

January 23, 2015

VIA ELECTRONIC FILING

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

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

Dear Ms. Dortch:

CTIA—The Wireless Association® is strongly committed to improving wireless 9-1-1 indoor location accuracy and appreciates the opportunity to work with the Commission to achieve this goal. We believe that together, the Commission and stakeholders can deliver on the promise of wireless 9-1-1 indoor location, with commitments to advance both dispatchable location and z-axis solutions. CTIA urges the Commission to adopt the amended Roadmap filed earlier this week by AT&T Mobility, Sprint, T-Mobile USA, and Verizon,¹ and supported by APCO and NENA,² which puts forward new, quantifiable deployment metrics to assure widespread wireless 9-1-1 indoor location fixes. The Roadmap signatories' filings demonstrate why the amended provisions offer the best way to achieve wireless 9-1-1 indoor location.

As the Commission moves forward, CTIA urges the Commission to decline the proposals made in NextNav's recent filing urging the Commission to mandate performance requirements that would be arbitrary and capricious if adopted.³ We believe the performance metrics and commitments in the amended Roadmap best achieve improved 9-1-1 location accuracy and describe our significant concerns with NextNav's self-serving statements below. We remain committed to addressing questions about the Roadmap with the Commission in a manner that advances 9-1-1 location accuracy and helps first responders.

¹ See Letter from AT&T Mobility, Sprint, T-Mobile USA and Verizon to Marlene H. Dortch, FCC, PS Docket No. 07-114 (filed Jan. 21, 2015).

² See Letter from APCO to Marlene H. Dortch, FCC, PS Docket No. 07-114 (filed Jan. 21, 2015); Letter from NENA to Marlene H. Dortch, FCC, PS Docket No. 07-114 (filed Jan. 21, 2015).

³ See Letter from NextNav, LLC to Marlene H. Dortch, FCC, PS Docket No. 07-114 (filed Jan. 22, 2015) ("NextNav Letter").

Horizontal Indoor Location Accuracy Metric

NextNav dismisses concerns about a horizontal metric for location fixes limited to “non-satellite-based technologies” which it refers to as “effectively, an indoor benchmark.”⁴

Substantive Concerns. NextNav is wrong in asserting that a metric based only on non-satellite-generated location technologies would be “effectively, an indoor benchmark.”⁵ Rather, it would be significantly and arbitrarily under-inclusive. The *Third Further Notice* recognized just how important satellite-assisted technologies are to indoor location fixes: “A-GPS technology works well in most indoor locations” and “the majority of indoor environments are likely to be the types of structures that are suitable for A-GPS location based solutions.”⁶ NextNav mischaracterizes studies about A-GPS (“Assisted GPS”) location fixes indoors⁷ – in fact, the study it cites finds that indoor accuracy “degraded as expected when GPS fixes were not attained,” generally deep indoors, and thus A-GPS acquires accurate fixes in many indoor locations.⁸ The *Third Further Notice*, moreover, viewed indoor requirements as “technologically feasible, as well as economically reasonable” in large part because of “the ability of A-GPS to perform well across a large number of indoor environments.”⁹ The rulemaking record, including test data filed by NextNav and other vendors, affirms this conclusion.¹⁰

⁴ *Id.* at 3. As reported in trade press, the horizontal performance metrics in the order on circulation would bar wireless carriers from using satellite-generated location fixes to meet the indoor call requirements (50% of indoor calls at 50 meters in three years and 80% of indoor calls at 50 meters in six years). See Howard Buskirk, *Parts of Wheeler Proposal on Indoor Location Accuracy Rules See Immediate Carrier Opposition*, COMMUNICATIONS DAILY, at 2 (Jan. 14, 2015).

⁵ NextNav Letter at 3.

⁶ Wireless E911 Location Accuracy Requirements, *Third Further Notice of Proposed Rulemaking*, 29 FCC Rcd 2374, at ¶ 104 (2014) (“*Third Further Notice*”); *id.* at ¶ 105 (noting “the ability of A-GPS to perform well across a large number of indoor environments, together with the fact that the majority of CMRS providers are already using handset-based, A-GPS solutions”).

⁷ See NextNav Letter at 4.

⁸ Indoor Location Test Bed Report, CSRIC III Working Group 3 E9-1-1 Location Accuracy, at 28 (Mar. 14, 2013).

⁹ *Third Further Notice* at ¶ 105.

¹⁰ See Letter from NextNav, LLC to Marlene H. Dortch, FCC, PS Docket No. 07-114 (filed May 12, 2014) (A-GNSS test data showing high performance for “Urbanized Clusters and rural morphology environments”); Letter from Technocom Corp. to Marlene H. Dortch, FCC PS Docket No. 07-114, Att. at 79 (filed June 23, 2014) (TruePosition’s testing used a handset “which supports GLONASS in addition to GPS, which likely contributed to the better deep indoor availability”).

Today's A-GPS 9-1-1 technology solutions provide location fixes within the requisite 50 meter positioning estimate for many indoor calls. From a practical perspective, if a performance metric were to exclude A-GPS solutions, carriers would be prohibited from including A-GPS-derived indoor location fixes for purposes of meeting the metric. Compliance could only be met by exclusively using alternative technologies to capture those calls made only from deep indoors where satellite-assisted technologies would not otherwise obtain an effective positioning fix. This approach would be a significant departure from the *Third Further Notice*,¹¹ and NextNav would have the Commission adopt rules that are arbitrary and capricious.¹² And any rule that would exclude all A-GPS calls, as urged by NextNav and others, also would be arbitrary because many non-satellite technologies are offered in tandem with satellite technologies.¹³ With satellite and non-satellite technologies designed in many cases to complement each other, measuring such solutions separately would not advance the objectives in this proceeding.

Notably, any such approach would violate principles of technological neutrality at the heart of 9-1-1 location accuracy regulation.¹⁴ It would skew results by ignoring proven 9-1-1 location technologies indoors. And, it would eliminate the quickest way to locate callers in many circumstances.¹⁵ NextNav may support a non-satellite metric because it could drive business to NextNav, but that solution will not be broadly available at the first benchmark of three years given deployment and handset issues, among others, and may never be available nationwide.¹⁶

Procedural Concerns. Further, under the Administrative Procedure Act's ("APA") notice and comment provisions,¹⁷ the non-satellite horizontal metric NextNav calls for would not

¹¹ *Third Further Notice* at ¶ 44.

¹² See *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, (1983) (agency must establish a "rational connection between the facts found and the choice made."); *BellSouth Telecommunications, Inc. v. FCC*, 469 F.3d 1052, 1060 (D.C. Cir. 2006).

¹³ See Comments of TruePosition, Inc., PS Docket No. 07-114, at 14 (filed May 12, 2014); Comments of Polaris Wireless, Inc., PS Docket No. 07-114, at 2-7 (filed May 12, 2014); Comment of NextNav, LLC, PS Docket No. 07-114, at 8-11 (filed May 12, 2014).

¹⁴ *Third Further Notice* at ¶ 44 ("[T]he requirement would apply uniformly to all indoor calls and would be technology-neutral; CMRS providers could use any location technology or combination of location technologies to meet this requirement.").

¹⁵ See *id.* at ¶ 159 (noting that CMRS providers first attempt to locate a 911 caller using A-GPS).

¹⁶ See *infra* note 24 and accompanying text.

¹⁷ Section 553(b) and (c) of the APA requires agencies to give public notice of a proposed rulemaking that includes "either the terms or substance of the proposed rule or a description of the subjects and issues involved," and to give interested parties an opportunity to submit comments on the proposal. 5 U.S.C. §§ 553(b)-(c).

be a “logical outgrowth” of the original notice.¹⁸ To the contrary, interested parties were given every reason to believe just the opposite – *i.e.*, that any new performance metric would be technology neutral and include the use of A-GPS, consistent with the Commission’s long-standing technology neutrality objectives. As the *Third Further Notice* made clear, “the requirement would apply uniformly to all indoor calls and would be technology-neutral; CMRS providers could use any location technology or combination of location technologies to meet this requirement.”¹⁹ The Commission sought input on how the *Third Further Notice* “as well as any potential alternatives” would promote technology neutrality.²⁰ And where the *Third Further Notice* sought comment regarding alternative metrics, it considered applying more relaxed accuracy thresholds, not more burdensome ones.²¹ Consistent with the *Third Further Notice*, the Commission should proceed with a rule that is technologically neutral and allows carriers to use any location technology solution to meet the horizontal location metrics.

Vertical Location Accuracy Metric

NextNav asserts that carrier concerns are “misplaced” with regard to a vertical performance metric of dispatchable location or z-axis solutions within 3 meters for 80% of “all calls” within six years. But any such approach would require carriers to extend vertical location to outdoor calls where it is of little to no relevance and would dictate z-axis deployment nationwide, as dispatchable location by its nature is an indoor-only technology.

CTIA is unaware of any evidence in the record asserting the benefits of extending vertical location accuracy requirements to outdoor calls, as an “all calls” vertical location requirement would do. Horizontal location accuracy provides First Responders with the information they need to locate a wireless 9-1-1 caller outdoors; and dispatchable location has been identified as the gold standard for indoor calls.

¹⁸ *Public Service Commission of the District of Columbia v. FCC*, 906 F.2d 713, 717 (D.C. Cir. 1990) (“It is well established that ... the final rule must be ‘a logical outgrowth’ of the rule proposed.”). The focus of the logical outgrowth test is whether commenting parties “should have anticipated” that the Commission might adopt the requirement at issue. *Aeronautical Radio, Inc., v. FCC*, 928 F.2d 428, 445-46 (D.C. Cir. 1991) (internal quotation marks omitted). Where parties could not have anticipated that the rule ultimately adopted was possible, the final rule is not a “logical outgrowth” of the original proposal and the APA’s notice requirements are violated. *See id.*, 928 F.2d at 445-46

¹⁹ *Third Further Notice* at ¶ 44.

²⁰ *Id.* at ¶ 39.

²¹ The Commission asked about modifying the performance metric to 100 meters instead of 50 meters, for certain indoor environments; adopting a dual search ring (50 meters/67%, 150 meters/80-90%); limiting the requirements to urban areas; or delivering dispatchable location instead of meeting the proposed 50-meter requirement. *See id.* at ¶¶ 107, 52, 106, & 50.

NextNav tacitly concedes that an “all calls” approach is not technology neutral as it would compel z-axis buildout both indoors and outdoors,²² whereas dispatchable location is by definition an indoor location technology. Dispatchable location provides a civic address, plus floor, apartment or suite number where necessary. To meet an “all calls” metric – if it were even feasible – carriers would need to deploy z-axis solutions to provide vertical fixes outdoors where there is little benefit, *and* ensure that z-axis capable handsets are in customers’ hands. This costly deployment would not enhance the availability of useful information to public safety.

NextNav’s attempt to moderate its support fails as well. It acknowledges that “the extensive record in this proceeding indicates that vertical location information will be of somewhat lesser value in rural environments, and therefore Z-axis solutions calibrated to within three meters may not be required in those environments.”²³ This is true, but NextNav perhaps takes this position because it offers a terrestrial beacon system solution that relies on its 900 MHz spectrum licenses, but it does not hold spectrum licenses nationwide.²⁴ Nor does it convincingly justify the need for outdoor vertical fixes in urban settings or elsewhere, asserting only that there would be “no additional cost, complexity, or effort” – but this is true only if a carrier is already deploying z-axis, rather than dispatchable location, for indoor vertical fixes.

Finally, as the record demonstrates, it will be several years before the Commission, carriers, public safety, and other stakeholders can make a full determination on proceeding with z-axis solutions.²⁵ In light of this reality, the Roadmap commits to studying z-axis solutions, developing z-axis standards, and establishing a z-axis metric based on test bed performance and evaluation by many stakeholders, including public safety. Based on the three-year evaluation of the dispatchable location and z-axis solutions, the Roadmap commits carriers to deploying either dispatchable location or z-axis solutions to ensure accurate vertical fixes for indoor wireless 9-1-1 calls.

²² NextNav Letter at 5-6.

²³ *Id.* at 5.

²⁴ *See, e.g.*, Reply Comments of Verizon, PS Docket No. 07-114, at 15-16 (filed Dec. 24, 2014) (“Verizon Reply Comments”). Indeed, as T-Mobile observes, “NextNav does not intend to deploy on a nationwide basis in all markets, leaving many 911 callers without access to their proposed solution, particularly in smaller cities.” Reply Comments of T-Mobile, PS Docket No. 07-114, at 15 (filed Dec. 24, 2014) (“T-Mobile Reply Comments”).

²⁵ *See, e.g.*, Reply Comments of CTIA—The Wireless Association®, PS Docket No. 07-114, at 20-23 (filed Dec. 23, 2014) (noting that z-axis technology is not implementable today and likely will not be in the foreseeable future and describing implementation challenges); T-Mobile Reply Comments at 15-18 (describing capabilities and limitations of candidate location accuracy technologies); Verizon Reply Comments at 15-18 (providing examples of how the rulemaking record demonstrates that alternative technologies would be unable to achieve the *Third Further Notice*’s proposed rules).

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CTIA and its members are committed to improving indoor wireless 9-1-1 location accuracy and pursuing a cooperative, collaborative effort with the Commission, the public safety community and all other stakeholders. We believe the Roadmap will achieve these improvements.

Respectfully Submitted,

/s/ Scott K. Bergmann

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CTIA—The Wireless Association®