

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

In the Matter of

Wireless E911 Location Accuracy
Requirements

911 Requirements for IP-Enabled Service
Providers

PS Docket No. 07-114

WC Docket No. 05-196

**REPLY COMMENTS OF T-MOBILE USA, INC. ON
SECTION III.B OF THE E911 LOCATION ACCURACY NPRM**

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INTRODUCTION AND SUMMARY

T-Mobile USA Inc. (“T-Mobile”) supports delivery of the best possible E911 location accuracy performance to the American public and PSAPs and is committed to finding ways to improve that performance. Nevertheless, as T-Mobile has made clear in its previous comments in this proceeding, it believes that the Commission’s recent adoption of a technically infeasible requirement for PSAP-level accuracy compliance at all Phase II PSAPs combined with infeasible implementation benchmarks¹ is a step backward. Given the Commission’s final action on that issue however, T-Mobile will not reiterate here either its objections to those rules or the case made in its initial comments for a reasonable phased approach. Instead, these reply comments will focus solely on the issues still pending before the Commission in this proceeding—whether further changes should be made to the CMRS location accuracy rules, including unifying the accuracy

¹ See News, *FCC Clarifies Geographic Area Over Which Wireless Carriers Must Meet Enhanced 911 Location Accuracy Requirements*, (FCC rel. Sept. 11, 2007), announcing the adoption of *Wireless E911 Location Accuracy Requirements*, Report and Order, FCC 07-166 (*September 11, 2007 Order*).¹

standard, mandating a hybrid solution, adding an elevation element, changes to compliance and maintenance testing methodologies and practices, and the application of CMRS autolocation and accuracy standards to interconnected VoIP services.²

With respect to those remaining issues, the Commission now should conduct the intensive engineering, scientific, and economic inquiry that it declined to undertake before adopting the new PSAP-level rules and benchmarks. Such a review should examine what is technically possible both today and in the foreseeable future and the trade-offs that will have to be made with respect to any additional mandates, such as a unified or otherwise tightened accuracy requirement. For example, establishment of an unrealistic accuracy standard could potentially force providers to eliminate—or decline to extend—service to some consumers. Additionally, some states could face a large, unexpected burden on their 911 funding mechanism.³ The best way to avoid unintended consequences would be to appraise, in advance of any new requirements, the extent to which improvements in location accuracy are feasible, and whether the improved or additional location information that carriers may be able to generate will help improve emergency response to a degree sufficient to justify the potential consumer harms, industry and government costs, and other disruptions the new mandates may impose.

T-Mobile urges the Commission to move forward with this essential inquiry by launching a WARN Act-type advisory committee composed of a broad range of stakeholders. This approach is overwhelmingly supported by both public safety and industry and would provide a basis for neutral evaluation of the various candidate

² See *Wireless E911 Location Accuracy Requirements; 911 Requirements for IP-Enabled Service Providers*, Notice of Proposed Rulemaking, FCC 07-108, 22 FCC Rcd. 10609 (June 1, 2007) (“*NPRM*”),

³ See Letter from Steve Marzolf, President, National Association of State 9-1-1 Administrators to Chairman Martin, CC Docket No. 94-102, at 2 (Sept. 19, 2005).³

technological solutions – as well as a way to determine the limitations of those technologies. In addition, the Commission could obtain a critical engineering review by the National Academy of Engineering (NAE) or a similar institution.

T-Mobile agrees with the broad consensus that Commission action with respect to autolocation for interconnected VoIP services would be premature. As a number of commenters emphasize, there is unlikely to be a single solution that is workable for all interconnected VoIP providers and all PSAPs at this time.

I. COMMENTERS OVERWHELMINGLY SUPPORT A BROAD WORKING GROUP STUDY OF E911 ACCURACY ISSUES.

As proposed by Commissioner Adelstein in his separate statement accompanying the Notice and embraced by a wide range of commenters including public safety, the Commission should enlist a technical advisory committee comprised of representatives of all stakeholders to review 911 accuracy issues (essentially following the model of the advisory committee chartered by Congress under Section 603 of the Warning, Alert and Response Network Act (“WARN Act”)).⁴ Of course, the Commission’s September 11, 2007 Order, which addressed issues raised in both Part III.A of the NPRM as well as Part III.B, has prejudged some of the issues that would be evaluated by the proposed advisory

⁴ See *NPRM*, Separate Statement of Commissioner Jonathan S. Adelstein; see also, e.g., Comments of NENA, PS Docket No. 07-114 at 5 (filed July 5, 2007); Comments of AT&T, Inc., PS Docket No. 07-114 at 3-6 (filed July 5, 2007); Comments of CTIA – The Wireless Association®, PS Docket No. 07-114 at 6-7 (filed July 5, 2007) (“*CTIA Comments*”); Comments of Rural Cellular Association, PS Docket No. 07-114 at 8-10 (filed July 5, 2007); Comments of Texas 9-1-1 Alliance & Texas Commission on State Emergency Communications, PS Docket No. 07-114 at 4 (filed Aug. 20, 2007) (“*Texas 9-1-1 Alliance Part III.B Comments*”); Comments of the Alliance for Telecommunications Industry Solutions’ Emergency Services Interconnection Forum, PS Docket No. 07-114 at 4-5 (“*ATIS/ESIF Comments*”); Comments of AT&T Inc., PS Docket No. 07-114 at 3 (filed Aug. 20, 2007) (“*AT&T Part III.B Comments*”); Comments of Rural Telecommunications Group, Inc., PS Docket No. 07-114 at iv (filed Aug. 20, 2007); Comments of Sprint Nextel, PS Docket No. 07-114 at 3 (filed Aug. 20, 2007) (“*Sprint Nextel Part III.B Comments*”); Comments of Andrew Corp., PS Docket No. 07-114 at 3 (filed Aug. 20, 2007); Comments of Motorola, PS Docket No. 07-114 at 4-6 (filed Aug. 20, 2007); Comments of Nokia Inc. and Nokia Siemens Networks, PS Docket No. 07-114 at 2-3 (filed Aug. 20, 2007); Comments of S-5 Wireless, PS Docket No. 07-114 at 9 (filed Aug. 20, 2007).

committee. Nonetheless, only such a consensus effort can provide the in-depth technology assessment necessary to decide whether further changes should, or could, be made to the accuracy standards.

Without an adequate technology evaluation, the Commission cannot rationally weigh the public safety and consumer welfare trade-offs of its proposal, for example, to unify the current accuracy standards, particularly if it does so at the current handset-based accuracy requirements. Nor will the Commission be able to evaluate the extent to which the rules that it has already adopted may halt the extension of CMRS services into presently unserved or underserved areas. As T-Mobile explained in its prior filings in this docket, it is not technically feasible to meet even the existing accuracy standards at the PSAP level in every PSAP, let alone satisfy any tightened standards.⁵ Creating a regulatory mandate will not change the technological reality. Indeed, an infeasible mandate will only set unrealistic expectations for the public and the call takers. Moreover, if what the Commission has mandated cannot feasibly be implemented, the Commission will then face the choice of whether to waive its rules or require carriers to turn down service in non-compliant areas.

The advisory committee is also needed to assess the technical merits of other suggested changes in Part B of the NPRM. For instance, as T-Mobile pointed out, GPS

⁵ Comments of T-Mobile USA, Inc., PS Docket No. 07-114 at 14 (filed July 5, 2007) (“*T-Mobile Part III.A Comments*”); Reply Comments of T-Mobile USA, Inc., PS Docket No. 07-114 at 2, 14 (filed July 11, 2007) (“*T-Mobile Part III.A Reply Comments*”); T-Mobile USA, Inc. Comments on Section III.B of the Wireless E911 Location Accuracy NPRM, PS Docket No. 07-114, at 1, 8-11 (“*T-Mobile Part III.B Comments*”); Letter of Thomas J. Sugrue, Vice President, Government Affairs, T-Mobile USA, Inc. to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 (filed Sept. 6, 2007); Letter of John T. Nakahata, Counsel to T-Mobile, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 (filed Sept. 7, 2007), *attaching* Declaration of John F. Pottle and Ryan N. Jensen; Letter of John T. Nakahata, Counsel to T-Mobile, to Marlene H. Dortch, PS Docket No. 07-114 (filed September 10, 2007). *See also* Letter of John T. Scott, III, Deputy General Counsel Regulatory Law, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 (filed Aug. 31, 2007), *attaching* Declarations of Richard A. Craig and Jeff M. McDougall; Declaration of James DeLoach, PS Docket No. 07-114 (filed Sept. 4, 2007).

specifications indicate that elevation can only be estimated within about 25 stories in 95 percent of the cases.⁶ No terrestrial-based system demonstrably can estimate elevation more accurately.⁷ It is far from clear that this relatively imprecise elevation information would assist public safety at all. For the Commission to evaluate rationally the NPRM's questions regarding adoption of an elevation requirement,⁸ the Commission must know the range of the potential results and whether results within that range would be useful to first responders. An advisory committee would be useful in gathering and verifying this information through its own testing.

Similarly, an advisory committee could evaluate the technical feasibility of Intrado's proposal that the type of location information actually delivered to the PSAP differ when the caller is "outdoors" as opposed to "indoors."⁹ In T-Mobile's experience, this proposal is not based in technical reality. As Intrado itself recognizes, "certain mobile technologies may not currently have the ability to discern whether an end user's device is located indoors."¹⁰ In fact, neither WiFi nor CMRS technologies have any means of discerning the caller's physical environment. But if Intrado believes otherwise, it could present evidence to the advisory committee that all participants, including public safety, would then have the opportunity to verify.

With regard to the NPRM's questions regarding roaming calls, AT&T correctly points out that network-based solutions locate with the same degree of accuracy all handsets in the deployed area, including those used by roamers, regardless of whether there is a roaming agreement between the carriers. Handset or hybrid-systems, on the

⁶ See T-Mobile Part III. B Comments at 12.

⁷ See *id.*

⁸ See NPRM at ¶ 12.

⁹ Comments of Intrado Inc., PS Docket No. 07-114 at 4-5 (filed Aug. 20, 2007).

¹⁰ *Id.* at 4.

other hand, will locate only the location-enabled handsets using the same location technology, and roamers may end up with a far lower level of location accuracy.¹¹ A technological assessment will help the Commission, public safety, and the public to understand when and why roamers may not be able to be located as precisely and how to make any possible improvements.

To further aid this advisory committee in conducting its engineering, economic, and technological evaluation, the Commission should consider requesting the assistance of the National Academy of Engineering (“NAE”). Founded in 1964, the NAE is directed “whenever called upon by any department or agency of the government, to investigate, examine, experiment, and report upon any subject of science or art.”¹² Here, with Commission sponsorship, the NAE could supply its expert services in a number of areas, such as inventorying candidate technologies and reviewing the technical strengths and limitations of various proposed 911 location solutions across a wide range of topologies. The NAE could also evaluate the barriers to widespread commercial adoption and deployment for those technologies, including consideration of differences in license areas, PSAP boundaries, and vendor development. The end result would be a solid analytical basis for a plan that would be much more likely to benefit the public.

II. ANY CHANGES IN TESTING METHODOLOGIES MUST BE FACTORED INTO THE EVALUATION OF TECHNICAL FEASIBILITY.

Although it may seem obvious, the Commission cannot reasonably evaluate technical feasibility using testing methodologies that are later changed. Technical feasibility must be evaluated in the same way that compliance will be measured.

¹¹ AT&T Part III.B Comments at 12.

¹² <http://www.nae.edu/nae/naehome.nsf/weblinks/NAEW-4NHMQM?OpenDocument>.

The Commission invited comment as to whether it could direct a number of changes in accuracy testing methods, including specifying the proportion of indoor versus outdoor test sites, the mix of equipment, the number and distribution of test sites, and other factors. As T-Mobile and other commenters pointed out, these factors are generally addressed in existing Emergency Services Interconnection Forum (ESIF) and Network Reliability and Interoperability Council (NRIC) consensus recommendations.¹³ T-Mobile urges the Commission to adopt these consensus standards and recommendations, which have been forged in the very type of broad-based expert process the Commission is now considering undertaking. However, to the extent the Commission wants to consider proposals for changes to those standards – for example, by specifying that 30 percent of test sites be indoors, as NENA and APCO now recommend – those same changes need to be incorporated into the Commission’s evaluation of technically feasible solutions. It would be arbitrary and capricious to evaluate technical feasibility by adopting a testing methodology other than the one used to also measure compliance.¹⁴

III. AUTOLOCATION OR ACCURACY REQUIREMENTS FOR INTERCONNECTED VOIP SERVICES ARE PREMATURE.

T-Mobile joins the numerous commenters from public safety and industry who urge the Commission not to adopt, at this point, its tentative conclusion that interconnected VoIP providers be required to meet the accuracy standards found in Rule 20.18(h). T-Mobile agrees with the VON Coalition that there is unlikely to be a “one-size-fits-all” standard for how best to handle location for interconnected VoIP.¹⁵

¹³ T-Mobile Part III.B Comments at 20-23; Sprint Nextel Part III.B Comments at 13-16; ATIS/ESIF Comments, *passim*.

¹⁴ Mandating a higher percentage of indoor sites than is presently used will also make it even more difficult to meet the already infeasible compliance deadlines set in the September 11, 2007 Order.

¹⁵ Comments of the Voice on the Net Coalition in Response to Part III.B of the NPRM, PS Docket No. 07-114, at 3-4, 10-14 (filed Aug. 20, 2007).

Interconnected VoIP covers a broad range of different services and settings.¹⁶ T-Mobile also agrees with VON's suggestion that a separate technical advisory committee be established for analysis of VoIP E911 autolocation and accuracy standards.¹⁷

With respect to its own offerings that combine GSM services over WiFi access with traditional CMRS, T-Mobile continues to evaluate and improve its processes for providing E911. T-Mobile has spent substantial time and resources in developing an effective approach that leverages the autolocation capabilities of its Phase II wireless deployments to support 911 and E911 for the dual mode services. Its dual mode handsets, for example, place all 911 calls over the CMRS network whenever possible which then permits T-Mobile automatically to derive location information for 911 calls for purposes of both routing the calls and providing location information to the PSAP. Because the overwhelming majority of 911 calls are placed over the CMRS network, T-Mobile rarely delivers 911 calls over the customer's IP connection. Thus, T-Mobile rarely relies on customer-provided E911 locations, which have a higher probability of being incorrect with respect to a mobile service than with a "nomadic" interconnected VoIP service. T-Mobile has consulted public safety organizations and continues to take into account the feedback it receives.

The Commission should not adopt the Texas 9-1-1 Alliance's suggestion that a service marrying traditional CMRS and WiFi technologies be required to attempt to send 911 calls over IP networks first, delivering an MSAG-validated address, and only secondarily route 911 calls over traditional CMRS.¹⁸ This proposal would limit the ability of carriers such as T-Mobile to leverage their Phase II capabilities, which are calculated

¹⁶ *Id.*

¹⁷ *See id.* at 22-24.

¹⁸ Texas 9-1-1 Alliance Part III.B Comments at 13.

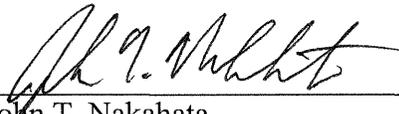
by the CMRS network. Adequate flexibility and an opportunity to learn from experience are necessary to ensure that 911 calls made over these nascent dual-mode services are delivered in the most effective manner possible. Adoption of rigid call routing protocols that ignore a wireless carrier's existing and extensive E911 infrastructure and processes, by contrast, would prevent carriers from providing consumers with the best available emergency service.

CONCLUSION

Before adopting any new E911 accuracy requirements for wireless, the Commission should convene a WARN Act-type technical advisory committee to help objectively determine the art of the possible. It is not in the interest of consumers, public safety, or the industry for carriers to be chasing unattainable requirements. Further, technical feasibility must be measured in the same way as compliance, subject to the same testing methodologies and procedures.

The Commission also should not move forward to adopt E911 autolocation and location accuracy requirements without a similar rigorous technical evaluation. The Commission should consider the wide diversity of interconnected VoIP services, as detailed by the VON Coalition. For those services, a “one-size-fits-all” approach is likely to be counterproductive.

Respectfully submitted,



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