

**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 T-MOBILE USA, INC. ON
THIRD FURTHER NOTICE OF PROPOSED RULEMAKING**

T-Mobile USA, Inc. (“T-Mobile”)¹ has always been proud of its role, along with the Association of Public Safety Officials, the National Emergency Number Association and other national carriers, in reaching a Voluntary Agreement to make available an interim text-to-911 solution.² However, T-Mobile also encourages the Commission to remember that Short Message Service (“SMS”) text-to-911 was never intended to be anything more than a transitional solution that acted as a bridge to Next Generation 911 (“NG911”), Therefore, as an interim solution, the Voluntary Agreement was necessarily limited in scope, to ensure that carriers were not burdened

¹ T-Mobile USA, Inc. is a wholly owned subsidiary of T-Mobile US, Inc.

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’Brian 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 (filed Dec. 6, 2012) (“Voluntary Agreement”).

with extensive retrofitting of legacy technologies at a time when all parties agreed that the biggest priority should be moving forward to implement NG911.³

The Commission has nevertheless acted to codify the Voluntary Agreement⁴ and now proposes additional new requirements which were expressly omitted from that agreement, including the provision of enhanced location,⁵ potentially utilizing a handset override mode,⁶ as well as SMS-to-911 access for roaming subscribers.⁷ With respect to enhanced location, T-Mobile already provides, upon re-bid and on a best-efforts basis, its best available estimated location, which can be better than the coarse location that accompanies the initial transmission. However, provision of this location information is limited by user privacy settings, and it is not feasible to redesign SMS—a legacy technology that will sunset—to incorporate voice-like overrides of handset settings by carriers. Such carrier handset overrides present significant technical hurdles.⁸ The Commission’s proposed roaming requirements face similar technical

³ See Voluntary Agreement at 2; see also Comments of APCO in Response to Third Further Notice of Proposed Rulemaking at 3-4, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014).

⁴ *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, 9851 ¶ 10 (2014) (“FNPRM”).

⁵ *Id.* at 9882 ¶ 82.

⁶ *Id.* at 9889, 9890 ¶¶ 100, 103.

⁷ *Id.* at 9892 ¶ 109.

⁸ See Comments of T-Mobile USA, Inc. on Second Report and Order and Third Further Notice of Proposed Rulemaking at 7-8, 9-10, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“T-Mobile Comments”); Comments of AT&T at 3, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“AT&T Comments”); Comments of Sprint Corporation at 4-6, 9-10, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“Sprint Comments”); Comments of Verizon and Verizon Wireless at 4, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“Verizon Comments”); Comments of CTIA—The Wireless Association at 2, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“CTIA Comments”); Comments of

difficulties. Furthermore, it is unlikely that SMS-to-911 roaming can be implemented in the Commission’s proposed two year timeframe.⁹

I. ENHANCED LOCATION IS MORE COMPLICATED THAN SOME HAVE CLAIMED

The record shows that enhanced location for SMS-to-911 is not as simple as overlaying voice call location estimates on to an SMS message to 911.¹⁰ *First*, calls for carrier handset overrides—whether to enable Phase II-like location estimates or to address consumer privacy concerns¹¹—ignore the technical and logistical realities of implementing such changes.¹² T-Mobile therefore encourages the Commission to reject a mandate for carrier handset overrides for SMS-to-911.¹³ Today, when a user sends an SMS to 911, neither the handset nor the network elements involved in SMS-to-911 go into emergency mode as they do in a voice 911 call. Instead, the phone remains in its normal mode of operation, with neither the network nor the handset being in a special, prioritized handling mode. This reality was well-understood by all of

the Rural Wireless Association, Inc. at 1-2, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014).

⁹ See T-Mobile Comments at 10-12; AT&T Comments at 6-7; Sprint Comments at 9-10; Verizon Comments at 5; CTIA Comments at 4-5; Comments of the Alliance for Telecommunications Industry Solutions at 5-6, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“ATIS Comments”).

¹⁰ See T-Mobile Comments at 7, AT&T Comments at 2; Sprint Comments at 4-6; Verizon Comments at 7-8; ATIS Comments at 4; CTIA Comments at 8.

¹¹ See, e.g., Comments of TruePosition at 6, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“TruePosition Comments”); Comments of The Boulder Regional Emergency Telephone Service Authority on Third Further Notice of Proposed Rulemaking Regarding Text to 9-1-1 at 6, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“BRETSA Comments”); Comments of The National Emergency Number Association at 4, PS Docket Nos. 11-153 and 10-255 (filed Oct. 16, 2014) (“NENA Comments”).

¹² See, e.g., Sprint Comments at 7-9.

¹³ See, e.g., BRETSA Comments at 6; TruePosition Comments at 6 (endorsing a Phase II-like mandate for location accuracy); NENA Comments at 4 (calling for control plane location systems for cLBS); see also *id.* at 8 (acknowledging that adding override and control plane mechanisms to handsets “is not a trivial matter”).

the signatories to the Voluntary Agreement—SMS-to-911 provides only secondary access to 911. Public safety itself recognized that a voice call to 911 was preferable to SMS-to-911, and, in signing the Voluntary Agreement, acknowledged that SMS-to-911 would not be identical to voice E911, believing it far more important to provide *some* access to 911 via text messaging while carriers and PSAPs transition to NG911.

The fact that SMS-to-911 is intended to be an interim solution is reinforced by the rules the Commission has adopted so far. To this end, bounce-back messages inform consumers when SMS-to-911 is not available and that they should make a voice call to 911.¹⁴ Furthermore, consumer education efforts focus on voice 911 calls as the best way to reach emergency responders and that SMS-to-911 should only be used where a voice call to 911 is not possible.¹⁵ The Commission should not undermine this approach by adopting mandates that turn interim SMS-to-911 into a substitute for voice 911, or for NG911’s multi-method access, when interim SMS-to-911 was never intended to serve as such a substitute.

T-Mobile notes also that a carrier override requirement would require re-engineering of existing handsets to allow text messages to invoke the control plane and override device settings. Many legacy handsets are incapable of over-the-air updating, thus any potential benefit to SMS-to-911 location estimates would require subscriber handset turnover—which takes years. It would also require a fundamental transformation of devices and core network equipment that would have essentially no utility in supporting NG911 applications; it would be an expenditure on a dead-end technology with a limited remaining life span. Thus, any requirements on carriers to invoke the control plane for texts sent to 911 should not apply to SMS to 911.

¹⁴ *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Report and Order, FCC 13-64, 28 FCC Rcd. 7556, 7581 ¶¶ 69 (2013).

¹⁵ *Id.* at 7583-86 ¶¶ 77-83.

Second, T-Mobile continues to emphasize that TruePosition’s claims about providing improved accuracy for SMS to 911 messages (or 911 calls for that matter) are nothing more than puffery.¹⁶ As T-Mobile has noted on the record in several filings, TruePosition’s Uplink-Time Difference of Arrival (“U-TDOA”) is simply not on the technology path for improved location accuracy, whether in existing legacy 2G and 3G networks, the 4G LTE networks now being deployed, or for NG911.¹⁷

Even if U-TDOA represented an opportunity for improved location (which it does not), the physical limitations associated with Location Measurement Unit (“LMU”) deployment mean that it cannot be deployed quickly and without degrading radio network performance. Carriers would have to install LMUs at nearly every single existing cell site, an extraordinary undertaking in terms of time and resources—with questionable results—since U-TDOA is not deployed at any 3G or 4G LTE sites today.¹⁸ In addition, LMUs must be installed between the uplink antenna and the cell site receiver.¹⁹ But that is not possible in many modern cell site configurations, which have integrated the transmitting/receiving equipment with the antenna on the tower in order to increase coverage and mobile broadband capacity by eliminating cable losses.²⁰ LMUs cannot be installed at such sites without completely reconfiguring these

¹⁶ TruePosition Comments at 7-8; *see also e.g.*, Letter from James Arden Barnett, Jr., Counsel to TruePosition, to Marlene H. Dortch, Secretary, FCC at 2, PS Docket No. 07-114 (filed Oct. 28, 2014) (“TruePosition Letter”).

¹⁷ *See* T-Mobile Comments at 8-9; T-Mobile USA, Inc. Reply Comments on Third FNPRM On Location Accuracy at 5, PS Docket No. 07-114 (filed July 14, 2014) (“T-Mobile 2014 Location Accuracy Reply Comments”); *see also id.* at Exhibit 1 Declaration of John F. Pottle, Ryan N. Jensen, and Daniel H. Wilson ¶¶ 16-23 (“Pottle/Jensen/Wilson Declaration”).

¹⁸ In addition, because U-TDOA does not operate on UMTS or LTE today, any adjustments necessary to make U-TDOA useful in those networks would add additional time and expense.

¹⁹ Pottle/Jensen/Wilson Declaration ¶ 20.

²⁰ *Id.*

architectures—adding more time and expense to what would already be a lengthy deployment process, as well as compromising performance of the radio network and reducing affected cell sites’ coverage areas and performance.²¹

TruePosition, interestingly, does not dispute this fundamental physical limitation. It instead continues to fall back on its general claim that only “relatively minor development effort[s]” are needed to enable U-TDOA for SMS-to-911.²² But this claim remains unproven, since U-TDOA has never been tested for SMS-to-911 and TruePosition opted out of the opportunity to prove U-TDOA performance against other technologies in the CSRIC-sponsored industry test bed for voice 911 location technologies.²³ Further, the claim that what amounts to a software upgrade alone is required ignores the fact that U-TDOA has only been used by two of the four national carriers and only on 2G networks—any applicability to other carriers and/or 3G and 4G networks necessarily implies a major hardware deployment to all cell sites.

II. ROAMING CANNOT BE ACCOMPLISHED IN TWO YEARS

Even if a viable roaming solution can be devised,²⁴ it will take much longer than two years to implement and deploy. T-Mobile’s estimates of deployment times for the plans currently proffered by TeleCommunication Systems (and others) are that it will take at least four years to get SMS-to-911 roaming functional.²⁵ Those estimates assume cooperation and coordination among the many relevant stakeholders. Those are big assumptions, particularly in

²¹ *Id.*

²² TruePosition Comments at 5 (citing Comments of TruePosition at 6, PS Docket Nos. 10-255 and 11-153 (filed Apr. 4, 2014)); TruePosition Letter at 2.

²³ *See* T-Mobile 2014 Location Accuracy Reply Comments at 21-22; Pottle/Jensen/Wilson Declaration ¶ 23.

²⁴ *See* T-Mobile Comments at 11-12.

²⁵ *Id.* at 11.

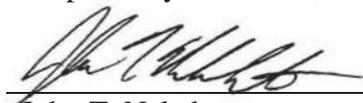
an environment where the viability of the proposed method is uncertain. Many stakeholders continue to question the feasibility of roaming for SMS to 911 in the first place.²⁶

If the Commission moves forward with a roaming mandate for interim SMS-to-911, it must take care to avoid imposing timelines and other requirements that simply cannot be met. Any roaming obligations must account for the realities of implementation and deployment as well as ensure carriers are not overly burdened with backwards-looking obligations when all stakeholders should be focusing forward on NG911 deployments.

* * * * *

T-Mobile encourages the Commission to remember the interim nature of SMS-to-911 as it explores additional obligations on covered text providers. The Voluntary Agreement was an important step forward for emergency communications, but one that was intended to bridge a gap between legacy systems and IP-based NG911. It was never expected that interim SMS-to-911 would serve as a substitute for true NG911 text-based communications. The Commission should take care to avoid imposing such expectations on this short-term solution.

Respectfully submitted,



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²⁶ See, e.g., Sprint Comments at 9; CTIA Comments at 6-7; see also Verizon Comments at 5-6; AT&T Comments at 6-7; ATIS Comments at 6.