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 INTELIQUENT

Onvoy, LLC d/b/a Inteliquent ("Inteliquent") files these comments in response to the Commission's Notice of Inquiry ("NOI") in the above-captioned proceeding on location-based routing for wireless 9-1-1 calls. As discussed below, Inteliquent strongly supports a transition from tower-based routing to location-based routing.[1]

Inteliquent has provided wholesale telecommunications services since 1988, and currently has the largest competitive nationwide tandem and session initiation protocol ("SIP") routing network in the United States. In addition to the voice services we provide, our wireless, VoIP, and wireline customers are increasingly requesting that we provide 9-1-1 services to help them meet their regulatory obligations.[2] To that end, we are launching emergency services products designed to modernize emergency communications: 9-1-1 Gateway ("ESGW") and VoIP Positioning Center ("VPC") services, branded as "9-1-1 Gateway with Nomadic Location." We are also well into the planning stages to deliver 9-1-1 services for mobile devices and Next Generation 9-1-1 ("NG911"). We accordingly take great interest in efforts to improve the routing of 9-1-1 calls.

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[1] *See In re Location-Based Routing for Wireless 911 Calls*, Notice of Inquiry, PS Docket No. 18-64 (rel. Mar. 23, 2018) (hereinafter "NOI").

[2] In that capacity, Inteliquent is a leading provider of wholesale voice services to the top ten wireline companies, the top eight cable companies, the top five VoIP companies, and the top six wireless companies operating in the U.S.

As the NOI describes, the current call-routing system for wireless 9-1-1 generally uses the nearest available serving cellular tower or serving cell sector to route calls to the Public Safety Answering Point ("PSAP"), but in many cases the tower may be up to several miles from the caller's location. This leads to frequent call "misroutes" where the receiving PSAP must transfer the call to a different PSAP that actually covers the caller's location, leading to delays in dispatch and the ability of first responders to render aid in emergency situations. Based on our experience in the wireless and 9-1-1 industries, Inteliquent agrees with the Commission that transitioning from tower-based routing to location-based routing would significantly reduce these misroutes.

Fortunately, the solution to this wireless call-routing problem already exists, and lies within the devices themselves using what the NOI refers to as "device-based hybrid location." Devices today have access to environmental information that will enable accurate routing at a reasonable cost with no changes required to current PSAP operations or equipment. The Commission should therefore continue to examine its rules to ensure that they facilitate and encourage device-based location solutions, with the ultimate goal of improving location-based 9-1-1 routing.

I. THE SOLUTION TO WIRELESS 9-1-1 CALL MISROUTES IS TO DERIVE LOCATION INFORMATION DIRECTLY FROM THE DEVICE.

Inteliquent believes that device-based hybrid location techniques are the preferred method of routing wireless 9-1-1 calls to the correct PSAP at the outset of the call, avoiding misroutes leading to unacceptable delays in providing emergency services. Mobile device manufacturers, including Apple and the manufacturers of Android devices, already make highly accurate device-derived location available via GPS, WiFi, and Bluetooth. And the technology

exists today to leverage that device-based location and provide it in real-time for routing to the designated aggregation point for the appropriate PSAP.

Inteliquent and its partners are in the process of developing one such solution: 9-1-1 Gateway with Real Time Location. This system will provide carriers the option of a fully outsourced 9-1-1 solution, including call transport and routing functionality based on real-time location derived from the 9-1-1 callers' devices. By relying on the device's actual location at the time of the call, device-based systems such as Inteliquent's need not rely on pre-provisioned addresses or centralized databases, which tend to be less accurate and more expensive to maintain.[3]

The location information derived from the device can be faster and is definitely more accurate than alternative solutions, including the current cell-tower location based routing. As the NOI explains, a March 2015 report on location-based routing found that at the time, device-based hybrid location solutions could resolve location within approximately five seconds, with "high location accuracy in many environments (including indoors)," and were already available from "a wide variety of location providers."[4] Developments in the years since the report have made it possible to derive location from devices almost immediately, with even greater accuracy using multiple sources of location information from the device—thus ensuring that the 9-1-1 call is routed to the correct PSAP.[5] Moreover, unlike other solutions, device-based call-routing supports rebidding locations. This ensures that the most current and accurate location

[3] In delivering 9-1-1 services for mobile devices, our intent is to leapfrog the current paradigm for routing wireless 9-1-1 calls by rolling out services that leverage cost-effective technology to provide better location accuracy for mobile devices and therefore the 9-1-1 caller.

[4] NOI ¶ 24.

[5] Some device manufacturers have started determining callers' locations as soon as they dial a "9" so that by the time they dial "1-1" the location has already been determined and can be sent to the location information server.

information is delivered to that nearby PSAP even if the caller moves after the call is initially routed.

Of course, delivering the call to the correct PSAP is only one part of the equation; it is essential that the PSAP receive the caller's accurate location information as well. In that regard, solutions that derive location from the device can be designed from the ground up for compatibility with existing PSAP systems, given that NENA has promulgated standards supporting consistent implementation of location information delivery to PSAPs using both NG911 equipment and legacy environments.[6] But in order for location information to be delivered to PSAPs without requiring significant changes to their existing legacy infrastructure, location information must be delivered via Automatic Location Identification ("ALI") in a format acceptable to the PSAP.

Inteliquent and others are developing solutions to adapt the form and format of 9-1-1 calls on the ingress side to the specific needs of local PSAPs on the egress side. As this process moves forward, coordination with PSAPs will be essential, and Inteliquent looks forward to bringing to bear its experience working with PSAPs to deliver solutions that work for their unique local circumstances at little or no cost to them. And while the focus of industry and the Commission should be on NG911 as opposed to legacy systems, Inteliquent's solution can adapt the delivery of location information to the needs of PSAPs regardless of whether they use NG911-capable call-handling equipment or legacy selective router call-handling equipment.

For all of these reasons, Inteliquent believes that the basic capability to address 9-1-1 call misroutes is already available today using device-based location methods and can be deployed in

[6] Wireless standards like J-STD-36 will, however, need to be revised to allow for call routing and location delivery via device-based location information.

a cost-effective manner. Inteliquent is currently working with its partners on developing a pilot test of its solution later this year, and looks forward to sharing the results of that testing with the Commission once it is complete.

II. THE COMMISSION SHOULD NOT MANDATE CENTRALIZED DATABASES OR OTHER INFLEXIBLE SOLUTIONS TO 9-1-1 LOCATION ROUTING.

In addition to device-based approaches, the NOI requests comment on other potential solutions to the very real problem of 9-1-1 call misroutes. Moving forward, the Commission should not rely on centralized databases or other inflexible solutions to wireless 9-1-1 location routing, which are neither as accurate nor as cost-effective as device-based solutions.

The NOI seeks comment as to whether the National Emergency Address Database ("NEAD") can be leveraged for 9-1-1 call routing purposes. The NEAD was originally designed as a tool to dispatch first responders, though over time it has been considered for use in location-based call routing. While this was a promising concept, its implementation has been problematic to say the least. Inteliquent's experience with the NEAD is that maintaining a database of all the fixed indoor access points in every building across the country cannot feasibly be accomplished with the requisite level of accuracy and currency for 9-1-1 call routing purposes. Moreover, access point owners are reluctant to make this location information available without significant compensation, such that centralizing this capability would impose significant costs on service providers and will not succeed in the marketplace.

Instead, any rules or standards endorsed by the Commission should ensure that location information from devices can be sent to location information servers ("LIS") designated by the service provider that can make the information available to any authorized user, as opposed to mandating the use of any particular database. The LIS could be hosted by the provider of service to the subscriber, an outsourced service provider, an arms-length service provider, or one

designated by the Originating Service Provider ("OSP"). Once location information is in the LIS, it could be used directly by the service provider or companies (like Inteliquent) that provide services to aggregate, augment, and route 9-1-1 calls to deliver the caller's location with speed and accuracy.

The NOI also seeks comment as to whether registered or provisioned civic addresses might be used for location-based routing of wireless 9-1-1 calls. In Inteliquent's experience, the vast majority of 9-1-1 calls originate from services that do not utilize subscriber-registered addresses. Thus, while improvements to these registered address databases can and should be explored by the Commission, we believe the focus should be on mobile services that do not rely on fixed addresses to deliver location information in emergency situations. Nor should the Commission move forward with proposals that could introduce delay into 9-1-1 call-routing, such as holding the call until a Phase II location is available to determine the proper PSAP or the so-called "interim or quick fix" which can take up to six seconds for the CMRS provider to deliver a location. Given that, as described above, there are technology solutions in existence today that use device-based location technologies to quickly and accurately route 9-1-1 calls, the Commission should not encourage solutions that impose needless delays on critical emergency services.

Finally, while Inteliquent remains committed to NG911 implementation, that alone will not solve the problem of wireless 9-1-1 call misroutes. In fact, much of the promise of NG911 will not be realized unless and until solutions are developed to derive the accurate location of callers at the time the call is routed.

CONCLUSION

Inteliquent appreciates and supports the Commission's efforts to solve the very real problem of wireless 9-1-1 call misroutes due to the outdated cell-tower-based call routing system. Inteliquent's experience counsels that device-based solutions are the way forward to delivering fast and accurate location information to the correct PSAP at the outset. Inteliquent is already working with its partners on developing such a solution, and looks forward to real-world testing of the solution later this year. Any steps taken by the Commission should facilitate and encourage device-based location routing for 9-1-1 calls, and avoid solutions that rely on centralized databases that are costly to update and maintain at the level necessary for use in emergency services.

Respectfully submitted,

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