



**Date: February 28, 2020**

**CA 9-1-1 BRANCH NOTICE 2020-12**

Expiration: When Superseded or Rescinded

**To:** ALL NG 9-1-1 SERVICE PROVIDERS

**Subject: NG 9-1-1 SERVICES NETWORK REQUIREMENTS AND NG 9-1-1 LAB TESTING UPDATE**

The California Governor's Office of Emergency Services – 9-1-1 Emergency Communications Branch (CA 9-1-1 Branch) has reviewed Exhibit 21- Prime Technical Requirements and Exhibit 23 – Region Technical Requirements. The CA 9-1-1 Branch is directing Atos, as the Prime Network Service Provider (PNSP), and Synergem, NGA 911, and CenturyLink, as the Region Network Service Providers (RNSPs) to add a Long-Term Evolution (LTE) NG 9-1-1 trunk at each Public Safety Answering Point (PSAP).

The PNSP shall include two diverse LTE connections that deliver a minimum of 1MB bandwidth as an additional IP path to each PSAP. The CA 9-1-1 Branch shall order this service as an NG 9-1-1 Trunk - 1 Mbps, identified in the Cost Workbook.

Each RNSP shall include an LTE network connection to each PSAP using an aggregated service leveraging multiple network connections to provide network diversity. Each LTE SIM shall be in active/active mode and capable of integrating multiple LTE/Low Earth Orbit/satellite connections into a single aggregated throughput, providing a minimum 10MB bandwidth. The CA 9-1-1 Branch shall order this service as an NG 9-1-1 Trunk - 10 Mbps, identified in the Cost Workbook.

The CA 9-1-1 Branch NG 9-1-1 Lab has been established and NG 9-1-1 Testing and Validation will be scheduled by March 31, 2020 based on our current timeline. To support NG 9-1-1 deployment, the PNSP and each RNSP Next Generation Core Service (NGCS) will be tested and validated in the NG 9-1-1 Lab. The following criteria has been established to support NGCS testing. Successful testing in the NG 9-1-1 Lab will trigger payment to each provider of 33% of the NGCS Monthly Recurring Cost (MRC).



The PNSP and each RNSP shall deliver a simulated test call with location to the NG 9-1-1 Lab Customer Premise Equipment (CPE). This initial NG 9-1-1 Lab test does not rely on other NG9-1-1 service providers. The initial acceptance test plan, at a minimum, will validate the ability for PNSP, and RNSPs to:

- Establish IP connection between NGCS datacenters to Lab CPE
- Install rack design equipment (sufficient enough to make a simulated call)
- Send 100 simulated calls to our Lab CPE that shows simulated location info
- Transfer 50 calls to our "secondary PSAP" within our Lab

The initial Acceptance Test Plan (ATP) shall include:

Assumptions:

- Both Data Centers for NG Core Services shall be stood up and configured as required in the SOW and Exhibit 23 for RNSP and Exhibit 21 for PNSP
- Vendor to install equipment at Cal OES Lab
- Simulated calls shall be based on NENA i3 specs and route to the Cal OES Lab CPE
- Network into the Cal OES Lab shall be via LTE or Comcast connection provided by Cal OES
- Test measurements shall be recorded throughout the processing phase
- All location and GIS databases shall be simulated in the event that they are not fully functional

**Test Procedures:**

<b>Test case</b>	<b>Expected Results and Success Criteria</b>
<b>Delivery of 9-1-1 call:</b> Initiate a simulated 9-1-1 voice call through each NGCS data center and answer at Cal OES CPE.	Ensure calls are delivered and answered with acceptable voice quality.
<b>Routing of 9-1-1 call:</b> Demonstrate Emergency Call Routing Function (ECRF) functionality for simulated 9-1-1 voice calls.	Ensure calls from data center to the PSAP are delivered using SIP over IP with i3 header. Ensure call is being routed using geospatial routing. Ensure calls with location in Presence Information Data Format Location Object (PIDF-LO) are routed using NENA i3 standard.
<b>PSAP to PSAP transfer:</b> Initiate a transfer of a simulated 9-1-1 voice call that is delivered to Cal OES CPE and then transferred to Cal OES CPE within LAB.	Conference bridge created, all parties are added to the bridge, location and additional data is the same at all parties.

Successful future NG 9-1-1 Lab Testing and Validation will trigger the remaining 66% MRC for NGCS. Future testing and validation will include:

- Complete the integrated acceptance test plan that, at a minimum, will validate the ability for PNSP or RNSP to:
  - Send a simulated call to the RNSP and transfer to PNSP
  - Establish connection to PSAP interface (RNSP/PNSP) per ICD design
  - Test all RNSP and PNSP PSAP backroom equipment in the final configuration
  - Establish interoperability and failover between data centers as well as PNSP/RNSP NGCS

**Assumptions:**

- Deliver over 100 simulated test calls using approved ICD design. Requires PNSP and RNSP to have fully functioning NGCS as required in the SOW and Exhibit 23 for the RNSP and Exhibit 21 for the PNSP. Simulated calls shall be based on NENA i3 specs and route to the Cal OES lab CPE
- Install fully approved equipment in rack
- Both Data Centers for NG Core Services shall be stood up and configured
- Two (2) NG Trunks installed by RNSP and PNSP to support transport
- Establish connection to PSAP interface (RNSP/PNSP) per ICD design
- Test measurements shall be recorded throughout the processing phase
- All location and GIS databases are functional and used to support call delivery
- PNSP shall receive 66% MRC upon first successfully completed region interoperability testing

**Test Procedures and Initial Acceptance Test Plan:**

Test case	Expected Results and Success Criteria
<p><b>Routing and Delivery of 9-1-1 call from a location within a specified GIS boundary:</b> Initiate a simulated 9-1-1 voice call through each NGCS data center and answer at Cal OES CPE based on location of caller.</p>	<p>Ensure calls are delivered based on location and answered with acceptable voice quality. Ensure successful routing and delivery of all 9-1-1 calls to proper PSAP, based on location and applied PRF rules – traversing all available trunk paths within the network.</p>
<p><b>Routing of 9-1-1 call using GIS Database:</b> Demonstrate ECRF functionality for simulated 9-1-1 voice calls. Ensure calls with location in PIDF-LO are routed using NENA i3 based on GIS database provided by PNSP.</p>	<p>Ensure calls from data center to the PSAP are delivered using SIP over IP with i3 header. LoST query is performed on all calls PSAP URI is returned by the ECRF within GIS boundaries. Ensure GIS data accuracy. Ensure calls with location in PIDF-LO are routed using NENA i3, based on the GIS database provided by PNSP.</p>

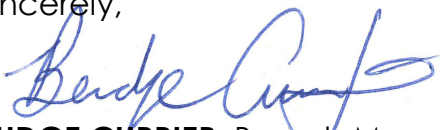
<p><b>PSAP to PSAP Transfer from RNSP to PNSP:</b> Initiate a transfer of a simulated 9-1-1 voice call that is delivered to Cal OES CPE and then transferred to Cal OES CPE within LAB. Transfer shall be initiated from RNSP to PNSP for call delivery.</p>	<p>Conference bridge created, all parties are added to the bridge, location and additional data is the same at all parties.</p>
<p><b>Failover from RNSP to PNSP for call delivery</b></p>	<p>Ensure delivery of 9-1-1 call when RNSP is unavailable and call is delivered by PNSP. Successful routing and delivery of call from each failing region to the correct PSAP.</p>
<p><b>Demonstrate SD-WAN Management:</b> Simulate a failure across MPLS network forcing utilization of SD-WAN alternate transport.</p>	<p>9-1-1 calls shall not be impacted and will be routed to the appropriate PSAP with NENA i3 headers based on location and applied PRF rules.</p>
<p><b>PRF:</b> Initiate a call to a PSAP from the NGCS data center for the following PSAP conditions: PSAP unavailable. PSAP busy.</p>	<p>Calls successfully follow PRF for each case.</p>
<p><b>Synchronize all RNSP GIS data with PNSP</b></p>	<p>Updates to the GIS database are verified.</p>
<p><b>Call type test cases</b></p>	<p>Call types, shall include all call types related to wireline, wireless, nomadic VoIP, non-nomadic VoIP, and text to 9-1-1</p>

**100% MRC** (First PSAP cutover):

- Complete the final acceptance test plan that, at a minimum, will validate the ability for PNSP or RNSP to successfully complete:
  - 1<sup>st</sup> PSAP is cutover
  - Acceptance Testing per approved test plan

Please feel free to contact me if you have any questions or concerns.

Sincerely,



**BUDGE CURRIER**, Branch Manager  
California 9-1-1 Emergency Communications Branch