Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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

REPLY COMMENTS OF AT&T

AT&T Services, Inc., on behalf of itself and its affiliates (collectively, "AT&T"), submits these reply comments in response to the Federal Communications Commission's ("FCC" or "Commission") Public Notice seeking comment on the vertical (z-axis) metric proposed by the nationwide wireless carriers.[1]

I. INTRODUCTION

AT&T is committed to working with stakeholders across the 911 ecosystem to advance the Commission's goals with respect to improving location accuracy for wireless 911 calls. As a signatory to the 2014 Roadmap for Improving E911 Location Accuracy,[2] AT&T has made significant efforts to improve indoor location accuracy. AT&T has supported technology vendors conducting z-axis location accuracy testing in the 911 Location Technologies Test Bed, has been a significant contributor of reference points to the National Emergency Address

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[1] *Public Safety and Homeland Security Bureau Seeks Comment on Vertical (Z-Axis) Accuracy Metric Proposed by the Nationwide Wireless Carriers*, Public Notice, PS Docket No. 07-114, DA 18-928 (Sept. 10, 2018).

[2] Letter from John Wright, APCO International; Charles W. McKee, Sprint Corporation (Sprint); Joan Marsh, AT&T Services, Inc.; Kathleen O'Brien Ham, T-Mobile USA, Inc.; Christy Williams, National Emergency Number Association; Kathleen Grillo, Verizon Wireless, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 (filed Nov. 18, 2014), Attachment A, "Roadmap for Improving E911 Location Accuracy."

Database ("NEAD"), and has been actively involved in standards development efforts related to 911 location accuracy.[3] In addition, AT&T will be integrating device-based hybrid location technology solutions this year to improve the accuracy of 911 caller location information.[4] AT&T shares the Commission's desire to formulate a z-axis metric that will be both technically feasible and actionable for emergency response.

II. ADDITIONAL TESTING MAY IDENTIFY A MORE PRECISE Z-AXIS ACCURACY METRIC.

The Commission's *Fourth Report & Order* on wireless indoor location accuracy requirements gave carriers a three-year timeline to develop a test bed and propose a z-axis accuracy metric.[5] Analyzing the results of the testing that could be completed prior to the Commission's August 3, 2018 deadline, the nationwide carriers submitted a z-axis metric of +/- 5 meters for 80% of fixes from mobile devices capable of delivering barometric pressure sensor-based altitude estimates.[6] In the opening comments to this proceeding, some public safety commenters expressed concern that this metric lacks the precision needed to reliably locate and protect the public in emergency situations, and preferred a metric that ensured the provision of floor-level information.[7] The test bed results available by the deadline "did not validate that a

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[3] *See* Letter from Joe Marx, AT&T, to Marlene Dortch, Secretary, FCC, PS Docket No. 07-114 (filed Aug. 3, 2018) (CMRS Provider 36-Month Progress Report).

[4] Press Release, CTIA, Wireless Industry Announces Development in Improving 9-1-1 Location Accuracy, Sept. 5, 2018, https://www.ctia.org/news/wireless-industry-announces-development-in-improving-9-1-1-location-accuracy.

[5] *Wireless E911 Location Accuracy Requirements*, Fourth Report & Order, 30 FCC Rcd 1259 at ¶ 3 (2015) ("*Fourth R&O*").

[6] *See* Letter from Scott Bergmann, CTIA, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 01-114 (filed Aug. 3, 2018) ("CTIA Z-Axis Letter").

[7] *See, e.g.* Comments of the National Public Safety Telecommunications Council, PS Docket No. 07-114 at 1 (filed Oct. 1, 2018); Comments of the Association of Public-Safety Communications Officials-International, Inc., PS Docket No. 07-114 at 1-3 (filed Oct. 1, 2018);

more accurate metric could be consistently achieved across all testing regions, morphologies, weather conditions, and devices."[8] That being said, additional testing may lead to the conclusion that a more precise z-axis metric is practicable.

As the testing completed to date was not comprehensive, commenters support additional testing to arrive at an optimal z-axis metric that is both useful for public safety and feasible for technology vendors and carriers.[9] It is important that testing encompass all regions of the country, all morphologies, all weather conditions, and all devices running all operating systems, including devices that may be provided at very low or no cost to consumers.[10] In addition, it is vital that further z-axis solution testing involve critical partners beyond the nationwide carriers, such as device manufacturers and additional technology vendors.[11] The testing to date also was limited by the fact that only two technology vendors elected to participate. Adopting a metric based on only the results of these two vendors could result in one technology provider capable of exercising market power with respect to licensing fees.[12] Further, original equipment

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Comments of the International Association of Chiefs of Police, the International Association of Fire Chiefs, the National Association of State EMS Officials, and the National Sheriffs' Association, PS Docket No. 07-114 at 1 (filed Oct. 1, 2018) ("IACP et al. Comments").

[8] *Id*. at 4-5.

[9] Letter from Matthew Gerst, CTIA, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 at 1, 3 (filed Oct. 1, 2018) ("CTIA Oct. 1 Letter"); Letter from Robert Morse, Verizon, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 07-114 at 1-2 (filed Sept. 28, 2018) ("Verizon Letter").

[10] Frequently, devices that are lower priced, such as those provided to prepaid wireless customers, may be equipped with less expensive internal componentry (*e.g.*, less precise barometric sensors) and non-standard operating system software.

[11] *See, e.g.* Comments of NextNav, PS Docket No. 07-114 at 26-27 (filed Oct. 1, 2018) (supporting further testing of indoor location technologies to identify those capable of providing the necessary floor level accuracy).

[12] *See also* Comments of the Boulder Emergency Telephone Service Authority, PS Docket No. 07-114 at 6 (filed Oct. 1, 2018) (noting "establishment of an accuracy metric which only a single provider can achieve could create a de facto monopoly.")

manufacturers ("OEMs") and operating system ("OS") providers may be reluctant to use proprietary technology on their handsets and platforms, even if the technology is provided at no cost. OEMs and OS providers will want to implement their own customized technologies that they know are compatible with their products. Unless the OEMs are compelled to use specific vertical accuracy technologies, it is important that OEMs and OS providers have choices in solutions from a number of vendors capable of meeting the metric such that the OEMs and OS providers have a choice between incorporating one of these technologies or developing the technology on their own. The Commission should not impose a z-axis standard before multiple, commercially available solutions have demonstrated consistent results in meeting this benchmark under rigorous testing.

Additional testing is not likely to delay the implementation of z-axis solutions. IACP, et. al. supported additional z-axis testing provided that carriers could still achieve the effective dates in the *Fourth Report & Order*.[13] The *Fourth Report & Order* requires nationwide carriers to deploy z-axis technology that achieves the Commission-approved z-axis metric to cover 80 percent of the population in the top 25 Cellular Market Areas ("CMAs") by August 3, 2021, and the top 50 CMAs by 2023.[14] Additional testing, if promptly commenced, should not delay the nationwide carriers in meeting this deadline.

If testing continues, carriers will continue to work to enhance 911 location information through a number of channels. AT&T has been a significant partner in developing the NEAD, which will support "accurate and actionable location information by providing a street address, as well as floor, suite, room, and other information that will help to identify the location of a 911

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13 IACP et al. Comments at 2.

14 *Fourth R&O* at 3.

caller."[15] AT&T was the first carrier to deliver Wi-Fi Access Point data to the NEAD, and our work on developing the NEAD will continue. The wireless industry already has spent tens of millions of dollars on the NEAD initiative, and the database is expected to go live in 2019.[16]

Finally, some commenters note that AT&T plans to offer floor-level z-axis location services to those first responders using FirstNet.[17] This commitment does not lead to the conclusion that floor level z-axis solutions can easily be scaled to provide 911 location information for the much larger population of wireless retail customers within the timeline established in the FCC's *Fourth Report and Order*. FirstNet users are a limited population for whom specialized solutions (*e.g.*, customized dongle accessories) and/or applications with dedicated calibration will be used to meet their floor-level, z-axis purposes. Comprehensive testing still needs to be done to ensure that z-axis solutions will work for the much larger number of retail wireless devices available in the market today and that may not allow the calibration that was required by the technology demonstrated in the CTIA Test Bed.

III. CONCLUSION

AT&T is committed to providing the most accurate, actionable location information, including vertical location information, to help public safety responders to wireless 911 calls. The Commission should refrain from adopting a z-axis location accuracy metric until comprehensive testing has been completed and there is evidence that a technically feasible and reliable solution for all types of users across the country can be offered by multiple vendors.

Respectfully submitted,

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15 CTIA Oct. 1 Letter at 2.

16 Verizon Letter at 1; CTIA Oct. 1 Letter at 2.

17 *See* IACP et al. Comments at 3.

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