

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

In the Matter of

Wireless E911 Location Accuracy  
Requirements

911 Requirements for IP-Enabled Service  
Providers

PS Docket No. 07-114

WC Docket No. 05-196

**COMMENTS OF THE VOICE ON THE NET COALITION  
IN RESPONSE TO PART III.B OF THE NPRM**

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**I. INTRODUCTION AND SUMMARY: IMPOSING AN AUTOLOCATION AND ACCURACY MANDATE ON INTERCONNECTED VOIP SERVICES WOULD CREATE A TECHNICALLY INFEASIBLE REQUIREMENT AND HARM PUBLIC SAFETY.**

The Voice on the Net Coalition (“VON”) shares the Commission’s goal of further improving location capabilities for E911 and delivering to the public the best possible E911 services. VON knows that dialing 911 may be the most important call a person ever makes, and its members take very seriously the need to provide end users the best possible emergency service. Interconnected VoIP service providers have demonstrated their reliability and critical adaptability in times of emergency, underscoring the importance of their services to consumers, public safety, and the economy.

Interconnected VoIP providers have made extraordinary progress with respect to emergency services in very little time, particularly in comparison to traditional voice services.<sup>1</sup>

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<sup>1</sup> See VON Coalition, VoIP Progress Presentation (available at [http://www.von.org/usr\\_files/911%20-%20Progress%201-10-07%20-%20ns.pdf](http://www.von.org/usr_files/911%20-%20Progress%201-10-07%20-%20ns.pdf)).

They provide E911 to more than 97 percent of their subscribers<sup>2</sup> – a remarkable achievement considering that no underlying network connectivity provider can yet offer interconnected VoIP providers the ability to connect to all selective routers nationwide and that interconnected VoIP providers lack the liability protection afforded to licensed voice service providers. The absence of any Commission-imposed E911 technology mandate has allowed industry the technological flexibility necessary to develop a variety of approaches to deliver the best possible E911 services to the public.

In its Notice of Proposed Rulemaking (“NPRM”), however, the Commission tentatively concludes that an interconnected VoIP service that can be used in more than one location must employ an automatic location technology that meets the same accuracy standards that apply to CMRS services.<sup>3</sup> While this is a laudable goal, it is simply not achievable with the technologies available today. Imposing the CMRS autolocation and accuracy requirements on interconnected VoIP services all the same would degrade public safety significantly.

No commercially ready autolocation solution will allow interconnected VoIP providers to meet the current CMRS standards nationwide.<sup>4</sup> It is premature for the Commission to impose any such mandate when the technology is not yet developed. Indeed, the Commission needs to ensure that technical solutions are available across the full spectrum of geographies and

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<sup>2</sup> See *id.* at 4.

<sup>3</sup> See *Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling; 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 ¶ 18 (rel. June 1, 2007) (“NPRM”).

<sup>4</sup> The Part A comments demonstrate that no commercially ready solution exists for CMRS providers either. See, e.g., Comments of T-Mobile at 4-10 (filed July 5, 2007); Comments of TruePosition at 3-4 (filed July 5, 2007); Comments of Sprint Nextel at 8-12 (filed July 5, 2007); Comments of Verizon Wireless at 14-22 (filed July 5, 2007); Comments of Qualcomm at 4-7 (filed July 5, 2007).

topologies. Otherwise, it could inadvertently make innovative interconnected VoIP services unavailable in some areas, especially rural America.

The interconnected VoIP services category covers a set of configurations that is far more diverse than interconnected CMRS voice services. For example, the proposed interconnected VoIP provider autolocation and accuracy rule could apply to any interconnected service that was capable of being used in more than one location, including cable telephony, over-the-top VoIP service provisioned through a terminal adapter, services that allow the use of Wi-Fi handsets or “soft phones” loaded onto laptops, and possibly dual-mode VoIP/traditional communications services. Applying a uniform solution to these diverse interconnected services ignores the fact that these services have:

- Differing network and service architectures, and differing means of accessing interconnected VoIP services;
- Differing likelihoods that an end user will use the device or service to place a 911 call;
- Differing likelihoods that the customer-provided address will be accurate, or that the device will actually be used in more than one location without the customer notifying the provider; and,
- Differing E911 alternatives available to the end user through the same service.

As proposed, the rule could apply to innovative services and to configurations of interconnected VoIP services in combination with traditional voice service made possible by the inherent flexibility of IP. No one-size-fits-all solution for all of these services exists. Imposing one all the same would likely reduce rather than improve the overall level of E911 service provided to first responders and consumers.

The Commission should carefully evaluate both the benefits and the costs of any interconnected VoIP autolocation and accuracy requirements before it considers adopting them. In addition to technical feasibility, the Commission needs to examine and quantify the specific

incremental benefits of imposing autolocation and accuracy mandates that meet the CMRS standards. Otherwise, mandatory autolocation could actually *decrease* location accuracy rather than improving it. For example, a customer-reported location (as is currently used with interconnected VoIP services) can provide the actual address, or door to be “kicked down.” An estimated autolocation, by contrast, would likely have a larger range of error.

If the Commission does decide to impose E911 autolocation and/or CMRS accuracy requirements on interconnected VoIP services – notwithstanding the likely harm to E911 innovation and the lack of existing technologies capable of meeting these requirements – the Commission should pursue a policy of regulatory flexibility and refrain from mandating a specific autolocation technology or technological standard. Because of the diversity of interconnected VoIP services, functions, and uses, different solutions may be appropriate in different environments. A technology mandate would chill innovation and directly inhibit the development of solutions. Industry and standard-setting bodies would be the best arbiters of which technology is appropriate in each circumstance.

Furthermore, if the Commission does adopt an autolocation and/or accuracy requirement for interconnected VoIP services, it must give interconnected VoIP providers sufficient time to comply with these new requirements. New technological solutions will have to be developed (if that is possible), and then standardized and deployed in services, networks, and end-user equipment. In no event should an autolocation mandate require – either implicitly or explicitly – changes to devices that are not designed primarily for interconnected VoIP service. Providers will also need time for end users to transition to new equipment – a process over which many interconnected VoIP providers do not maintain centralized control.

Rather than adopting an immediate autolocation and/or accuracy mandate, the Commission should charter an advisory committee composed of industry representatives, public safety organizations, and interconnected VoIP consumers to review what is actually technically feasible, not just in the lab but in real-world settings. The committee should examine how often – and for what types of interconnected VoIP services – the customer-provided registered location is inadequate. It should also assess how often autolocation using available technologies would improve the customer-provided location information provided to public safety entities and the ability of those entities to respond. And it should examine the scope of changes necessary to implement such a mandate, and the time needed to do so without consumer disruption.

In short, rather than adopt a new mandate for interconnected VoIP providers to automatically locate 911 callers at the same accuracy levels as CMRS, the Commission should first build a complete substantive and technical record in this proceeding. Before imposing new rules, it should take the important *prior step* of collecting the hard data, science, and engineering with which to make decisions about the technical feasibility, costs, and trade-offs involved in real-world settings.

**II. IT IS NOT TECHNICALLY FEASIBLE FOR INTERCONNECTED VOIP SERVICE PROVIDERS TO AUTOMATICALLY LOCATE CALLERS USING THE CMRS ACCURACY REQUIREMENTS.**

The comments in response to Part A of the NPRM establish uniformly that it is not technically feasible for wireless carriers to locate CMRS subscribers within Rule 20.18 requirements applied at the PSAP-level.<sup>5</sup> Notably, however, interconnected VoIP service providers face even greater challenges due to fundamental differences between the CMRS and

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<sup>5</sup> See, e.g., Comments of T-Mobile at 5-10 (filed July 5, 2007); Comments of Qualcomm at 4-7 (filed July 5, 2007); Comments of Sprint Nextel at 8-12 (filed July 5, 2007); Comments of Verizon Wireless at 14-22 (filed July 5, 2007).

interconnected VoIP technologies and capabilities. At the core, CMRS service providers operate or contract for the use of radio-based access networks, which many can then use to triangulate the location of their handsets. In contrast, interconnected VoIP service providers typically do not operate radio networks. Rather, their traffic generally flows over the public Internet or other broadband access providers' IP networks.

As further discussed in Part III below, this means that many interconnected VoIP service providers: (1) do not have an ability to use network-based triangulation solutions to provide autolocation; and (2) would need to derive the user's location from sources outside of their control (*i.e.*, either the underlying network providers' cooperation would be needed to access this information, or the provider would need to use an externally available location information source, such as GPS). This problem is further exacerbated due to the fact that interconnected VoIP services are most commonly used indoors where GPS does not work; thus, simply including a GPS chip in interconnected VoIP devices will not provide a viable autolocation solution in most settings. Moreover, as also detailed in Part III, the fact that interconnected VoIP services come in a wide variety of service configurations and combinations prevents the implementation of any one-size-fits-all autolocation solution.<sup>6</sup>

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<sup>6</sup> The challenges of E911 in the context of interconnected VoIP services (the clear limit of the NPRM's assessment of IP-based communications) pales in comparison to the technological hurdles posed by services outside the "interconnected VoIP" category. These non-interconnected services (which are clearly excluded from the Commission's proposed rules) are even more varied and less susceptible to a single solution. Generally speaking, non-interconnected services are aimed at a variety of long-tail markets and exist along a vast spectrum of computing platforms – everything from desktops, to laptops, to mobile devices and even stuffed animals. See <http://www.amperordirect.com/pc/b-hamfriends/webcam-hams-timmytiger.html>.

Even more fundamentally, non-interconnected services generally are not ones for which there is any user expectation to be able to place a 911 call. A click-to-connect service that allows a user to talk directly to a catalog ordering service or to customer support and service is not going to be where someone turns to place a call to summon first responders. Similarly, users facing an emergency are not going to turn to a service that allows team members to collaborate on a joint presentation or project via the Internet. Reflecting the clear limits articulated in the NPRM, *see* NPRM ¶ 18, the Commission must therefore avoid adopting any mandates that may touch on these diverse services and devices.

Of course, ensuring that PSAPs receive interconnected VoIP callers' accurate E911 location information is vitally important. A careful evaluation of existing technologies leads to the inescapable conclusion, however, that no technically feasible solution exists today "to meet Phase II [CMRS] accuracy requirements" specified in Rule 20.18(h) "at the PSAP service area level."<sup>7</sup> The Commission's prior findings support this conclusion and acknowledge the difficulties of imposing an E911 autolocation mandate on for interconnected VoIP services. In the *Interconnected VoIP E911 First Report and Order* requiring VoIP providers to supply E911 capability, for example, the Commission observed that "'portable' VoIP service providers often have no reliable way to discern from where their customers are accessing the VoIP service."<sup>8</sup>

The Commission's *Vonage Order* similarly found that "Vonage has no means of directly or indirectly identifying the geographic location of a DigitalVoice subscriber."<sup>9</sup> The Commission pointed out, moreover, that "the significant costs and operational complexities associated with modifying or procuring systems to track, record and process geographic location information as a necessary aspect of the service would substantially reduce the benefits of using the Internet to provide the service, and potentially inhibit its deployment and continued availability to consumers."<sup>10</sup>

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<sup>7</sup> NPRM ¶¶ 5, 18.

<sup>8</sup> *IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd. 10,245, 10,259 ¶ 25 (2005) ("Interconnected VoIP E911 First Report and Order"). Notably, the Commission's Consumer and Governmental Affairs Bureau reiterated this finding in December 2006, noting that "it is apparent that the current state of technology does not allow a means of automatically determining the geographic location of TRS calls originating via the Internet." *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, 21 FCC Rcd. 14,554, 14,557 ¶ 10 (Consumer and Governmental Affairs Bureau 2006). The Bureau further found that "a similar issue exists with respect to VoIP service (i.e., voice telephone calls made via the Internet rather than the PSTN), and that for this reason, the Commission has presently mandated that VoIP providers obtain a registered location for each of their customers so that the providers can direct an emergency VoIP call to the appropriate PSAP." *Id.*

<sup>9</sup> *Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, Memorandum Opinion and Order, 19 FCC Rcd. 22,404, 22,418-19 ¶ 23 (2004).

<sup>10</sup> *Id.*

While interconnected VoIP service providers have worked with a variety of technologies to improve E911 availability since the Commission made these findings, there have been no major technological breakthroughs in automatically determining an interconnected VoIP caller's location, without relying on the user-provided location. Indeed, the Part A comments establish that all existing autolocation technologies have drawbacks, even for CMRS, and those problems are magnified for interconnected VoIP services:

- **GPS:** The Part A comments establish that GPS only works well when the handset can see at least three GPS satellites.<sup>11</sup> But interconnected VoIP services are most commonly used indoors due to the need for a broadband connection and Wi-Fi's limited range, so a GPS receiver integrated into hardware used to provide interconnected VoIP services will frequently be unable to see three satellites adequately.<sup>12</sup> Accordingly, efforts to provide interconnected VoIP autolocation information using GPS would need to be combined with some other technology, which does not exist today, to obtain usable data indoors or wherever else GPS will not work.
- **Terrestrial Triangulation:** Terrestrial triangulation is a means of establishing a device's location based on the location of terrestrial radio-frequency transmitters. More specifically, terrestrial triangulation uses distance measurements (gathered via timing signals sent from at least three locations such as cell towers) to provide location data permitting a receiver to more quickly calculate its position than through reliance on GPS signals alone. As the Part A comments demonstrated, however, the present terrestrial triangulation solutions cannot meet the Commission's accuracy requirements at every PSAP even for CMRS.<sup>13</sup> Moreover, most interconnected VoIP providers do not operate networks with known sites and timing-signal systems that can be used for triangulation. While some vendors claim their technologies can calculate location based on, for example, television signals or Wi-Fi access points, these technologies are still unproven, need to be further tested to assess whether they will actually work as advertised in all settings, and would have to be available in all markets, not just a few.
- **Access Point Inventories.** Some technologies may allow an access provider (or network administrator for an enterprise network) to maintain a database of end-user

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<sup>11</sup> See, e.g., Comments of Verizon Wireless at 16-18 (filed July 5, 2007) (explaining that "a minimum of three satellites is needed to provide a GPS fix that can comply with the FCC's existing numerical accuracy standards").

<sup>12</sup> See *id.* at 20 (setting forth additional circumstances under which GPS receivers experience problems with satellite visibility).

<sup>13</sup> See, e.g., Comments of Verizon Wireless at 21 (filed July 5, 2007); Comments of Qualcomm at 6 (filed July 5, 2007).

locations and to transmit location information to the end-user device using a Dynamic Host Configuration Protocol (“DHCP”) address.<sup>14</sup> This approach requires a centralized network administrator and would not likely be usable outside of campus, or similar, settings. Another vendor has proposed a solution that uses a database of public and private wireless access points (“WAPs”) operating under IEEE 802.11 standards. Because WAPs are uniquely identifiable based on their base station addresses, a device that knows the location of multiple WAPs can in theory provide a fairly accurate estimate of its location. In practice, however, such a database would need to be updated frequently because, as unlicensed and unregulated devices, the access points can be moved without notice. Moreover, WAPs are not widespread across the country, and most areas – particularly rural areas – are not covered by enough overlapping WAPs to enable autolocation based on access point data.

- **Positioning Based on Broadcast Signals.** One vendor has promoted an autolocation solution based on broadcast television signals. Today, however, the infrastructure necessary to implement such a solution simply does not exist. Widespread deployment of new equipment would be necessary before this approach could be implemented.

In sum, existing autolocation technologies – and even those technologies still on the horizon – do not and will not in the foreseeable future allow interconnected VoIP service providers to meet the Phase II accuracy requirements specified in Rule 20.18(h) at the PSAP service area level, or even on a broader geographic level.

In the face of these real-world circumstances, it would be arbitrary and capricious for the Commission to adopt the proposed autolocation and accuracy requirements despite the fact that no solution exists and the mandate cannot possibly be met. As a number of commenters point out in their Part A comments, a regulation must be achievable and feasible in order to be lawful.<sup>15</sup> For an agency to establish that its rules are “based on a consideration of the relevant factors” and not “a clear error of judgment,”<sup>16</sup> the “record must establish that the required

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<sup>14</sup> See Comments of Cisco Systems, WC Docket Nos. 04-36 and 05-196, at 6-7 (filed August 15, 2005).

<sup>15</sup> See, e.g., Comments of Verizon Wireless at 8-10 (filed July 5, 2007); Comments of T-Mobile Comments at 11-13 (filed July 5, 2007).

<sup>16</sup> *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415-16 (1971).

technology is feasible, not merely *possibly* feasible.”<sup>17</sup> Indeed, the D.C. Circuit has emphasized that “[i]mpossible requirements imposed by an agency are perforce unreasonable.”<sup>18</sup>

**III. SUPERIMPOSING THE CMRS AUTOLOCATION MANDATE ON INTERCONNECTED VOIP SERVICES WOULD IGNORE THE FUNDAMENTAL DISTINCTIONS BETWEEN INTERCONNECTED VOIP SERVICES, COULD HARM PUBLIC SAFETY, AND WOULD BE ARBITRARY AND CAPRICIOUS.**

Even if it were technically feasible to comply, which it is not, it would also be arbitrary and capricious to impose a single, one-size-fits-all mandate derived from wireless service on all interconnected VoIP service providers because the benefits and costs of autolocation vary substantially among the myriad interconnected VoIP services. The differences among these services and service configurations cannot be ignored; rather, they are critical to analyzing whether an autolocation or accuracy mandate for each service or service configuration will actually benefit public safety and improve overall consumer welfare.

Although we cannot set forth every variation of interconnected VoIP services here, the following examples are illustrative of this problem:

- Some interconnected VoIP services are deployed to a user that essentially uses the service only from a single fixed location, even if the service may be capable of use at different locations. Nomadic use of these services (*i.e.*, disconnecting a device such as a terminal adapter from one broadband connection and plugging it into a broadband connection at a different location) may be possible, but may only occur rarely and may be able to be addressed through alternative measures (such as providing for or prompting a user update).
- Some interconnected VoIP services are deployed in a campus or enterprise setting, where the network administrator has substantial control over the network and may have the ability to inventory and track which devices are being used from which ports, and the location of those ports. Other network administrators, however, lack the ability to track the location of the ports from which a device is used, and thus may lose any ability to track the location of the caller, such as when the caller moves location within the campus or enterprise.

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<sup>17</sup> *Bunker Hill Co. v. EPA*, 572 F.2d 1286, 1301 (9<sup>th</sup> Cir. 1977).

<sup>18</sup> *Alliance for Cannabis Therapeutics v. DEA*, 930 F.2d 936, 940 (D.C. Cir. 1991).

- Some interconnected VoIP services are provided via a softphone, which, by definition, has no hardware into which a location chip could be loaded, and would have to be wholly dependent upon either the host device or the access provider for location information.
- Some interconnected VoIP services are offered in conjunction with traditional fixed or mobile services that already have E911 autolocation capabilities. End users of such devices can place a 911 call using these traditional voice services (and thus using the existing E911 location capabilities).
- Some interconnected VoIP services can be used with Wi-Fi enabled handsets operating via Wi-Fi access points. The interconnected VoIP provider frequently may not even know that a Wi-Fi enabled handset is being used. In some cases the location of these access points may be known to an interconnected VoIP provider, but in most cases the interconnected VoIP provider will not know the location of the Wi-Fi router unless it is provided by the user.
- Some interconnected VoIP services combine several of these different modes of interconnected VoIP (and possibly non-interconnected VoIP services) to give consumers a highly flexible service.

Moreover, depending on the setting, the relationship between the provider of an interconnected VoIP service and a broadband Internet access provider will also vary, sometimes changing with the customer's location. In some cases, an interconnected VoIP service provider may either provide the access service itself or partner with a company that provides the access service; in many other cases, however, the interconnected VoIP service provider will have no relationship whatsoever with the underlying broadband Internet access provider. The latter case makes it inherently more difficult for the interconnected VoIP service provider to develop an E911 autolocation solution.

For each of these variations, different E911 solutions will have different benefits and costs. Ignoring these differences may actually undermine, rather than enhance, public safety. For example, in the overwhelming majority of cases, a customer's registered address will be the most accurate location that can be provided to PSAPs as that data will reflect a specific street address rather than an estimated location. In situations where street addresses are the most accurate information possible, an autolocation or accuracy mandate may come at the cost of

reducing, not improving, the quality of information available to first responders in the vast majority of situations.<sup>19</sup>

An autolocation mandate would impose other costs as well. It may, for example, limit the commercial availability of VoIP softphones because they cannot incorporate E911 autolocation hardware. Since it is highly unlikely that a softphone user would boot up a laptop to call 911, or lack a cell phone or other device with which to call, the mandate would stifle calling and safety alternatives. Indeed, consumers do not expect to use their softphones for E911. Thus, an overbroad E911 autolocation and accuracy mandate would likely have a negative impact on the development, deployment, and dissemination of innovative new services, without any true improvement to public safety.

Furthermore, the high costs of imposing an autolocation or accuracy mandate seem particularly hard to justify for interconnected VoIP services where E911 availability has little relevance. Mobile Wi-Fi-only phones are still only a very small part of the market, and many of the consumers who have them also have CMRS phones that they would be more likely to use to place a 911 call in an emergency, especially when away from the customer-provided registered location. Nomadic interconnected VoIP services and Wi-Fi only phones are also likely to be among the most affected by the lack of a technically feasible autolocation solution. As discussed above, GPS cannot work outside of the view of GPS satellites, and most areas of the country will not have a sufficient number of overlapping WAPs to allow location based on access point inventories (in the event that turns out to be an accurate and feasible solution). Accordingly, a

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<sup>19</sup> Of course, when an interconnected VoIP provider can automatically estimate a customer's location, and when the provider believes its automatically derived information is more likely to be correct, nothing should preclude the provider from substituting its automatically derived estimate of a customer's location for the customer-provided registered location. See, e.g., *Joint Petition for Clarification of the National Emergency Number Association and the Voice on the Net (VON) Coalition* at 8, WC Docket Nos. 04-36 and 05-195 (filed July 29, 2005) ("*VON-NENA Petition*"); *Petition of T-Mobile USA, Inc. for Clarification* at 4-5, WC Docket Nos. 04-36 and 05-195 (filed July 29, 2005) ("*T-Mobile Petition*").

strict autolocation requirement would likely chill the development of nomadic interconnected VoIP services and the incorporation of Wi-Fi access and voice services into new devices, while offering little value to users who are unlikely to rely on Wi-Fi only phones for E911 access.

As the discussion above illustrates, interconnected VoIP providers offer a wide range of services with different likelihoods that the phones will actually move, different likelihoods that they will be used to place 911 calls, different alternative 911 capabilities, different abilities to incorporate hardware-based solutions and, most importantly, different benefits and costs of implementing autolocation technologies. The Commission must carefully consider these differences before imposing any autolocation mandate.

Finally, there may be some interconnected VoIP services that are technically capable of being used from more than one location, but for which the customer clearly and unambiguously agrees not to move the service. The Commission should make clear that any autolocation mandate does not apply to situations in which end users agree expressly in their service contracts to use the service only from a single location. In such instances, there should be no need to provide E911 capabilities from other locations because the interconnected VoIP consumer should have no need for (or expectation of) emergency service capability from other locations.<sup>20</sup>

Consistent with the Administrative Procedures Act, the Commission must “examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made’” before imposing such a new obligation.<sup>21</sup> Thus, before imposing autolocation mandates designed for CMRS industry on the separate and distinct interconnected VoIP industry, the Commission should take into account

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<sup>20</sup> See *VON-NENA Petition* at 8-9.

<sup>21</sup> *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto, Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)).

critical factors such as: (1) whether there is a need for such a mandate, and the net benefits to public safety of implementing such a mandate; (2) the significant (and possibly insurmountable) technological challenges the interconnected VoIP industry would face in developing currently non-existent solutions; (3) the cost and time required to develop such solutions; and (4) the great variation in interconnected VoIP services. In the end, the Commission must make a “rational connection between the facts found and the choice[s] made” and balance the incremental benefits from autolocation with CMRS accuracy against the costs for the different types of interconnected VoIP service or configuration.

**IV. THE COMMISSION SHOULD NOT IMPOSE A SPECIFIC TECHNOLOGY OR TECHNOLOGICAL STANDARD FOR INTERCONNECTED VOIP E911.**

As explained above, an autolocation mandate with CMRS accuracy requirements is technically infeasible, would likely harm public safety, and would create unreasonable costs if applied on a one-size-fits-all basis. If the Commission nonetheless elects to impose such a mandate on interconnected VoIP services, it should not require the use of any specific technology or technological standard. Nor should it impose a *de facto* mandate by requiring performance characteristics that only a single technology can satisfy. Because of the differences in interconnected VoIP services discussed above, there is likely to be no single technological solution applicable to or effective for all interconnected VoIP services.

The Wireless Broadband Access Task Force concluded in 2005 that the Commission should not attempt “to pace the technological advancements and changes in consumer preferences with its rules, but should instead allow the market to determine the development” of innovative new broadband services.<sup>22</sup> The same is true in the present context. Government

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<sup>22</sup> Connected & On the Go: Broadband Goes Wireless, FCC Wireless Broadband Access Task Force Report, GN Docket No. 04-163, 2005 FCC LEXIS 1488, \*169 (Feb. 2005).

regulation cannot keep pace with the technological advances in location solutions across the wide variety of interconnected VoIP services. Rather, relying on private industry and the standards-development process is the best means of both keeping up with and contributing to the technological developments that will be necessary to deliver E911 autolocation for interconnected VoIP services.<sup>23</sup>

**V. ANY AUTOLOCATION AND ACCURACY MANDATES WOULD REQUIRE SUBSTANTIAL TIME FOR EFFECTIVE IMPLEMENTATION.**

If – notwithstanding technical infeasibility and the substantial costs both to public safety and the development of interconnected VoIP services – the Commission does impose an autolocation and/or accuracy mandate on interconnected VoIP providers, it must recognize that substantial time will be needed for implementation. It must therefore delay the implementation date of these new mandates accordingly. As discussed above, there simply is no single “off-the-shelf” solution ready to be implemented.<sup>24</sup> Time will be needed for basic technology development. In addition, any solution will need to be standardized and inserted in the mass production of products such as ATA, wireless access points, and IP handsets before it can be effective. As a result, in the event the Commission imposes an autolocation mandate on interconnected VoIP service, cycling properly equipped devices into service will take significant time. (VON notes that in no event should an autolocation mandate require changes to devices that are not designed primarily for interconnected VoIP service, which could extend regulation far beyond the scope of the NPRM into desktops, laptops or generally available Wi-Fi routers.)

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<sup>23</sup> S.428 and H.R. 3403, both of which codify the requirement for interconnected VoIP providers to provide E911, would preclude the Commission from mandating the use of any specific technologies. *See* S. 428 (110<sup>th</sup> Cong., 1<sup>st</sup> Sess.); H.R. 3403 (110<sup>th</sup> Cong., 1<sup>st</sup> Sess.).

<sup>24</sup> The comments filed in response to Part A of the NPRM describe the time needed for CMRS implementation. *See, e.g.*, Comments of T-Mobile at 8 (filed July 5, 2007); Comments of Qualcomm at 4-7 (filed July 5, 2007); Comments of AT&T at 6-10, 13-14 (filed July 5, 2007); Comments of CTIA at 4-6 (filed July 5, 2007); Comments of Polaris Wireless at 3-8 (filed July 5, 2007); Comments of TruePosition at 4, 6 (filed July 5, 2007).

Indeed, the CMRS E911 experience counsels caution and realism with respect to any timeframes imposed for implementation. The Commission's *CMRS E911 First Report and Order* envisioned Phase II compliance within five years of a Consensus Agreement filed on the record on February 12, 1996.<sup>25</sup> But this proved to be insufficient time, even for the largest wireless national carriers. Moreover, for smaller carriers – more akin to the size of even the largest interconnected VoIP providers – the Commission provided even longer implementation deadlines.<sup>26</sup> Learning from the CMRS experience, the Commission should take care to adopt a realistic compliance timetable for interconnected VoIP services as well. Otherwise, it will be mandating the impossible.

**VI. IMPOSING UNATTAINABLE AUTOLOCATION OBLIGATIONS WOULD JEOPARDIZE INTERCONNECTED VOIP SERVICES' CRITICAL ROLE IN ROBUST EMERGENCY COMMUNICATIONS NETWORKS.**

The advent of VoIP, including interconnected VoIP services, has ushered in a new era of disaster-proof communications systems. VoIP and other IP-based communications services increasingly serve as the foundation of “survivable” networks that provide reliable and efficient connectivity in emergency situations even when key infrastructure has been disabled or destroyed. Because it operates over decentralized IP networks with redundant paths between any two points, interconnected VoIP service mitigates the dire consequences that can otherwise result from single points of failure. Burdening this emerging, survivable technology with technologically unattainable regulatory obligations will serve only to discourage deployment that

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<sup>25</sup> See *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd. 18,676, 18,688 ¶ 23 (1996) (“*CMRS E911 First Report and Order*”).

<sup>26</sup> See *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Phase II Compliance Deadlines for Non-Nationwide CMRS Carriers*, Order to Stay, 17 FCC Rcd. 14,841, 14,841 ¶ 1 (2002). The largest Tier II CMRS carrier had over 6.6 million subscribers at the time. See *id.* at 14,847 ¶ 22 n. 34.

can provide valuable emergency capabilities, leading to the unintended consequence of reduced public safety.

VoIP communications have proven their resilience repeatedly in emergency situations. Virtually every study of emergency communications performance following the September 11th attacks and Hurricane Katrina concluded that redundant, survivable communications systems are critical in an emergency and that nomadic capabilities greatly enhance the value of those communications systems during disaster response and recovery operations. Upgrading to VoIP-based emergency communications networks that can re-route around infrastructure failures, the studies concluded, would ensure hardier networks and more reliable access to emergency services.

In an assessment issued following the September 11th attacks, the National Academies concluded that the Internet had been far more reliable than other communications networks and that network operators turned to VoIP for communications when traditional networks failed.<sup>27</sup> Likewise, the Katrina Panel, established by the FCC to prepare an independent study of the hurricane's impact on communications, issued a comprehensive report detailing the fragility and failures of traditional networks while lauding VoIP's robust capabilities and inherently redundant network design.<sup>28</sup> In particular, the Katrina Panel reported that some of the storm's devastation –

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<sup>27</sup> See National Academies, Computer Science and Telecommunications Board, *THE INTERNET UNDER CRISIS CONDITIONS: LEARNING FROM SEPTEMBER 11* (2003) (“As a whole, the attacks affected Internet services very little compared with other telecommunications systems. Telephone service was disrupted in parts of lower Manhattan, and cell-phone service suffered more widespread congestion problems. Nearly one-third of Americans had trouble placing a phone call on the day of the attacks. The Internet, however, experienced only a small loss of overall connectivity and data loss, the report says. With phone service impaired, some individuals used instant messages on their wireless handheld devices and cellular phones to communicate instead. Web sites were created to distribute lists of missing persons and other information to help people try to locate loved ones.”).

<sup>28</sup> See Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, Report and Recommendations to the Federal Communications Commission (June 12, 2006) (reprinted as Appendix B to *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*, Notice of Proposed Rulemaking, 21 FCC Rcd. 7320 (2006)).

service failure for more than 3 million wireline customers and key infrastructure disruptions that isolated emergency responders – could have been mitigated, and restoration facilitated, if public safety entities had redundant systems in place.<sup>29</sup>

Nomadic interconnected VoIP services also played a well-documented role during Katrina’s immediate aftermath. When the storm disabled completely the New Orleans city government’s telephone network and all other communications systems, the New Orleans Mayor relied on interconnected VoIP to call to President Bush and to coordinate the efforts of state and local authorities. The Mayor’s staff was able to deploy interconnected VoIP “virtually” by downloading a nomadic interconnected VoIP provider’s software to several laptops and establishing several accounts. For five critical days following the storm, this interconnected VoIP connection provided the Mayor’s only reliable outside contact.<sup>30</sup>

Much more recently, interconnected VoIP again proved its resilience in the face of crisis when the I-35 bridge collapsed in Minneapolis earlier this month and when an earthquake devastated southern Peru last week. In Minnesota, the developer of the municipal Minneapolis Wi-Fi network, only one-sixth deployed at the time, disabled paid log-in requirements to allow unfettered support for data transmission and interconnected VoIP communications – which proved particularly valuable as traditional communications networks in the city were overwhelmed.<sup>31</sup> The Wi-Fi network developer also rapidly deployed additional access points (and wireless video cameras) near the collapsed bridge for use in the rescue work, thereby

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<sup>29</sup> See *id.* at 8, 23.

<sup>30</sup> See Christopher Rhoads, Cut Off: At Center of Crisis, City Officials Faced Struggle to Keep in Touch, WALL STREET JOURNAL (Sept. 9, 2005) (describing the Mayor’s use of Vonage accounts to connect with the outside world) (available at [http://www.von.org/usr\\_files/Katrina%20-%20WSJ%20-%20Cut%20off%20Mayors%20office%20uses%20VoIP%209-9-05.pdf](http://www.von.org/usr_files/Katrina%20-%20WSJ%20-%20Cut%20off%20Mayors%20office%20uses%20VoIP%209-9-05.pdf)).

<sup>31</sup> See Carol Wilson, Muni Wi-Fi Boosted by Post-Disaster Performance, Telephony Online (Aug. 9, 2007) (available at [http://telephonyonline.com/home/news/muni\\_wifi\\_minneapolis\\_080907/](http://telephonyonline.com/home/news/muni_wifi_minneapolis_080907/)).

facilitating connectivity for interconnected VoIP communications and other IP-based communications. The Minneapolis Wi-Fi network's performance during the crisis, and the speed with which it was expanded when necessary, demonstrates the value and durability of mesh Wi-Fi networks powered by IP.

In Peru, the magnitude-8 quake killed hundreds, turned cities to rubble, and completely disabled traditional wireline and wireless voice services. Survivors turned to a nomadic interconnected VoIP service – “the only phone that was working” – to contact the outside world.<sup>32</sup> As in other public safety crises, the resiliency and redundancy inherent in interconnected VoIP services ensured that communications with the earthquake-scarred areas were possible even though all other voice services had been crippled.

The success and promise of interconnected VoIP in the face of actual emergencies demonstrate the technological advances that flow from a flexible regulatory approach that encourages innovation. Indeed, several local communities, states, and federal agencies have adopted interconnected VoIP communications systems since September 11th and Katrina. In Tammany Parish, Louisiana – where Katrina destroyed the tandem serving the PSAP and virtually all other wireline infrastructure – parish officials have converted to an IP-based public safety communications system that, among other things, incorporates network redundancies allowing the PSAP to connect with other PSAPs in the region independent of the 911 tandem. Similarly, the Metropolitan Emergency Services Board in Minneapolis/St. Paul is assessing an IP-based communications solution that would link the 26 PSAPs it manages,<sup>33</sup> and the Arizona

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<sup>32</sup> CNN Transcript, American Morning, At Least 337 Dead in Peru Earthquake (Aug. 16, 2007, 7:00 AM Broadcast) (describing a survivor's reliance on a Vonage account) (*available at* <http://transcripts.cnn.com/TRANSCRIPTS/0708/16/tm.01.html>).

<sup>33</sup> See Marguerite Reardon, 911 Dials IP Technology, ZDNet News (Jan. 13, 2006) (*available at* [http://news.zdnet.com/2100-9595\\_22-6026770.html](http://news.zdnet.com/2100-9595_22-6026770.html)).

state government has implemented interconnected VoIP communications systems in each of its 114 state agencies.<sup>34</sup> In addition, the state of Washington's Emergency Management Division has created a self-contained mobile command post that relies on satellite-connected nomadic interconnected VoIP to provide communications capability on a moment's notice in disaster recovery situations.<sup>35</sup>

Federal agencies recognize the innovative power and public safety potential of interconnected VoIP communications as well. The Department of Homeland Security has recognized the central role that VoIP can play in disaster response and recovery, and it assembled a panel of public safety and industry experts to highlight the critical public safety communications needs that IP-based systems can serve.<sup>36</sup> The Department of Commerce converted to an agency-wide interconnected VoIP system to enhance its ability to make emergency broadcasts similar to a "reverse 911"; depending on the nature of a particular emergency situation, Commerce officials can direct voice, text, or data information to all employees or to specified subgroups. The Environmental Protection Agency, which has adopted an interconnected VoIP system for its Disaster Recovery Center, selected an IP-based solution because it allows the agency to relocate handsets and end-users on the fly, while maintaining reliable communications with redundant back-up capabilities. The Department of Energy, the

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<sup>34</sup> See Dan Tynan, *Arizona Hears the Call of IP Telephony*, *Government Computer News* (Aug. 29, 2005).

<sup>35</sup> See *Placing Cost Effective VoIP Satellite Communication in the Hands of our Emergency First Responders* (Feb. 24, 2006) (*available at <http://news.thomasnet.com/companystory/478586>*).

<sup>36</sup> The Department of Homeland Security roundtable found that IP-based systems have several critical disaster-recovery applications, including: radio system connections (*i.e.*, connect communications center to a mountain top transmitter); radio system to radio system interface (*i.e.*, connecting two or more radio systems via a VoIP link); dispatch interface (*i.e.*, using VoIP to enable dispatchers to communicate with each other); bridging systems (*i.e.*, using VoIP to connect radio systems that do not support direct interconnection); system and subscriber unit interfaces (*i.e.*, communications from radio system to radios, PDAs, wireless laptops, or direct communications among such devices, in the event of infrastructure failure). See Department of Homeland Security, Office for Interoperability and Compatibility, Roundtable on Public Safety Interoperability and Voice Over Internet Protocol (2007) (*available at <http://www.safecomprogram.gov/NR/rdonlyres/F5097180-FD4C-463A-8050-F24489853ED7/0/2ndRoundtableonPublicSafetyInteroperabilityandVoIPmeetingreport.pdf>*).

Census Bureau, the Securities and Exchange Commission, and the Food and Drug Administration have migrated to interconnected VoIP as well. Indeed, even Congress has recognized VoIP's fundamental role in interoperable communications for use in disaster-recovery: legislation signed into law earlier this month modifies NTIA's \$1 billion interoperable communications grant program by clarifying that IP-based solutions are eligible targets for funding.<sup>37</sup>

The IP-based communications industry is justifiably proud of the technology's achievements in the public safety arena, and it continues to make emergency services a key priority. The absence of insurmountable regulatory hurdles has provided industry with the technological flexibility necessary to respond rapidly and effectively and to deliver the best possible emergency service to the public – easily surpassing the capabilities of traditional communications services.

In light of interconnected VoIP's impressive track record and largely untapped potential, the Commission should avoid imposing unattainable regulatory hurdles that would serve only to jeopardize the technology's role in public safety, particularly given the Commission's "core goal" of enabling "first responders to render aid, regardless of the technology or platform employed."<sup>38</sup> Premature application of overly burdensome and technologically infeasible requirements to nomadic and mobile interconnected VoIP services, without a clear assessment of the relative costs and benefits, could both impede current public safety solutions and seriously impair the development of innovative interconnected VoIP alternatives in the market. This, in turn, would slow the deployment of technologies that may have public safety advantages.

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<sup>37</sup> See Pub. L. No. 110-53, Implementing Recommendations of the 9/11 Commission Act of 2007, § 2201 ("Nothing in this section shall be construed or interpreted to preclude the use of funds under this section by any public safety agency for interim or long-term Internet Protocol-based interoperable solutions.").

<sup>38</sup> NPRM ¶ 6.

Accordingly, the Commission should refrain from making any decision about whether to impose autolocation and accuracy requirements until it has had an opportunity to assemble a full record assessing both the benefits and costs of such requirements – including the impact on the deployment of more survivable interconnected VoIP services.

**VII. THE COMMISSION SHOULD CONVENE A TECHNICAL ADVISORY COMMITTEE TO REVIEW INTERCONNECTED VOIP SERVICES AUTOLOCATION ISSUES.**

To create the proper, robust, science and technology-based record for evaluation, the Commission should convene a technical advisory committee (“TAC”) to examine autolocation for interconnected VoIP services. Because interconnected VoIP services cover a wide array of configurations and present their own unique technological challenges, the VON Coalition believes that this new TAC should focus exclusively on interconnected VoIP. Thus, the TAC would parallel, but be separate from, the technical advisory committee proposed by Commissioner Adelstein, the National Emergency Number Association, and many others to address accuracy requirements for CMRS.<sup>39</sup>

The Commission should ensure that the proposed TAC has sufficient time to complete its work. Unlike the CMRS industry, which has already compiled a valuable collection of information through the work of NRIC VII and ESIF, the interconnected VoIP industry lacks a substantial body of work on E911 autolocation. Accordingly, the proposed TAC’s charter for interconnected VoIP services should run significantly longer than the one-year timeframe that has been proposed for a wireless E911 TAC.<sup>40</sup>

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<sup>39</sup> See, e.g., Comments of NENA at 5 (filed July 5, 2007); Comments of AT&T at 3-6 (filed July 5, 2007); Comments of CTIA at 6-7 (filed July 5, 2007); Comments of the Rural Cellular Association at 8-10 (filed July 5, 2007).

<sup>40</sup> See, e.g., Comments of AT&T at 4 (filed July 5, 2007); Comments of the Rural Cellular Association at 9 (filed July 5, 2007).

The proposed TAC should have a membership drawn from all stakeholders – including network operators, equipment manufacturers, interconnected VoIP service providers, public safety representatives, and consumers. The collaborative work of a representative group would provide the Commission with an accurate and objective assessment of the technological feasibility of complying with the proposed regulations and an analysis of the benefits and costs of doing so.

Among other issues, the Commission should direct the proposed TAC to develop a record and then report on the following matters, each of which is critical to the regulatory analysis the Commission must undertake:

- What autolocation technologies are technically feasible for which types of interconnected VoIP services, and in what settings or environments?
- How often, and for what types of interconnected nomadic or mobile VoIP services, are customer-provided registered locations inadequate? How often would currently available autolocation technologies provide more accurate information to PSAPs? How often would customer-provided registered locations provide more accurate information?
- Which interconnected nomadic or mobile VoIP services, if any, would see a significant improvement in the accuracy of information provided to PSAPs as a result of deploying autolocation technologies in place of customer-provided registered locations? What is the appropriate definition of a “significant improvement” (*e.g.*, results that are at least  $X$  meters more accurate for at least 5 percent of 911 calls)?
- What associated accuracy parameters are technically feasible, and according to what type of testing methodologies?
- What are the projected costs of implementing an E911 autolocation solution for those interconnected nomadic or mobile VoIP services, if any, that would see a significant improvement in accuracy? Would an autolocation obligation discourage the provision of these services and, if so, to what extent and in what areas?
- What are the operational impediments to deploying autolocation for interconnected nomadic or mobile VoIP services, if any, that would see a significant improvement in accuracy? How much time would be reasonably necessary to phase in a requirement to deploy autolocation capabilities?

- How often, and in what contexts, have interconnected VoIP services been combined with other voice services (*e.g.*, CMRS or landline) such that the consumer will have the ability to place an automatically located E911 call via the other service?
- How often are laptops and other “softphone” platforms used to place 911 calls?
- How can interconnected VoIP service providers feasibly handle calls for which they may have no location information, or only the coarsest (*e.g.* metropolitan area) location information? How can calls be delivered to PSAPs in the rare, but possible, circumstance in which an interconnected VoIP provider or third party connectivity provider lacks a connection to the relevant selective router?

Of course, the proposed TAC may need to reorient its analysis based on its findings, and additional areas of inquiry may emerge. All the same, the VON Coalition believes that the Commission should have the benefit of the TAC’s full report on the issues identified above before making regulatory decisions that will have profound effects on public safety communications, and on the availability of and innovation around interconnect VoIP services.

**VIII. THE COMMISSION SHOULD CONSIDER OTHER AVENUES THAT CAN FOSTER IMPROVED E911 CAPABILITY FOR INTERCONNECTED VOIP SERVICES.**

The VON Coalition also urges the Commission not to focus on autolocation and accuracy to the exclusion of other critical aspects of creating an overall functioning E911 system. As the National Emergency Number Association (“NENA”) pointed out in its Part A comments, there are still 75 percent of PSAPs that do not have wireless Phase II capability – which also means that they are less likely to have the capability to handle interconnected VoIP E911 calls for “portable” or “mobile” services. Those PSAPs that have not been able to upgrade to handle interconnected VoIP calls need to be able to do so. PSAPs and interconnected VoIP providers still do not have equivalent liability protection to traditional carriers, which continues to make some PSAPs leery of accepting interconnected VoIP E911 calls. Other examples of important issues affecting the overall implementation of E911 for interconnected VoIP are:

- *Selective Routers to Which There Are No Available Connections.* As VON and NENA explained in their Joint Petition for Clarification, there are selective routers for which a dedicated connection may never economically make sense and may never be provisioned.<sup>41</sup> No third party provider today can connect an interconnected VoIP provider to 100 percent of selective routers nationwide. In these instances, interconnected VoIP providers cannot deliver E911 as prescribed by the Commission's rules.
- *Underequipped PSAPs.* No matter how location information is collected, many PSAPs are still not equipped with the dynamic data update capability necessary to handle or recognize autolocation information received from all interconnected VoIP numbers (*i.e.*, from a non-native nomadic VoIP subscriber.) While this limitation is not covered in the NPRM, it is a threshold barrier that will preclude seamless and robust emergency access capabilities regardless of the requirements of the Commission's autolocation information rules.<sup>42</sup>
- *Location Reference Service.* As explained above, developing an autolocation solution for nomadic and mobile interconnected VoIP services presents a profound technological challenge because the vast majority of interconnected VoIP providers do not operate radio networks that they can use for autolocation purposes. The Commission should consider whether a location reference service, similar to GPS but with greater indoor capability, could be provided, perhaps by the 700 MHz Public Safety Broadband Licensee as that network is built out to over 99 percent of the country.
- *Trial and Test Service Offerings.* The Commission should also confirm that any autolocation rules it adopts for nomadic or mobile interconnected VoIP services do not apply to services offered on a trial basis or to test new service offerings.<sup>43</sup> This would allow providers to fine-tune service offerings early in the development stage and to implement full emergency access capability in the event of commercial roll out. In these situations, the interconnected VoIP service provider would instruct the consumer about the emergency access limitations of the service and instruct the consumer not to disconnect existing wireline or CMRS connections.
- *Transitioning to an IP-based E911 system.* As has often been observed, today's E911 network is architected on network technologies from the 1950s and 1960s. Moving to an IP-based E911 network will not only make it easier to deliver E911 calls, but will open up a host of other possible uses for E911 connectivity.

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<sup>41</sup> See VON-NENA Petition at 6-8.

<sup>42</sup> See *id.*; see also T-Mobile Petition.

<sup>43</sup> See VON-NENA Petition at 10.

Each of these issues is closely intertwined with the proposals and overall goals presented in the NPRM. Several of them highlight the fact that interconnected VoIP service E911 requires input and cooperation from a broad array of actors, not just the service providers and equipment manufacturers. VON therefore urges the Commission to consider these issues carefully when assessing interconnected VoIP services' role in emergency communications. In particular, the Commission should take action promptly on the pending petitions for clarification that relate to several of these issues.<sup>44</sup>

### CONCLUSION

The VON Coalition strongly supports the Commission's objective – enhancing public safety and ensuring that the public can use 911 and E911 to summon help. However, it is just not possible at this time to implement autolocation requirements at the CMRS accuracy level across the broad range of interconnected VoIP services. Indeed, as the Part A comments show, it is not even possible for CMRS carriers to meet those requirements at every PSAP. Therefore, imposing autolocation and CMRS accuracy requirements on interconnected VoIP services would only create further impediments to their development and deployment. This would be a truly counterproductive result because interconnected VoIP services have proven to be survivable and robust even in times of high network stress and failure – such as the September 11th attacks, Hurricane Katrina, and the Minneapolis bridge collapse.

As with CMRS accuracy requirements, the Commission should take the time to conduct a thorough examination of potential interconnected VoIP autolocation technologies, along with the benefits and the costs of autolocation and accuracy requirements. This evaluation will allow the

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<sup>44</sup> See, e.g., *VON-NENA Petition*; *T-Mobile Petition*. The Commission has acknowledged that such petitions are pending and stated that it would take action in this docket (WC Docket No. 05-196). See *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 8064, 8114 ¶ 136 (2007).

Commission to determine whether to impose a mandate and, if it does, to ensure that it would lead to a meaningful increase in public safety without creating a harmful disincentive to new deployments or innovative services. Accordingly, the Commission should charter a Technical Advisory Committee – comprised of public safety organizations, interconnected VoIP service providers, manufacturers of interconnected VoIP equipment and platform devices, and consumers – to specifically evaluate autolocation and accuracy for interconnected VoIP services.

Taking action without first analyzing the existing and potential technologies and the associated benefits and costs could produce the least beneficial result: regulatory barriers that curb the future deployment of a uniquely valuable service that has proved its reliability and flexibility on several occasions in the past. The Commission should therefore refrain from making a possibly harmful decision in the absence of a full record – especially in a critical area like public safety, where the *right* regulations are so important.

Respectfully submitted,

/s/

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