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ATTORNEYS AT LAW

September 27, 2013

Ex Parte

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

Re: *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114

Dear Ms. Dortch:

As requested by Public Safety and Homeland Security Bureau staff, T-Mobile USA, Inc. (“T-Mobile”) herein provides specific information regarding T-Mobile’s positioning technologies and the sequence in which they are utilized.

As discussed in T-Mobile’s comments in response to the recent Public Notice announcing the Public Safety and Homeland Security Bureau’s (“Bureau”) October 2, 2013, workshop, T-Mobile’s transition from network-based E911 location technologies to handset-based technologies over the last five years has enabled T-Mobile to significantly improve the accuracy of its location estimates with little effect on its overall Phase II yield.

T-Mobile uses two different sets of wireless E911 location technologies, depending upon whether the user’s handset is A-GPS capable. Essentially all UMTS/HSPA+ handsets are A-GPS capable, and both the UMTS and GSM networks support A-GPS positioning. For 911 calls placed using A-GPS capable handsets (the substantial majority of T-Mobile 911 calls), T-Mobile first attempts to obtain an A-GPS fix. If that is not possible—such as when a sufficient number of satellites are not visible to the handset—T-Mobile’s system uses a “hybrid” combination of the A-GPS measurements it has and RTT, wherein a calculation of the “round trip time” between the basestation and the handset is added to the GPS measurements to allow a hybrid A-GPS/RTT solution. If no A-GPS fix is available at all, or if the RTT fix provides a better estimate on its own, the RTT estimate is provided. If no Phase II location technology can obtain a location estimate—or the uncertainty of the estimate is larger than the radius of the cell site, T-Mobile provides Phase I, or cell site ID information.

For 911 calls from a non-GPS capable phone (a small minority of overall T-Mobile 911 calls), T-Mobile relies on U-TDOA. If the U-TDOA attempt fails, or if it is less accurate than the Cell ID – Timing Advance estimate, the Cell ID – Timing Advance result is returned.

T-Mobile only returns a Phase I, cell site ID result if the Phase II results are not sufficiently accurate.

T-Mobile is proud of the high Phase II yield and high accuracy made available to PSAPs by this robust combination of positioning methods. For all 911 calls over 30 seconds, including outdoor and indoor locations (from wherever the actual 911 calls are originating), our national UMTS yield for the initial A-GPS attempt is over 77 percent—up from 74 percent a year ago. Thus, not only is AGPS yield high, but is actually increasing over time as a result of both handset and network improvements, despite the possible increase in wireless 911 calls originating from indoors. Of the remaining 911 calls, T-Mobile provides an RTT estimate for 17 percent, and Phase I data for 6 percent.

T-Mobile looks forward to the opportunity to participate in next week's E911 Phase II location accuracy workshop, and to continuing the dialog with the Commission, public safety and other stakeholders necessary to facilitate continued, fact-driven improvements to E911 location technology.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Nakahata".

John T. Nakahata
Counsel to T-Mobile USA, Inc.

cc: David Turetsky
Henning Schulzrinne
David Furth
Tim May