January 14, 2015

VIA ELECTRONIC FILING

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

Re: Wireless E9-1-1 Location Accuracy Requirements, PS Docket No. 07-114

Dear Ms. Dortch,

On Monday, January 12, 2015, representatives from the Association of Public-Safety Communications Officials ("APCO") International, the National Emergency Number Association ("NENA"), and from wireless carriers AT&T Mobility, Sprint, T-Mobile and Verizon (collectively, the "signatories"), together with representatives from CTIA—The Wireless Association®, met separately with representatives from the offices of Chairman Wheeler, Commissioner Clyburn, Commissioner Rosenworcel, Commissioner Pai, and Commissioner O'Rielly, as indicated in Attachment A. The parties discussed the signatories' Roadmap to improve wireless 9-1-1 call location accuracy for indoor and outdoor calls.

At the outset, the signatories recounted the development of the Roadmap – a carefully balanced document negotiated over seven months. The most significant aspect of the Roadmap is a clear commitment to implement Dispatchable Location to locate wireless 9-1-1 callers indoors. This solution is the "gold standard" of public safety. During the meeting, the signatories summarized five of the Roadmap's key elements:

(1) *Leveraging widespread commercial technologies.* The Roadmap is a landmark opportunity to leverage ubiquitous WiFi and Bluetooth beacons to provide Dispatchable Location.
(2) *Deploying an open test bed.* Any stakeholder may participate in a competitively neutral, open, transparent test bed to fully vet potential location solutions.
(3) *Establishing aggressive benchmarks*. The Roadmap adopts the Commission's 50 meter metric, and necessitates the implementation of technologies to locate callers indoors based on real-world calling patterns.
(4) *Using live 9-1-1 call data.* Public safety will obtain live 9-1-1 call data to track various positioning source technologies and evaluate improved location performance indoors, what some have called a "sea-change" for assessment purposes.
(5) *Pursuing additional z-axis solutions.* In addition to deploying Dispatchable Location, public safety's first choice for addressing z-axis considerations, carriers commit to real and tangible progress on additional z-axis technologies, and to be prepared to use these technologies as a backstop. Carriers commit to study ongoing developments in z-axis and pursue z-axis standards on an aggressive timeline, and if Dispatchable Location is not moving ahead as planned, carriers commit to z-axis deployments in the 50 most populous CMAs.

During the meeting, the signatories expressed a strong commitment to work with the Commission to achieve the goals of improving indoor location accuracy but expressed significant concern with some elements of the draft 9-1-1 location accuracy order.

First, the draft order as reported includes technology-specific metrics intended to approximate an indoor-only metric by removing satellite-assisted calls from measurements. The draft order's proposed indoor-only metric is not a reasonable proxy for evaluating "indoor-only" 9-1-1 calls. Such an approach would not be technology neutral and would skew results in a way that misrepresents actual 9-1-1 location performance indoors. Ultimately, the proposed metric would fail to provide the data the Commission seeks to ensure improvement in indoor location accuracy.

A-GPS positioning technology currently provides location fixes within 50 meters for many indoor 9-1-1 calls. In filings, wireless carriers have consistently provided data indicating that, for calls exceeding 30 seconds in duration, A-GPS accounted for nearly 80% of location estimates.[1] This could not have been the case if A-GPS failed to provide location estimates for indoor calls. Excluding these satellite-assisted calls from a performance metric misrepresents indoor 9-1-1 call location performance. In addition, many of the location technologies today and in the future will use a hybrid of satellite-assisted and other non-satellite technologies. To exclude satellite based solutions from compliance would deny the ability to harness hybrid technologies that provide indoor location fixes which contradicts the Commission's goal of improving indoor location performance. Moreover, excluding satellite-assisted calls could create disincentive for deployment of further A-GPS performance improvements or the use of additional A-GNSS constellations that would result in improved accuracy for indoor location estimates.

While some have raised concern about the Roadmap's "blended composite" of indoor and outdoor calls, the draft Order's focus on calls with non-GPS location technology is itself a "blended composite" of indoor and outdoor calls. For example, the effect of the draft Order's performance metric to count only non-GPS location technology fixes would treat as "indoor" those outdoor calls that are located by OTDOA or some other non-GPS technology. Thus the proposed metric excludes indoor satellite-assisted calls but includes outdoor non-GPS calls. This technology-specific approach erroneously represents an "indoor" metric and would be arbitrary and capricious.

Given that carriers cannot distinguish between indoor and outdoor calls based only on location technology as described below, the Roadmap carefully constructed performance metrics based on a blended composite of indoor and outdoor calls and how each technology performs in the test bed. Rather than arbitrarily excluding certain technologies, the signatories explained that the Roadmap's approach of capturing both indoor and outdoor calls more accurately reflects performance metrics based on the way wireless technologies operate.

The metrics in the Roadmap account for the fact that wireless carriers for the first time will provide public safety with live 9-1-1 call data – a powerful tool to quantify, track, and evaluate real-world location performance that is firmly endorsed by public safety. In a live call environment, however, there is no way to distinguish between indoor and outdoor 9-1-1 calls (in

[1] *See, e.g.,* T-Mobile Comments, at 3 (filed May 12, 2014)(77% of UMTS calls over 30 seconds get an A-GPS estimate); Letter of Nneka Chiazor, Verizon, to Marlene H. Dortch, Secretary, FCC at 3 (86% of Phase II calls, which were 91-95% of all 911 calls within the five CalNENA jurisdictions, involved GPS-only location); Comments of AT&T, at 4 (filed September 25, 2013)(within the five CalNENA jurisdictions AT&T had over 78% A-GPS locates).

contrast to test beds), rendering "indoor-only" proxies a failed approach. Inherent in the Roadmap's approach, as wireless 9-1-1 calls increasingly occur indoors they will make up a growing cross-section of the live call data – and compliance with the metrics will necessitate use of technologies that increasingly perform better indoors. Thus, the roadmap best captures indoor performance through the use of live call data and a combined metric that will only be met if carriers address indoor location.

The signatories also raised concerns with the reported z-axis provisions in the draft order to require the use of Dispatchable Location or other z-axis technologies to meet a vertical requirement for a specific percentage of "all calls." As the Roadmap signatories explained, Dispatchable Location is intended for indoor calls because a vertical component is unnecessary for outdoor calls. However, the Commission's proposal would require a vertical component for all outdoor and indoor calls, and effectively requires carriers to immediately begin deployment of a national overlay of z-axis technology, regardless of whether such information is necessary for all calls.

As noted above, however, the Roadmap establishes reasonable mechanisms to expeditiously determine whether such technology advances the Commission's indoor locations accuracy goals and whether such information can be utilized by PSAPs. The Roadmap commits to study deployment and utilization of z-axis technologies (through a study of barometric pressure sensors to start within 6 months and test bed evaluation of z-axis solutions within 24 months), as well as the development of z-axis standards. The carriers commit to advance z-axis and to be in a position to deploy additional z-axis approaches if Dispatchable Location does not advance as expected.

The signatories believe that the Roadmap meets the Commission's goal of incentivizing validated and proven technologies to improve indoor location performance and remain willing to work with the Commission to ensure wireless consumers and first responders realize the benefits of improved wireless 9-1-1 location accuracy, both indoors and outdoors.

Pursuant to Section 1.1206 of the Commission's Rules, this letter is being electronically filed with your office.

Respectfully Submitted,

/s/ Scott K. Bergmann

Scott K. Bergmann
Vice President, Regulatory Affairs
CTIA-The Wireless Association®

cc: Attachment A

ATTACHMENT A
January 12 and 14, 2015 Meeting Participants, WT Docket No. 07-114

January 12, 2015:

Office of Chairman Wheeler
Ambassador Philip Verveer, FCC
Daniel Alvarez, FCC
Jeff Cohen, APCO International
Mark Reddish, APCO International
Brian Fontes, NENA
Trey Forgety, NENA
Joan Marsh, AT&T Services Inc.
Joe Marx, AT&T Services Inc.
Ray Rothermel, Sprint
Steve Sharkey, T-Mobile
Eric Hagerson, T-Mobile
Kathleen Grillo, Verizon
Greg Romano, Verizon
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