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

In the Matters of	)	
	)	
Wireless E911 Location Accuracy Requirements	)	**PS Docket No. 07-114**
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	**CC Docket No. 94-102**
	)	
Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling	)	
	)	
911 Requirements for IP-Enabled Service Providers	)	**WC Docket No. 05-196**

JOINT INITIAL COMMENTS OF THE TEXAS 9-1-1 ALLIANCE AND THE TEXAS COMMISSION ON STATE EMERGENCY COMMUNICATIONS

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TEXAS COMMISSION ON STATE EMERGENCY COMMUNICATIONS

On the comments:
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The Texas 9-1-1 Alliance[1] and the Texas Commission on State Emergency Communications[2] (collectively referred to herein as the "Texas 9-1-1 Agencies") jointly submit these initial comments to the Federal Communications Commission ("Commission" or "FCC") Notice of Proposed Rulemaking ("NPRM") in the above-referenced dockets,[3] which seeks comment on the Commission's Section III.B. tentative conclusions and proposals to improve on 9-1-1 location accuracy.[4]

I.

Summary of Initial Comments

The Texas 9-1-1 Agencies support the Commission's efforts to examine the state of wireless location technology, near- and long-term, and to determine reasonable and achievable more stringent location accuracy requirements for 9-1-1 emergency calls. The need for wireless location accuracy is much greater today because, as the Commission pointed out in the NPRM, the increasing number of people abandoning traditional

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[1] The Texas 9-1-1 Alliance is an interlocal cooperation act entity composed of the Texas Health and Safety Code Chapter 772 Emergency Communication Districts with E9-1-1 service public safety responsibility for approximately 50% of the population of Texas. The Texas 9-1-1 Alliance members joining in these comments are: Abilene/Taylor County 9-1-1 District, Austin County Emergency Communications District, Bexar Metro 9-1-1 Network District, Brazos County Emergency Communication District, Calhoun County 9-1-1 Emergency Communication District, Cameron County Emergency Communications District, 9-1-1 Network of East Texas, Denco Area 9-1-1 District, Emergency Communications District of Ector County, Galveston County Emergency Communication District, Greater Harris County 9-1-1 Emergency Network, Henderson County 9-1-1 Communication District, Howard County 9-1-1 Communication District, Kerr Emergency 9-1-1 Network, Lubbock Emergency Communication District, McLennan County 9-1-1 Emergency Assistance District, Midland Emergency Communications District, Montgomery County Emergency Communication District, Potter-Randall County Emergency Communications District, Smith County 9-1-1 Communications District, Tarrant County 9-1-1 District, Texas Eastern 9-1-1 Network, and Wichita-Wilbarger 9-1-1 District. These districts were created pursuant to Texas Health and Safety Code Chapter 772.

[2] The Texas Commission on State Emergency Communications is a state agency created pursuant to Texas Health and Safety Code Chapter 771, and is the State of Texas' authority via statute for 9-1-1 emergency communications.

[3] FCC 07-108, released June 1, 2007, 72 Fed Reg 33948, June 20, 2007.

[4] In the first part of the NPRM related to Section III.A, the FCC sought comment on its tentative conclusion to adopt the Association of Public-Safety Communications Officials International, Inc. ("APCO") proposal defining Section 20.18(h) location accuracy testing at an appropriate geographic PSAP responsibility area, and, if so adopted, whether to defer enforcement of Section 20.18(h) as so defined.

wireline service (which provides static validated address locations for 9-1-1 emergency calls) now only have a wireless communications device. This trend continues to increase at a point when wireless already represents a majority of 9-1-1 calls. Wireless 9-1-1 call volume at Public Safety Answering Points (PSAPs) has generally been in excess of 50% since 2004 and currently reaches considerably above 60% in some areas. The Texas 9-1-1 Alliance supports the other parties who suggest convening a technology summit to determine what is reasonable and achievable, in the near- and long-term, in defining more stringent wireless location accuracy requirements for emergency calls.

The Commission needs to establish reasonable and appropriate location accuracy compliance benchmarks. When those compliance benchmarks should occur and whether those compliance benchmarks should be incorporated into the Commission's rules, compliance reports, or implemented in some other manner, may depend on the further technology information to be obtained. As long as the ultimate effective date for compliance would be the same date, the Texas 9-1-1 Agencies do not object to a stay or its equivalent, as opposed to deferred enforcement, if the Commission deems the concerns with deferred enforcement raised by the wireless carriers to have some merit. Moving toward one minimum location accuracy standard for all wireless 9-1-1 calls has benefits, and would provide greater standard simplicity. However, there should be two basic Commission minimum 9-1-1 standards: one for wireless/mobile 9-1-1 calls, and another for Internet Protocol (IP) nomadic/wireline 9-1-1 calls. At the present time, it is preferable to have a specific and validated Master Street Address Guide (MSAG) Automatic Location Identification record of the emergency caller's location when carriers can make it available.

Given the generally known circumstances associated with the use of wireless communications devices and the state of the location technology industry, there should be a strong presumption that improving wireless 9-1-1 location accuracy is technically possible today and in the near future -- absent clear and compelling technical information to the contrary. Other revisions that could help improve wireless carrier location accuracy are for the Commission to address: (1) passing a standardized uncertainty factor for Phase II calls; (2) clarifying that in the absence of Phase II data (or when only Phase I service has been implemented) wireless carriers should send the cell tower and cell sector information rather than sending the "cell centroid" because the latter may be inconsistent with 9-1-1 mapping and 9-1-1 Customer Premises Equipment (CPE) location display; (3) where it has not been addressed, correcting the interference with the voice communication by certain TDM GPS handsets; and (4) decreasing the latency period and improving the speed in which latitude and longitude information is determined so that it may be used for wireless 9-1-1 call routing rather than routing the call based on cell tower information.

As far as OET No. 71, it should be revised to raise the number of test calls from "indoors" to at least 30% to reflect the trend of consumer movement from traditional wireline service to wireless services. Wireless roaming location accuracy appears to be an issue initially for the wireless carriers to address as an industry, and they should be given a reasonable deadline to present the Commission with an industry consensus on the issue. The issue of non-service initialized wireless handsets as it relates to prepaid wireless service expiration may need to be considered too. Prepaid wireless phones may operate as non-service initialized phones for some period of time after expiration of the prepaid wireless service, so this may also be an issue of similar concern going forward.

Interconnected VoIP service providers should generally be required to provide wireless type location accuracy when the 9-1-1 emergency call is sent to the PSAP via wireless network technology. However, when Interconnected VoIP service providers have the ability to send a 9-1-1 call to a PSAP via a wireline network technology, then validated MSAG ALI record location information for the emergency caller's location should be the requirement. In converged or mixed type services, these general rules should still apply, but wireless carriers that can and do send a validated MSAG record for the emergency caller's location should be considered compliant with Commission requirements. Other revisions to the Commission's Interconnected VoIP rules that could help improve location accuracy are clarifying two issues: (1) MSAG validation should be a requirement in the Interconnected VoIP rules for IP/wireline type 9-1-1 calls from known address locations; and (2) if a state (or the local governments of a state), such as Texas, provides a Validation Database (VDB) and an Emergency Services Zone Database (ERDB), then Interconnected VoIP Providers and their agents must utilize the state specific VDB/ERDB for VoIP call location validation and routing.

II.

Deferred Enforcement

The Commission seeks comment on several issues related to deferred enforcement, including, but not limited to, how long the Commission should defer enforcement for wireless carriers who do not achieve compliance, what specific tasks are necessary for wireless carriers to come into compliance, whether the amount of time should vary based on certain factors, what factors should be considered, and should benchmarks be established.[5] In the first phase on the Section III.A comments to the

[5] NPRM at ¶ 8.

NPRM, the Texas 9-1-1 Alliance supported deferred enforcement. In the earlier Section III.A comments to the NPRM, however, certain wireless carriers responded that a "stay" as opposed to "deferred enforcement" would be better for wireless carriers because of potential financing, credit arrangements, punitive interest charges, and liability issues.[6] The Texas 9-1-1 Agencies would note that as long as the ultimate effective date for compliance would be the same date, it does not object to a stay or its equivalent, as opposed to deferred enforcement, if the Commission deems the concerns with deferred enforcement raised by certain wireless carriers to have merit.

Regarding the specific questions related to the proposed effective date, establishing appropriate benchmarks is most important. The amount of time needed, the factors, and the specific tasks needed are items that should be developed from the technology summit meetings and forums urged by numerous parties in this proceeding. The Texas 9-1-1 Agencies urge the Commission to convene or support such technology forums and meetings to develop more specific details to improve wireless location accuracy. (The Commission took similar action in developing its initial wireless 9-1-1 rules.) Whether the benchmarks should be incorporated into the Commission's rules, compliance reports, or some other manner may depend on the further technology information to be obtained; however, regardless of the determination of the most appropriate procedure, there should be reasonable and appropriate benchmarks.

III.

Single Location Accuracy Standard

The Commission invites comment on the tentative conclusion that it is in the public interest to have a single location accuracy requirement, rather than separate

[6] Initial Comments on Section III.A by Sprint Nextel at 15; Reply comments on Section III.A by SouthernLinc Wireless at 13.

accuracy requirements for network- and handset- based technologies.[7] The Texas 9-1-1 Agencies believe that moving toward one minimum location accuracy standard for all wireless 9-1-1 calls has benefits and would provide greater standard simplicity. However, at the present time, as noted herein and in more detail later, the Texas 9-1-1 Agencies also believe that there should be two basic Commission minimum standards: one for wireless/mobile 9-1-1 calls, and another for IP nomadic/wireline type 9-1-1 calls. Currently, it is preferable to have a specific, MSAG validated ALI record that identifies a caller's location when it can be made available. It is recognized that, for wireless 9-1-1 emergency calls indoor vs. outdoor situations and rural vs. urban situations present technology issues associated with a single wireless location standard, which would need to be considered before establishing appropriate benchmarks and criteria leading to a single minimum wireless location standard. It should be noted, however, that establishing a single minimum wireless location accuracy requirement and benchmarks should not deter carriers and technology providers from exceeding the minimum requirement and benchmarks when achievable.

IV.

Location Technologies

In the discussion about establishing a single wireless location technology standard, the Commission seeks comment on several questions associated with the capabilities and limitations of existing or developing location technologies. The Commission also seeks specific comments on the experience of PSAPs receiving Phase II

[7] NPRM at ¶¶ 9 and 10.

service, and what other potential revisions to the current accuracy requirements could help to improve location accuracy.[8]

The Texas 9-1-1 Agencies note that its experience to date in wireless 9-1-1 testing is consistent with the information provided to the Commission in the APCO Project Locate Report and the other general information in the record: handset solutions generally work better outdoors and in rural areas, while network solutions generally work better indoors and may have issues in rural areas. As far as what can be done technologically today, the Texas 9-1-1 Agencies would have to rely on the location-determination vendors and the wireless carriers and the proposed technology summit and meetings to come forward with the significant data on what can reasonably be achieved and how soon – as the Commission indicated it expected for purposes of preparing the Commission Reports by its engineers and staff on (1) in-building location and (2) the use of hybrid technology to increase location accuracy.[9]

The Texas 9-1-1 Agencies would note as a general matter that one need only look at newspapers, financial publications, and new commercial product offerings to see an apparent trend that location technology and companies are much more mainstream and a strongly developing industry than was the case when the Commission's wireless 9-1-1 rules were initially adopted. As such, the Texas 9-1-1 Agencies respectfully submit that there should at least be a strong presumption that improving critical 9-1-1 location accuracy is technically possible today and in the near future -- absent clear and compelling technology information to the contrary.

As far as what other technical revisions could help improve wireless carrier location accuracy, there are at least four other issues that should be addressed: (1) passing

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[8] NPRM at ¶ 11.

[9] NPRM at ¶ 19.

a standardized uncertainty factor for Phase II calls; (2) clarifying that in the absence of Phase II data (or when only Phase I service has been implemented) wireless carriers should send the cell tower and cell sector information rather than sending the "cell centroid" because the latter may be inconsistent with 9-1-1 mapping and 9-1-1 CPE location display; (3) correcting (where it has not been addressed) the interference with the voice communication by certain TDM GPS handsets; and (4) improving the latency period and speed in which latitude and longitude information is made available so that it can be used for wireless 9-1-1 call routing in place of the cell tower information routing.

V.

Accuracy Standard

The Commission seeks comment on what should be the single location accuracy standard requirement; should it be at least as stringent as the current handset accuracy standard requirement; should the standard requirement include additional information, such as elevation; what is the appropriate compliance date; and what other measures should be taken to improve accuracy.[10] As discussed above, there should be a strong presumption that the current location accuracy standard can be improved and made more stringent. The Texas 9-1-1 Agencies concur with the tentative conclusion in the NPRM that the current handset requirement should be at least the place to start any analysis.

The industry and vendors need to expand the envelope of technology to perhaps consider and address issues like "elevation." However, at the present time, while realizing the conceptual potential value of elevation, the Texas 9-1-1 Agencies would like to see more information on how "elevation" would specifically be proposed for use in practice at the PSAP before it would be considered further to become a requirement. As

[10] NPRM at ¶ 12.

far as what other measures could be taken to improve location accuracy, the Texas 9-1-1 Agencies would again urge the four items stated above related to location technologies.[11]

VI.

Compliance Timeframes

The Commission invites comment on what is the appropriate date for compliance at the PSAP level, and what is the appropriate date for compliance for a single location accuracy standard and for any other new requirements that may be adopted on a going forward basis.[12] The Texas 9-1-1 Agencies, as noted earlier, support the comments of other parties suggesting a technology summit to obtain more specific, detailed technical information on what is reasonable and achievable, in the near- and long-term, for more stringent wireless location accuracy requirements for wireless 9-1-1 emergency calls. When those compliance benchmarks should occur and whether those compliance benchmarks should be incorporated into the Commission's rules, compliance reports, or implemented in some other manner may depend on the further technology information to be obtained. But in establishing the specific compliance benchmarks, the Commission should consider not only what can be technically achievable now and in the near future, but also the rate at which wireless service has become a substitute for wireline service from a consumer's home location in 9-1-1 call emergency situations which should compel reasonably aggressive compliance benchmarks.

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[11] These items are: (1) passing a standardized uncertainty factor for Phase II calls; (2) clarifying that in the absence of Phase II data (or when only Phase I service has been implemented) wireless carriers should send the cell tower and cell sector information rather than sending the "cell centroid" because the latter may be inconsistent with 9-1-1 mapping and Customer Premises Equipment location display; (3) correcting (where it has not been addressed) the interference with the voice communication by certain TDM GPS handsets; and (4) improving the latency period and speed in which latitude and longitude information is made available so that it can be used for wireless 9-1-1 call routing in place of the cell tower information routing.

[12] NPRM at ¶ 13.

VII.

Compliance Testing

The Commission seeks comment on what methodology carriers should use to verify compliance, including what revisions to OET No. 71 would be appropriate, and should there be a certain level of indoor versus outdoor testing.[13] OET No. 71 should be revised to raise the number of test calls from "indoors" to at least 30%.[14] This is needed to reflect the trend of consumer movement from traditional wireline service to wireless services.

VIII.

Schedule for Testing

The Commission seeks comment on the schedule for testing, whether the APCO suggestion of every two years or some other schedule should be required, how compliance testing should occur for new Phase II deployments, how and where such testing information should be filed or provided, and whether the Commission should treat it as confidential.[15] The APCO suggestion of every two years appears to be a reasonable starting point for discussion. (State confidentially and/or public information laws may or may not require the confidentially of testing information submitted to 9-1-1 Entities.) The ATIS recommendations on initial and maintenance testing should be considered. As far as new deployments, wireless carriers must still follow local requirements for testing and interconnection to the 9-1-1 system to verify the 9-1-1 emergency service is being established and documented correctly. In all cases where there has been an identified 9-1-1 call delivery problem, requiring additional testing must be an option.

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[13] NPRM at ¶ 14.

[14] The 30% number is based on estimating that a consumer with only a wireless telephone might likely be at home approximately 30% of the time.

[15] NPRM at ¶ 15.

IX.

Accuracy Data

The Commission tentatively concludes that carriers should automatically provide accuracy data to the PSAPs, and seeks comments on how and in what format, how often, whether it should be provided as part of the call/ALI information, and the appropriate level of granularity.[16] The Texas 9-1-1 Agencies respectfully submit that other than passing a standardized uncertainty factor, as discussed earlier, the passing of any new additional accuracy information to the PSAP as part of call delivery should be evaluated first for its usefulness and ability to assist and display at the PSAP before becoming a call delivery requirement. Annual reports would appear to be a reasonable starting balance between timeliness and the burdens involved in creating the reports for the wireless carriers, although it is reasonable to hear more on this issue from the wireless carriers on any excessive burdens that are not apparent.

X.

911 Calls Placed When Roaming

The Commission seeks comment on how different deployed location technologies impact location accuracy for roaming 9-1-1 calls, how these issues can be addressed, and if carriers should be required to deliver location for every 9-1-1 call handled on their network, including for customers of roaming carriers.[17] The Texas 9-1-1 Agencies submit that wireless roaming location accuracy appears to be an issue initially for the wireless carriers to address as an industry, and they should be given a reasonable deadline to present the Commission with an industry consensus on the issue. In considering the every call requirement, the issue of non-service initialized wireless service, as it relates to

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[16] NPRM at 16.

[17] NPRM at ¶ 17.

prepaid wireless service expiration, may need to be considered as well. This is especially important if prepaid phones operate as non-service initialized phones for some period of time after expiration of the prepaid wireless service. The expiration of prepaid wireless service factor was not considered when the Commission adopted its earlier rules and it may be, or may become, just as prevalent an issue as the roaming issue going forward.

XI.

Interconnected VoIP Services

On the issue of interconnected VoIP services, the Commission seeks comment on (1) whether, and to what extent, providers of interconnected VoIP services should be required to provide ALI; (2) whether, and to what extent, they should be subject to the same location accuracy requirements that apply to certain services provided by circuit-switched CMRS carriers under Section 20.18 of the Commission's rules; (3) the tentative conclusion that VoIP services that can be used in more than one location must employ automatic location identification that meets the same accuracy standard that apply to CMRS services, and in light of this tentative conclusion seeks comment on all other issues in the NPRM as though those accuracy requirements would apply to interconnected VoIP; and (4) any update to the record or new information or arguments relevant to the interconnected VoIP issues.[18]

Interconnected VoIP service providers should generally be required to provide wireless type location accuracy when the 9-1-1 call is sent to the PSAP via wireless network technology. But when Interconnected VoIP service providers send a 9-1-1 call to a PSAP via an IP nomadic/wireline type network technology, then validated MSAG record location information for the emergency incident location should be the

[18] NPRM at ¶ 18.

requirement. For example, if the wireless handset for the T-Mobile Hotspot at Home Service switches to the wireless network to deliver a 9-1-1 call, then the 9-1-1 call should generally be delivered consistent with the Commission's wireless 9-1-1 requirements. On the other hand, if Clearwire provides nomadic VoIP service and sends 9-1-1 calls via an IP/wireline type network, then these 9-1-1 calls should be delivered consistent with the Commission's Interconnected VoIP requirements. Notwithstanding these general rules, in converged or mixed type services wireless carriers that can or should send a validated MSAG ALI record for the emergency incident location must be considered compliant with Commission requirements.

At the present time, it is preferable to have a specific and MSAG-validated ALI record of the emergency caller's location when such can be provided. Recent press statements regarding the T-Mobile and Cisco wireless router for VoIP calls may be an example where a wireless carrier should be required at minimum to send a 9-1-1 call via the VoIP network with a "Registered Location" MSAG validated address, and not be acceptable to switch a 9-1-1 call to the wireless 9-1-1 network for a VoIP call from that location. Moreover, in such a situation, to the extent that the wireless carrier can work with the PSAP to deliver or make available the latitude and longitude information in addition to the MSAG validated "Registered Location" information, then the wireless carrier should work with the PSAPs to do so. As the IP-industry develops and deploys the ability to deliver automatic and validated location information for VoIP emergency 9-1-1 calls (as opposed "Registered Location" information under the current Commission rule), then the converged or mixed type services may be addressed by that future evolution requirement.

As far as what current revisions to the Commission's Interconnected VoIP rules could help improve location accuracy, the Commission should clarify at least two issues: (1) MSAG validation should be a requirement in the Interconnected VoIP rules for IP/wireline type 9-1-1 calls from known locations, and (2) if a state (or the local governments of a state), such as Texas, provides a Validation Database (VDB) and Emergency Services Zone Database (ERDB), then Interconnected VoIP Providers and their agents must utilize the state specified VDB/ERDB for validation and routing. MSAG validation has generally been addressed in practice notwithstanding that it may not be entirely specific in the Commission rule.[19] The lack of clarity on the VDB/ERDB issue (similar to the King County demarcation issue the Commission addressed related to wireless 9-1-1 deployments), however, might significantly jeopardize the deployment of 9-1-1 Entity statewide VDB/ERDBs.[20] The VDB/ERDB is a component of the NENA i2 standard to provide wireline equivalency for nomadic solution and VoIP 9-1-1 calls, and should evolve into the routing proxy of a Next Generation 9-1-1 system. Facilitating the VDB/ERDB deployment through the Commission's clarification as requested above on the use of the VDB/ERDB would strongly support the Commission's NPRM goals to improve interconnected VoIP location accuracy. As such, the Texas 9-1-1 Agencies request that the Commission clarify or rule at the earliest possible time that Interconnected VoIP Providers and their agents must utilize the state specified VDB/ERDB for validation and routing.

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[19] The Texas 9-1-1 Agencies would note that NENA and the VON Coalition and others have made previous filings requesting clarification on the MSAG validation requirement.

[20] If deemed needed, the Texas 9-1-1 Alliance is prepared to file a separate petition seeking a Commission clarification or ruling on the VDB/ERDB issue.

XII.

Commission Reports

The Commission notes that it expects the filed comments to provide significant data on the ability of current technologies to meet location criteria and the development of new technologies to increase location accuracy, but the Commission also notes that there are at least two issues that warrant additional evaluation by the Commission engineers and staff: (1) methods for carriers to improve in-building location accuracy, and (2) the use of hybrid technology solutions to increase location accuracy and address short-comings of current technologies. As noted above, because of the increasing number of wireless 9-1-1 emergency calls as a replacement to wireline services, these two wireless location issues are important and warrant the significant focus expressed by the Commission in the NPRM.

XIII.

Conclusion

The Texas 9-1-1 Alliance and the Texas Commission on State Emergency Communications appreciate the opportunity to comment on these issues, and respectfully urge Commission action consistent with these initial comments.

Respectfully submitted,

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