Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
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Implementation of the NET 911 Improvement Act of 2008	)	WC Docket No. 08-171
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COMMENTS OF T-MOBILE USA, INC.

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September 9, 2008

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T-Mobile USA, Inc. ("T-Mobile") hereby comments on the Commission's Notice of Proposed Rulemaking[1] to implement the New and Emerging Technologies 911 Improvement Act of 2008 ("NET 911 Improvement Act").[2] T-Mobile urges the Commission not to take any action in this proceeding that would undermine the development and deployment of innovative commercial mobile radio services ("CMRS") that use IP as well as wireless technologies. Autolocation requirements for dual mode CMRS offerings that combine IP and traditional wireless technologies, to the extent even covered by the new law, are beyond the scope of this initial 90-day rulemaking, which addresses the capabilities needed to meet current Commission requirements. The Commission should therefore defer any proposals for new autolocation rules until after the E911 Implementation Office completes its congressionally-mandated report addressing autolocation, and until there is some evidence that VoIP 911 calls from roaming callers on dual-mode handsets are actually occurring to any significant degree.

[1] *Implementation of the NET 911 Improvement Act of 2008,* Notice of Proposed Rulemaking,, FCC 08-195, WC Docket Nos. 08-171, (2008) ("NPRM").

[2] Pub. L. No. 110-283 (enacted July 23, 2008).

INTRODUCTION AND SUMMARY

Over the past five years, T-Mobile developed and brought to market an innovative CMRS offering that combines traditional GSM service using licensed CMRS spectrum and GSM service over Wi-Fi access points and IP transport into a single, seamless service. The first dual-mode service to be launched nationwide, T-Mobile's service provides consumers with even more flexibility and value. With the integrated Wi-Fi calling option, consumers can strengthen coverage at work or at home, and also have the option of purchasing flat-rate unlimited Wi-Fi based calling. In developing its mobile product, T-Mobile crafted novel approaches to handling 911 calls that took advantage of its traditional CMRS E911 capabilities, as well as supplementing those capabilities with a combination of user-provided and automatically determined customer location information for 911 calls flowing over Wi-Fi networks. In doing so, T-Mobile reached out to and consulted with leading public safety organizations, which provided valuable feedback. Since it launched the initial trial of this service, T-Mobile has been able to deliver 911 calls that otherwise would not have been possible, increasing consumers' ability to summon help in an emergency. T-Mobile's experience confirms Commissioner Tate's observation that "CMRS carriers that add new technology such as Wi-Fi to their existing service actually allow an additional layer of protection for completing a very small subset of emergency calls, including calls that otherwise would not be made available to mobile users who do not have a similar service."[3]

The Commission should not attempt to resolve in this abbreviated timeframe the questions raised in the NPRM about dual mode CMRS services that utilize both traditional licensed wireless networks supplemented by connectivity through Wi-Fi access points and IP

[3] NPRM, Statement of Commissioner Deborah Taylor Tate.

transport. As Commissioners Copps and McDowell pointed out, neither the plain language nor the spirit of the NET 911 Improvement Act requires the Commission to address these issues in the first 90 days. Instead, 911 autolocation for such services can be fully and adequately considered in a separate FCC proceeding.[4]

To the extent the NET 911 Improvement Act applies to these services, there is no evidence of a problem that needs addressing. As far as it is aware, T-Mobile is the only provider offering CMRS using Wi-Fi/IP transport as part of its nationally-available services, and *none* of the Wi-Fi based 911 calls placed from its dual-mode handsets from February 1, 2008 to August 27, 2008 – a nearly seven-month period – were placed by customers roaming outside T-Mobile's service area, the scenario which the NPRM seeks to address. 911 calls from T-Mobile's dual-mode handsets – of which there were over 400,000 in this period – are being successfully completed. Rushing to address these VoIP autolocation issues now short-circuits Congress' specific process in the NET 911 Improvement Act for evaluating new VoIP autolocation mandates – a process that expressly includes a study and evaluation to be completed by the E911 Implementation Office within 270 days of enactment. Further, adopting the proposals set forth in the NPRM on so-called mobile VoIP services has the potential to lock in one particular autolocation solution when others may prove to be more effective as autolocation strategies continue to develop for all VoIP services. In this situation, the Commission should be guided by

[4] *See* NPRM, Statement of Commissioner Michael J. Copps ("this issue may not be exactly what Congress had in mind when it drafted the NET E911 Act (and that is certainly my reading of the statute and associated legislative history)"); Statement of Commissioner Robert McDowell ("This question, however, is in no way compelled by the plain language or intent of the NET 911 Act."); Statement of Commissioner Jonathan S. Adelstein ("I note that while there are a number of E911 compliance and policy questions raised by dual-mode mobile commercial mobile radio service/VoIP handsets that use Wi-Fi technology, these issues are more appropriately addressed in a separate proceeding.")

the maxim of "first do no harm" instead of looking to adopt a rigid set of rules that are unlikely to improve upon the solutions already in place and being developed in the marketplace.

I. Congress Did Not Intend the FCC to Address VoIP Autolocation as Part of the 90-day Statutory Implementation Proceeding.

The NET 911 Improvement Act requires "IP-enabled voice service providers" – who are providers offering services meeting the Commission's definition of "interconnected VoIP services"[5] – to "provide 9-1-1 service and enhanced 9-1-1 service to their subscribers in accordance with the requirements of the Federal Communication Commission, as in effect on the date of enactment."[6] The Act also requires the FCC, within 90 days of the date of enactment, to issue implementing rules, including rules that ensure that an "IP-enabled voice service provider" has "access to such capabilities, including interconnection, to provide 9-1-1 and enhanced 9-1-1 service on the same rates, terms and conditions that are provided to a provider of commercial mobile service."[7] The Act does not require the Commission to create new 911 and E911 mandates on IP-enabled service providers within its initial 90-day implementation rulemaking.

To its knowledge, T-Mobile is currently the only provider of a nationally available dual mode CMRS service that uses Wi-Fi access points and IP transport to supplement coverage from traditional licensed, cellularized spectrum.[8] T-Mobile allows a subscriber to its licensed CMRS

[5] NET 911 Improvement Act, § 101(3)("the term 'IP-enabled voice service' has the meaning given the term 'interconnected VoIP service' by section 9.3 of the Federal Communications Commission's regulations (47 C.F.R. 9.3)").

[6] NET 911 Improvement Act, § 101(2)(new section 6(a) to the Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 ("Wireless 911 Act")).

[7] NET 911 Improvement Act, § 101(2)(new section 6(b) to the Wireless 911 Act).

[8] There are some smaller carriers that may also be implementing this capability. *See e.g.* *http://www.cincinnatibell.com/consumer/wireless/home_run/*. In addition, Sprint appears to be

service also to receive and send calls over Wi-Fi with IP transport, provided the subscriber purchases a dual-mode handset.[9] With the dual-mode handset, the Wi-Fi/IP transport capability is seamlessly integrated with the traditional licensed CMRS service.[10] A customer can begin a call on a Wi-Fi access point, and have the call transition – while in progress – to the licensed CMRS signal. Similarly, the call can begin on a licensed CMRS signal and transition without interruption to a signal from a Wi-Fi access point. Other than for T-Mobile-branded locations, the customer must affirmatively select the Wi-Fi access points with which he or she wishes to use the dual-mode capability.

Even if the NET 911 Improvement Act applies to dual-mode CMRS services (which is not at all clear),[11] Congress established separate timelines for the implementation of the VoIP

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deploying services that allow a customer to create a mini-cell site using licensed spectrum within the customer's home. *See* http://www.nextel.com/assets/pdfs/en/services/sprint_airave_faqs.pdf. This service operates in a different context than T-Mobile's both because Sprint utilizes an A-GPS, handset-based E911 solution, while T-Mobile uses a network-based solution, and because Sprint's service uses specialized single-purpose CPE rather than the more common and flexible Wi-Fi access point.

[9] Customers have a choice of handsets that operate only with traditional CMRS frequencies, as well as handsets that operate over both traditional CMRS and Wi-Fi.

[10] The customer can purchase an add-on, called Unlimited HotSpot Calling, which allows unlimited calling over Wi-Fi access points. The customer, however, is not required to purchase this add-on in order to use T-Mobile's dual-mode capability. Any customer with a dual-mode handset can make and receive calls over a Wi-Fi access point; if the customer has not purchased the Unlimited HotSpot Calling option, those calls are rated in the same manner as calls that originate over T-Mobile's traditional GSM network.

[11] The Commission has never addressed the regulatory classification of dual-mode CMRS services that incorporate Wi-Fi or IP transport and such classification was not among the issues on which T-Mobile sought clarification three years ago. Furthermore, as the Commission's rules regarding interconnected VoIP have developed over the last several years, there are at least some instances in which the Commission appears to assume that a service is either CMRS or interconnected VoIP, but not both. For example, the Commission applies different, and wholly

capabilities assessment for existing requirements and assessment and future implementation of E911 autolocation. As Chairman Martin acknowledged in his separate statement, paragraph 7 of the NPRM addresses the provision of automatic location information for dual-mode services[12] and has nothing to do with ensuring that VoIP providers have access to interconnection and other capabilities necessary to provide 911 and E911 services on the same basis as CMRS providers. With regard to autolocation, Congress specifically asked for additional input from the E911 Implementation Office within 270 days of the date of enactment, as part of its overall plan for next-generation 911 and E911 services.[13]

The FCC has never set *any* rules requiring VoIP autolocation, whether for "mobile VoIP" or for "nomadic VoIP." Although the Commission sought comment on such mandates, both in its 2005 Further Notice of Proposed Rulemaking and in Part B of its NPRM on CMRS E911

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incompatible, safe harbors to CMRS and interconnected VoIP for the purposes of universal service revenue reporting. The Commission also attaches different regulatory fees to CMRS and to interconnected VoIP. Regulatory classification also has the potential to affect intercarrier compensation, for which there are different rules for CMRS and for non-CMRS traffic. *Compare* 47 C.F.R. § 51.701(b)(1) *with* 47 C.F.R. § 51.710(b)(2). In addition, the Commission has never considered the implications here of potentially applying two regulatory classifications to a service that is fundamentally a single, integrated offering. These issues go far beyond the scope of this proceeding and the NET 911 Improvement law , and should not be resolved here in a curtailed timeframe.

[12] NPRM, Statement of Chairman Kevin J. Martin ("we need to ensure that our enhanced 911 (E911) rules provide meaningful automatic location information that permits first responders to reliably find callers, even when they are using mobile wireless or VoIP phones").

[13] NET 911 Improvement Act, § 102 (new section 3(d) of Section 158 of the National Telecommunications and Information Administration Organization Act (47 U.S.C. § 942), which requires the 911 Implementation Office, in a national plan for migrating to a national IP-enabled emergency network, to "identify location technology for nomadic devices . . ." and to "analyze efforts to provide automatic location for enhanced 9-1-1 services and provide recommendation on regulatory or legislative changes that are necessary to achieve automatic location for enhanced 9-1-1 service.")

location accuracy requirements, neither resulted in rules to date.[14] As such, there are no autolocation requirements existing on the date of enactment that apply to any VoIP service, whether or not integrated into a CMRS service.

Nor would it be proper or consistent with the NET 911 Improvement Act for the Commission to rush forward now to promulgate such rules for dual-mode services before the E911 Implementation Office has had the opportunity to perform its technological review. Indeed, in its Committee report accompanying the NET 911 Improvement Act, Congress explicitly stated, "The Commission should take into account technical feasibility as it implements the provisions of [the NET 911 Improvement Act of 2008], particularly for nascent technologies such as mobile VoIP service."[15] The House report makes clear that Congress did not, in enacting the NET 911 Improvement Act, authorize the FCC to promulgate technically infeasible, "technology-forcing" requirements.[16] It is difficult to see how the Commission could claim to have considered technical feasibility without waiting for the E911 Implementation Office's statutorily mandated report.

The Commission should honor Congress' express timelines and defer any consideration of additional autolocation requirements, and capabilities for use in supporting any such mandates, until after the E911 Implementation Office completes its report, and the Commission has an

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[14] *Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling; 911 Requirements for IP-Enabled Service Providers*, 22 FCC Rcd 10609, 10615 (¶ 18); *IP-enabled Services; E911 Requirements for IP-Enabled Service Providers*, 20 FCC Rcd 10245, 10276-77 (¶¶ 56-57)(2005).

[15] H. R. Rep. No.110-442, at 14.

[16] *See Alliance for Cannabis Therapeutics v. DEA*, 930 F.2d 936, 940 (D.C. Cir. 1991) ("Impossible requirements imposed by an agency are perforce unreasonable.").

opportunity to consider any recommendations made. This is especially important because, as discussed below, there is simply no problem now that needs to be addressed.

II. The FCC Should Not Adopt New Autolocation Requirements for Roaming Dual-Mode Customers.

The Commission should not adopt requirements for dual-mode CMRS providers to locate roaming subscribers using last known cell site information, or for the roaming partners of dual-mode CMRS providers to supply cell site identifiers and corresponding locations. These are autolocation solutions in search of a problem. T-Mobile, which currently is the only national carrier providing such a dual-mode service, has investigated a variety of autolocation approaches and vetted them both internally and externally, and has developed a robust solution that works well for consumers and public safety. And, T-Mobile's two years of experience with its chosen approach has demonstrated that the hypothetical posed in the NPRM of a roaming customer seeking to place a 911 call over Wi-Fi simply is not occurring in actual practice. Indeed, over the nearly seven-month period from February 1, 2008 through August 27, 2008, when more than 400,000 911 calls were placed from dual-mode handsets, none of the very few Wi-Fi based calls that were routed to T-Mobile's failsafe call center originated from outside T-Mobile's service area. This is not surprising. T-Mobile markets its dual mode capability as an integrated service, requiring subscription to a GSM calling plan, and not for standalone Wi-Fi based use.

In developing its E911 solution for this service, T-Mobile wanted to make sure that its CMRS customers could continue to receive 911 and E911 service that was at least as good as if they were not using a dual-mode capability. Thus, with wireless E911 much more mature and developed than VoIP 911, and having an inherent capability specifically designed to determine the location of mobile callers, T-Mobile decided that, whenever possible, all 911 calls on dual-

mode phones would be placed using traditional licensed CMRS frequencies, and not Wi-Fi. As it turns out, 99.85 percent of all 911 calls from dual-mode handsets processed by T-Mobile's network are placed using traditional licensed CMRS frequencies, and therefore are processed as any other traditional CMRS 911 call, pursuant to the Commission's wireless 911 rules.[17]

T-Mobile recognized, however, that it is possible in a rare case for a customer to attempt to place a 911 call from a location where the caller has no GSM signal – whether from T-Mobile or from any other carrier. Only a very small fraction of the 911 calls placed from dual-mode handsets – approximately 0.15% – fall into this category and are carried over Wi-Fi and IP transport rather than traditional CMRS frequencies. To handle these calls, T-Mobile collects a subscriber-entered location (akin to the Registered Location under the Commission's interconnected VoIP 911 rules) and provides subscribers with a means to update that location, including from the dual-mode handset. Because of the mobile nature of the service, however, T-Mobile developed several different methods in addition to subscriber-supplied information to attempt to determine or verify a customer's approximate location automatically, using information from its CMRS network as well as from other sources.

For example, T-Mobile knows the location its own branded HotSpot access points and can use that information to route a 911 call placed from those locations. In addition, when a dual-mode caller establishes a connection via a Wi-Fi access point, T-Mobile collects from the network switching equipment, the identifier for the last known traditional CMRS cell site through which the customer connected, subject to certain time parameters to screen out stale information. T-Mobile is able to identify cell sites on its own network, and can use that information to route the 911 call. T-Mobile has also taken additional steps to improve the

[17] *See* 47 C.F.R. § 20.18.

reliability of its 911 routing by obtaining access to a database of approximate geographic locations that can be associated with IP addresses. This tool allows T-Mobile to deliver 911 calls to the same general area in which the caller is located. In case all of these location determination methods fail, or if the caller is located outside of T-Mobile's GSM operating areas in which it will have connections to selective routers, T-Mobile will route the call to a call center established just for this purpose to ensure that all 911 calls can be answered and routed to the appropriate PSAP.[18]

The NPRM attempts to address a hypothetically possible situation in which a T-Mobile customer with a dual-mode handset may be using that handset outside of T-Mobile's service area, in the area of a T-Mobile roaming partner. As T-Mobile has implemented the service, the hypothetical case in the NPRM is highly unlikely to occur because the handset would have to also be out of range of *any* GSM traditional wireless signal. In that extremely limited situation, the 911 call would be placed over the Wi-Fi connection, but T-Mobile would not have location information to correlate with the roaming partner's cell site identifiers. The NPRM asks whether the Commission should require T-Mobile's roaming partners to provide T-Mobile with the cell site identifiers and associated cell site locations so that T-Mobile could use "last known cell site" as a method to locate these calls.[19]

Although the NPRM's hypothetical scenario is possible, it is simply not occurring. As stated above, T-Mobile's data show that from February 1, 2008 to August 27, 2008, of the approximately 0.15 percent of 911 calls from dual-mode handsets that were routed via Wi-Fi rather than traditional CMRS, *none* were placed from locations outside T-Mobile's service

[18] This failsafe call center also acts as a back-up with respect to all 911 calls placed over T-Mobile's traditional GSM network, whether or not from dual mode handsets.

[19] NPRM at ¶ 7.

area.[20] Accordingly, even if T-Mobile had access to its roaming partners' cell site locations, as the NPRM proposes, *none* of these calls would have benefited from having access to that information.

Both before its launch and subsequently, T-Mobile discussed its 911 and E911 call handling procedures for dual-mode handsets with organizations representing PSAPs and solicited their input. While that input was diverse, it was also generally supportive of the procedures T-Mobile developed. PSAPs found the various location-determination methods and the back-up use of a call center to meet their needs, while doing everything possible to ensure that all 911 calls can be delivered. Not lost on anyone was the fact that T-Mobile's dual mode phones allow callers to place 911 calls in circumstances where they would not have been able to do so before using a traditional wireless handset. This added capability to reach 911 was uniformly recognized as a positive public safety enhancement, not a detraction.

Rather than mandating a regulatory solution for which there is not even a sliver of a problem, the Commission should continue to allow location solutions to evolve. As Commissioner Tate notes, the Commission should look to "carriers that have found unique ways to provide valuable services to consumers and take into account the experience of such carriers in developing 911 and E911 call routing that better allows completion of emergency calls."[21] There is no pressing need to address non-existent Wi-Fi-based 911 calls from roaming customers,

[20] Between February 1, 2008 and August 27, 2008, out of over 400,000 911 calls placed from dual-mode handsets, a total of 41 calls (0.01% of the 911 calls from those handsets) were routed to T-Mobile's last resort call center – an average of one call every 3 days. All of these calls were routed to the failsafe call center because of intermittent issues that can occur in the autolocation systems, and not because the location was known but out of T-Mobile's service area. This points to the value of a back-up call center – it ensured that calls that would otherwise have failed were answered and sent on to the appropriate PSAP.

[21] NPRM, Separate Statement of Commissioner Deborah Taylor Tate.

especially since T-Mobile continues to work closely with public safety to further refine the 911 processes for dual mode callers. In its dialogue with public safety agencies, T-Mobile has found there to be overwhelming support for the use of the failsafe call center in the rare instances where it is required, as a reasonable and practical approach to delivering potential roaming Wi-Fi based 911 calls to the appropriate PSAP.

In addition to there being no problem to fix, the NPRM's proposed solution that roaming partners be required to provide last known cell site location information is wholly impractical and likely technically infeasible. For a carrier to maintain an up-to-date and accurate database of its own existing cell sites is highly challenging, as the network is constantly changing, with cell sites being added and divided. To maintain an accurate database of roaming partners' (at least some of whom are direct competitors) cell sites would be impossible. In the first instance, a carrier would have to obtain and maintain up-to-date information of the cell site locations of every roaming partner – and every carrier that enters into a roaming agreement with the dual-mode CMRS carrier would have to assemble and deliver the cell site location information. Because only some carriers would use the database, there would need to be some way to ensure that the non-benefitting carriers in fact supplied current cell site location information. The NPRM provides no guidance as to how this would actually occur beyond the FCC issuing a mandate. Furthermore, carriers regard cell site information and network changes as proprietary, as they affect coverage and service quality over which carriers fiercely compete. Accordingly, it is likely that this database of cell site locations would have to be maintained by a third party, and not just by the carrier providing dual-mode CMRS service. The costs of preparing, assembling, maintaining, and updating this database would be prohibitive.

These onerous information collection and other burdens cannot be justified by any kind of reasonable cost/benefit analysis, especially when compared to T-Mobile's current approach – which can be used if and when the hypothetical roaming scenario ever actually occurs. The Commission would be imposing dramatic costs, with no actual offsetting benefits. Not only would such a requirement be arbitrary and capricious, it would constitute the type of regulatory overreaching that Congress meant to curb in enacting the Paperwork Reduction Act.[22]

Furthermore, as the NPRM acknowledges, a mandate that carriers provide last known cell site information (and thus necessarily the geographic location of all their cell sites) to roaming partners would create a substantial disincentive for carriers to enter into roaming agreements. This would be most acute in areas subject to the "in-market" exclusion, but would be true in all areas. The implementation and operational costs of providing last known cell site information would likely add to roaming charges, as carriers seek to recover these costs, exacerbating existing roaming problems. The Commission has no effective way to prevent denial of roaming because of the burdens that a requirement to supply last known cell site and cell site location information would impose. The curtailment of roaming opportunities would directly and negatively impact not only the current dual mode customers, but all customers of any CMRS carrier that attempts to roll out these new and innovative services that actually improve the customers' ability to complete 911 calls. Obviously, such a result would be counter to the very purpose Congress had in mind when it enacted the NET 911 Improvement Act—encouraging innovation and improving 911 services.

[22] Paperwork Reduction Act of 1995, Pub. L. No. 104-13, 109 Stat. 163 (1995).

CONCLUSION

Action on the proposals set forth in the NPRM concerning autolocation for 911 calls placed from dual-mode CMRS handsets would be inappropriate as a matter of law and policy in the context of this abbreviated proceeding. The Commission should resolve the issues that Congress set before it – namely, issuing implementing rules to ensure that VoIP providers have access to the capabilities necessary to provide 911 and E911 services on the same basis as CMRS providers – and decline to adopt costly, infeasible and impractical solutions to non-existent E911 autolocation problems for dual-mode services.

Respectfully submitted,

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