

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of:)	
)	
Wireless E911 Location Accuracy Requirements)	PS Docket No. 07-114
)	
E911 Requirements for IP-Enabled Service Providers)	WC Docket No. 05-196
)	

REPLY COMMENTS OF MOTOROLA MOBILITY, INC.

Motorola Mobility, Inc. (“Motorola Mobility”) hereby submits the following reply comments in response to the record developed on the Federal Communications Commission’s (“Commission”) Further Notice of Proposed Rulemaking (“*FNPRM*”) and Notice of Inquiry (“*NOI*”) on wireless E911 location accuracy requirements and E911 requirements for IP-enabled service providers.¹ The record in this proceeding demonstrates broad support for the points made in Motorola Mobility’s initial comments,² namely that the new location accuracy rules adopted in the Second Report and Order represent the limits of current technology, and that further study and development is required before the industry can address the remaining challenges in providing automatic location information. Moreover, while the comments confirm that it is likely too early to impose automatic location information (“ALI”) requirements on all

¹ See Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, PS Docket No. 07-114, WC Docket NO. 05-196, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, 25 FCC Rcd 18957 (2010) (“*Notice*”).

² In the opening round of this proceeding, Motorola Mobility, Inc. filed joint comments in collaboration with Motorola Solutions, Inc. See Comments of Motorola Mobility, Inc. and Motorola Solutions, Inc., PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“*Motorola Mobility Comments*”). For the sake of clarity, Motorola Mobility stresses that the present reply comments are filed independently, and the views represented herein are solely those of Motorola Mobility.

VoIP services, to the extent that VoIP services are required to provide this information in the future, the VoIP service provider (“VSP”) should bear the responsibility for ensuring that 911 calls are properly routed and ALI is transmitted.

I. FURTHER CHANGES TO THE LOCATION ACCURACY RULES ARE UNWARRANTED AT THIS TIME.

Commenters on the record widely agreed that the time is not right for the Commission to consider further changes to the CMRS location accuracy rules.³ In the *Second Report and Order*, the Commission revised the wireless E911 Phase II location accuracy rules of Section 20.18(h) to require that the accuracy standards be satisfied at either a county-based or PSAP-based geographic level, and revised the location accuracy requirements for handset-based and network-based location technologies.⁴ Motorola Mobility joins the chorus of other commenters who applaud the Commission on these important developments. However, Motorola Mobility agrees with Sprint Nextel that “[g]iven the Commission’s recent action, there is no immediate need to modify these requirements. There is certainly no evidence that an increase in these standards is technically or economically feasible.”⁵

As CTIA states, “any action by the Commission to add new requirements while the industry is implementing the more granular location accuracy benchmarks so recently adopted

³ See, e.g., Comments of AT&T at 4, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“AT&T Comments”); Comments of CTIA—The Wireless Association at 2-4, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“CTIA Comments”); Comments of Sprint Nextel Corporation at 3, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“Sprint Nextel Comments”); Comments of T-Mobile USA, Inc. at 2, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“T-Mobile Comments”); Comments of the Telecommunications Industry Association at 5, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“TIA Comments”).

⁴ See *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, Second Report and Order, 25 FCC Rcd 18909, 18910 ¶ 2 (2010) (“*Second Report and Order*”).

⁵ Sprint Nextel Comments at 3.

risks diverting resources or stalling the deployment of systems to meet those requirements.”⁶

The new rules of the *Second Report and Order* have only just been adopted, and the changes will prompt an industry-wide wave of infrastructure investment and technology development geared at meeting the increasingly strict location accuracy requirements. In the words of T-Mobile, “[t]he *FNPRM* unfortunately threatens to distract from those efforts, reopening the prospect that, even before the eight-year transition is complete, the FCC may ‘move the goalposts’ that were just set.”⁷ Rather than risking the delay of the significant public benefits of the new rules, the Commission should instead allow the industry time to implement the changes that have been adopted and to collect observations on their efficacy.

Motorola Mobility also agrees with the numerous filers who oppose making mandatory the location accuracy testing and verification guidelines of OET Bulletin 71.⁸ As explained by AT&T, the OET Bulletin itself states that “*it is not intended to establish mandatory procedures*” but rather to “provid[e] guidance” as technology develops.⁹ Motorola Mobility supports voluntary testing for carriers. However, to the extent that the Commission deems formal compliance testing necessary in the future, it should focus on industry-led standard processes, such as those developed through ATIS.¹⁰

⁶ Comments of CTIA—The Wireless Association at 3, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011).

⁷ Comments of T-Mobile USA, Inc. at 2, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011).

⁸ See AT&T Comments at 8; Comments of Alliance for Telecommunications Industry Solutions at 6, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“ATIS Comments”); Comments of Qualcomm Incorporated at 13, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“Qualcomm Comments”); Sprint Nextel Comments at 7.

⁹ OET Bulletin No. 71, “Guidelines for Testing and Verifying the Accuracy of Wireless E911 Location Systems,” FCC, at 2 (Apr. 12, 2000).

¹⁰ See ATIS Comments at 5-6.

II. FURTHER STUDY IS NEEDED TO ADDRESS THE PERSISTING CHALLENGES IN LOCATION ACCURACY.

Commenters from across the industry and public safety communities indicate that significant additional study and technical development is needed to identify solutions to persisting challenges in providing accurate location information across various environments and technologies.¹¹ Motorola Mobility agrees that ongoing research into location accuracy is necessary, and continues to believe that this would be best accomplished through a multi-stakeholder group such as the E911 Technical Advisory Group (“ETAG”).

The comments confirm that there are currently some environments for which providing accurate location information has proven to be challenging. Many commenters point to the ongoing work of the Communications Security, Reliability, and Interoperability Council (“CSRIC”) and suggest that the upcoming CSRIC Working Group reports will contain a helpful assessment of these challenges.¹² T-Mobile points out that the CSRIC working group reports on location accuracy and NG911 may render moot many of the Commission’s questions, and suggests that the Commission should therefore avoid considering any rule changes before the final reports have been completed and analyzed.¹³ Motorola Mobility has actively participated in the CSRIC process and concurs that the Commission should review the working group reports

¹¹ See, e.g., AT&T Comments at 11-12; Comments of the Association of Public-safety Communications Officers at 5, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“APCO Comments”); Comments of the National Emergency Number Association at 15, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“NENA Comments”); Qualcomm Comments at 13-14; Sprint Nextel Comments at 8.

¹² See, e.g., APCO Comments 3; Joint Initial Comments of The Texas Commission on State Emergency Communications and the Texas 9-1-1 Alliance at 5-6, 14-15, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“Texas Public Safety Comments”); T-Mobile Comments at 7; TIA Comments at 8-9; Comments of Verizon and Verizon Wireless at 7, 9, 11, 12, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011) (“Verizon and Verizon Wireless Comments”).

¹³ See T-Mobile Comments at 6-7.

closely, as they are likely to be highly relevant to the questions of providing ALI in challenging environments and over emerging technologies.

However, the CSRIC reports likely will not answer all remaining questions on these issues. CTIA and others suggest that any remaining technical issues be investigated through an ongoing stakeholder group that includes participation from across the industry and public safety community.¹⁴ Along these lines, Motorola Mobility reiterates its support for the ETAG concept that has previously been promoted by a cross-section of industry and public safety commenters.¹⁵ As articulated by AT&T, the ETAG would include representatives from all sectors of the industry and “would work cooperatively and expeditiously to define industry direction to enhance location accuracy and to improve the manner in which location accuracy is measured.”¹⁶ Any future studies on location accuracy technologies and capabilities should be led by the ETAG, which can draw upon the experience and expertise of its industry and public safety members in conducting real-world evaluations of the efficiency and feasibility of potential technical solutions for providing location accuracy in challenging environments and over emerging technologies.

In particular, vendor claims regarding solutions for improving location accuracy indoors or in other challenging environments should be fully vetted and explored by the ETAG before being considered by the Commission. Predicting that the *Notice* would draw strong interest by the location information vendor community, Sprint Nextel urged the Commission to “take into account that, although a technology may be technically feasible for carriers to deploy, factors

¹⁴ See CTIA Comments at 4-8.

¹⁵ See, e.g., AT&T Comments at 4-5; ATIS Comments at 4; Letter from Brian Fontes, CEO, NENA to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 (filed Dec. 11, 2008); TIA Comments at 10.

¹⁶ AT&T Comments at 5.

such as cost, labor, and the time associated with deployment may make such deployment both impractical and economically infeasible for carriers and ultimately consumers.”¹⁷ Indeed, several vendors of E911 solutions submitted comments in response to the Notice touting the benefits of their proprietary solutions for providing indoor ALI.¹⁸ None of these solutions have been demonstrated to be effective and feasible on the scale necessary to support improved indoor location accuracy in the most challenging environments. Claims such as these should be referred to the ETAG for consideration and evaluation. The technology to reliably provide adequate indoor ALI is not yet available, and specific rules for indoor location accuracy are inappropriate at this time.

Significant additional research and coordination between various industry members and the public safety community will also be required with respect to the challenge of providing ALI to PSAPs via SMS text message. As Verizon and Verizon Wireless correctly observed, “[e]nabling the ability to locate and route the emergency text in the same manner as a 3G voice 911 call will require not only modifications to the handset emergency service processing functions, but also to all end-to-end systems in the E911 voice and data paths.”¹⁹ SMS text messaging is not an acceptable mechanism for emergency communications. SMS is a best-effort communications medium with no guarantee of timely delivery and limited or no feedback to senders when messages fail to transmit. There is presently no means to provide ALI or reliable

¹⁷ Sprint Nextel Comments at 2-3.

¹⁸ *See generally* Comments of Andrew, a CommScope Company, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 18, 2011); Comments of Commlabs, Inc., PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011); Comments of Mobile TREC Corporation, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011), Comments of Polaris Wireless, Inc., PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011); Comments of TruePosition Inc., PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011).

¹⁹ Comments of Verizon and Verizon Wireless at 11, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011).

call routing to the appropriate PSAP with text messages. Moreover, even if technical solutions to providing adequate E911 capabilities via SMS text are developed, implementation would be complex and costly, necessitating large-scale upgrades for both the wireless carriers and PSAPs. Motorola Mobility expects that the upcoming CSRIC Working Group 4B report will provide additional information on the challenges of facilitating emergency communications via text messaging, however, the Commission should fully expect that for the foreseeable future SMS text messaging will remain incapable of providing E911 functionality in a standardized manner.

III. ANY VOIP E911 OBLIGATIONS MUST APPLY SOLELY TO THE VOIP SERVICE PROVIDER.

The record confirms Motorola Mobility's position that substantial additional work remains to be done before it would be appropriate to require automatic location information to be provided to PSAPs for all 911 calls placed via interconnected VoIP and other IP-based voice services. However, to the extent that the Commission decides in the future to impose E911 call routing or ALI mandates on VoIP services, the obligation to facilitate coordination between the user, the access network, and the PSAP must fall on the VSP.

Commenters recognize that there are significant technical complications to providing ALI over VoIP that remain to be addressed.²⁰ As Verizon and Verizon Wireless note, the nomadic nature of certain VoIP services, which may operate over a variety of different devices connected to any sort of IP-based network, makes it impossible with current technology to provide location information other than through a user-input registered location.²¹ The technical standards community is working tirelessly on developing means for transmitting location information in a

²⁰ See AT&T Comments at 17; ATIS Comments at 9-11; Comments of Qwest Communications International, Inc. at 4-7, PS Docket No. 07-114, WT Docket No. 05-196 (filed Jan. 19, 2011); NENA Comments at 15; Verizon and Verizon Wireless Comments at 15-17.

²¹ Verizon and Verizon Wireless Comments at 15-16.

consistent and usable format to PSAPs for all interconnected VoIP calls. As Verizon and Verizon Wireless explain, “this is just one piece of the puzzle, and there are no technologies or commercially available or viable means to support ALI for interconnected VoIP today that do not rely upon subscriber input.”²² Motorola Mobility expects that the final reports of CSRIC Working Groups 4B and 4C will both provide further insight on the challenges of VoIP location information and the ongoing efforts to develop technical solutions. The Commission should review these reports closely, but in the interim, no new VoIP ALI rules are appropriate.

VoIP functionality is growing in popularity and new services are being introduced seemingly on a daily basis. If VoIP applications grow increasingly ubiquitous, users will expect to be able to contact 911, and it may be appropriate to impose some form of E911 requirements, even for over-the-top VoIP applications that may only be partially interconnected (*e.g.*, VoIP services that are able to terminate calls to the PSTN but not to receive incoming calls originating from the PSTN). Indeed, as NENA indicates in its comments, “[i]t is entirely reasonable for consumers to expect that services which allow outbound calling to the PSTN will properly route calls to 9-1-1, and NENA believes that this is indeed the expectation held by the overwhelming majority of VoIP users.”²³

Under these circumstances it may be appropriate, at some time in the future, to impose E911 call routing or ALI obligations on VoIP services. In this case, Motorola Mobility respectfully reiterates that fulfillment of any E911 obligations placed on VoIP services must remain the sole responsibility of VSP. The VSP is the only party with knowledge of the functional and technical details of the VoIP service, how it connects to and transmits over

²² *Id.* at 17.

²³ NENA Comments at 13.

broadband networks, what devices it is likely to operate over, and so on. While VSPs may need to coordinate with network operators and PSAPs to provide this functionality, device manufacturers and access network operators, who may have no control over the applications being used by consumers, should not be expected to ensure E911 capabilities.

IV. **CONCLUSION**

Motorola Mobility again commends the Commission on the significant steps taken in the *Second Report and Order* to ensure that accurate, reliable, and useful location information is provided with 911 calls, to the greatest extent currently technically possible. The newly adopted rules reflect the state of the art in location accuracy. As discussed above and in the record of this proceeding, the Commission should defer consideration of any additional location accuracy regulation at this time, and instead focus on facilitating the significant study and technical development that is ongoing.

Respectfully submitted,

/s/ Katie Peters

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