

**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 MICROSOFT CORPORATION

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TABLE OF CONTENTS

I.	Introduction and Summary	1
II.	To Fulfill a Short-Term Implementation of Text-to-911, CMRS Providers Should Not Interfere with Interconnected OTT Apps’ Ability to Connect to 911 Through the SMS API.	3
III.	The Term “Interconnected Text Applications” Includes Only Those Services that Can Send <i>and</i> Receive Texts to SMS-Capable U.S. Phone Numbers.	8
IV.	Expanding Beyond the SMS API Approach Requires Examination and Resolution of Significant Location Challenges.....	11
V.	The History of Implementation Challenges Surrounding E911 Counsels Caution.	13
	CONCLUSION.....	15

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I. Introduction and Summary

The Commission’s efforts to modernize emergency communications are commendable, and Microsoft Corporation (“Microsoft”) is committed to engaging in the discussion about the move to next-generation (“NG”) 911 services.¹ As communications evolve, the way in which consumers communicate with emergency services must evolve too. The technical, legal, policy and regulatory challenges surrounding NG 911 services are significant but they are not insurmountable. They must be addressed globally through international standards bodies and through the cooperative efforts of regulatory agencies worldwide, including the Federal Communications Commission (“FCC”).

Given the dynamic nature of the communications marketplace, and in particular the global nature of communications applications that can be accessed from any place a consumer can reach the Internet, it is important that the Commission exercise caution in applying 911 obligations on non-carrier providers of messaging services. Specifically, in light of the location accuracy and technical challenges that exist in connecting non-carrier messaging applications to

¹ See, e.g., *Framework for Next Generation 911 Deployment*, PS Docket No. 10-255, Ex Parte Notice of Microsoft Corporation (Dec. 3, 2012); *Framework for Next Generation 911 Deployment*, PS Docket No. 10-255, Ex Parte Notice of Microsoft Corporation (July 23, 2012).

911 services, Microsoft believes it is premature to set a date certain by which such apps will be required to provide text-to-911 capability.² However, if the Commission pursues a December 31, 2014 deadline for any text apps to provide text-to-911 service, the only viable path is to limit the obligation to apps that provide interconnected text service and that can convey messages to and from 911 through a CMRS-network solution that allows the third party apps to use the phone's native SMS capability.³ That is the sole viable solution in the short run. Other solutions included in the above-captioned Further Notice and in the comments may be plausible in the longer term NG 911 environment, but have not yet been tested and proven to have the location accuracy that is essential for effective 911 service. Moreover, if the Commission were to embrace NENA's proposal and impose text-to-911 requirements on one-way text applications,⁴ that could lead to serious consumer confusion because the user and the PSAP operator could not engage in two-way communications. Finally, we request that the FCC avoid imposing

² Other commenters also suggested the Commission should refrain from setting a deadline for OTT apps to provide text-to-911 service. *See, e.g.*, Comments of Twilio, Inc., *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 8, 11-12 (April 4, 2014) (stating that to apply a text-to-911 obligation on OTT service providers "would likely cause detrimental consumer confusion"); Comments of Verizon and Verizon Wireless at 3 ("It is too early to conclude that the proposed rules will more effectively achieve the Commission's public safety and accessibility objectives than voluntary efforts.").

³ An app is "interconnected" if it can send and receive texts to other users' telephone numbers, whether or not they have also downloaded the same text application. If users on either end of a text message must have downloaded a messaging application to send/receive messages from one another, then the application is not, by definition, "interconnected." *See In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, Report and Order, at ¶ 39 (May 17, 2013). *See also* Comments of Microsoft Corporation, *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 4 (April 4, 2014) ("Microsoft Comments").

⁴ Comments of the National Emergency Number Association, *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 15 (April 4, 2014) ("NENA Comments").

requirements that cannot be met at this time and that would distract industry and the Commission from focusing on the transition to an NG 911 network.

II. To Fulfill a Short-Term Implementation of Text-to-911, CMRS Providers Should Not Interfere with Interconnected OTT Apps' Ability to Connect to 911 Through the SMS API.

Meeting a December 31, 2014 deadline for interconnected OTT apps to provide text-to-911 can be achieved only if CMRS carriers do not interfere with interconnected OTT apps utilizing the phone's native SMS application programming interface ("API") to deliver the text-to-911 message. As Microsoft noted in its initial comments, the necessary functionality for an interconnected app to access a phone's native SMS and send a text to 911 over the SMS network already exists for mobile devices operating on CMRS networks.⁵ Implementing this approach requires no action from the carriers beyond the transmittal of a native text from the handset to 911 — something the four major carriers already have in place. The only action required of the carrier is to not block the transmission of these texts. The burden would fall on interconnected app providers to develop a capability in their app to recognize when "9-1-1" has been entered, and then to launch the native SMS capability on the device to transmit the text, over the carrier's SMS infrastructure, to a PSAP.

In light of this sole available path forward to compliance in the short run, Microsoft is concerned by comments of some carriers indicating they would not permit their SMS networks to be used for this purpose. In particular, AT&T Inc. states that the Commission should "avoid burdening carriers with the obligation of providing OTT Text Providers a delivery solution to

⁵ Microsoft Comments at 5.

their Text-to-911 service.”⁶ AT&T opposes delivery models “that entail high levels of direct CMRS carrier involvement, such as the CMRS network-based model”⁷ even as an interim solution. That model, however, is the *only* way to enable interconnected text-to-911 by December 31, 2014, and, contrary to AT&T’s assumption, it would not require “high levels” of carrier involvement, as the interconnected text apps will simply utilize the same CMRS text-to-911 infrastructure that will already be in place. Rather, the carriers would only have to not block interconnected apps from accessing their SMS API and sending texts to 911 over their SMS network. T-Mobile correctly recognizes that the effort is modest at best and asserts that it “does not object to the general proposal” that carriers not block access to “capabilities that would enable interconnected text providers to provide consumers using their OTT applications to send texts to 911,” as long as the carrier’s underlying network is not harmed.⁸ As the Commission and others note, with relatively minor enhancements, the technology already exists to make compliance possible using the native SMS API.⁹

⁶ Comments of AT&T Services, Inc., *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at v (April 4, 2014) (“AT&T Comments”).

⁷ *Id.* at 3.

⁸ Comments of T-Mobile USA, Inc., *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 11 (April 4, 2014) (“T-Mobile Comments”).

⁹ See *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, PS Docket Nos. 11-153, 10-255, *Policy Statement and Second Further Notice of Proposed Rulemaking*, at ¶ 26 (Jan. 31, 2014) (“FNPRM”); see also *id.*, Comments of TeleCommunications Systems, Inc., at 6-7 (stating that to provide text-to-911, the “OTT providers will need to interface with the development toolkits provided by the device OS manufacturers, just as they do today in order to build their OTT applications. The device manufacturers have already performed the required work to interface with the CMRS providers and thus already provide those interfaces to the OTT messaging providers by proxy”).

In the short term, no other solution is feasible. While the Commission’s three other proposed solutions are plausible in the longer term once numerous location and routing challenges are resolved (and PSAP networks are upgraded), they cannot be implemented by the end of the year. The “network and server based models” proposed by the Commission would require new gateways for Text Control Centers (“TCCs”) to receive text messages from applications; agreements between the makers of interconnected OTT apps and TCCs to enable routing of text-to-911 messages;¹⁰ and, in one instance, require the interconnected OTT app to obtain the phone number of the mobile device, convey it via protocol message to the OTT provider’s server, and then send it to a third-party TCC for routing to a PSAP.¹¹ The technical development required to implement these solutions could not be completed by December 31, 2014.¹² The final solution proposed by the Commission, a server-based model that does not rely on cellular data connectivity or on CMRS location information,¹³ could show promise for the long term, but, as the CSRIC Working Group 3 has found, location determination technology needs “additional development.”¹⁴

¹⁰ FNPRM, at ¶¶ 30-32.

¹¹ *Id.* at ¶ 32.

¹² For instance, the first network and server based model proposed by the Commission assumes that the OTT application is using the same phone number as the number assigned by the CMRS provider to the device itself. *See* FNPRM, at ¶ 31. But, as Comcast points out, that assumption is not all true for all apps. Comments of Comcast Corporation at 8. The second network and server based model proposed requires the OTT app to obtain the phone number of the mobile device to route to a PSAP, and Apple’s iOS does not currently permit an OTT app to access the mobile device’s phone number. *See id.* at 9.

¹³ FNPRM, at ¶ 33.

¹⁴ Wireless E911 Location Accuracy Requirements, PS Docket No. 07-114, *Third Further Notice of Proposed Rulemaking*, at ¶ 15 (Feb. 21, 2014) (quoting CSRIC Indoor Location Test Bed Report) (“E911 Location Accuracy Third FNPRM”).

In fact, the alternatives that require apps to independently route to TCCs face challenges similar to those confronting CMRS carriers in roaming situations. In an SMS roaming scenario, it is the home SMS network (the SMSC) that routes the customer's SMS regardless of which visited network they are in. Today, the visited network does not provide location information (not even a cell site ID) back to the home network and, as a result, the home network cannot ascertain the texting party's location for purposes of routing to the appropriate PSAP.¹⁵ In the app context, every app is essentially in a constant state of roaming. The network over which the app is accessed is not providing the app any information about its location (not even a cell site ID). Therefore, the challenges of locating and conveying an app's location information are not unlike those that arise in locating a roaming SMS subscriber. Just as the FCC has recognized the additional complexities and challenges created by CMRS roaming scenarios, it should also recognize that the challenges of locating and conveying app location for text-to-911 purposes cannot be resolved in the short run. Moreover, the challenges in locating and conveying the location of an app, which is inherently global in nature, demand an industry-wide, global approach, preferably working through international standards bodies, to ensure consistent, workable solutions.

Thus, to meet the Commission's goal of interconnected texting apps providing text-to-911 by December 31, 2014, the simplest and surest technical solution is using the SMS API of the underlying carriers, for as long as it is available. Microsoft recognizes and supports the need for developing future paths for enabling texts in the context of NG 911. But in the meantime, as long as the Commission moves to impose an obligation on interconnected texting apps provided

¹⁵ See FNPRM, at ¶ 46 (stating that CTIA and the wireless carriers characterize "the ability of roaming subscribers to send a text to 911 as being 'considerabl[y] uncertain' and encourage[] more study of the issue").

by third parties unaffiliated with the underlying wireless carrier, compliance can be achieved if the carriers simply do not interfere with interconnected OTT apps' ability to connect to 911 through the SMS API.¹⁶

Alternatively, as others have stated, the Commission could instead limit the application of text-to-911 during this transitional period to the entities that both operate the networks and provide the texting service, *viz.*, the wireless carriers.¹⁷ This would allow the Commission to draw a distinct line, understood by consumers, between SMS services that can reach 911 and applications that cannot. While the SMS API approach makes it technically feasible to initiate text-to-911 from an interconnected text app, it also creates the potential for customer confusion and false consumer expectations. For example, when an interconnected OTT text uses the phone's native SMS, the return message from the PSAP would *not* go to the interconnected OTT text app on which the user may be focusing and from which she sent her emergency text. Instead, the text comes back to the consumer in a different service — as an SMS on the wireless carrier's SMS service. Therefore, this approach creates the potential for customer confusion, which is compounded by the fact that interconnected texts to 911 will not work at all where the

¹⁶ Microsoft is puzzled by the comments of Bandwidth.com, Inc., stating that the short-term CMRS network-based model “places burdens on CMRS carriers and handset providers to create APIs for the OTT application providers.” Comments of Bandwidth.com, Inc., *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 4 (April 4, 2014) (“Bandwidth Comments”). This API already exists for Windows and Android phones. No creation or development work is necessary by CMRS carriers, which is one reason why it's the most attractive solution in the short-term.

¹⁷ See Comments of Sprint Corporation, *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 3 (April 4, 2014) (stating that the Commission “should consider an alternative timeframe for interconnected text providers” because of the numerous complexities involved); Comments of the Voice on the Net Coalition, *In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications*, PS Docket Nos. 11-153, 10-255, at 1 (March 11, 2013) (opposing any mandate for OTT text providers to provide text-to-911 capability before the establishment of Next Generation 911 and stating that, prior to NG 911, it would be less costly and more effective for the Commission to focus its text-to-911 efforts on CMRS providers).

CMRS network is unavailable. The Commission could avoid this potential for consumer confusion by drawing a clear line between the phone's native SMS offering and interconnected OTT text offerings. This would also allow the industry to focus on developing and executing on a proper long-term, global approach to apps connecting to next generation 911 networks.

III. The Term “Interconnected Text Applications” Includes Only Those Services that Can Send *and* Receive Texts to SMS-Capable U.S. Phone Numbers.

Any text-to-911 requirements adopted by the Commission should be clearly limited to interconnected text applications that can *both* send and receive texts to and from any SMS-capable U.S. phone number. Applications that *cannot* both send and receive texts to and from phone numbers run the risk over time of creating a one-way communication, in which the user would be able to text 911 but the PSAP would not be able to text the user back. Unlike voice communications where a real-time discussion is possible, a text is an asynchronous communication. If a PSAP cannot respond to the text it receives or initiate a text to the person in need of assistance, the PSAP will have no way of engaging in an essential dialogue with the person in need of assistance. The Commission should craft its 911 policies today with an eye on the long-term evolution of technology so that those policies shape consumer expectations in a manner that ensures consumers will know the best way to connect to 911 using only those communications capabilities designed to enable actual two-way communication with the PSAP.

Microsoft recognizes that, under the CMRS-solution proposed by the Commission, a one-way text application could launch the phone's native SMS API when “911” is entered into the app, and a PSAP could then respond with an SMS message to that phone. However, over time this scenario could create an unsafe expectation among consumers that they always will be able to reach 911 through one-way text apps. When legacy SMS eventually is phased out (as the

carriers say will happen¹⁸), one-way apps no longer will be able to launch the SMS API, and even if they can send a text to 911 through one of the other solutions proposed by the Commission,¹⁹ one-way apps would not be able to receive a return text from the PSAP. The Commission can do its part, starting today, to protect consumer expectations by prodding consumers to turn to two-way, interconnected communications capabilities to text 911 and keep one-way texting applications out of the scope of any text-to-911 order. Thus, to guard against unsafe expectations in the long run, the Commission should reject the suggestion that one-way text messaging apps “must be within the ambit of the Commission’s rules.”²⁰

The perils associated with one-way communications in emergency contexts are well known to the Commission. In 1996, the FCC adopted a rule that required all cell phones, including those for which there is no service plan with a particular wireless carrier, to be able to contact 911.²¹ Because these phones were not initialized for service, they could not receive incoming calls. Nonetheless, the Commission required carriers to deliver 911 calls from these non-service initialized phones to a PSAP.²² Problems arose when calls would be disconnected and PSAPs were unable to call back the individual seeking assistance.²³ These one-way

¹⁸ See, e.g., AT&T Comments at 4 (“CMRS providers ought to be free to deploy whatever successor technologies to SMS texting they deem appropriate”).

¹⁹ See FNPRM, at ¶¶ 30-33.

²⁰ NENA Comments at 15.

²¹ See Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, RM-8143, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 18676, 18692-97 (1996) (“E911 First Report and Order”). See also Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, RM-8143, *Memorandum Opinion and Order*, 12 FCC Rcd 22665, 22717-19 (1997) (“E911 First Memorandum Opinion and Order”).

²² E911 First Memorandum Opinion and Order, 12 FCC Rcd at 22717-19.

²³ See Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Report and Order*, 17 FCC Rcd 8481, (continued...)

communications generated such concern among public safety entities — including NENA, the Association of Public-Safety Communications Officials (APCO), and the National Associations of State Nine One One Administrators (NASNA) — that they sent a letter to the Commission requesting it revisit and take further action on the issue.²⁴ The public safety entities and manufacturers “agree[d] that the ability of a PSAP to return a wireless 911 call if the call is dropped or the caller hangs up before the PSAP operator can ascertain the caller’s exact location is important in ensuring a prompt emergency response.”²⁵ NENA and others also noted that the ability of a PSAP to call back is important to weed out prank calls and avoid wasting scarce emergency resources.²⁶ Similarly, due to the challenges created by one-way emergency calling, a number of European countries have changed their rules to prohibit emergency calls from devices with no service plan (or, no SIM card).²⁷

Given the even greater risks posed by the asynchronous nature of texting, the Commission should not impose 911 obligations on one-way text applications, because the PSAP will be unable to respond to the consumer who is experiencing an emergency. On the contrary, the Commission should start shaping appropriate consumer expectations by focusing text-to-911 rulemaking on only those means of communication that ensure a two-way conversation with the PSAP.

8482-83 (2002) (noting that when receiving calls from a non-initialized phone, “the PSAP operator will not be able to return the call if it ends prematurely, and may not be automatically notified that the call is from a non-initialized phone”).

²⁴ *Id.* at 8483 & n.8.

²⁵ *Id.* at 8485.

²⁶ *Id.*

²⁷ *See* European Commission, *112 in United Kingdom* (stating, “It is not possible to call 112 from a mobile phone without a SIM card.”), at <http://ec.europa.eu/digital-agenda/en/112-united-kingdom>; European Commission, *112 in Germany* (same), at <http://ec.europa.eu/digital-agenda/en/112-germany>.

IV. Expanding Beyond the SMS API Approach Requires Examination and Resolution of Significant Location Challenges.

The Commission has long recognized that for any emergency response system to be effective, it must be able to locate and communicate with the person reaching out for assistance.²⁸ That is why Microsoft believes the Commission’s CMRS-network solution as the only one that can reliably support text-to-911 capability for interconnected OTT apps by December 31, 2014. As Bandwidth.com recognizes, “[b]ecause of the relatively high degree of accuracy of the location information wireless carriers present, the public safety community has high levels of confidence in the wireless carriers’ location determination systems.”²⁹ Indeed, the carriers’ already proven location determination capability is a significant factor in making text-to-911 a near-term possibility for interconnected apps, but interconnected apps can only take advantage of that capability under the CMRS-network solution.

The Commission therefore should be cautious before accepting Bandwidth.com’s suggestion to pursue “application-derived location determination” solutions, rather than the tested and proven CMRS location determination.³⁰ As noted above, OTT apps are not unlike CMRS roamers in that the cell site location is not readily available to the app. Thus, pursuing these other approaches requires overcoming a number of challenges. These challenges include the testing of location information to ensure it is accurate, creating standardized acquisition and

²⁸ See E911 Location Accuracy Third FNPRM, at ¶ 6 (“[O]ur ultimate objective is that all Americans using mobile phones — whether they are calling from urban or rural areas, from indoors or outdoors — have technology that is functionally capable of providing accurate location information so that they receive the support they need in times of an emergency.”); Wireless E911 Location Accuracy Requirements, *Second Report and Order*, 25 FCC Rcd 18909, 18909 (2010) (“Without precise location information, public safety’s ability to provide critical services in a timely fashion becomes far more difficult if not impossible.”).

²⁹ Bandwidth Comments at 6.

³⁰ *Id.* at 3, 6.

transmission of that location information, developing and implementing the necessary TCC gateways to enable the transmission of texts from OTT apps, and getting all interconnected app providers to contract with TCCs prior to the end of this year. These are important issues that must be resolved before the deployment of next generation emergency communications. They should not be rushed when simpler solutions already exist.

Bandwidth.com’s proposed “application-derived” location determination (or, what the Commission refers to as network- and server-based models³¹) raises a number of questions that have not been answered, and that need to be resolved before it can be successfully deployed. If an interconnected app is capturing location information from the device, such as from its GPS, then it must be determined whether the app or the device maker or a third party location database service has the legal obligation to test and prove the accuracy of that location information. Under the Commission’s rules, wireless carriers must measure location accuracy compliance on a per-county or per-PSAP basis and file reports on their verification procedures.³² Under Bandwidth.com’s application-derived determination proposal, it is unclear whether — and how — each app maker would verify location information down to that granular per-county or per-PSAP level. While third party technologies, such as AGPS/AFLT by Qualcomm, RF fingerprinting by Polaris, and network beacon technology by NextNav, may provide a solution, much work remains to be done. The CSRIC Working Group 3 report on its indoor location accuracy test bed showed “significant promise” but that “additional development is required” to ensure the provision of an actionable location, especially in urban environments.³³ The CMRS

³¹ FNPRM, at ¶¶ 30-33.

³² See 47 C.F.R. § 20.18; E911 Location Accuracy Third FNPRM, at ¶ 7.

³³ See E911 Location Accuracy Third FNPRM, at ¶ 15 (quoting CSRIC Indoor Location Test Bed Report).

solution is the only solution that requires minimal development effort and could be realistically implemented this year.

V. The History of Implementation Challenges Surrounding E911 Counsels Caution.

Finally, the Commission's experience with location accuracy requirements shows the disruptive effect on industry, and on the Commission's work, when the Commission requirements get ahead of technology. In 1996, the Commission adopted a requirement that wireless carriers begin offering handsets with location capability by October 1, 2001,³⁴ despite industry's comments that the timelines were too aggressive and technology was not yet in place. The Commission moved ahead with the requirements, but then had to grant numerous waivers because "the Commission recognized that the E911 deployment schedule was aggressive in light of the need for further technological advancement."³⁵ The Commission granted waivers to AT&T Wireless, Cingular, Nextel, Sprint, Verizon, and others because they could not meet the Commission's advanced timeline.³⁶

The Commission needs to balance its role in prodding industry to make text-to-911 advances with the need for Commission staff and industry to have time to study and respond to the carriers' voluntary text-to-911 implementation and how OTT providers fit into this complex system. While providing some text-to-911 during the transition to NG 911 network is important,

³⁴ See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 18676, 18708-10 (1996).

³⁵ See Revision of Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Order*, 16 FCC Rcd 18277, 18278 (2001).

³⁶ See Revision of Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Request for Waiver by AT&T Wireless Servs., Inc.*, 16 FCC Rcd 18253, 18268 (2001) ("Whenever the Commission mandates various technological capabilities by licensees, it runs into the very real limits imposed by manufacturing capabilities and time") (Separate Statement of Commissioner Kathleen Abernathy).

the Commission should not allow this transitional period to overtake progress on the longer term Next Gen capabilities. The need for protracted proceedings and waivers on text-to-911 at this stage would distract the Commission and industry from moving forward with NG 911. For this reason, Microsoft suggested in its initial comments that the Commission not set any specific dates for text-to-911 capability for non-interconnected texting apps.³⁷ Microsoft notes that NENA and APCO also support delayed implementation for certain OTT providers.³⁸

Moreover, the Commission should not allow the transitional period to result in uncertainty for consumers about which text services connect to 911 and which do not. To the extent the Commission determines that any type of texting app should reach 911 prior to NG 911, drawing clear lines is critical to ensuring consumers are not placed at risk by uncertainty and confusion as to how they can reach emergency services. Therefore, if OTT texting apps are included in any text-to-911 framework prior to the deployment of NG 911 networks, the Commission should draw a clear line between those apps that allow communications to and from SMS-enabled phone numbers and those that do not allow communications to and from SMS-enabled phone numbers. The industry and the Commission must also recognize that popular texting apps are as likely to come from Croatia as from California, and developers abroad are unlikely to be aware of FCC obligations or within the FCC's jurisdiction.³⁹ Therefore, focusing

³⁷ See Microsoft Comments at 11-15.

³⁸ See APCO Comments at 3 (“Providing text-to-9-1-1 through ‘over-the-top’ (OTT) text applications does pose additional challenges that may justify a two-tiered regulatory approach.”); NENA Comments at 5 (supporting a delayed deadline of December 31, 2015, for interconnected OTT providers).

³⁹ See Microsoft Comments at 14-15; see also Jon Russell, *22 of the best mobile messaging apps to replace SMS on your smartphone*, TheNextWeb.com (Oct. 18, 2013) (describing popular apps developed in Korea, Japan, Taiwan, China, and elsewhere that are available on Windows Phone, Android, and iOS), available at <http://thenextweb.com/apps/2013/10/18/best-mobile-messaging-apps/2/>.

on a global approach is critical to successfully implementing emergency services for 21st century communications.

CONCLUSION

In sum, it is premature to set a date certain by which non-carrier messaging applications will be required to provide text-to-911 capability. Rather, the Commission should encourage a voluntary industry commitment to work toward text-to-911 capability for interconnected apps. However, if the Commission moves ahead with implementing text-to-911 obligations for interconnected OTT text providers in the short term, the only viable solution is the CMRS-network solution. The Commission should focus its rules on two-way interconnected OTT text services and ensure that CMRS carriers do not interfere with the interconnected OTT text apps' ability to access the wireless phone's SMS API. The Commission should exempt one-way OTT text applications given the risks that this would create for consumer expectations. Lastly, the Commission should be cautious to not get ahead of technology, recognize the global nature of communications applications provided over the Internet, and listen to the concerns of industry as it goes about providing another means for Americans to reach 911.

Respectfully submitted,

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