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

COMMENTS OF T-MOBILE USA, INC. ON SECOND REPORT AND ORDER AND THIRD FURTHER NOTICE OF PROPOSED RULEMAKING

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October 16, 2014

TABLE OF CONTENTS

I. INTRODUCTION AND SUMMARY 1

II. IMPOSITION OF REGULATORY MANDATES ON PARTIES TO VOLUNTARY AGREEMENTS DISCOURAGES STAKEHOLDERS FROM DEVELOPING COLLABORATIVE SOLUTIONS OUTSIDE OF THE AGENCY CONTEXT. 3

III. THE COMMISSION'S PROPOSED DATABASE SOLUTION MUST BE FINE-TUNED BEFORE IT IS IMPLEMENTED. 4

IV. THE COMMISSION MUST NOT FORGET THAT SMS-TO-911 IS AN INTERIM SOLUTION ONLY. 7

A. Enhanced Location for SMS-to-911 Is Fundamentally Different from Location Technology Used in Voice E911. 7

1. T-Mobile Has Concerns with the Use of cLBS for "Enhanced Location." 7

2. Vendor Claims Regarding Location Technology Must Be Reviewed for Technical and Economic Feasibility. 8

3. The Commission Cannot Ignore Privacy Concerns Inherent to the Use of cLBS for Enhanced Location. 9

B. Roaming Access to Interim SMS-to-911 Will Require More than Two Years to Develop and Implement. 10

V. CONCLUSION 13

I. INTRODUCTION AND SUMMARY

T-Mobile USA, Inc.[1] ("T-Mobile"), the Uncarrier, is proud of its role as one of the signatories to the voluntary agreement with the National Emergency Number Association ("NENA") and the Association of Public-Safety Communications Officials International ("APCO") to implement interim Short Message Service ("SMS")-to-911 so that consumers can contact public safety via text message in instances in which a voice call cannot or should not be made.[2] As part of that agreement, since May 15, 2014, T-Mobile will implement text-to-911 to any Public Safety Answering Point ("PSAP") that makes a certifiable request. In providing this service, T-Mobile seeks to ensure that it can make available to PSAPs the best possible location estimate when its customers send an SMS text to 911 in an emergency.

Now that the Commission has codified the voluntary agreement for all wireless carriers,[3] as well as extended the elements of it to over-the-top ("OTT") interconnected text providers, the Commission should keep in mind the critical role of voluntary agreements in facilitating improvements to emergency communications as it interprets and implements its new requirements. The Commission's decision not to grant the four nationwide carriers a safe harbor for SMS-to-911 undermines the important role of voluntary industry agreements.

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[1] T-Mobile USA, Inc. is a wholly-owned subsidiary of T-Mobile US, Inc., a publicly-traded company.

[2] Letter from Terry Hall, APCO International, Robert W. Quinn, Jr., AT&T, Barbara Jaeger, NENA – The 9-1-1 Association, Charles W. McKee, Sprint Nextel, Kathleen O'Brien Ham, T-Mobile USA and Kathleen Grillo, Verizon, to FCC Chairman Julius Genachowski, Commissioner McDowell, Commissioner Clyburn, Commissioner Rosenworcel and Commissioner Pai, PS Docket Nos. 11-153 & 10-255 (Dec. 6, 2012), *available at* http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/GovAffairs/121206_-_Voluntary_Commitmen.pdf ("Carrier-NENA-APCO Agreement").

[3] *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Second Report and Order and Third Further Notice of Proposed Rulemaking, FCC 14-118, 29 FCC Rcd. 9846 (2014) ("*FNPRM*").

T-Mobile also encourages the Commission not to ignore the significant costs to carriers of implementing interim solutions for technologies facing imminent retirement, like SMS-to-911, when developing its cost-benefit analyses. While T-Mobile does not dispute that extending access to interim SMS-to-911 will have benefits, it is concerned that the Commission's calculations are difficult to validate, particularly given that the record indicates the costs of implementing the proposed enhancements to SMS-to-911 will be extremely high and will take several years to implement. Moreover, the Commission fails to account for the practice by some states of diverting funds collected for 911 to other purposes. As the need to migrate to Next Generation 911 ("NG911") becomes more pressing—as evidenced in this proceeding as well as in the ongoing location accuracy proceeding for voice E911—it is even more critical that 911 funds are used to facilitate that migration.

Finally, with respect to the new rules and the Commission's proposed rules set forth in the *FNPRM*, T-Mobile asks the Commission to consider the following modifications:

- The Commission should solicit input from carriers, PSAPs, and other stakeholders about how best to develop and deploy its proposed covered text provider notification/PSAP readiness database, to ensure that carriers are not penalized for delays in deploying SMS-to-911 when those delays are the result of lack of readiness on the part of PSAPs.
- The Commission should make sure that any new mandates to provide enhanced location information to PSAPs with SMS messages sent to 911 are reasonable given the inherent limitations associated with the use of SMS, including that interim SMS-to-911 cannot activate the control plane but instead is limited to the user plane.

- The Commission should recognize the costs involved in and extended timeframe required for implementing roaming for interim SMS-to-911 and ensure that carriers and supporting vendors have sufficient time to deploy any compliant solution to possible requirements, as well as ensure the development of a robust and competitive ecosystem for roaming location solutions.

It is important that whatever action the Commission may take in regards to SMS-to-911, it not divert resources away from the development and deployment of "NG911" networks, thus delaying their implementation.

II. IMPOSITION OF REGULATORY MANDATES ON PARTIES TO VOLUNTARY AGREEMENTS DISCOURAGES STAKEHOLDERS FROM DEVELOPING COLLABORATIVE SOLUTIONS OUTSIDE OF THE AGENCY CONTEXT.

T-Mobile joined with the other three nationwide carriers, NENA, and APCO in developing the voluntary agreement to make interim SMS-to-911 service available to subscribers.[4] T-Mobile hoped that the voluntary agreement would serve as a model for industry collaboration with public safety. Indeed, it still may do so.

T-Mobile continues to be concerned, therefore, that the Commission appears to have entirely disregarded the role of the signatories to the voluntary agreement in adopting broad rules governing text-to-911 service. The Commission has codified the conditions in the voluntary agreement and has added requirements that were never intended to be part of the interim solution, including a requirement mandating carriers allow access to their underlying SMS network platform so OTT interconnected text providers can use carrier SMS capabilities to meet their own obligations. Moreover, the Commission is now considering adding further near-term requirements, such as text-to-911 while roaming, that all parties to the voluntary agreement

[4] Carrier-NENA-APCO Agreement.

specifically excluded. In an environment in which industry is continually encouraged to collaborate with appropriate stakeholders to develop solutions to key issues, the path the Commission has chosen in regards to text-to-911—escalating beyond the stakeholder compromise—does little to encourage further voluntary agreements. T-Mobile urges the Commission to recognize the efforts of those stakeholders that participate in voluntary agreements and acknowledge those efforts through safe harbors and other similar regulatory means.

III. THE COMMISSION'S PROPOSED DATABASE SOLUTION MUST BE FINE-TUNED BEFORE IT IS IMPLEMENTED.

T-Mobile has several concerns related to the Commission's proposal to adopt a database solution for PSAPs to indicate their readiness and desire to receive text-to-911 service, which would operate in lieu of the current letter notification mechanism used by PSAPs to notify carriers that they are text-to-911 ready. T-Mobile believes the database solution, as set forth in the *Order and FNPRM*, may not allow carriers to adequately determine if a PSAP is, in fact, ready to receive 911 texts and risks putting a carrier in a position of non-compliance in cases where the PSAP is, in fact, not ready.

A description of how the letter notification process currently in use operates illustrates the potential pitfalls of the database proposal. Today, a PSAP provides notice via letter to carriers that it is requesting text-to-911 service. The PSAP must also provide a completed "SMS-to-911 Readiness Questionnaire" to the carrier from whom it is requesting service;[5] only

[5] This questionnaire was created by the Communications, Security, Reliability, and Interoperability Council ("CSRIC") IV and is part of CSRIC's best practices for the implementation of SMS-to-911. *See* CSRIC, Working Group 1, Next Generation 9-1-1, Task 1, Subtask 2, *Final Report—PSAP Requests for Service for Interim SMS Text-to-9-1-1* (May, 2014), *available at* http://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG-1_Task-2_Final_061814.pdf.

after the questionnaire has been returned to the carrier and the PSAP has been verified for readiness does the deployment clock start. T-Mobile's experience is that nearly a quarter of PSAPs currently take more than 30 days after the initial letter notification to return the questionnaire; indeed, T-Mobile must often request the questionnaire multiple times before receiving it. Some PSAPs have returned the questionnaire only to later determine that they are not technically ready. Others return the questionnaire and indicate that they wish to receive text-to-911 under one solution, but intend to shortly implement a different technological solution.[6]

It is unclear how the database proposal will accommodate delay by the PSAP in returning the questionnaire as well as how T-Mobile and other carriers should treat any changes to a PSAP request.[7] Though the Commission's proposal establishes a rebuttable presumption that a PSAP complying with the CSRIC IV best practices[8]—including completion of the questionnaire prior to requesting service via the database—is text ready, T-Mobile's experience has shown this is not always the case. It is very likely that even after the introduction of a readiness database, there will still be instances of PSAPs indicating readiness and compliance with best practices when in reality they are not ready or in compliance. A different solution will need to accommodate situations in which a PSAP requests text-to-911 service using, for instance, TTY,

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[6] PSAPs can receive text-to-911 via one of several methods—web, TTY, or MSRP per ATIS/TIA J-STD-110. Each of these methods requires carriers take different actions to provide text-to-911 service to the PSAP.

[7] Regardless of whether the PSAP chooses the database to notify covered text providers of readiness, T-Mobile will still require the satisfactory completion of an "SMS-to-911 Readiness Questionnaire" before it can begin the process of provisioning SMS-to-911 service to that PSAP. T-Mobile believes that the Commission should continue to support the adoption of best practices as identified by CSRIC IV Working Group 1 and the Service Coordination Group led by NENA, which includes the use of a readiness questionnaire.

[8] *FNPRM* ¶ 53.

but before the end of the six-month implementation deadline, decides that it wants to instead deploy using MSRP.

T-Mobile suggests that, if the Commission intends to move forward with notification via a database, it implement certain safeguards to ensure that covered text providers are not held to deployment timelines that cannot be met. For instance, if a PSAP fails to return the questionnaire within 60 days of requesting service, the request should be invalidated. Similarly, if a PSAP indicates that it is changing its SMS method more than 60 days after an initial request for text-to-911 service but prior to the establishment of service, the initial request should be nullified.

T-Mobile additionally requests that, prior to adopting the proposed database, the Commission solicit feedback from carriers, PSAPs, and other stakeholders on how best to design it, including whether and how to adopt proactive notifications to covered text providers. T-Mobile encourages the Commission to require PSAPs to complete, as part of the database submission process, a certification that they meet all requirements for requesting text-to-911 service from any covered text provider and for the given text delivery method they are requesting. Finally, T-Mobile asks the Commission to extend the existing provider certification process used for voice E911 that permits a carrier to certify that it has done everything it can to respond to a PSAP request for service without further action by the PSAP.

IV. THE COMMISSION MUST NOT FORGET THAT SMS-TO-911 IS AN INTERIM SOLUTION ONLY.

A. Enhanced Location for SMS-to-911 Is Fundamentally Different from Location Technology Used in Voice E911.

The Commission's proposed "best available location"[9] standard is much more appropriate for interim SMS-to-911 than voice E911 Phase II-like mandates. But even the "best available" proposal raises a number of additional concerns of which the Commission must not lose sight, including how the use of commercial Location Based Services ("cLBS") for emergency location implicates relationships between carriers, manufacturers, and cLBS developers/providers. In addition, the Commission should continue to consider the significant potential privacy concerns of this approach, given that interim SMS-to-911 methods do not override privacy functions in the way that voice E911 does. In short, even if "enhanced location" for interim SMS-to-911 is feasible, it still is not simple—especially in instances where users disable location functionality for privacy or power conservation reasons.

1. T-Mobile Has Concerns with the Use of cLBS for "Enhanced Location."

SMS messages to 911 are fundamentally different from voice 911 calls—that is, SMS-to-911 does not occur in the carrier network control plane, but rather in the same user plane as cLBS. This reality can limit the location information available to a carrier, and presents different expectations as to trustworthiness, at least at this time. Notwithstanding these inherent limitations, T-Mobile provides the best available location at the time a PSAP bids for location information for a text message, just as it does with voice E911. In some cases, that information may be enhanced location, when possible given handset capabilities, user interface settings, and the environment of the handset at the time the SMS message is sent. Of course, enhanced

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[9] *FNPRM* ¶ 82.

location is also more likely to be available if the PSAP rebids for location and T-Mobile encourages PSAPs to rebid for location on SMS messages sent to 911, just as on voice E911 calls.

Best available location will also continue to vary based on the generation of the customer's handset. For some handsets, coarse location will be the best-available for text. For others, A-GPS or cLBS may be possible. Inasmuch as wireless networks are in the midst of a transition from 2G and 3G to LTE, and PSAPs are in a transition to NG911, the range of capabilities currently in use requires a flexible standard. For these reasons, T-Mobile continues to encourage the Commission to adopt reasonable and feasible location benchmarks and implementation timeframes for interim SMS-to-911 based on best-available location while continuing to focus the bulk of its efforts on encouraging migration to NG911.

2. Vendor Claims Regarding Location Technology Must Be Reviewed for Technical and Economic Feasibility.

T-Mobile also encourages the Commission to review proposals by technology vendors with a critical eye. For instance, TruePosition claims that its Uplink-Time Difference of Arrival ("U-TDOA") technology could be implemented for SMS-to-911 purposes with relatively minor development effort.[10] This claim is simply untrue. As T-Mobile explained in its comments and reply comments on location accuracy earlier this year, implementation of U-TDOA for any location purposes will require deployment of Location Measurement Units ("LMUs") to every 3G and 4G cell site—sites that, in many if not most cases, are not architected to support LMU connections.[11] As stated in the Pottle/Jensen/Wilson declaration attached to T-Mobile's reply

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[10] *FNPRM* ¶ 88 (citing Comments of TruePosition at 6, PS Docket Nos. 10-255 & 11-153 (filed Apr. 4, 2014)).

[11] *See* T-Mobile USA, Inc. Reply Comments on Third FNPRM On Location Accuracy at 21-22, PS Docket No. 07-114 (filed July 14, 2014) ("T-Mobile Location Accuracy Reply

comments on location accuracy earlier this year, modern radios and antennas are now integrated in order to increase coverage and data throughput.[12] In such a configuration, there is simply no place to insert the LMU necessary to operate U-TDOA. U-TDOA is simply not on the technology roadmap for either emergency services or cLBS, period. That is clear from the record in the voice E911 context; it is equally true for interim SMS-to-911.

Given these realities, T-Mobile continues to encourage the Commission to focus its primary efforts on the ways it can transition networks and consumers to next generation technologies, rather than on any mandates that require retrofitting legacy technologies or inefficient investment that is likely to be stranded. Regardless of a carrier's ability to leverage even the best of today's legacy technologies, there will still remain limitations on what can be done that are inherent in the technologies themselves.

3. The Commission Cannot Ignore Privacy Concerns Inherent to the Use of cLBS for Enhanced Location.

As noted above, the plain fact is that SMS messages cannot be sent in an emergency services mode. Thus today, carriers do not—indeed, cannot—override user location privacy settings when routing SMS-to-911 calls. This is a limitation that is essentially intrinsic to the architecture of interim SMS-to-911. In other words, when the user has deactivated location settings, cLBS is not available to support text-to-911.

If the Commission were to mandate that carriers override these settings for SMS-to-911, such a mandate could not be implemented quickly and easily. Overriding existing cLBS privacy settings would require a complete overhaul of emergency services privacy standards to ensure the same kind of privacy protection consumers experience with voice E911 under the interim

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Comments"); *see id.* at Exhibit 1, Declaration of John F. Pottle, Ryan N. Jensen, and Daniel H. Wilson ¶¶ 19-21 ("Pottle/Jensen/Wilson Declaration").

[12] *See* Pottle/Jensen/Wilson Declaration ¶ 20.

SMS-to-911 paradigm. Consumers would likely also need to replace their handsets to support this capability. Next-generation technologies and networks will not have these problems, as text-to-911 capabilities are being designed as a part of NG911, rather than as a retrofit of legacy technologies such as SMS.[13] And the standards that will govern next generation networks are still in development, ensuring that they can accommodate additional privacy considerations as they arise, unlike today's legacy standards which are no longer being updated.[14]

B. Roaming Access to Interim SMS-to-911 Will Require More than Two Years to Develop and Implement.

Carriers and others have provided detailed and specific information on the technical and economic hurdles associated with every aspect of implementing roaming for interim SMS-to-911 on the record.[15] SMS messaging, unlike voice calling, is always routed through the subscriber's home network. An SMS message is never routed through a roaming network. Provision of SMS-to-911 while roaming will therefore require substantial new development and investment to overcome this fundamental aspect of SMS. While there are proposals that may permit roaming in the SMS-to-911 context, even if they prove workable, none of those proposals can be

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[13] *See* NENA-The 9-1-1 Association, *Detailed Functional and Interface Specification for the NENA i3 Solution—Stage 3* (June 14, 2011), *available at* https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Standards/08-003_Detailed_Functional_a.pdf; ATIS, Emergency Services Interconnection Forum (ESIF), *available at* http://www.atis.org/esif/ (last visited Oct. 16, 2014).

[14] *See* T-Mobile Location Accuracy Reply Comments at 26.

[15] *See, e.g.*, Comments of T-Mobile USA, Inc. On Second Further Notice of Proposed Rulemaking at 8, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); Comments of AT&T at 6-7, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); Comments of CTIA—The Wireless Association at 11, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); Comments of The Rural Wireless Association at 3, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); Comments of Sprint Corporation at 12, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); Comments of Verizon and Verizon Wireless at 14, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014); *see also* Comments of The Alliance for Telecommunications Industry Solutions at 5-6, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014).

implemented in the two years suggested by the Commission.[16] Moreover, roaming for SMS-to-911 will never be successful unless the Commission requires a viable and competitive technological ecosystem for roaming protocols and technologies.

Two roaming options have been proposed for the interim SMS-to-911 architecture—a system in which carriers would directly interconnect with one another to share location information, and one in which Text Control Centers ("TCCs") act as hubs, receiving and passing information to carriers from other carriers as well as from other TCCs. Deployment of either or both purported solutions will take at least 36-48 months.

First, adoption of either roaming proposal will require carriers to devote resources to developing and implementing the Open Mobile Alliance ("OMA") Roaming Location Protocol ("RLP"), as well as concurrent upgrades to Global Mobile Location Centers ("GMLCs") to support the multi-carrier location requests which are enabled through the development of the RLP interface. RLP is standards-based but cannot simply be "turned on" to make it work. T-Mobile, for instance, does not currently have an RLP option as a part of its existing Mobile Location Protocol ("MLP") service. Enabling this functionality would require at minimum 12 to 18 months of software development in order to manage, coordinate and enable outbound RLP requests to other location servers. In addition to software development, hardware modifications might also be required.

Second, only after carriers have implemented RLP can they begin the process of establishing and testing interconnections among carriers and the TCC hubs and completing coordination with TCCs and other carriers to enable the necessary information sharing required to permit roaming access. That process can be expected to take at least another 18 months, but

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[16] *FNPRM* ¶ 109.

will more likely take longer. Carriers would also have to establish and maintain consistent connectivity with a variety of third-party location services applications and/or to other carriers' location servers, which creates additional problems related to intercarrier interconnection between location server vendors that are competitive with each other.

As the Commission reviews these issues and explores a potential regulatory mandate for text-to-911 roaming, it should ensure that carriers are given sufficient time to implement a compliant solution. In addition, the Commission must ensure that it does not adopt a mandate that requires carriers to resort to a single-sourced technology but instead ensures an open technological ecosystem, with interconnection and data interchange standards, that provides flexibility, reliability, efficiency, and choice for carriers as to whether to self-supply or contract for support in a competitive market. Predicated on there being viable SMS-to-911 solutions, carriers should be permitted to choose, to the extent they may exist, the roaming method(s) that works best for their networks and subscribers. Carriers should not be forced into proprietary hub-and-spoke methodologies, for instance, when they might prefer to directly interconnect with other carriers to provide location information or pursue some other workable solution. An open and competitive ecosystem will also facilitate innovation—something that, in the 911 context, can only be of benefit to consumers.

Finally, the Commission should actively encourage carriers and PSAPs to move toward next generation technologies. NENA suggested one means by which the Commission could do so—by exempting carriers from roaming deadlines when those carriers voluntarily commit to transition to NG911 protocols on a somewhat longer timeframe.[17] Even if the Commission does not adopt that specific proposal, it should at least consider extending its proposed timelines for

[17] Comments of The National Emergency Number Association at 11, PS Docket Nos. 11-153 & 10-255 (filed Apr. 4, 2014).

implementing difficult and expensive technological upgrades, particularly where those upgrades are to legacy technologies and will result in stranded investments.

V. CONCLUSION

Interim SMS-to-911 has always been intended to be a temporary solution that provides text access to emergency services while the migration to all-IP NG911 networks progresses. T-Mobile encourages the Commission not to lose sight of this fundamental reality as it implements new rules extending SMS-to-911 obligations to other covered text providers, as well as considers additional rules regarding location and roaming for SMS-to-911. T-Mobile is proud of its role in improving access to emergency services for all consumers, and looks forward to working with the Commission and other stakeholders in determining the best ways to migrate to next generation technologies that will natively support many features that are simply unavailable in legacy SMS services.

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