

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
Wireless E911 Location Accuracy)	PS Docket No. 07-114
Requirements)	
)	

COMMENTS OF AT&T INC.

AT&T Inc. (“AT&T”) welcomes this opportunity to comment in response to the Commission’s September 22, 2008 public notice seeking comment on recent proposals to improve wireless E911 Phase II location accuracy.¹ AT&T is firmly committed to improving wireless E911 location accuracy and has consistently provided leadership in this area. Over the past several years, AT&T has also poured substantial resources into improving location accuracy – spending on average more than \$300 million in each of the last six years to improve the accuracy and reliability of its network-based solution, with a total investment of close to \$2 billion.² That investment has resulted in a state-of-the-art network-based location accuracy solution that consistently meets the accuracy standards set out in the Commission’s rules.³

Yet even as it consistently demonstrates compliance with the Commission’s existing rules, AT&T recognizes that more remains to be done. Like all providers that rely on network-based E911 solutions, AT&T’s E911 location technology works through the use of location

¹ See Public Notice, *Comment Sought on Proposals Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability*, DA 08-2129, PS Docket No. 07-11 (Sept. 22, 2008).

² See Joint Decl. of Richard E. Burns and Kristin Rinne ¶ 4, PS Docket 07-114 (filed Feb. 22, 2008) (“Burns/Rinne Decl.”).

³ See 47 C.F.R. § 20.18(h)(1); Burns/Rinne Decl. ¶ 9 (describing AT&T’s compliance with the Commission’s existing location accuracy requirements).

measurement units by measuring the time difference of mobile signals to estimate the relative distance between a 9-1-1 caller and nearby cell sites. To work properly, the technology requires that the caller be within range of multiple sites.⁴ Yet there are several commonly occurring situations in which this multiple-site requirement simply cannot be met. As a result, existing network-based technology in these situations is incapable of immediately meeting more stringent FCC accuracy standards.⁵ The net result is that, although AT&T's system-wide location-accuracy performance is excellent and within the Commission's existing standards, there may be areas within AT&T's service footprint in which AT&T, like all other providers, is, as a technological matter, unable to provide accurate location information.

Although the existence of such locations is inevitable based on the technologies currently available, AT&T is committed to working to limit them to the degree it is technologically feasible to do so. To that end, AT&T has collaborated closely with the Association of Public-Safety Communications Officials, International ("APCO") and the National Emergency Number Association ("NENA") to understand the goals of public safety organizations in connection with wireless E911, and to assess the technical feasibility of meeting those goals over time. The result of this close collaboration is the joint proposal reflected in the August 25, 2008 Joint Letter from APCO, NENA, and AT&T to Chairman Martin referenced in and attached to the Commission's Public Notice.⁶

⁴ See Burns/Rinne Decl. ¶¶ 7-8.

⁵ See *id.* ¶ 8 (explaining, for example, that this requirement may not be met when a caller is at or near the edge of a carrier's service area, when a caller is moving along a highway that is served by sites in a linear (or "string-of-pearls") configuration, or when a caller is in an area served by one or a small number of sites).

⁶ See Letter from Brian Fontes, NENA, Robert M. Gurss, APCO, and Robert W. Quinn, Jr., AT&T, to the Hon. Kevin Martin, Chairman, FCC, PS Docket No. 07-114 (Aug. 25, 2008) ("Joint Letter").

The APCO/NENA/AT&T proposal contains three parts: First, APCO, NENA, and AT&T propose the adoption of aggressive county-level measurements of location-accuracy performance that will spur development and deployment of the technological advances necessary to improve location accuracy. Second, the parties propose an industry-led E911 Technical Advisory Group (“ETAG”) that will, within one year, make recommendations regarding potential improvements in both location accuracy and the manner in which location accuracy is measured. Third, the parties propose that CMRS carriers provide “confidence or uncertainty” data that PSAPs can use to assess the degree of confidence the carrier has in the location data it has provided to the PSAP. The remainder of these comments discusses these three facets of the APCO/NENA/AT&T proposal in turn.

County-Level Location Accuracy Measurements. Public safety organizations have long proposed that, in addition to system-wide performance, carriers be required to meet location accuracy requirements within specific geographic areas. The APCO/NENA/AT&T joint proposal would introduce county-level location accuracy measurement, while recognizing that “network-based providers will be unable to meet the new proposed county-level accuracy standards in all areas relying solely upon current network-based technology solutions.”⁷

The specific measurements in this joint proposal, along with interim benchmarks, are set forth in detail in the Joint Letter, and AT&T will not repeat them here. It is important to stress that these measurements and benchmarks are aggressive. Indeed, as the Joint Letter recognizes, they cannot be met solely in reliance on technology that is available today.⁸ Their purpose is to ensure that carriers continue to work aggressively to improve location accuracy, and they reflect

⁷ Joint Letter at 1.

⁸ *See id.*

an optimistic assessment of the speed with which carriers will be able to develop and deploy new technologies to achieve that goal.

Formation of E911 Technical Advisory Group (“ETAG”). In addition to proposing aggressive compliance standards that will spur improvements in location accuracy, the Joint Letter also proposes establishment of an ETAG to assess current technological capabilities for wireless E911 location accuracy and to identify and verify emerging technologies for improving performance, particularly in challenging areas (including calls originating indoors). As AT&T envisions it, the ETAG would operate under the auspices of CTIA and ATIS, and its membership would be open (including, at a minimum, representatives from public safety, the wireless industry, local exchange carriers, and technology vendors).

The ETAG’s primary purpose would be to undertake an intensive study of existing and emerging E911 location accuracy technologies, and to make recommendations to the Commission to improve both location technology performance and the manner in which performance is measured. Specifically, the ETAG would study, and provide a report and recommendations on, the following topics:

- The potential to improve location accuracy performance in challenging areas, including calls originating indoors, using existing technologies (UTDOA and AGPS). (In this respect, for calls originating indoors, AT&T supports and, as part of the ETAG, would be willing to test UTDOA technology on its network with its technology vendor.)
- Updated accuracy measurement methodologies for both UTDOA and AGPS, including in particular for calls originating indoors.
- Development and feasibility of emerging technologies intended to improve E911 location accuracy. (This would include, to the extent feasible, testing of emerging technologies and/or verification of claims that such technologies can improve E911 location accuracy performance.)
- E911 responsibilities in an open-access environment.

- Processes to ensure that confidence/uncertainty information is passed to local exchange carriers; can be received by PSAPs; and is used as appropriate to correct any accuracy performance issues.

In view of the importance of these issues, it is imperative that the ETAG be convened promptly and act quickly. To spur such action, AT&T proposes that the ETAG be directed to provide a final report, including recommendations, to the Commission within one year of the effective date of Commission rules issued in this proceeding. To meet this deadline, the ETAG should convene within 10 days of the effective date of Commission rules, and full meetings should be held at least once every 45 days thereafter. Although the ETAG would be governed by an Executive Committee to be elected at the first meeting (and would operate through subcommittees created as necessary), interested parties that are not ETAG members would be permitted to provide written submissions identifying and addressing points of interest and concern. A written progress report would be prepared for public distribution following each ETAG meeting, and the Executive Committee would also produce two interim reports geared at meeting the one-year deadline for a final report: first, within 120 days of effective date, the Executive Committee would identify all work items within the five ETAG study areas (accuracy performance improvement, accuracy measurement, emerging technologies, open access E911 issues, and delivery/use of confidence/uncertainty data); second, within 240 days of the effective date of Commission rules, the Executive Committee would produce an outline of the final report to be distributed to ETAG members for discussion.

Provision of “Confidence and Uncertainty” Information. As the Commission is aware, the technological challenges associated with providing location information with wireless E911 calls are substantial. Importantly, those challenges vary depending on a number of factors, including, for example, the physical characteristics of the area in which the 9-1-1 caller is located and the resulting ability of the provider’s location technology to obtain an accurate fix on his or

her location. Thus, for example, a carrier that uses a network-based, UTDOA solution may be highly confident in the location estimate provided with 9-1-1 calls from a particular urban area that contains numerous cell sites with limited line-of-sight obstructions, while being far less confident in the location estimate provided with calls from an underdeveloped location that is served by only a handful of cell sites.

During the course of AT&T's collaboration with APCO and NENA, it became apparent that PSAPs desired a method of assessing the accuracy of the location estimate received with emergency calls. The "confidence and uncertainty" proposal reflected in the Joint Letter reflects an effort to meet this desire. "Confidence and uncertainty" data – or "C/U data" – reflect the carrier's degree of confidence that the caller is within a specified distance of the location provided by the carrier. The "confidence" factor is a value that defines the statistical probability that a caller lies within the area defined by the associated "uncertainty" estimate. The "confidence" factor is expressed in terms of a percentage, while the "uncertainty" estimate is expressed in meters. For example, a location estimate (expressed in latitude and longitude) accompanied by a 90%/35 meter C/U score reflects 90% confidence that the caller is within 35 meters of the estimated location.

In AT&T's view, wireless carriers are well positioned to develop and transmit C/U data, and our discussions with public safety organization have made clear that, by enabling first responders to more accurately identify the relevant search area, the data can be very useful for PSAPs that are equipped to receive and utilize it. It is important, moreover, that the C/U data delivered by carriers adhere to a single, common standard applicable to all carriers, regardless of the location technology utilized. A single standard will permit each Phase II PSAP to develop

and implement a single capability to receive C/U data that will work for calls from all providers, and will accordingly enhance PSAPs' ability to make use of this information.

The Joint Letter proposes that, beginning two years after the effective date of rules adopted in response to the Public Notice, providers will generate C/U data on a per call basis upon PSAP request, to permit testing to establish baseline confidence and uncertainty levels in each county. Once a provider has established such a baseline confidence and uncertainty level for calls originating in that county, ongoing accuracy is to be monitored based on the trending of uncertainty data (though additional ongoing testing would not be required).⁹ The Joint Letter's proposal on this issue reflects the recognition that first responders, armed with an understanding of the accuracy of the location estimate provided with a particular call, will be better able to locate the caller on an expedited basis.

AT&T further notes, however, that the usefulness of C/U data depends on multiple factors. Wireless providers such as AT&T can generate the data and pass it to the local exchange carrier that serves the PSAP, and that is precisely what the joint proposal contemplates. For that data to provide value, however, the local exchange carrier must then deliver that data to the PSAP, and the PSAP must be equipped to receive and use it. The wireless provider *itself* cannot deliver confidence and uncertainty information to the PSAP, nor can it ensure that the PSAP is equipped for it. For that reason, as discussed above, AT&T has proposed that the ETAG (discussed above) study and make recommendations on processes to ensure that C/U data is passed to local exchange carriers; can be received by PSAPs; and is used as appropriate to correct any accuracy performance issues.

⁹ See Joint Letter at 3.

Conclusion

The proposals reflected in the Joint Letter reflect AT&T's commitment to improvements in wireless E911 location accuracy. AT&T respectfully suggests that those proposals should be adopted without delay.

Respectfully submitted,

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