

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

In the Matter of	)	
	)	
Location-Based Routing	)	PS Docket No. 18-64
For Wireless 911 Calls	)	

**COMMENTS OF  
NEXTNAV, LLC**

For nearly a decade, NextNav, LLC (“NextNav”) has worked closely with the Commission, its advisory council, the public safety community, the major wireless carriers, and wireless equipment manufacturers to address the need of ascertaining the location of wireless callers to E911 emergency services. NextNav is the only company that has demonstrated in industry-wide testing that its technology can reliably achieve wireless location accuracy within 50 meters for both horizontal and floor-level vertical location in urban indoor environments.

NextNav is currently working with major wireless carriers to incorporate NextNav’s highly accurate location technology into the overall mix of location services that the carriers will use to comply with the Commission’s progressively stringent wireless location rules.<sup>1</sup> Concurrent with these efforts, NextNav provides these comments to the Commission on its Notice of Inquiry (“NOI”) regarding the potential use of wireless location services to address the significant problem of misrouted E911 calls to incorrect public safety answer points (“PSAP”).<sup>2</sup>

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<sup>1</sup> See 47 C.F.R. § 20.18(i).

<sup>2</sup> See Location-Based Routing For Wireless 911 Calls, *Notice of Inquiry*, FCC 18-32, (March 23, 2018) (“*NOI*”).

**I. ANY CALL ROUTING SOLUTION MUST BE TECHNICALLY NEUTRAL IN ORDER TO OPERATE WITH THE VARIOUS LOCATION TECHNOLOGIES THAT MAY BE EMPLOYED BY CARRIERS IN DIFFERENT ENVIRONMENTS**

The Commission is correct in concluding that the problem of misrouted calls to E911 is very significant and needs to be addressed promptly. The data produced by California's NG9-1-1 Northeast Grant Project highlights the potential scope of the problem.<sup>3</sup> Using an X/Y (Quick Fix) Location method, the study identified 42,509 calls that would have been misrouted if they had been sent to the PSAP associated with the wireless tower that received the call.<sup>4</sup> When considered as a percentage of the 109,759 calls that were actually analyzed for accuracy (*i.e.*, those calls in which a location technology was available and the location information was provided within the six second deadline), this meant that 38.7 percent (more than one third) of the calls would have been misrouted if the tower location information was used.

Consistent with this, the CSRIC V LBR report recommends that the Commission explore the potential to use alternative forms of call routing capabilities to address the problem of misrouted calls to E911 emergency services.<sup>5</sup> In assessing the options for call routing, the CSRIC V LBR report considers several different types of wireless location services that the major carriers either currently use for wireless location (such as A-GPS) or might use in the future (such as device-based hybrid ("DBH") or registered civic address) in order to consider the measures that would be necessary to use those same technologies for call routing. The CSRIC V LBR report acknowledges, however, that other "new location technologies" have been developed "that

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<sup>3</sup> See Final Report – Task 2: 911 Location-Based Routing, Communications Security, Reliability and Interoperability Council, at 12 (Sept. 2016) ("*CSRIC V LBR Report*").

<sup>4</sup> See *id.*

<sup>5</sup> See *id.* at 27.

promise significantly increased accuracy and quicker time to first fixes that would allow for their use in routing 9-1-1 calls to the jurisdictionally appropriate PSAP.”<sup>6</sup>

The CSRIC V LBR report separately considers the call routing considerations for each of the several location technologies that are addressed in its report. Wireless carriers, however, are likely to use a mix of wireless location technologies – including technologies that were not addressed in the report – to achieve compliance with the Commission’s location requirements. As a result, most Mobile Switching Centers will receive E911 calls employing different location technologies and the call routing approach for those calls must be sufficiently neutral in its design to ascertain the location and route the call to the appropriate PSAP based on the specific location technology employed.

The Commission should ensure that any location-based routing solution that is employed for E911 calls incorporates adequate backup protection in scenarios where a technology might be used by a wireless carrier for location compliance, but fails to timely achieve an accurate fix in all instances. For example, in those cases in which a carrier employs A-GPS, other location technologies should be available to support the routing of calls originating from indoor locations where A-GPS may not produce a location fix. In addition, if a DBH approach is used, consideration must be given to whether the resulting location information is sufficiently reliable to support call routing, particularly in communities and neighborhoods where broadband penetration is low (such as in low income areas), where Wi-Fi devices may be subject to frequent relocation (such as college dorms or apartment complexes), or in cases in which individuals may have turned off the location functions on their wireless handsets due to privacy concerns.

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<sup>6</sup> *Id.* at 28.

A procedure would need to be developed, tested and independently validated in a neutral test bed to address each of these (and comparable) circumstances. Finally, the call routing solution would need to be able to differentiate between various types of wireless location technologies being employed by carriers and promptly determine which of those technologies provide location information that is sufficiently accurate within the required time frame in order to be used to route an emergency call to the appropriate PSAP.

## **II. NEXTNAV'S WIRELESS LOCATION TECHNOLOGY CAN BE USED IN AN EFFECTIVE AND EXPEDIENT MANNER TO FACILITATE THE ACCURATE ROUTING OF WIRELESS E911 CALLS TO THE CORRECT PSAP**

As the NOI observes, wireless calls to E911 are usually routed to a PSAP by the Mobile Switching Center ("MSC") within six seconds after a wireless caller initiates an emergency call.<sup>7</sup> Therefore, the ultimate goal of the Commission's inquiry is the identification of location solutions that can facilitate the correct routing of the wireless call within five seconds or less.<sup>8</sup>

NextNav's wireless location technology can reliably satisfy this requirement. As NextNav reported to the Commission as early as 2012, handsets equipped with NextNav's technology can compute a position fix from a cold start typically within five seconds.<sup>9</sup> NextNav has since improved its technology sufficiently that a highly accurate position fix can be determined within two to five seconds. Using this information, MSCs can be programmed to employ NextNav's

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<sup>7</sup> See NOI, ¶ 18 (citing *CSRIC V LBR Report* at 8).

<sup>8</sup> See *id.*

<sup>9</sup> See Letter from Bruce A. Olcott, Squire Sander (US) LLP, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 11-49 (Jan. 27, 2012), at Attachment 1, *Wide Area Positioning System, Network Description*, page 8 (Jan. 27, 2012).

location information to accurately route wireless calls to the correct PSAP and thereby greatly reduce the incidence of misrouting.

Consistent with this, NextNav concurs with the CSRIC V LBR recommendation that the Commission “should continue to support the independent testing and analysis of new location technologies that promise significantly increased accuracy and quicker times to first fixes that would allow for their use in routing 9-1-1 calls to the jurisdictionally appropriate PSAP.”<sup>10</sup> The Commission should also carefully consider the privacy concerns arising out of the use of location-based routing, particularly to the extent that commercially-derived location information is used in making the location determination.

NextNav is already actively participating in industry-run test beds to document the highly accurate horizontal and vertical accuracy of its wireless location technology. The Commission should ensure that, in order to preserve the long standing integrity of the E911 emergency response system, all location technologies under consideration for location-based routing must be tested and validated in an independent test bed, with the test results made public for review and confirmation.

Respectfully submitted,

NEXTNAV, LLC

By: 

Bruce A. Olcott  
Jones Day  
51 Louisiana Ave. NW  
Washington, D.C. 20001  
(202) 879-3630

Its Attorneys

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<sup>10</sup> *Id.* at 28.