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

In the Matter of	)	
	)	
Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications	)	PS Docket No. 11-153
	)	
Framework for Next Generation 911 Deployment	)	PS Docket No. 10-255

REPLY COMMENTS OF THE VOICE ON THE NET COALITION

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Glenn S. Richards
Executive Director
2300 N Street, NW
Washington, D.C. 20037
(202) 663-8215
glenn.richards@pillsburylaw.com

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The Voice on the Net Coalition (VON)[1] hereby submits this reply to initial comments filed in response to the Notice of Proposed Rulemaking (NPRM) in the above-referenced proceeding.[2] VON acknowledges the efforts of Commission staff for the hard work that goes into this very important topic. VON recognizes that the successful transition to the Next Generation 911 (NG 911) will have countless benefits for consumers and emergency service providers, and VON members are leaders in the development of IP-based products, services and applications that will eventually enable the use of voice, text, and imaging in emergency communications.

I. SUMMARY

VON and its members have worked closely with the National Emergency Number Association ("NENA") and other standards development organizations to ensure that the transition to NG 911 is feasible and as seamless as possible. To accomplish this goal, the

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[1] The VON Coalition works to advance regulatory policies that enable Americans to take advantage of the potential of IP enabled communications. Its members – AT&T, Broadvox, BT, Cloud Communications Alliance, Google, iBasis, Microsoft, Nextiva, Skype, Vonage, and Yahoo – are developing and delivering voice and other communications applications that may be used over the Internet.

[2] In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, *et al.*, *Notice of Proposed Rulemaking*, FCC 11-134 (Sep. 22, 2011) ("NPRM"); Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications; Framework for Next Generation 911 Deployment, 76 Fed. Reg. 63257 (Oct. 12, 2011).

transition from the legacy 911 architecture to new, IP-enabled networks must involve a step-by-step process with involvement by all stakeholders. Broad participation by regulatory bodies, telecommunications service providers, emergency service providers and standards organizations will ensure that the 911 system is functional, uniform, practical and serving the daily needs of consumers and emergency service providers.

VON urges the Commission to take a measured approach with respect to standards development for NG 911. Regulator-imposed deadlines and timelines are not likely to expedite the process, which is best left to industry experts. And short-term or interim obligations are also a bad idea because they would divert time and resources away from developing long-term solutions. The Commission should instead focus on PSAP readiness for NG 911 development.

II. DISCUSSION

In the NPRM, the Commission thoughtfully considers both short-term and long-term mechanisms for implementing text-to-911 capabilities, and creating functionality for photographic, video and other visual communications in a NG 911 system. Undoubtedly, text-to-911 functionality will benefit all consumers and particularly, as the Commission notes, those with disabilities. It is important to develop text-to-911 quickly, but also responsibly. Significant technological and operational work is needed to achieve interoperability with NG 911.[3]

Commenters generally agree on two main points with respect to the transition to NG 911. First, it is a very complicated and expensive process,[4] particularly if the current

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[3] *See, e.g.*, NENA Baseline Next Generation 9-1-1 Description, *available at* http://www.nena.org/resource/resmgr/Docs/NENA_Baseline_NG9-1-1.pdf (describing the minimum technological capabilities needed for NG 911).

[4] *See, e.g.*, Comments of Motorola at 4; Comments of MetroPCS at 6; Comments of Level 3 at 12.

PSAP structure is maintained. Second, the Commission must not impose requirements beyond what the industry and the 911 infrastructure are capable of technically and economically.[5] As VON has urged before in the initial phase of this proceeding, NG 911 deployment should be as simple as possible and addressed in a methodical fashion, first ensuring that voice telecommunications and interconnected voice over Internet protocol (VoIP) communications are functional on the new network, before text and other "secondary" communications (e.g. photographic, video, etc.) are addressed.[6]

The VON Coalition argues specifically that a) industry experts should pave the way for NG 911; b) the Commission should not extend short-term 911 obligations to IP-based data services and messaging; c) an E911 Technical Advisory Group ("ETAG") should be established for resolving the location availability and accuracy issues associated with locating applications that connect to PSAPs; d) to the extent the Commission seeks to explore issues raised therein, it should request comments on the Emergency Access Advisory Committee's ("EAAC") recommendations; and e) the Commission should not adopt Real-Time Text ("RTT") as an accessibility solution.

A. Voluntary Standards Developed by Industry Experts Should Pave the Way for NG 911 Development

The Commission asks whether it should impose deadlines or timetables with regard to standards development.[7] The Commission should not take a regulatory stance on standards development. Instead, the Commission should encourage industry actors, PSAPs and emergency service providers to work together in developing standards and an implementation timeline. These entities are best situated to develop a consensus-based

[5] *See, e.g.*, Comments of Rural Cellular Association at 10 (". . . the Commission should instead take this opportunity to proceed with goals grounded in market realities.").

[6] *See* Comments of the Voice on the Net Coalition, PS Docket No. 10-255 (filed Feb. 28, 2011).

[7] NPRM at ¶ 89.

and workable NG 911 architecture that, with the support of the Commission, can be rolled-out in a reasonable timeline and ensure the greatest reliability and uniformity of text-to-911 and other NG 911 communications.[8] Much good work has been, and will continue to be, developed on a voluntary basis within the standards bodies responsible for these critical communications.[9]

There is broad consensus among commenters that the Commission should rely upon industry experts to develop NG 911.[10] The Commission should be careful not to repeat the approach taken in the wireless E911 docket, where rules and deadlines were waived and delayed repeatedly. This experience illustrates that arbitrary timelines are costly and unnecessary. But the Commission should also resist the urge to rely heavily on the views of one particular technology or one particular vendor.[11] Rather, the Commission would benefit from the input of a broad set of industry participants through industry working groups and voluntary standards.

The timelines and benchmarks the Commission proposes to adopt are premature. The standards organizations tasked with addressing NG 911 issues are hard at work and the establishment of government-imposed deadlines will not hasten the process.[12] Given

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[8] *See* NPRM at ¶ 83 (asking what role the Commission should play in developing standards and implementation timelines).

[9] *See* Comments of Sprint Nextel at 20 ("Standards organizations have been working for several years on developing appropriate standards for NG9-1-1, and these efforts continue to move forward without the imposition of a mandatory timetable."); *See also* Comments of ATIS at 19 (stating that there is no need for Commission action to align the standards efforts of the relevant organizations).

[10] *See, e.g.*, Comments of APCO at 3-4, Comments of NENA at 3-4; Comments of Sprint Nextel at 20; Comments of Verizon and Verizon Wireless at 6; Comments of ATIS at 17.

[11] *See* ATIS Interim Non-Voice Emergency Services (INES) Report and Recommendations (filed Dec. 20, 2011) at 6 (noting that ATIS INES is not focusing on specific vendor implementations and will not endorse a particular vendor implementation).

[12] *See id.*

the numerous technical and operational challenges these organizations face, a better role for the Commission would be to monitor their progress.

B. Short-Term Requirements and Premature Regulation of Industry Would Impede Comprehensive NG 911 Development

The Commission should not require adoption of interim solutions that involve retrofitting IP technology to the legacy 911 network.[13] These solutions may not be possible in some instances and would likely divert human and financial resources from development of new technological solutions.[14] The benefits of such a mandate would not outweigh the costs.[15]

Instead, the Commission should encourage PSAPs and communications service providers to develop the infrastructure to support long-term NG 911 innovation. PSAPs must have the capabilities to receive and interpret IP communications and new forms of media, otherwise regulation of and compliance by communications providers will be meaningless. Coordinated development is preferable because if industry gets too far ahead with NG 911 solutions, PSAPs might not be prepared. In one interesting example of coordinated development, the University of Maryland has already developed a software application downloadable by students or university employees that allows for real-time video, text and image streaming between the university's PSAP and the application user.[16]

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[13] *See* NPRM at ¶¶ 4, 34; Comments of CTIA at 6-11.

[14] *See* Comments of 4G Americas at 9; Comments of AT&T at iii, 6 (noting that Sweden took an interim approach, which took years to develop and produced results far short of the goals set for truly next generation emergency communications).

[15] *See* Comments of Blooston Rural Carriers at 4.

[16] *See* Lee Tune, *University of Maryland M-Urgency App Streams Emergency Information*, UMD News Desk (Jan. 25, 2012).

A recent cost study by the Commission illustrates that, in general, PSAPs have far to go before they can connect to the NG 911 network.[17] The study finds that the cost of upgrading PSAP connectivity over a ten-year period will likely range from about $1.44 billion to $2.68 billion.[18] Thus, state governments in general will need to bear significant transition costs over a significant period of time to connect their PSAPs. Industry should not be required to comply with mandates to bring networks into compatibility with NG 911 when it is uncertain when, how, and to what extent PSAPs will be able to receive NG 911 communications.[19] Even so, VON supports smart efforts to ensure the end result is achieved as quickly as possible. Therefore, VON echoes AT&T's recommendation to encourage the creation of Advanced Regional 911 Centers in order to cut down on transition costs and expedite deployment on the PSAP side.[20]

The Commission is right to encourage "coordination, cooperation and planning" in order to ensure that there is funding for the transition; that regulatory impediments are removed; and that technological changes are implemented.[21] As T-Mobile points out, the Commission should avoid the kind of fragmented implementation that characterized the E911 transition, where mandates were placed only on wireless carriers.[22] Rather, the Commission's handling of the Commercial Mobile Alert System (CMAS) development is

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[17] Federal Communications Commission, White Paper: A Next Generation 911 Cost Study: A Basis for Public Funding Essential to Bringing a Nationwide Next Generation 911 Network to America's Communications Users and First Responders, Public Safety and Homeland Security Bureau (September 2011) *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-309744A1.pdf.

[18] *Id.* at 7, 9.

[19] *See, e.g.*, Comments of TIA at 11. VON agrees with the comments of CTIA that PSAPs should signal readiness with NG 911 through a statewide certification process. Comments of CTIA at 15.

[20] Comments of AT&T at vi, 19.

[21] *See* NPRM at ¶¶ 92-100; *see also* NENA, A Policy Maker Blueprint for Transitioning to the Next Generation 9-1-1 System: Issues and Recommendations for State and Federal Policy Makers to Enable NG9-1-1 (September 2008) *available at* http://www.nena.org/resource/resmgr/ng9-1-1_project/ng9-1-1policymakerblueprintt.pdf.

[22] Comments of T-Mobile at 5.

a better model for NG 911. In adopting CMAS regulations, the Commission permitted carriers to elect to participate.[23] From a carrier's perspective, competitive pressures drove them to participate instead of mandates insisted on by other stakeholders. Coordinated innovation by PSAPs and by state and local regulators, as well as telecommunications service providers and national actors, is an indispensible part of transitioning to NG 911.

Until a reliable and uniform system is operational, public education will continue to be a critical component of the Commission's efforts to advance NG 911.[24] VON and its members have long advocated for educating consumers about how best to reach 911 and limitations on 911 services, so that individuals can quickly and reliably access emergency services. Further complicating matters for consumers, technical capabilities will vary from PSAP to PSAP. VON supports a Commission-led public awareness campaign about NG 911, once those capabilities begin to become available.

C. An E911 Technical Advisory Group Should be Established to Resolve Location Availability and Accuracy Issues Associated with Locating Applications Connecting to PSAPs

The Commission asks for comment on whether it should adopt any incentives for the development of NG 911 solutions or if it should wait until standards are more universally adopted.[25] VON recommends that the Commission wait until solutions are more universally adopted, as industry activity would be the best path forward. For example, an E911 Technical Advisory Group ("ETAG") is needed to solve the

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[23] *See* Comments of T-Mobile at 8.

[24] *See* Comments of TIA at 12; Comments of Texas 9-1-1 Alliance at 14; Comments of PSCO at 7; Comments of AT&T at iii.

[25] NPRM at ¶ 89.

outstanding location problems.[26] The Commission will likely be unable to resolve the location accuracy issues inherent in an IP environment without significant input from industry experts from all parts of the Internet ecosystem. Neither the Commission nor existing standards organizations have the technological breadth or depth to address the complexities involved in resolving these issues. Therefore, a new ETAG consisting of broadband network providers, application providers and others should be convened to appropriately address the location of callers using IP-based services.

D. Overlap with CVAA and EAAC

The Commission seeks comment on the relationship between this proceeding and the implementation of Twenty-First Century Communications and Video Accessibility Act ("CVAA") and the work of the EAAC.[27] Since the EAAC report was included in the NG 911 record (Docket No. 10-255) in December, to the extent that the Commission seeks to explore issues raised in the report or pursue rules as an outgrowth of the report, VON supports Verizon's request that the Commission seek comment on it.[28] VON appreciates EAAC's hard work in bringing diverse stakeholders together to address these issues. However, interested parties should have the opportunity to respond to its recommendations because the report represents only a handful of industry participants.

Affected parties have varying views on the issues addressed in the report, so the Commission would have an incomplete record if many of these important views go unexpressed. Even many of the EAAC participants raised concerns with the report, but because these issues went unresolved, they were not included in the report. As a result,

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[26] *See* CSRIC, Working Group 4C, Technical Options for E9-1-1 Location Accuracy, Final Report at 60; Comments of TIA at 13-16; Comments of APCO at 3-4.

[27] NPRM at ¶ 114.

[28] Comments of Verizon at 28-30.

the recommendations are presented without the appropriate context. In addition, a number of the recommendations go beyond the Commission's authority under the CVAA.[29] In light of these considerations, the Commission cannot simply adopt the EAAC recommendations without a full and fair opportunity for all interested parties to comment.

Conceiving of RTT as the "equivalent" of voice, *i.e.*, as the accessibility solution for voice communications, rather than simply as a text-based form of communication, will limit the potential commercial deployment of RTT and risk the introduction of security vulnerabilities. Therefore, the Commission should not adopt the EAAC recommendations to the extent that they would require providers to imbue all RTT products with disability access.[30]

E. The Commission Should not Adopt RTT as an Accessibility Solution for Voice Communications

Although RTT may someday be an option for reaching emergency services personnel in a fully deployed NG 911 network, RTT as designed in the RFC 4103 standard has significant limitations as an accessibility solution.[31] First, as a general observation, VON supports Neustar's contention that special purpose mechanisms for people with disabilities do not work well as accessibility solutions; rather, general

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[29] *See, e.g.*, Emergency Access Advisory Committee (EAAC) Report and Recommendations, at 28-29 (filed Dec. 12, 2011) ("Recommendation T1.2: Interim Mobile Text Solution: . . .") (EAAC Report); *see also* Comments of AT&T at iv, 21 (stating that the Commission has failed to articulate either direct or ancillary jurisdiction over NG 911 services).

[30] For example, the EAAC report recommends that the FCC adopt requirements that ensure the quality of video, text and voice is sufficient to provide usability to individuals with disabilities. To the extent that this recommendation would require such a minimum level of quality for all types of products, VON Coalition disagrees. *See* Comments of the Voice on the Net Coalition, *In the Matter of Accessible Mobile Phone Options for People Who are Deaf, Blind, or Have Low Vision*, CG Docket No. 10-45, at 7 (filed Apr. 25, 2011); EAAC Report at 23.

[31] *See* ATIS Interim Non-Voice Emergency Services (INES) Report and Recommendations (filed Dec. 20, 2011) at 41-42 (describing the challenges of a system where RTT messages are converted to TTY).

purpose mechanisms are preferable. As Neustar notes, "[i]t is not that line-at-a-time IM is better than RTT; rather it's that everyone uses line-at-a-time. People with disabilities will get more out of using what everyone else uses than they will from a mechanism created just for them."[32] This line of reasoning suggests that RTT, if it is to be supported at all, should be introduced as a feature of Instant Messaging ("IM")—rather than VoIP—so it can enable backward compatibility with mainstream IM services and standards and, thus, be part of a tool used by "everyone" rather than a special-purpose one-off functionality for persons with disabilities.

Second, in the transitional period to NG 911, RTT as an emergency accessibility solution is particularly problematic because RTT presumes interaction with PSAP TTY/TDDs. However, with the severe decline in TTY/TDD usage for emergency calling generally, it has been documented that many PSAPs currently are handling only a small number of TTY/TDD calls.[33] Given these circumstances, many PSAPs do not have the physical and human infrastructure necessary to handle RTT-to-TTY/TDD translation and cannot necessarily be assumed to have the capability to operate at a much higher level of usage. As a result, before proceeding with the RTT to TTY/TDD gateway approach, it would be important to assess the current level of TTY/TDD usage for 911 calling, as well as PSAP operational readiness for TTY/TDD calling.[34]

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[32] Comments of Neustar at 7.

[33] *See* Comments of Neustar at 6, n.7.

[34] *See* Comments of 4G Americas at 6 ("If the Commission were to mandate standalone RTT for emergency services, network operators would have to undertake additional development and testing efforts before deploying that service").

Moreover, during a transition period where RTT—as defined in the RFC 4103 standard—is conveyed using session initiated protocol ("SIP")[35] trunking services rather than direct connection to the PSAP, it will encounter incompatibilities with carrier infrastructure, such as support within Session Border Controllers ("SBCs"). Therefore, a RTT solution is not appropriate for supporting calls to PSAPs during the transition period to NG 911.

Finally, it is rare for the Commission to mandate a particular technological standard, and in the case of RTT it would be particularly bad public policy for the Commission to mandate a SIP-based RTT standard. In the NPRM's Technical Background section, the Commission discusses the various protocols that support IP-based messaging, including SIP.[36] SIP-based text messaging runs counter to the direction of the industry today. While most VoIP functionality today is deployed using SIP, consumer instant messaging services are adopting alternatives to SIP-based text messaging. Enterprise unified communications vendors who initially supported SIP-based instant messaging have now added support for other standards and are increasingly emphasizing those alternatives. In addition, government agencies—including parts of the U.S. government (*e.g.*, the Defense Information Systems Agency) have, through their procurement policies, required text messaging standards that are not SIP-based. Therefore, any obligation to deploy an approach that runs counter to trends in both industry and government is bad public policy and a poor use of industry and government resources. If there is a need to support RTT, the better course of action is for the

[35] SIP is an IETF application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants.

[36] NPRM at ¶ 29.

Commission to work with industry to leverage existing messaging trends to enable more widespread—and faster—deployment of RTT functionality.

There are also significant security risks associated with the RFC 4103 RTT standard. To avoid the potential for SPAM, IP-based text messaging features typically incorporate consent mechanisms (*e.g.*, approval of presence subscription prior to allowing an IM to be displayed) or include per-message charges sufficient to discourage those who would send SPAM. If RFC 4103 is implemented in general use without per-message charges or presence integration, there is a significant potential for introduction of SPAM over RTT. In contrast, if RTT can be integrated as part of existing text messaging systems, providers and users can avoid this problem by leveraging the existing consent mechanisms for the RTT feature.

CONCLUSION

The successful transition from the circuit-switched technologies of the legacy 911 system to an IP-based NG 911 will be a watershed event in the future of 911 communications. The VON Coalition looks forward to working with the Commission and other stakeholders to develop standards, technologies, and implementation plans that will best enable this success and serve the public interest.

Respectfully submitted,

VOICE ON THE NET COALITION

/s/

Glenn S. Richards
Executive Director
2300 N Street, NW
Washington, D.C. 20037
(202) 663-8215
glenn.richards@pillsburylaw.com

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