

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

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

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

**THE TEXAS COMMISSION ON STATE
EMERGENCY COMMUNICATIONS**

THE TEXAS 9-1-1 ALLIANCE

Patrick Tyler
General Counsel
Commission on State Emergency
Communications
333 Guadalupe Street, Suite 2-212
Austin, Texas 78701-3942
512-305-6915
512-305-6937 (fax)
Patrick.tyler@csec.state.tx.us

Michael J. Tomsu
Vinson & Elkins L.L.P.
2801 Via Fortuna, Suite 100
Austin, Texas 78746
512-542-8527
512-236-3211 (fax)
mtomsu@velaw.com

On the comments:
Richard A. Muscat
Bexar Metro 9-1-1 Network District

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The Texas Commission on State Emergency Communications¹ and the Texas 9-1-1 Alliance² (collectively referred to herein as “Texas 9-1-1 Agencies”) respectfully submit the following joint initial comments in response to the Further Notice of Proposed Rulemaking (“FNPRM”) and Notice of Inquiry (“NOI”) adopted by the Federal Communications Commission (“Commission” or “FCC”) in its September 23, 2010 Order (“Order”) in the above-referenced dockets.

I.

Preliminary Statement

The Texas 9-1-1 Agencies strongly support the Commission initiating the next stage of regulations to “explore how to further improve the location capability of 911 and E911 services for existing and new voice communications technologies,” and strongly support the

¹ The Texas Commission on State Emergency Communications (“CSEC”) is a state agency created pursuant to Texas Health and Safety Code Ann. Chapter 771, and is the state authority on emergency communications. CSEC oversees the implementation of 9-1-1 service provided by Texas’ 24 Councils of Government, which serve approximately two-thirds of the geographic area of Texas and one-third of its population.

² The Texas 9-1-1 Alliance is an interlocal cooperation entity composed of 24 Texas Emergency Communication Districts with E9-1-1 service and public safety responsibility for approximately 53% of the population of Texas. These districts were created pursuant to Texas Health and Safety Code Chapter 772.

Commission's aim to ensure that it is "doing everything within its power, in conjunction with the public safety community and service providers, to ensure that Americans have access to the most forwarding-thinking technologically advanced system in the world."³ The Commission seeks comment on the appropriate regulatory framework, the things the Commission should heed, and whether there should be minimum requirements in the context of NG9-1-1 NENA i3.⁴ However, it is equally important to consider these same questions for the existing environment *simply to maintain the current level of 9-1-1 location accuracy for existing services to Public Safety Answering Points ("PSAPs")* (hereinafter sometimes referred to as "this-gen").

While the Commission's Order is mostly divided between the FNPRM (which focuses primarily on wireless) and the NOI (which focuses primarily on nomadic/portable Interconnected VoIP and new VoIP services), in more and more contexts such distinctions are proving to be unworkable and are failing to provide regulatory certainty and stability. *Major reasons for these existing uncertainties appear to be: (1) convergence of services to end users and (2) convergence and expanded use of 9-1-1 delivery solutions using Pseudo-ANIs.*⁵ Regarding convergence of services to end users, for example, the FNPRM asks several questions that can be impacted by whether the 9-1-1 location information for *static* (i.e., non-nomadic, non-portable, non-mobile) services would be satisfied by merely providing *x* and *y* coordinates applicable to

³ FNRRM and NOI Order at ¶ 1.

⁴ FNPRM and NOI Order at ¶ 33 ("As the regulatory framework for wireless and VoIP E911 evolves, what specific considerations should the Commission heed as NG911 systems are deployed throughout the nation? Are there a minimum set of network, software and/or device criteria that would afford flexibility in providing location accuracy, but also meet consumers' expectations and facilitate the deployment of NG911?").

⁵ 47 C.F.R. § 9.3 provides: "*Pseudo Automatic Number Identification (Pseudo-ANI)*. A number, consisting of the same number of digits as ANI, that is not a North American Numbering Plan telephone directory number and may be used in place of an ANI to convey special meaning. The special meaning assigned to the pseudo-ANI is determined by agreements, as necessary, between the system originating the call, intermediate systems handling and routing the call, and the destination system." (Hereinafter Pseudo-ANIs are referred to as "pANIs.")

wireless Phase 2, as opposed to also having a Master Street Address Guide (“MSAG”) validated civic address. Such issues that may be impacted include, but are not limited to, *Potential Modifications to Accuracy Standard*⁶, *Compliance Testing*⁷, *Challenging Environments*⁸, and *Vertical Location Information*.⁹ The Commission noted in paragraph 41 of the Order in regard to femtocells -- if a 9-1-1 call could be sent with “an exact address” ... it “would lead to significant improvement in location accuracy, akin to the location quality of wireline networks.”¹⁰ One major femtocell provider delivers both the MSAG validated civic address and the *x* and *y* coordinates of the end user and routes the 9-1-1 calls to the appropriate PSAP based on the MSAG validated location of the end user. But another major femtocell provider delivers only *x* and *y* coordinates and routes 9-1-1 calls to the appropriate PSAP based on the cell tower that is assumed would have handled the 9-1-1 call if the femtocell did not exist.

As for convergence and expanded use of 9-1-1 delivery solutions using pANIs, potentially impacting an immediate significant number of static end users are recent efforts by cable providers to convert from delivering ANI for its **static** end users to instead delivering pANIs for such users.

Accordingly, to express our primary 9-1-1 location accuracy concerns most clearly, these joint initial comments will be divided into three parts: (1) wireless and Interconnected VoIP 9-1-1 location accuracy issues needing expedited Commission resolution; (2) other longer-term

⁶ FNPRM and NOI Order at ¶ 17.

⁷ FNPRM and NOI Order at ¶ 19.

⁸ FNPRM and NOI Order at ¶ 22.

⁹ FNPRM and NOI Order at ¶ 23.

¹⁰ FNPRM and NOI Order at ¶ 41.

wireless and VoIP 9-1-1 location accuracy issues; and (3) impact of NG9-1-1 deployment on location accuracy.

II.

Executive Summary

It is significantly important to consider the regulatory framework and minimum requirement issues raised by the Commission in paragraph 33 of the Order not only in the context of NG9-1-1 NENA i3, but to also consider it in the context of “this-gen.” The Commission providing more detailed 9-1-1 location interpretations or revised/new regulations, including requirements for advance notice and testing, that clarify issues such as “existing convergence of services to end users” and “existing convergence and expanded use of 9-1-1 delivery solutions using pANIs,” protects current accuracy of 9-1-1 location display and location-based routing in “this-gen” and ultimately provides a more solid foundation for future NG9-1-1 NENA i3.

Among the most relevant matters for consumers and public safety for purposes of 9-1-1 location accuracy are reasonable expectations and consistency in meeting those reasonable expectations. For purposes of 9-1-1 location, what is most relevant and consistent with end user and PSAP call-taker reasonable expectations should be *whether the use of service is 1) static, 2) nomadic/portable, 3) mobile, and/or 4) combination of static, portable/nomadic, and/or mobile service*. Each of these types of services can be identifiable and understandable, and can have potentially different impacts depending upon how 9-1-1 location is handled and what information is conveyed to, and displayed at, the PSAP. Providing more detailed 9-1-1 location interpretations or revised/new regulations that clarify requirements for 9-1-1 ALI location display and 9-1-1 routing for each of the four basic uses for service types would significantly and

immediately be helpful for purposes of “this-gen.” Existing issues can be reasonably clarified by interpretations or revised/new regulations that simply state the basic 9-1-1 location requirements of, for example: *static* switched traditional wireline; *static* Interconnected VoIP; *static* wireless CMRS Femtocells over wireline broadband; *static* Interconnected VoIP over wireless broadband; *nomadic/portable* Interconnected VoIP over wireline broadband; *nomadic/portable* Interconnected VoIP over Wi-Fi; and *nomadic/portable* Interconnected VoIP over wireless broadband. Such a basic framework for services with current 9-1-1 location requirements would be reasonably identifiable and understandable.

Traditionally, the 9-1-1 selective routing service and the 9-1-1 ALI database service have been regulated from at least a 9-1-1 service quality perspective by state public utility commission regulations and via cooperative federalism in the case of local interconnection. This framework may not be appropriate for third-party, NENA i2 pANI solutions providers or for NG9-1-1 NENA i3 solutions; or at least such service quality and interconnection regulations for 9-1-1 are arguably ambiguous. This creates a potential gap that should be recognized as deserving of prudent Commission consideration both for “this-gen” and NG9-1-1 NENA i3.

Our view on some of the longer-term, less immediate wireless and VoIP 9-1-1 location accuracy issues raised in the FNPRM and the NOI Order are summarized as follows:

(1) What is reasonable and achievable by existing and future location technologies should be based on the best available data and thorough analysis, and similar to the Commission, we look forward to seeing such data provided by the vendors and the CSRIC analysis, conclusions, and recommendations on these issues to enable greater evaluation.

(2) The methodology for initial and ongoing testing and the schedule for testing are important, but a threshold issue in this context is that wireless carriers must be required to do initial pre-deployment testing of Phase 2 service before turning up any new towers with live traffic or any new coverage areas with live traffic in those areas that have full Phase 2 service. In addition, on the issue of testing, it should be acknowledged that

9-1-1 public safety authorities have their own independent testing programs, and such can have great benefits for public safety authorities and wireless carriers. On the issue of “indoor testing,” waiting to see how the “indoor testing” issues might be addressed within the context of the CSRIC seems a reasonably prudent approach at this time.

(3) The challenging environment questions could be viewed only as an extension of existing and prospective location technology issues. But it is reasonable for the Commission and public safety authorities to expect wireless carriers to deploy such services to challenging environments beyond the minimum wireless Phase 2 standards when it is reasonably achievable, and reasonably expected by end users for them to do so; for example, in the case of femtocells.

(4) On the vertical location issue, unless those with additional technical expertise in the area provide information to the contrary, it does not appear that wireless elevation, vertical (z-axis) location is yet beyond the “aspiration and evaluation” stage on what can be delivered by wireless carriers and what can actually be usable and useful to 9-1-1 authorities, but that does not mean that in at least some contexts other enhancements are not reasonable and achievable.

(5) At the present time, we are not taking a position on the priority of only nomadic Interconnected VoIP services. This does not mean that auto-location in general and more broadly is not a significant issue for the Commission to press forward on expeditiously, as we transition into a fully IP and NG9-1-1 future of open access and nomadic and mobile IP devices and over the top services independent of the access network providers. Since we cannot turn back the clock on innovation, open access, and nomadic and mobile IP devices and over the top services independent of the access network providers, the Commission keeping auto-location at the forefront to promote reasonable progress is a significant part of being ready for what appears more broadly on the horizon.

(6) On the issue of additional services arguably not subject to the existing Commission 9-1-1 requirements, such as Skype Mobile and Google Voice, at the present time, we do not have sufficient information to make recommendations as to each of these services. However, we urge that the parties offering such additional VoIP service make sufficient information available to the Commission and interested parties to determine conclusions as to reasonable expectations and priorities. In addition, as a threshold matter notwithstanding ambiguities or requirements, these vendors should be required to provide public education materials related to service uses and limitations and work diligently with public safety and access network providers as may be appropriate to minimize confusion and potential adverse consequences to their end users.

(7) For purposes of the impact of NG9-1-1 deployments on location accuracy and ALL, providing more detailed 9-1-1 location interpretations or revised/new regulations would be most helpful in several contexts:

- (a) sending appropriate 9-1-1 location as part of 9-1-1 call delivery to the Emergency Services Internetwork in NG9-1-1 NENA i3;
- (b) access network provider responsibilities;
- (c) Location Information Server responsibilities;
- (d) the NG9-1-1 NENA i3 regulatory framework; and
- (e) facilitating prudent synchronization and management of reasonable expectations and technical limitations.

In addition, in the context of NG9-1-1 NENA i3, specific factors deserving special attention include, but are not limited to: (a) synchronizing reasonable expectations, (b) recognizing what providers can deliver within technical limitations; and (c) recognizing what PSAPs can accept and reasonably process from a technological and human capital perspective -- so as to improve what can be done, but not to overwhelm providers or PSAPs or address issues in a manner that has not been appropriately prioritized.

III.

Wireless and VoIP 9-1-1 Location Accuracy Issues for Expedited Commission Resolution

- A. Providing more detailed 9-1-1 location interpretations or revised/new regulations, including requirements for advance notice and testing, that clarify issues, such as “existing convergence of services to end users” and “existing convergence and expanded use of 9-1-1 delivery solutions using pANIs,” protects current accuracy of 9-1-1 location display and location-based routing in “this-gen,” and ultimately provides a more solid foundation for future NG9-1-1 NENA i3 solutions.**

It is critically important, as noted above, to consider the regulatory framework and minimum requirement issues raised by the Commission in paragraph 33 of the Order¹¹ not only in the context of NG9-1-1 NENA i3 but to also consider it in the context of “this-gen.” Even the most knowledgeable parties acting in good faith cannot seem to agree on what current 9-1-1 location requirements are applicable to, for example, femtocells and Interconnected VoIP. 9-1-1 has at least two fundamental location aspects for purposes of providing the most appropriate response expected by the public: (1) displaying 9-1-1 location on the ALI screen to the 9-1-1 call-taker and (2) using that 9-1-1 location to route the 9-1-1 calls to the most appropriate PSAP.

¹¹ FNPRM and NOI Order at ¶.

And each of these two aspects has more detailed subparts,¹² which may be compromised or adversely impacted by convergence and how it is deployed in some situations.

For purposes of explaining potential issues better, 9-1-1 convergence is being separated into two major aspects: (1) *convergence of services to end users* and (2) *convergence and expanded use of 9-1-1 delivery solutions using pANIs, which appear to have been initially intended by the Commission and some 9-1-1 public safety authorities for use only in the context of nomadic/portable (i.e., non-static) Interconnected VoIP*. A clear example of *convergence* is a device and service like wireless femtocell using IP connections to deliver services from and to the femtocell. At least one major wireless carrier delivers 9-1-1 service from the femtocell by providing both the MSAG validated civic address of the end user and the *x* and *y* coordinate of the femtocell as the 9-1-1 location to the ALI screen of the 9-1-1 call-taker; however, another major wireless carrier delivers only the *x* and *y* coordinates of the femtocell as the 9-1-1 location to the ALI screen of the 9-1-1 call-taker, notwithstanding that the device is non-mobile and pretty much intended to be static. These same major wireless carriers also route the end users' 9-1-1 calls originating on the femtocell based on different 9-1-1 locations. The wireless carrier that provides both the MSAG validated civic address of the end user customer and the *x* and *y* coordinate of the femtocell as the 9-1-1 location routes the 9-1-1 call to the most appropriate PSAP based on the MSAG validated address of the femtocell. The other wireless

¹² For example, the type of location information that must be included in the ALI screen display for traditional wireline services is addressed in Texas PUC Subst. Rule 26.272(e)(1)(B)(i)(V), available at <http://puc.state.tx.us>, which provides as follows: “The CTU is responsible for providing the ALI for each of its customers. The ALI shall consist of the **calling customer name, physical location, appropriate emergency service providers, and other similar standard ALI location data specified by the appropriate 9-1-1 administrative entity**. For purposes of this subclause, other similar standard ALI data does not include supplemental data not part of the standard ALI location record.” (emphasis added).

carrier using only the x and y coordinates will use the wireless Phase I tower location to route 9-1-1 calls from the femtocell to the most appropriate PSAP.

An example of *convergence and expanded use of 9-1-1 delivery solutions using pANIs*, is the growing use of pANIs by static cable providers in place of the traditional 9-1-1 selective routing and traditional ALI database they have used for many years. This is not to suggest that using pANIs cannot deliver a reasonably comparable level of 9-1-1 service quality and location accuracy as compared to traditional wireline 9-1-1 service. But arguable ambiguities regarding what is required in this context, notwithstanding the demonstrated ability of the cable providers to provide 9-1-1 service on par with that of traditional wireline carriers, can lead to unnecessary confusion, lack of clear communication, or impact 9-1-1 location quality in “this-gen.”

Commission’s Rule 9.5(b)(3) provides that “all 911 calls must be routed through the use of ANI and, *if necessary*, pseudo-ANI, via the dedicated Wireline E911 Network...” (emphasis added). However, Rule 9.5(b)(3) does not unambiguously indicate who decides the “if necessary,” and the criteria for evaluating the “if necessary” decision in the event of a dispute. Regarding the call-taker’s ALI location screen, Commission Rule 9.3 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.” But the definitions in Commission Rule 9.3 are ambiguous on whether the 9-1-1 location ALI display of a static cable provider must be reasonably comparable to traditional wireline 9-1-1 location ALI screen display for aspects of 9-1-1 location, such as Class of Service (“COS”), English Language Translations (“ELTs”) of applicable responders, mapping, etc. . . .¹³ If the quality and level of 9-1-1 location provided by using pANIs can be reasonably comparable to the use of ANI, then there may be no reason to

¹³ *Cf.*, Texas PUC Subst. Rule 26.272(e)(1)(B)(i)(V).

require use of ANI or to decide the ambiguous “if necessary” questions. On the other hand, if the quality and level of 9-1-1 location information provided by using pANIs is not reasonably comparable to the use of ANI, then resolving ambiguity becomes a necessity.

For the foregoing reasons, it is important that the Commission provide more detailed 9-1-1 location interpretations or revised/new regulations, including requirements for advance notice and testing, that clarify issues, such as “existing convergence of services to end users” and “existing convergence and expanded use of 9-1-1 delivery solutions using pANIs” in a manner that protects current accuracy of 9-1-1 location display and location-based routing in “this-gen.” This will also ultimately provide a more solid and reasonable foundation to build on for future NG9-1-1 NENA i3.

B. Providing more detailed 9-1-1 location interpretations or revised/new regulations that explain requirements for 9-1-1 ALI location display and 9-1-1 routing that are reasonably understandable to consumers and public safety for each of the four basic use types: (1) static, (2) nomadic, (3) mobile, and (4) hybrid.

One of the most relevant matters for consumers and public safety for 9-1-1 location accuracy purposes are reasonable expectations and consistency in meeting those reasonable expectations. For purposes of 9-1-1 location, what is most relevant and consistent with end user and PSAP call-taker reasonable expectations should be *whether the service is 1) static, 2) nomadic/portable, 3) mobile, and/or 4) combination of static, portable/nomadic, and/or mobile service*. Each of these types of uses by end users can be identifiable and understandable, and can have potentially different impacts depending how 9-1-1 location is handled or conveyed.

Presently, it appears that the four basic use types will be consistent and applicable to both “this-gen” and future NG9-1-1 NENA i3. As mentioned before, it is significant to consider the regulatory framework and minimum requirement issues raised by the Commission in paragraph

33 of the Order¹⁴ not only in the context of NG9-1-1 NENA i3 but to also consider it in the context of “this-gen.” Potentially different impacts depending upon how 9-1-1 location is handled or conveyed can occur for each of the four basic use types. Examples of the issues coming up currently in “this-gen” include, but are not limited to: 1) which type of service covered by a 9-1-1 location requirement is involved (e.g., wireline, static Interconnected VoIP, nomadic/portable Interconnected VoIP, traditional mobile wireless, wireless static femtocell, etc.); 2) what type of 9-1-1 network delivery is involved; 3) what type of 9-1-1 ALI database delivery is involved; 4) what type of Commission or state public utility commission regulations are involved, or should be followed even when applicable requirements may be somewhat uncertain because of convergence; 5) what type of COS will be displayed and how will it impact 9-1-1 location ALI display or 9-1-1 routing of the emergency call to the appropriate PSAP; 6) uncertainties as to whether an MSAG validated civic address is involved or whether only x and y coordinates are to be provided; 7) disagreements regarding applicable requirements or standards; 8) who has the responsibility to determine such issues in the first instance for deploying services on an immediate or quick deadline; 9) who has the responsibility associated with additional costs to maintain reasonably comparable 9-1-1 service level requirements; and 10) who is responsible for making any changes needed to ensure upstream and downstream systems are not needlessly or adversely impeded because 9-1-1 location can impact them. ***These issues make it imperative that advance notice, planning, and testing is critical and must be mandated.***

Providing more detailed 9-1-1 location interpretations or revised/new regulations that explain requirements for 9-1-1 ALI location display and 9-1-1 routing for each of the four basic use types would significant and immediately be helpful for purposes of “this-gen.” Issues can be

¹⁴ FNPRM and NOI Order at ¶ 33.

reasonably explained by interpretations or revised/new regulations that simply state the basic 9-1-1 location requirements of, for example: static switched traditional wireline; static Interconnected VoIP; static wireless CMRS Femtocells over wireline broadband; static Interconnected VoIP over wireless broadband; nomadic/portable Interconnected VoIP over wireline broadband; nomadic/portable Interconnected VoIP over Wi-Fi; and nomadic/portable Interconnected VoIP over wireless broadband. Such a basic framework for services with current 9-1-1 location requirements would be reasonably identifiable and understandable. Using such a basic framework, examples of a straw-man draft interpretation or revised/new regulation with more detailed requirements could be something like the following clarifications:

(1) If a service is static (whether wireline, Interconnected VoIP, or Femtocell wireless), then the information to be provided as part of ALI location record screen should at minimum include the MSAG-validated address, with apartment/building number if applicable, of the Customer, the Customer Name, appropriate Residential or Business Class of Service, and English Language Translations, and the 9-1-1 call should be selectively routed to the appropriate PSAP based on the Emergency Service Zone of the MSAG-validated address.

(2) If a service is portable/nomadic (whether Interconnected VoIP or wireless VoIP), then the information to be provided as part of ALI location record screen should at minimum include the MSAG-validated address of the Customer, the Customer Name, appropriate Residential or Business Class of Service, and English Language Translations, and the 9-1-1 call should be selectively routed to the appropriate PSAP based on the Emergency Service Zone of the MSAG-validated address.

(3) If a service is mobile (whether traditional CMRS, managed mobile VoIP over wireless broadband, telematics, or an application over wireless broadband), then the information to be provided as part of ALI location record screen should at minimum include Phase I and Phase II location requirements (as applicable), Class of Service, requested sub-identifiers (such as Femtocell or Telematics), and the 9-1-1 call should be selectively routed to the appropriate PSAP based on the Emergency Service Zone of the latitude and longitude of the customer (if available) or otherwise based on the cell site location serving the customer.

(4) If a service can be used in more than one manner or has aspects of more than one service use type (such as Interconnected VoIP call over Wi-Fi or Femtocell service over a wireline broadband network), then the information to be provided as part of ALI

location screen should at minimum include both (1) the MSAG-validated address, the Customer Name, appropriate Residential or Business Class of Service, and English Language Translations and (2) Phase I and Phase II location requirements (as applicable), requested sub-identifiers (such as Femtocell), and the 9-1-1 call should be selectively routed to the appropriate PSAP based on the Emergency Service Zone of the MSAG-validated address (if available), otherwise the latitude and longitude of the customer (if available), or otherwise based on the cell site location serving the customer.

(5) Other voice and/or data services that can be used for communications, but that are not required under federal or state regulatory 9-1-1 regulations to provide both “access to 9-1-1” and “9-1-1 location” shall provide public education materials related to service uses and limitations and work diligently with public safety and access network provider as may be appropriate to minimize confusion and potential adverse consequences to their end users.

C. Providing more detailed interpretations or revised/new regulations for core 9-1-1 IP interconnection and 9-1-1 location quality for “this-gen” and NG9-1-1 NENA i3.

To this point, these comments might be read as requesting only clarifying interpretations or revised/new regulations applicable to wireless carriers and Interconnected VoIP providers for purposes of 9-1-1 location accuracy. However, this is not the intent. Initial pANI pools were deployed in Texas to help meet the Interconnected VoIP mandate on nomadic providers that could not use a traditional selective routing and ALI database because it was not a static service. From a technical, operational, and feasibility perspective, shared pANI pools have been deployed or have at least been requested for deployment generally in that manner in accordance with NENA i2 standards. Once those pANI pools are set up for nomadic Interconnected VoIP, any subsequent use for other types of services should require the proper level of advance notice, cooperation, collaboration, evaluation, testing and agreements on the deployment details, including education/training for call-takers at PSAPs. Examples of situations where these pANI pools have been used for other services include, but are not limited to, telematics, femtocells, and now static cable providers are increasingly looking to use pANI pools for their static services.

The Texas 9-1-1 Agencies do not oppose cable provider migration to pANIs, provided that such migration is reasonably comparable to the current level of 9-1-1 location quality or enhances it. However, achieving the proper and most desirable results requires advance notice, cooperation, collaboration, evaluation, testing and agreements on the deployment details, including education/training for call-takers at PSAPs..

Traditionally, the 9-1-1 selective routing service and the 9-1-1 ALI database service has been regulated from at least a 9-1-1 service quality perspective by state public utility commission regulations and via cooperative federalism in the case of local interconnection. This may not be the situation for those third-party NENA i2 pANI solutions providers or for NG9-1-1 NENA i3 solutions; or at least such service quality and interconnection regulations for 9-1-1 are unambiguous. This is a potential gap that should be recognized as deserving prudent Commission consideration both for “this-gen” and NG9-1-1 NENA i3.

IV.

Longer-Term Wireless and VoIP 9-1-1 Location Accuracy FNPRM and NOI Issues

The initial comments below briefly address some of the longer-term wireless and VoIP 9-1-1 location accuracy issues raised in the FNPRM and the NOI Order. The Texas 9-1-1 Agencies plan to evaluate the initial comments of other interested parties on these and other issues, and as appropriate possibly provide additional detail in reply comments.

A. Existing and Prospective Location Technologies¹⁵

What is reasonable and achievable by existing and future location technologies is a significant issue that should be based on the best available data and thorough analysis. Similar to the Commission, we look forward to seeing such data provided by the vendors and the CSRIC

¹⁵ FNPRM and NOI Order at ¶ 15.

analysis, conclusions, and recommendations on these issues to enable greater evaluation of these issues.

B. Compliance Testing¹⁶ and Schedule for Testing¹⁷

The methodology for initial and ongoing testing and the schedule for testing are important, but a threshold issue in this context for initial testing is that it needs to be done *before* beginning to handle live traffic from end users. If such initial testing does not occur prior to live turn up for end users, or can occur as much as six months after a wireless carrier started handling live end user traffic, then it ignores the whole concept of prudent pre-deployment initial testing. Wireless carriers *must* be required to do initial pre-deployment testing of Phase 2 service before turning up any new towers with live traffic or any new coverage areas with live traffic in 9-1-1 authority areas that have full Phase 2 service. Commission Rule 20.18 should not be interpreted to create an automatic loophole extension of up to six-months for wireless carriers to deploy Phase 2 service at a later date after they start handling live end user traffic. In addition, on the issue of testing, it should be acknowledged that 9-1-1 public safety authorities have their own independent testing programs, and they can have great benefits not only for the 9-1-1 public safety authorities but also for wireless carriers.

The Commission also seeks comments on whether to require wireless carrier “indoor testing” and at what percentage of such testing requirement should apply. Given that the CSRIC reports should be released soon, waiting to see how the “indoor testing” related issues might be addressed within the context of the CSRIC analysis, conclusions, and recommendations seems a reasonably prudent approach at this time.

¹⁶ FNPRM and NOI Order at ¶ 19.

¹⁷ FNPRM and NOI Order at ¶ 21.

C. Challenging Environments¹⁸

The challenging environment questions could be viewed only as an extension of existing and prospective location technology issues. But in some contexts this is inaccurate, as the Commission noted in paragraph 41 of the NOI regarding femtocells -- if a 9-1-1 call could be sent with “an exact address” ... it “would lead to significant improvement in location accuracy, akin to the location quality of wireline networks.”¹⁹ At least one major wireless carrier for its femtocell service does provide an MSAG validated civic address as opposed to only *x* and *y* coordinates and routes 9-1-1 calls based on the MSAG validated civic address. Whether something can arguably be classified as “wireless service” instead of “Interconnected VoIP service,” it is reasonable for the Commission and public safety to expect wireless carriers to deploy such services to challenging environments beyond the minimum wireless Phase 2 standards when it is reasonably achievable for them to do so, such as in the case of femtocells.

D. Vertical Location Information²⁰

The vertical location issue has been around for some time. Unless those with additional technical expertise in the area provide information to the contrary, it does not appear to us that wireless elevation, vertical (*z*-axis) location has advanced beyond the “aspiration and evaluation” stage on what can be delivered by wireless carriers and what can actually be usable and useful to 9-1-1 public safety authorities. However, as discussed earlier, and as noted by the Commission, that does not mean that requirements cannot currently mitigate these issues in at least some

¹⁸ FNPRM and NOI Order at ¶ 22.

¹⁹ FNPRM and NOI Order at ¶ 41.

²⁰ FNPRM and NOI Order at ¶ 23.

contexts, such as requiring that femtocells also provide MSAG valid civic address information of the end user and using the end user location for routing 9-1-1 calls.

E. Automatic Location Identification²¹

At the present time, we are not taking a position on the priority of only nomadic Interconnected VoIP services. This does not mean that automatic location identification in general is not a significant issue for the Commission to press forward on expeditiously as we transition into a fully IP and NG9-1-1 future of open access and nomadic and mobile IP devices and over the top services independent of the access network providers. Since we cannot turn back the clock on innovation, open access, and nomadic and mobile IP devices and over the top services independent of the access network providers, the Commission keeping automatic location identification at the forefront to promote reasonable progress is a significant part of being ready for what is on the horizon more broadly.

F. Additional VoIP Services²²

Regarding additional services arguably not subject to the existing federal or state regulatory 9-1-1 regulations to provide both “access to 9-1-1” and “9-1-1 location,” as a threshold matter notwithstanding ambiguities or requirements, vendors of these services should be required to provide public education materials related to 9-1-1 limitations and work diligently with public safety and access network provider as may be appropriate to minimize confusion and potential adverse consequences to their end users. As far as the additional services arguably not subject to the existing Commission 9-1-1 requirements, major ones that come to mind immediately are Skype Mobile and Google Voice. From what we understand to date, many of

²¹ FNPRM and NOI Order at ¶ 27.

²² FNPRM and NOI Order at ¶ 31.

these additional VoIP services may be used primarily for long distance by-pass and/or video calling. It is also our understanding that these additional VoIP services, like over the top nomadic Interconnected VoIP services, may operate differently depending on whether it is a carrier managed service or provided in conjunction with the broadband carrier – Verizon Skype Mobile being an example that comes to mind initially.

At the present time, we do not have sufficient information to make recommendations as to each of these services. We would urge, however, that the appropriate primary threshold standard for starting an inquiry and evaluation of these issues should be consumer’s “reasonable expectations” regarding 9-1-1 service for these additional VoIP services, and that the parties offering such additional VoIP service make sufficient information available to the Commission and interested parties to determine conclusions as to “reasonable expectations” and priorities.

V.

Impact of NG9-1-1 Deployments on Location Accuracy and ALI

- A. Providing more detailed 9-1-1 location interpretations or revised/new regulations would be most helpful in several contexts: (1) sending appropriate 9-1-1 location as part of 9-1-1 call delivery to the Emergency Services Internetwork in NG9-1-1 NENA i3; (2) access network provider responsibilities; (3) Location Information Server responsibilities; (4) the NG9-1-1 NENA i3 regulatory framework; and (5) facilitating prudent synchronization and management of reasonable expectations and technical limitations.**

For purposes of the impact NG9-1-1 deployments on location accuracy and ALI,²³ the Commission, first and foremost, should give significant deference and weight to NENA’s comments and views on these issues, and their much appreciated ongoing work and efforts on these matters. Second, the Commission raises one of the most significant matters when it asks

²³ FNPRM and NOI Order at ¶ 33.

“[w]hat technological or operational changes might service providers, applications developers, and device manufacturers implement that would complement NG911 capabilities?”²⁴

NG9-1-1 NENA i3 systems should enable PSAPs to receive 9-1-1 location as part of 9-1-1 call delivery; however, the service providers with the 9-1-1 location information may also need to send appropriate 9-1-1 location as part of 9-1-1 call delivery to the Emergency Services Internetwork in NG9-1-1 NENA i3, or otherwise assist and/or enable it to occur. This may involve not only the service provider serving the end user, but also may need to involve the access network providers. In the traditional legacy 9-1-1 systems, the MSAG serves as a fundamental source information point for validating addresses in ALI databases for current static services (as well as for current nomadic services). However, in the NG9-1-1 NENA i3 solution context, a Location Information Server (“LIS”) will replace the static ALI database. The LIS interacts with the Location Validation Function (“LVF”) and Geospatial database to perform the location validation functions. The LIS is actually the location information source itself for the Access Providers for wireline and equivalent services, thereby replacing the static databases in ALI servers. These items deserve appropriate Commission attention.

For purposes of the appropriate regulatory framework, what things the Commission should heed, and whether there should be minimum requirements in the context of NG9-1-1 NENA i3,²⁵ it should be noted that in NG9-1-1 NENA i3, there might not even be the traditional 9-1-1 selective routing and 9-1-1 ALI database service providers and/or what may come next may not fit cleanly under that regulatory framework, 9-1-1 location service quality, and/or

²⁴ *Id.*

²⁵ FNPRM and NOI Order at ¶ 33.

interconnection responsibilities to the NG9-1-1 NENA i3 system. These are potential 9-1-1 location accuracy gaps that deserve Commission consideration.

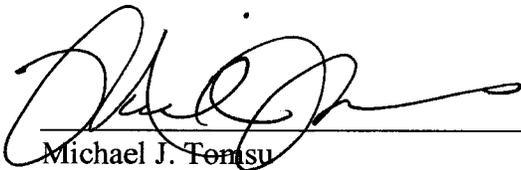
In addition, in the context of NG9-1-1 NENA i3 specifically, we would also note in evaluating new issues, factors deserving special attention include, but are not limited to: (1) synchronizing reasonable expectations, (2) recognizing what providers can deliver within technical limitations; and (3) recognizing what PSAPs can accept and reasonably process from a technological and human capital perspective -- so as to improve what can be done, but not to overwhelm providers or PSAPs or address issues in a manner that has not been appropriately prioritized. It does little good for PSAPs get ready for something that the service providers cannot deliver, but it also does little good for service providers to be required to deliver something PSAPs cannot accept and use appropriately.

VI.

Conclusion

The Texas 9-1-1 Agencies respectfully urge the Commission to adopt additional clarifying interpretations or revised/new regulations clarifying the important matters identified in these comments for expedited resolution consistent with our recommendations on these issues. The Texas 9-1-1 Agencies also respectfully urge the Commission to evaluate the longer-term wireless and VoIP 9-1-1 location accuracy and NG9-1-1 NENA i3 issues location accuracy consistent with our recommendations on these issues.

Respectfully submitted,



Michael J. Tomsu
Vinson & Elkins L.L.P.
2801 Via Fortuna, Suite 100
Austin, Texas 78746
512-542-8527
512-236-3211 (fax)
mtomsu@velaw.com

On behalf of the Texas 9-1-1 Alliance



Patrick Tyler
General Counsel
Commission on State Emergency
Communications
333 Guadalupe Street, Suite 2-212
Austin, Texas 78701-3942
512-305-6915
512-305-6937 (fax)
Patrick.tyler@csec.state.tx.us

On behalf of the Texas Commission on State
Emergency Communications

On the comments:

Richard A. Muscat
Bexar Metro 9-1-1 Network District

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