of the nation's 911 system is a dedicated, redundant, highly reliable wireline network (Wireline E911 Network).²¹ The Wireline E911 Network generally has been constructed, operated, and maintained by a subset of incumbent local exchange carriers (LECs).²² Network designs vary from carrier to carrier and jurisdiction to jurisdiction.²³ The Wireline E911 Network includes Selective Routers, which receive 911 calls transmitted over dedicated trunks from competitive and incumbent LEC central offices.²⁴ The Selective Router in turn queries a Selective Router Database (SR Database), which typically is owned and operated by the incumbent LEC, to determine which PSAP serves the caller's geographic area.²⁵ The Selective Router will then forward the 911 call along with the caller's phone number (*i.e.*, ANI) to that PSAP. The PSAP in turn then forwards the caller's ANI over dedicated circuits to an Automatic Location Identification database (ALI Database),²⁶ again typically under control of the incumbent LEC. The ALI Database returns to the PSAP the caller's street address (that previously has been verified by comparison to a separate database known as the MSAG as part of an initial data entry process).²⁷ The Wireline E911 Network also includes a Database Management System (DBMS), which provides a method for competitive and incumbent LECs to enter customer data into both the SR Database and the ALI Database.²⁸ The Wireline E911 Network thus typically includes: the Selective Router; the trunk line(s) between the Selective Router and the PSAP(s); the ALI Database; the SR Database; the DBMS; ESNs; the MSAG; the data circuits connecting these elements; and the network elements, features, processes, and agreements necessary to enable the use of these elements.²⁹

¹⁹ See *id.* at 10251, para. 13.

²⁰ See *id.* at 10251, para. 12.

²¹ See *id.* at 10251, para. 14.

²² See *id.*

²³ See *id.* at 10252, para. 14.

²⁴ See *id.* at 10252, para. 15 n.37 (stating that "[t]he presence of and functionality provided by the Selective Router is the key characteristic that distinguishes basic 911 from E911 service").

²⁵ Specifically, the SR Database identifies the Emergency Service Number (ESN) that corresponds to the caller's location. ESNs are typically three to five digit numbers that represent a unique combination of emergency service agencies (Law Enforcement, Fire, and Emergency Medical Service) designated to serve a specific range of addresses within a particular geographical area, called an Emergency Service Zone (ESZ). The ESN itself is derived from the Master Street Address Guide (MSAG), which is a separate database of street addresses and corresponding ESNs. Some PSAPs require the use of ESNs to facilitate selective routing and selective transfer to the appropriate PSAP. Thus, the ESN essentially is a standardized identifier for the PSAP serving a specific area. See, e.g., Vonage Comments at 12-14.

²⁶ See *VoIP 911 Order*, 20 FCC Rcd at 10252, para. 15.

²⁷ The ALI Database may also return additional information, such as the name of the individual who is billed for telephone service at that address.

²⁸ The DBMS is typically under the control of the Emergency Services Network Provider, which is often but not always the incumbent LEC.

²⁹ See *VoIP 911 Order*, 20 FCC Rcd at 10252, para. 15.

9. *Wireless E911 Network.* Under the Commission's wireless E911 rules, wireless carriers must provide the telephone number of the originator of a 911 call (*i.e.*, ANI) and information regarding the caller's location (*i.e.*, ALI) to any PSAP that has requested that such information be delivered with 911 calls.³⁰ As explained in the *VoIP 911 Order*, the mobile nature of wireless technology and service presents significant obstacles to making E911 effective – in particular, the provision to PSAPs of accurate ALI.³¹ Specifically, the mobility of wireless service precludes the use of permanent street addresses as a location indicator and may require the provision of real-time location updates to the PSAP. In addition, the caller's phone number (*i.e.*, the ANI information) may be not be usable by the Selective Router for PSAP routing purposes within the specific geographic region in which the mobile 911 call was placed. To overcome this mobility problem, wireless carriers have developed various techniques to provision ANI and ALI to the PSAP that involve enhancements or "add-ons" to the existing Wireline E911 Network.³²

10. In a typical wireless E911 network construct, the wireless 911 call is received by a base station, which in turn sends the call to a Mobile Switching Center (MSC). The MSC essentially serves the same function as the competitive and incumbent LEC central office described above for wireline E911 calls.³³ The MSC sends the call record information associated with the call (*e.g.*, the actual call back number) as well as the cell site or sector to a Mobile Positioning Center (MPC). The MPC in turn sends back to the MSC a "pseudo-ANI" or "p-ANI" number. The term "p-ANI" refers to a number consisting of the same number of digits as ANI, that, unlike standard ANI, is not a North American Numbering Plan telephone number but may be used in place of ANI to convey special meaning to the Selective Router, PSAP, and other elements of the 911 system.³⁴ Wireless 911 systems use p-ANI because Selective Routers are not generally capable of properly routing calls from telephone numbers that are not local, or "native" to the geographic area that they service.

11. The MPC then simultaneously takes the call record information, along with location information, and populates a "shell record"³⁵ associated with that p-ANI, which has been previously

³⁰ See *id.* at 10252, at para. 16; 47 C.F.R. §§ 20.18(d)-(h). The Commission's requirements to provide location information (*i.e.*, ALI) are comprised of two phases. Pursuant to the Phase I rules, wireless carriers are required to provide a call back number for the handset placing the 911 call and report the locations of the cell tower that received the call. See 47 C.F.R. § 20.18(d). Under the Phase II rules, wireless carriers are required to provide more accurate 911 call location information that includes longitude and latitude. See 47 C.F.R. § 20.18(e). For a PSAP request to be valid, the PSAP must be "capable of receiving and utilizing the data elements associated with" either E911 Phase I or Phase II service. See 47 C.F.R. § 20.18(j).

³¹ See *VoIP 911 Order*, 20 FCC Rcd at 10252, para. 17. The Commission currently is considering improved location accuracy standards for wireless E911. See *Comment Sought on Proposals Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability*, PS Docket No. 07-114, Public Notice, DA 08-2129 (PSHSB rel. Sept. 22, 2008).

³² See *VoIP 911 Order*, 20 FCC Rcd at 10252-53, para. 17.

³³ See *supra* para. 8.

³⁴ See *VoIP 911 Order*, 20 FCC Rcd at 10253, para. 17. The special meaning assigned to the p-ANI is determined by agreements, as necessary, between the system originating the call, intermediate systems handling and routing the call, and the destination system. See *id.* at 10253, para. 17 n.45. Forms of p-ANI are also known as "Emergency Services Routing Key" (ESRKs), "Emergency Services Query Keys" (ESQKs), and "Emergency Services Routing Digits" (ESRDs). See *id.* at 10253, para. 17.

³⁵ Shell records are established in the ALI Database and associated with a given p-ANI. Shell records are created by the MPC in a manual process and entered into the ALI Database outside the DBMS system. The ALI Database administrator defines and controls this entry process. As explained herein, they have a generic field that is updated during a 911 call to provide call-specific ALI data and the call back number. See, *e.g.*, <http://www.nena.org/media/files/VoIPPolicyPositions3.20.06.doc> (visited Sept. 29, 2008).

provisioned within ALI Database. Based on the p-ANI provided, the MSC then routes the call along with the p-ANI to the appropriate Selective Router. The Selective Router queries the SR Database to determine the ESN, which in turn identifies the PSAP that serves the wireless 911 caller's location based upon the p-ANI number,³⁶ and routes the call accordingly. The PSAP accesses the ALI Database using the p-ANI and is provided with the information in the shell record associated with that p-ANI.³⁷ Thus, the elements of the wireless 911 systems that are additional to the Wireline E911 Network are p-ANI, mobile switching center capabilities, mobile positioning center capabilities, and shell records. The wireless 911 systems also may include additional data circuits, network elements, features, processes, and agreements necessary to enable the use of these additional elements.

12. *Interconnected VoIP E911 Network.* Under the Commission's rules, interconnected VoIP providers must provide E911 service to their customers.³⁸ As with wireless technology and services, interconnected VoIP technology and service present challenges in making E911 effective. Interconnected VoIP service may enable customers to place calls from various geographic locations which, as explained above,³⁹ may necessitate the use of p-ANI for routing 911 calls. Furthermore, given the state of current technology to determine automatically the location from which an interconnected VoIP call is made, the Commission required providers of interconnected VoIP services to obtain location information, called "Registered Location," from their customers.⁴⁰

13. Under the Commission's rules, interconnected VoIP providers must forward all 911 calls made over their interconnected VoIP service, as well as a call back number and the caller's Registered Location for each call, to the appropriate PSAP.⁴¹ These calls must be routed through the use of ANI and,

³⁶ Typically, the MPC will assign p-ANI numbers to cell sites or sectors, and the ESNs that correspond to those static locations are known. The p-ANI typically will reside in the ALI Database along with a shell record that already identifies the ESN. When the base station assigned to that p-ANI receives a 911 call, the MPC populates the shell record with the caller's actual call back number, location, and other information.

³⁷ The shell record also will be updated with location coordinates in accordance with the Commission's CMRS location accuracy standard, which track the caller's location as opposed to the cell site or sector location, although not all PSAPs are capable of receiving and processing such information.

³⁸ 47 C.F.R. §§ 9.1 *et seq.* We note that an interconnected VoIP provider need only provide such call back and location information as a PSAP, designated statewide default answering point, or appropriate local emergency authority is capable of receiving and utilizing. 47 C.F.R. § 9.5(c). Even where the PSAP is not capable of receiving and utilizing this information, interconnected VoIP providers must transmit all 911 calls to the appropriate PSAP via the Wireline E911 Network. *Id.*; *VoIP 911 Order*, 20 FCC Rcd at 10269-70, para. 42.

³⁹ *See supra* para. 12.

⁴⁰ *VoIP 911 Order*, 20 FCC Rcd at 10271, para. 46 (stating that "providers of interconnected VoIP services that can be utilized from more than one physical location must provide their end users one or more methods of updating information regarding their user's physical location"). The Commission has sought comment on whether it should require interconnected VoIP services to provide location information automatically. *See id.* at 10276-77, para. 57. We note that in the *Location Accuracy Notice*, the Commission tentatively concluded that "to the extent that an interconnected VoIP service may be used in more than one location, providers must employ an automatic location technology that meets the same accuracy standards that apply to those CMRS services." *See Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; 911 Requirements for IP-Enabled Service Providers*, PS Docket No. 07-114, CC Docket No. 94-102, WC Docket No. 05-196, Notice of Proposed Rulemaking, 22 FCC Rcd 10609, 10615, para. 18 (2007) (*Location Accuracy Notice*); *see also supra* note 31.

⁴¹ 47 C.F.R. § 9.5(b)(2); *see also VoIP 911 Order*, 20 FCC Rcd at 10266, para. 37.

if necessary, and similar to wireless carriers, p-ANI,⁴² via the dedicated Wireline E911 Network, and the caller's Registered Location must be available from or through the ALI Database.⁴³ Interconnected VoIP providers may comply with the Commission's rules by interconnecting indirectly through a third party such as a competitive LEC, interconnecting directly with the Wireline E911 Network, or through any other solution that allows the provider to offer E911 service.⁴⁴

D. Entities That Own or Control Interconnected VoIP 911 or E911 Capabilities

14. As discussed in the *VoIP 911 Order*, E911 capabilities vary from network to network and location to location. A variety of entities own or control these capabilities.⁴⁵ Some capabilities used to provide E911 service are owned by different types of entities in different areas of the country.⁴⁶

15. *Incumbent LECs.* As described above, it is common for several of the capabilities of the E911 system to be owned or controlled by the incumbent LEC serving the area. These capabilities include interconnection to the Selective Router.⁴⁷ Often, incumbent LECs control p-ANI.⁴⁸ Incumbent LECs also sometimes own or control certain of the databases described above, such as the ALI Database, the SR Database, and the DBMS.⁴⁹ Incumbent LECs also frequently control certain E911 processes, such as providing access to ESNs and shell records.⁵⁰

16. *CMRS Providers.* Mobile wireless providers own or control several of the capabilities described above, including those held at MSCs and MPCs.

17. *States, Localities, and PSAPs.* States, localities, or PSAPs often own or control other E911 capabilities. The MSAG, for example, is frequently owned by local authorities.⁵¹ Other databases, such as the ALI Database, also may be sometimes owned or controlled by local authorities.⁵² And localities or PSAPs maintain control over certain processes, such as "certifying" providers to send 911 calls to a particular PSAP, testing that capability, and sometimes entering into agreements that address how 911 calls are handled in a particular locality.⁵³

18. *Third-Party Commercial Providers.* Certain third-party commercial providers of communications services also own or control capabilities. For example, Intrado and TCS are major providers of VoIP positioning center (VPC) services – these are essentially the same services provided by

⁴² Most commenters agree that ANI and p-ANI are common core capabilities for any interconnected VoIP 911 Network. *See, e.g.*, Illinois Commission Comments at 3; NENA Comments at 7-8; Vonage Comments at 7-9; VON Coalition Comments at 8-10.

⁴³ *VoIP 911 Order*, 20 FCC Rcd at 10266, para. 37.

⁴⁴ *Id.* at 10246, para. 1.

⁴⁵ *See id.* at 10250-54, paras. 11-18.

⁴⁶ *See supra* note 16; *see also* NENA Comments at 10 (stating that the 911 system is operated in different ways depending on the service providers and 911 authorities involved).

⁴⁷ *See, e.g.*, AT&T Comments at 6.

⁴⁸ *See, e.g.*, TCS Comments at 8.

⁴⁹ *See, e.g.*, AT&T Comments, Attach. § 3.4; Vonage Comments at 18; VON Coalition Comments at 11.

⁵⁰ *See, e.g.*, Vonage Comments at 12; VON Coalition Comments at 12-13; AT&T Reply at 5.

⁵¹ *See, e.g.*, Oklahoma City Comments at 5.

⁵² *See, e.g.*, Sprint Comments at 4 n.8; Vonage Comments at 18; Von Coalition Comments at 11.

⁵³ *See, e.g.*, Oklahoma Municipal League Comments at 2.

an MPC in the wireless E911 context, only here they are provided in the VoIP context – which route E911 calls to the appropriate PSAP based on the interconnected VoIP customers' Registered Locations and often include elements such as transport and p-ANI.⁵⁴ Some competitive LECs provide interconnection to Selective Routers, access to p-ANI, and other E911 capabilities on a wholesale basis to interconnected VoIP providers.⁵⁵

19. *Interim RNA.* The Interim Routing Number Authority (Interim RNA), a contractor to the Commission, controls some p-ANI.⁵⁶

III. DISCUSSION

20. In this part, we turn first to our obligation under section 6(c)(1) of the Wireless 911 Act to issue regulations ensuring that interconnected VoIP providers can exercise their rights of access to any and all “capabilities” they need to be able to provide 911 and E911 service in full compliance with our rules from “an entity with ownership or control over such capabilities.”⁵⁷ Congress did not define key terms of these provisions, such as the “capabilities” to which interconnected VoIP providers have a right of access, or an “entity” with ownership or control over capabilities, but left the elucidation of these terms to the Commission. We interpret these terms, examining the statutory language itself, its legislative history, and the record. We next discuss the “rates, terms and conditions” that apply to that access. Then, we impose certain security requirements to protect the integrity of the 911 system.

A. Access to 911 and E911 Capabilities

21. *Need for Rules in General.* We turn first to the scope of the Commission's obligation to “issue regulations implementing the [NET 911] Act, including regulations that . . . ensure that IP-enabled voice service providers have the ability to exercise their rights [to access].”⁵⁸ We conclude that having rules establishing standards for access to capabilities best fulfills the Commission's obligations and the goals of the NET 911 Act. Congress clearly intended for the Commission to implement regulations more specific than the statutory language itself. In section 6(c), Congress specifically directed the Commission to conduct this rulemaking to assure interconnected VoIP providers' rights under section (6)(b), taking into account specific factors, such as “any technical, network security, or information privacy requirements that are specific to IP-enabled voice services.”⁵⁹ If Congress had not intended the Commission to implement rules more detailed than the statute itself, it would not have instructed the Commission to take certain things into account; it would have left the statutory language as sufficient and

⁵⁴ See Intrado Comments at 2; TCS Comments at 7-8; Vixxi Reply at 1. Intrado offers a comprehensive solution for delivering E911 for VoIP providers. See <http://www.intrado.com/main/company/government/voipdeployment/whatisintradosome/> (visited Sept. 26, 2008).

⁵⁵ See, e.g., AT&T Comments at 6.

⁵⁶ See Letter from Thomas J. Navin, Chief, Wireline Competition Bureau, FCC, to Thomas M. Koutsky, Chair, North American Numbering Council, and Ms. Amy L. Putnam, Director, Numbering Pooling Services, NeuStar, Inc., at 2 (Sept. 8, 2006) (p-ANI Administration Letter) (assigning NeuStar, Inc. to be the Interim RNA for the p-ANI codes used for routing emergency calls); see also Letter from Thomas J. Navin, Chief, Wireline Competition Bureau, FCC, to Thomas M. Koutsky, Chair, North American Numbering Council, at 1 (June 28, 2007) (designating the entity serving as the pooling administrator also to serve as the Routing Number Authority).

⁵⁷ NET 911 Act § 101(2); Wireless 911 Act §§ 6(b), 6(c)(1)(A).

⁵⁸ NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1).

⁵⁹ NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1)(B).

self-effectuating.⁶⁰ We therefore disagree with commenters that suggest that no specific rules are needed, or that any rules can simply parrot the statutory language.⁶¹

22. We also decline to issue highly detailed rules listing capabilities or entities with ownership or control of those capabilities.⁶² As recognized above and explained further in this part, the nation's 911 system varies from locality to locality, and overly specific rules would fail to reflect these local variations.⁶³ Furthermore, as Congress recognized, the nation's 911 system is evolving from its origins in the circuit-switched world into an IP-based network.⁶⁴ Our rules should be sufficiently flexible to accommodate this ongoing process. Indeed, Congress specifically prohibited the Commission from "issu[ing] regulations that require or impose a specific technology or technological standard,"⁶⁵ which specific, invariable rules could do. We therefore adopt rules that establish standards for determining to what capabilities interconnected VoIP providers have a right of access and from which entities, and we explain in this Order what capabilities and entities would typically (but not necessarily) be encompassed in today's architecture.

⁶⁰ See Vonage Reply at 2 (arguing that it would be inadequate for the Commission to simply state that entities that provide 911 capabilities to CMRS carriers must make such capabilities available to interconnected VoIP providers on the same, rates, terms, and conditions, as urged by USTelecom, AT&T, Verizon, Qwest and Sprint).

⁶¹ See, e.g., AT&T Comments at 5 (stating that, "the Commission's role in implementing the NET 911 Act is not to reinvent the wheel by establishing a lengthy new list of Commission-prescribed capabilities that must be offered to VoIP providers"); USTelecom Comments at 5 (stating that there is no need for detailed regulations to effectuate the purposes of the NET 911 Act); Verizon Comments at 3 (stating that VoIP providers are already providing E911 service to their customers, and given the very short deadline for Commission action imposed by the NET 911 Act, the Commission should not attempt to develop detailed and prescriptive rules defining 911 capabilities).

⁶² See, e.g., Vonage Comments at 5-6 (stating the Commission must establish "a clear, non-exhaustive, and prospective definition of capabilities in order to allow [interconnected VoIP providers] the ability to exercise their rights under the legislation"); Illinois Commission at 2 (stating that the Commission should define capabilities in its rule); Oklahoma Municipal League Comments at 2 (stating that the Commission should define capabilities in a rule, to a level of detail such that state commissions, 911 districts and agencies, and PSAPs who have capacity to utilize such capabilities are given clear authority to ensure that IP-enabled voice service providers comply with state and local standards related to routing, documentation, data formatting, carrier identification, and other established procedures); Texas 911 Alliance Comments at 4 (stating that any adopted rule should list certain core elements of the current 911 system); Vonage Reply at 13 (stating that the Commission should broadly define the parties that own or control the E911 capabilities).

⁶³ As the VON Coalition explains:

[The E911 system] utilizes a variety of legacy technologies. Equipment, network elements, databases, selective routers, interfaces and facilities are unique in each region. New service offerings, like VoIP, have been forced to retrofit their technologies to be backward compatible with this legacy technology that often varies PSAP to PSAP. . . . Network elements and database access necessary in one region may not be in another. Given the existence of over 6000 independently operated public safety answering points (PSAPs) and over 1000 independent incumbent local exchange carriers (ILECs), it is impossible to create an exhaustive list of necessary 9-1-1 components.

VON Coalition Comments at 8.

⁶⁴ See NET 911 Act, Preamble ("[t]o encourage the Nation's transition to a national IP-enabled emergency network"); NET 911 Act § 102 (requiring the National Telecommunications and Information Administration's E911 Implementation Coordination Office to "develop and report to Congress on a national plan for migrating to a national IP-enabled emergency network capable of receiving and responding to all citizen-activated emergency communications").

⁶⁵ NET 911 Act § 101(2); Wireless 911 Act § 6(e)(1).

23. *Standard for Right of Access to Capabilities.* Consistent with the approach just described, here we adopt rules establishing a standard for determining to what capabilities interconnected VoIP providers have a right of access, and also providing examples of the capabilities that will typically be required in most local 911 and E911 architectures.⁶⁶ We explain in later parts of this Order that capabilities may only be used for the provision of 911 and E911 service.⁶⁷

24. First, we begin with the statutory language. While the statute does not define the term “capabilities,” it does provide that interconnected VoIP providers have a right of access to capabilities on the same “rates, terms, and conditions that are provided to a provider of commercial mobile service.”⁶⁸ Pursuant to our authority under the NET 911 Act, we issue rules to grant interconnected VoIP providers a right of access to the capabilities CMRS providers use to provide E911 service equal to the access rights made available to CMRS providers.⁶⁹ Congress clearly recognized a commonality between the capabilities needed by interconnected VoIP providers and those already used by CMRS providers. Indeed, if an owner or controller of a capability used to provide E911 service made it available to a CMRS provider at a certain rate but refused to grant interconnected VoIP providers access to that same capability, that interconnected VoIP provider would not “*have a right of access to such capabilities . . . to provide [E911] service on the same rates, terms, and conditions that are provided to a provider of [CMRS].*”⁷⁰ We also find support for this position in the context in which this legislation was enacted.⁷¹ As explained above,⁷² the capabilities used by interconnected VoIP providers – particularly those providing a nomadic or mobile service – to provide E911 service are similar to those used by CMRS providers; interpreting the statute to mean that interconnected VoIP providers have a right of access to those capabilities used by CMRS providers furthers Congress’s goal of “ensur[ing] that consumers using Voice over Internet Protocol (VoIP) service can access enhanced 911 (E-911) emergency services by giving VoIP providers access to the emergency services infrastructure.”⁷³

⁶⁶ We decline to expand the applicability of the rights granted in the NET 911 Act to entities beyond those encompassed within that statute as some commenters have suggested. In this Order, therefore, we do not address whether we should modify or waive section 52.15(g)(2)(i) of the Commission’s rules to allow VPC providers that are neither carriers nor interconnected VoIP providers to obtain numbering resources. See TCS Comments at 4 (requesting that the Commission address issues raised in a TCS petition for waiver that is pending in CC Docket No. 99-200). Our determination that such providers are not granted access rights under the NET 911 Act does not prejudice the Commission’s ultimate decision on any pending petitions for waiver.

⁶⁷ See *infra* para. 26.

⁶⁸ NET 911 Act § 101(2); Wireless 911 Act § 6(b).

⁶⁹ E.g., AT&T Comments at 2 (stating that the NET 911 Act instructs the Commission to adopt regulations that ensure that VoIP providers have the ability to access 911 capabilities provided to CMRS providers); USTelecom Comments at 2 (arguing that Congress intended the existing commercial mobile service E911 system to serve as the template for VoIP E911 access).

⁷⁰ NET 911 Act § 101(2); Wireless 911 Act § 6(b) (emphasis added).

⁷¹ The House Report supports this interpretation, noting that “subsection 6(b) would give VoIP providers, when they seek access to the capabilities needed to provide 911 and E-911 service from any entity with ownership or control over those capabilities, *the same rights*, including rights of interconnection, and on the same rates, terms, and conditions as would be applicable to providers of commercial mobile service (also referred to herein as wireless service), subject to regulations promulgated by the Commission under new subsection 6(c).” H.R. Rep. No. 110-442 at 13 (emphasis added).

⁷² See *supra* paras. 9-11.

⁷³ H.R. Rep. No. 110-442 at 5.

25. Second, with respect to any capabilities that are not provided to CMRS providers for their provision of E911 service, we interpret the NET 911 Act as granting interconnected VoIP providers a *right of access if the capability is necessary for the interconnected VoIP provider to provide E911 service* in compliance with the Commission's rules. For reasons similar to those outlined in the previous paragraph, we believe that the right of an interconnected VoIP provider to certain rates, terms, and conditions necessarily includes a right of access to such capability.⁷⁴ Section 6(c)(1)(C) of the Wireless 911 Act provides that "with respect to any capabilities that are not required to be made available to a [CMRS] provider but that the Commission determines . . . are *necessary* for an [interconnected VoIP] provider to comply with its obligations [to provide E911 service in accordance with the Commission's rules], that such capabilities shall be available at the same rates, terms, and conditions as would apply if such capabilities were made available to a [CMRS] provider."⁷⁵ We also find that this text limits interconnected VoIP providers' right of access to such capabilities to those that are *necessary* to provide E911 service in compliance with the Commission's rules.

26. Third, regardless whether a capability is used by a CMRS provider or not, for any capability an interconnected VoIP provider gets pursuant to rights granted in the NET 911 Act and our implementing rules, such capability may be used by that provider *only* for the purpose of providing E911 service in accordance with the Commission's rules.⁷⁶ The NET 911 Act explicitly mandates this limit on interconnected VoIP providers' statutory access rights with respect to capabilities CMRS providers use to provide E911 service.⁷⁷ We recognize that the statute does not expressly contain a similar limitation in section 6(c)(1)(C), which grants interconnected VoIP providers a right to access the capabilities they need to provide E911 service even if they are not capabilities CMRS providers use to provide E911 service.⁷⁸ Nevertheless, our interpretation of the NET 911 Act is informed by the legislative history⁷⁹ as well as Congress's overarching purpose in enacting the provisions at issue here. Both with respect to capabilities that are used by CMRS providers and those that are not, the NET 911 Act is clear that its purpose is to facilitate interconnected VoIP providers' ability to provide E911 service in compliance with the Commission's rules, without granting access rights to additional capabilities. This overarching purpose indicates that Congress intended that *any* capabilities to which access is gained pursuant to the NET 911 Act may be used exclusively for the purpose of providing E911 service. In addition, the record indicates that CMRS providers use most of the capabilities interconnected VoIP providers need to provide E911 service.⁸⁰ We do not find any reason to believe that Congress would have granted interconnected VoIP

⁷⁴ Thus, interconnected VoIP providers have a right to access capabilities necessary for the provision of 911 and E911 service.

⁷⁵ NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1)(C) (emphasis added).

⁷⁶ Thus, we reject any claims that interconnected VoIP providers could access capabilities pursuant to the Net 911 Act and our implementing rules for purposes other than providing E911 service. *See, e.g.*, USTelecom Comments at 4.

⁷⁷ *See, e.g.*, NET 911 Act § 101(2); Wireless 911 Act § 6(b) (providing that interconnected VoIP providers' right to capabilities, including interconnection, to comply with that provider's E911 obligations under the Commission's rules, shall be "for the exclusive purpose of complying with its obligations").

⁷⁸ NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1)(C).

⁷⁹ The House Report states that any regulations issued under section 6(c) should "adhere to the basic tenet established in new subsection 6(b) that the rights given to VoIP providers in [the NET 911 Act] are the for the sole purpose of transmitting, delivering, and completing 911 and E-911 calls and associated E-911 information and do not extend beyond a right of access only to the 911 infrastructure needed to transmit, deliver, and complete 911 and E-911 calls and associated E-911 information." H.R. Rep. No. 110-442 at 14.

⁸⁰ *See, e.g.*, Illinois Commission Comments at 3; AT&T Reply at 2.

providers more expansive rights with respect to the relatively small subset of capabilities that are not used by CMRS providers to provide E911 service than those capabilities that are. Therefore, we believe it is reasonable to require that interconnected VoIP providers use all capabilities that they obtain pursuant to the NET 911 Act and this Order exclusively for the provision of E911 service in compliance with our rules.⁸¹

27. *Typical Capabilities.* The record reflects general consensus as to what capabilities are used by CMRS providers today and what capabilities are not used by CMRS providers but are “necessary” for interconnected VoIP providers to comply with our rules.⁸² As AT&T explains, CMRS providers have been offering E911 services for many years and even interconnected VoIP providers have been providing such services since 2005.⁸³ We therefore interpret “capabilities” to include all those items described in part II of this Order that are used by wireless providers today or that are not used by wireless providers but are necessary to interconnected VoIP providers’ compliance with our rules. Thus, in a typical local architecture, “capabilities” will include: the Selective Router; the trunk line(s) between the Selective Router and the PSAP(s); the ALI Database; the SR Database; the DBMS, the MSAG; p-ANIs;⁸⁴ ESNs; mobile switching center capabilities; mobile positioning center capabilities; shell records; the data circuits connecting these elements; and the network elements, features, processes, and agreements necessary to enable the use of these elements.

28. *Entities with Ownership or Control of Capabilities.* We conclude that interconnected VoIP providers are entitled to access to capabilities from *any* entity that owns or controls such capabilities. Again, we find this interpretation to be the most natural reading of the statutory language. Section 6(b) grants interconnected VoIP providers a right to access “such capabilities,”⁸⁵ with “such” referring back to the “capabilities [an interconnected VoIP seeks] to provide 9-1-1 and enhanced 9-1-1 service from an entity with ownership or control over such capabilities.”⁸⁶ Congress’s use of the term “an entity” instead of “the entity” strongly suggests that Congress understood that capabilities might be available from multiple sources and intended a broad interpretation of the scope of “entities” obligated to provide access to capabilities. We therefore interpret the NET 911 Act to impose obligations of access on each of the entities described in part II.D of this Order, including in typical E911 architectures: incumbent LECs, PSAPs and local authorities, VPCs, CMRS providers, competitive carriers, and the Interim RNA to the extent any of these entities has “ownership or control” over any capabilities to which interconnected VoIP providers have a right of access.

29. We recognize that in some instances, multiple entities may have ownership or control of similar capabilities in the same local area. We see nothing in the NET 911 Act to suggest that only certain of those entities would have the obligation to provide access. Indeed, if some but not all entities had that obligation, disputes would certainly arise over which entities were subject to the Act, causing delays in granting interconnected VoIP providers access and thwarting Congress’s ultimate goal of

⁸¹ See, e.g., USTelecom Comments at 4.

⁸² See, e.g., Comcast Comments at 4-5; Illinois Commission Comments at 2-3; NENA Comments at 7; Vonage Comments at 6-17; AT&T Reply at 2; RNK Reply at 4; T-Mobile Reply at 2.

⁸³ AT&T Reply at 2.

⁸⁴ As a result of today’s Order, interconnected VoIP providers now have access to p-ANIs. This includes all forms of p-ANI, such as ESRKs, ESQKs, or ESRDs, as described above. See *supra* note 34. Because we find that p-ANIs are capabilities under the NET 911 Act and our implementing rules, this decision requires changes to the current p-ANI administration system. See p-ANI Administration Letter at 3. The Wireline Competition Bureau will provide conforming instructions to the Interim RNA.

⁸⁵ NET 911 Act § 101(2); Wireless 911 Act § 6(b).

⁸⁶ See *id.*

“facilitating the rapid deployment of IP-enabled 911 and E911 services.”⁸⁷ Finally, we recognize that we do not normally regulate some of the entities we describe in this part, such as PSAPs and VPCs. Yet Congress has imposed a duty on them and instructed this Commission to issue regulations to “ensure that IP-enabled voice service providers have the ability to exercise their rights under subsection (b).”⁸⁸ As Congress has instructed the Commission to take these actions, it has also given the Commission the authority it needs to do so.⁸⁹

B. Rates, Terms, and Conditions

30. The NET 911 Act also mandates that the rates, terms, and conditions under which access to 911 and E911 capabilities is provided are to be the same as made available to CMRS providers. Under the rules we issue today, interconnected VoIP providers may exercise these rights to fulfill their obligation to provide 911 and E911 in full compliance with our rules.

31. As a threshold matter, we find that issuing rules of general applicability regarding rates, terms, and conditions best fulfills the goals of the NET 911 Act. The rules we adopt today are specific enough to bring market certainty and clear direction while also being flexible enough to ensure that Congress’s aims are met in a wide variety of circumstances. Contrary to the approach advocated by some commenters, we find no indication that Congress intended the Commission to issue detailed regulations regarding the pricing methodology under which E911 capabilities must be made available.⁹⁰ Instead, we find it sufficient to specify that those rates, terms, and conditions must *in all instances be reasonable*.⁹¹ One indicia of reasonableness will be whether the rates, terms, and conditions under which E911 capabilities are made available to interconnected VoIP providers are the same as the rates, terms, and conditions made available to CMRS providers.⁹²

⁸⁷ See NET 911 Act, Preamble.

⁸⁸ NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1)(A); see also Verizon Reply at 3 (explaining that entities other than incumbent LECs own or control various 911 capabilities, such as state or local governments, PSAPs, and VPC providers, and the Commission “should make clear that any entity that owns or controls 911 capabilities – and not just incumbent LECs – must make them available to [interconnected VoIP providers.]”).

⁸⁹ NET 911 Act § 101(2).

⁹⁰ We therefore reject the request of certain commenters that we establish a specific pricing standard for access to E911 capabilities, such as requiring that such access must be based on forward-looking costs under the Commission’s total element long run incremental cost (TELRIC) standard. See, e.g., Comcast Comments at 8 (asserting that the Commission should obtain a reasonable proxy for long-run incremental costs for E911 elements); Vonage Comments at 22 (asserting that the Commission should establish cost-based pricing standards for E911 elements); Comcast Reply at 7.

⁹¹ See, e.g., NENA Comments at 3-4 (stating that interconnected VoIP providers should be granted access to all capabilities that are necessary for E911 services and “such access should be provided at rates that are just, reasonable and non-discriminatory”); Letter from Patrick Halley, Government Affairs Director, NENA, and Robert Gurs, Director, Legal and Government Affairs, APCO, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 08-171 at 1 (filed Oct. 2, 2008) (same).

⁹² We decline to address in this order whether the rates, terms, and conditions currently provided to CMRS providers are competitive. As an initial matter the statutory provisions at issue here do not call for such an evaluation. Even if they did, the record in this proceeding does not contain detailed information about the market conditions in which E911 capabilities are provided to CMRS providers or interconnected VoIP providers, nor could we complete such a review within the 90-day statutory deadline. See, e.g., Intrado Comments at 3 (“ILECS have retained their monopolies in their individual operating territories for the purposes of 911/E911 services to PSAPs”); Vonage Comments at 4 (stating that, in contrast to wireline and wireless carriers, interconnected VoIP providers “are dependent on a small handful of subcontractors to provide E911 services to their customers”). But see, e.g., (continued....)

32. First, we consider the case where a capability is in fact provided to CMRS carriers, such that the owner or controller of that capability must grant interconnected VoIP providers access to that capability. In that case, the statute is clear on its face that the capability must be made available "on the same rates, terms, and conditions that are provided to" a CMRS provider.⁹³ We interpret the term "provided" as used in this provision as encompassing not only those capabilities that are actually provisioned to a CMRS provider as well as the rates, terms, and conditions under which they are provisioned, but also those capabilities that are currently offered to a CMRS provider as well as the rates, terms, and conditions under which they are offered. We interpret "provided" broadly to ensure that interconnected VoIP providers are able to access the same capabilities that CMRS providers may access on the same rates, terms, and conditions that are available to CMRS providers.

33. In addition, if an owner or controller of a capability does not provide a capability to CMRS providers but is required under part III.A above to grant interconnected VoIP providers access to such capability, such access must be provided on the rates, terms, and conditions that would be offered to a CMRS provider.⁹⁴ We do not believe that Congress intended for us, within the 90-day timeframe we have to adopt rules implementing the NET 911 Act, to conduct detailed pricing proceedings to determine, for each such capability offered by each type of provider in various localities around the country, what the exact price for each capability would be if it were offered to CMRS providers. Congress clearly did intend, however, for this Commission to provide guidance as to how the rates, terms, and conditions for these capabilities should be determined.⁹⁵ To further that intent, minimize disputes over these rates, terms, and conditions, and help achieve Congress's ultimate goal "[t]o promote and enhance public safety by facilitating the rapid deployment of IP-enabled 911 and E-911 services,"⁹⁶ we provide further guidance.⁹⁷ Specifically, if an owner or controller does not provide a capability to CMRS providers but is required under part III.A of this Order to give interconnected VoIP providers access to such capability, such access must be made available on the same rates, terms, and conditions that are offered to other telecommunications carriers or any other entities. We believe such rates, terms, and conditions are a

(Continued from previous page)

USTelecom Comments at 4 (the Commission need not regulate prices as commercially negotiated agreements are made freely in the marketplace).

⁹³ NET 911 Act § 101(2), Wireless 911 Act § 6(b).

⁹⁴ See NET 911 Act § 101(2); Wireless 911 Act §§ 6(b), (c)(1)(C) (instructing the Commission to issue regulations that "provide, with respect to any capabilities that are not required to be made available to a commercial mobile service provider but that the Commission determines . . . are necessary for an IP-enabled voice service provider to comply with its [E911] obligations . . . that such capabilities shall be available at the same rates, terms, and conditions as would apply if such capabilities were made available to a commercial mobile service provider"). The record indicates that the industry already is moving in this direction and that many agreements with interconnected VoIP providers for E911 capabilities are patterned after existing agreements with CMRS providers. See, e.g., AT&T Comments at 4-5; Verizon Comments at 4; Verizon Reply at 5-6.

⁹⁵ See NET 911 Act § 101(2); Wireless 911 Act § 6(c) ("The Commission . . . shall issue regulations . . . that . . . provide, with respect to any capabilities that are not required to be made available to a commercial mobile service provider but that the Commission determines . . . are necessary for an IP-enabled voice service provider to comply with its [E911] obligations . . . that such capabilities shall be available at the same rates, terms, and conditions as would apply if such capabilities were made available to a commercial mobile service provider.") (emphasis added).

⁹⁶ NET 911 Act, Preamble.

⁹⁷ See NET 911 Act § 101(2); Wireless 911 Act § 6(c)(1)(C). Comcast Comments at 4; Vonage Comments at 17. But see AT&T Comments at 6 ("AT&T would expect that there should be few (if any) additional 911/E911 capabilities that are not currently offered to CMS providers in the marketplace today for which the Commission would find it necessary to address pursuant to section 6(c) of the NET 911 Act.").

reasonable proxy for the rates, terms and conditions that would be provided to a CMRS provider.⁹⁸ To the extent an owner or controller of a capability used to provide E911 service provides a single capability to more than one CMRS provider or other entity, an interconnected VoIP provider that requests access to such capability is entitled to the rates, terms and conditions provided to any such single other provider.⁹⁹

34. If an owner or controller of a capability required to be made available does not currently make that capability available to any other entities, the rates, terms and conditions under which that owner or controller must provide access to a requesting interconnected VoIP provider must be reasonable, and should be reached through commercial negotiation.¹⁰⁰ Given the industry's track record in working diligently and on an accelerated time table to implement the *VoIP 911 Order* and the importance all industry participants attach to having a reliable and effective 911 and E911 network,¹⁰¹ we believe that the capability owner or controller and the interconnected VoIP provider will be able to expeditiously negotiate reasonable rates, terms, and conditions for that capability. We clarify that in granting interconnected VoIP providers new contractual rights, we do not abrogate any existing commercial agreements that interconnected VoIP providers may already have reached for access to capabilities for the provision of E911 service.¹⁰² Finally, we emphasize that all rights to capabilities that the NET 911 Act

⁹⁸ See AT&T Comments at 6 (arguing that the Commission should rely upon market-based, commercial arrangements to the extent that the Commission identifies capabilities needed by interconnected VoIP providers that are not currently offered to CMRS providers).

⁹⁹ We require that interconnected VoIP providers get the benefits and burdens associated with all of the applicable rates, terms, and conditions of agreements for access to the capabilities they need to provide E911 service, rather than getting to "pick and choose" the best terms from each such agreement. Cf., e.g., *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-338, Second Report and Order, 19 FCC Rcd 13494 (2004), *aff'd*, *New Edge Network, Inc. v. FCC*, 461 F.3d 1105 (D.C. Cir. 2006) (replacing the "pick and choose" rule with an "all or nothing" rule). We recognize, however, that many such agreements will address matters other than access to E911 capabilities. Our requirement that the rates, terms, and conditions under which E911 capabilities are made available to interconnected VoIP providers be reasonable ensures that those providers are able to meet their obligations to provide E911 service to their customers, consistent with Congress's intent.

¹⁰⁰ To facilitate compliance with the requirements adopted in this Order, we require the owners and controllers of capabilities to ensure that interconnected VoIP providers have ready access to the rates, terms, and conditions upon which their rights are based. See, e.g., Comcast Comments at 7 (arguing that an ability to determine existing rates, terms, and conditions is essential to ensuring compliance with the NET 911 Act); Intrado Comments at 5 (urging the public filing of such agreements for similar reasons); Oklahoma City Comments at 8; Vonage Comments at 22; NCTA Reply Comments at 3. As the Commission previously has found, competition is facilitated if customers can easily find information on the rates, terms, and conditions for services. See, e.g., *Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 254(g) of the Communications Act of 1934*, CC Docket No. 96-61, Second Order on Reconsideration and Erratum, 14 FCC Rcd 6004, 6009, para. 9 (citing *Policy and Rules Concerning the Interstate, Interexchange Marketplace*, CC Docket No. 96-61, Second Report and Order, 11 FCC Rcd 20730, 20745-46, para. 25 (1996)). Nevertheless, we decline at this time to require parties to publish their rates, terms, and conditions or file them with the Commission to comply with the NET 911 Act. See Verizon Comments at 4 (arguing that such rates, terms, and conditions are readily ascertainable from public documents). In the absence of any record of abuse, we believe requiring ready access is sufficient to ensure that the goals of the NET 911 Act are met without imposing any undue burdens.

¹⁰¹ See, e.g., Verizon Comments at 4; Vonage Comments at 2-3; VON Coalition Comments at 3 (referring to "the incredible efforts of [i]nterconnected VoIP providers and their 911 partners" in implementing the *VoIP 911 Order*); see also Washington State 911 Program Comments at 1 (urging that the Commission encourage collaboration between public safety and service suppliers).

¹⁰² See H.R. Rep. No. 110-442 at 13 (stating that the prior, similar version of this legislation "is not intended to abrogate existing commercial arrangements relating to the provision of 911 and E-911 service entered into by VoIP providers prior to the enactment of [the legislation]"); see also, e.g., AT&T Comments at 5. Of course, any change of (continued....)

grants to an interconnected VoIP provider are “for the exclusive purpose of complying with . . . its obligations under subsection (a) [*i.e.* the Commission’s existing E911 rules].”¹⁰³ The NET 911 Act does not grant, and our rules do not grant, access to capabilities beyond what interconnected VoIP providers need to provide 911 and E-911 service, nor does the statute or our rules grant access to capabilities for any purpose other than compliance with our 911 and E911 rules.

C. Technical, Network Security, and Information Privacy Requirements

35. To protect the security and reliability of the E911 network, interconnected VoIP providers may obtain access to E911 capabilities only in compliance with the specific criteria set forth below. The safety of our nation’s citizens vitally depends upon protecting the emergency services network from security threats. In this Order, as required by the NET 911 Act, we grant interconnected VoIP providers access to E911 capabilities.¹⁰⁴ Expanding the range of entities that have access to the E911 network raises new challenges. As NENA has said, VoIP technology “presents new challenges and security issues [for 911 service] as it breaks the bond between access and service provider characteristics of legacy networks and at this time lacks the legislative and regulatory requirements that apply to more conventional telephone services.”¹⁰⁵

36. Although Congress has granted interconnected VoIP providers additional rights to access E911 capabilities, in most cases, we do not anticipate significant deviation from current practices. Commenters agree that interconnected VoIP providers today are successfully using numbering partners and other 911 service providers to deliver E911 calls to the appropriate PSAP.¹⁰⁶ For example, Vonage reports that for “98.45% of its customers, Vonage [currently] provides the full suite of E911 service” pursuant to NENA’s standard and is in the process of obtaining the capabilities it needs to provide E911 service for most of the remainder of its customers.¹⁰⁷

37. NENA has developed national VoIP E911 requirements, referred to as NENA’s i2 standard, that are “designed to ensure that VoIP 9-1-1 calls are routed and presented in a wireline

(Continued from previous page) _____

law provision in an existing agreement should be given the effect intended by the parties to the agreement. In addition, nothing in this Order is intended to alter the cost allocation for services between the PSAP and the interconnected VoIP provider. *See* Intrado Comments at 13; *VoIP 911 Order*, 20 FCC Rcd at 10253, para. 18.

¹⁰³ *See* NET 911 Act § 101(2); Wireless 911 Act § 6(b).

¹⁰⁴ *See supra* part III.

¹⁰⁵ *See* Interim VoIP Architecture For Enhanced 9-1-1 Services, NENA 08-001, Issue 1 at 58 (December 6, 2005) (NENA’s i2 Standard), available at http://www.nena.org/media/File/08-001_20051205.pdf (visited Oct. 14, 2008) (“These security threats present themselves in a number of forms and have varying degrees of severity should they be exploited to their full potential. . . . This section does not in itself provide solutions to these concerns.”); Oklahoma City Comments at 9 (stating that “IP-enabled voice services provide new opportunity for intentional penetration and disruption of 911 services” and offering examples of “denial of service attacks generated by hackers or cyber terrorists who may penetrate the IP network at various points” – the risks of which are magnified to the extent an interconnected VoIP provider has access to the 911 and E911 network).

¹⁰⁶ *See, e.g.*, AT&T Comments at 4-5 (arguing that given the success of interconnected VoIP providers in currently providing E911 service, only limited rule changes are necessary); Verizon Comments at 1 (noting interconnected VoIP providers success in providing E911 service); VON Coalition Comments at 2-3 (reporting that “interconnected VoIP services now provide basic or enhanced 911 to more than 97 percent of their subscribers – the fastest and broadest onetime implementation of E911 in the history of public safety” (footnote omitted)).

¹⁰⁷ Vonage Comments at 3.

equivalent manner.”¹⁰⁸ We believe that any interconnected VoIP provider that is in compliance with this standard already is coordinating its efforts with the other organizational entities responsible for providing E911 service.

38. We require interconnected VoIP providers to comply with all applicable industry network security standards to the same extent as traditional telecommunications carriers when they access capabilities traditionally used by carriers. We recognize the security of the nation’s emergency services network depends on many interlocking measures that collectively preserve the integrity of the 911 system from unauthorized access and use. For instance, in addition to the security concerns discussed above, the network elements used to provide 911 service must be kept physically secure. The E911 network must also be kept secure against unauthorized electronic access, such as through hacking. NENA reports that “[t]he existing Emergency services network provides a relatively high degree of security for correctness of information, integrity, and authorization of access, authenticity/secrecy, and accuracy of information.”¹⁰⁹ By requiring interconnected VoIP providers to comply with the same standards as carriers, we are able to expand access to the E911 system without compromising network security.¹¹⁰

39. Finally, our rules contemplate that incumbent LECs and other owners or controllers of 911 or E911 infrastructure will acquire information regarding interconnected VoIP providers and their customers for use in the provision of emergency services. We fully expect that these entities will use this information only for the provision of E911 service. To be clear, no entity may use customer information obtained as a result of the provision of 911 or E911 services for marketing purposes.¹¹¹

IV. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Act Analysis

40. As required by the Regulatory Flexibility Act of 1980 (“RFA”),¹¹² the Commission has prepared a Final Regulatory Flexibility Analysis (“FRFA”) relating to this Report and Order. The FRFA is set forth in Appendix C.

B. Paperwork Reduction Act Analysis

41. This document contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new or modified information collection requirements adopted in this Order.

¹⁰⁸ NENA Comments at 5; King County Reply at 2 (stating that NENA’s i2 “standards are developed through an extensive process of discussion and review, with participation from all parties involved in the provision of E911 service”); *see also* NENA’s i2 Standard.

¹⁰⁹ *See* NENA’s i2 Standard at 57-58.

¹¹⁰ *See, e.g.*, Intrado Comments at 11 (stating that any entity that connects to 911 network needs to comply with “industry recommended standards that ensure interoperability between service providers and the 911/E911 network”); Sprint Nextel Comments at 8 (“Sprint is not aware of any technical, network security or information privacy requirements that are unique to IP-enabled services.”); Verizon Reply at 6.

¹¹¹ *See* Sprint Nextel Comments at 8; Texas 911 Alliance Comments at 9.

¹¹² *See* 5 U.S.C. § 604. The RFA, *see* 5 U.S.C. § 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (“SBREFA”), Pub. L. No. 104-121, Title II, 110 Stat. 847 (1996). The SBREFA was enacted as Title II of the Contract With America Advancement Act of 1996 (“CWAAA”).

C. Congressional Review Act

42. The Commission will include a copy of this Report and Order in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

D. Accessible Formats

43. To request information in accessible formats (computer diskettes, large print, audio recording, and Braille), send an e-mail to fcc504@fcc.gov or call the Commission's Consumer and Governmental Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (TTY). This document can also be downloaded in Word and Portable Document Format ("PDF") at: <http://www.fcc.gov>.

V. ORDERING CLAUSES

44. Accordingly, IT IS ORDERED that pursuant to sections 1, 4(i)-(j), 251(e) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i)-(j), 251(e), 303(r), and section 101 of the NET 911 Act, the Report and Order in WC Docket No. 08-171 IS ADOPTED, and that Part 9 of the Commission's Rules, 47 C.F.R. Part 9, IS AMENDED as set forth in Appendix B. The Order shall become effective 30 days after notice of it is published in the Federal Register subject to OMB approval for new information collection requirements.

45. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION



Marlene H. Dortch
Secretary

APPENDIX A

List of Commenters

Comments in WC Docket No. 08-171

Comments	Abbreviation
9-1-1 Association of Central Oklahoma Governments	911 Association of Central Oklahoma Governments
AT&T Inc.	AT&T
Comcast Corporation	Comcast
City of Oklahoma City	Oklahoma City
District of Columbia Office of Unified Communications	D.C. Office of Unified Communications
Illinois Commerce Commission	Illinois Commission
Intrado Inc. and Intrado Communications	Intrado
National Emergency Numbering Association and Association of Public-Safety Communications Officials-International	NENA
Oklahoma Municipal League	Oklahoma Municipal League
Oklahoma Statewide 911 Advisory Board	Oklahoma Statewide 911 Advisory Board
Qwest Communications International Inc.	Qwest
Sprint Nextel Corporation	Sprint
T-Mobile USA, Inc.	T-Mobile
TeleCommunication Systems, Inc.	TCS
The Texas 9-1-1 Alliance and Texas Commission on State Emergency Communications	Texas 911 Alliance
The VON Coalition	The VON Coalition
United States Telecom Association	USTelecom
Verizon	Verizon
Vonage Holdings Corp.	Vonage
Washington State E911 Program	Washington State E911 Program

Reply Comments in WC Docket No. 08-171

Reply Comments	Abbreviation
AT&T Inc.	AT&T
Cincinnati Bell Wireless LLC	Cincinnati Bell Wireless
Comcast Corporation	Comcast
CTIA – The Wireless Association	CTIA
Intrado Inc. and Intrado Communications	Intrado
King County E911 Program	King County
Level 3 Communications LLC	Level 3
National Emergency Numbering Association and Association of Public-Safety Communications Officials-International	NENA
National Cable & Telecommunications Association	NCTA
People of the State of California and California Public Utilities Commission	California Commission
RNK Communications	RNK

T-Mobile USA, Inc.	T-Mobile
TeleCommunication Systems, Inc.	TCS
United States Telecom Association	USTelecom
Verizon	Verizon
Verizon Wireless	Verizon Wireless
Vixxi Solutions Inc.	Vixxi
Vonage Holdings Corp.	Vonage

APPENDIX B**Final Rules**

Part 9 of Title 47 of the Code of Federal Regulations is amended to read as follows:

PART 9 – INTERCONNECTED VOICE OVER INTERNET PROTOCOL SERVICES

1. The authority citation for Part 9 is amended to read as follows:

Authority: 47 U.S.C. 151, 154(i)-(j), 251(e), 303(r), and 615a-1 unless otherwise noted.

2. § 9.1 is amended to read as follows.

§ 9.1 Purposes.

The purposes of this part are to set forth the 911 and E911 service requirements and conditions applicable to interconnected Voice over Internet Protocol service providers, and to ensure that those providers have access to any and all 911 and E911 capabilities they need to comply with those 911 and E911 service requirements and conditions.

3. § 9.3 is amended by adding in alphabetical order definitions of “ALI” and “CMRS” to read as follows.

§ 9.3 Definitions.

Automatic Location Information (ALI). Information transmitted while providing E911 service that permits emergency service providers to identify the geographic location of the calling party.

CMRS. Commercial Mobile Radio Service, as defined in § 20.9 of this chapter.

4. § 9.7 is added to read as follows.

§ 9.7 Access to 911 and E911 Service Capabilities.

(a) **Access.** Subject to the other requirements of this part, an owner or controller of a capability that can be used for 911 or E911 service shall make that capability available to a requesting interconnected VoIP provider as set forth in paragraphs (a)(1) and (a)(2) of this section.

- (1) If the owner or controller makes the requested capability available to a CMRS provider, the owner or controller must make that capability available to the interconnected VoIP provider. An owner or controller makes a capability available to a CMRS provider if the owner or controller offers that capability to any CMRS provider.
- (2) If the owner or controller does not make the requested capability available to a CMRS provider within the meaning of paragraph (a)(1) of this section, the owner or controller must make that capability available to a requesting interconnected VoIP provider only if that capability is necessary to enable the interconnected VoIP provider to provide 911 or E911 service in compliance with the Commission’s rules.

(b) Rates, Terms, and Conditions. The rates, terms, and conditions on which a capability is provided to an interconnected VoIP provider under paragraph (a) of this section shall be reasonable. For purposes of *this paragraph, it is evidence that rates, terms, and conditions are reasonable if they are: (1) the same as the rates, terms, and conditions that are made available to CMRS providers, or (2) in the event such capability is not made available to CMRS providers, the same rates, terms, and conditions that are made available to any telecommunications carrier or other entity for the provision of 911 or E911 service.*

(c) Permissible Use. An interconnected VoIP provider that obtains access to a capability pursuant to this section may use that capability only for the purpose of providing 911 or E911 service in accordance with the Commission's rules.

APPENDIX C

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *NET 911 Notice* in WC Docket 08-171.² The Commission sought written public comment on the proposals in the *Net 911 Notice*, including comment on the IRFA.³ We received no comments on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.⁴

A. Need for, and Objectives of, the Rules

2. In this Report and Order (Order), we adopt rules implementing certain key provisions of the New and Emerging Technologies 911 Improvement Act of 2008 (NET 911 Act). The NET 911 Act, signed into law on July 23, 2008, is designed to “promote and enhance public safety by facilitating the rapid deployment of IP-enabled 911 and E911 services, encourage the Nation’s transition to a national IP-enabled emergency network, and improve 911 and enhanced 911 (E911) access to those with disabilities.” Congress directed the Commission to issue rules implementing certain key provisions of the NET 911 Act no later than October 21, 2008. In particular, to effectuate the requirement that providers of interconnected voice over Internet Protocol (interconnected VoIP) service provide 911 and enhanced 911 (E911) service without exception, Congress mandated that the Commission issue regulations in this time frame that, among other things, ensure that interconnected VoIP providers have access to any capabilities they need to satisfy that requirement. Today, we fulfill that duty and take steps to ensure that interconnected VoIP providers will use the capabilities they gain as a result of this Order to provide 911 and E911 in complete accord with our rules.

3. Specifically, in this Order we issue rules that give interconnected VoIP providers rights of access to any and all capabilities necessary to provide E911 from any entity that owns or controls those capabilities. We establish a standard to determine the rates, terms, and conditions that will apply to that access and also restrict interconnected VoIP provider’s access to capabilities for the sole purpose of providing 911 or E911 service. Finally, interconnected VoIP providers must comply with all applicable industry network security standards to the same extent as traditional telecommunications carriers when they access capabilities traditionally used by carriers.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

4. No comments were submitted specifically in response to the IRFA.

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

5. 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 rules adopted herein.⁵ The RFA generally

¹ See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. §§ 601-12, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See *Implementation of the NET 911 Improvement Act of 2008*, WC Docket No. 08-171, Notice of Proposed Rulemaking, FCC 08-195, para. 18 & Appendix (2008) (*NET 911 Notice*).

³ See *id.*

⁴ See 5 U.S.C. § 604.

⁵ 5 U.S.C. §§ 603(b)(3), 604(a)(3).

defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."⁶ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.⁷ 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.⁸

6. *Small Businesses.* Nationwide, there are a total of approximately 22.4 million small businesses according to SBA data.⁹

7. *Small Organizations.* Nationwide, there are approximately 1.6 million small organizations.¹⁰

8. *Small Governmental Jurisdictions.* The term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."¹¹ Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.¹² We estimate that, of this total, 84,377 entities were "small governmental jurisdictions."¹³ Thus, we estimate that most governmental jurisdictions are small.

1. Telecommunications Service Entities

a. Wireline Carriers and Service Providers

9. We have included small incumbent local exchange carriers (LECs) in this present RFA analysis. As noted above, a "small business" under the RFA is one that, *inter alia*, meets the pertinent small business size standard (*e.g.*, a telephone communications business having 1,500 or fewer employees) and "is not dominant in its field of operation."¹⁴ The SBA's Office of Advocacy contends that, for RFA purposes, small incumbent LECs are not dominant in their field of operation because any such dominance is not "national" in scope.¹⁵ We have therefore included small incumbent LECs in this

⁶ 5 U.S.C. § 601(6).

⁷ 5 U.S.C. § 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 terms which are appropriate to the activities of the agency and publishes such definitions(s) in the Federal Register."

⁸ 15 U.S.C. § 632.

⁹ See SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

¹⁰ Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

¹¹ 5 U.S.C. § 601(5).

¹² U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, Section 8, page 272, Table 415.

¹³ We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

¹⁴ 15 U.S.C. § 632.

¹⁵ Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (May 27, 1999). The Small Business Act contains a definition of "small-business concern," which the RFA incorporates into its own definition of "small business." See 15 U.S.C. § 632(a) (Small Business Act); 5 U.S.C. § 601(3) (RFA).

(continued....)