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

To: The Commission

COMMENTS

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SUMMARY

As mobile wireless networks have become one of the principal means of communication for Americans, the Federal Communications Commission ("FCC") has taken on the critical task of proposing rules to ensure that Americans can safely access emergency services from their mobile phones in order to protect their personal safety and property. The ability to text to 911 is an important resource in emergency situations where individuals cannot safely make emergency voice calls, and particularly important for Americans with disabilities that cannot make voice calls to reach emergency services. It is equally important that a text message requesting help in an emergency situation is delivered to the Public Safety Answering Point ("PSAP") with accurate location information.

There are proven technologies that are capable of providing accurate location information in conjunction with a text message sent to a PSAP. There is no reason why this text-to-911 location capability cannot be used to save lives, as proposed in the *Policy Statement and Second Notice of Proposed Rulemaking*. Further, the FCC should increase the likelihood that text-to-911 will be implemented effectively, efficiently and in a timely manner by making the regulations technology-neutral. By allowing providers to choose among available technologies, both Commercial Mobile Radio Service and Over-the-Top text messaging service providers will be able to comply with the Commission's regulations.

TruePosition herein states its support for the FCC's reasonable and prudent regulations that will promote text-to-911 and Next Generation 911through effective technology. Undoubtedly, the FCC's actions in this proceeding will save lives, reduce property losses and aid local governments in the efficient and effective delivery of public safety services throughout the United States.

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COMMENTS

TruePosition, Inc., through its attorneys, and pursuant to Section 1.41 of the Commission's rules, 47 C.F.R. § 1.41, respectfully submits these Comments in response to the Federal Communications Commission's ("FCC") *Policy Statement and Second Further Notice of Proposed Rulemaking*[1] in the above-referenced docket.

I. STATEMENT OF INTEREST

TruePosition is the nation's leading manufacturer of mobile location solutions for mission-critical situations where lives and safety are at stake and accuracy and reliability are of paramount concern. TruePosition has more patents, technical expertise, and operational experience in wireless location systems and services than any other company in the world. Every day more than 100 million people depend on location services supported by TruePosition's technology. With respect to the wireless location technological questions raised by the FCC in this rulemaking proceeding, there are few companies better qualified to answer them than TruePosition.

[1] In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, PS Docket No. 11-153, PS Docket No. 10-255, *Policy Statement and Second Further Notice of Proposed Rulemaking* (Rel. Jan. 31, 2014) ("*Second FNPRM*").

II. TEXT-TO-911 SHOULD BE ENCOURAGED

As stated by the FCC in its *Second FNPRM*, "[o]ne of the core missions of the [FCC] is promoting the safety of life and property of the American public through the use of wire and radio communications."[2] With a growing number of individuals solely relying on wireless technologies as their primary means of communication, especially text messaging, it is imperative for the FCC to adopt regulations that allow consumers to contact 911 emergency services with the use of Commercial Mobile Radio Service ("CMRS") and Over-the-Top ("OTT") text messaging services. Many people conduct the majority of their communications via text message[3] and will expect that when they text "9-1-1", an emergency services provider will be contacted. The FCC's proposed rules also will be of profound importance to individuals with disabilities who cannot place voice calls in an emergency. These individuals will expect to, and should, receive the same level of service given to 911 voice calls, including the delivery of accurate location information to Public Safety to enable first responders to find and help them quickly.

TruePosition's technology uses Uplink Time Difference of Arrival ("U-TDOA"), a network-based technology, to determine accurate location information that can then be provided to specific PSAPs when a wireless user sends a text message. True Position is ready now to help every CMRS and OTT text messaging service provider throughout the United States meet the FCC's critical public safety standards. The costs of achieving these text-to-911 standards are manageable and pale in comparison to the consequences of failing to provide this critical public safety service.

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[2] *Second FNPRM* at P 1.
[3] *See Second FNPRM* at n.9; n.10.

III. THE FCC SHOULD ADOPT TECHNOLOGY-NEUTRAL REGULATIONS

In its *Second FNPRM*, the FCC states that it believes a "technology-neutral approach provides platform-independent norms for all stakeholders, based on high-level functional standards set by the relevant stakeholders in industry and the public safety community."[4] That being said, the FCC's role should be to provide objective standards toward which the carriers, their equipment manufacturers, OTT service providers and vendors can design and implement text-to-911 solutions. The FCC should not favor one technology over another.

The FCC, the public safety sector and many technical experts have carefully and thoroughly evaluated the issues in the three years since the FCC launched its *Notice of Proposed Rulemaking* to determine a framework for deploying Next Generation 911technology.[5] By promulgating technology-neutral regulations, the FCC will allow text messaging service providers, industry stakeholders and the public safety community to work collaboratively to pick from a variety of technological solutions that best meet the needs of all service providers and their customers. The competitive market and messaging consumers, who have every reason to want to reach PSAPs and be found right away, will "pick the winners." By allowing all effective technologies for text-to-911 to participate in the FCC's public safety initiatives, industry will have the incentive to provide location information for emergency text messages within the FCC's regulatory timeframe.

IV. THE FCC HAS JURISDICTION TO REGULATE TEXT-TO-911

The FCC has evident statutory authority to regulate text messaging for CMRS text message service providers. The U.S. Supreme Court has recognized that Title III of the

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[4] *Second FNPRM* at P 15.

[5] 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 No. 11-153, PS Docket No. 10-255, *Notice of Proposed Rulemaking*, 26 FCC Rcd. 13615 (2011).

Communications Act grants the FCC "expansive powers" and a "comprehensive mandate" to regulate the use of spectrum in the public interest.[6] Even though text messaging is a largely unregulated Information Service, nevertheless, the D.C. Circuit has upheld the FCC's authority to regulate text messaging under Chapter III of the Communications Act, and the FCC's ancillary jurisdiction. In *Cellco Partnership v. FCC*, the D.C. Circuit recognized that the FCC's "broad authority to manage spectrum…in the public interest" also applies to wireless data services.[7]

Perhaps the more contentious issue regarding the FCC's regulatory authority is whether it has jurisdiction to regulate OTT text messaging service providers. TruePosition submits that it does. The FCC has plenary jurisdiction over the telephone numbering system in the United States.[8] CMRS text messaging service providers and OTT providers use phone numbers as essential components of the sender's and recipient's address.[9] OTT text messaging service providers do not own the phone numbers that are critical to the functioning of their services; these numbers are a "public resource" that the FCC has plenary authority to regulate in the public interest.[10] The FCC can regulate telephone numbers, including taking them away from service providers and imposing regulations on them, should the FCC deem it necessary to do so in the public interest.

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[6] In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, PS Docket No. 11-153, PS Docket No. 10-255, *Report and Order* (2013) at P 89 (citing *Nat'l Broad. Co. v. United States*, 319 U.S. 190, 219 (1943) (recognizing the FCC's "expansive powers" and "comprehensive mandate"); *see also* Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services, *Second Report and Order*, 26 FCC Rcd. 5411, 5439-5443 (¶¶ 61-64) (2011) (discussing the scope of the FCC's Title III authority) ("*Data Roaming Order*"), *petition for review denied Cellco Partnership v. FCC*, 700 F.3d 534 (D.C. Cir. 2012) (upholding the FCC's authority to rely on Title III provisions to impose the data roaming rule)).

[7] *Cellco*, 700 F.3d at 541.

[8] *Sprint Corp. v. F.C.C.*, 331 F.3d 952, 954 (D.C. Cir. June 4, 2003) ("Congress, as part of the Telecommunications Act of 1996…amended the Communications Act…to vest exclusive authority in the Commission over all aspects of numbering administration in the United States.").

[9] *See Second FNPRM* at n.9.

[10] *See In the Matter of Administration of the North American Numbering Plan*, 11 FCC Rcd. 2588, 2591 (July 13, 1995) ("These numbers are a public resource, and are not the property of the carriers.").

Given that an increasing number of consumers are using IP-based text messaging services as their primary means of text communication,[11] FCC regulation of the use of phone numbers when they are an integral part of OTT messaging services is a reasonable exercise of the agency's statutory authority. It is undoubtedly in the public interest to promote public safety, and achieve uniformity in the nation's 911 emergency system, through the proposed text-to-911 regulations.

V. EXISTING TECHNOLOGY CAN FIND ANYONE, ANYWHERE, WITH A TEXT

The FCC has asked for comments on a variety of technical issues related to Text-to-911. In general, TruePosition submits that as soon as practical, any lingering differences between voice to 911 and text to 911 that are inherent only due to legacy practices ought to be eliminated as soon as possible. The consuming public certainly expects their messaging services to work seamlessly and without interruption from one end of the United States to another, and, they often pay a premium for their text messaging services. It is reasonable for consumers to be able have assurances that emergency text messages will be handled with the same speed and accuracy as consumers expect when they place voice emergency calls.

A. Existing Network Technology Can Be Used to Provide Phase II Location Information for Emergency Text Messages

The solutions produced by the voluntary Carrier-NENA-APCO agreement, and the J-STD-110 standard, do not currently define an interface protocol to retrieve sender/customer location information; these are interim solutions, but they provide a solid platform from which to build a more permanent solution to the problem of identifying the location of the customer who has sent an emergency text message. Some messaging service providers have suggested that it

[11] *See Second FNPRM* at n.33.

may take anywhere between four to nine years for a significant majority of their subscribers to migrate to a yet-to-be-finalized permanent solution to this problem *via* Next Generation LTE networks. That is simply far too long to wait while tens of millions of wireless users are left without a Phase II-like location capability. Without location information, millions of lives will be endangered as cellphone users who find themselves in situations where making a phone call could, and announcing their location, would expose them to imminent danger. In the types of situations where Text to 911 is most likely to be necessary, user location information is inherently critical for public safety officials to be able to timely-respond and assist.

The FCC has asked industry to provide comments on capabilities to provide Phase II equivalent location information, similar to "thin-client" applications.[12] Existing E911 location capabilities can be used successfully with relatively minor development effort to locate people sending emergency text messages. In particular, existing network-based U-TDOA location capabilities can be used to locate a device by the transmission of an SMS receive acknowledgement of either the response SMS from the PSAP, or a "silent" SMS sent to the device for the specific purpose of locating it. By contrast, "User Plane" approaches would require a wireless data connection through the CMRS, which will either be subscribed to or enabled by the user, or the device may access an un-related Wi-Fi service at the time the emergency occurs.

B. Technology is on the Horizon for OTT Providers to Provide Location Accuracy Information for Text-to-911

The FCC seeks comment on what technological solutions would be required for interconnected text providers, ones that are not CMRS service providers, to implement a

[12] *See Second FNPRM* at P 41.

technology that provides Phase II equivalent location information.[13] Following existing standards for commercial location-based services, an Interconnected Text provider that identifies a message as addressed to 911 could collaborate with the serving CMRS provider to determine the subscriber's location with Phase II accuracy and meet the same standards required for handset-based location delivery. Just as with a CMRS network, a mobile phone user would send a text to 911, which would be processed by the Short Message Service Center, then sent to the Text Control Center ("TCC"). In order for the TCC to route the text message to the correct PSAP, it would need to obtain a coarse location for the mobile device from a Location Server ("LS"). The LS would then interact with the Routing Server to forward the emergency text message to the appropriate PSAP.

Although location information for voice calls is provided through the Serving Cell Site information rather than coarse data, the technology solution for text messaging is similar to voice; "coarse location" data will soon be capable of providing location information that is just as precise for Text-to-911. In fact, law enforcement has for years used the Gateway Mobile Locating Center ("GMLC") to locate specific users. GMLC is a platform in the wireless network today that manages location requests and delivery. GMLC is a location-oriented network element that interacts with the network and manages queries regarding subscriber location information. The issued request is returned with location-related information, such as Cell ID and sector information. This information is then processed by the Serving Mobile Location Center and translated into coordinates. GMLC has been used in various location based services successfully for many years.

The best contender for a location accuracy solution for OTT text-to-911 may be the Mobile-Terminated Location Request ("MTLR"). MTLR "wakes-up" an idle mobile phone just

[13] *See Second FNPRM* at P 43.

long enough to get it to interact with the network so that a UTDOA location can be provided. For this technology to work, either the TCC or the PSAP would need a mechanism to request the location produced by the GMLC, and to accept the results. Although there would be software developments required to make MLTR work for OTT text-to-911, this technology will soon be available. This would provide Phase II-like location capability to users of texting applications that are "growing increasingly popular and have eclipsed short messaging service (SMS) text messages provided by wireless carriers in terms of volume".[14]

C. The Same Location Accuracy Standards Should Be Required for Text-to-911 As Handset-Based Voice Calls to 911

TruePosition applauds the FCC for setting the goal for voice and text service providers to meet the same 911 location accuracy standards. Existing standards for commercial location-based services can be leveraged to offer exactly the same level of service and capabilities for text messages as with an emergency voice call. This concept can be used to bring together the commercial plane in which SMS operates, and enhance the location capabilities of emergency services providers.

Just as the first step toward providing accurate locations indoors[15] was taken when the FCC required accurate locations outdoors, the first step toward being able to locate the source of an emergency text message anywhere in the U.S. will be to locate emergency text messages in outdoor environments. In accordance with Phase II location standards, CMRS text messaging service providers should be required to locate an emergency text message within 50 meters for 67 percent of calls and 150 meters for 90 percent of calls. Likewise, when the required

[14] *Second FNPRM* at P 6.
[15] Wireless E911 Location Accuracy Requirements, PS Docket No. 07-114, *Notice of Proposed Rulemaking*, 79 FR 17820 (March 28, 2014) ("*Indoor Location NPRM*").

technology has been developed, OTT text messaging service providers should be required to locate an emergency texter within 100 meters for 67 percent of calls and 300 meters for 90 percent of calls.[16] After the technology has been developed to meet these outdoor Phase II standards with accuracy, industry can then work to improve the technology so that emergency text messages will meet the proposed indoor location standards for CMRS emergency voice calls.[17]

D. Existing Commercial Location-Based Services Can Be Used to Provide Accurate Location Information for Customers When Roaming

TruePosition shares the public safety community's desire to "push[] forward [with roaming regulations] in the face of technical complexities."[18] The roaming challenges that the FCC mentions regarding routing an emergency text message to the correct PSAP can be addressed over time through reasonable changes to existing text-messaging protocols. Moreover, now is the ideal time, prior to widespread deployment of Fourth Generation Long-Term Evolution voice and data networks, for carriers and other messaging service providers to work together with vendors and industry standards organizations (such as 3GPP and 3GPP2) to adopt industry-wide standards that will enable emergency text messages to be received by the nearest PSAP.

In brief, the essence of the roaming problem has to do with the message delivery protocols. When a text is sent it first goes to the serving carrier's network, which will route the text to its own SMSC (Short Message Service Center), or to the subscriber's home SMSC if the subscriber is a roamer. The SMSC then looks at the recipient's address, if it is a 911 message,

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[16] Interconnected VoIP Service; Wireless E911 Location Accuracy Requirements; E911 Requirements for IP-Enabled Service Providers, Ps Docket No. 07-114, GN Docket No. 11-117, WC Docket No. 05-196, *Final Rule*, 76 FR 59916 (Sept. 28, 2011).
[17] *See Indoor Location NPRM* at 17820.
[18] *Second FNPRM* at P 47.

the SMSC routes the SMS to its own network's TCC (Text Control Center). The TCC then does a query to its own LS (Location Server) to get the identification of the serving cell that is hosting the call. The TCC performs a mapping of serving cells to PSAPs, the TCC uses the serving cell's identification received from the LS to decide which PSAP should receive the text. The problem for the roaming scenario is that the TCC of the home network does not have knowledge of the serving cell ID, and does not have the mapping of the roaming network's cell IDs, making it impossible to route emergency text messages to the closest PSAP for customers when they are roaming outside their home carrier's network.

There are a variety of ways in which the carriers and message providers could change these protocols to fix this problem: (1) The TCC could be programmed to ask the LS for a location rather than just a cell ID, and then perform the routing based on the location information. This would require the LS of the home network to have a connection to the visited network's GMLC (Gateway Mobile Location Center), which coordinates locating the mobile user. (2) Carriers could share cell ID databases with each other when they have roaming agreements. (3) The MSC could be programmed to always route the 911 text to its own SMSC rather than to the home SMSC even in the case of roamers.

Clearly, some development efforts by all messaging service providers will be required before an effective message roaming system can be deployed. Moreover, the FCC may need to intervene to ensure that some form of common and uniform emergency message delivery protocols are adopted and implemented nationwide. In the absence of common standards and protocols, individual message service providers will be faced with the difficult task of coming up with their own solutions to this roaming problem.

VI. CONCLUSION

Bringing 911 capabilities and accurate location information to the vast and ever-growing text messaging community is a critical public safety necessity. TruePosition urges the FCC to adopt technology-neutral regulations in order to allow for flexibility in deploying the best technology to suit each CMRS and OTT text messaging service. TruePosition promotes these regulations for all CMRS and OTT messaging services and stands ready to work with CMRS and OTT messaging service providers to develop a location service that will meet their needs. Consequently, TruePosition requests that the Commission proceed to adopt the text-to-911 regulations proposed in its *Second FNPRM*. TruePosition also supports the FCC's long-term goal of adopting standards that will ultimately afford the same location accuracy requirements for messaging services as the FCC has proposed for voice-based 911 emergency calls.

Respectfully Submitted,

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