

Ms. Marlene H. Dortch, *Secretary*

Federal Communications Commission

445 12th Street SW

Washington, D.C. 20554

October 11, 2019

*In re* Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems. PS Docket No. 07-114.

Dear Ms. Dortch:

On October 9th, 2019, the undersigned, Daniel Henry, Director of Government Affairs, along with NENA CEO Dr. Brian Fontes and NENA Director of Technical Issues Brandon Abley, made an *ex parte* presentation to representatives of the Commission’s Public Safety and Homeland Security Bureau with respect to the above-captioned proceedings. Present on behalf of the Bureau were Ken Carlberg, John Evanoff, Nellie Foosaner, David Furth, Erika Olsen, and Dr. Rasoul Safavian.

During our presentation, we discussed 9-1-1’s requirements for vertical (“Z-axis”) location accuracy, and expressed opposition to the “phased-in approach” to implementing the z-axis location accuracy benchmarks suggested by CTIA in their August ex parte filing.[[1]](#footnote-1) Emphasizing public safety’s sensitivity to timeline slip, we noted that the proposed benchmarks have been in place since the Commission’s 2015 Roadmap, and that — contrary to CTIA’s claim that commercially-available vertical location solutions are still in a “nascent state” [[2]](#footnote-2) — solutions capable of meeting the Commission’s 2021 requirements have existed since CSRIC III.[[3]](#footnote-3)

In response to questions regarding market penetration of cellular handset barometric pressure (“BP”) sensors (in the context that barometric pressure is used when measuring altitude on a smartphone), we note a number of factors that speak to the prevalence of BP sensors in the majority of these handsets. Historically speaking, BP sensors have been present in Android handsets since as early as 2011,[[4]](#footnote-4) and in Apple handsets dating to 2014.[[5]](#footnote-5) In more recent years (from 2017 to 2Q2019), Apple and Samsung together comprised an average of 62% of U.S. smartphone sales.[[6]](#footnote-6) While these two manufacturers alone do not represent the totality of the U.S. smartphone marketplace, they do constitute a substantial portion of the handsets purchased by consumers during the past three years, and provide a solid basis on which to make a rough assessment of BP sensors’ market penetration.

In our research, we were unable to find a single Apple or Samsung handset manufactured since 2014 that lacked BP sensor hardware. Further, despite the multitude of Android handset models across numerous manufacturers, we found that most models contain one of a small group of chipsets such as those in the Qualcomm Snapdragon family,[[7]](#footnote-7) which make use of BP sensors like those produced by Bosch Sensortec. While results were mixed for LG, the third leading handset manufacturer in the U.S. (comprising 10–15% of handsets sold in the past three years), it is safe to assume that a comparatively small portion of modern mobile phones lack BP sensors. Looking forward, market trends suggest that BP sensors aren’t going away, as applications such as fitness apps and small electronic devices like standalone GPS and fitness trackers increasingly incorporate altitude measurements, driving incentives to include BP sensor hardware.

Regarding the deployment and use of Z-axis solutions across the country, we noted that despite the Commission’s rules addressing only urban areas, concentrating regulatory and market focus on Z-axis location can potentially scale to remote areas such as Washington state’s Gifford Pinchot National Forest, where knowledge of caller elevation can cut response times by hours. This focus can be of great value to *all* Americans, and in this respect may be preferable in the long-term to those solutions that rely on urban infrastructure like Wi-Fi hotspots, Bluetooth beacons, and even 5G access points.

Lastly, we expressed our continued concerns that the National Emergency Address Database (“NEAD”) could potentially generate dangerously inaccurate results for public safety, and that its compliance regime — which is based merely on the quantity of NEAD-registered access points in a given CMA, not necessarily on the population served by those access points or even whether the system successfully provides accurate location at all — creates the potential for vast swaths of unserved 9-1-1 callers and poor quality of location provided to answering points. That said, we discussed increasing the location accuracy rules’ granularity with respect to certain unique applications like large arenas and stadiums, which may benefit disproportionately from a dispatchable location (“DL”) solution while avoiding the inaccuracy pitfalls that typically accompany such solutions.

Should you have any questions concerning this presentation, please contact me as below.

Sincerely,

Daniel Henry

*Director of Government Affairs*

CC: Ken Carlberg, PSHSB

John Evanoff, PSHSB

David Furth, PSHSB

Nellie Foosaner, PSHSB

Erika Olsen, PSHSB

Dr. Rasoul Safavian, PSHSB

1. Notice of Ex Parte Presentation from CTIA, PS Docket No. 07-114 (Sept. 3, 2019). [↑](#footnote-ref-1)
2. CTIA Ex Parte. [↑](#footnote-ref-2)
3. CSRIC III Working Group 3 Indoor Location Test Bed Report, March 14, 2013, p. 36, <https://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRIC_III_WG3_Report_March_%202013_ILTestBedReport.pdf>. [↑](#footnote-ref-3)
4. Engadget identifies the Bosch BMP180 BP sensor hardware in the Samsung Galaxy Nexus as “the first of its kind in a smartphone.” *Behind the glass: a detailed tour inside the Samsung Galaxy Nexus*. Engadget. October 20, 2011. Accessed October 10, 2019. https://www.engadget.com/2011/10/20/behind-the-glass-a-detailed-tour-inside-the-samsung-galaxy-nexu/ [↑](#footnote-ref-4)
5. *Slow clap: New iPhone6 has a barometer*, The Washington Post, September 9, 2014, accessed October 10, 2019, https://www.washingtonpost.com/news/capital-weather-gang/wp/2014/09/09/slow-clap-new-iphone6-has-a-barometer/ [↑](#footnote-ref-5)
6. *See* *U.S. Smartphone Market Share: By Quarter*, Counterpoint Research, August 27, 2019, accessed October 10, 2019, https://www.counterpointresearch.com/us-market-smartphone-share/. [↑](#footnote-ref-6)
7. Qualcomm’s website lists 132 different devices containing Snapdragon chipset, *Snapdragon Phone Finder*, Qualcomm, accessed October 10, 2019, <https://www.qualcomm.com/snapdragon/devices/phone-finder>; *also* *See, e.g.,* *List of Smartphones Powered by Qualcomm Snapdragon 845 Processor*, Techwalls, August 12, 2019, accessed October 10, 2019, <https://www.techwalls.com/qualcomm-snapdragon-845-smartphones/>; Surface RT 2: Tegra confirmed, despite superiority of Snapdragon and Bay Trail, ExtremeTech, August 9, 2013, accessed October 10, 2019, <https://www.extremetech.com/computing/163582-surface-rt-2-tegra-confirmed-despite-superiority-of-snapdragon-and-bay-trail>, (“…almost every smartphone and tablet announced in the last few months has been powered by a Qualcomm Snapdragon 600 or 800 [system on a chip].”). [↑](#footnote-ref-7)