NG 9-1-1 For the Line Level Dispatcher
CALNENA 2022
Discussion Overview

- Today’s 9-1-1 system
- 9-1-1 System Failures and what they impact
- NG 9-1-1 Terms and Concepts
- NG 9-1-1 Overview
- NG 9-1-1 Go Live and what to expect
- NG 9-1-1 and what will be available one day (soon...)
Legacy 9-1-1 – Call routing

- CPE – Customer Premise Equipment
- ESN - Emergency Service Number that identifies PSAP to receive call
- ALI – Automatic Location Information
- ANI – Automatic Number Identification
- pANI - Pseudo ANI
- VoIP – Voice over IP
- MSC – Mobile Switching Center
- VPC – VoIP Positioning Center

Phone Number and Voice

End-Office Switch

Selective Router

Call and ANI sent to PSAP

CAMA Trunk

IN A

IN3

ALI - Location Info

ALI Data Base

Public Safety Answering Point

End-Office Switch

Landline 9-1-1
• CPE – Customer Premise Equipment
• ESN – Emergency Service Number
• ALI – Automatic Location Information
• ANI – Automatic Number Identification
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• VoIP – Voice over IP
• MSC – Mobile Switching Center
• VPC – VoIP Positioning Center
• SOI – Service Order Input
Legacy 9-1-1 – Outages

Network Outages: 37,000 Minutes per month
Location Outages: 5,500 Minutes per month
CPE Outages: 23,000 Minutes per month
Community Isolation: 1,000 Times per month

Text to 9-1-1
Text Control Center

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9-1-1 traffic routing with NG 9-1-1

Definitions

**ESRP** - Emergency Services Routing Proxy essentially replaces the selective routers in NG 9-1-1.

**ECRF** - Emergency Call Routing Function is the functional element where caller location and routing information for that call is stored (think GIS)

**LDB** – Location Data Base server retains all of the current information, functionality, and interfaces of today’s ALI and can utilize the new protocols required in an NG 9-1-1 deployment

**LIS** - Location Information Server is used in conjunction with the LDB

**LNG** – Legacy Network Gateway – performs specific interworking functions to support ingress of non-i3 calls into the i3 network

**PRF** – The Policy Routing Function is where default, alternate, contingent, and emergency routes are located. The PRF is the specific functionality regarding 9-1-1 traffic routes
NG 9-1-1 – Call routing

California NG 9-1-1 System

ESRP (Routing) – Emergency Services Routing Proxy
ECRF (Routing) – Emergency Call Routing Function
LDB – Location Data Base
LIS – Location Information Server
LNG – Legacy Network Gateway
PRF – The Policy Routing Function
URI – Uniform Resource Locator

Text to 9-1-1
Landline 9-1-1
Wireless 9-1-1
VoIP 9-1-1
VoIP 9-1-1

End-Office Switch

VoIP Service Provider
Carrier Based Location Information Server

Headers | Phone # | Location | URI | Media Payload

All Carriers Send SOI to update records

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NG 9-1-1 Connectivity

- **Every PSAP in state**
  - Statewide Data Centers
  - MPLS
  - LTE
  - SD-WAN ESInet for Statewide Provider
  - 2 LTE SIM Cards

- **Every PSAP in Region**
  - Regional Data Centers
  - MPLS
  - LTE
  - SD-WAN ESInet for Region Providers
  - Robust LTE

- **9-1-1 Traffic**

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Preparing for NG 9-1-1 Go-Live

CPE Vendor
- Install LPG or Upgrade CPE Software
- Install Firewall and Router
- Program CPE and Line Appearances
- CPE Testing and Training

Atos and Region
- Region Installs Equipment
- Region Installs Circuits
- Atos Installs Equipment
- Atos Installs Circuits
- Atos and Region Connected at PSAP
- NG 9-1-1 Testing and Training

Carriers (Originating Service Providers)
- Connect to NG 9-1-1
- Validate Location Data Flow
- Carrier Test Calls

Go-Live Preparations
1. Complete Go-Live Testing
2. Complete PSAP Training
3. Validate NOC operations
4. Schedule Carrier cutover dates
5. Validate PSAP Readiness
Final testing requires dispatchers to answer calls to validate the programming is correct and that the training is adequate.

We are asking for PSAPs to support test windows for the testing that must be completed at the PSAP.

- Test Windows will be Tuesday – Thursday from 10:00 am – 1:00 pm.
- No more than 10 test calls will be completed in any single hour unless approved by PSAP.
- During planned events and increased busy times, test windows can be cancelled by PSAP.
- Each PSAP will have unique testing number for Atos and their region to support additional PSAP testing.
What does NG 9-1-1 Testing look like for my PSAP?

There will be many types of Testing:

- CA 9-1-1 Branch NG 9-1-1 lab testing (Completed)
- CPE Testing to validate CPE upgrades or LPG (Almost Completed)
- NG 9-1-1 Testing to validate NG 9-1-1 connectivity to your PSAP
- CPE and NG 9-1-1 Testing – Test numbers provided to PSAP for PSAP testing
- “Go Live” Testing to validate NG 9-1-1 Go-Live readiness
- Carrier Testing to validate each carrier can deliver 9-1-1 calls through NGCS
- “Go Live” and Carrier Testing – After line appearances are programmed on your CPE and training is completed by the CPE vendor, anticipate that your PSAP will be receiving NG 9-1-1 test calls
NG 9-1-1 – And Data Available today

Today with NG 9-1-1
Voice Communications Routing to any PSAP
Improved Location
Improved Reliability

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<tr>
<th>Headers</th>
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<th>Location</th>
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Text to 9-1-1
End-Office Switch
VoIP Service Provider
VoIP 9-1-1
Landline 9-1-1
Wireless 9-1-1

California NG 9-1-1 System
ECRF (GIS)
Location Data Base
Policy Routing Function

9-1-1 “call” sent to PSAP as SIP i3 message

Data Sources
CPE
CAD
Browser

Public Safety Answering Point

Carrier Based Location Information Server

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NG 9-1-1 – And Data Available One Day

One Day with NG 9-1-1 and Cloud CPE
Real Time Text
Direct integration of any data source
Video and Photos (when carrier sends)

Data

Sources

Cloud CPE
CAD
Browser

Public Safety Answering Point

Headers | Phone # | Location | URI | Media Payload

Text to 9-1-1
End-Office Switch
VoIP 9-1-1
VoIP Service Provider
Carrier Based Location Information Server
VoIP 9-1-1
Landline 9-1-1
Wireless 9-1-1

Text Control Center

California NG 9-1-1 System

ECRF
Location Data Base
Policy Routing Function

VoIP 9-1-1

CALNENA 2022
NG 9-1-1 – And Data Available Some Day

Some Day with 100% native IP
Direct integration of all data sources
Video and Photos
No more over the top solutions

Text to 9-1-1
VoIP 9-1-1
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VoIP Service Provider
Carrier Based Location Information Server
End-Office Switch
Text Control Center

California NG 9-1-1 System

ESRP
ECRF
Policy Routing Function

9-1-1 “call” sent to PSAP as SIP i3 message

Supplemental Data Sources
Cloud CPE
EIDO CAD
Public Safety Answering Point

Some Day with 100% native IP
Direct integration of all data sources
Video and Photos
No more over the top solutions

Headers | Phone # | Location | URI | Media Payload
Any Questions