Next Gen 9-1-1
Town Hall Meetings
Sept – Oct 2019
Briefing Overview

- Importance of Next Gen 9-1-1
- The RFP and Contract Award Process
- Overview of Next Gen 9-1-1 in California
- How will Next Gen 9-1-1 impact my PSAP?
- Other Projects
  - Location Accuracy/RapidDeploy, GIS project, CPE Contract
- Discussion and Questions
- Follow CA 9-1-1 Branch on Twitter - @CalOES_911

Send email to: Andrew.Mattson@caloes.ca.gov for slides
Connecting the Technology

Next Generation 9-1-1

Broadband Services

Alerts and Warnings

Public Safety Answering Point

CPE – Customer Premise Equipment used to answer 9-1-1 calls
CAD – Computer Aided Dispatch used to dispatch emergency responders
LMR – Land Mobile Radio used for mission critical voice communications
Next Generation 9-1-1 will:

- Increase resiliency by hardening the system to withstand disasters
- Allow agencies to re-route 9-1-1 calls to each other during disasters
- Reduce 9-1-1 system downtime. Outages in the current 9-1-1 system are an ongoing problem with the aging infrastructure currently being used in California
- Allow the NG 9-1-1 system to be used as a common delivery system for Alerts and Warnings at little additional expense, saving local agencies funding individual systems
- Ensure emergency calls are quickly and accurately delivered
- Support text to 9-1-1 delivery into the dispatch center and text from 9-1-1
- Deliver increased location accuracy for all 9-1-1 calls
- Provide the ability to integrate other 9-1-1 technologies over secure IP connections
Deployment Timeline

- Statewide Prime – Aug 2019 – Mar 2021
- Northern Region – Aug 2019 – Apr 2021
- LA Region – Aug 2019 – Jun 2021
- Southern Region – Aug 2019 – Jul 2021
- Central Region – Aug 2019 – Aug 2021
- All selective routers decommissioned - 2022
The RFP Process

- Competitive bid process used to select qualified Next Gen 9-1-1 service providers
- A total of 8 Bidders participating in the RFP process
- Bidders were required to file Next Gen 9-1-1 tariffs
- Cal OES established Not to Exceed pricing to ensure bids were at or near cost
- Bidders were required to comply with functional requirements needed to ensure project success
- Bidders submitted narrative responses that were evaluated and scored
- Only qualified bidders with NENA i3 compliant Next Gen 9-1-1 solutions were selected
- All four regions have a capable, qualified NG 9-1-1 Service Provider
- Winning bidders were notified at 9-1-1 Advisory Board on August 20, 2019
## Next Gen 9-1-1 RFP Timeline

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>RFP Pre-Solicitation Released</td>
<td>February 15, 2019</td>
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<tr>
<td>Confidential Discussions</td>
<td>March 19-21, 2019</td>
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<tr>
<td>RFP Released</td>
<td>April 1, 2019</td>
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<tr>
<td>Last day to submit Intent to Bid</td>
<td>April 12, 2019</td>
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<tr>
<td>Last day to submit Proposal</td>
<td>May 17, 2019</td>
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<tr>
<td>Last day to submit tariffs to CPUC</td>
<td>June 7, 2019</td>
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<tr>
<td>Cost Worksheets due</td>
<td>June 27, 2019</td>
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<tr>
<td>Notice of Intent to Award</td>
<td>August 20, 2019</td>
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<tr>
<td>All contracts signed</td>
<td>By August 30, 2019</td>
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<tr>
<td>Tariff filing process completion</td>
<td>By November 30, 2019</td>
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How does the NG 9-1-1 Contract address the needs and concerns of California?

- Diverse connections into each PSAP
- Ability to route 9-1-1 calls to any PSAP and willingness to work with other Next Gen 9-1-1 providers
- Security – Protecting against DDoS, TDoS and Cyber security attacks
- 99.999% reliability and eliminating outages
- System failover and redundancy
- Accurate system monitoring
- Integration of Alert and Warning
Next Gen Vendor POC

- **Atos (Statewide Prime)**
  - Cal OES Project Manager: Anne Leal-Abdallah; Anne.Leal-Abdallah@CalOES.ca.gov; (916) 657-9152
  - NG9-1-1 Project Coordinator: Jennifer Sebastian; jennifer.sebastian@atos.net; (804) 281-5010

- **Century Link (Southern Region)**
  - Cal OES Project Manager: Curt Guillot; Curt.Guillot@CalOES.ca.gov; (916) 657-9600
  - NG9-1-1 Project Coordinator: Earl Luhn; Earl.Luhn@CenturyLink.com; (703) 387-9099

- **Synergem (Northern Region)**
  - Cal OES Project Manager: Angela Chen; Angela.Chen@CalOES.ca.gov; (916) 657-9177
  - NG9-1-1 Project Coordinator: Danny McGinnis; dmcginnis@synergemtech.com; (206) 310-3369

- **NGA 911 (Central Region)**
  - Cal OES Project Manager: Tiffany Howard; Tiffany.Howard@CalOES.ca.gov; (916) 657-9233
  - NG9-1-1 Project Coordinator: Alicia Caddy; Alicia.Caddy@NGA911.com; (951) 551-8405

- **NGA 911 (L.A. Region)**
  - Cal OES Project Manager: Chereise Bartlett; Chereise.Bartlett@CalOES.ca.gov; (916) 657-9235
  - NG9-1-1 Project Coordinator: Kim Aleman; Kim.Aleman@NGA911.com; (916) 213-8091
Next Gen 9-1-1 Vendor Responsibilities

- Prime Vendor Responsible for:
  - Next Gen 9-1-1 Core Services
  - Aggregation of all Originating Service Provider (OSP) traffic except wireless, AT&T, Consolidated, and Frontier wireline
  - System monitoring
  - Interface standards
  - Text to 9-1-1
  - Next Gen 9-1-1 Alert and Warning

- Region Vendor Responsible for:
  - Next Gen 9-1-1 Core Services
  - Aggregation of all wireless, AT&T, Consolidated, and Frontier wireline OSP traffic in awarded region
  - Compliance with interface standards
  - System monitoring

Sept-Oct 2019
Project Initialization meetings, Sept 4-11, 2019
- Established priorities, meeting schedules, and clarified roles & responsibilities
- Cal OES Project Managers will be your main point of contact
- Continue to work with your PSAP Advisors
- Cal OES is conducting town hall meetings in Sept – Oct 2019
- Cal OES will send coordinating instructions via email by Oct 18
- Expect PSAP site surveys to begin in November
  - Both Atos (Prime) and your region vendor will be visiting your PSAP
Optimistic Next Gen 9-1-1 Project Timeline

- Build Project Team
- Perform Site Surveys
- Order Circuits
- SD-WAN Deployment
- Design/Build NOC
- Finalize Operations of NG 9-1-1 Core Services
- Test Integration
- Conduct ATP

Timeline:
- 3Q2019
- 4Q2019
- 1Q2020
- 2Q2020
- 3Q2020
- 4Q2020
Project Risks

- Availability of network connectivity to each PSAP
- Available space in PSAP equipment room
- PSAP coordination
- Input and concerns from local IT personnel
- Connections to Originating Service Providers
How will this project affect my PSAP?

- Equipment will be installed in your backroom
  - Anticipate 1 rack of additional equipment
  - Vendors will identify equipment location
  - Atos (Prime) and your regional vendor will label rack space allocations in each PSAP
  - Goal is standard rack configuration in each PSAP
- Reality is that some PSAPs may not have space
  - Cal OES will work with partners to develop solutions
How will this project affect my PSAP?

- Multiple IP connections will be brought to your PSAP
  - Demark location will be important
  - These connections are needed to deliver 9-1-1 calls
  - These connections will replace the existing 9-1-1 trunks
  - Existing 9-1-1 trunks will remain in place until after system acceptance

Connections will not interface with existing IT infrastructure at PSAP
Who will be visiting my PSAP?

- A representative from both Atos (Prime) and your Regional NG 9-1-1 Service provider will visit your PSAP
  - They will complete a site survey
  - They will return and install equipment
  - There will be multiple visits scheduled to complete acceptance testing
  - We need to know your specific security requirements for access to your equipment room
- You will continue to work with your CPE technician for all CPE related work
- The CPE technician and the NG 9-1-1 Service provider technician will work together to integrate NG 9-1-1 with CPE
Role of the PSAP

- Goal is to ensure Next Gen 9-1-1 does not disrupt PSAP operations
- Communication with CA 9-1-1 Branch and Next Gen 9-1-1 service providers
  - Let us know if you have concerns about site surveys
  - What information do you want to see about the Next Gen 9-1-1 system?
  - Trouble reporting to vendor and CA 9-1-1 Branch
  - Providing network performance feedback after cutover
- We want to make sure that the PSAP has input into approach and strategy
Additional PSAP considerations

- What policy based routing means to you
- What happens with a 10 digit / 7 digit transfers?
- How will alternate answer work with Next Gen 9-1-1?
Role of Cal OES

- Responsibility for procurement, design, and implementation of the Next Gen 9-1-1 Solution
- Develop policies and standards for the system based on PSAP operational requirements
  - 9-1-1 Branch needs feedback from PSAPs
  - 9-1-1 Branch will work with 9-1-1 Advisory Board, LRPC, and NG 9-1-1 Regional Task Force
- Establish policies and best practices for NG 9-1-1 activities across the state including network operation, monitoring, and service management
- Manage regional and prime vendors
- Coordinate GIS data
- Align California Next Gen 9-1-1 program with national efforts and vision for a nationwide system.

Sept-Oct 2019
Next Gen 9-1-1 Regional Task Force

- Build and strengthen the PSAP community’s relationship to the CA 9-1-1 Branch through communication and mutual regard for the rollout of Next Gen 9-1-1 in California
- Give input on the needs of the region’s PSAPs
- Give feedback on the configuration of NG 9-1-1 at the regional level
- Quarterly meetings throughout the state
Regional Task Force PSAP Representatives

Northern Region
Katie Braverman
Courtney Lamet
Laurie Sowder
Marie Silva
Jennifer Gibson
Mark Chase
Rosa Ramos
Gus Ulloth
Eric Gornitsky

Southern Region
Kim Turner
Rebecca Meeks
Kurt Wallace
Bruce Baumann
Christine McMillen
Mike Bell
Brian MacPherson
Brian Acosta
Lori Brown

Central Region
Ron Dunn
Michael Flory
Dennis Kidd
Nicole Phillips
Kris Zuniga
Brian Pichette
Scott Deaver
Steve Loftus
Olivia Madrigal

Southern Region
San Bernardino SO
Garden Grove PD
Anaheim PD
USMC Miramar
La Mesa PD
CONFIRE
UC San Diego PD
Ontario FD
Indio PD

Los Angeles Region
Greg Pascal
Josh Armstrong
Sheryl Davis-Moore
Brian Flinn
Ella Sotelo
Todd Austin

CSU Long Beach PD
El Camino College
Glendale PD
Downey PD
LA County Coordinator
LAPD

Sept-Oct 2019
Other Projects currently in progress

Break for 15 minutes:

- Text to 9-1-1 (part of Next Gen 9-1-1)
- Alert and Warning (part of Next Gen 9-1-1)
- GIS data needed to route a 9-1-1 call
- The next CPE contract
- RapidDeploy Location Accuracy project
AB 1168 requires all PSAPs to accept Text to 9-1-1 by January 2021

- This answers the question: Will I take Text to 9-1-1?
- The NG 9-1-1 project will define how and when each PSAP will take Text to 9-1-1
- We need your input and support for this project.

Services will be transitioned from existing contract to the Next Gen 9-1-1 contract

- Agent 511, as the subcontractor to Atos, will provide the service
- Agent 511 will connect to each of the TCCs
- Text to 9-1-1 delivery to the PSAP will use the Next Gen 9-1-1 infrastructure
- PSAPs currently accepting Text to 9-1-1 will be transitioned first
- Existing delivery method (integrated or web) will be supported
- Goal will be to transition current Text to 9-1-1 PSAPs by April 2020
Next Gen 9-1-1 Alert and Warning Integration

- Provide a common technology platform that can be used by local agencies to issue alerts and warnings
- Shall be fully integrated with IPAWS (including WEA) and the California Earthquake Early Warning system.
- Shall be fully integrated with the NG 9-1-1 core services
  - Leverage NG 9-1-1 data and information
  - Ensures Alert and Warning database remains current and secure
  - Facilitates developing, implementing and training for best practices to support the statutory requirements outlined in SB 833
- Shall support the ability to import data from locally managed commercial Alert and Warning system
- Delivered at no cost to local agencies

Sept-Oct 2019
Currently, WEA messages can only be credentialed for an entire county, which means that cities in the county could potentially send a WEA that is outside their jurisdiction. The NG 9-1-1 Alert and Warning will provide increased capability to ensure local agencies only send an Alert and Warning to their jurisdiction.

- Provides the ability to send notifications to other jurisdictions in the region when an Alert and Warning has been sent, which will increase situational awareness.
- Does NOT supersede local authority to issue alerts (i.e., locals retain authority to issue alert in their jurisdictions).
- Mitigates the problem of numerous/disparate commercial A&W systems.
- Did we mention that this is at no cost to the local agency.
DDTI will complete GIS dataset needed to route 9-1-1 calls by Jan 1, 2020

GeoComm and 9-1-1 Datamaster (subcontractors to Atos – Prime) will begin transition of GIS dataset from DDTI

Target date of Summer 2020 for an operational GIS dataset

Cal OES has established an updated GIS funding policy

- Counties are eligible for a minimum of $50k to support GIS data efforts
  - Cities can directly ask for funding, but must provide data to County
  - Address points cannot be counted for both a County and a City

- Larger Counties and state agencies are eligible for $0.44 per address point up to $500k

- The GIS funding model will be updated in FY 2020/2021 to support maintaining the data based on feedback from GIS Task Force
Authorized GIS funding

- Must follow authorized use of GIS allotment in the CA 9-1-1 Branch Operations Manual

1. Road centerlines
2. Address points
3. PSAP boundary polygons
   a. Personnel time to produce initial data set and maintain the agency portion of the NG9-1-1 GIS database
   b. Verification of map dataset accuracy
4. Consulting services for NG9-1-1 GIS to provide services above

Contact PSAP advisor and/or Natasha Potter for additional information

Sept-Oct 2019
CA 9-1-1 Branch Operations Manual updates

- GIS funding allotment
- Increased ATA allotment from $3K to $10k per PSAP
  - Supports training with CA 9-1-1 Branch pre-approval
  - Includes NENA, APCO and POST training
  - NENA Center Managers Course has received POST approval
- Updates to approved list of authorized use of residual funds
- Friendly reminder: Call answer time standards
  - 95% in 15 seconds
Legacy 9-1-1 System Limitations
1) Only 50% of calls arrive with location data
2) Limited to 512 bytes of location data in ANI/ALI
3) Lack of ability to integrate new technology
4) Requires onsite technicians for most upgrades
5) Slow deployment and refresh cycle
6) Lack of reliability (typically 99.9%)
7) Inability to integrate with other Emergency Management technologies
8) Inability to integrate with Alerts and Warnings
9) Limited security capabilities
10) Does not align with available technology
Access to maps and GIS data of other jurisdictions

Ability to transfer incidents, not just calls

Visibility into unit availability, location, and status

Ability to provide surge capacity staffing without having to physically relocate

Integrated visibility into alerts and warnings and other emergency management functions

Provides consistent baseline of service for agencies of all sizes

Potential cost savings and faster speed to deployment

Facilitates technology innovation, no infrastructure required at PSAP

Increased security capability

Flexible. Features and functions can be added as needed and available

No downtime for PSAPs as new features are deployed, non-intrusive software vs intrusive hardware upgrades

Difficult in legacy on-premise environment – easy in a cloud-native environment
FedRAMP certified systems

- The Federal Risk and Authorization Management Program (FedRAMP) enables agencies to rapidly adapt from old, insecure legacy IT to mission-enabling, secure, and cost effective cloud-based IT.
- Developed using experts from GSA, NIST, DOD, and NSA

High Availability

- Multiple instances of software across multiple datacenters
- Each instance supports 100% of the need
- Active / Active deployment of each Instance with automatic failover
- Secure network connections with logical and physical diversity

Dedicated and Secure

- Private, closed network for each region
- Highest level of cyber security, actively deployed in over 3000 government agencies
Moving toward newer technologies

- **CPE and Cloud / Data Center Model**
  - Moving away from per position costs and toward call volume pricing
  - Equipment for positions will still be provided by Cal OES
  - Developing RFP for cloud-based or data center solutions
  - Cal OES will release pre-solicitation (RFP) in winter 2019
  - We need your input on functional requirements
    - Example: Functional versus technical requirements
  - Contract should be awarded by June 2020
Contract awarded to RapidDeploy

- Software solution uses device based data from Google and Apple, provided by RapidSOS

RapidDeploy software at no cost to PSAP will provide:

- RapidSOS supplemental device based location to PSAP via web interface
- Automatic location updates for RapidSOS wireless 9-1-1 calls with ANI/ALI
- Ability to display both ANI/ALI data and RapidSOS data via a web interface
- Map data & GIS layers across jurisdictions
- Additional situational awareness tools (RapidSOS additional data: Uber, and other RapidDeploy data: weather, traffic, etc.)
- Cal OES will provide the IP connection for web interface

Sept-Oct 2019
Use case example: Caller in motion
“This morning we received a 911 call from a male that had crashed into a ditch that had water in it and it was filling up his car and he could not get out. Long story short he was diabetic and his blood sugar was low. He did not know where he was at and was disoriented and could not tell us where he was at. Since it was a 911 call RapidDeploy pinged his location within 5 meters and we were able to get him help and get him out of the car. This no doubt saved his life but only because of the location accuracy of RapidDeploy.

So for the PSAP’s that think this is one more thing that they have to monitor or use, it's worth it. We are here to serve the public and get them the help that they need and if I have one more thing to monitor that’s ok that is what we are here for.”

Source: Wave 1 PSAP, September 2019
RapidDeploy Solution Overview

PSAP CPE

Secure Encrypted IP connection

Microsoft Azure Government

Secure Encrypted IP connection

PSAP: Mapping

Access to 911 Tactical Mapping via Chrome Browser
- ALI/ANI Location
- RapidSOS supplemental location
- RapidSOS additional data
- RapidDeploy Additional data
  - Live traffic, weather and other feeds
  - ESRI layers & feature services

PSAP

CPE

ALI*

To Existing CAD

Emergency Data Gateway (EDG)

Secure Encrypted IP connection

Cal OES 9-1-1 Branch: Analytics

Access to 911 Location Statistics
- Location Accuracy
- Location Speed
- Difference between ALI/ANI & Supplemental Loc.

EDG Device Deployed in Every PSAP

* Similar to ALI Spill to CAD

Sept-Oct 2019
Location Accuracy Project Status

- Pilot and Wave 1 deployment completed (48 PSAPs)
- Cal OES is validating call location data analytics provided by the onsite RapidDeploy EDG
  - Validating device based location data increases location accuracy
- Comcast is working to deploy 10 Mbps network connections with managed router services to the Pilot and Wave 1 PSAPs
- All remaining PSAPs are scheduled for Wave 2 deployments which are to be completed by the end of 2019
- Historic Call Data Records request exercise completed
  - One day turn around time
Wave 2 Deployment Process

- Email was sent to all Wave 2 PSAPs
  - Included overview of project and other important information
  - Cal OES Technicians will install a Cradlepoint LTE Router
  - AT&T will work with your CPE Vendor to install connections from EDG device to CPE
  - Cal OES will coordinate with your CPE vendor
  - Cal OES and RapidDeploy will coordinate training and go live date for your PSAP
    - Training and technical data webinars are available every week
    - Train the trainer approach
    - Integrated training platform, Zendesk available to the PSAPs
    - Videos and 'How to Guides' are available
- If you have any questions, contact Curt Guillot

Sept-Oct 2019
Cal OES & RapidDeploy are looking for product feedback and improvement ideas

First set of ideas have already been implemented and updated in the mapping application (e.g., view locations of all 9-1-1 calls currently active at PSAP, zooming behavior, hide historic locations)

Please also share your success stories & saves!
Next Gen 9-1-1 PSAP Meetings

**Sept 17 – Redding (North)**
12:00 PM - 3:00 PM (PST)
City of Redding Electric Utility, 3611 Avtech Parkway, Redding, CA

**Sept 18 – Ukiah (North)**
12:00 PM - 3:00 PM (PST)
Mendocino County Sheriff Office, 951 Lowgap Road, Ukiah, CA

**Sept 19 – Santa Rosa (North)**
9:00 AM - 12:30 PM (PST)
Finely Community Center, 2060 West College Ave, Santa Rosa, CA

**Sept 24 – Palo Alto (North)**
12:00 PM - 3:00 PM (PST)
Mitchell Park Community Center, El Palo Alto West Room, 3700 Middlefield Rd, Palo Alto, CA

**Sept 25 – Atwater (Central)**
9:00 AM - 12:00 PM (PST)
Merced County Emergency Operations Center, 3500 Apron Ave, Atwater, CA

**Sept 26 – Rocklin (North)**
12:00 PM - 4:30 PM (PST)
Rocklin Police Department, 4080 Rocklin Road Rocklin, CA

**Oct 1 – Anaheim (South)**
12:00 PM - 3:00 PM (PST)
Anaheim Police Department, 425 South Harbor Blvd, Anaheim, CA

**Oct 2 – Hawthorne (LA)**
9:00 AM - 12:00 PM (PST)
Hawthorne Memorial Center, Sun & Venus Rooms, 3903 West El Segundo Blvd, Hawthorne, CA 90250 –, CA

**Oct 3 – Santa Barbara (Central)**
9:00 AM - 12:00 PM (PST)
Chase Palm Park, 232 E Cabrillo Blvd, Santa Barbara, CA

**Oct 8, Encinitas (South)**
12:00 PM - 3:00 PM (PST)
Encinitas Community Center - Banquet Hall B, 1140 Oakcrest Park Dr, Encinitas, CA

**Oct 9 – San Bernardino (South)**
9:00 AM - 12:00 PM (PST)
San Bernardino County Sheriff’s Department, Main Conference Room of Headquarters, 655 East Third Street, San Bernardino, CA
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.

PRF – The Policy Routing Function is where default, alternate, contingent, and emergency routes are located. The PRF is the specific functionality regarding how those routes are changed.

ALI DB service - The Automatic Location Information Database is being used to route calls in a legacy system

LDB – Location Database 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 will transition the ALI database transition into the ESInet / NG 9-1-1 core

LVF - The ECRF connects to the LIS to determine location and validates it through a Location Validation Function (LVF).

LSRG – Legacy Selective Router Gateway

LNG – Legacy Network Gateway

LPG – Legacy PSAP Gateway