LOCATION-BASED ROUTING

FILLING A VOID FOR 9-1-1 CALLERS AND TELECOMMUNICATORS – TODAY

"9-1-1, What is the location of your emergency?" How the 9-1-1 caller answers this question impacts the time it takes for the telecommunicator to respond quickly with the appropriate resources, especially if the caller isn't able to say where they are, or doesn't know.

Not having an accurate location affects the stress the telecommunicator and the caller experience – a situation made even worse if the call is routed to the wrong PSAP and the process must start over again, losing valuable time.

In Next Generation 9-1-1 (NG9-1-1), one of the most important outcomes is routing the call to the correct PSAP using Next Generation Core Services (NGCS), the NG9-1-1 functional elements that enable NENA (National Emergency Number Association) i3 location-based call routing. NG9-1-1 is built on technology innovation and flexibility that Motorola Solutions delivers — today. Motorola Solutions is one of the first in the nation to provide NG9-1-1 i3 location-based routing for all call types.

PRINCE GEORGE'S COUNTY

At Prince George's County, Maryland, just east of Washington D.C., Motorola Solutions has deployed location-based routing where the location is delivered with every call. Prince George's County averages 75,000 9-1-1 calls a month.
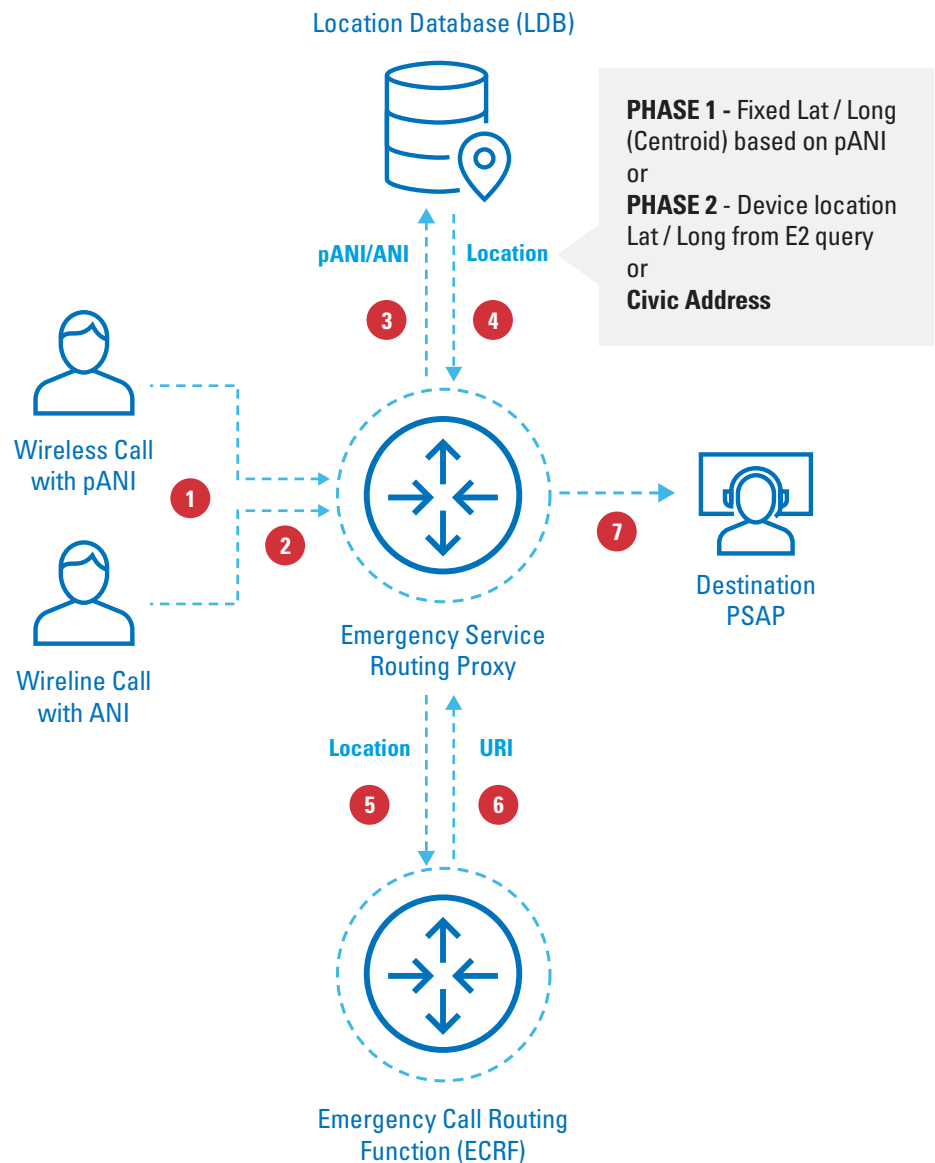
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i3 LOCATION-BASED ROUTING ARCHITECTURE

The NENA i3 end-state architecture assumes the Originating Service Provider (OSP) will provide the caller location at the time the call is presented to the NGCS system for routing. Presently, no OSP in the U.S. delivers location as Presence Information Data Format-Location Object (PIDF-LO) with calls as a standard practice. The PIDF-LO provides the location of the caller by way of civic address or latitude and longitude coordinates.

To compensate for the absence of location from the OSP, Motorola Solutions is providing call routing based on the NENA i3 functional elements.

THE WORKFLOW

1, 2   The call is received by NGCS.

3, 4   If location is not provided with the call by the OSP, Motorola Solutions obtains the caller location from our Location Database (LBD) at the time the call is received.

5, 6   The location is used to query the Emergency Call Routing Function (ECRF) for the PSAP destination.

7   The ESRP consults the Policy Routing Policy Routing Function (PSAP-defined policy), and the call is routed to the Destination PSAP.

Location Database (LDB)

PHASE 1 - Fixed Lat / Long (Centroid) based on pANI
or
PHASE 2 - Device location Lat / Long from E2 query
or
Civic Address

pANI/ANI   Location

3   **4**

Wireless Call with pANI

1

2

Wireline Call with ANI

Emergency Service Routing Proxy

7

Destination PSAP

Location   URI

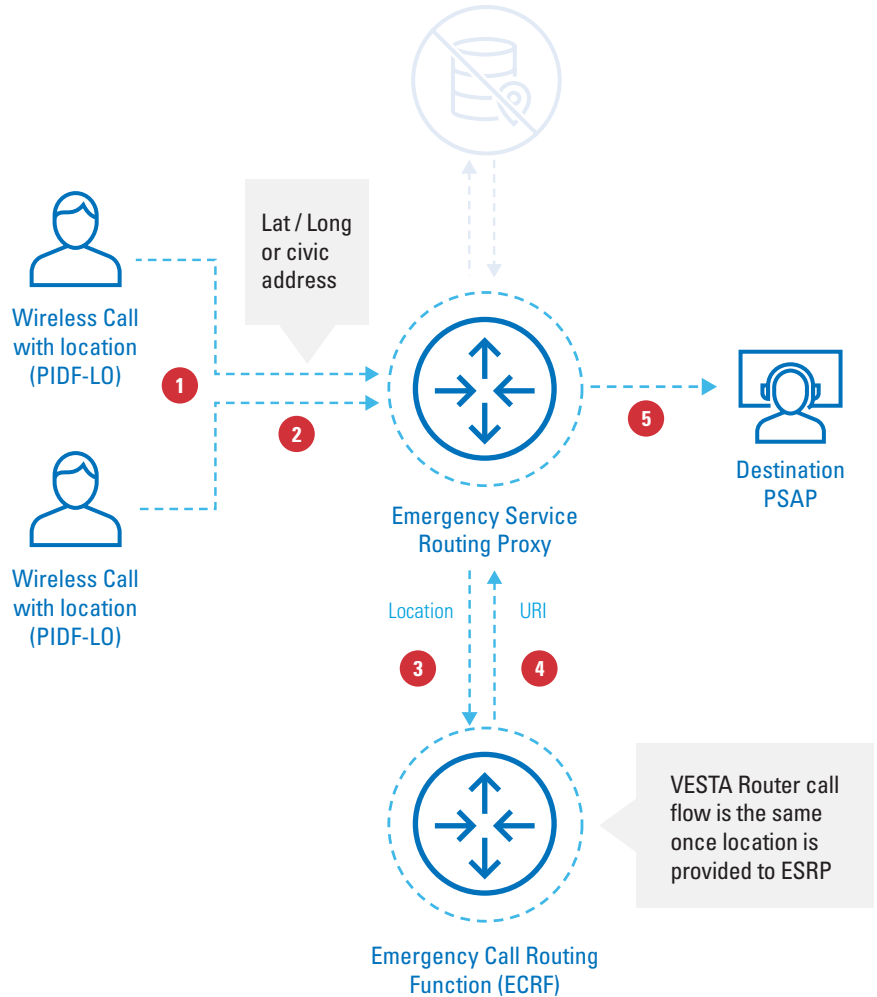**5**   **6**

Emergency Call Routing Function (ECRF)

NOW VERSUS END-STATE

With Motorola Solutions' location-based routing, PSAPs do not need a full set of highly accurate GIS data, which includes road centerlines and point files, to transition. They can move forward today with the NENA-prescribed NG9-1-1 i3 architecture and still have the flexibility to utilize their existing Master Street Address Guide (MSAG) data, as well as add more advanced GIS data layers based on their implementation schedule.

END-STATE – ORIGINATING CARRIER DELIVERS LOCATION WITH THE CALL

This diagram depicts the end-state architecture when location is delivered with the call from the carrier. When each carrier is ready to deliver location by value or reference, the PSAP won't have to go through a forklift effort to implement another system. With Motorola Solutions, they'll be ready.

At Motorola Solutions, our expert NGCS teams are continuing the critical work of helping PSAPs across the country prepare their GIS data.

Wireless Call with location (PIDF-LO)

1

2

Lat / Long or civic address

Wireless Call with location (PIDF-LO)

Emergency Service Routing Proxy

5

Destination PSAP

Location

URI

3

4

VESTA Router call flow is the same once location is provided to ESRP

Emergency Call Routing Function (ECRF)

WHY WAIT?

The innovation of Motorola Solutions' location-based routing solution allows PSAPs to move forward and to better serve the community today, while preserving the flexibility to implement advanced GIS data on a schedule that works for them.

Motorola Solutions' timely approach for NENA i3 call routing fills a void today for telecommunicators and 9-1-1 callers – ultimately helping to save lives.

For more information, visit us at www.motorolasolutions.com/ng9-1-1

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