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VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **In the Matter of Wireless E911 Location Accuracy Requirements (PS Docket No. 07-114; CC Docket No. 94-102)**

Dear Mr. Dortch,

On August 25, 2008, AT&T filed a joint letter with APCO and NENA to outline a proposal for improved compliance measurements for the Commission's wireless E911 location accuracy rules governing network-based technologies. This letter supplements that filing with additional detail on the location accuracy challenges inherent in a network-based technology solution and how those challenges can be met through the deployment of assisted global positioning system ("aGPS") devices.

Achieving meaningful network-wide accuracy performance improvements in any existing network-based E911 location system is a significant challenge, due largely to the following three factors:

- Variations in cell site density,
- Impact of local topography on RF propagation, and
- Existing network designs.

Looking first at cell site density, the accuracy performance of a network-based E911 solution generally improves as the number of cell sites in the targeted area increases. This fact -- a fundamental premise of all network-based E911 solutions -- stems from the ability of the location technology to obtain more location measurements (time based measurements for UTDOA) from different location measurement units deployed at individual cell sites that "see" the uplink signals from the 911-calling handset. While a network-based solution is often referred to as being based on "triangulation," individual locates within 300m of a 911 caller's actual location are often based on data from as many as ten or more cell sites. Accordingly, network-based E911 location performance will generally be more accurate in urban and suburban areas, with

their higher cell site density, than the same system operating in a rural district, where there are fewer cell sites needed for commercial service due to lower call volumes.

Local topography also plays in important role in accuracy measurements. Local terrain features -- both natural (e.g., mountains, dense forestation, lakes, valleys) and manmade (e.g., buildings, etc.) – degrade network-based E911 accuracy performance by reducing the number of cell sites that can generate location data. For example, due to topographically-induced variations in RF propagation, a network-based E911 location technology used in a flat rural or suburban area will generally outperform the same location system used in a mountainous area, even where the cell site density in the two areas is similar.

Finally, network design also impacts E911 location accuracy. A carrier has to consider many factors when making decisions about the number of cell sites deployed in any given service territory, which are based on current and future caller usage patterns, local zoning restrictions, local community acceptance, and economics. The resulting number and pattern of deployed cell sites will directly affect E911 accuracy performance for network-based systems. Examples of specific circumstances that present challenges include:

- A so-called "string of pearls" deployment along a desert or rural freeway, in which cell sites are built only in the freeway's immediate vicinity so as to serve travelers along that highway,
- A "coverage island", where a carrier builds coverage to serve a particular location (e.g., ski area, etc.) but does not initiate service elsewhere, and
- "Border areas" created along the RF boundaries of existing service areas.

In addition, location accuracy is affected by the position of the cell sites and their attendant location measurement units in relation to each other. If the geometric spacing is optimal, then a minimum of three sites can be used to triangulate for a good location estimate. If the geometric spacing is poor, then significantly more cell sites are necessary to get a good location estimate. Unfortunately, local zoning restrictions often limit the ability for carriers to deploy cell sites in an optimal geometric spacing.

Each of these situations present accuracy challenges to a network-based E911 solution. In some areas, one or more of these factors render the achievement of the current network-based location standards infeasible at the county level. In many instances, these challenges can be mitigated or overcome through the deployment of aGPS technology. Accordingly, using both network-based and handset-based E911 technologies in concert will allow all carriers over time to significantly improve E911 accuracy performance across the majority of service areas.

An aGPS-equipped handset is very much like a stand-alone global positioning device that measures the signals from satellites to calculate locations using triangulation techniques. However, unlike a stand-alone GPS receiver, the aGPS handset also receives assistance data from the serving carrier's network, allowing it to calculate location

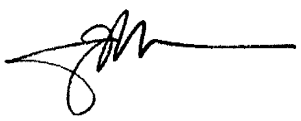
estimates much faster than a pure GPS device. Initial deployment of aGPS technology requires that both consumer handsets and network components be upgraded. Handsets must have a GPS chipset and antenna, along with the software necessary to receive location assistance data from the serving carrier's network. Components in the serving network must also be enhanced so as to facilitate the delivery of relevant location assistance data. However, once those handset and network improvements have been completed, aGPS technology will, in many environments, provide significantly-improved accuracy performance, so long as a sufficient number of GPS satellites can be received by the handset. Of course, due to line of sight obstructions, local topography can also prevent aGPS location systems from achieving current handset-based location accuracy standards in many counties.

The joint proposal submitted on August 25, 2008 by AT&T, APCO, and NENA recognizes the benefits and shortcomings of both network and handset E911 location technologies, and outlines an achievable path to materially-improved E911 accuracy for the nation's wireless users. First, by measuring E911 accuracy performance at the county level, public safety officials and carriers alike will be able to evaluate E911 system performance using an agreed-upon geographic standard. Next, revised accuracy standards for both network and handset solutions acknowledge that improving E911 system performance will be a significant challenge across many of the diverse RF environments found in carriers' service areas. The delivery of confidence and uncertainty data on a per-call basis will markedly improve 911 call takers' ability to assess the validity of each call's location information and deploy public safety resources accordingly.

In addition, the use of a "blended" E911 accuracy measurement standard will mean that more and more consumers will reap the benefits of both handset and network technologies as the proposed compliance period progresses. Over time, in areas where one E911 location technology has certain inherent weaknesses, the strengths of the other technology may be leveraged, thereby continuing to improve first responders' ability to locate those in need of emergency services. This overlay approach recognizes both the benefits of current E911 systems and the technology investments made over the past decade by wireless carriers, while acknowledging and advancing the important public interest in improved E911 location accuracy.

In accordance with Commission rules, this letter is being filed electronically with your office for inclusion in the public record.

Sincerely,



Joan Marsh

cc: Derek Poarch
Jeff Cohen