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 COMCAST CORPORATION

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Comcast Corporation and its affiliates ("Comcast") hereby submit these reply comments in response to the Further Notice of Proposed Rulemaking ("*Further Notice*" or "*FNPRM*") released by the Federal Communications Commission ("FCC" or "Commission") in the above-captioned proceeding.[1] Due to the technical complexities and the likely significant costs of implementing a text-to-911 solution for interconnected text messaging providers, Comcast urges the Commission to refrain from imposing compliance deadlines on such providers until solutions actually have been developed and tested and are commercially available.

I. INTRODUCTION AND SUMMARY

Access to 911 and enhanced 911 services is critically important to U.S. consumers, including the growing number of individuals and businesses that rely heavily on text messaging services. Comcast, therefore, supports the Commission's goal of

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[1] *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications; Framework for Next Generation 911 Deployment*, Further Notice of Proposed Rulemaking, 27 FCC Rcd 15659 (2012).

promoting access to emergency services across multiple platforms and operating systems, including by providers of interconnected text messaging services like Comcast.

Most of the industry's 911 efforts in the text messaging area to date, however, have focused on developing an interim text-to-911 mechanism for commercial mobile radio service ("CMRS") providers. In contrast, very few resources have been devoted to developing a mechanism that provides users of an interconnected text message service a reliable text-to-911 option. As a result, interconnected text providers face numerous technical challenges in developing and implementing a workable text-to-911 feature for their services. Further, each of the Commission's three proposals for text-to-911 services for interconnected text providers will require further development and resolutions to specific technical problems.

In short, much work remains to be done to develop a dependable text-to-911 functionality for interconnected text providers. And the costs of implementing such a functionality also must be considered. Until the record in this proceeding demonstrates, with clear and convincing evidence, that the necessary mechanisms have been tested and are commercially available, the Commission should refrain from establishing text-to-911 compliance deadlines for interconnected text messaging services.

II. THE RECORD DEMONSTRATES THAT INTERCONNECTED TEXT MESSAGE PROVIDERS FACE SIGNIFICANT TECHNICAL CHALLENGES IN DEVELOPING A RELIABLE TEXT-TO-911 SOLUTION.

The communications industry, in concert with the public safety community, has made significant progress over the past decade in developing 911 and automatic location identification ("ALI") solutions that enhance consumer access to public safety answering

points ("PSAPs").[2] To date, however, industry groups have concentrated their text-to-911 research and other resources on developing an interim solution for CMRS providers.[3] Indeed, "unlike carriers who may have been working at this issue for a notable portion of time, this issue is relatively new to interconnected text providers."[4]

Moreover, many of the technical challenges that interconnected text message providers are likely to face differ from those the industry has been working to solve for facilities-based wireless providers. For example, interconnected text applications support

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[2] *See, e.g., Leveraging LBS and Emerging Location Technologies for Indoor Wireless E9-1-1*, Report of the Communications Security, Reliability and Interoperability Council III ("CSRIC"), Working Group 3, E9-1-1 Location Accuracy (March 14, 2013), http://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRIC_III_WG3_Report_March_%202013_LeveragingLBS.pdf; *Public Safety and Homeland Security Bureau Releases Agenda for Workshop on Upcoming Test Bed to Improve Indoor Location Accuracy for Wireless 911 Calls*, Public Notice, 27 FCC Rcd 12346 (2012); *Outdoor Location Accuracy*, Final Report of CSRIC Working Group 3, E9-1-1 Location Accuracy (March 14, 2012), http://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRIC-III-WG3-Final-Report.pdf.

[3] *See, e.g.,* Alliance for Telecommunications Industry Solutions and Telecommunications Industry Association, *Joint ATIS/TIA Native SMS to 9-1-1 Requirements and Architecture Specification*, J-STD-110, at 1 (2013), http://global.ihs.com/search_res.cfm?RID=TIA&INPUT_DOC_NUMBER=J-STD-110 ("Th[e] scope of this Standard is limited to text messaging to 9-1-1 emergency services for wireless operator native Short Message Service (SMS) capabilities. The support of text messaging to 9-1-1 emergency services for third-party over-the-top SMS-like texting applications is beyond the scope of this Standard. Multimedia Messaging Service (MMS) and Rich Communications Services (RCS) to 9-1-1 are for further study.") ("ATIS/TIA Native SMS to 9-1-1 Standard"); Report of Emergency Access Advisory Committee (EAAC) Subcommittee 1 on Interim Text Messaging to 9-1-1, PS Docket No. 10-255, at 8, 23 (March 1, 2013, filed March 7, 2013) ("Utilizing the existing standards-based SMS network architectures and capabilities currently offered by wireless service providers to wireless subscribers, with minimal modifications or alterations, would be the most technically and economically feasible way to ensure rapid deployment of SMS-based text messaging to 9-1-1.") ("EAAC Text-to-911 Report").

[4] Comments of the Telecommunications Industry Association at 11. (Unless otherwise indicated, all comments referenced herein were filed in PS Docket No. 11-153 on March 11, 2013.)

communications capability across multiple platforms. Consequently, the industry will need to develop and implement solutions that work reliably over multiple hardware platforms, operating systems, and operating system versions.

The Commission appears to have recognized one technical challenge for interconnected text message providers: there is no uniform set of technologically-feasible, cost-effective solutions for automatically determining the location of users that send text messages using inherently nomadic interconnected text applications. There is currently, for instance, no reliable mechanism that enables a service provider to determine the location of a text messaging customer that uses Wi-Fi on a smartphone or laptop to transmit text messages.[5] Thus, the Commission's proposed rules properly would limit an interconnected text message provider's obligation to provide 911 access to "time periods when the mobile device is connected to a CMRS network."[6]

While the National Emergency Number Association ("NENA") claims that "routing and location determination . . . capabilities are either already available [to interconnected text message providers] or can be made available on a short timeframe,"[7] NENA cites no source in making this assertion and provides no information regarding a specific instance in which these capabilities are "already available." Instead, NENA notes that: (1) "interconnected text messaging providers already exchange text messages

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[5] As parties in the record aptly have noted, the result of these limited location determination capabilities likely will be consumer confusion. Put simply, an interconnected text message customer may be able to obtain access to a PSAP when they operate a messaging application on a smartphone, but lack access when they operate the same application on a Wi-Fi-only tablet. *See, e.g.,* Comments of TechAmerica at 11 ("TechAmerica Comments").

[6] *FNPRM*, Appendix B at section 20.18(n)(6)(b).

[7] Comments of the National Emergency Number Association at 7.

with integrated text messaging providers"; (2) the "service processes of . . . interconnected text [originating service providers ("OSPs")] . . . involve *some* routing and interconnection interface and protocol to permit the delivery of texts to integrated text OSPs . . . or other interconnected text OSPs"; and (3) messages "originated by interconnected OSP subscribers can . . . be accompanied by additional data payloads," such as the location of the subscriber's device.[8] These assertions are factually accurate statements regarding the means and methods by which text messages currently are exchanged. Nonetheless, these statements shed no light on whether interconnected text message services can provide reliable text-to-911 service. For example, the fact that a text message can be "accompanied by additional data payloads" does not mean that the interconnected text message service provider has access to reliable customer location information that can be included with the message.[9]

Moreover, contrary to some claims, the fact that third-party vendors offer location-based services for use with voice services, such as VoIP, does not establish that those vendors offer location information that can be used with an interconnected text-to-911 service.[10] So far as Comcast is aware, third-party vendors have undertaken text-to-

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[8] *Id.* at 7-8.

[9] Similarly, parties such as Bandwidth claim that "the text-to-911 transition for [over-the-top] applications hosted on a device that has a global positioning satellite ('GPS') chip should be relatively straightforward." Comments of Bandwidth.com, Inc. at 8. Such claims ignore the fact that users can easily disable GPS functionality and disregard concerns about the reliability of GPS when used indoors. *See, e.g.,* TechAmerica Comments at 10-11; Comment of the Voice on the Net Coalition at 9 ("VON Coalition Comments").

[10] *See, e.g.,* Comments of the Boulder Regional Emergency Telephone Service Authority at 9 ("Third party text-to-9-1-1 and emergency services providers including over-the-top application providers may rely upon . . . 'Intermediate Providers' [such as Intrado, TCS, and Bandwidth] for the network and connections to the selective router and

911 trials for CMRS providers, but have not yet developed reliable solutions for interconnected text message applications. It is particularly noteworthy that one of the leading third-party vendors of such services, Intrado, has commented that "[i]nterconnected text over-the-top applications . . . may not always be location aware" and that "consideration must be given to the technical ability of the application to access caller location."[11]

III. NONE OF THE COMMISSION'S PROPOSED SOLUTIONS FOR INTERCONNECTED TEXT MESSAGE PROVIDERS CAN BE IMPLEMENTED UNTIL VARIOUS TECHNICAL ISSUES ARE RESOLVED.

The three options that the Commission outlines in the *Further Notice* for adding a text-to-911 functionality to interconnected text message services provide concrete examples of the technical complexities that remain before such solutions can be implemented.[12] As a number of parties explained in their initial comments, the technical solutions required to deploy that functionality under any of the three approaches are not yet available. It, therefore, would be premature for the Commission to establish a deadline for interconnected text message providers to equip their services with a text-to-911 mechanism.

ANI/ALI database to deliver calls and location information, and for p-ANIs necessary to route calls to the correct PSAP.").

[11] Comments of Intrado Inc. at 2 ("Intrado Comments"). Moreover, parties express concerns regarding the reliability of the location information that third-party vendors have made available. *Id*. at 2-3; VON Coalition Comments at 10.

[12] *FNPRM* ¶¶ 95-98.

A. Short Message Service ("SMS") Application Programming Interface ("API") Option

The Commission's first option proposes to allow the interconnected text application to use "the SMS [API] offered by common smartphone operating systems."[13] As Comcast understands this approach, the interconnected text message provider would modify its application to route 911 text messages to an API maintained by the operating system provider – *e.g.*, Android, iOS – that, in turn, would use the underlying wireless carrier's text messaging application to deliver the message to the appropriate PSAP. While parties in the record suggest that this approach would obviate the need for the interconnected text message service to determine a customer's location because this option apparently would rely on the location information obtained by the underlying CMRS provider,[14] significant obstacles to implementing this approach still remain.

This option would require three different groups of providers – interconnected text message providers, operating system providers, and CMRS providers – each to develop part of the solution and coordinate with the other providers to implement it. Even if this were a rational approach that all these parties supported and agreed were workable, interconnected text message providers would not be able to develop a new text-to-911 mechanism to implement this option until SMS APIs were in fact developed by the various smartphone operating system providers. And, even after APIs are made

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13 *Id.* ¶ 96.

14 *See, e.g.,* Comments of Sprint Nextel Corporation at 10-11 (outlining potential benefits of the first option and specifically noting that "the first option . . . should provide the ability to deliver location information because the[] option[] would utilize CMRS-deployed location capabilities (both device- and network-based") ("Sprint Comments"); VON Coalition Comments at 11 (noting that "this approach may be the most expedient because it relies on the carrier's underlying SMS-to-911 infrastructure").

available, interconnected text message providers would have to determine how to obtain the necessary location information from customers who have activated the privacy settings on their devices or who have not enabled the GPS feature on their handsets.[15] Thus, even if this option ultimately became viable, interconnected text message providers would still face technical issues that would have to be resolved before they would be able to upgrade their offerings for new subscribers to include the text-to-911 feature. Leaving aside any other issues, the Commission would have to provide a substantial period after the necessary APIs were made available for interconnected text message providers to complete their part of the process.

B. SMS Gateway Provider Option

The Commission's second option proposes a text-to-911 solution that involves routing messages through a third-party gateway (and possibly another vendor selected by the gateway provider).[16] As an initial matter, parties in the record note that this option would be complicated and expensive.[17] Moreover, the lead time required to develop and implement this solution likely would be very substantial. While the Emergency Access Advisory Committee's text-to-911 report includes a basic description of the architecture that might support an over-the-top text-to-911 gateway,[18] technical specifications have

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15 *See, e.g.,* TechAmerica Comments at 10-11; Intrado Comments at 2-3.

16 *FNPRM* ¶ 97.

17 *See, e.g.,* VON Coalition Comments at 12 ("Resolving the[] third party gateway technical challenges would not only take time, but once resolved, would impose significant costs on providers of software applications . . .").

18 EAAC Text-to-911 Report at 8 ("While wireless mobile devices may support Over-The-Top ('OTT') and other third party proprietary IP-based text applications that offer 'SMS'-like messaging services, third party OTT and other SMS-like messaging service providers should utilize a standards-based approach based on the C/E gateway

yet to be developed, much less tested and implemented, for routing a message with the necessary location information to such a gateway.[19] For example, Sprint notes that "how the PSAP would route text responses to the correct interconnected text server and correct interconnected text client needs to be considered before this [option] can be endorsed."[20]

C. Interconnected Application Layer Protocols Option

The Commission's third option, in which text-to-911 messages would be delivered via Internet application layer protocols without being converted to SMS, also likely would be difficult to implement in the near future.[21] While recognizing that "full NG911 is still a number of years from being deployed,"[22] the Commission notes that this option would require the use of "NG911 protocol mechanisms."[23] Because these protocols are not yet in place, Sprint correctly concludes that the third proposed option "is not viable as an interim option."[24]

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In sum, all of the alternatives outlined in the *Further Notice* for interconnected text message providers raise significant unresolved technical issues that require additional careful examination and testing.[25] Industry groups such as the Alliance for

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architecture in order to minimize implementation challenges for industry and PSAPs . . .") (footnote omitted).

19 *See, e.g.,* VON Coalition Comments at 11-12.

20 Sprint Comments at 10-11.

21 *FNPRM* ¶ 98.

22 *Id.* ¶ 73 n.182.

23 *Id.* ¶ 98.

24 Sprint Comments at 11.

25 Aside from the technical obstacles associated with developing and deploying a text-to-911 solution, interconnected text message providers will face additional technical

Telecommunications Industry Solutions properly have thus far focused on developing and implementing interim text-to-911 solutions for CMRS carriers.[26] No one can state with any confidence how long it will take for these groups to analyze and develop solutions for the technical issues associated with provision of interconnected text-to-911 service.[27] The Commission should not specify a compliance date for providers to include a text-to-911 solution in their offerings to new subscribers until a reliable, cost-effective solution has been identified and the research and development needed to make the solution available have been completed.[28]

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issues in implementing a selective bounce-back functionality, which will be needed going forward because some, but not all, PSAPs will be able to accept text-to-911 messages.

[26] *See, e.g.,* ATIS/TIA Native SMS to 9-1-1 Standard at 1.

[27] Some parties suggest that the Commission can address these technical concerns through a waiver process for the individual interconnected text message providers that are unable to implement a text-to-911 solution by the deadline adopted. *See, e.g.,* Comments of AT&T Inc. at 13. These parties ignore the fact that all interconnected text message providers face essentially the same obstacles. It makes little sense for the Commission to devote its scarce resources to processing individual waiver requests while these industry-wide technical hurdles remain.

[28] Further, many interconnected text message providers have only recently introduced these services. Certain obligations imposed on them could, if burdensome and expensive, impede additional competition and dampen the emergence of these nascent services. These concerns, as well as the overall prematurity of a compliance deadline for interconnected text message providers, should guide the Commission's actions. At least for now, nascent services should provide an appropriate bounce-back notification to any user that attempts to use the text message service to contact 911 and such text message offerings should be labeled to clearly communicate the level of emergency services available from the application.

IV. CONCLUSION

For the foregoing reasons, the Commission should take actions that will promote the availability of text-to-911 functionalities, but should not prematurely impose specific compliance deadlines on interconnected text message providers until it is clear that a text-to-911 solution for such providers is technically feasible and can be implemented in a cost-effective, efficient manner.

Respectfully submitted,

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