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 MOTOROLA SOLUTIONS INC.

I. INTRODUCTION AND SUMMARY

Motorola Solutions, Inc. respectfully submits the following comments in response to the Federal Communications Commission's ("Commission") *Notice of Inquiry*.[1] As a recognized global leader in the development and manufacture of innovative communications offerings for the public safety and enterprise sectors, Motorola Solutions is committed to the nationwide deployment of robust, advanced emergency communications systems, including efficient and effective 9-1-1 solutions.

Motorola Solution agrees with the Commission's concerns about the routing of wireless 9-1-1 calls in the current 9-1-1 system. Such routing relies upon the location of the cell tower that handles the call, which may or may not correspond to the actual location of the caller. As a result, wireless 9-1-1 calls can be misrouted – a situation that poses a threat to the public safety given that time is of the essence in emergency situations.

The problem of misrouted wireless 9-1-1 calls has become more acute as consumers increasingly rely upon their mobile devices for their communications needs. Consumers reasonably expect that their wireless 9-1-1 calls will be accurately routed, and their ability to

---

[1] *Location-Based Routing for Wireless 911 Calls*, Notice of Inquiry, PS Docket No. 18-64, FCC 18-32 (rel. March 23, 2018) ("*Notice of Inquiry*").

receive prompt attention from first responders in the case of an emergency should not depend upon whether they place a 9-1-1 call from their landline phone or mobile device.

The location accuracy problems inherent with the routing of wireless 9-1-1 calls can be addressed by migrating to device-based hybrid location solutions, which combine data from various sensors on the user's mobile device and provide the best information about the user's actual location based on context and environment. Numerous test results confirm the viability of these device-based hybrid location solutions, which can provide more accurate location information on a more timely basis as compared to the legacy 9-1-1 routing architecture.

The Commission should use this proceeding to explore the creation of incentives for deploying location based routing technologies. Such incentives should include sufficient and sustained levels of funding for Next Generation 9-1-1 ("NG9-1-1") deployments, of which device-based hybrid location solutions should be an integral part.

II. BACKGROUND

Motorola Solutions regularly works with government entities – including Federal agencies, State and local law enforcement, fire, emergency medical services and other first and second level responders – to improve responsiveness in emergency situations. Our mission critical grade communications networks, devices, applications and services – many of which are custom built to customer specifications – provide public safety personnel with real-time data and information to elevate situational awareness in ways that help save lives and property. Motorola Solutions also is providing mobile devices, applications, software, and services for the FirstNet network as part of its role on the AT&T team selected to deliver America's first nationwide

wireless broadband public safety network, which will "provide public safety with the modern, lifesaving technology it needs."[2]

A robust 9-1-1 system that leverages leading edge technology is essential to protecting the public in emergency situations. Motorola Solutions offers equipment, software, applications, and network support for 9-1-1 and NG911 services by Public Safety Answering Points ("PSAPs"), which include command center software for emergency call handling and a comprehensive portfolio of 9-1-1 and NG9-1-1 solutions operating on flexible open software architectures that support text-to-911, call mapping, and data management and analytics. Additionally, VESTA Solutions, a wholly owned subsidiary of Motorola Solutions, delivers Next Generation Core Service ("NGCS") solutions that provide customers with a comprehensive transition strategy from legacy systems to a standards-based (i3), unified NG9-1-1 system.

Together, Motorola Solutions and VESTA Solutions are committed to improving and enhancing the 9-1-1 system. In support of this commitment, Motorola Solutions has been deeply involved in all aspects of the technological development of NG9-1-1 and NGCS and in the smooth and efficient transition to NG9-1-1 and NGCS, including location based 9-1-1 call routing. Motorola Solutions agrees with the Commission that "NG9-1-1 has the potential to vastly improve 9-1-1 service by offering more flexible call routing and providing PSAPs with a greater range of information, including text, video and other data from devices such as vehicle crash sensors."[3]

---

[2] William Schrier - Senior Advisor, First Responder Network Authority, *Applications and Mobile Data to Improve Operations and Emergency Responder Safety* (April 19, 2018), *available at* https://www.firstnet.gov/newsroom/blog/applications-and-mobile-data-improve-operations-and-emergency-responder-safety.

[3] *911 Governance and Accountability; Improving 9-1-1 Reliability*, Policy Statement and Notice of Proposed Rulemaking, PS Docket Nos. 14-193, 13-75, ¶ 10 (Nov. 21, 2014).

III. CONSUMERS REASONABLY EXPECT THAT THEIR WIRELESS 9-1-1 CALLS WILL BE ROUTED CORRECTLY.

Given the dramatic proliferation of and increased consumer reliance on mobile devices, accurate routing of wireless 9-1-1 calls should be a given. When attempting to reach an emergency call taker, Americans reasonably expect that their wireless 9-1-1 call will be immediately routed to, and answered by, the PSAP that can dispatch first responders promptly and accurately to the caller's location. A caller's safety should not vary based on how a 9-1-1 call is placed (wireline vs. wireless).

However, because legacy wireless 9-1-1 call routing primarily relies upon cell tower location, calls can be misrouted to first responders that can be miles from the caller's actual location.[4] These misrouted calls pose a significant operational challenge to PSAPs, not to mention represent a threat to the health and safety of the caller for whom life-saving services may be delayed while the 9-1-1 call is transferred to the correct PSAP. No reason exists for the Commission to tolerate the imprecision inherent in the current legacy wireless routing methodology when improvements in wireless location determination technologies now make it possible to route wireless 9-1-1 calls based on a caller's precise location.

IV. WIRELESS 9-1-1 CALLS CAN BE ROUTED BASED ON THE CALLER'S PRECISE LOCATION USING DEVICE-BASED HYBRID LOCATION SOLUTIONS, THE DEPLOYMENT OF WHICH THE COMMISSION SHOULD ENCOURAGE.

Enhanced wireless location accuracy is now possible through a synthesis of modern location determination technologies, including device-based hybrid location solutions. Field trial results support the effectiveness of these solutions, which combine location data from various

---

4 *Notice of Inquiry* ¶¶ 1-2.

sensors on the device such as GPS, Wi-Fi access points, and Bluetooth beacons, and provide the best location based on context and environment.

For example, RapidSOS and its NG911 Clearinghouse recently were used in testing Android Emergency Location Service ("ELS") to examine its potential to determine the location of wireless 9-1-1 calls.[5] The testing reflected that ELS provided more accurate location data to PSAPs more quickly than traditional Automatic Location Information and saved lives during real emergencies in the process.[6]

Likewise, testing results of various device-based hybrid solutions were unveiled at the recent 2018 NG9-1-1 Institute Technical Showcase.[7] These results uniformly confirmed the ability of device-based hybrid solutions to deliver more accurate location information on a more timely basis as compared to the legacy wireless 9-1-1 architecture.

Use of device-based hybrid location solutions for routing would improve call delivery (fewer 9-1-1 calls being misrouted) and operational efficiency (fewer 9-1-1 calls transfers), which would expedite the ability of first responders to provide aid in an emergency. Accordingly, the Commission should embrace and encourage the use of modern location determination technologies of all types, including device-based hybrid location solutions, for wireless 9-1-1 call routing. Specifically, the Commission should explore the creation of

---

5 NG911 Clearinghouse Android ELS Pilot Project (Jan. 2018), *available at* https://cdn2.hubspot.net/hubfs/549701/RapidSOS%20ELS%20Pilot%20Project%20Report.pdf ("ELS Pilot Project Report"). ELS is supported by approximately 99 percent of Android devices, and this service has been successfully implemented in many countries in Europe; according to some estimates, 7,500 lives and 95 billion euros could be saved if ELS were implemented in all EU member countries. *See, e.g.,* Press Release, European Emergency Number Association, *How the EU Saves Lives Thanks to Emergency Caller Location* (Oct. 2, 2017), *available at* http://www.eena.org/press-releases/112-day-2017-aml#.WueAMOSWyuV.

6 ELS Pilot Project Report at 9-21.

7 *See, e.g.,* West Safety Services Google ELS Pilot (Feb. 15, 2018), *available at* http://www.ng911institute.org/tech-showcase-2018.

incentives for: (1) ongoing testing and pilot activity validating improvement/benefits derived from location based routing technology; (2) PSAPs to use location based routing technology; and (3) the migration to NG9-1-1 and the use of location based routing technology at the state and local levels.

V. NG9-1-1 FUNDING IS ESSENTIAL FOR ADOPTION OF DEVICE-BASED HYBRID LOCATION SOLUTIONS.

The Commission can best incentivize adoption of device-based hybrid location solutions by continuing to encourage: (1) the creation of sufficient and sustained levels of funding for NG9-1-1 deployments, such as those funding mechanisms identified by the Commission's Task Force on Optimal PSAP Architecture;[8] and (2) the establishment of funding programs for PSAPs, including grants, such as those administered by the National 9-1-1 Program Office.[9] These funding mechanisms and programs should include the ability to develop and perform further testing of device-based hybrid location solutions.

May 7, 2018

Respectfully submitted,

By: */s/ Frank Korinek*

_____

Frank Korinek
Director Spectrum & Regulatory
Government Affairs
Motorola Solutions, Inc.
1455 Pennsylvania Ave., #900 N.W.
Washington DC 20004

[8] Task Force on Optimal PSAP Architecture, Adopted Final Report, at 152-176 (Jan. 29, 2016), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DA-16-179A2.pdf.

[9] https://www.911.gov/project_911grantprogram.html.