

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

In the Matters of

IP-Enabled Services

E911 Requirements for IP-Enabled Service
Providers

WC Docket No. 04-36

WC Docket No. 05-196

**PETITION OF T-MOBILE USA, INC. FOR
CLARIFICATION**

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SUMMARY

T-Mobile is a nationwide commercial mobile radio service (“CMRS”) carrier currently serving more than 18 million customers. Via its HotSpot service, T-Mobile also provides Wi-Fi (802.11b) wireless broadband Internet access in more than 5,700 convenient public locations. There are promising technologies using unlicensed spectrum in development that may enable the offering of VoIP services in conjunction with CMRS.

T-Mobile agrees with the Commission that consumer emergency service access is vital and that the Order appropriately pushes the industry to ensure that it is available. T-Mobile seeks only limited clarification of certain operational aspects of the *VoIP E911 Order* so that benefits of promising new wireless technologies can be offered to consumers as follows:

- The requirement to collect and pass to the PSAP the customer’s Registered Location includes information that the interconnected VoIP provider derives automatically from its provision of service or operation of the network, and the interconnected VoIP provider may select and transmit the Registered Location that it deems most likely to accurately reflect the customer’s location at the time the customer places the 911 call.
- The requirement to obtain a customer-provided Registered Location, either prior to service initiation or thereafter through update, can be satisfied without end user interaction if the interconnected VoIP provider derives a Registered Location automatically from its provision of service or operation of the network, and does not rely on customer-provided location information. This will be particularly important for mobile VoIP offerings, for which an end user provided Registered Location may not be the appropriate location for emergency response.
- When it is not practicable to obtain customer-provided Registered Location information prior to service initiation, and the VoIP service provider will not be exclusively using automatically derived location information, the interconnected VoIP service provider may obtain such a customer-provided Registered Location following service initiation, provided that it does so as soon as is practicable.

- For mobile and nomadic VoIP applications, the PSAP will not be considered to be capable of “receiving and utilizing” E911 data until the PSAP can use non-call associated signaling, retrieve location from real-time databases and the implementation period in 47 C.F.R. § 20.18 has elapsed with respect to a request associated with such signaling and databases. Unless the PSAP is able to request and process 911 calls using pseudo-ANIs and is capable of retrieving location information from real-time databases, it will not be able to receive and utilize E911 data from mobile or nomadic VoIP users. Under rule § 20.18, the Commission has established a timetable and process for CMRS carriers and PSAPs to implement necessary upgrades, and the Commission should rely on that process here.
- Mobile and nomadic VoIP providers, particularly CMRS carriers, that offer interconnected VoIP services may deliver location information to the PSAP for interconnected VoIP services using latitude and longitude coordinates, just as is done today for CMRS E911 calls.

These clarifications are necessary to ensure that CMRS providers can provide the best possible emergency location information if providing interconnected VoIP services, and to allow CMRS providers to leverage their existing E911 infrastructure to provide such emergency services.

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**PETITION OF T-MOBILE USA, INC.
FOR CLARIFICATION**

T-Mobile USA, Inc. (“T-Mobile”) hereby petitions the Commission for a limited clarification of its *VoIP E911 Order*.¹ T-Mobile agrees with the Commission that it is vital for consumers to be able to access emergency services in their time of need, and that the Order appropriately pushes industry to ensure that can happen. In a few instances, however, it would be helpful operationally to clarify a few aspects of the rules. T-Mobile requests that the Commission clarify the Order as follows:

- The requirement to collect and pass to the PSAP the customer’s Registered Location includes information that the interconnected VoIP provider derives automatically from its provision of service or operation of the network, and the interconnected VoIP provider may select and transmit the Registered Location that it deems most likely to accurately reflect the customer’s location at the time the customer places the 911 call.
- The requirement to obtain a customer-provided Registered Location, either prior to service initiation or thereafter through update, can be satisfied without end user interaction if the interconnected VoIP provider derives a Registered Location automatically from its provision of service or operation of the network, and does not rely on customer-provided location information. This will be particularly important for mobile VoIP offerings, for which an end user provided Registered Location may not be the appropriate location for emergency response.
- When it is not practicable to obtain customer-provided Registered Location information prior to service initiation, and the VoIP service provider will not be exclusively using automatically derived location information, the interconnected VoIP service provider may obtain such a customer-provided Registered Location following service initiation, provided that it does so as soon as is practicable.
- For mobile and nomadic VoIP applications, the PSAP will not be considered to be capable of “receiving and utilizing” E911 data until the PSAP can use non-call associated signaling, retrieve location from real-time databases and

¹ See *In the Matter of IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, FCC 05-116, WC Dockets No. 04-36, 05-196 (rel. June 3, 2005)(“*VoIP E911 Order*”). To the extent necessary to grant the relief requested herein, T-Mobile alternatively requests that the Commission, pursuant to 47 C.F.R. § 1.429, reconsider the underlying order to the limited extent necessary to grant such relief.

the implementation period in 47 C.F.R. § 20.18 has elapsed with respect to a request associated with such signaling and databases. Unless the PSAP is able to request and process 911 calls using pseudo-ANIs and is capable of retrieving location information from real-time databases, it will not be able to receive and utilize E911 data from mobile or nomadic VoIP users. Under rule § 20.18, the Commission has established a timetable and process for CMRS carriers and PSAPs to implement necessary upgrades, and the Commission should rely on that process here.

- Mobile and nomadic VoIP providers, particularly CMRS carriers, that offer interconnected VoIP services may deliver location information to the PSAP for interconnected VoIP services using latitude and longitude coordinates, just as is done today for CMRS E911 calls.

These limited clarifications are necessary both to ensure that CMRS providers offering interconnected VoIP services can provide the most reliable emergency location information, and to allow CMRS providers to use their existing E911 infrastructure to provide such service, to the maximum extent possible.

I. INTRODUCTION

T-Mobile is a nationwide commercial mobile radio service (“CMRS”) carrier currently serving more than 18 million customers. Via its HotSpot service, T-Mobile also provides Wi-Fi (802.11b) wireless broadband Internet access in more than 5,700 convenient public locations such as Starbucks coffeehouses, hotels, airports, and airline clubs, making it the largest carrier-owned Wi-Fi network in the world.

In the future, as many press reports have described, it is likely that commercial mobile service providers may more fully integrate their existing CMRS operations with services using unlicensed spectrum to provide IP-enabled services. These converged services hold much promise for consumers. For example, unlicensed wireless could supplement existing CMRS service, providing better in-building and residential coverage than may have been the case previously.

T-Mobile has worked vigorously to ensure that its GSM networks are in full compliance with the Commission's CMRS E911 rules. As of today, 2572 PSAPs were receiving Phase I E911 service from T-Mobile, and 1764 PSAPs were receiving Phase II service. T-Mobile is equally committed to ensuring that, in the future, customers will receive the best possible level of reliable E911 service while they enjoy the benefits of converged mobile IP enabled services (which include the benefits that enhanced coverage can bring for communicating generally in times of need).

T-Mobile therefore agrees with the Commission that it is critically important that interconnected VoIP service providers deliver E911 service wherever PSAPs are capable of receiving and utilizing the E911 data elements. As discussed further below, should a CMRS carrier provide interconnected VoIP service, existing E911 infrastructure would likely be used wherever possible to provide E911 service for 911 calls placed over IP-enabled networks.² As is the case with wireless E911 calls today, location information derived in real time from the network for a particular E911 call will be much more likely to approximate a mobile 911 caller's current location than a user-provided address. This petition addresses certain technical and operational issues for which the language of the order or rules is either uncertain or presents operational difficulties as applied to interconnected VoIP services provided by CMRS operators.

² When a GSM network is available (whether T-Mobile's GSM network or that of another operator), an E911 call can be placed through the GSM network rather than the mobile IP enabled service platform, and thus the issue of interconnected VoIP service E911 capability is not an issue.

DISCUSSION

II. A PROVIDER MAY USE AUTOMATICALLY DERIVED LOCATION INFORMATION IN LIEU OF END USER SUPPLIED LOCATION INFORMATION.

The Commission should clarify that nothing in its rules or orders precludes an interconnected VoIP provider from using an automatically derived Registered Location in lieu of end user provided information whenever the provider believes its information likely would be more accurate. Rule 9.5(b) requires an Interconnected VoIP service provider to transmit, along with the 911 call, Automatic Number Identification (ANI) and the caller's Registered Location.³ The Commission defines "Registered Location" as "[t]he most recent information obtained by an interconnected VoIP service provider that identifies the physical location of an end user."⁴ Importantly, in note 146, the Commission noted, "Nothing in these rules, however, prevents an interconnected VoIP provider from automatically obtaining an accurate Registered Location if it is capable of doing so." However, in the second to last sentence of paragraph 46 of the Order, the Commission wrote, "[t]he most recent location provided to an interconnected VoIP provider by a customer is the 'Registered Location.'"⁵

T-Mobile requests that the Commission clarify that the second-to-last sentence of paragraph 46 is limited to those situations in which the interconnected VoIP provider lacks the means to automatically derive the user's location. Without network-derived location information, the most recent customer-provided location may be the best the interconnected VoIP provider can do. However, if an interconnected VoIP provider is

³ See 47 C.F.R. § 9.5(b)(2).

⁴ 47 C.F.R. § 9.3.

⁵ *VoIP E911 Order*, at ¶ 46.

able to determine the user's location in some other manner, then the interconnected VoIP provider should be able to use the network-derived location in favor of the most recent customer-provided location. Indeed, in a mobile service, the actual current location can routinely be expected to be different from any user provided address.

T-Mobile is exploring a number of alternatives that would yield more relevant current information in a mobile setting. For example, if a customer is using an interconnected VoIP service over Wi-Fi at an access point for which T-Mobile knows the address, T-Mobile can provide that information as the Registered Location. The use of a known access point to place a 911 call would be the "most recent information" T-Mobile obtained that identifies the physical location of the end user.⁶

The interconnected VoIP service provider must have the latitude to determine which information will be the most likely to be accurate, and thus the best information to pass as the Registered Location. The Commission should not attempt to define all the possible ways that a provider could choose to update a customer's location information as the technical means to automatically derive location information is constantly evolving.

Accordingly, the Commission should clarify that a Registered Location includes any automatically derived location information, and is not required to be the most recent customer-provided location information unless the interconnected VoIP service provider determines the Registered Location solely based on customer-provided information.

⁶ See 47 C.F.R. § 9.3.

III. AN INTERCONNECTED VOIP SERVICE PROVIDER SHOULD NOT BE REQUIRED TO OBTAIN A USER-PROVIDED REGISTERED LOCATION IF THE PROVIDER DETERMINES LOCATION AUTOMATICALLY.

When an interconnected VoIP provider only uses automatically-derived location information as the Registered Location, the provider should not be required to collect a user-provided Registered Location. In paragraph 46 of the Order, the Commission stated that “interconnected VoIP providers must obtain from each customer, prior to the initiation of service, the physical location at which the service will first be utilized.”⁷ Rule 9.5(b)(1) echoes this requirement.⁸ Furthermore, Rule 9.5(b)(2) requires that the interconnected VoIP service provider must provide end users with a means of updating their Registered Location.⁹

These requirements, however, presume that an interconnected VoIP service provider will use customer-provided location information to determine the Registered Location. If the interconnected VoIP service provider can automatically derive location information and will therefore not need to rely on customer-provided location information, these requirements are unnecessary. The Commission should clarify that paragraph 46 of the Order and Rule 9.5(b) do not require collection of customer-provided location information when the interconnected VoIP service provider will not use such information to determine the Registered Location.

⁷ *VoIP E911 Order*, at ¶ 46.

⁸ *See* 47 C.F.R. § 9.5(b)(1).

⁹ *See* 47 C.F.R. § 9.5(b)(2).

IV. AN INTERCONNECTED VOIP SERVICE PROVIDER SHOULD BE ABLE TO OBTAIN A CUSTOMER-PROVIDED REGISTERED LOCATION AFTER SERVICE INITIATION IF NOT PRACTICABLE BEFOREHAND.

When a provider needs to collect a user-provided Registered Location (rather than deriving location automatically), it should be permitted to do so after service initiation if it is not practicable to do so beforehand. This is particularly an issue for GSM operators.

GSM phones use a Subscriber Identification Module (SIM) card, which allows the customer to switch service from one handset to another without any provider interaction. If dual mode GSM/unlicensed handsets become available, a customer may be able to begin using such a handset and make use of interconnected VoIP services simply by transferring her SIM card from her existing phone to a new, dual-mode phone. In that setting, it will be difficult to determine when the interconnected VoIP service is “initiated,” inasmuch as the phone itself will detect and automatically begin using the unlicensed network without subscriber interaction. And there will not necessarily be any opportunity to collect reliable customer-provided location information prior to the time the phone “initiates” service.¹⁰

The Commission should therefore also clarify paragraph 46 and Rule 9.5(b)(1) to make clear that, when an interconnected VoIP service provider intends to use customer-provided location information, it must obtain that information, if practicable, prior to service initiation, and if not practicable, as soon as practicable following service initiation. This fulfills the intent of paragraph 46 and the Commission’s rules to enable emergency location to be passed to PSAPs, while permitting the flexibility to address

¹⁰ For example, the dual-mode phone may be purchased as a gift by someone other than the user. In that situation, the purchaser will not necessarily know the appropriate location information to provide at the time of sale.

situations in which the provider and the customer do not interact prior to initiation of service.

V. A PSAP SHOULD NOT BE DEEMED TO BE ABLE TO RECEIVE AND UTILIZE E911 DATA ELEMENTS FOR MOBILE OR NOMADIC VOIP UNTIL IT CAN USE NON-CALL ASSOCIATED SIGNALING AND REAL-TIME DATABASES, AND 47 C.F.R. § 20.18'S IMPLEMENTATION PERIOD HAS EXPIRED.

Because PSAPs that have not implemented non-call associated signaling for CMRS E911 also will lack the capability to receive and utilize E911 data elements for mobile and nomadic interconnected VoIP, the Commission should clarify that PSAPs must implement non-call associated signaling, be capable of retrieving location information from real-time databases, and Rule 20.18's implementation period must have elapsed with respect to a request associated with such signaling before a PSAP will be deemed to be able to receive and utilize E911 for mobile and nomadic interconnected VoIP.¹¹ Rule 9.5(a) states that the E911 requirements for interconnected VoIP service providers apply "to 911 calls placed by users whose Registered Location is in a geographic area served by a Wireline E911 Network."¹² Paragraph 42 of the Order, however, makes clear that this requirement is more limited: "We recognize that not all PSAPs will immediately be capable of receiving and utilizing the call back number and Registered Location information associated with the E911 requirements [imposed on interconnected VoIP service providers] . . . We therefore hold that the E911 requirements set forth above shall be applicable when an interconnected VoIP provider provides service to a Registered Location *only to the extent that the PSAP* . . . designated to serve

¹¹ For a CMRS operator that provides interconnected VoIP service in an area where it also provides CMRS service, the deadline in § 20.18 should have elapsed with respect to a request to that carrier, not just any CMRS carrier.

¹² 47 C.F.R. § 9.5(a).

that Registered Location *is capable of receiving and utilizing the data, such as ALI or ANI, associated with those requirements.*”¹³

As the Commission is well aware, just because a PSAP may be capable of receiving and utilizing ANI to determine location for a wireline E911 call does not mean that the PSAP is capable of “receiving and utilizing” data elements associated with wireless E911 services. Indeed, the Commission has issued multiple orders concerning when a PSAP is capable of “receiving and utilizing” wireless E911 data elements.¹⁴

Implementing E911 for mobile or nomadic interconnected VoIP services, i.e., services that are not limited to fixed locations for which the telephone number corresponds to the rate center in which the Registered Location is located, requires that a PSAP implement the same capabilities as are necessary to “receive and utilize” wireless Non-Call Path Signaling (NCAS) Phase I and Phase II services. As the Commission has previously established, when a PSAP has not arranged to upgrade to these capabilities, it cannot be said to be ready to “receive and utilize” the E911 data elements in question.¹⁵

Since PSAPs must upgrade their infrastructure to non-call associated signaling and have the ability to retrieve location information from real-time databases in order to implement CMRS E-911 Phase I and Phase II services, the CMRS E911 rules already provide a process and a timeline for upgrading E911 services.¹⁶ Moreover, a CMRS provider can provide E911 service for its interconnected VoIP services through the same

¹³ *VoIP E911 Order*, at ¶ 42 (emphasis added).

¹⁴ *See, e.g., In the Matter of Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems – Petition of City of Richardson, Texas*, Second Order on Reconsideration, 18 FCC Rcd. 26374 (2003); Order on Reconsideration, 17 FCC Rcd 24282 (2002); Order, 16 FCC Rcd. 18982 (2001).

¹⁵ *See* 47 C.F.R. § 20.18(j)(2)(B)(ii).

¹⁶ Under Rule § 20.18, only a PSAP that is capable of receiving and utilizing E911 data elements can request that the wireless carrier offer Phase I or Phase II E911 service; thereafter, the wireless carrier has six months in which to implement the request. *See* 47 C.F.R. § 20.18(d), (e), (j).

infrastructure that it uses to provide its CMRS services. Should the Commission not clarify its rules to synchronize the CMRS and VoIP implementation deadlines, however, a potentially anomalous situation may result where a CMRS carrier could be required to complete the upgrades necessary to offer mobile or nomadic interconnected E911 service before the PSAP had even made a request to that same carrier for CMRS E911 service, even though E911 for CMRS and mobile or nomadic interconnected VoIP requires the same PSAP upgrades.

Accordingly, the Commission should clarify that a PSAP will not be deemed to be capable of “receiving and utilizing” E911 data elements until it has implemented non-call associated signaling and the ability to retrieve location information from real-time databases, and the implementation period in Rule § 20.18 has elapsed with respect to a request that would utilize such signaling and databases. For a CMRS provider that offers nomadic or mobile interconnected VoIP within the same area that it provides CMRS service, this should be a request under § 20.18 to that CMRS carrier.

VI. PROVIDERS MAY DELIVER LOCATION INFORMATION TO THE PSAP FOR INTERCONNECTED VOIP SERVICES IN THE SAME MANNER AS FOR CMRS SERVICES.

The Commission should clarify that providers, especially CMRS operators that provide interconnected VoIP services, may deliver location information to the PSAP in the same manner as for CMRS. In footnote 148 of the Order, the Commission noted, “We expect that customers of interconnected VoIP service providers will, in almost all cases, be able to provide their Registered Location in the form of a valid street address.”¹⁷ The Commission did not, however, specify that an interconnected VoIP service provider must deliver such information to the PSAP in the form of a valid street address. Indeed,

¹⁷ *VoIP E911 Order*, at n. 148.

the Commission expressly noted that “[w]e recognize, however, that wireless broadband technologies may increase the possibility that a user’s location is not associated with a street address, and request comment on whether some other solution is necessary in that circumstance.”¹⁸

Notably, the Commission did not adopt requirements as to the form of the location information passed to a PSAP. In particular, the Commission has not required that a PSAP be provided with a street address, whether or not in MSAG format, particularly for wireless carriers. Wireless carriers do not deliver street addresses to the PSAP: instead, they deliver geographic longitude and latitude (known as “x, y”) coordinates to the PSAP.¹⁹ By continuing to permit delivery of location information in longitude and latitude format the Commission will provide the PSAPs with additional flexibility in how their operations are run and will leverage for VoIP callers the CMRS E9-1-1 capabilities which are already widely deployed.

There is no good public policy reason for the Commission to require a CMRS provider that offers interconnected VoIP service to deliver the emergency location for VoIP calls in street address form while the emergency information for CMRS calls is delivered in latitude and longitude form. Doing so would make it impracticable for a CMRS operator to utilize its existing wireless E911 infrastructure to support the interconnected VoIP service.

¹⁸ *Id.* See also *id.* at ¶ 59 (seeking comment on “how should the use of wireless broadband connections such as Wi-Fi or WiMax impact the applicability of the obligations we adopt today?”)

¹⁹ In the street address field, wireless carriers often deliver an agreed upon address range associated with a particular cellsite.

VII. CONCLUSION

For the foregoing reasons, the Commission should grant T-Mobile's petition for limited clarification or, if necessary, reconsideration of the Commission's *VoIP E911 Order*.

Respectfully submitted,

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