STATE OF CALIFORNIA
DEPARTMENT OF TECHNOLOGY
STATEWIDE TECHNOLOGY PROCUREMENT

STANDARD AGREEMENT

TECH 213 (NEW 12/2018)

REGISTRATION NUMBER	
PURCHASING AUTHORITY NUMBER (if applicable)	AGREEMENT NUMBER 6058-2019

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

CONTRACTING AGENCY NAME
California Governor's Office of Emergency Service

CONTRACTOR NAME
Atos Public Safety LLC

2. The term of this Agreement is: Start Date: 08/20/2019
End Date: 08/19/2024

3. The maximum amount of this Agreement is: $ 198,476,699.52

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement:

EXH	TITLE	PAGES
*	General Provisions - Information Technology (GSPD- 401IT-09/05/2014)	
A	Statement of Work	106
20	Prime Technical Narrative Response	34
21	Prime - Technical Requirements	38
22	Cost Workbook	8

Items shown with an asterisk (*) are hereby incorporated by reference and made part of this agreement as if attached hereto. These documents can be viewed at https://www.dgs.ca.gov/PD/Resources/Page-Content/Procurement-Division-Resources-List-Folder/Model-Contract-Language

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR

CONTRACTOR NAME *(If other than an individual, state whether a corporation, partnership, etc.)*
Atos Public Safety, LLC

CONTRACTOR AUTHORIZED SIGNATURE | DATE SIGNED

PRINTED NAME AND TITLE OF PERSON SIGNING
Jayesh Maroo, Chief Financial Officer

ADDRESS
4851 Regent Blvd., Irving, TX 75063

STATE OF CALIFORNIA

CONTRACTING AGENCY NAME
California Governor's Office of Emergency Services

CONTRACTING AGENCY AUTHORIZED SIGNATURE | DATE SIGNED

PRINTED NAME AND TITLE OF PERSON SIGNING
Tabitha Stout, Assistant Director of Administrative Services

CONTRACTING AGENCY ADDRESS
3650 Schriever Avenue, Mather, CA, 95655

Department of Technology, Statewide Technology Procurement Use Only

☐ Exempt per_

EXHIBIT A, STATEMENT OF WORK

1 BACKGROUND AND PURPOSE

The Governor's Office of Emergency Services (Cal OES), Public Safety Communications, CA 9-1-1 Emergency Communications Branch (CA 9-1-1 Branch) is authorized by statute Government Code (GC) Sections 53100-53121 to manage and oversee the statewide 9-1-1 emergency communications system. The authority to oversee the expenditures of State Emergency Telephone Number Account (SETNA) funds is provided in the California Department of Finance's Manual of State Funds, 0022. The CA 9-1-1 Branch is responsible for administering the SETNA which provides funding to California Public Safety Answering Points (PSAPs) for 9-1-1 systems and services. Guidance for filing 9-1-1 tariffs is provided by the California Public Utilities Commission (CPUC) and can be found at:
http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Communications_-Telecommunications_and_Broadband/Service_Provider_Information/911%20Tariff%20Filing%20Text%20for%20CD.pdf_
The Next Generation 9-1-1(NG9-1-1) services in California will follow the National Emergency Number Association (NENA) i3 Call Flow per Figure 1 in NENA-STA-010.2-2016 https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/NENA-STA-010.2_i3_Architectu.pdf NENA Detailed Functional and Interface Standards for the NENA i3 Solution. Each region shall provide NENA i3 call flow to support interoperability between their Region and the Prime. The Prime shall have the overall management and direction for consistency of call flow, as defined in the SOW and EXHIBIT 21 – TECHNICAL REQUIREMENTS.

The Prime Network Service Provider (PNSP) and Regional Network Service Provider (RNSP) shall provide services that meet National Emergency Number Association (NENA) Next Generation 9-1-1 (NG9-1-1) requirements and standards available upon contract award, and as they become available in the future within 6 months of CA 9-1-1 Branch notification of any future updates to the NENA i3 standard, at no additional cost to the CA 9-1-1 Branch. Contractor shall provide an annual compliance report stating how they meet all applicable standards.

Additional resource documents for the (PNSP) to reference:

- CA 9-1-1 Branch Operations Manual http://www.caloes.ca.gov/cal-oes-divisions/public-safety-communications/ca-9-1-1-emergency-communications-branch

- Federal Communications Commission (FCC) best practices:

  https://www.fcc.gov/best-practices

The general 9-1-1 traffic flow will be to aggregate 9-1-1 traffic in each region. The RNSP shall aggregate, process and deliver all 9-1-1 traffic from AT&T, Consolidated Communications wireline and Frontier wireline, and all wireless Originating Service Providers (OSPs) to the correct PSAP.

The PNSP shall aggregate, process and deliver all small Local Exchange Carriers (LECs), Voice over Internet Protocol OSPs (VoIP OSPs) and Text to 9-1-1 traffic to the correct PSAP. The PNSP shall also deliver 9-1-1 traffic from RNSP to the correct PSAP in the event the RNSP cannot deliver the 9-1-1 traffic for any reason.

The 9-1-1 traffic will be anchored at aggregation until verification of the ability for the regional NG9-1-1 core services to deliver the 9-1-1 traffic. In the event that the regional NG9-1-1 Core Services cannot deliver the 9-1-1 traffic, the 9-1-1 traffic will be passed to the Prime NG9-1-1 Core Services for routing and delivery to the PSAP by the PNSP. The assumption is that all 9-1-1 traffic that arrives at PNSP aggregation will be delivered by the PNSP under normal conditions and all 9-1-1 traffic that arrives at the RNSP aggregation will be delivered by the RNSP under normal conditions. In the event 9-1-1 traffic is passed to a region that should be delivered by another region, the region will pass the 9-1-1 traffic to the PNSP for routing and delivery to the PSAP. In the event 9-1-1 traffic cannot be delivered to a PSAP by the PNSP, the PNSP shall pass the 9-1-1 traffic to the correct RNSP to deliver to the PSAP.

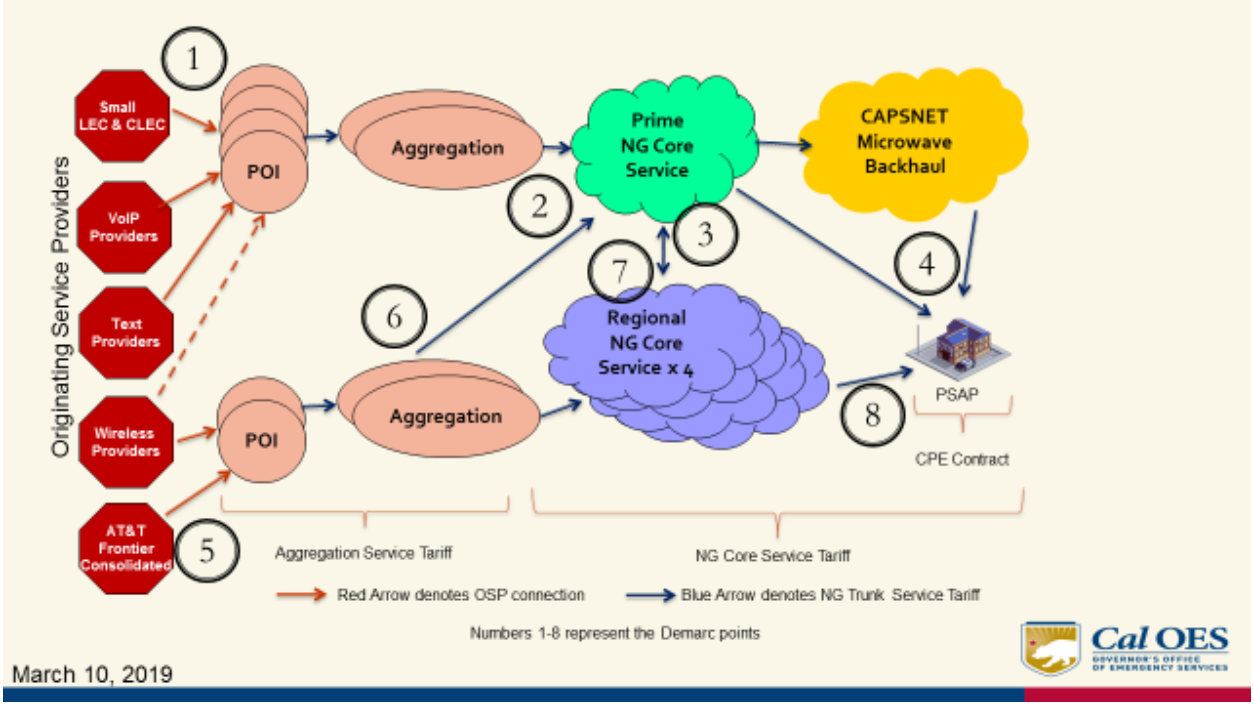


FIGURE 1: NEXT GENERATION 9-1-1 TARIFF SCHEME

Demarc number	Prime Network Service Provider Demarc description
1	Small LEC, Text, and VoIP OSPs
2	Aggregation to Prime NGCS
3	From Prime NGCS to Regional NGCS (will require demarc for each RNSP)
4	Prime NGCS to all PSAP statewide
Demarc number	**Regional Network Service Provider Demarc description**
5	All Wireless OSPs, Consolidated Communications, AT&T, and Frontier
6	From Regional aggregation to Prime NGCS (will require demarc from each RNSP to Prime NGCS)
7	From Regional NGCS to Prime NGCS (will require demarc from each RNSP to Prime NGCS)
8	From Regional NGCS to PSAP within region

The Warren 9-1-1 Emergency Assistance Act, Government Code 53100-53120 modified in 2015 by Senate Bill SB1211, requires the Cal OES, CA 9-1-1 Branch to implement Next Generation 9-1-1 (NG9-1-1) including Text to 9-1-1 in California. With the increased use of text by the general public, Text to 9-1-1 will provide an immediate and crucial method beyond existing video relay, 7-1-1 relay, and IP relay to allow the deaf, disabled and hard of hearing community to receive emergency service when needed and provide an alternate method for those without speech or with hearing disabilities to contact 9-1-1.

The FCC, through agreement with the four (4) major wireless carriers (AT&T, Sprint, T-Mobile and Verizon) agreed to make Text to 9-1-1 services available in May 2014. Other wireless carriers were required to make text available by January 2015.

Since 2014, California has proactively participated in trials to accommodate the FCC agreement with wireless carriers to provide Text to 9-1-1 services to meet California's emergency response needs.

The CA 9-1-1 Branch currently has a Text to 9-1-1 Services contract in place that will expire April 2020. As of January, 219 there are 286 PSAPs currently have deployed or are in the process of deploying Text to 9-1-1 Services, 244 are web based text and 42 are integrated into the PSAP's Customer Premise Equipment (CPE). A transition from the existing Contract shall take as soon as possible after contract execution and based on the Project Deployment Plan (PDP).

1.1 OBJECTIVE

This Statement of Work (SOW) shall be the Contract between the CA 9-1-1 Branch and the Contractor to provide the Prime NG9-1-1 Services that will connect to every PSAPs in California and that will interconnect the four (4) Regions. All Prime NG9-1-1 services shall be purchased off of Tariffs. The Contractor shall provide service to process 9-1-1 traffic, which shall include voice and data to the appropriate PSAPs.

This SOW shall also be the Contract between the CA 9-1-1 Branch and the Contractor to provide the Regional NG9-1-1 Services that will connect to every PSAP in a specific Region in California. All Region NG9-1-1 services shall be purchased off of Tariffs. The Contractor shall provide service to process 9-1-1 traffic, which includes voice and data, to the appropriate PSAPs in the awarded region. Throughout this SOW a distinction will be made when SOW requirements apply only to a Region or to the Prime. When not delineated or where there may be ambiguity, the requirements apply to both a Region and the Prime.

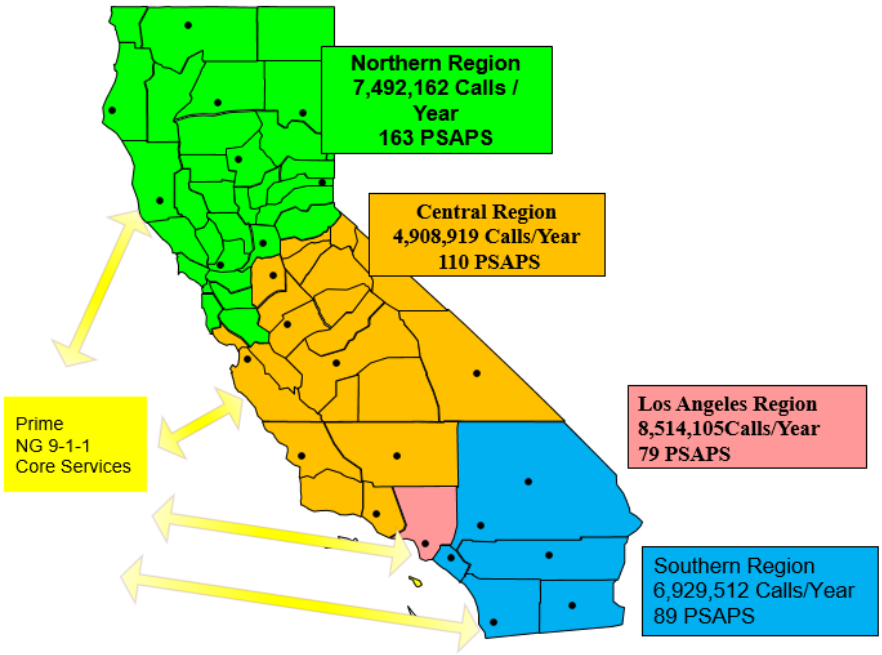


FIGURE 1.1 NEXT GENERATION PRIME JURISDICTION MAP

The Text to 9-1-1 service shall be available to all (approximately 440) primary and secondary PSAPs in California and accommodate every PSAP deployment method. Any Text to 9-1-1 sessions shall be available by Web Browser, Integrated, and Prime NG Core Services to a PSAP that integrate with a Host-Remote Configuration, or Stand Alone environment.

The Prime Contractor shall provide NG9-1-1 Prime Network Services which will include a connection to every PSAPs in California to deliver NG Text to 9-1-1 Services. All NG Text to 9-1-1 Services shall be purchased off of Tariffs. The Prime Contractor shall provide service to deliver Text to 9-1-1 traffic to the PSAPs. The PNSP shall be responsible for all costs associated with the network connectivity to the Text Control Center (TCC), PSAPs, and future connections. The PNSP shall not charge a connection fee for any connectivity. The PNSP shall provide system monitoring for the NG9-1-1 Trunks and all 9-1-1 traffic from aggregation to PSAP.

2 DESCRIPTION OF PROPOSED NEW SERVICE

2.1 SERVICE TO BE PROVIDED

The Prime Contractor agrees to provide Prime NG9-1-1 services in accordance with the SOW and EXHIBIT 21, TECHNICAL REQUIREMENTS. The Region Contractor agrees to provide Region NG9-1-1 services for the awarded region in accordance with the SOW and EXHIBIT 23, TECHNICAL REQUIREMENTS. The contractor agrees to standards based,

non-proprietary Prime NG9-1-1 services or Region NG9-1-1 services to be provided but not limited to:

1) PNSP shall manage and maintain CA 9-1-1 Statewide Geographic Information System (GIS) database;
2) RNSP shall integrate with the CA 9-1-1 Statewide GIS database;
3) PNSP shall provide Statewide network performance monitoring and oversight and provide access through dashboard that includes data pushed from RNSP to PNSP;
4) RNSP shall provide Regional network performance monitoring and oversight and provide access through dashboard and push data to the PNSP for statewide network monitoring;
5) PNSP shall provide network monitoring for all four (4) regional networks, using data provided by the RNSPs, in addition to the Prime Network and provide access through dashboard, per EXHIBIT 21: PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23: REGION TECHNICAL REQUIREMENTS;
6) PNSP shall be solely responsible for trouble ticket reporting for all services in the Prime network to include subcontractor services. The PNSP shall develop and maintain trouble ticket e-bonding for all PNSP and RNSP trouble ticketing;
7) RNSP shall be solely responsible for trouble ticket reporting for all services in the awarded Region network to include subcontractor services. The RNSP shall support trouble ticket e-bonding from PNSP for trouble ticket reporting;
8) Prime shall interpret and implement standards and best practices with CA 9-1-1 Branch concurrence to be used by all Regions for consistency of 9-1-1 traffic between aggregation services, the Regions and Prime and established connectivity standards at each PSAP to ensure global interoperability;
9) RNSP shall implement standards and best practices as determined by the Prime with CA 9-1-1 Branch concurrence to be used by the awarded Region for consistency of 9-1-1 traffic between aggregation services, the Regions and Prime and established connectivity standards at each PSAP to ensure global interoperability;
10) PNSP shall manage, process and deliver NG Text to 9-1-1 services for the State. For the approximate 440 PSAPs in California, the PSAPs currently deployed with Text services shall be transitioned first to use this Contract, unless otherwise specified by CA 9-1-1 Branch. Wherever possible the integrated text service shall be deployed, based upon the PSAP's CPE and their readiness; otherwise, the default mode for Web based text services shall be used;
11) PNSP shall provide redundancy to support failover for each Region in the state;
12) RNSP shall provide redundancy to support failover for the Prime for the PSAPs in the awarded Region in the state;

13) PSNP shall provide aggregation and 9-1-1 traffic routing for all Voice over Internet Protocol (VoIP) and small LEC OSPs in California. This excludes wireless, AT&T wireline, and Frontier wireline and Consolidated Communications wireline;
14) RNSP shall provide aggregation and 9-1-1 traffic routing for all wireless, AT&T wireline, and Frontier wireline, and Consolidated Communications wireline OSP in California for the awarded Region;
15) PNSP shall provide leadership to promote collaborative mission focused, implementation that supports interoperability and Cal OES mission;
16) The RNSP shall follow the leadership provided by the PNSP to promote collaborative mission focused, implementation that supports interoperability and Cal OES mission;
17) The PNSP, RNSP and the CA 9-1-1 Branch shall provide a lead team member to work together to establish the interoperability interface. The PNSP Team Member shall be the Interface Team Leader. The Interface Team shall meet at a minimum weekly to develop the interoperable capability of the NG9-1-1 networks and interfaces;
18) PNSP and RNSP shall provide CPUC approved tariffed services based on the SOW and approval of the CA 9-1-1 Branch;
19) The PNSP shall be responsible to support integration of an NG9-1-1 Emergency Alert and Warning System (NG9-1-1 AWS) to include capabilities to use all functions provided by the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS).

2.2 PROJECT DESIGN

The NG9-1-1 service provider shall be responsible for providing NG9-1-1 tariffed services as defined by this SOW, and EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS, and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

The six (6) areas of tariffed services are:

1) NG9-1-1 Trunk Services;
2) NG9-1-1 Prime Aggregation Services (Note: Provide aggregation and 9-1-1 traffic routing for all VoIP and small LEC originating service providers in California. This excludes wireless, AT&T wireline, and Frontier wireline, and Consolidated Communications wireline);
3) NG9-1-1 Region Aggregation Services (Note: Provide aggregation and 9-1-1 traffic routing for all wireless, AT&T wireline, and Frontier wireline, and Consolidated Communications wireline OSPs in the awarded Region in California.
4) NG9-1-1 Core Services;
5) NG9-1-1 Prime Functions and Services;
6) NG9-1-1 Region Functions and Services.

2.3 NG9-1-1 SERVICES ENVIRONMENT

This section is intended to present an overview of the NG9-1-1 Services Environment. The PNSP shall be responsible to deliver a solution utilizing the required technical requirements identified in the SOW and EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS. The RNSP shall be responsible to deliver a solution utilizing the required technical requirements identified in the SOW and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

The NG9-1-1 Services – Prime and Region in California shall follow the NENA i3 Call Flow per NENA-STA-010.2-2016, NENA Detailed Functional and Interface Standards for the NENA i3 Solution. Each region shall provide NENA i3 call flow to support interoperability between their Region and the Prime. The Prime shall have the overall management and direction for consistency of call flow.

The NG9-1-1 Service Network Provider – PNSP shall be responsible to aggregate all OSP 9-1-1 traffic with the exception of AT&T, Frontier, Consolidated Communications wireline and wireless OSP. Text to 9-1-1 is also included as part of the 9-1-1 traffic. The PNSP shall aggregate all Text to 9-1-1 traffic from the Text Control Center or OSP. The PNSP shall be responsible for routing all aggregated 9-1-1 traffic to the appropriate PSAP. In the event of a regional network failure, the PNSP shall be responsible to provide redundant path for routing all 9-1-1 traffic from region through Prime to the PSAP. In the event a PSAP requires 9-1-1 traffic to be transferred outside of their region, the PNSP shall be responsible to accept the 9-1-1 traffic from the RNSP and deliver to the appropriate PSAP.

The NG9-1-1 Regional Network Service Provider – (RNSP) shall be responsible to aggregate all AT&T, Frontier, Consolidated Communications wireline and wireless OSP traffic within their awarded region.

The PNSP and RNSP shall be responsible to anchor all 9-1-1 traffic at aggregation until verification of the ability for the NG9-1-1 core services to deliver the call to the appropriate PSAP.

The RNSP shall be responsible for all costs associated with the network connectivity to the PNSP for the redundant connectivity. The PNSP shall not charge the RNSP a connection fee for the redundant connectivity.

2.4 COMMERCIALLY AVAILABLE HARDWARE

Where ever possible, commercially available hardware shall be used for the best quality and ability to replace parts quickly for maintenance and/or upgrades.

3 TERM OF THE CONTRACT

Effective upon approval of the California Department of Technology (CDT), Statewide Technology Procurement (STP), the term of the contract is five (5) years with five (5) one (1) year optional extensions.

The CA 9-1-1 Branch at its sole discretion, may exercise its option to execute, five (5), one (1)-year extensions to perform Prime NG9-1-1 Core Services , ongoing support, and

knowledge transfer at the rates identified in EXHIBIT 22, COST WORKBOOK, for a maximum contract term of ten (10) years.

The CA 9-1-1 Branch may also amend to add services, including those identified as RNSP services, at the rates provided in the Contractor's BAFO submission.

3.1 CONTRACT COMMENCEMENT TIME

Upon contract execution, the Contractor shall not be authorized to deliver or commence the performance of services as described in this SOW until written approval has been obtained from Cal OES. Any delivery or performance of service that is commenced prior to the signing of the contract shall be considered voluntary on the part of the Contractor and non-compensable.

Upon contract execution, the Contractor shall align the deployment NG Text to 9-1-1 Services as identified in the SOW, Project Deployment Plan (PDP), and EXHIBIT 21: TECHNICAL REQUIREMENTS. All other NG9-1-1 Services shall not be started until approval and written notification by Cal OES. All NG9-1-1 Services are expected to commence upon funding approval.

Contractor shall update tariffs and obtain CPUC approval of the tariff filing within 120 days of contract execution that support all technical requirements in EXHIBIT 21 or 23, cost elements in EXHIBIT 22 and the requirements in the SOW to CPUC and shall comply with all regulatory requirements. Failure to obtain approved tariff from the CPUC shall result be a material breach of contract.

3.2 CONTRACT AMENDMENTS

This Contract may be amended, consistent with the terms and conditions of the Contract and by mutual consent, of both parties, subject to approval by the STP.

3.3 GENERAL PROVISION DEFINITIONS

For this contract only the following sections of the GSPD 401 IT General Provisions are further defined as listed below:

22.a)

"Notice of Termination" means the written notice specifying the date and Services to be terminated, which shall be no later than 90 days after the date the notice was issued.

26.a)

For the purposes of Section 26a of the General Provisions limited liability, purchase price will be defined as the State's aggregate Not to Exceed (NTE) contract amount for the previous twelve months prior to the incident ($38,148,480) or the Contractor's aggregate contract amount, whichever is lower.

4 CONTRACT CONTACTS

The project representatives during the term of this Contract will be:

The CA 9-1-1 Branch contact will be the primary interface with the Contractor.

State:	Governor's Office of Emergency Services, Public Safety Communications, CA 9-1-1 Branch	Contractor:
Name:	Tiffany Howard	Name:
Address:	601 Sequoia Pacific Blvd. Sacramento, CA 95811	Address:
Phone:	(916) 657-9233	Phone:
e-mail:	Tiffany.Howard@caloes.ca.gov	e-mail:

5 SOLUTION REQUIREMENTS

5.1 TECHNICAL REQUIREMENTS

All requirements as stated in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS, are part of this SOW. Within ten (10) days of award of contract, the Contractor shall schedule an initial meeting with the CA 9-1-1 Branch to prioritize the statewide deployment. The services shall meet the technical requirements contained in all worksheets in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS. Additional meetings may be required to further prioritize the statewide deployment. Additional meetings shall be agreed upon by the Contractor and CA 9-1-1 Branch at the initial meeting. The priorities to the statewide deployment shall be used to establish the Deployment Plan identified in section 13.1. The CA 9-1-1 Branch shall reserve the right to reassign priorities for the deployment of the statewide network. The Contractor agrees to follow the priorities as assigned by CA 9-1-1 Branch.

The Deployment Plan for Prime NG9-1-1 services at 440 PSAPs will require the Contractor to assign A Single Point of Contact to prioritize the statewide rollout in an efficient manner and consider all dependencies of PSAPs, Technology, CA 9-1-1 Branch Timeframe, Ordering Process, Risks, Training, Resources, and Acceptance Testing.

The Deployment Plan for an awarded Region NG9-1-1 services at all PSAPs in the awarded Region will require the Contractor to assign a Single Point of Contact to prioritize the region wide rollout in an efficient manner and consider all dependencies of PSAPs, Technology, CA 9-1-1 Branch Timeframe, Ordering Process, Risks, Training, Resources, and Acceptance Testing.

6 CONTRACTOR FACILITY LOCATIONS

All Contractor's facilities, direct technical and administrative support personnel that will perform services as part of this Contract must be located within the Continental United States (CONUS) or the District of Columbia. The PSNP and RNSP shall maintain a minimum of two (2) geographically diverse cores dedicated to California with demonstrated capability to provide 99.999% availability.

7 CA 9-1-1 BRANCH ROLES AND RESPONSIBILITIES

1) The CA 9-1-1 Branch will designate a person to whom all Contractor communication may be addressed, and who has the authority to act on all aspects of the services, see Section 4 for designee. This person will review the SOW and associated documents with the Contractor to ensure understanding of the responsibilities of both parties;
2) The CA 9-1-1 Branch personnel shall utilize the Project Milestone Report (PMR), SOW – ATTACHMENT 8, to document and track the status of all project tasks. The original PMR will be maintained with the CA 9-1-1 Branch and a copy of the PMR will be provided to the PNSP and RNSP Contractor.
3) The CA 9-1-1 Branch will provide access to department staff and management, offices and operation areas, as required, to complete the tasks and activities defined under this Contract;
4) The CA 9-1-1 Branch requires a minimum of ten (10) State business days for the review and approval of information and documentation provided by the Contractor to perform its obligations. In the event CA 9-1-1 Branch is unable to review and approve documents within the ten (10) days, the Contractor will be notified of the adjusted date. The documents are not automatically approved in the event CA 9-1-1 Branch is not able to review and approve within the ten (10) business days. If the Contractor is not provided an estimated date of State review and approval completion, the Contractor may initiate the escalation process which is identified in Section 11, Problem Escalation;
4) If a Contractor employee is unable to perform due to illness, resignation, or other factors beyond the Contractor's control, the Contractor will provide suitable substitute personnel. The substitute personnel shall be interviewed and approved by the CA 9-1-1 Branch NG9-1-1 Manager.

5) The CA 9-1-1 Branch will work with PSAP in the event there is no cabling available at Main Point of Entry (MPOE). For these instances, PNSP and RNSP shall not be responsible for any cost element related to new cabling and installation.

8 CONTRACTOR'S ROLES AND RESPONSIBILITIES

1) Upon contract execution the PNSP and RNSP shall meet via in person meeting or teleconference, with the CA 9-1-1 Branch team at a minimum weekly, or at the discretion of the CA 9-1-1 Branch, to ensure project tasks and timelines are met, with all Contractor Key Staff identified in SOW Section 9. The CA 9-1-1 Branch may require an in person meeting based on project status.
2) Upon contract execution until NG9-1-1 services are fully implemented, the PNSP and RNSP Project Coordinator shall maintain communication with the CA 9-1-1 Branch team on a regular basis throughout the week.
3) Once NG9-1-1 services are fully implemented, the PNSP and RNSP team shall meet with the CA 9-1-1 Branch at a minimum monthly to review outage reports and SLAs. This meeting will be in person with the CA 9-1-1 Branch team.
4) The PNSP shall develop all interface standards for aggregation, region, and PSAP, based on direction and approval from the CA 9-1-1 Branch.
5) The RNSP shall comply with all PNSP developed interface standards for aggregation, region, and PSAP, based on direction and approval from the CA 9-1-1 Branch.
6) The PNSP and RNSP shall collaborate on the implementation and development of all interface standards based on direction and approval from the CA 9-1-1 Branch. Upon contract execution the CA 9-1-1 Branch will establish a regular meeting schedule to facilitate PNSP and RNSP collaboration.
7) The Contractor shall provide its own equipment and software necessary to perform the required duties;
8) The PNSP and RNSP shall use a multi-layered redundancy of systems, software and facilities with no single point of failure;
9) The Contractor shall designate a primary contact person to whom all project communications may be addressed and who has the authority to act on all aspects of the services;
10) The Contractor shall notify CA 9-1-1 Branch in writing, of all changes in key personnel assigned to the tasks as outlined in Section #9 below. If a Contractor employee is unable to perform due to illness, resignation, or other factors beyond the Contractor's control, the Contractor will provide suitable substitute personnel. The substitute personnel shall be interviewed and approved by the CA 9-1-1 Branch NG9-1-1 Manager;
11) The Contractor shall perform their duties on the premises of the PSAP facilities located within California during the best available hours for the PSAP and at all other times as required to successfully provide the services;
12) Contractor staff that perform duties on premises of the PSAP will be subject to that PSAP's background check and security requirements;

13) The Contractor shall maintain a Certificate of Public Convenience and Necessity (CPCN) through CPUC throughout the term of the contract;
14) The Contractor shall have CPUC approved tariffs that match the contract terms, conditions, and pricing, throughout the term of the contract.
15) The Contractor shall submit a Project Milestone Report (PMR) for each non-tariffed NRC. Prior to payment, CA 9-1-1 Branch acceptance and signature of PMR is required.

9 CONTRACTOR KEY STAFF

The Contractor will be responsible for providing all necessary staff to implement all services within the Prime NG9-1-1 Services Contract.

Unanticipated Tasks will be charged at the hourly rates identified in the Cost Workbook (EXHIBIT 22). Pricing for this tariffed line item shall be provided in the EXHIBIT 22, COST WORKBOOK. Within 14 calendar days of contract execution, the Contractor shall submit in writing to CA 9-1-1 Branch the following key staff:

1) Project Coordinator;

    a) A minimum of three (3) years' experience with knowledge and experience in managing projects/ system installations of similar complexity.

2) PNSP Alert and Warning Coordinator;

    a) A minimum of two (2) years' experience with Knowledge and experience in emergency notification systems, alert and warning requirements, and FEMA Integrated Public Alert Warning System (IPAWS).

3) NG9-1-1 Trunk Services Coordinator;

    a) A minimum of two (2) years' experience with knowledge and experience in NG9-1-1 networks.

4) NG9-1-1 Aggregation Services Coordinator;

    a) A minimum of two (2) years' experience with knowledge and experience in NG9-1-1 traffic aggregation and network configuration.

    b) A minimum of two (2) years' experience with knowledge and experience working with the OSP include wireless, wireline, and VoIP technologies.

5) NG9-1-1 Core Services Coordinator;

    a) A minimum of two (2) years' experience with knowledge and experience in development and implementation of NG9-1-1 Core Services.

6) NG9-1-1 Prime or Region Functions and Services Coordinator;

   a) A minimum of two (2) years' experience with knowledge and experience in development and implementation of NG9-1-1 Core Services including network interoperability, system monitoring, GIS, and outage reporting.

7) PNSP Text-to-9-1-1 Coordinator;

   a) A minimum of two (2) years' experience with knowledge and experience in NG Text to 9-1-1 Services.

8) System Monitoring and Outage Reporting Coordinator.

   a) A minimum of two (2) years' experience with knowledge and experience in system monitoring, outage reporting, NG9-1-1 Network Services.

The proposed Key Staff must be available to start work on the project within 30 days of Contract execution.

10 SUBCONTRACTORS

The PNSP and RNSP Contractor shall provide and maintain a list of all subcontractors providing the services identified below. The information shall be submitted in the same format as EXHIBIT 24: LIST OF PROPOSED SUBCONTRACTORS.

- Next Generation Core Services (NGCS)
- GIS
- Emergency Call Routing Function (ECRF)
- Emergency Services Routing Proxy (ESRP)
- Location Information Service (LIS)
- Location Database (LDB)
- Aggregation
- Alert and Warning
- Text-to-9-1-1
- System Monitoring

The PNSP and RNSP Contractor notify the CA 9-1-1 Branch, in writing, of any changes of Subcontractor personnel assigned to the tasks within ten (10) business days of the change. CA 9-1-1 Branch retains the right to approve or not approve. This requirement does not apply to subcontractors providing supplies only and no labor to the overall contract or project.

11 PROBLEM ESCALATION

The parties acknowledge and agree that certain technical and project related problems or issues may arise, and that such matters shall be brought to the CA 9-1-1 Branch's attention. Problems or issues shall be reported in monthly status reports and via web-based alerting/monitoring systems accessible by the CA 9-1-1 Branch. Severity of the problem(s) as outlined below require escalated reporting. To this extent, the Contractor will determine the level of severity and notify the appropriate CA 9-1-1 Branch personnel. The CA 9-1-1 Branch personnel notified, and the time period taken to report the problem or issue, shall be at a level commensurate with the severity of the problem or issue. The CA 9-1-1 Branch personnel include, but are not limited to, the following:

First level: NG9-1-1 Manager
First.Last@caloes.ca.gov
(916) 657-####

Second level: Ryan Sunahara, Division Chief
Ryan.Sunahara@caloes.ca.gov
(916) 657-9100

Third level: Budge Currier, Branch Manager
Budge.Currier@caloes.ca.gov
(916) 657-9911

11.1 SERVICE ISSUES AND OUTAGE NOTIFICATION

After Contract award, information for the confidential CA 9-1-1 Branch outage notification phone number and e-mail will be provided. The outage reporting shall incorporate real-time or live monitoring per EXHIBIT 21 PRIME TECHNICAL REQUIREMENTS or EXHIBIT 23 REGION TECHNICAL REQUIREMENTS, where a secure log in portal is available to CA 9-1-1 Branch.

The Contractor shall develop an automated outage notification system that will provide live system monitoring capability and outage reporting to the CA 9-1-1 Branch.

11.1.1 FAILURE EVENT NOTIFICATION

In the event of any service issue(s) and/or outage(s) as specified in the appropriate Service Level Agreement (SLA), the Contractor shall notify the CA 9-1-1 Branch via a phone call and via email within ten (10) minutes of initial report of outage or network failure, providing the Initial Notification and containing the following (as available):

1) Primary outage location;
2) Problem description;
3) Time of failure;
4) Affected systems/services;
5) Impact to the provision of 9-1-1 Service;
6) Trouble ticket number; Ticket pending (test or dispatch).

Follow-up notifications shall be provided by the contractor as new information becomes available or every 2 hours, whichever occurs first, and include a current status of the data provided in the initial contact and any additional data pertinent to the outage and its resolution such as:

1) Extent of outage;
2) Affected systems/services (if different than initial);
3) Potential number of requests for emergency services denied/failed, if unable to determine if requests for emergency service were lost or not, "session lost – unknown" should be in the outage notification);
4) Sequence of events toward resolution (action taken to resolve the issue);
5) Estimated time of technician arrival (ETA)/Estimated time of outage resolution (ETR).

When major event is cleared, Contractor shall send a Final Notification of resolution. CA 9-1-1 Branch may review this with the Contractor every month, to determine if major notifications need to be adjusted to support the overall Cal OES situational awareness. See SLA Section 32.

11.1.2 OTHER EVENT NOTIFICATION

For any other service issue(s) or outage(s) that the monitoring system does not report on, the Contractor shall notify CA 9-1-1 Branch. Notifications shall include but are not limited to location not delivered with 9-1-1 traffic from OSP, 80% trunk capacity, policy based routing failure, and regional network down. Contractor shall notify the CA 9-1-1 Branch of the problem via e-mail within five (5) minutes of initial report of outage or disruption of service(s) providing the Initial Notification and contain the following (as available):

1) Primary outage location;
2) Problem description;
3) Time of failure;
4) Affected systems/services;
5) Impact to the provision of 9-1-1 Service;
6) Trouble ticket number; Ticket pending (test or dispatch).

When other event is cleared, Contractor shall send a Final Notification of resolution. CA 9-1-1 Branch may review this with the Contractor every month, to determine if notifications need to be adjusted to support the overall Cal OES situational awareness. See SLA Section 32.

11.1.3 OUTAGE REPORTING

The Contractor shall for any service/system outage, deliver the appropriate e-mail, and if necessary a voice call to the CA 9-1-1 Branch Outage phone, and provide root cause analysis. See SLA Section 32

12 CHANGE CONTROL PROCESS

The Contractor shall not make any changes after implementation and successful acceptance of the NG9-1-1 service, unless approved by the CA 9-1-1 Branch NG9-1-1 Manager. If change is required after implementation and successful acceptance that adds time or money, the amendment process shall be followed.

13 CONTRACTOR TASKS AND DELIVERABLE REQUIREMENTS

13.1 MAINTENANCE PLAN

Contractor shall be responsible for all maintenance to the Prime NG9-1-1 Services and the Region NG9-1-1 Services for the term of the Contract, at no additional cost. PNSP and RNSP Contractor shall include a draft maintenance plan in response to the RFP. A final maintenance plan shall be submitted to CA 9-1-1 Branch for review and approval within 90 days from Contract execution. Planned or unplanned maintenance shall not disrupt 9-1-1 service and/or trigger any SLAs.

Maintenance Schedule shall include at a minimum:

1) Hardware Issues;
2) Servers;
3) Switches;

4) Routers;

5) Software Issues;

6) Operating System Software Issues;

7) Security System Software Issues;

8) Connectivity Issues.

13.2 PNSP PROJECT DEPLOYMENT PLAN (PDP)

All documents shall be provided in electronic format unless a hardcopy is specifically requested by the State.

1) The PNSP Contractor shall submit a draft Statewide NG9-1-1 PDP as a part of their bid submission. Upon contract execution, PNSP Contractor shall submit a final statewide PDP within 60 days after contract execution or a mutually agreed upon date between the Contractor and CA 9-1-1 Branch per the SLA 32.2. All modifications to the PNSP final PDP shall be approved by CA 9-1-1 Branch. The PDP shall be a task-oriented Gantt chart detailing the deployment activities, clearly identifying all external dependencies outside of the Contractor's control for expected timelines and that addresses each of the NG9-1-1 service areas.
2) The PNSP Contractor shall utilize the Project Milestone Report (PMR), SOW – ATTACHMENT 8, for each milestone to document and track the status of all project tasks. The original PMR will be maintained with the CA 9-1-1 Branch and a copy of the PMR will be provided to the PNSP.
3) Within 60 days of contract execution for each Region, the PNSP and RNSP Project Managers shall begin coordination of their Interface and Integration Plan of the PDP's for all associated tasks for connectivity between PNSP and RNSP, PSAP interface, and aggregation per the SLA 32.2. The PNSP and RNSP who fail to meet this requirement shall collectively be subject to the SLA 32.2. CA 9-1-1 Branch will schedule and facilitate meetings between PNSP and RNSP within 60 days of contract execution for each region.
4) Within 120 days of contract execution for each Region, the PNSP and RNSP Project Managers shall complete coordination of their Interface and Integration Plan of the PDP's for all associated tasks for connectivity between PNSP and RNSP, PSAP interface, and aggregation per the SLA 32.2. The PNSP and RNSP who fail to meet this requirement shall collectively be subject to the SLA 32.2. CA 9-1-1 Branch will schedule and facilitate meetings between PNSP and RNSP within 60 days of contract execution for each region. The PDP shall include major milestones identified at a minimum the following:

1. Identify Key Staff

2. Project schedule with major milestones identified
   a) PSAP site survey schedule;

   b) Network requirements and final design solution;

   c) OSP aggregation connectivity plan;

   d) PNSP Text to-911 deployment plan;

   e) PNSP Alert and Warning deployment plan;

   f) PNSP Alert and Warning training plan;

   g) Acceptance Test Plan;

   h) Training plan;

   i) Monthly Billing and SLA plan;

   j) PSAP cutover day plan;

   k) Interface and Integration plan (shall include PSAP, RNSP and aggregation);

   l) Selective Router Decommissioning Plan: This plan will outline the PNSP role in transitioning all 9-1-1 traffic from selective router.

5) PNSP Contractor shall conduct a site survey;
6) PNSP Contractor shall deliver a certificate of system readiness when the service is ready for acceptance testing;
7) PNSP Contractor shall develop the Statewide Text to 9-1-1 Project Deployment Plan as part of the master Project Plan within ten (10) days after contract execution or a mutually agreed upon date. The Deployment shall consist of at least three (3) phases with milestones that are completed for PSAPs with Text Existing within three (3) month, PSAPs with Text Planned within six (6) months, and PSAPs remaining within nine (9) months. The project plan shall be a task-oriented Gantt chart detailing the deployment activities, clearly identifying all external dependencies outside of the Contractor's control for expected timelines;
8) PNSP Contractor shall deliver System Acceptance Testing to ensure that the system operates in substantial accord with the technical specifications, is

adequate to perform as warranted by Contractor's response to the requirements of this Contract and evidences a satisfactory level of performance reliability, prior to its acceptance;

9) PNSP Contractor shall deliver acceptance testing for software (other than Operating System Software);
10) PNSP Contractor shall provide a Project Coordinator with knowledge and experience in managing system installations of similar complexity at no additional cost to the PSAP or the CA 9-1-1 Branch. All installations shall use industry accepted project management methodology throughout the project;
11) PNSP Contractor shall deliver maintenance service including parts, software support and labor;
12) PNSP Contractor shall deliver notification to the PSAPs if determining telephone line repair is needed;
13) PNSP Contractor shall deliver the necessary maintenance and parts to keep the service in good operating condition, which includes preventative scheduled maintenance.

13.3 RNSP PROJECT DEPLOYMENT PLAN

All documents shall be provided in electronic format unless a hardcopy is specifically requested by the State.

1) The RNSP Contractor shall submit a draft Region-wide NG9-1-1 Project Deployment Plan as a part of their bid submission. Upon contract execution, RNSP Contractor shall submit a final statewide PDP within 60 days after contract execution or a mutually agreed upon date between the Contractor and CA 9-1-1 Branch per the SLA 32.2. All modifications to the RNSP PDP shall be approved by CA 9-1-1 Branch. The PDP shall be a task-oriented Gantt chart detailing the deployment activities, clearly identifying all external dependencies outside of the Contractor's control for expected timelines and that addresses each of the NG9-1-1 service areas.
2) The RNSP Contractor shall utilize the Project Milestone Report (PMR), SOW – ATTACHMENT 8, for each milestone to document and track the status of all project tasks. The original PMR will be maintained with the CA 9-1-1 Branch and a copy of the PMR will be provided to the RNSP.
3) Within 60 days of contract execution for awarded Region, the PNSP and RNSP Project Managers shall begin coordination of their Interface and Integration Plan of the PDP's for all associated tasks for connectivity between PNSP and RNSP, PSAP interface, and aggregation per the SLA 32.2. The PNSP and RNSP who fail to meet this requirement shall collectively be subject to the SLA 32.2. CA 9-1-1 Branch will

schedule and facilitate meetings between PNSP and RNSP within 60 days of contract execution for each region.

4) Within 120 days of contract execution for awarded Region, the PNSP and RNSP Project Managers shall complete coordination of their Interface and Integration Plan of the PDP's for all associated tasks for connectivity between PNSP and RNSP, PSAP interface, and aggregation per the SLA 32.2. The PNSP and RNSP who fail to meet this requirement shall collectively be subject to the SLA 32.2. CA 9-1-1 Branch will schedule and facilitate meetings between PNSP and RNSP within 60 days of contract execution for each region.
5) The PDP shall include major milestones identified at a minimum the following:

    1. Identify Key Staff
    2. Project schedule with major milestones identified
        a) PSAP site survey schedule;
        b) Network requirements and final design solution;
        c) OSP aggregation connectivity plan;
        d) Acceptance Test Plan;
        e) Training plan;
        f) Monthly Billing and SLA plan;
        g) PSAP cutover day plan;
        h) Interface and Integration plan (shall include PSAP, RNSP and aggregation);
        i) Selective Router Decommissioning Plan: This plan will outline the RNSP role in transitioning all 9-1-1 traffic from selective router.

6) RNSP Contractor shall conduct a site survey;
7) RNSP Contractor shall deliver a certificate of system readiness when the service is ready for acceptance testing;
8) RNSP Contractor shall deliver System Acceptance Testing to ensure that the system operates in substantial accord with the technical specifications, is adequate to perform as warranted by Contractor's response to the requirements of this Contract and evidences a satisfactory level of performance reliability, prior to its acceptance;

9) RNSP Contractor shall deliver acceptance testing for software (other than Operating System Software);
10) RNSP Contractor shall provide a Project Coordinator with knowledge and experience in managing system installations of similar complexity at no additional cost to the PSAP or the CA 9-1-1 Branch. All installations shall use industry accepted project management methodology throughout the project;
11) RNSP Contractor shall deliver maintenance service including parts, software support and labor;
12) RNSP Contractor shall deliver notification to the PSAPs if determining telephone line repair is needed;
13) RNSP Contractor shall deliver the necessary maintenance and parts to keep the service in good operating condition, which includes preventative scheduled maintenance.

13.4 TEXT-TO-9-1-1 SPREADSHEET TRACKING

Due to the need to transition Text-to-9-1-1 services within 12 months of contract execution, the PNSP Contractor shall use comprehensive Excel spreadsheets depicting each PSAP, Text Service Modality, Acceptance Testing, test dates per wireless carrier, and final go live dates. This shall be provided monthly no later than the 10th calendar day of each month.

CA 9-1-1 Branch tracking #	FCCID	PSAP NAME	COUNTY	TEXT SERVICE MODALITY	STATUS	Date Approved	Carrier test date	Date for acceptance	Date Live
				Web or Integrated	Live or approved or in progress		For each carrier		

13.5 TEXT-TO-9-1-1 PSAP DEPLOYMENT PLAN

For each PSAP, the PNSP Contractor shall provide their deployment plan information 20 calendar days before the PSAP installation or a mutually agreed upon date. The deployment plan shall include, but not limited to:

a) PSAP training;
b) Admin training if applicable;
c) Go Live Date;
d) Carrier testing coordination documentation;
e) PSAP name and contact.

13.6 TEXT-TO-9-1-1 PSAP CONNECTIVITY AND TESTING

For each PSAP, the PNSP Contractor shall, install connectivity and conduct testing as necessary.

13.7 TEXT-TO-9-1-1 PSAP ACCEPTANCE TESTING

For each PSAP, the PSNP Contractor shall coordinate with PSAP and CA 9-1-1 Branch to conduct fully comprehensive Acceptance Testing and complete the Acceptance Test Form, and submit to the CA 9-1-1 Branch. Additionally, PNSP Contractor shall perform a new Acceptance Test within five (5) business days along with any additional training if necessary, if there is a technology upgrade or if the PSAP changes from one Text-to-9-1-1 modality service to another.

14 DELIVERABLE ACCEPTANCE/REJECTION PROCESS (PNSP AND RNSP)

14.1 ACCEPTANCE

The CA 9-1-1 Branch will be the sole judge of the acceptability of all work performed and all work products produced by the Contractor as a result of this SOW. Should the work performed or the products produced by the Contractor fail to meet the CA 9-1-1 Branch conditions, requirements, specifications, guidelines, or other applicable standards, the following resolution process will be employed, except as superseded by other binding processes.

The CA 9-1-1 Branch will notify the Contractor in writing within ten (10) State business days after completion of each phase of service of any acceptance problems by identifying the specific inadequacies and/or failures in the services performed and/or the products produced by the Contractor.

The Contractor will, within five (5) State business days after initial problem notification, respond to the CA 9-1-1 Branch by submitting a detailed explanation describing precisely how the identified services and/or products actually adhere to and satisfy all applicable requirements, and/or a proposed corrective action plan to address the specific inadequacies and/or failures in the identified services and/or products. Failure by the Contractor to respond to the CA 9-1-1 Branch initial problem notification within the required time limits may result in immediate termination of the Contract.

The CA 9-1-1 Branch will, within ten (10) State business days after receipt of the Contractor's detailed explanation and/or proposed corrective action plan, notify the Contractor in writing whether it accepts or rejects the explanation and/or plan. If the CA 9-1-1 Branch rejects the explanation and/or plan, the Contractor will submit a revised corrective action plan within five (5) State business days of notification of rejection. Failure by the Contractor to respond to the CA 9-1-1 Branch' notification of rejection by submitting a revised corrective action plan within the required time limits may result in immediate termination of the Contract.

The CA 9-1-1 Branch will, within ten (10) State business days of receipt of the revised corrective action plan, notify the Contractor in writing whether it accepts or rejects the revised corrective action plan proposed by the Contractor. Rejection of the revised corrective action plan will result in immediate termination of the Contract. In the event of such termination, the CA 9-1-1 Branch shall pay all amounts due the Contractor for all work accepted prior to termination.

14.2 ACCEPTANCE TESTING CRITERIA (PNSP AND RNSP)

The Contractor shall provide Acceptance Testing Plan (ATP) and Checklist within 30 calendar days of contract execution. Contractor shall finalize ATP and Checklist and submit to CA 9-1-1 Branch for final approval within 90 calendar days of contract execution. At a minimum the ATP shall include the current NENA standards. System acceptance templates have been provided in SOW – Attachment 4a-4e and SOW – Attachment 5a-5b to identify the minimum required information.

The Contractor shall develop an ATP to include at a minimum for the following services:

1) NG9-1-1 Trunk Services;
2) PNSP NG9-1-1 Alert and Warning System;
3) NG9-1-1 Aggregation Services;
4) NG9-1-1 Statewide GIS (PNSP shall manage, RNSP shall integrate);
5) NG9-1-1 Core Services;
6) PNSP NG Text-to-9-1-1 Services and Text-to-9-1-1 Authorization Checklist;
7) Full System Acceptance (include Prime and Region network acceptance);
8) Other:
    a) PSAP cutover plan;

b) Billing Process;

c) Real-Time System Monitoring;

d) PSAP Interface;

e) Aggregation Interface;

f) Prime/Regional Interface.

Acceptance Testing is intended to ensure that the service is performing as warranted by Contractor's response to the requirements of this Contract and evidences a satisfactory level of performance availability as per SLAs, prior to its acceptance by the CA 9-1-1 Branch. Acceptance Testing is required for all newly installed technology service after a successful performance period.

The Contractor shall issue a certificate of system readiness to the CA 9-1-1 Branch when services are ready for Acceptance Testing. Acceptance Testing shall commence on a date and time mutually agreed upon by the CA 9-1-1 Branch, within ten (10) business days, following receipt of the certificate of system readiness and shall end when the services have met the standard of performance ATC for a period of 45 calendar days. Operation of the services to confirm proper installation shall be considered to be a part of the Acceptance Test. It is not required that the 45 calendar days expire in order to begin a subsequent Acceptance Testing period.

Services shall not be accepted by the CA 9-1-1 Branch, and no charges associated with such service shall be paid by the CA 9-1-1 Branch, until the Contractor has demonstrated that the Contractor has satisfactorily provided all of the functionality per SOW, Section 14.2 ACCEPTANCE TESTING CRITERIA.

The standard of performance for Acceptance Testing is defined as the operation of service at 99.999% availability for a period of 45 calendar days. For Acceptance Testing purposes, the system shall not have any major failures during the 45 calendar day testing period. In the event of a major failure, the 45 day clock will be restarted after the failure has been corrected. Minor failures will not restart the testing period clock however, will be noted in the System Acceptance report.

Upon successful completion of the entire NG9-1-1 network system ATC, a Certificate of System Readiness shall be completed by the PNSP, the PSAP representative and the CA 9-1-1 Branch NG9-1-1 Manager. The Certificate of System Readiness will be attached with all testing notes and findings and the original copy shall be filed with the CA 9-1-1 Branch.

It shall be in the CA 9-1-1 Branch's sole determination as to whether a deliverable service has been successfully completed and acceptable to the CA 9-1-1 Branch.

15 USER ACCEPTANCE TESTING CRITERIA (PNSP AND RNSP)

The Contractor shall coordinate with the CA 9-1-1- Branch NG9-1-1 Manager who will identify the PSAP team for User Acceptance Testing (UAT) criteria. The PSAP team will coordinate UAT with the Contractor for all NG9-1-1 Services deployed at the PSAP and Regional level. UAT will be developed by the PSAP and in collaboration with the contractor and approved by the NG9-1-1 Manager.

16 NG9-1-1 EMERGENCY ALERT AND WARNING (PNSP)

The PNSP shall be responsible for providing a statewide NG9-1-1 AWS for local, regional and state end users that meet all technical requirements outlined in EXHIBIT 21, TECHNICAL REQUIREMENTS.

The NG9-1-1 AWS shall be capable of distributing and/or broadcasting recorded voice, text-to-voice, text message, email and fax notifications to an area identified by a GIS polygon or predefined GIS tool.

16.1 PUBLIC SELF-REGISTRATION PORTAL

The PNSP shall provide a public facing portal to allow local community members to register their contact information and additional telephone, text message and email contact information that meet all technical requirements outlined in EXHIBIT 21, TECHNICAL REQUIREMENTS.

16.2 ALERT AND WARNING GIS MAP

The Alert and Warning System GIS map shall provide local, regional and state users predefined customizable geometric shapes to select contact data from the GIS map.

16.3 ALERT AND WARNING TRAINING

The PNSP shall be responsible to provide training in the form of the Train-the-Trainer course for all local, regional, and state entities who will utilize the system. Training shall include all training resource materials and on-site training per EXHIBIT 21, TECHNICAL REQUIREMENTS.

17 GEOGRAPHICAL INFORMATION SYSTEM (PNSP AND RNSP)

CA 9-1-1 Branch will provide PNSP contractor the complete and validated CA 9-1-1 Statewide GIS database that conforms to NENA-STA-010.2-2016 i3 standard and all technical requirements outlined in EXHIBIT 21, TECHNICAL REQUIREMENTS.

17.1 GEOGRAPHICAL INFORMATION DATABASE (PNSP AND RNSP)

PNSP Contractor shall be responsible for coordination and transition of Statewide GIS database from CA 9-1-1 Branch' selected GIS database Contractor. Contractor shall assimilate the Statewide GIS database and accept responsibility for the tools and resources needed to manipulate, edit, process discrepancies, provide updates, provision to functional elements, and provide data normalization of the GIS database.

RNSP Contractor shall be responsible incorporate the Statewide GIS database, emergency call routing function (ECRF), and associate policy based routing functions from CA 9-1-1 Branch' selected PNSP Contractor into the RNSP ECRF and NG Core Service solution.

17.2 GEOGRAPHICAL INFORMATION DATABASE RESPONSIBILITY (PNSP)

The Statewide GIS Database will contain the shape files and layers necessary to route 9-1-1 traffic. OSPs are responsible to provide subscriber location data and submit updates to the PNSP. The 9-1-1 County Coordinators are responsible to maintain GIS data and submit updates to the PNSP. The PNSP shall be the definitive data source for 9-1-1 traffic routing.

1) The PNSP shall provide an administrative access to GIS database for a maximum of 500 users. The users will include County Coordinators, OSP representatives and the CA 9-1-1 Branch. Complete list of personnel will be provided to the PNSP upon contract award;
2) The PNSP shall provide all PSAPs the functionality to support database location queries that integrate to CPE.

17.3 LOCATION DATABASE (LDB) AND ASSOCIATED SERVICES (PNSP)

The PNSP Contractor shall provide a Location Database (LDB) to facilitate the implementation of location services. The LDB must be able to provide Presence Information Data Format – Location Object (PIDF-LO), utilizing both the civic and geodetic profiles, for all calls entering the Next Generation Core Services (NGCS). At a minimum, the LDB shall meet the technical requirements identified in EXHIBIT 21, TECHNICAL REQUIREMENTS.

Ability for Service Providers to update their location records using their existing processes (such as Service Order Input (SOI)) or a web based user interface.

17.4 PSAP GIS BOUNDARY DATA (PNSP)

The PSNP Contractor shall maintain records of all PSAP profiles and GIS routing boundaries. The shape file jurisdiction boundaries shall be the property of the CA 9-1-1 Branch and provided upon request. The initial shape files will be provided by the CA 9-1-1 Branch; updates may be sent by County Coordinators or PSAPs and the update

process will be similar to the existing Master Street Address Guide (MSAG) update process. NG9-1-1 traffic will be routed via GIS shape files to the correct PSAP.

18 POLICY BASED ROUTING (PNSP AND RNSP)

The PNSP Contractor shall supply a rules-based routing proxy functionality per NENA-STA-010.2-2016. Specifically the Policy Routing Function (PRF) is required to interface with the Emergency Service Routing Proxy (ESRP) and the conditional routing possibilities within the NGCS. Contractors must ensure that the system's rules-based routing interfaces to the other components and functional elements making up the NGCS are in compliance with NENA-STA-010.2-2016 (https://www.nena.org/page/i3_Stage3) and meets the requirements of the CA 9-1-1 Branch. The Contractor shall specifically identify the interface used to establish these rules within the NGCS and any conditions that may exist limiting its function. All Policy Routing Data is the property of CA 9-1-1 Branch and shall be available for review by an on-line system, dashboard, by GIS, or excel data format.

The RNSP shall supply a rules-based routing proxy functionality per NENA-STA-10.2-2016 (and subsequent versions) that aligns with the PSNP developed and maintained (PRF) as required to interface with the PSNP developed and maintained Emergency Service Routing Proxy (ESRP) and the conditional routing possibilities within the NGCS.

19 DATA HANDLING AND OWNERSHIP (PNSP AND RNSP)

Contractor shall provide security for all data handling and make it available to the CA 9-1-1 Branch at no additional charge upon request in written, electronic, or by secure portal access for each of the following types of data. All data related to this contract shall be the property of the CA 9-1-1 Branch.

19.1 CALL DATA RECORDS (PNSP AND RNSP)

Any 9-1-1 Call Data Records (CDR) are the property of the CA 9-1-1 Branch and shall be available to the PSAP as defined by CA 9-1-1 Branch's Operation Manual. The Contractor shall utilize Session Internet Protocol (SIP) metadata and i3 logging to monitor, track and verify data flow as a part of the CDR. The PNSP shall be able to provide a data push and/or pull of NENA i3 logging data from all RNSPs. The RNSP shall provide a data push and/or pull of NENA i3 logging data to the PNSP. All NG9-1-1 Metadata shall have a ten (10) year retention period.

19.2 NG9-1-1 TEXT TRAFFIC STATISTICS (PNSP)

PNSP Contractor shall provide interface and all required data to support text session CDR within State's existing statistical tracking contractor. NG9-1-1 traffic includes all voice and data from caller to PSAP.

19.3 TEXT SESSION STATISTIC DATA (PNSP)

Any Text Session Data are the property of the CA 9-1-1 Branch and shall be available to the PSAP as defined by CA 9-1-1 Branch's Operation Manual. Statistical reports and Ad hoc report data shall also be available. Text Session Metadata shall be provided to CA 9-1-1 Branch for ten (10) year retention period.

19.4 TEXT SESSION DATA (PNSP)

Any Text-to-9-1-1 session data is the property of the PSAP and shall be available for up to two (2) years after the session is completed. Statistical reports and Ad hoc report data shall also be available. Batches of text session data shall be available to the PSAP by week, month, or year.

19.5 DATA MANAGEMENT (PNSP AND RNSP)

Data and reports requested within the scope of this contract shall be maintained daily and be made available electronically upon request but shall be submitted as required in the SOW.

19.6 CONFIGURATION MANAGEMENT DATABASE (PNSP AND RNSP)

The Contractor shall supply a Configuration management database that at a minimum, includes all of the software, systems, network protocols, port usage and relevant system related information in a mutually agreed upon format as defined in EXHIBIT 21 PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23 – REGION TECHNICAL REQUIREMENTS.

19.7 TEST ACCEPTANCE DATA (PNSP AND RNSP)

All Test Acceptance Data shall be made available to the CA 9-1-1 Branch upon request during the deployments with no limitations for distribution and discussion. All Test Data shall be provided to the CA 9-1-1 Branch upon request, with no restrictions.

19.8 DATA TRANSFERABILITY (PNSP AND RNSP)

Upon termination or Contract expiration, for any reason, this data shall be transferred to the CA 9-1-1 Branch, in an effort to ensure emergency operations are not disrupted.

20 REPORTING (PNSP AND RNSP)

Contractor is responsible for delivering all reports as described in the SLA's, EXHIBIT 21, Prime TECHNICAL REQUIREMENTS, EXHIBIT 23, Region TECHNICAL REQUIREMENTS and SOW. In addition, the following reports are required as described below. This list is not intended to be exhaustive and additional reports may be required.

20.1 NG9-1-1 PNSP SERVICE OUTAGE REPORTING

PNSP Contractor shall provide the required outage reporting per the CA 9-1-1 Branch procedures and technical requirements EXHIBIT 21, EXHIBIT 21 PRIME TECHNICAL REQUIREMENTS.

20.2 PNSP NG9-1-1 SERVICE PROJECT REPORTING

PNSP Contractor shall provide coordination and all supporting project documentation for weekly NG9-1-1 Prime Service meetings/updates with CA 9-1-1 Branch, including the Text to 9-1-1 deployment plan.

20.3 PNSP SYSTEM MONITORING DASHBOARD

PNSP Contractor shall provide a system that will monitor, display and report the health of the Prime and Regional networks from ingress to egress of all 9-1-1 traffic. Monitoring system shall meet all technical requirements in accordance with EXHIBIT 21, EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS.

20.4 PNSP NG9-1-1 SERVICE REPORTING

PNSP Contractor shall provide the required SLA reports per the SOW, SLA Section 32.

20.5 PNSP TEXT TO 9-1-1 SERVICE REPORTING

PNSP Contractor shall provide the required SLA reports per the SOW, SLA Section 32.

20.6 PNSP TEXT TO 9-1-1 SESSION REPORTING

PNSP Contractor shall provide full reports of the Text to 9-1-1 sessions to the PSAPs in a secure and always available on-line platform.

20.7 RNSP NG9-1-1 SERVICE OUTAGE REPORTING

RNSP Contractor shall provide the required outage reporting per the CA 9-1-1 Branch procedures and technical requirements EXHIBIT 23 REGION TECHNICAL REQUIREMENTS.

20.8 RNSP NG9-1-1 SERVICE PROJECT REPORTING

RNSP Contractor shall provide coordination and all supporting project documentation for weekly NG9-1-1 Region Service meetings/updates with CA 9-1-1 Branch.

20.9 RNSP SYSTEM MONITORING DASHBOARD

RNSP Contractor shall provide a system that will monitor, display and report the health of the Regional networks from ingress to egress of all 9-1-1 traffic and provide reporting system monitoring data to the PNSP. Monitoring system shall meet all technical requirements in accordance with EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

20.10 RNSP NG9-1-1 SERVICE REPORTING

Contractor shall provide the required SLA reports per the SOW, SLA Section 32.

21 SECURITY (PNSP AND RNSP)

Contractor shall provide all security and monitoring for the Prime NG9-1-1 Services per the requirement EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

22 DISASTER RECOVERY (PNSP AND RNSP)

PNSP and RNSP Contractor is fully responsible for developing and implementing a disaster recovery plan to identify how the NGCS system tactically recovers from a disaster or situation that compromises the performance of NG9-1-1 services. This plan shall focus on alert, notification, response, restoration activities and the management of any event identified as a disaster that may cause harm to the system. The Disaster Recovery Plan shall be delivered within 30 days of Contract award for review and approval. The PNSP shall provide a step by step emergency re-route procedures from each Regional NG9-1-1 Network to the PSAP 90 calendar days, or mutually agreed upon date, prior to Region Network go-live. The RNSP shall provide a step by step emergency re-route procedures from awarded Regional NG9-1-1 Network to the PNSP for delivery to PSAP 90 days, or mutually agreed upon date, prior to Region Network go-live. The requirements are as follows:

1) The Disaster Recovery strategy must be consistent regardless of event or trigger;
2) An assessment process must be applied to the Disaster Recovery process;
3) Ownership of all facets of the plan must be defined;
4) Management teams and reporting scenarios must be defined;
5) Response teams must be identified;
6) Key decision makers and escalation lists must be defined;
7) Procedures of communication must be defined.

The goal of the Disaster Recovery plan is to create and document a playbook that includes procedures for a single source of management of the event for rapid escalation, triage, problem management, and communications.

The Disaster Recovery Plan must include:

1) Activation procedures;
1) Recovery team identification;
2) Roles and responsibilities ;
3) Recovery strategies and response;
4) Recovery management procedures;
5) Recovery cost procedures;
6) Recovery resources;
7) Recovery communications;
8) Stakeholder management.

Disaster recovery shall contain, but not limited to, the items listed in EXHIBIT 21, EXHIBIT 21, Prime Technical Requirements and EXHIBIT 23, REGION TECHNICAL REQUIREMNTS. Contractor shall provide the Disaster Recovery Plan within 30 calendar days after award or a mutually agreed upon date for CA 9-1-1 Branch to review and approve.

23 CONTINUITY OF OPERATIONS PLAN (PNSP AND RNSP)

The Contractor must develop and maintain a Continuity of Operations Plan for the NGCS. Whereas the Disaster Recovery plan is concerned with response, mitigation and recovery; the Continuity of Operations plan must focus on ensuring that all critical services, and functions may still be carried out in the wake of a disruption, as well as after a disruption has been recognized. The Continuity of Operations Plan must include measures to account for common threats and vulnerabilities that may make a significant disruption more likely. The Contractor shall treat the Continuity of Operations Plan as a long term strategic plan to ensure continued operation in spite of disasters, disruptions or service limiting events.

The Continuity of Operations plan may include the following areas:

1) Backup facilities and redundancy such as mobile sites, hot sites, warm sites, and cold sites;
2) Backup software, storage and procedures for all data and files;
3) Redundant and diverse communications paths and systems;
4) Backup power, power supplies and power generation;
5) Complete redundant systems utilizing alternate technology;
6) Personnel and resources to support continued operations;
7) Subscription services;
8) Cyber incident redundancy and recovery support;
9) Call trees;
10) Crisis communications;

11) Succession plans.

Contractor shall provide the Continuity of Operations Plan within one month after contract execution or a mutually agreed upon date for CA 9-1-1 Branch to review and approve. The PNSP shall provide a step by step emergency re-route procedures from each Regional NG9-1-1 Network to the PSAP 90 calendar days, or mutually agreed upon date, prior to Region Network go-live. The RNSP shall provide a step by step emergency re-route procedures from awarded Regional NG9-1-1 Network to the PNSP for delivery to PSAP 90 days, or mutually agreed upon date, prior to Region Network go-live.

24 AGGREGATION SERVICE (PNSP AND RNSP)

The PNSP contractor shall provide an OSP traffic aggregation service for all OSPs in the State of California excluding wireless, AT&T wireline, Consolidated Communications wireline and Frontier wireline as defined in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS. PNSP shall provide aggregation connections to all Wireless OSPs that are in "hot standby" mode to enhance aggregation capabilities. The PNSP shall provide aggregation service that supports Text to 9-1-1 requirements in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS.

The RNSP contractor shall provide an OSP traffic aggregation service for all wireless, AT&T wireline, Consolidated Communications wireline and Frontier wireline OSPs in the awarded Region in the State of California as defined in EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

25 AGGREGATION "HOT STANDBY" PLAN (PNSP)

The PNSP Contractor shall provide an aggregation plan to support wireless, AT&T wireline, Consolidated Communications wireline and Frontier wireline as directed by CA 9-1-1 Branch. Aggregation services for wireless, AT&T wireline, Consolidated Communications wireline and Frontier wireline will be the responsibility of the RNSP provider however, in certain emergency situation CA 9-1-1 Branch may need to contact the Contractor to perform services as required. This plan will support the need to aggregate OSP traffic in the event that a regional aggregation service needs to be replaced with another aggregation service provider. In this emergency situation, the PNSP would take on the OSP aggregation responsibility and would be required to execute their Aggregation Plan. The PNSP does not have primary responsibility to aggregate OSP traffic. The PNSP would rely on the RNSP to deliver 9-1-1 traffic to the PNSP. This aggregation plan would only be utilized in emergency situations; however, must be in active standby mode and plan must include a test cycle. The replacement of the OSP aggregation service provider would be directed by CA 9-1-1 Branch. The aggregation plan is needed to support emergency situations.

26 COMPATIBILITY AND INTERFACE (PNSP AND RNSP)

The PNSP Contractor is responsible for all PNSP Network connections, as defined by Interconnection Agreements, and all related NG911 service interfaces from the ingress of any 9-1-1 traffic type at the aggregation service providers Point of Interface (POI) to the egress of any 9-1-1 traffic type to any of the possible PSAP Call Processing Equipment site or host configurations by managed gateway and as directed by CA 9-1-1 Branch. The Contractor shall provide the interfaces to interconnect to each RNSP as directed by CA 9-1-1 Branch and per the applicable requirements in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS. Demarcation points shall be defined by Interconnection Agreements between interconnecting service providers. Contractor shall provide 9-1-1 traffic flow architecture to support the design overview.

The RNSP Contractor is responsible for all RNSP Network connections in the awarded Region, as defined by Interconnection Agreements, and all related NG911 service interfaces from the ingress of any 9-1-1 traffic type at the aggregation service providers POI to the egress of any 9-1-1 traffic type to any of the possible PSAP Call Processing Equipment site or host configurations by managed gateway and as directed by CA 9-1-1 Branch. The RNSP Contractor shall provide the interfaces to interconnect to the PNSP as directed by CA 9-1-1 Branch and per the applicable requirements in EXHIBIT 23, REGION TECHNICAL REQUIREMENTS. Demarcation points shall be defined by Interconnection Agreements between interconnecting service providers. RNSP Contractor shall provide 9-1-1 traffic flow architecture to support the design overview.

The EXHIBIT 22 COST WORKBOOK defines the prices for interfaces, NG9-1-1 Trunks and POIs. The CA 9-1-1 Branch will work with the PNSP and RNSP to approve items in the Cost Workbook to support the Project Plan. In the event PNSP or RNSP determines the need for an item in the COST WORKBOOK the CA 9-1-1 Branch will validate the need and ensure alignment with SOW prior to approval.

26.1 STATEWIDE CAPSNET INTERFACE (PNSP)

PNSP Contractor shall provide a plan to interface with the statewide California Public Safety Microwave Network (CAPSNET) backhaul as redundant path to each PSAP as defined in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS. The CA 9-1-1 Branch will provide additional information on the CAPSNET plan upon contract execution.

27 SYSTEM/SERVICE INSTALLATION (PNSP AND RNSP)

Contractor shall provide a detailed installation, implementation, and training plan to the CA 9-1-1 Branch for review and approval within 30 calendar days of Contract Execution.

The Contractor's plan shall include the time provisions specified in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

28 TECHNOLOGY REFRESH (PNSP AND RNSP)

PNSP Contractor shall provide the CA 9-1-1 Branch, in writing, within 12 months from contract execution, a plan to maintain and update all hardware and software services on the Prime NG9-1-1 Service. The PNSP Contractor agrees Prime NG9-1-1 Services shall not be disrupted while performing hardware and/or software upgrades, in accordance to EXHIBIT 21 PRIME TECHNICAL REQUIREMENTS. PNSP Contractor shall provide all technology refreshes, to include training, equipment and technician hours at no cost to the State.

RNSP Contractor shall provide the CA 9-1-1 Branch, in writing, within 12 months from contract execution, a plan to maintain and update all hardware and software services on the Region NG9-1-1 Service. The RNSP Contractor agrees Region NG9-1-1 Services shall not be disrupted while performing hardware and/or software upgrades, in accordance to EXHIBIT 23 REGION TECHNICAL REQUIREMENTS. RNSP Contractor shall provide all technology refreshes, to include training, equipment and technician hours at no cost to the State.

29 KNOWLEDGE TRANSFER AND TRAINING (PNSP AND RNSP)

Contractor shall provide Train-the-Trainer course for CA 9-1-1 Branch personnel and not to exceed one (1) eight (8)-hour training course for the Network Reporting System. Contractor shall conduct training within 45 calendar days of the scheduled "Go Live" date and shall provide all training resources at the time of training. Contractor shall be responsible to maintain current versions of the training materials and provide training material to the CA 9-1-1 Branch for the duration of service.

29.1 PSAP NG TEXT TO 9-1-1 TRAINING (PNSP)

Contractor shall provide all PSAP training as Train-the-Trainer and training materials to PSAP(s) who deployed web-based Over-the-Top (OTT) NG Text-to-9-1-1 Solutions. Contractor shall coordinate training dates with each of PSAP and training shall be completed prior to the 'Go-Live' date. Contractor is not require to provide integrated Text-to-9-1-1 training.

30 MAINTENANCE (PNSP AND RNSP)

PNSP Contractor shall be responsible for all maintenance to the Prime NG9-1-1 Services for the term of the Contract. RNSP Contractor shall be responsible for all maintenance to the Region NG9-1-1 Services for the term of the Contract. A final maintenance plan shall

be submitted to CA 9-1-1 Branch for review and approval within 90 calendar days from Contract execution. Planned or unplanned maintenance shall not disrupt 9-1-1 service and/or trigger any SLAs.

Maintenance Schedule shall include at a minimum:

1) Hardware Issues;
2) Servers;
3) Switches;
4) Routers;
5) Software Issues;
6) Operating System Software Issues;
7) Security System Software Issues;
8) Connectivity Issues.

31 PSAP HELP DESK/CALL CENTER (PNSP AND RNSP)

Contractor shall provide a point of contact 24 hours a day, 7 days a week, 365 days a year, for CA 9-1-1 Branch, PSAP, PNSP and RNSP personnel to report trouble on the respective NG9-1-1 Services in accordance with requirements as identified in EXHIBIT 21, PRIME TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS. The Contractor shall provide help desk and call center service in accordance with EXHIBIT 21, TECHNICAL REQUIREMENTS and EXHIBIT 23, REGION TECHNICAL REQUIREMENTS.

32 SERVICE LEVEL AGREEMENTS (SLA) (PNSP AND RNSP)

32.1 A SINGLE OUTAGE COULD TRIGGER MULTIPLE SLAS.SLA CONTRACTOR'S MONTHLY ACTIVITY REPORT (PNSP AND RNSP)

By the 10th of each month, the Contractor shall provide the CA 9-1-1 Branch with a detailed report of the service level made under this Contract using Monthly Technical SLA Compliance Report listed below, Contractor's Monthly Activity Report, SLA Section 32. The CA 9-1-1 Branch reserves the right to require the Contractor to modify the format and content of these reports during the Contract term at no cost. At the conclusion of each month's meeting, CA 9-1-1 Branch will advise Contractor on any SLAs that have not been met. Contractor agrees this will be final notification and will move forward with any appropriate credit/or adjustment for the next billing cycle. Contractor agrees this meeting shall serve as notification in compliance with the SLA terms. The remedy for each missed SLA shall be solely determined by the State.

32.1.1 THE CONTRACTOR'S MONTLY ACTIVITY REPORT

Monthly Activity Report shall include at a minimum the fields listed below:

1) ID;
2) PSAP Name Impacted;
3) Month Date;
4) Day/Time Start;
5) Day/Time End;
6) Duration Hour: Min
7) Reporting Entity;
8) Outage Type;
9) Cause of Incident/Outage;
10) Summary of Incident/Outage;
11) Yes/no if qualified for SLA;
12) The applicable SLA;
13) Rights and remedies applied to each ticket when applicable;
14) Other.

32.1.2 PNSP NG9-1-1 TARIFF SERVICES TO BE IDENTIFIED IN THE MONTHLY ACTIVITY REPORT ARE:

1) NGCS;
2) NG9-1-1 Alert and Warning;
3) Aggregation;
4) NG9-1-1 Trunk
5) NG Text to 9-1-1;

6) Statewide GIS.

32.1.3 RNSP NG9-1-1 TARIFF SERVICES TO BE IDENTIFIED IN THE MONTHLY ACTIVITY REPORT ARE:

1) NGCS;
2) Aggregation;
3) NG9-1-1 Trunk.

32.2 SLA REPORTING REQUIREMENTS – ADMINISTRATIVE

32.2.1 PNSP Project Deployment Plan (PDP)			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Final PNSP PDP shall be delivered within 60 calendar days of contract execution to CA 9-1-1 Branch.	Calendar Days	Delivery of PNSP PDP within 60 days.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the report is not delivered after the objective.

32.2.2 RNSP Project Deployment Plan (PDP)			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Final RNSP PDP shall be delivered within 60 calendar days of contract execution to CA 9-1-1 Branch.	Calendar Days	Delivery of RNSP PDP within60 days.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the report is not delivered after the objective.

32.2.3 PNSP and RNSP Interface and Integration Collaboration for Project Deployment Plan (PDP)

Definition	Measurement Method	Objective	Rights and Remedies
PNSP and RNSP shall begin collaboration 60 days from contract execution of each region.	Calendar Days	To initiate and ensure collaboration for Interface and Integration of the NG9-1-1 Services.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the report is not delivered after the objective.
Final Interface and Integration PDP shall be delivered within 120 calendar days after contract execution of each awarded region.	Calendar Days	To ensure collaboration for Interface and Integration of the NG9-1-1 Services.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the report is not delivered after the objective.

32.2.4 Unauthorized Modification Project Deployment Plan (PDP)			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Contractor shall not modify any CA 9-1-1 Branch approved milestones in the PDP.	Calendar Days	Completion of PDP milestones within the date agreed by the State and Contractor.	Any unauthorized modification to the PDP shall result in a $50,000.00 credit/or adjustment plus $5,000.00 for each calendar day that the PDP is not restored to the approved version.

32.2.5 PNSP and RNSP Interface and Integration Implementation of Project Deployment Plan (PDP)			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
PNSP and RNSP shall complete and comply with the Interface and Integration Plan based on the approved SOW Attachment 8 – Project Milestone Report.	Calendar Days	To eliminate finger pointing and complete the Interface and Integration of the NG9-1-1 Services.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the report is not delivered after the objective. Additionally a Senior Staff Member from both the RNSP and PNSP that fail to meet this SLA shall appear before the CA 9-1-1 Advisory Board as

			directed be the CA 9-1-1 Branch.

32.2.6 Failure to Meet Project Deployment Plan (PDP) Milestone Dates			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Contractor shall achieve all milestone dates identified in the PDP.	Calendar Days	Completion of PDP milestones within the date agreed by the CA 9-1-1 Branch and Contractor.	Any failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each calendar day that the milestone is not delivered after the objective.

32.2.7 Budget SLA Remittance			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
SLA Remedy Delivery Timely credit/or adjustment of remedies due to the CA 9-1-1 Branch for missed SLA objectives.	Calendar Days.	Contractor's credit/or adjustment shall be issued no more than 60 calendar days after written notice from the CA 9-1-1 Branch.	Each occurrence of an SLA remedy (credit/or adjustment) that is not issued within 60 calendar days shall result in a $5,000.00 credit/or adjustment for each calendar day that the credit/or adjustment is not issued.

32.3 SLA REPORTING REQUIREMENTS – TECHNICAL

The following technical SLAs provide charts describing the definition, measurement method, objective, and rights and remedies for each category. The following SLAs are not intended to supersede any regulatory or statutory requirements and/or penalties imposed by the FCC, CPUC, or any other legislative oversight.

32.3.1 System Monitoring			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Contractor shall deliver all System Monitoring Access 24/7/365.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The monthly Availability percentage shall be based on the cumulative total of all outage durations for each calendar month.	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the Total Monthly Recurring Cost (TMRC) of all System Monitoring services under contract for that month. Next consecutive month fail to meet the SLA objective shall result in a 50% credit/or adjustment of the TMRC of all System Monitoring services under contract for that month. Each additional consecutive month fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC of all System Monitoring services under contract for that month.

32.3.2 System Outage Notification			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Contractor shall report all outages that potentially impact the delivery of 9-1-1 traffic within ten (10) minutes of the occurrence.	Any outage that potentially impacts the delivery of 9-1-1 traffic.	Notification within ten (10) minutes or less.	Any failure to meet the objective shall result in a $5,000.00 credit/or adjustment Next consecutive minute that the Contractor fails to meet the SLA objective shall result in an additional $1,000.00 credit/or adjustment per minute, up to the TMRC for all System Monitoring services.

32.4 SLA NG9-1-1 TRUNK SERVICE – AVAILABILITY CHART

NG9-1-1 Trunk Service Availability			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The overall NG9-1-1 Trunk Service shall be available to each end point connection.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The NG9-1-1 Trunk Service availability requires two diverse NG9-1-1 Trunk Connections to each PSAP. For those PSAPs where diverse NG9-1-1 Trunks are not available and when approved by CA 9-1-1 Branch, the Individual NG9-1-1 Trunks Service applies. The monthly Availability percentage shall be based on the cumulative total of all outage durations for each calendar month.	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC for NG9-1-1 Trunk Service for that month. Failure to meet the SLA objective for the next consecutive month shall result in a 50% credit/or adjustment of the TMRC for NG9-1-1 Trunk Service for that month. Failure to meet the SLA objective for each additional consecutive month shall result in a 100% credit/or adjustment of the TMRC for that month plus an additional $50,000.

Individual NG9-1-1 Trunk Service Availability			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Individual NG9-1-1 Trunk Service shall be available to each end point connection and will only apply when diverse NG9-1-1 trunks are not available and when approved by CA 9-1-1 Branch.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The monthly Availability percentage shall be based on the cumulative total of all outage durations for each calendar month.	99.9%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC for the impacted individual NG9-1-1 Trunk Services. Next consecutive month fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC for the impacted individual Trunk Services. Each additional consecutive month fail to meet the SLA objective shall result in a 200% credit/or adjustment of the impacted individual NG9-1-1 Trunk Services.

32.5 SLA AGGREGATION SERVICE – AVAILABILITY CHART

Aggregation Service Availability			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The NG9-1-1 Aggregation Service shall be available to combine all identified incoming OSPs including Text to 9-1-1 OSPs for the PNSP.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The monthly Availability percentage shall be based on the cumulative total of all outage durations for each calendar month.	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC for Aggregation Service for that month. Next consecutive month fail to meet the SLA objective shall result in a 50% credit/or adjustment of the TMRC for that month. Each additional consecutive month fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC for that month plus an additional $50,000.

32.6 SLA NG CORE SERVICES AVAILABILITY

A Core Service Outage is defined as the failure to deliver a call properly presented (i.e. Address, or Latitude/Longitude or Cell Sector) to the ***Core Services*** to some PSAPs due to a failure in some part of the Contractors solution. The Core Services availability shall have an uptime of at least 99.999%.

Note that delivering a call to an alternate or default CA PSAP due to an Emergency Services IP Network (ESInet) connectivity problem, a CA PSAP problem or other external circumstance not part of the Contractors solution, is not defined as a Core Service Outage.

Core Service Availability			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The NG9-1-1 core service will deliver 9-1-1 traffic including location information to the appropriate CPE.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The monthly Availability percentage shall be based on the accumulative total of all outage durations for each calendar month.	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC of NG9-1-1 Core Service. Next consecutive month to fail to meet the SLA objective shall result in a 50% credit/or adjustment of the TMRC of NGCS. Each additional consecutive month to fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC of NGCS plus

			an additional $50,000.

32.7 SLA NG CORE SERVICES – ROUTING FAILURE

A Routing Failure is defined as the failure to select the correct preferred PSAPs for a call based on the information accompanying the call, including any and all parts of the NG9-1-1 Core Services. Incorrect routing due to incorrect or missing data accompanying the call, or due to incorrect GIS database entries provided by the authoritative service, or alternate routing due to factors such as CA PSAP conditions, or network outages not under the Contract resulting control of the Contractor, are not considered Routing Failures. The SLA requires that 99.999% of all calls be free of Routing Failures.

Routing Failure			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The failure to select the correct preferred PSAP for a call based on the information accompanying the call and the contents of the GIS and Policy Databases within NGCS.	The monthly number of calls that are routed to a specific PSAP divided by the number of calls the information accompanying the call and the contents of the GIS and Policy Databases indicate should have been routed to that specific PSAP multiplied by 100.	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC of NGCS. Next consecutive month to fail to meet the SLA objective shall result in a 50% credit/or adjustment of the TMRC of NGCS. Each additional consecutive month to fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC of NGCS plus an additional $50,000.

32.8 SLA NG CORE SERVICE – VOICE QUALITY MEAN OPINION SCORE (MOS)

NG Core Network Services must forward voice calls with little or no degradation of voice quality of the call from the ingress demarcation point to the egress demarcation point, as measured and monitored by an automated MOS measurement tool between various ingress and egress points at times when the ESInet is meeting its performance parameters. MOS values shall be measured hourly unless a problem has been detected, in which case measurements shall be made at five (5) minute intervals as necessary, 99% of the MOS measurements shall exceed two-point-six (2.6), and 90% of the MOS measurements shall exceed three-point-eight (3.8). If the ESInet is not meeting performance standards and while a Trouble Ticket is open on the ESInet performance problem, then substandard MOS measurements shall not be charged against the Contractors performance.

NG CORE NETWORK SERVICE – MOS			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
NG Core Network Services must forward voice calls with little or no degradation of voice quality of the call from the ingress demarcation point to the egress demarcation point, as measured and monitored by an automated Mean Opinion Score (MOS) measurement tool between various ingress and egress points at times when the ESInet is meeting its performance parameters.	MOS values shall be measured hourly unless a problem has been detected	At five (5) minute intervals, 99% of the MOS measurements shall exceed 2.6 and 90% shall exceed 3.8.	25% credit/or adjustment of TMRC of NG9-1-1 Core Services for single occurrence. 50% credit/or adjustment of TMRC of NG9-1-1 Core Services for second occurrence with a 60 minute period. 100% credit/or adjustment of TMRC of NG9-1-1 Core Services for third occurrence with a 60 minute period.

32.9 SLA NG CORE SERVICE – CATASTROPHIC OUTAGE 1

Core Service Catastrophic Outage 1

Definition	Measurement Method	Objective	Rights and Remedies
The NG9-1-1 core service will deliver 9-1-1 traffic including location information to the appropriate NG9-1-1 CPE.	Single outage with a duration of six (6) minutes or more.	Preventing outages of six (6) minutes or more.	100% credit/or adjustment of the TMRC of NGCS plus an additional $50,000.

32.10 SLA NG CORE SERVICE – CATASTROPHIC OUTAGE 2

Catastrophic Outage 2			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The NG9-1-1 Core Service will deliver 9-1-1 traffic including location information to the appropriate NG9-1-1 CPE.	Single outages of greater than two (2) minutes and less than six (6) minutes.	Preventing outages greater than two (2) minutes, but less than six (6) minutes.	50% credit/or adjustment of the TMRC of NGCS.

32.11 SLA PRIME NG TEXT TO 9-1-1 SERVICE AVAILABILITY CHART

NG Text to 9-1-1 Service Availability			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
NG Text to 9-1-1 Service shall deliver text calls to the appropriate PSAP for every PSAP in the State, within the Contractor's control.	The monthly availability percentage equals the Scheduled Uptime per month less Unavailable Time divided by Scheduled Uptime per month multiplied by 100. Scheduled uptime is based on 24x number of days in the month. The monthly Availability percentage shall be based on the	99.999%	Failure to meet the SLA objective for one month shall result in a 25% credit/or adjustment of the TMRC of NG Text to 9-1-1 for that month. Next consecutive month fail to meet the SLA objective shall result in a 50% credit/or adjustment of the TMRC of NG

	accumulative total of all outage durations for each calendar month.		Text to 9-1-1 for that month. Each additional consecutive month fail to meet the SLA objective shall result in a 100% credit/or adjustment of the TMRC of NG Text to 9-1-1 for that month plus additional $10,000.

32.12 SLA PRIME NG TIME TO RESTORE – TEXT SERVICE FAILURE CHART

Time to Repair – Text Service Failure			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
NG Text to 9-1-1 service shall deliver text calls to the appropriate PSAP for every PSAP in the State, within the Contractor's control.	Single outage with a duration of two (2) minutes to five (5) minutes.	Outages greater than two (2) minutes	25% credit/or adjustment of the TMRC for NG Text to 9-1-1.
NG Text to 9-1-1 service shall deliver text calls to the appropriate PSAP for every PSAP in the State, within the Contractor's control.	Single outage with a duration of six (6) minutes to 29 minutes.	Outages greater than six (6) minutes.	50% credit/or adjustment of the TMRC for NG Text to 9-1-1.

NG Text to 9-1-1 service shall deliver text calls to the appropriate PSAP for every PSAP in the State, within the Contractor's control.	Single outage with a duration of 30 minutes to 59 minutes.	Outages greater than 30 minutes.	100% credit/or adjustment of the TMRC.
NG Text to 9-1-1 service shall deliver text calls to the appropriate PSAP for every PSAP in the State, within the Contractor's control.	Single outage with a duration of 60 minutes or more.	Outages greater than 60 minutes.	100% credit/or adjustment of the TMRC plus an additional $5,000 for NG Text to 9-1-1.

32.13 SLA PRIME NG TIME TO TRANSITION TEXT-TO-9-1-1 SERVICE

Time to transition Text-to-9-1-1 Service			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
All PSAPs who have already deployed text with web or integrated service, as of Contract award, must be transitioned to the awarded Contractor no less than one (1) year of the Contract execution date.	The number of PSAPs deployed with text service as of the contract award date that have signed and submitted the SOW NG Prime Text-to-9-1-1 Acceptance and Authorization Check List.	To transition a minimum of 100 PSAPs that are currently text deployed within the first six months of contract award date. The remaining Text	Any of the first 100 PSAPs transitioning within the first six (6) months that have not signed system acceptance shall result in a 100% credit/or adjustment for a total of each Monthly Recurring Costs (MRC). For the remaining PSAPs transitioning within the first 12 months that

		deployed PSAPs shall be transitioned to the NG9-1-1 Services - Prime contract within 12 months of the contract award date.	have not signed system acceptance shall result in a 100% credit/or adjustment for a total of each MRC plus an additional $5,000. Any PSAP deployed that has not transitioned by 24 months after contract award date shall result in a 100% credit/or adjustment for a total of each MRC. Plus an additional $10,000.

32.14 SLA PRIME NG TIME TO DEPLOY NEW TEXT-TO-9-1-1 SERVICE

Time to deploy Text-to-9-1-1 Service			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The contractor shall have 180 days to deploy text for any PSAP's initial request to deploy text for web or integrated.	From the Text Deployment Status report, the time measured in calendar days from the date of the requested order approved.	Any text deployment shall be provisioned, tested and live, with final acceptance signed by the PSAP within 180 days of request to take text.	Every month, or any portion of a month after 180 days, shall result in a 100% credit/or adjustment for a total of each MRC.

32.15 NG9-1-1 ALERT AND WARNING SYSTEM (NG9-1-1 AWS)

NG9-1-1 Alert and Warning System (NG9-1-1 AWS)			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The PNSP shall provide NG9-1-1 AWS to broadcast notifications to a pre-selected geographic area and/or delivery of an IPAWS message.	Single outages of greater than five (5) minutes.	99.99%.	25% credit/or adjustment of the TMRC for NG9-1-1 AWS.
The PNSP shall provide AWS to broadcast notifications to a pre-selected geographic area and/or delivery of an IPAWS message.	Single outage with a duration of greater than five (5) minutes to 29 minutes.	99.99%	50% credit/or adjustment of the TMRC for NG9-1-1 AWS.

The PNSP shall provide AWS to broadcast notifications to a pre-selected geographic area and/or delivery of an IPAWS message.	Single outage with a duration of 30 minutes to 59 minutes.	99.99%	100% credit/or adjustment of the TMRC for NG9-1-1 AWS.
The PNSP shall provide AWS to broadcast notifications to a pre-selected geographic area and/or delivery of an IPAWS message.	Single outage with a duration of 60 minutes or more.	99.99%	100% credit/or adjustment of the TMRC plus an additional $5,000 for NG9-1-1 AWS.

32.16 TECHNICAL SLA COMPLIANCE REPORT

The PNSP and each RNSP shall submit Monthly SLA Compliance Report for each NG service type shall be provided in the format listed below. The PNSP and RNSPs shall submit a monthly report to the CA 9-1-1 Branch no the 10th of each month following the end of the reporting month that reflects the status of all SLA objectives that were not met during the previous month, including the rights and remedies. The report shall list all Trouble Tickets that were open and/or acted upon during the reported month, including tickets not qualifying for SLA remedy. This report shall show what SLA rights and remedies were applied to each ticket number, when applicable. If no Trouble Tickets were opened and/or acted upon during a month, the report shall state there were no issues or tickets for that month. The CA 9-1-1 Branch may review this with the Contractor every month, to determine if the monthly technical SLA compliance report needs to be adjusted to support the overall CA 9-1-1 Branch fiscal oversight.

The monthly SLA compliance report shall include the following detail:

1) Report period;
2) Contractor's trouble ticket number;
3) PSAP name;

4) PSAP FCC ID;
5) Service type;
6) Brief trouble symptom;
7) Brief restoration description;
8) Ticket open date and time;
9) Problem resolution date and time;
10) Total stop clock duration, outage duration;
11) Yes/no if qualified for SLA;
12) The applicable SLA; and
13) Rights and remedies applied to each ticket when applicable.

32.17 NG TECHNICAL SLA COMPLIANCE REPORT CHART

NG Technical C**ompliance Report SLA**			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
Reporting Requirement The Contractor shall provide the SLA reports required by this contract for each month of activity during the term of the contract by the 10th business day of the following month	Business Days.	The Contractor shall deliver accurate and complete reports by the 10th of the month following the end of the applicable reporting month.	Failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each business day that the report is not delivered after the objective.

32.18 UNPLANNED DOWNTIME REPORTING

UNPLANNED DOWNTIME REPORTING SLA			
Definition	**Measurement Method**	**Objective**	**Rights and Remedies**
The Contractor shall provide an initial root cause analysis within 48 hours.	Business Days	The Contractor shall deliver initial root cause analysis to CA 9-1-1 Branch and the affected PSAPs within 48 hours of unplanned failure.	Each occurrence of a failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each business day that the report is not delivered after the objective.
Disclosure for Unplanned Downtime and Root Cause Analysis shall be provided within 15 business days.	Business Days.	The Contractor shall deliver disclosure reports to CA 9-1-1 Branch and the affected PSAPs within 15 business days of unplanned failure.	Each occurrence of a failure to meet the objective shall result in a $5,000.00 credit/or adjustment for each business day that the report is not delivered after the objective.

32.19 STOP CLOCK CONDITIONS (PNSP and RNSP)

The following Stop-Clock Conditions shall apply for any of the SLA Categories, during the term of this Contract including any and all extensions. Timeframes are dependent on the length of time the Contractor takes to restore the NG9-1-1 service, minus the time associated with events outside of the Contractor's control to prevent punitive damages

from being assessed. At any time the Contractor can contact the CA 9-1-1 Branch to discuss Stop Clock conditions that may not be identified below.

32.20 STOP CLOCK – REQUEST FOR DELAY (PNSP and RNSP)

Periods when restoration or testing effort is delayed at the specific request of the PSAP or CA 9-1-1 Branch. The Stop-Clock condition shall exist during the period the Contractor was delayed, provided that reasonable and documented efforts are made to contact the PSAPs during the applicable Stop-Clock period.

32.21 STOP CLOCK – REQUEST FOR OBSERVATION (PNSP and RNSP)

Time after a service has been restored, but the PSAP or CA 9-1-1 Branch requests ticket be kept open for observation. If the service is later determined by the PSAP or CA 9-1-1 Branch to not have been restored, the Stop-Clock shall continue until the time the PSAP or CA 9-1-1 Branch notifies the Contractor that the service has not been restored.

32.22 STOP CLOCK – RESTORATION NOT VERIFIED (PNSP and RNSP)

Time after a service has been restored, but the PSAP or CA 9-1-1 Branch is not available to verify that the service is working. If the service is later determined by the PSAP or CA 9-1-1 Branch, to not have been restored, the Stop-Clock shall apply only for the time period between Contractor's reasonable attempt to notify the PSAP or CA 9-1-1 Branch that Contractor believes the service has been restored and the time the PSAP or CA 9-1-1 Branch notifies the Contractor that the service has not been restored.

32.23 STOP CLOCK – LACK OF ENTRANCE (PNSP and RNSP)

Lack of building entrance facilities or conduit structure that are the PSAPs responsibility to provide.

32.24 STOP CLOCK – SITE READINESS REQUIREMENTS (PNSP and RNSP)

PSAPs failure to prepare the site in accordance with the Contractor's Site Readiness Requirements.

32.25 STOP CLOCK – PSAP CONTACT/ACCESS PROBLEM (PNSP and RNSP)

The following contact/access problems, provided that Contractor makes reasonable efforts to contact the PSAPs during the applicable stop-clock period:

1) Access necessary to correct the problem is not available because access has not been arranged by site contact or the PSAPs representative;
2) Site contact refuses access to technician who displays proper identification;

3) Insufficient or incorrect site contact information which prevents access, provided that Contractor takes reasonable steps to notify the PSAPs of the improper contact information and takes reasonable steps to obtain the correct information;
4) Site has limited hours of business that directly impacts the Contractor's ability to resolve the problem;
5) If it is determined later that the cause of the problem was not at the site in question, then the Stop-Clock shall not apply;
6) Any problem or delay to the extent caused by PSAPs staff that prevents or delays Contractor's resolution of the problem. In such event, Contractor shall make a reasonable request to PSAPs staff to correct the problem or delay;
7) PSAPs applications that interfere with repair of the trouble;
8) Failure of the Trouble Ticket originator or responsible party to return a call from Contractor's technician for on-line close-out of Trouble Tickets after the service has been restored as long as Contractor can provide documentation substantiating message from Contractor's technician.

32.26 STOP CLOCK – UNAPPROVED ALTERATIONS (PNSP and RNSP)

If service failure is caused by alterations or attachments not furnished, approved or maintained by the Contractor.

32.27 REPORTING TROUBLE TICKET LOG (PNSP and RNSP)

The Contractor shall maintain a Trouble Ticket Log that will track the progress and status of restoration for all SLAs. The Contractor's Trouble Ticket Log will include the date and time that each Failure was reported, or system/service alarm of failure whichever occurs first, each PSAP affected by the failure, the current status of the restoration process and the date and time that the failure is remedied to the CA 9-1-1 Branch representative's satisfaction. The Contractor shall provide web-portal, 24 hour, seven (7) day, access to the CA 9-1-1 Branch in order to track progress of the restoration of failures and to validate SLA calculations.

32.28 UNPLANNED DOWNTIME DISCLOSURE AND ROOT CAUSE ANALYSIS (PNSP and RNSP)

In the event an individual NG Core Service component is impacted by unplanned downtime, (such as a failure), the Contractor shall provide, at the request of the CA 9-1-1 Branch and/or PSAPs, a written disclosure statement within two (2) calendar weeks via email which shall include but not be limited to:

1) The component that failed;

2) The duration the component was impacted;
3) Impact to the overall service due to the component failure – including impacted PSAPs by FCC Identification (ID);
4) Corrective action taken to recover the component.

In addition to the above disclosure the Contractor shall provide a root cause analysis to the CA 9-1-1 Branch and affected PSAPs within 15 business days. The Contractor shall provide an initial root cause analysis within 48 hours and then update the CA 9-1-1 Branch and PSAPs every five (5) business days until root cause is determined.

Root cause analysis shall identify the root cause of failure and corrective action to prevent a like failure in the future.

33 UNANTICIPATED/ NEW TECHNOLOGY TASKS (PNSP and RNSP)

This Contract shall include Unanticipated/New Technology Tasks, the cost of which shall be calculated on an hourly basis per EXHIBIT 22, COST WORKBOOK. These tasks shall include only services, including work products, not specifically set forth in this Contract, but which are subsequently identified as in-scope and necessary for the successful delivery of the services described in this Contract. Prior to commencement of any work being performed for Unanticipated/ New Technology Tasks, the Contractor shall have received an approved Work Order Authorizations (WOA) for such work. The labor rates for Unanticipated/ New Technology Tasks shall not exceed the hourly rates as stated in EXHIBIT 22, COST WORKBOOK. WOAs for Unanticipated/New Technology Tasks shall include the Contractor's estimated number of hours required to complete the work, multiplied by the hourly labor rates specified in EXHIBIT 22, COST WORKBOOK. The CA 9-1-1 Branch will release payment for any WOA upon the CA 9-1-1 Branch acceptance criteria specified in the approved WOA in accordance with SOW section 36, BUDGET DETAIL AND PAYMENT PROVISIONS.

33.1 Work ORDER AUTHORIZATIONS (PNSP and RNSP)

1) The WOA establishes that the CA 9-1-1 Branch and Contractor have a common understanding of the scope, schedule, format, content (depth and breadth), estimated hours per task by staff member and acceptance criteria of work products required prior to the Contractor beginning work. The CA 9-1-1 Branch and Contractor will define and develop Acceptance Criteria and these tasks shall be assigned to the Contractor, including specific, measurable success factors, to be set forth in the WOA. The tasks and any potential work products must be listed in the WOA form. The WOA details Contractor services required to meet project objectives.

2) All Contractor work shall be authorized in advance via the WOA process, see SOW - Attachment 6 for the WOA form. Once the WOA has been reviewed and accepted the Contractor and CA 9-1-1 Branch NG9-1-1 Manager, or designee, will sign it. This will constitute acceptance of the WOA. The originally approved WOA will be retained by the CA 9-1-1 Branch NG9-1-1 Manager with copies sent to the Contractor.

3) It is understood and agreed by both parties that all of the terms and conditions of this contract shall remain in force with the inclusion of any such WOA.

4) If, in the performance of the work, the Contractor determines that the work approved through the WOA cannot be accomplished within the estimated work hours, the Contractor will immediately notify the CA 9-1-1 Branch NG9-1-1 Manager in writing of the Contractor's estimate additional hours to complete the work in full. Upon receipt of such notification, CA 9-1-1 Branch may:

    a) Alter the scope of the WOA in order to define tasks that can be accomplished within the remaining estimated work hours by issuance of an approved WOA amendment or
    b) Terminate the WOA.

34 CONTRACTOR SERVICE ORDERING PROCESS – 9-1-1 TARIFFED SERVICES (PNSP and RNSP)

In California the NG9-1-1 Service Provider is required to follow the steps outlined below when ordering items or services that are governed by CPUC tariffs. Once approved and submitted, invoices will be billed by the contractor to the CA 9-1-1 Branch for direct payment.

1) Prime Network Service Provider submits supporting documentation to CA 9-1-1 Branch

   The contractor will submit the following to the CA 9-1-1 Branch:
    a) Copy of completed TDe-289 form (SOW Attachment 2 – TDe-289);
    b) Tariff pricing for each line item and reference to NG9-1-1 Tariff filing;
    c) Change in project pricing, including NRC and MRC, broken out by item or service.

   A CA 9-1-1 Branch NG9-1-1 Manager will review the documents for compliance to the established tariffs and assign an internal tracking number to the overall project.

2) CA 9-1-1 Branch issues TDe-289 to contractor:

Once the documents have been reviewed and approved by the CA 9-1-1 Branch, the assigned NG9-1-1 Manager will generate a TDe-289 form. The form will be routed internally for CA 9-1-1 Designee signature. Once signed, the NG9-1-1 Manager will return an approved copy to the contractor. This will serve as official "approval" of the project and the contractor can proceed with ordering.

3) Contractor orders services/proceeds with project:
The Contractor may then order services and proceed with the project. All related invoices shall be submitted to the CA 9-1-1 Branch for direct payment, pursuant to the terms and conditions of the executed SOW.

35 INSURANCE REQUIREMENTS (PNSP and RNSP)

Insurance Requirements – Contractor shall comply with all requirements outlined in the one (1) General Provisions section and two (2) Contract Insurance Requirements outlined in this section. No payments will be made under this contract until contractor fully complies with all requirements.

1) **General Provisions Applying to All Policies**
   a) **Coverage Term** – Coverage needs to be in force for the complete term of the contract. If insurance expires during the term of the contract, a new certificate must be received by the State at least 30 days prior to the expiration of this insurance. Any new insurance must comply with the original contract terms of the contract;
   b) **Policy Cancellation or Termination & Notice of Non-Renewal** – Contractor is responsible to notify the State within five (5) business days of any cancellation, non-renewal or material change that affects required insurance coverage. New certificates of insurance are subject to the approval of the Department of General Services and the Contractor agrees no work or services will be performed prior to obtaining such approval. In the event Contractor fails to keep in effect at all times the specified insurance coverage, the State may, in addition to any other remedies it may have, terminate this Contract upon the occurrence of such event, subject to the provisions of this Contract;
   c) **Premiums, Assessments and Deductibles** – Contractor is responsible for any premiums, policy assessments, deductibles or self-insured retentions contained within their insurance program;
   d) **Primary Clause** – Any required insurance contained in this contract shall be primary, and not excess or contributory, to any other insurance carried by the State;
   e) **Insurance Carrier Required Rating** – All insurance companies must carry an AM Best rating of at least "A–" with a financial category rating of no lower

than VII. If the Contractor is self-insured for a portion or all of its insurance, review of financial information including a letter of credit may be required;

f) **Endorsements** – Any required endorsements requested by the State must be physically attached to all requested certificates of insurance and not substituted by referring to such coverage on the certificate of insurance;

g) **Inadequate Insurance** – Inadequate or lack of insurance does not negate the contractor's obligations under the contract;

h) **Available Coverages/Limits** – All coverage and limits available to the contractor shall also be available and applicable to the State;

i) **Satisfying an Self Insured Retention (SIR)** - All insurance required by this contract must allow the State to pay and/or act as the contractor's agent in satisfying any SIR. The choice to pay and/or act as the contractor's agent in satisfying any SIR is at the State's discretion;

j) **Use of Subcontractors** - In the case of Contractor's utilization of subcontractors to complete the contracted scope of work, contractor shall include all subcontractors as insured's under Contractor's insurance or supply evidence of subcontractor's insurance to The State equal to policies, coverages, and limits required of Contractor.

2) **Contract Insurance Requirements**

Contractor shall display evidence of the following on a certificate of insurance evidencing the following coverages:

a) **Commercial General Liability**

Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Commercial General Liability Insurance covering bodily injury, and property damage in a form and with coverages that are satisfactory to the State. This insurance shall include personal and advertising injury liability, products, completed operations, and contractual liability coverage for the indemnity provided under this Contract. Coverage shall be written on an occurrence basis in an amount not be less than $1,000,000 per occurrence. Annual aggregate limit shall not be less than $2,000,000. **The State of California, its officers, agents, and employees are to be covered as additional insureds with respect to liability arising out of work or operations.**

b) **Automobile Liability**

Contractor shall maintain motor vehicle liability with limits of not less than $1,000,000 combined single limit. Such insurance shall cover liability arising out of a motor vehicle including owned, hired, and non-owned motor vehicles. **The State of California, its officers, agents, and employees are to**

be covered as additional insureds with respect to liability arising out of work or operations.

c) **Workers' Compensation and Employer's Liability**
Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease. **Policy shall be endorsed to include a waiver of subrogation in favor of State of California.**

d) **Technology Professional Liability/Errors and Omissions Insurance** appropriate to the Contractors profession and work hereunder, with limits not less than $5,000,000 per occurrence. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by the Contractor in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, copyright, trademark, invasion of privacy violations, information theft, release of private information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

1. The Policy shall include, or be endorsed to include, ***property damage liability coverage*** for damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the State in the care, custody, or control of the Contractor. If not covered under the Contractors liability policy, such "property" coverage of the may be endorsed onto the Contractors Cyber Liability Policy as covered property as follows:

   Cyber Liability Coverage in an amount sufficient to cover the full replacement value of damage to, alteration of, loss of, or destruction of electronic data and/or information "property" of the State that will be in the care, custody, or control of Vendor.

2. **If Policy is written on a claims-made basis provide the following:**

   a) The Retroactive Date must be shown, and must be before the date of the Contract or the beginning of contract work;

   b) Insurance must be maintained and evidence of insurance must be provided ***for at least five (5) years after completion of the contract of work;***

c) If coverage is canceled or non-renewed, and not replaced ***with another claims-made policy form with a Retroactive Date prior to*** the Contract effective date, the Contractor must purchase "extended reporting" coverage for a minimum of ***five (5)*** years after completion of work.

3) **Other Required Insurance Provisions.** Certificate of Insurance must also contain all of the following provisions:

a) Name and address of the insurance company, the policy number, and the beginning and ending dates of the policy;

b) Statement requiring the Insurer to provide written notice to Cal OES 30 calendar days prior to canceling Contractor's policy;

c) Statement that CA 9-1-1 Branch, its officers, agents, servants and employees are included as additional insured on the policy, but only insofar as the services under this Contract are concerned;

d) Statement that neither CA 9-1-1 Branch, nor any of its agencies, will be responsible for any premium or assessment on said policies;

e) The Contractor shall submit the certificate of insurance, identifying the California Governor's Office of Emergency Services contract number, to
CA 9-1-1 Branch at the following address:

California Governor's Office of Emergency Services
Procurement and Logistical Services
Attention:
3650 Schriever Avenue
Mather, CA 95655

To expedite processing, certificates may be faxed to: (916) 845-8303

36 BUDGET DETAIL AND PAYMENT PROVISIONS (PNSP and RNSP)

1) The Contractor shall be limited to two (2) months of back billing including any reconciliation effort, on all services and functionality ordered under the Contract. Invoices presented more than 12 months after the formal acceptance of the service or functionality will not be considered valid and shall not be paid;

2) The Contractor shall reconcile incorrect invoices within 30 calendar days from the date of notification by CA 9-1-1 Branch of the discrepancy. CA 9-1-1 Branch shall suspend all current charges when unresolved disputed items extend beyond 90 days. Remittance shall resume to include any outstanding payments, upon resolution;

3) The Contractor shall issue invoices to CA 9-1-1 Branch for only those milestone services after system testing and acceptance, as agreed by CA 9-1-1 Branch. The NRC and the MRC shall be on separate invoices;

4) The Contractor shall render invoices for total monthly service charges following the month for which the charges accrue. Monthly service billing shall only be billed in full month increments after service has been rendered:

5) The Contractor shall provide invoices under this Contract in accordance with the CA 9-1-1 Branch Operations Manual. Example: Exhibit A, SOW, SOW - Attachment 1 NG9-1-1 SERVICE INVOICE TEMPLATE.

6) All invoices submitted to the CA 9-1-1 Branch as a result of this Contract will be billed separately from other charges the Contractor may currently be billing. Invoices not received in the approved format shall not be processed;

7) Payment for services performed under this contract shall not exceed the rates listed in EXHIBIT 22 COST WORKBOOK. It shall be the CA 9-1-1 Branch NG9-1-1 Manager's sole determination as to whether a service has been successfully completed and is acceptable;

8) Submit electronic invoices with reference to the Contract number to:

Email: CA911Invoicing@caloes.ca.gov
California Governor's Office of Emergency Services
Public Safety Communications
Attention: CA 9-1-1 Branch

9-1-1 Reconciliation Unit
601 Sequoia Pacific Blvd., MS9-1-1
Sacramento CA 95811

9) The Contractor shall not assess late fees for any reason.

10) The Contractor costs related to items such as travel or per diem are costs of the Contractor and will not be paid separately as part of this Contract.

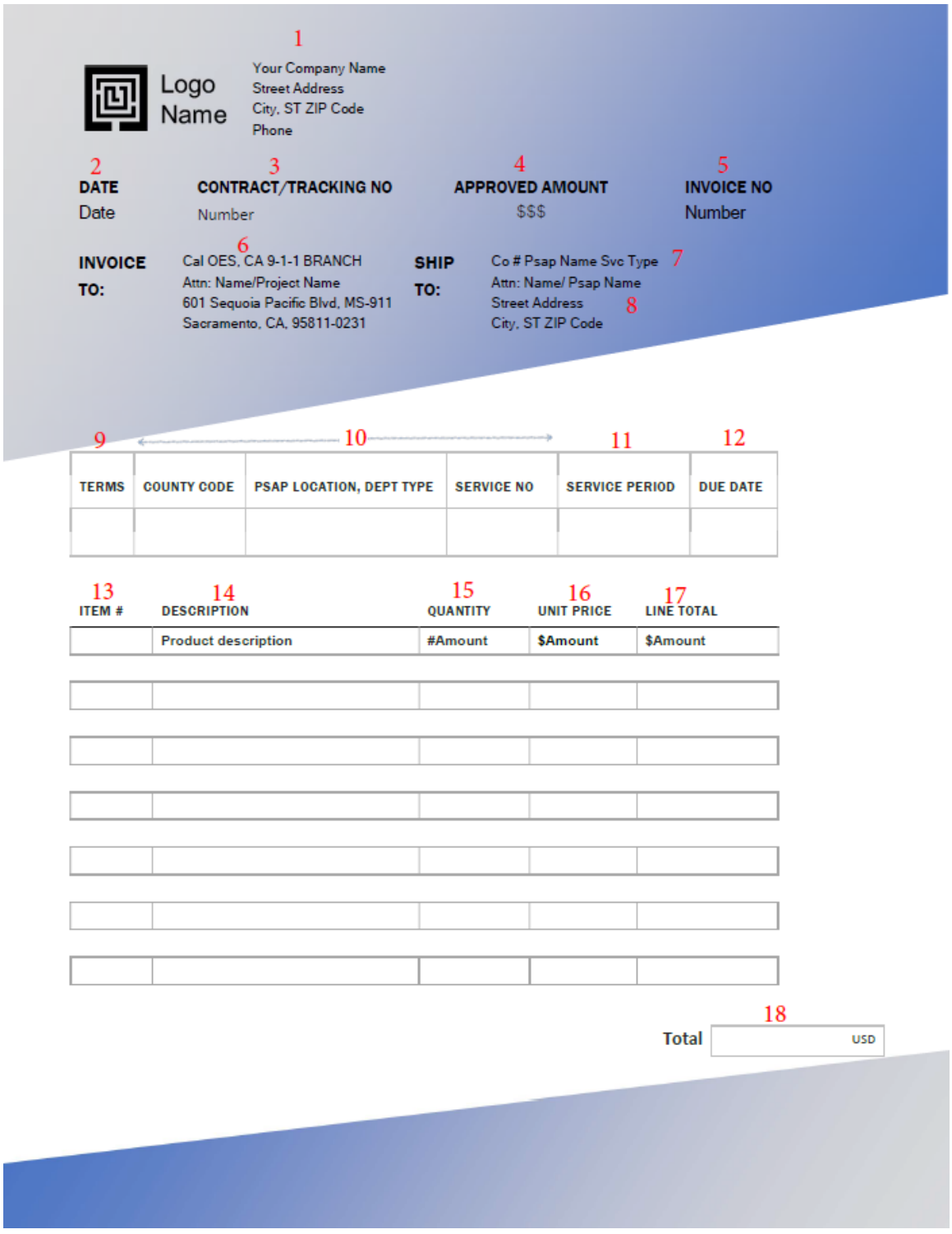
36.1 BUDGET CONTINGENCY CLAUSE (PNSP and RNSP)

1) Payment will be made in accordance with, and within the time specified in, Government Code Chapter 4.5, commencing with Section 927. Payment to small/micro businesses shall be made in accordance with and within the time specified in Chapter 4.5, Government Code 927 et seq.

2) It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Contract does not appropriate sufficient funds for the program, this Contract shall be of no further force and effect. In this event, CA 9-1-1 Branch shall have no liability to pay any funds whatsoever to the Contractor or to furnish any other considerations under this Contract and Contractor shall not be obligated to perform any provisions of this Contract.

3) If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, CA 9-1-1 Branch shall have the option to either cancel this Contract with no liability occurring to the CA 9-1-1 Branch, or offer an amendment to the Contract to reflect the reduced amount.

SOW - ATTACHMENT 1: NG9-1-1 SERVICE INVOICE SAMPLE TEMPLATE



1
Logo Name
Your Company Name
Street Address
City, ST ZIP Code
Phone

2 DATE
Date

3 CONTRACT/TRACKING NO
Number

4 APPROVED AMOUNT
$$$

5 INVOICE NO
Number

INVOICE TO:
6
Cal OES, CA 9-1-1 BRANCH
Attn: Name/Project Name
601 Sequoia Pacific Blvd, MS-911
Sacramento, CA, 95811-0231

SHIP TO:
Co # Psap Name Svc Type 7
Attn: Name/ Psap Name
Street Address 8
City, ST ZIP Code

9 TERMS	COUNTY CODE	PSAP LOCATION, DEPT TYPE	SERVICE NO	11 SERVICE PERIOD	12 DUE DATE

13 ITEM #	14 DESCRIPTION	15 QUANTITY	16 UNIT PRICE	17 LINE TOTAL
	Product description	#Amount	$Amount	$Amount

18 Total USD

SOW - ATTACHMENT 1a: NG9-1-1 SERVICE INVOICE TEMPLATE INSTRUCTIONS

1) NOTE: * each section in the invoice template and the TDe-289 are numbered in red. CONTRACTOR: Name, Address and Direct contact number for inquires on this account (Ref. TDe-289 Contractor Name Part 1);
2) INVOICE NO: Invoice issue date;
3) CONTRACT/TRACKING NO: Contract number Ref. TDe-289 Part 3a) and state tracking number 'mandatory' (Ref. TDe-289 Part 3b);
4) APPROVED AMOUNT: cost approved on TDe-289 for one time or Recurring as applicable;
5) INVOICE NO: Contractor invoice number identifier;
6) INVOICE TO: (Ref. TDe-289 Part 6a)

Email: CA911Invoicing@caloes.ca.gov
Cal OES, CA 9-1-1 Branch
601 Sequoia Pacific Blvd, MS-911
Sacramento, Ca 95811-0231

7) ATTN: 'name of NG9-1-1 Manager 'optional' (Ref. TDe-289 Part 6b) SHIP TO (1st LINE): County Code, PSAP name, Service Number (Ref. TDe-289 Part 10 or fill in the appropriate county code and service type following table 1 and 2, PSAP name refer to TDe-289 Part 8);
8) SHIP TO: PSAP name and the location address of your delivery service (Ref. TDe-289 Part 8);
9) TERMS: the invoice cycle for this service [ex: 1 means the first bill, etc.];
10) COUNTY CODE, PSAP LOCATION, DEPT TYPE, SERVICE TYPE: Replicate Section 7 (Ref. TDe-289 Part 10);
11) SERVICE PERIOD: date and month through date and month (ex: 07/01/2018 – 07/31/2018);
12) DUE DATE: the due date of the invoice;
13) NG SERVICE #: Next Generation Service number (Ref. TDe-289 Part 13);
14) DESCRIPTION: description of NG9-1-1 Service and reference to NG9-1-1 Tariff Filing (Ref. TDe-289 Part 14) [ex: PSAP location, size];
15) QUANTITY: unit of measure and number of services;
16) UNIT PRICE: U.S. dollar amount per quantity;
17) LINE TOTAL: per NG Service total amount;
18) TOTAL: total amount due.

NG9-1-1 Service Invoice Template Instructions

Table 1 County Code

CO #	COUNTY	CO #	COUNTY
01	Alameda	31	Placer
02	Alpine	32	Plumas
03	Amador	33	Riverside
04	Butte	34	Sacramento
05	Calaveras	35	San Benito
06	Colusa	36	San Bernardino
07	Contra Costa	37	San Diego
08	Del Norte	38	San Francisco
09	El Dorado	39	San Joaquin
10	Fresno	40	San Luis Obispo
11	Glenn	41	San Mateo
12	Humboldt	42	Santa Barbara
13	Imperial	43	Santa Clara
14	Inyo	44	Santa Cruz
15	Kern	45	Shasta
16	Kings	46	Sierra
17	Lake	47	Siskiyou
18	Lassen	48	Solano
19	Los Angeles	49	Sonoma
20	Madera	50	Stanislaus
21	Marin	51	Sutter
22	Mariposa	52	Tehama
23	Mendocino	53	Trinity
24	Merced	54	Tulare
25	Modoc	55	Tuolumne
26	Mono	56	Ventura
27	Monterey	57	Yolo
28	Napa	58	Yuba
29	Nevada	97	Cal Fire (statewide)
30	Orange	98	CHP (statewide)

Table 2 Service Type

SV #	Service Type	SV #	Service Type
27	Text to 9-1-1 Services	31	9-1-1 Statewide GIS
28	9-1-1 Trunk & Trans Services	32	9-1-1 Aggregation Services
29	NG 9-1-1 Core Services	32	Miscellaneous

SOW - ATTACHMENT 2: NG9-1-1 SERVICE ORDER TEMPLATE

State of California, California 9-1-1 Emergency Communications Branch (CA 9-1-1 Branch)

CA 9-1-1 Service Order Form
TDe-289 (Rev.09/2018)

U.S. Mail form to:
Public Safety Communications, CA 9-1-1 Branch
601 Sequoia Pacific Blvd., MS-911
Sacramento, CA 95811-0231
(916) 657-9369

This Form To Be Completed By The State 9-1-1 Branch Only			
State Agency:	CA 9-1-1 Branch	Contractor Name:	
Address:	601 Sequoia Pacific Blvd., MS-911	Mailing Address:	
City, State, Zip:	Sacramento, CA 95811-0231	City, State, Zip:	
Email Address:	CA911Branch@caloes.ca.gov	E-Mail Address:	
Phone Number:	(916) 657-9369	Phone Number:	
Fax Number:	(916) 657-9882	CPCN Number:	
9-1-1 Project Lead:		Representative:	
PSAP Name:			
Contract Number:		**Contract Expiration Date:**	

1. Type of Next Generation Services: ( ) NG 9-1-1 PRIME ( ) NG 9-1-1 REGIONAL ( ) NG 9-1-1 SERVICES

2. Service category(ies) must be checked:

( ) NG 9-1-1 Aggregation Services ( ) NG 9-1-1 Statewide GIS ( ) NG 9-1-1 Trunk Services
( ) NG 9-1-1 Core Services ( ) NG Text to 9-1-1 Services ( ) Alert & Warning ( ) Other

Description of Next Generation Services to be funded:

Purchase/Service Information: Include service description, service number, quantity, unit cost, installation cost, monthly cost, and total cost. Attached SOW or supporting documentations, where applicable.

Description (Reference to CPUC' Advice Letter No. and Sheet #)	NG Service #	Unit of Measure	One-time (NRC) Cost	Monthly (MRC) Cost	Total NRC Cost	Total MRC Cost
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
			$ -	$ -	$ -	$ -
				Subtotal	$ -	$ -
				TOTAL APPROVED		$-

TDe-289 expiration date:	N/A	Fiscal Year:	
All invoices shall refer to tracking number:		Account Name:	

The State of California's monetary obligation under this agreement in subsequent fiscal years is subject to, and contingent upon, availability of funds in the State Emergency Telephone Number Account. Please be advised that this commitment to fund does not constitute a binding master agreement.

RECOMMENDED BY:	Date	APPROVED BY:	Date

SOW - ATTACHMENT 3 - PSAP LIST

California Statewide Statistics and PSAP Location Information

The California PSAPs listed below represent those funded by the CA 9-1-1 Branch. Not all PSAPs request/receive funding from the CA 9-1-1 Branch; therefore, the list is not inclusive of all PSAPs in California. Some NG9-1-1 Core Services with an ESINet *exist* today or are *planned* and are designated by "CE" or "CP". Some PSAPs contain Evergreen Network based Turnkey Call Handling Systems that are *existing* or *planned*, designated by "EE" or "EP". The remaining PSAPs are all Stand-Alone CPE, designated as "Blank" in the status field, or Host-Remote Call Handling Systems, designated with an "HS" as defined below.

The list designates if the PSAP currently received Text to 9-1-1 calls or is planning to but not yet deployed, but may be by the time the contract is awarded. All PSAPs without a predefined deliver modality will be determined at the time of deployment, if prior to contract award, or deploy with integrated text as defined in this contract.

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
1	8225	Alameda County Regional Fire/LLNL	Livermore		W / PD	11-29
2	523	Alameda County Sheriff's Department	San Leandro		W / D	6-10
3	524	Alameda Police Department	Alameda			6-10
4	525	Albany Police Department	Albany			1-5
5	526	Alhambra Police/Fire Department	Alhambra	EE, CP	W / D	1-5
6	528	Amador County Sheriff's Department	Jackson			1-5
7	530	Anaheim Police Department	Anaheim			11-29
8	532	Antioch Police Department	Antioch		W / D	6-10
9	533	Arcadia Police Department	Arcadia		W / D	1-5
10	534	Arcata Police Department	Arcata		I / PD	1-5
11	536	Arvin Police Department	Arvin		W / PD	1-5
12	537	Atascadero Police Department	Atascadero		W / D	1-5
13	538	Atherton Police Department	Atherton		W / D	1-5
14	539	Atwater Police Department	Atwater		W / PD	1-5
15	540	Auburn Police Department	Auburn	HS-P		1-5
16	542	Avalon Fire Department	Avalon		W / D	1-5
17	544	Azusa Police Department	Azusa		W / D	1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
18	545	Bakersfield Police Department	Bakersfield		W / PD	11-29
19	546	Baldwin Park Police Department	Baldwin Park		W / D	1-5
20	547	Banning Police Department	Banning		W / D	1-5
21	548	Barstow Police Department	Barstow		W / D	1-5
22	8114	Bay Area Rapid Transit (BART) Police Dept.	Oakland			1-5
23	551	Beaumont Police Department	Beaumont		W / D	1-5
24	552	Bell Gardens Police Department	Bell Gardens		W / PD	1-5
25	553	Bell Police Department	Bell			1-5
26	554	Belmont Police Department	Belmont		W / D	1-5
27	555	Benicia Police Department	Benicia			1-5
28	556	Berkeley Police/Fire Communications Center	Berkeley			6-10
29	558	Beverly Hills Police Department	Beverly Hills	EE, CP	W / D	1-5
30	560	Bishop Police Department	Bishop			1-5
31	561	Blythe Police Department	Blythe			1-5
32	562	Brawley Police Department	Brawley	HS-I	W / D	1-5
33	563	Brea Police Department	Brea			6-10
34	8531	Brentwood Police Department	Brentwood		W/ PD	1-5
35	567	Buena Park Police Department	Buena Park			6-10
36	568	Burbank Police Department	Burbank	EE, CP	W / D	1-5
37	569	Burlingame Police Department	Burlingame		W /D	1-5
38	571	Butte County Sheriff's Department	Oroville	CP, HS-B	I / D	6-10
39	574	Calaveras County Sheriff's Department	San Andreas			1-5
40	576	Calexico Police Department	Calexico	HS-I	W / PD	1-5
41	589	CAL-FIRE Camino (Amador/El Dorado Unit)	Camino			6-10
42	599	CAL-FIRE El Cajon (San Diego Unit)	El Cajon			6-10
43	601	CAL-FIRE Felton (San Mateo/Santa Cruz)	Felton			1-5
44	725	CAL-FIRE Fortuna (Humboldt/Del Norte Unit)	Fortuna			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
45	591	CAL-FIRE Fresno (Fresno/Kings Unit)	Fresno			1-5
46	596	CAL-FIRE Grass Valley (Nevada/Yuba/Placer)	Grass Valley			6-10
47	592	CAL-FIRE Mariposa (Madera/Mariposa/Merced)	Mariposa			1-5
48	594	CAL-FIRE Monterey (San Benito/Monterey)	Monterey			1-5
49	602	CAL-FIRE Morgan Hill (Santa Clara Unit)	Morgan Hill			1-5
50	570	CAL-FIRE Oroville (Butte Unit)	Oroville	CP, HS-B	I / D	1-5
51	597	CAL-FIRE Perris (Riverside Unit)	Perris			11-29
52	605	CAL-FIRE Red Bluff (Tehama/Glenn Unit)	Red Bluff	CP		1-5
53	603	CAL-FIRE Redding (Shasta/Trinity Unit)	Redding	CP		1-5
54	606	CAL-FIRE San Andreas (Tuolumne/Calaveras)	San Andreas			1-5
55	598	CAL-FIRE San Bernardino (San Bernardino)	San Bernardino			1-5
56	600	CAL-FIRE San Luis Obispo (San Luis Obispo)	San Luis Obispo			1-5
57	595	CAL-FIRE St Helena (Sonoma/Lake/Napa)	St Helena			1-5
58	992	CAL-FIRE Susanville (Lassen/Modoc Unit)	Susanville	CP		1-5
59	1004	CAL-FIRE Visalia (Tulare Unit)	Visalia			1-5
60	593	CAL-FIRE Willits (Mendocino Unit)	Willits			1-5
61	607	CAL-FIRE Yreka (Siskiyou Unit)	Yreka	CP		1-5
62	577	California City Police Department	California City		W / PD	1-5
63	579	Calistoga Police Department	Calistoga			1-5
64	581	Campbell Police Department	Campbell			1-5
65	582	Carlsbad Police Department	Carlsbad			1-5
66	584	Carmel Police Department	Carmel		W / D	1-5
67	587	Cathedral City Police Department	Cathedral City		W / D	6-10
68	609	Ceres Police Department	Ceres			6-10

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
69	8116	Cerritos College Police Department	Norwalk		W / D	1-5
70	610	Chico Police Department	Chico	CP, HS-B	I / D	6-10
71	612	Chino Police Department	Chino		W / D	6-10
72	613	Chowchilla Police Department	Chowchilla			1-5
73	637	CHP Atwater (Merced)	Atwater		W / PD	30+
74	614	CHP Bakersfield (Kern)	Bakersfield		W / PD	11-29
75	615	CHP Barstow (San Bernardino)	Barstow		W / D	1-5
76	616	CHP Bishop (Inyo)	Bishop		W / PD	11-29
77	617	CHP Border Comm Center	San Diego		W / PD	30+
78	618	CHP Capitol Communications Center	Sacramento		W / PD	1-5
79	619	CHP Chico (Butte)	Chico	CP	W / D	1-5
80	620	CHP El Centro (Imperial)	Imperial		W / D	1-5
81	623	CHP Eureka (Humboldt)	Arcata		W / PD	1-5
82	621	CHP Fresno	Fresno		W / PD	1-5
83	624	CHP Indio (Riverside)	Indio		W / PD	11-29
84	625	CHP Inland (San Bernardino)	Fontana		W / D	30+
85	639	CHP Irvine (Orange)	Irvine		W / PD	11-29
86	626	CHP Los Angeles	Los Angeles		W / D	30+
87	641	CHP Rancho Cordova (Sacramento)	Rancho Cordova		W / D	30+
88	640	CHP Redding (Shasta)	Redding	CP	W / PD	1-5
89	638	CHP Salinas (Monterey)	Salinas		W / D	11-29
90	642	CHP San Luis Obispo	San Luis Obispo		W / D	1-5
91	643	CHP Stockton (San Joaquin)	Stockton		W / PD	11-29
92	644	CHP Susanville (Lassen)	Susanville	CP	W / PD	1-5
934	647	CHP Ukiah (Mendocino)	Ukiah		W / PD	6-10
95	622	CHP Vallejo/Golden Gate (Solano)	Vallejo		W / D	11-29
96	648	CHP Ventura	Ventura		W / PD	11-29
97	649	CHP Yreka (Siskiyou)	Yreka	CP	W / PD	1-5
98	650	Chula Vista Police Department	Chula Vista			6-10
99	8255	Citrus Heights Police Department	Citrus Heights		W / PD	6-10
100	653	Claremont Police Department	Claremont		W / D	1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
101	654	Cloverdale Police Department	Cloverdale			1-5
102	655	Clovis Police Department	Clovis			1-5
103	658	Coalinga Police Department	Coalinga			1-5
104	659	Coloma Police Department	Coloma		W / PD	1-5
105	660	Colton Police Department	Colton		W / D	6-10
106	661	Colusa County Sheriff's Department	Colusa	CP		1-5
107	663	Concord Police Department	Concord		W / PD	6-10
108	911	CONFIRE - San Bernardino County Fire (Rialto)	Rialto		W / D	11-29
109	665	Contra Costa County Fire Protection District	Pleasant Hill		W / PD	6-10
110	666	Contra Costa County Sheriff's Department	Martinez		W / PD	6-10
111	667	Corcoran Police Department	Corcoran			1-5
112	669	Corning Fire Department	Corning	CP		1-5
113	668	Corning Police Department	Corning	CP		1-5
114	670	Corona Police Department	Corona			6-10
115	671	Coronado Police Department	Coronado			1-5
116	672	Costa Mesa Police Department	Costa Mesa			6-10
117	673	Cotati Police Department	Cotati			1-5
118	674	Covina Police Department	Covina		W / D	1-5
119	8074	CSU Channel Island Police Department	Camarillo			1-5
120	677	CSU Chico Police Department	Chico	CP, HS-B	I / D	1-5
121	678	CSU Dominguez Hills Police Department	Carson		W / D	1-5
122	8115	CSU East Bay Police Department	Hayward		W / PD	1-5
123	679	CSU Fresno Police Department	Fresno			1-5
124	680	CSU Fullerton Police Department	Fullerton			1-5
125	758	CSU Humboldt Police Department	Arcata			1-5
126	8118	CSU Long Beach University Police	Long Beach		W / D	1-5
127	681	CSU Los Angeles Police Department	Los Angeles		W / D	1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
128	682	CSU Northridge University Police	Northridge		W / D	1-5
129	573	CSU Pomona (Cal Poly) Police Department	Pomona		W / D	1-5
130	683	CSU San Bernardino Police Department	San Bernardino		W / D	1-5
131	684	CSU San Diego Police Department	San Diego			1-5
132	929	CSU San Francisco Police Department	San Francisco			1-5
133	685	CSU San Jose Police Department	San Jose			1-5
134	8124	CSU San Luis Obispo (Cal Poly) Police Dept.	San Luis Obispo		W / PD	1-5
135	8256	CSU San Marcos Police Department	San Marcos			1-5
137	691	Davis Police Department	Davis		W / PD	1-5
138	692	Del Norte County Sheriff's Department	Crescent City			1-5
139	693	Delano Police Department	Delano		W / PD	1-5
140	694	Dinuba Police Department	Dinuba			1-5
141	8231	Dos Palos Police Department (Westside Regional Comm)	Dos Palos		W / PD	1-5
142	695	Downey Fire Department	Downey		W / D	1-5
143	696	Downey Police Department	Downey		W / D	6-10
144	697	East Bay Regional Park District	Castro Valley			1-5
145	702	El Cajon Police Department	El Cajon			1-5
146	703	El Camino Community College District Police	Torrance		W / D	1-5
147	705	El Centro Police Department	El Centro	HS-I	W / D	1-5
148	708	El Dorado County Sheriff's Department	Placerville		W / PD	1-5
149	709	El Monte Police Department	El Monte		W / D	6-10
150	8155	Elk Grove Police Department	Elk Grove		W / D	6-10
151	711	Emeryville Police Department	Emeryville			1-5
152	713	Escondido Police Department	Escondido			6-10
153	715	Eureka Police Department	Eureka			6-10
154	717	Fairfax Police Department	Fairfax			1-5
155	718	Fairfield Police Department	Fairfield			1-5
156	722	Firebaugh Police Department	Firebaugh			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
157	723	Folsom Police Department	Folsom		I / PD	1-5
158	724	Fontana Police Department	Fontana		W / D	6-10
159	726	Fortuna Police Department	Fortuna			1-5
160	727	Foster City Police Department	Foster City		W / D	1-5
161	728	Fountain Valley Police Department	Fountain Valley			1-5
162	730	Fremont Police Department	Fremont			6-10
163	731	Fresno County EMS	Fresno			6-10
164	732	Fresno County Sheriff's Department	Fresno			6-10
165	733	Fresno Police Department	Fresno			11-29
166	737	Fullerton Police Department	Fullerton			6-10
167	738	Galt Police Department	Galt		W / PD	1-5
168	739	Garden Grove Police Department	Garden Grove			6-10
169	740	Gilroy Police Communications	Gilroy			1-5
170	741	Glendale Police Department	Glendale	EE,CP	W / D	6-10
171	742	Glendora Police Department	Glendora		W / D	1-5
172	743	Glenn County Sheriff's Department	Willows	CP		1-5
173	745	Gridley Police Department	Gridley	CP, HS-B	I / D	1-5
174	746	Grover Beach Police Department	Grover Beach		W / PD	1-5
175	748	Hanford Police Department	Hanford			1-5
176	749	Hayward Police Department	Hayward		W / D	6-10
177	750	Healdsburg Police Department	Healdsburg			1-5
178	751	Heartland Communications Facility Authority-Fire	El Cajon			6-10
179	752	Hemet Police Department	Hemet			1-5
180	754	Hillsborough Police Department	Hillsborough		W / PD	1-5
181	757	Humboldt County Sheriff's Department	Eureka			1-5
182	759	Huntington Beach Police Department	Huntington Beach			6-10
183	760	Huntington Park Police Department	Huntington Park		W / D	1-5
184	761	Huron Police Department	Huron			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
185	764	Imperial County Sheriff's Department	El Centro	HS-I	W / D	1-5
186	765	Indio Police Department	Indio		W / D	1-5
187	766	Inglewood Police/Fire Department Comm.	Inglewood		W / D	6-10
188	767	Inyo County Sheriff's Department	Independence			1-5
189	768	Irvine Police Department	Irvine			6-10
190	769	Irwindale Police Department	Irwindale		W / D	1-5
191	8242	Kern County Fire Department	Bakersfield		W / PD	11-29
192	771	Kern County Sheriff's Department	Bakersfield		W / PD	11-29
193	772	Kings County Sheriff's Department	Hanford			6-10
194	774	La Habra Police Department	La Habra			1-5
195	775	La Mesa Police Department	La Mesa			1-5
196	776	La Palma Police Department	La Palma			1-5
197	777	La Verne Police/Fire Department	La Verne		W / D	1-5
198	778	Laguna Beach Police Department	Laguna Beach			1-5
199	779	Lake County Sheriff's Department	Lakeport		I / PD	1-5
200	586	LASD - Carson Sheriff's Station	Carson	HS-LAS	W / D	1-5
201	608	LASD - Century Sheriff's Station	Lynwood	HS-LAS	W / D	6-10
202	8117	LASD - Cerritos Sheriff's Station	Cerritos	HS-LAS	W / D	1-5
203	662	LASD - Compton Sheriff's Station	Compton	HS-LAS	W / D	6-10
204	676	LASD - Crescenta Valley Sheriff's Station	La Crescenta	HS-LAS	W / D	1-5
205	698	LASD - East Los Angeles Sheriff's Station	Los Angeles	HS-LAS	W / D	1-5
206	652	LASD - Industry Sheriff's Station	City of Industry	HS-LAS	W / D	6-10
207	780	LASD - Lakewood Sheriff's Station	Lakewood	HS-LAS	W / D	6-10
208	781	LASD - Lancaster Sheriff's Station	Lancaster	HS-LAS	W / D	6-10
209	790	LASD - Lomita Sheriff's Station	Lomita	HS-LAS	W / D	1-5
210	805	LASD - Lost Hills/Malibu Sheriff's Station-Agoura	Calabasas	HS-LAS	W / D	1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
211	811	LASD - Marina Del Rey Sheriff's Station	Marina Del Rey	HS-LAS	W / D	1-5
212	8263	LASD - Metro Transportation Authority	Los Angeles	HS-LAS	W / D	1-5
213	849	LASD - Norwalk Sheriff's Station	Norwalk	HS-LAS	W / D	6-10
214	864	LASD - Palmdale Sheriff's Station	Palmdale	HS-LAS	W / D	1-5
215	872	LASD - Pico Rivera Sheriff's Station	Pico Rivera	HS-LAS	W / D	1-5
216	926	LASD - San Dimas Sheriff's Station	San Dimas	HS-LAS	W / D	1-5
217	955	LASD - Santa Clarita Valley Sheriff's Station	Valencia	HS-LAS	W / D	1-5
218	784	LASD - South Los Angeles Sheriff's Station	Los Angeles	HS-LAS	W / D	6-10
219	997	LASD - Temple City Sheriff's Station	Temple City	HS-LAS	W / D	6-10
220	1040	LASD - Walnut/Diamond Bar Sheriff's Station	Walnut	HS-LAS	W / D	1-5
221	1045	LASD - West Hollywood Sheriff's Station	Los Angeles	HS-LAS	W / D	1-5
222	782	Lassen County Sheriff's Department	Susanville	CP		1-5
223	785	Lincoln Police Department	Lincoln	HS-P		1-5
225	787	Livermore Police Department	Livermore		W / PD	1-5
226	788	Livingston Police Department	Livingston		I / PD	1-5
227	789	Lodi Police Department	Lodi			1-5
228	791	Lompoc Police Department	Lompoc			1-5
229	792	Long Beach Fire Department	Long Beach		W / D	6-10
230	794	Long Beach Police Department	Long Beach		W / D	11-29
231	796	Los Altos Police Department	Los Altos	HS-SC	I / PD	1-5
232	799	Los Angeles City Fire Department	Los Angeles		W / D	30+
233	797	Los Angeles County Fire	Los Angeles		W / D	11-29
234	800	Los Angeles Police Department	Los Angeles		W / D	30+
235	801	Los Banos Police Department	Los Banos		W / PD	1-5
236	802	Los Gatos Police Communications	Los Gatos		I / PD	1-5
237	803	Madera County Sheriff	Madera			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
238	804	Madera Police Department	Madera			1-5
239	806	Manteca Police Department	Manteca			1-5
240	808	Marin County Fire Department	Woodacre		I / PD	1-5
241	810	Marin County Sheriff's Department	San Rafael		I / PD	6-10
242	812	Mariposa County Sheriff's Department	Mariposa			1-5
243	813	Martinez Police Department	Martinez		W / D	1-5
244	814	Marysville Police Department	Marysville	CP		1-5
245	8264	McFarland Police Department	McFarland		W / PD	1-5
246	816	Mendocino County Sheriff's Department	Ukiah	HS-M	I / PD	6-10
247	817	Menlo Park Police Department	Menlo Park		W / D	1-5
248	819	Merced County Sheriff's Department	Merced		W / PD	1-5
249	820	Merced Emergency Medical Services	Merced		W / PD	1-5
250	821	Merced Police Department	Merced		W / PD	1-5
251	822	MetroNet - Metro Cities Fire Authority Comm. Center	Anaheim			6-10
252	825	Milpitas Police Department	Milpitas		I / PD	1-5
253	826	Modoc County Sheriff's Department	Alturas	CP		1-5
254	827	Mono County Sheriff's Department	Bridgeport			1-5
255	828	Monrovia Police Department	Monrovia		W / D	1-5
256	829	Montclair Police Department	Montclair		W / D	1-5
257	830	Montebello Police Department	Montebello		W / D	1-5
258	831	Montecito Fire Protection District	Montecito			1-5
259	835	Monterey County Emergency Communications	Salinas		W / D	11-29
260	834	Monterey Park Police/Fire Department	Monterey Park		W / PD	6-10
261	836	Morgan Hill Police Communications	Morgan Hill			1-5
262	838	Mountain View Police/Fire Department	Mountain View	HS-SC	I / PD	1-5
263	839	Mt. Shasta Police Department	Mt Shasta	CP		1-5
264	840	Murrieta Police Department	Murrieta			6-10

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
265	841	Napa County Communications	Napa			6-10
266	8126	NASA AMES Police Department	Moffett Field			1-5
267	842	National City Police Department	National City			1-5
268	844	Nevada County Sheriff's Department	Nevada City		I / PD	1-5
269	846	Newark Police/Fire Department	Newark			1-5
270	847	Newport Beach Police Department	Newport Beach			6-10
271	887	North County Dispatch	Rancho Santa Fe			6-10
272	850	Novato Police Department	Novato			1-5
273	851	Oakdale Police Department	Oakdale			1-5
274	852	Oakland Fire Department	Oakland			6-10
275	853	Oakland Police Department	Oakland			11-29
276	854	Oceanside Police Department	Oceanside			6-10
277	8479	Ontario Fire Department	Ontario		W / D	6-10
278	856	Ontario Police Department	Ontario		W / D	11-29
279	857	Orange County Fire Authority	Irvine			6-10
280	8257	Orange County Sheriff (Harbor Patrol/Newport Beach)	Corona Del Mar			1-5
281	858	Orange County Sheriff's Department	Silverado			11-29
282	859	Orange Police Department	Orange			6-10
283	860	Oroville Police Department	Oroville	CP, HS-B	I / D	1-5
284	861	Oxnard Police/Fire Department	Oxnard	HS-V		6-10
285	863	Palm Springs Police/Fire Department	Palm Springs		W / D	6-10
286	865	Palo Alto Police Department	Palo Alto	HS-SC	I / PD	6-10
287	866	Palos Verdes Estates Police/Fire Dept.	Palos Verdes		W / D	1-5
288	867	Paradise Police Department	Paradise	CP, HS-B	I / D	1-5
289	868	Pasadena Police Department	Pasadena	EE,CP	W / D	6-10
290	869	Paso Robles Police Department	Paso Robles		W / D	1-5
291	871	Petaluma Police Department	Petaluma			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
292	873	Piedmont Police Department	Piedmont			1-5
293	874	Pinole Police Department	Pinole		W / PD	1-5
294	875	Pismo Beach Police Department	Pismo Beach		W / D	1-5
295	876	Placentia Police Department	Placentia			1-5
296	877	Placer County Sheriff's Department	Auburn	HS-P		6-10
297	7957	Placerville Police Department	Placerville		W / PD	1-5
298	879	Pleasant Hill Police Department	Pleasant Hill		W / PD	1-5
299	880	Pleasanton Police Department	Pleasanton			1-5
300	881	Plumas County Sheriff's Department	Quincy	CP		1-5
301	882	Pomona Police Department	Pomona		W / D	6-10
302	883	Port Hueneme Police Department	Port Hueneme			1-5
303	885	Porterville Police Department	Porterville			1-5
304	888	Red Bluff Police Department	Red Bluff	CP	I / PD	1-5
305	889	Redlands Police Department	Redlands		W / D	6-10
306	891	Redondo Beach Police/Fire Department	Redondo Beach		W / D	1-5
307	892	Redwood City Police Department	Redwood City		W / D	6-10
308	893	Reedley Police Department	Reedley			1-5
309	895	Rialto Police Department	Rialto		W / D	6-10
310	897	Richmond Police Department	Richmond		W / D	6-10
311	898	Ridgecrest Police Department	Ridgecrest		W / PD	1-5
312	899	Ripon Police Department	Ripon			1-5
313	8120	Riverside County Sheriff's Department	Blythe	HS-R		1-5
314	8121	Riverside County Sheriff's Department	Palm Desert	HS-R		6-10
315	900	Riverside County Sheriff's Department	Riverside	HS-R		11-29
316	901	Riverside Police Department	Riverside		W / PD	11-29
317	902	Rocklin Police Department	Rocklin	HS-P		1-5
318	903	Rohnert Park Police Department	Rohnert Park			1-5
319	904	Roseville Police Department	Roseville	HS-P		6-10

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
320	906	Sacramento City Police Department	Sacramento		W / PD	11-29
321	905	Sacramento County Sheriff's Department	Elk Grove		W / PD	11-29
322	907	Sacramento Regional Fire Emergency Comm. Center - SRFECC	Sacramento			11-29
323	912	San Bernardino County Sheriff Dept.-Rialto/Valley	Rialto		W / D	11-29
324	915	San Bernardino County Sheriff's Department (Victorville/Desert)	Hesperia		W / D	11-29
325	917	San Bernardino Police Department	San Bernardino		W / D	11-29
326	918	San Bruno Police Department	San Bruno		W / D	1-5
327	922	San Diego County Lifeguards	San Diego			1-5
328	923	San Diego County Sheriff's Department	San Diego			11-29
329	924	San Diego Fire Communications/Metro Zone Command	San Diego			11-29
330	8258	San Diego Harbor Police Department	San Diego			1-5
331	925	San Diego Police Department	San Diego			30+
332	927	San Fernando Police Department	San Fernando	EE,CP	W / D	1-5
333	588	San Francisco Dept. Emergency Management	San Francisco		I / PD	30+
334	8125	San Francisco International Airport Police	South San Francisco		W / PD	1-5
335	931	San Gabriel Police Department	San Gabriel	EE,CP	W / D	1-5
336	933	San Joaquin County Sheriff's Department (Stockton/French Camp)	French Camp		W / PD	6-10
337	935	San Jose Police/Fire Communications	San Jose		W / PD	30+
338	936	San Leandro Police Department	San Leandro			6-10
339	937	San Luis Obispo County Sheriff's Department	San Luis Obispo		W / D	6-10

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
340	938	San Luis Obispo Police Department	San Luis Obispo		W / D	1-5
341	939	San Marino Police Department	San Marino		W / D	1-5
342	940	San Mateo County Communications	Redwood City			6-10
343	941	San Mateo Police Department	San Mateo		W / D	1-5
344	944	San Rafael Police Department	San Rafael			1-5
345	945	San Ramon Valley Fire Protection District	San Ramon		W / PD	1-5
346	948	Santa Ana Police Department	Santa Ana			11-29
347	950	Santa Barbara County Sheriff's Department	Santa Barbara		W / PD	6-10
348	951	Santa Barbara Police Department	Santa Barbara		W / PD	6-10
349	952	Santa Clara County Sheriff's Department Comm	San Jose			6-10
350	954	Santa Clara Police Department	Santa Clara		W / D	6-10
351	956	Santa Cruz Regional 9-1-1	Santa Cruz		W / D	11-29
352	958	Santa Maria Police Department	Santa Maria			6-10
353	960	Santa Monica Police Department	Santa Monica		W / D	11-29
354	961	Santa Paula Police Department	Santa Paula			1-5
355	962	Santa Rosa Police Department	Santa Rosa			6-10
356	964	Scotts Valley Police Department	Scotts Valley		I / PD	1-5
357	965	Sebastopol Police Department	Sebastopol			1-5
358	966	Selma Police Department	Selma			1-5
359	968	Shafter Police Department	Shafter		W / PD	1-5
360	969	Shasta County Comm. Center - SHASCOM	Redding	CP	W / PD	6-10
361	971	Sierra County Sheriff's Department	Downieville	CP		1-5
362	972	Sierra Madre Police/Fire Department	Sierra Madre	EE,CP	W / D	1-5
363	973	Signal Hill Police Department	Signal Hill		W / D	1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
364	974	Simi Valley Police Department	Simi Valley	HS-V	W / PD	1-5
365	975	Siskiyou County Sheriff's Department	Yreka			1-5
366	976	Solano County Sheriff	Fairfield			6-10
367	8259	Sonoma County REDCOM Fire & EMS	Santa Rosa			6-10
368	977	Sonoma County Sheriff's Department	Santa Rosa			6-10
369	979	Sonora Police Department	Sonora			1-5
370	980	South Bay Regional Public Comm. Authority	Hawthorne		W / D	6-10
371	981	South Gate Police Department	South Gate		W / D	6-10
372	983	South Lake Tahoe Police Department	South Lake Tahoe			1-5
373	984	South Pasadena Police/Fire Department	South Pasadena		W / D	1-5
374	985	South San Francisco Police Department	South San Francisco		I / D	6-10
375	986	St. Helena Police Department	St. Helena			1-5
376	988	Stanislaus Regional 9-1-1	Modesto			11-29
377	8260	Stockton Fire Department	Stockton			6-10
378	989	Stockton Police Department	Stockton		W / PD	11-29
379	990	Suisun City Police Department	Suisun		I / PD	1-5
380	991	Sunnyvale Police Department	Sunnyvale		W / D	6-10
381	993	Sutter County Sheriff's Department	Yuba City	CP		1-5
382	994	Taft Police Department	Taft		W / PD	1-5
383	996	Tehama County Sheriff's Department	Red Bluff	CP		1-5
384	1000	Torrance Police Department	Torrance		W / D	11-29
385	1001	Tracy Police Department	Tracy			1-5
386	1003	Trinity County Sheriff's Department	Weaverville	CP		1-5
387	8261	Tulare County Consolidated Ambulance Dispatch - TCCAD	Tulare			1-5
388	8262	Tulare County Fire Department	Farmersville			1-5
389	1005	Tulare County Sheriff's Department	Visalia			11-29
390	1006	Tulare Police Department	Tulare			6-10

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
391	1008	Tuolumne County Sheriff's Department	Sonora		I / PD	1-5
392	1009	Turlock Police Department	Turlock			6-10
393	1010	Tustin Police Department	Tustin			1-5
394	1012	UC Berkeley Police Department	Berkeley			1-5
395	1013	UC Davis Police Department	Davis		W / PD	1-5
396	1014	UC Irvine Police Department	Irvine			1-5
397	1015	UC Los Angeles Police Department	Los Angeles		W / D	1-5
398	8173	UC Merced Police Department	Merced		W / PD	1-5
399	1016	UC Riverside Police Department	Riverside		W / PD	1-5
400	1017	UC San Diego Police Department	La Jolla			1-5
401	1018	UC San Francisco Police Department	San Francisco			1-5
402	1019	UC Santa Barbara Police Department	Santa Barbara		W / PD	1-5
403	1020	UC Santa Cruz Police Department	Santa Cruz			1-5
404	1021	Ukiah Police Department	Ukiah	HS-M	I / PD	1-5
405	1023	Upland Police Department	Upland		W / D	6-10
406	549	US Air Force Beale AFB SFCC	Beale AFB			1-5
407	700	US Air Force Edwards AFB Fire Department	Edwards AFB		W / PD	1-5
408	1002	US Air Force Travis AFB	Travis AFB			1-5
409	1031	US Air Force Vandenberg AFB Police/Fire Dept.	Vandenberg AFB		W / PD	1-5
410	734	US Army Fort Hunter Liggett Police Department	Ft Hunter Liggett		W / D	1-5
411	736	US Army Fort Irwin Provost Marshall (MP)	Fort Irwin			1-5
412	886	US Army Presidio of Monterey Dispatch Center	Presidio of Monterey		W / D	1-5
413	1025	US Park Police Golden Gate NRA	San Francisco			1-5
414	967	US Sequoia National Park	Three Rivers			1-5
415	1053	US Yosemite National Park	El Portal			1-5
416	580	USMC Camp Pendleton JECC	Camp Pendleton			1-5

#	FCC ID	PSAP NAME	LOCATION	STATUS	TEXT	# OF POS RANGE
417	8075	USMC Logistics Base Barstow - NEBO Provost Marshall	Barstow			1-5
418	8123	USMC Miramar Air Station Police/Fire Dept.	San Diego			1-5
419	1027	USMC Twenty-Nine Palms Combat Center - Fire	Twenty-Nine Palms			1-5
420	1029	Vacaville Police Department	Vacaville			6-10
421	1030	Vallejo Police Department	Vallejo			6-10
422	987	Valley Regional Emergency Comm Center	Modesto			11-29
423	1033	Ventura County Fire Protection District	Camarillo			6-10
424	1032	Ventura County Sheriff's Department	Ventura	HS-V		6-10
425	1034	Ventura Police Department	Ventura			6-10
426	1035	Verdugo Fire Department	Glendale	EE,CP	W / D	6-10
427	1036	Vernon Police Department	Vernon		W / D	1-5
428	1038	Visalia Police Department	Visalia			6-10
429	1039	Walnut Creek Police Department	Walnut Creek		W / PD	1-5
430	1042	Weed Police Department	Weed	CP		1-5
431	1044	West Covina Police/Fire Department	West Covina	EP,CP	W / D	1-5
432	1043	WEST-COMM - West Cities Police Comm Center	Seal Beach			6-10
433	1046	Westminster Police Department	Westminster			6-10
434	1047	Whittier Police Department	Whittier		W / PD	1-5
435	1048	Willits Police Department	Willits	HS-M	I / PD	1-5
436	1035	Willows Fire Department	Willows	CP		1-5
437	1051	Yolo Emergency Communications Agency YECA	Woodland		W / PD	6-10
438	1054	Yreka Police Department	Yreka	CP		1-5
439	1055	Yuba City Police Department	Yuba City	CP	I / PD	1-5
440	1056	Yuba County Sheriff's Department	Marysville	CP		1-5

*Updated PSAP tables will be provided to the Contractor upon contract execution.

Blank – CPE Stand-Alone
HS – CPE Host-Remote System
HS – B (Butte)
HS – I (Imperial)
HS – LAS (Los Angeles Sheriff)
HS – P (Placerville)
HS – R (Riverside)
HS – SC (Santa Clara)
HS – V (Ventura)
CE – Core Existing
CP – Core Planned
EE – Evergreen Existing
EP – Evergreen Planned

W / D – Text Existing Web Based Service Deployed
I / D – Text Existing Integrated Service Deployed
W / PD – Text Planned or Pending Web Based Deployment
I / PD – Text Planned or Pending Integrated Deployment

Table 1: Statewide Overview

Number of PSAPs[1]	**440**
Total Population[2]	**39,536,653**
2017 Total 9-1-1 Call Volume[3]	**28,129,927**
Average Monthly 9-1-1 Call Volume[4]	**2,319,585**
2017 Busiest Month 9-1-1 Call Volume[5]	**2,840,116**
Average Busy Hour 9-1-1 Call Volume[6]	**4,751**
2017 Busiest Hour 9-1-1 Call Volume[7]	**36,736**
Average Call Duration in Seconds[8]	**99.94**

[1] Data updated February 2019, will be 438 as of April 1, 2019
[2] U.S. Census Bureau, Population estimates, July 1, 2017
[3] Source: Cal OES Official Published Call Statistics in 2017 (include CHP Golden Gate 2016 counts due to long term outage in 2017)
[4] Statewide sum total of the average 2017 monthly call volume for each PSAP
[5] Statewide sum total of the 2017 busiest month call volume for each PSAP
[6] Statewide sum total of the average 2017 busy hour call volume for each PSAP
[7] Statewide sum total of the 2017 busiest hour call volume for each PSAP
[8] Statewide average of the 2017 9-1-1 average call duration for each PSAP

Table 2: Average Region Overview

Average Number of PSAPs[9]	**110**
Average Total Population[10]	**9,499,970**
Average 2017 Total 9-1-1 Call Volume[11]	**6,711,175**
Average 2017 Monthly 9-1-1 Call Volume[12]	**579,896**
Average 2017 Busiest Month 9-1-1 Call Volume[13]	**710,029**
Average Busy Hour 9-1-1 Call Volume[14]	**1,188**
Average 2017 Busiest Hour 9-1-1 Call Volume[15]	**9,184**
Average Call Duration in Seconds[16]	**100**

[9] Data updated February 2019, Largest Region has 163, smallest is 79.
[10] U.S. Census Bureau, Population estimates, July 1, 2017
[11] Source: Cal OES Official Published Call Statistics in 2017 (include CHP Golden Gate 2016 counts due to long term outage in 2017)
[12] Average of regions, sum total of the average 2017 monthly call volume for each PSAP
[13] Average of regions, sum total of the 2017 busiest month call volume for each PSAP
[14] Region average, sum total of the average 2017 busy hour call volume for each PSAP
[15] Region average, sum total of the 2017 busiest hour call volume for each PSAP
[16] Region average, average of the 2017 9-1-1 average call duration for each PSAP

SOW - ATTACHMENT 4a – NG9-1-1 PRIME FUNCTIONS AND SERVICES ACCEPTANCE AND AUTHORIZATION TEMPLATE

This document is a template that will serve as a starting point to develop a checklist that shall serve as notice from CA 9-1-1 Branch to the Contractor that the NG Prime Functions and Services are acceptable, as stated below and the Contractor may invoice CA 9-1-1 Branch.

All Information to be completed by the Contractor only

CA 9-1-1 Branch Initial

- ❑ NG Text to 9-1-1 – Web Based OTT _____
- ❑ NG Text to 9-1-1 – Integrated _____
- ❑ Legacy PSAP Gateway _____
- ❑ Independent Verification & Validation _____
- ❑ Regional Interoperability Connection _____
- ❑ PSAP Integration _____
- ❑ Performance Reporting _____
- ❑ Call Logging _____
- ❑ Statewide Outage Reporting _____
- ❑ NRC Project Initiation and Design _____
- ❑ Statewide 911 GIS _____
- ❑ Selective Routing – as a standalone service _____
- ❑ GIS Data synchronization _____
- ❑ Alert and Warning System _____

Minor Discrepancies:

_____

_____

As the authorized representative of:

_____ *(CA 9-1-1 Branch NG9-1-1 Manager),*

I hereby acknowledge receipt, installation and satisfactory performance of the service. If minor discrepancies exist, but do not keep the service from performing in accordance with the contracted terms and conditions, these discrepancies are noted above.

AUTHORIZED BY:

_____ _____

Signature Date

_____ _____

Printed/Typed Name Title

IMMEDIATELY AFTER ACCEPTANCE

File a scanned copy to the CA 9-1-1 Branch NG9-1-1 Manager

SOW - ATTACHMENT 4b –NG9-1-1 TRUNKS ACCEPTANCE AND AUTHORIZATION TEMPLATE

This document is a template that will serve as a starting point to develop a checklist that shall serve as notice from CA 9-1-1 Branch to the Contractor, that the NG Prime/Region Trunk services are acceptable, as stated below, and the Contractor may invoice CA 9-1-1 Branch.

All Information to be completed by Contractor only

CA 9-1-1 Branch Initial

- ❑ Trunks from Prime to PSAP _____
- ❑ Capacity tested 1Mb _____
- ❑ Capacity tested 10Mb _____
- ❑ Capacity tested 100Mb _____
- ❑ Capacity tested 1000Mb _____
- ❑ Trunk failover tested _____

Minor Discrepancies:

_____

_____

_____

As the authorized representative of:

_____ *(CA 9-1-1 Branch NG9-1-1 Manager),*

I hereby acknowledge receipt, installation and satisfactory performance of the service. If minor discrepancies exist, but do not keep the service from performing in accordance with the contracted terms and conditions, these discrepancies are noted above.

AUTHORIZED BY:

_____ _____

Signature Date

_____ _____

Printed/Typed Name Title

IMMEDIATELY AFTER ACCEPTANCE

File a scanned copy to the CA 9-1-1 Branch NG9-1-1 Manager

SOW - ATTACHMENT 4c – NG9-1-1 AGGREGATION ACCEPTANCE AND AUTHORIZATION TEMPLATE

This document is a template that will serve as a starting point to develop a checklist that shall serve as notice from CA 9-1-1 Branch to the Contractor, that the NG9-1-1 Aggregation services are acceptable, as stated below, and the Contractor may invoice CA 9-1-1 Branch.

All Information to be completed by Contractor only

CA 9-1-1 Branch Initial

- ❑ Able to accurately aggregate all Text OSPs (PNSP) _____
- ❑ Able to accurately accept aggregation (# of aggregations) _____
- ❑ Able to failover if one aggregation is offline _____
- ❑ Able to transfer all 9-1-1 call modalities to Prime and Region _____

Minor Discrepancies:

_____

_____

As the authorized representative of:

_____ *(CA 9-1-1 Branch NG9-1-1 Manager),*

I hereby acknowledge receipt, installation and satisfactory performance of the service. If minor discrepancies exist, but do not keep the service from performing in accordance with the contracted terms and conditions, these discrepancies are noted above.

AUTHORIZED BY:

_____ _____

Signature Date

_____ _____

Printed/Typed Name Title

IMMEDIATELY AFTER ACCEPTANCE

File a scanned copy to the CA 9-1-1 Branch NG9-1-1 Manager

SOW - ATTACHMENT 4d –NG CORE SERVICES ACCEPTANCE AND AUTHORIZATION TEMPLATE

This document is a template that will serve as a starting point to develop a checklist that shall serve as notice from CA 9-1-1 Branch to the Contractor, that the Prime NG Core Services are acceptable, as stated below, and the Contractor may invoice CA 9-1-1 Branch.

All Information to be completed by Contractor only

CA 9-1-1 Branch Initial

- ❑ Able to accurately route 9-1-1 calls _____
- ❑ Able to receive all 9-1-1 call modalities _____
- ❑ Able to transfer all 9-1-1 call modalities _____
- ❑ Received training of NG Prime Core 9-1-1 service _____
- ❑ Received training to access NG Prime Core call data _____
- ❑ Can access and understand NG Prime administrative tools _____

Minor Discrepancies:

_____

_____

As the authorized representative of:

_____ *(CA 9-1-1 Branch NG9-1-1 Manager),*

I hereby acknowledge receipt, installation and satisfactory performance of the service. If minor discrepancies exist, but do not keep the service from performing in accordance with the contracted terms and conditions, these discrepancies are noted above.

AUTHORIZED BY:

_____ _____

Signature Date

_____ _____

Printed/Typed Name Title

IMMEDIATELY AFTER ACCEPTANCE

Submit a scanned copy to the CA 9-1-1 Branch NG9-1-1 Manager

SOW - ATTACHMENT 4e – PRIME NG TEXT TO 9-1-1 ACCEPTANCE AND AUTHORIZATION TEMPLATE

This document is a template that will serve as a starting point to develop a checklist that shall serve as notice from CA 9-1-1 Branch to the Contractor, that the Prime NG Text to 9-1-1 Services are acceptable, as stated below, and the Contractor may invoice CA 9-1-1 Branch.

All Information to be completed by Contractor only

CA 9-1-1 Branch Initial

- ❑ Able to receive NG Text to 9-1-1 _____
- ❑ Able to send NG Text to 9-1-1 _____
- ❑ Able to transfer NG Text to 9-1-1 _____
- ❑ Received training of NG Text to 9-1-1 service _____
- ❑ Received training to access NG Text to 9-1-1 session data _____
- ❑ Can access and understand Text administrative tools _____
- ❑ Validate session data with NG Text to 9-1-1 reporting tool _____

Minor Discrepancies:

_____

_____

As the authorized representative of:

_____ *(CA 9-1-1 Branch NG9-1-1 Manager),*

I hereby acknowledge receipt, installation and satisfactory performance of the service. If minor discrepancies exist, but do not keep the service from performing in accordance with the contracted terms and conditions, these discrepancies are noted above.

AUTHORIZED BY:

_____ _____

Signature Date

_____ _____

Printed/Typed Name Title

IMMEDIATELY AFTER ACCEPTANCE

Submit a scanned copy to the CA 9-1-1 Branch NG9-1-1 Manager

SOW - ATTACHMENT 5a – ACCEPTANCE TESTING PLAN TEMPLATE

The Acceptance Test Plan template is attached in an Excel format.

Requirement Reference Number	Test Date and Duration	Test Results	Pass/Fail	Notes	Contractor signoff
1.1					
1.2					
1.3					

SOW - ATTACHMENT 5b – CERTIFICATE OF SYSTEM READINESS TEMPLATE

The Certificate of System Readiness Template is in Word format.

PRIME/REGION NETWORK SERVICE PROVIDER	PSAP NAME	TODAY'S DATE:
Start Date of System Acceptance:	End Date of System Acceptance:	
PNSP/RNSP Representative Name:	PNSP Representative Signature:	
PSAP Representative Name:	PSAP Representative Signature:	
CA 9-1-1 Branch Representative Name:	CA 9-1-1 Branch Representative Signature:	
All of the above signed Representatives hereby acknowledge receipt, installation and satisfactory performance of the Next Generation 9-1-1 Services. This Certificate of System Readiness confirms the NG9-1-1 Services have successfully completed the 45 calendar day Acceptance Test Plan (ATP). Any discrepancies noted during the ATP shall be noted on the Final Test Report.		

SOW - ATTACHMENT 6 – WORK ORDER AUTHORIZATION FORM

WOA Number: **Amendment:**

Title of WOA: **Dates:**

Work Description:

Tasks and Work Products:

Cost:

Not-to-Exceed Cost					
	Staff Name	**Classification**	**Labor Hours**	**Rate Per Hour**	**Cost**
1					
2					
				Not-to-Exceed Cost Total	

Acceptance Criteria:

State Responsibilities:

Approvals:

These tasks will be performed in accordance with this WOA including any accompanying documentation, if applicable and the provisions of the Contract.

State of California

Name Date

Contractor

Name Date

SOW - ATTACHMENT 7 – CONTRACTOR'S LICENSE INFORMATION

(Installation Services Only)

The Contractor shall obtain, at their own expense, all license(s) and permit(s) required by law for accomplishing any work required in connection with this contract. The Contractor shall complete the applicable contractor's license information below in accordance with the Contractor's State License Board, Department of Consumer Affairs. At a minimum, a California C-7 license is required prior to commencement of work which may include the installation of cable and wiring and electrical modification. Contractors or subcontractors performing cable and/or wiring installation work or structural modifications are required to have the appropriate State contractor's license. The license must be in the name of the company or the name of the "qualifying individual" of the company. It is the Contractor's responsibility to ensure that the Contractor and/or Subcontractor maintain a current CA C-7 license during the term of the contract and may be verified by the State at any time. The Contractor may not perform any work at or with a PSAP without valid license.

CONTRACTOR:
Class _____ License No: _____
Licensee: _____ Expiration Date: _____
Class _____ License No: _____
Licensee: _____ Expiration Date: _____

Note: Contractor (Firm's Name or a Responsible Managing Employee) must be licensed in addition to all subcontractor(s) performing under this contract.

SUBCONTRACTOR 1
Class _____ License No: _____
Licensee: _____ Expiration Date: _____
Relationship of Licensee to Contractor:
_____

SUBCONTRACTOR 2
Class _____ License No: _____
Licensee: _____ Expiration Date: _____
Relationship of Licensee to Contractor: _____

SOW – ATTACHMENT 8 – PROJECT MILESTONE REPORT

Project Milestone Report

Project Name / Contract Number:			**Prepared date/time:**		
Project Start Date:	**Project End Date:**			**% Complete:**	
Cal OES Project Manager:			**Contractor Project Manager:**		
Milestone Name:			**Milestone Due Date:**		
Milestone Description:					
Cal OES Project Manager Name:			**Contractor Project Manager Name:**		
Cal OES Project Manager Signature:			**Contractor Project Manager Signature:**		
Agreement to Adjust Milestone Due Date					
			Adjusted Milestone Due Date:		
Approved by Cal OES Date:			**Approved by Contractor Date:**		
Cal OES Project Manager Name:			**Contractor Project Manager Name:**		
Cal OES Project Manager Signature:			**Contractor Project Manager Signature:**		
Reason for adjusted Milestone Due Date:					
Project Milestone Status:					
Green: Project Milestone is within scope, budget, and schedule.		**Yellow:** Project milestone is at risk.		**Red:** Project milestone is in danger	
Circle Project Milestone Status:					
Green		**Yellow**		**Red**	
Current Milestone Life Cycle Phase (Check one):					
Concept	Planning	Design	Test	Implement	Completed
Project Documentation		**Resources**		**Services and Software**	
☐ Not started		☐ Available		☐ No updates needed	
☐ In development		☐ Need to assess		☐ Software updates needed	
☐ Revision update		☐ Need to hire		☐ Under development	
☐ Sent for approval		☐ Release resource(s)		☐ Not applicable	
☐ Other (specify)_____		☐ Other (specify)_____		☐ Other (specify)_____	
Project Milestone Status: (This is an update of the current status for this Milestone)					
Project Milestone Risks: (These should include actions being taken or recommendations for mitigation.)					

SOW Attachment 9: GLOSSARY OF TERMS

Acronyms and Abbreviations

Term/Acronym	Definition
9-1-1 traffic	Includes all voice, data, text, pictures, videos, and any future technologies capable of delivering to PSAP over the NG9-1-1 Network.
Agency/State entity	Includes every state office, officer, department, division, bureau, board, and commission, including Constitutional Officers. "State entity" does not include the University of California, California State University, the State Compensation Insurance Fund, the Legislature, or the Legislative Data Center in the Legislative Counsel Bureau.
Aggregation	The services needed to receive 9-1-1 traffic from an OSP and deliver to the correct Core Service Provider.
Business Requirements	Higher-level statement of the goals, objectives, or needs of the Agency/state entity. Business requirements describe the reasons why a project has been initiated, the objective that the project will achieve, and the metrics that will be used to measure its success. Business requirements describe the needs of the Agency/state entity as a whole, not the groups or stakeholders within it.
Certificate of System Readiness Form	Contractor shall complete the acceptance test plan and authorization checklist as defined in the SOW Section 14.2 Acceptance Testing Criteria. The Certificate of System Readiness Form will be signed by the Contractor and approved by CA 9-1-1 Branch for the acknowledgement of satisfactory system performance.
Commercial Off The Shelf Software (COTS)	A computer hardware or software product that is ready-made for specific uses and available for sale to the general public. COTS products are designed to be installed without requiring custom development. For example, Microsoft Office is a COTS product that is a packaged software solution for businesses and individuals. The set of rules for COTS is defined by the Federal Acquisition Regulation (FAR).
Contractor	The bidder who is awarded the NG9-1-1 Services – Prime contract. Contractor may also be referenced as Prime Network Service Provider.
Custom solution	Typically, computer software developed for a specific customer to accommodate the customer's particular requirements, preferences, and expectations.

Term/Acronym	Definition
Dedicated	All components and software that are used to support NG9-1-1 traffic in California, must meet the requirements of this RFP and the needs of California at any instance in time.
Functional Requirements	Functional requirements represent the business objectives, needs and outcomes of all stakeholders. They should be organized and presented in context of and with a baseline business process/workflow that they describe. They provide a description of what an enabling solution should provide and specify essential details of a solution for stakeholders as a means to express and manage expectations. They describe actions and operations that the solution must be able to perform. They can describe services, reactions, and behaviors of the solution. They also describe information the solution will manage. The requirements should be expressed in business terms and should not include any technical references. The requirement should identify "what" is required to meet the business objective, not "how" the requirement will be implemented.
Modified Off The Shelf (MOTS)	MOTS product – Typically, a COTS product with source code made available to the purchaser to allow for modifications. The product may be customized by the purchaser, by a vendor, or by another party to meet the requirements of the customer. Since MOTS product specifications are written by external sources, purchasers may not have control of future changes to the product.
Non-functional Requirements	Non-functional requirements provide criteria to evaluate the operation of an enabling solution and primarily represent qualities of (expectations and characteristics) and constraints on (e.g., governmental regulations) the solution. They capture conditions that do not directly relate to the behavior or functionality of the solution, but rather describe environmental conditions of an effective solution or productive qualities of the solution. Mid-level non-functional requirements also define quality of service requirements, such as those relating to required capacity, speed, security, privacy, availability, response time, throughput, usability, and the information architecture and presentation of the user interfaces.
Point of Interface (POI)	Placed in a location that meets the needs of OSPs and provides the interfaces needed to accept 9-1-1 traffic from the OSP and deliver that traffic to aggregation over an NG9-1-1 trunk service.

Term/Acronym	Definition
Prime Network Service Provider	The bidder who is awarded the NG9-1-1 Services – Prime contract. The Prime Network Service Provider may also be referenced as the Contractor.
Project/Transitional Requirements	Project/transition requirements describe capabilities that the solution must have in order to facilitate the transition from the current state of the enterprise to a desired future state. Mid-level project/transition requirements are differentiated from other requirement types because they are usually temporary in nature and will not be needed once the transition is complete. They typically cover process requirements imposed through the contract, such as mandating a particular design method, administrative requirements, data conversion and migration from existing services, interfaces, skill gaps that must be addressed, and other related changes required to reach the desired future state.
Region	One of four areas in California, defined Northern Region (163 PSAPs and 7,492,162 Yearly number of calls); Central Region (110 PSAPs and 4,918,909 Yearly number of calls); Los Angeles Region (79 PSAPs and 8,514,105 Yearly number of calls); Southern Region (89 PSAPs, 6,929,512 Yearly number of calls)
Regional	A large scale 9-1-1 project that meets both of the following conditions: 1) More than on PSAP, or single PSAP that dispatch multiple agencies. 2) Has a total call volume of greater than 1,000,000 calls per year.
Solution Requirements	Describes the characteristics of a solution that will meet the business requirements. Solution requirements describe specific characteristics of the solution both in terms of functionality and quality of service. Solution requirements are sub-classified into functional requirements, non-functional requirements and project/transitional requirements.
Transitional/Project Requirements	Transition/ Project requirements describe capabilities that the solution must have in order to facilitate the transition from the current state of the enterprise to a desired future state. Mid-level project/transition requirements are differentiated from other requirement types because they are usually temporary in nature and will not be needed once the transition is complete. They typically cover process requirements imposed through the contract, such as mandating a particular design method, administrative requirements, data conversion and migration from existing services, interfaces, skill gaps that must be addressed, and other related changes required to reach the desired future state.

Cal OES
GOVERNOR'S OFFICE OF EMERGENCY SERVICES

July 16, 2019

CommITted to Future Growth

Next Generation 9-1-1 Services – Prime and Regions

Volume 1: Response to Administrative Requirements

RFP 6026-2018 – BAFO Submission

Atos | Public Safety

Exhibit 20: Technical Requirements and Narrative Response

See EXHIBIT 21_ Prime Technical Requirements, Tab 21.0 Narrative Requirements for requirements that require a narrative response

See Exhibit 23 Region Technical Requirements, Tab 23.0 for requirements that require a narrative response

Exhibit 21: Prime – Technical Requirements Narrative

Interface, Compatibility, and Interoperability – Prime

21.0.0 – (a) Describe the key success factors for the PNSP and how the PNSP will measure, monitor, and ensure timely implementation of NG 9-1-1 services. The description must include challenges and mitigation strategies that impact the project's critical path. (b) Describe the maximum call volume the solution will support and how the proposed solution is scalable.

Atos Response: (a) Key Success Factors

The key success factors for the PNSP consist of multiple parallel work streams:

- Identification of PNSP Key Staff individuals
- Finalized Statement of Work (SOW) and Project Deployment Plan (PDP) schedule
  - Clarification of requirements and use cases
  - Executed contract between CalOES CA 9-1-1 Branch and Atos Public Safety
- Updated and accepted CPUC tariff filing
- Provisioning and deployment of NGCS data center infrastructure (network, servers, functional elements) dedicated to CA
- Provisioning and configuration of Alert and Warning System (AWS) and Over The Top (OTT) Text to 9-1-1 service
- Statewide GIS dataset handoff to PNSP
  - PNSP QA / QC validation / acceptance of data for 9-1-1 call routing
  - Initialization of GIS SI for RNSP
- Buildout of statewide ESInet (NG Trunks interconnects between OSPs, Data Centers, and PSAPs)
  - NG Trunk services for both OSPs and PSAPs (including last mile connectivity)
  - PSAP CAPSNET backhaul integration / aggregation to SD-WAN
  - PSAP existing CALNET services migration to NG Trunk services
- PNSP Interface Control Document (ICD) for OSP Aggregation, NGCS, and PSAP
- PSAP integration with PNSP
  - Conduct PSAP surveys for NG Trunk and CPE i3 capability / readiness
  - Integration with ESInet connectivity (NG Trunk service)
  - Integration with NGCS
  - Integration with Text to 9-1-1 service
- OSP integration with PNSP
  - Provisioning and deployment of OSP Aggregation services dedicated to CA
  - Coordination and ICA with wireline, VoIP, and Small ILEC service providers
  - Integration with OSP Aggregation service
- Monitoring and Outage Reporting
  - Integration of monitored devices and functional elements (discovery and dependency maps)
  - Service Desk and CMDB initialization and integration

  - CA 9-1-1 Branch monitoring dashboard design and implementation
  - Atos Public Safety NOC services integration
- Continuous system integration testing and QA / QC validation

The Atos PMO will utilize the PDP schedule and CA 9-1-1 Branch milestone reports to measure, monitor, and ensure timely implementation of NG9-1-1 services. The Atos PMO will coordinate with and delegate tasks to key staff individuals responsible for managing their domain-specific subsystems. This includes coordinating with and management of all subcontractor components and services. The Atos PMO will conduct recurring meetings with CA 9-1-1 Branch to report project status, review SLA performance, and to identify and remedy blocking tasks / items that impact the project's critical path. The Atos PMO will conduct status meetings and review action / issue registries with CA 9-1-1 Branch weekly and in some cases twice a week as needed.

Atos anticipates challenges and recommends mitigation strategies that impact the project's critical path:

- OSP interconnects to PNSP OSP Aggregation Centers (POI)
  - Begin OSP Aggregation Center provisioning immediately
  - Coordinate with OSPs and CPUC on Interconnection Agreements (ICA)
- OSP circuit order input
  - Coordinate order intervals (some may be up to 90 days)
  - Coordinate circuit diversity requirements
  - Coordinate any buildout requirements (new facility construction)
- OSP interoperability and acceptance testing
  - Begin development of OSP Aggregation ICD immediately
  - Coordinate with OSPs for review of ICD, requirements
  - Conduct OSP surveys to assess capabilities and sequence / prioritize PDP schedule
- PSAP interconnects to NG Trunk service (last mile connectivity)
  - Coordinate with CalOES on existing CALNET services and upgrade plan
  - Conduct PSAP surveys to assess readiness for NG Trunk service
  - Coordinate with CalOES and PSAPs for additional CALNET services to complete last mile connectivity
- PSAP interoperability and acceptance testing
  - Begin development of PSAP ICD immediately
  - Coordinate with PSAPs for review of ICD, requirements
  - Conduct PSAP surveys to assess capabilities and sequence / prioritize PDP schedule
- Legacy PSAP CPE (very old and unsupported systems)
  - Identify baseline functionality (via PSAP survey) for LPG to ensure deployment readiness
  - Coordinate with PSAPs on use of alternate location interface (e.g. legacy ALI over IP)
- Originating TCC service provider integration testing and migration to Prime NGCS aggregator
  - TCC service providers may take 6 months to implement / migrate service (as per FCC)
  - Begin formal FCC notification process immediately upon contract award
  - Complete required integration testing with TCC service provider well in advance of deployment
- Originating TCC service provider capabilities and support for RFP requirements
  - Work with CalOES and TCC service providers to agree on baseline capabilities
  - Position the TCC service provider as a gateway service within the deployment architecture
  - Utilize the Atos OpenScape Emergency Router (OSER) ESRP as the TCC aggregator to expand TCC capabilities, such as support for inter-PSAP transfers of Text to 9-1-1 calls

These challenges and mitigation activities will be included in the final version of the Project Deployment Plan (PSP) schedule in order to track progress toward completion and the impact on the project's critical path. These

items will be monitored closely, and all available resources will be used to ensure the schedule stays on track. Atos will work closely with CA 9-1-1 Branch on all actions and risks related to the schedule and collectively look to address any delays or newly identified blocking issues.

Atos Response: (b) Solution Capacity and Scalability

Each Prime NGCS ESInet solution instance (dedicated to CA) deployed in each of the two NGCS data centers will support the maximum yearly 9-1-1 call volume of 28,129,927 as specified in the RFP requirements (Table 1: Statewide Overview), plus an annual growth rate of 2%.

Each fully redundant data center instance is designed to support the call load for the entire state. The Atos OpenScape Emergency Router (OSER) - BCF, ESRP, PRF, Bridging Services - will be provisioned to support the full simultaneous sessions for the entire state as identified in the table below (line count). These calculations will be finalized and updated during final system configurations, prior to deployment.

OSER can scale out if needed with additional servers and Virtual Machine (VM) instances. In addition, the OSER deployment consists of parallel processing "lanes" for processing of all calls. Each lane consists of i3 functional elements, in VM instances, such as BCF, ESRP, and Bridging Services. Additional "lanes" can be provisioned for additional call volume capacity.

The LDB, ECRF, and i3 Logger / Recorder instances within each PNSP NGCS data center are also sized to support the entire statewide call load. These functional elements operate within application service pools (vSphere VMs and Kubernetes containers) behind data center load balancers, providing a single common access URL. Increased capacity is achieved by adding application service instances to the pool.

The Alert and Warning System (AWS) and Text to 9-1-1 system operate as hosted, cloud-based solutions. These systems, like all others included in the Atos solution, are sized to support the entire call load of the state within a single geographic instance. Operating as cloud native systems, both AWS and Text to 9-1-1 scale out as needed using incremental application services.

21.0.1 - Describe the process that uses a non-proprietary NENA i3 compliant solution to route any 9-1-1 traffic within California when the Regional NG Core Services are not available, or RNSP cannot reach the PSAP, or when a call needs to be transferred to a PSAP not in the Region.

Atos Response: The Atos Public Safety OpenScape Emergency Router (OSER) is the core system on which all calls are routed through the Prime NGCS ESInet to the target PSAP. OSER is based on the proven Atos OpenScape Voice platform which consists of Border Control Function (BCF), Emergency Services Routing Proxy (ESRP), Policy Routing Function (PRF), and Media Bridging Services. These functional elements were designed to comply with IETF SIP and NENA i3 standards (NENA-STA-010), have been certified secure by independent third-party test organizations (Miercom), and maintain current listing on DoD JITC Defense Information Systems Agency Approved Products List (DISA APL).

Scenario #1 – Route any 9-1-1 traffic within California when the Regional NGCS are not available

The regional aggregation centers utilize BCF instances which implement standard IETF SIP interfaces to anchor the call while determining the next target endpoint in the network. The BCF is configured with a primary (Regional NGCS) and secondary (Prime NGCS) endpoint target list. The BCF maintains endpoint target accessibility status utilizing standard IETF SIP mechanisms. If the Regional NGCS becomes unavailable, the BCF will direct originating calls to the Prime NGCS for routing to the target PSAP. OSER running in the Prime NGCS will utilize standard NENA PRF policy to determine the target PSAP based on caller location, geospatial routing boundaries in the ECRF, and other required conditions. The call is delivered to the correct PSAP utilizing the Prime ESInet and PNSP connection to the PSAP.

Scenario #2 – Route any 9-1-1 traffic within California when the RNSP cannot reach the PSAP

As described above, the regional aggregation center BCF instances will anchor the call before forwarding to the Regional NGCS. If the target PSAP is not accessible by the Regional NGCS because the RNSP cannot reach the PSAP then the call route will fail, but the caller remains anchored to the BCF. The regional aggregation center BCF will then deliver the call using alternate routes such as another Regional NGCS or Prime NGCS. OSER running in the Prime NGCS will utilize standard NENA PRF policy as described above to determine the target PSAP based on caller location, geospatial routing boundaries in the ECRF, and other required conditions.

Scenario #3 – Call needs to be transferred to a PSAP not in the Region

Call transfer requests receive different treatment by the NGCS due to differences in the Request URI value of the SIP message. Instead of a service URN value, transferred calls use the actual URI of the target destination. This allows the ESRP to apply different policy on each call type. DNS resolution of the target destination URI allows the call to be routed through the Prime ESInet via NNI demarks to the correct Regional ESInet. This process is used regardless if the Regional NGCS utilizes network conference bridging services for inter-PSAP transfer.

21.0.2 - Describe the interface with the Statewide CAPSNET microwave backhaul to each PSAP as a diverse path, as directed by CA 9-1-1 Branch and shall actively monitor CAPSNET connection. Note: the CAPSNET is currently being upgraded to MPLS, prior to the completion of the upgrade redundancy must be included via an alternate connection.

Atos Response:

The interface with the statewide CAPSNET microwave back-haul will be with the PNSP routers both at the data centers and the PSAP. The routers will connect to the CAPSNET network through WAN links to the CAPSNET hardware at each site. Atos will monitor the CAPSNET connection at the routers through SNMP traps as well as synthetic probes at each site.

Atos solution includes dual NG trunks that provide redundancy to each PSAP along with the CAPSNET network as a tertiary link for added resiliency. Atos will work with CA 9-1-1 Branch to understand the interconnect to the CAPSNET microwave network to interface to the PSAP routers. The interface for all three links will connect through our network hardware (Routers) at the PSAP. The routers will support firewall for the PSAP and also be used to monitor all three links and report statistics back to the monitoring solution and customer dashboard. In addition, we will install probes that will conduct synthetic testing through each of the three links to ensure quality is met. SD-WAN will be used to manage the traffic between the links and prioritization during normal operations and link failures.

During the upgrade of CAPSNET to MPLS, Atos will ensure redundancy through the dual NG trunks provided with our PNSP solution. All NG trunks in and out of the data centers will be on dual independent POPs to ensure continuity of service. Once the CAPSNET upgrade is complete, the routers at the data centers will connect into CAPSNET. This will also be done at the PSAP routers for end to end connectivity.

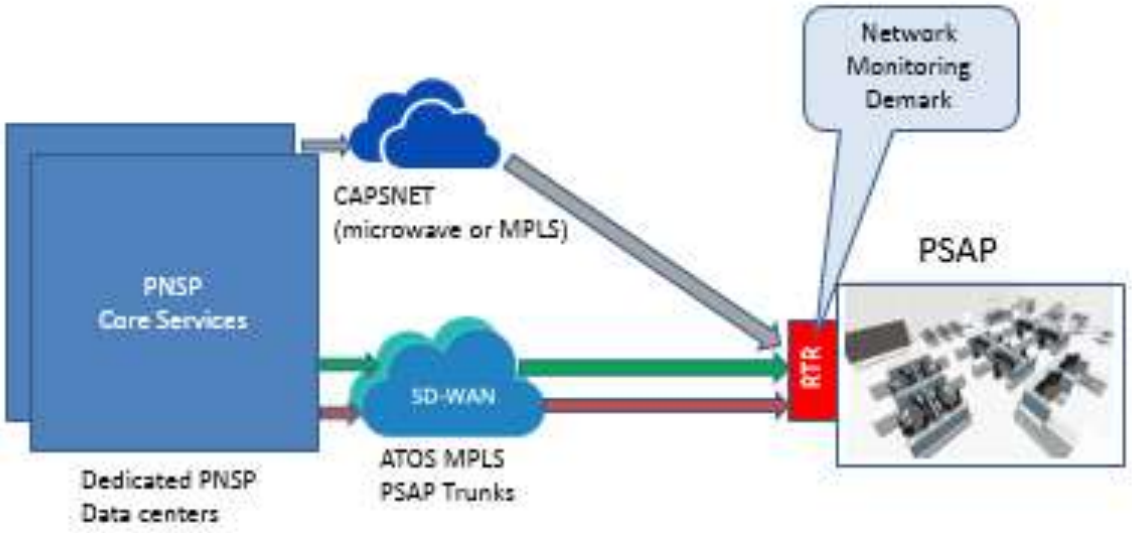


Figure 1: PSAP Interconnections

Connectivity between the Atos Public Safety provided ESInet solution and the CAPSNET microwave network will be via multiple points of connectivity into the CAPSNET aggregation rings. Regardless of whether the CAPSNET microwave deployment is Ring and Spoke or Multi-Ring topology, the IP / MPLS network being provisioned by Atos Public Safety will have the flexibility to provide fully diverse paths for a highly resilient infrastructure.

Path selection in the event of a circuit failure will be mitigated using standardized routing protocols such as BGP and if applicable proprietary EIGRP. In addition, specific policies can be put in place by leveraging the Cisco / Viptela SD-WAN to assure use of the CAPNSET network in the event of certain predefined events or triggers.

21.0.3 - Describe how resources will be dedicated to provide the leadership, program management, collaboration, and communication needed for the overall management and direction of standards and best practices for consistency of 9-1-1 traffic between the Regions and Prime that demonstrates a commitment to transparency.

Atos Response:

Atos will have dedicated resources assigned to the CA PNSP project. These key personnel will include Executive Leadership, Project Management Office (PMO), Client and Account Management.

- Dedicated leadership teams will be assigned specific for CA 9-1-1 Branch.
- Dedicated PMO and project support team such as PMs and Project director using ITIL and QA monitoring throughout.
- Atos will provide transparency with regular meetings and reports with all RNSP providers, CalOES and any other required parties.
- Atos will engage in full collaboration with RNSP and CA 9-1-1 Branch throughout the process to ensure transparency and status of the project. This will be done as part of the partnership approach to project management. The PMO will create the stakeholder team that includes all counterparts from each RNSP and CA 9-1-1 Branch.
- Atos will publish standards-based ICD that will consist of NENA i3 specifications, VOIP network best practices and QoS guidelines for consistency with all regions. This document will be published and shared with all the regions and will be used for continuous testing to ensure these standards are met with measurable results that will be visible to all stakeholders.

Atos is trusted by many of the largest, most progressive and most technically-complex organizations (and networks) in the world. Atos has earned that trust by being transparent, honest and by always delivering on our promises. This includes everything from what happens on 'day one' of the program, through engagement and transition to establishing an ongoing managed services partnership. Atos believes it's vitally important to do this upfront – and not just because the success of our business is predicated on the success of yours – but because we strongly believe bringing clarity and transparency breeds trust…and that's something we don't question. Atos employs an effective management of resources which is an essential task when managing complex and integrated projects. This management provides information about the availability of the resource and having them available at the right time for the activities and smoothly executing the project activities.

Atos will assign a Project Director and Project Manager for Transformation. Atos will also assign a Program Manager. These resources will be consistent throughout the project and the Program Manager will be responsible for service delivery following transformation.

Atos will lead as well as participate in collaborative meetings with the State of California, its' providers and other industry leaders. Atos believes that effective communication between all parties is a cornerstone to success during the project and follow on services.

Technical expertise and commercial acumen are central to delivering the best managed service solution – ensuring we align technology with your business goals. Each year our Academy for Professional Training delivers courses to over 60,000 staff, partners and customers. This is why we currently hold over 2000 certifications – on technologies right across the vendor spectrum. A successful managed services relationship is built on trust. And you can have the confidence that all our people, from solution architects to support desk operatives, are fully trained and certified in their chosen areas – and in your specific environment. It also means we can apply our expertise to deliver continual improvement throughout the life of the contract.

The Service Level Manager (SLM), is responsible for the aggregation and review of all reporting data. It is their job to ensure that every element of the SLA is being achieved and in doing so will carry out monthly reviews with the Program and Account Managers. The SLM is your representative within Atos, the first point of escalation and often one of the most strategic elements of the entire partnership.

While this provides an overview of primary leadership roles, a full description of resources will be provided in accordance with the requirements specified herein.

21.0.4 - Describe how the PNSP, in coordination with CA 9-1-1 Branch, will connect to all four regions, define interfaces (region, aggregation, PSAP), and how the PNSP will maintain interoperability.

Atos Response: The proposed PNSP ESInet solution utilizes diverse, redundant NG Trunks with separate ingress (9-1-1 access) and egress (PSAP) networks at the data centers for interconnects to the OSP aggregation centers in each region, PSAPs, all regional RNSP networks.

The PNSP will use the ingress NG trunks to connect all four regions to the data centers as well as the CAPSNET network to the PNSP NGCS instances that are dedicated to the state. These interfaces will be SIP based connections. The same ingress NG trunks will be used to connect the OSP aggregation sites to the data centers. Atos along with the CA 9-1-1 Branch, will issue the ICD and interoperability testing as guidelines to ensure latency, jitter, QoS and media quality through MOS scoring is consistent through all interconnects. This will be measured continuously, using monitoring tools and dashboards that we have throughout our solution.

The PNSP will have separate egress NG trunks to the PSAPs, along with the tertiary connections through CAPSNET. During PSAP surveys with all PSAPs in the state, Atos will categorize the interfaces with the PSAP as i3 SIP, IP, and legacy TDM. An ICD will be published for each of these interface types and a consistent interoperability plan will be created for these PSAP types. This document will be shared with each of the regions to ensure consistent interconnected to the PSAP from PNSP and RNSP.

In the diagram below, there are three sets of interfaces for interconnect.

- The Ingress NG trunks (OSP) which are dual MPLS connections from two different providers. These trunks will be used to connect the data centers to the aggregation centers. The POI will also connect through these NG trunks to the aggregation centers in each region. The OSPs will connect to the POI either through SIP trunks or TDM based on availability of the OSP. The TCCs will connect to the data centers through the ingress NG trunks as illustrated below. Each of the regions, which are depicted as logical inter-region interconnects, will connect to the ingress NG trunks using SIP trunks. Each region will have two interconnects into the ingress NG trunks for redundancy.
- PSAPs will connect to the data centers through Egress NG trunks at the data centers which are also MPLS connections using dual providers for redundancy. These interfaces will be i3 SIP based to the network demarc point at the PSAP.

CA 9-1-1 branch will have a dedicated VPN to each data center for access to the monitoring web portal and data analytics.

Atos will also connect into the CAPSNET network through the data center routers and the PSAP routers for end to end connectivity. All routers and switches will be managed through SD-WAN for traffic management.

Atos will coordinate with CA 9-1-1 Branch to manage the connections to the regions during project phase to ensure interoperability through ICD documentation and testing. The ICD will include protocol and firewall guidelines as well as testing guidelines to ensure consistency through all RNSPs. The NG9-1-1 domain as designed herein will serve the needs of the various PSAP, Aggregation and Regional Back-up centers in the state as the entire call flow is based on SIP, extending a data circuit(s) to any of these institutes and interconnecting via Session Border Controllers and BCFs, secure interface and call delivery (bi-directional) can be easily achieved.

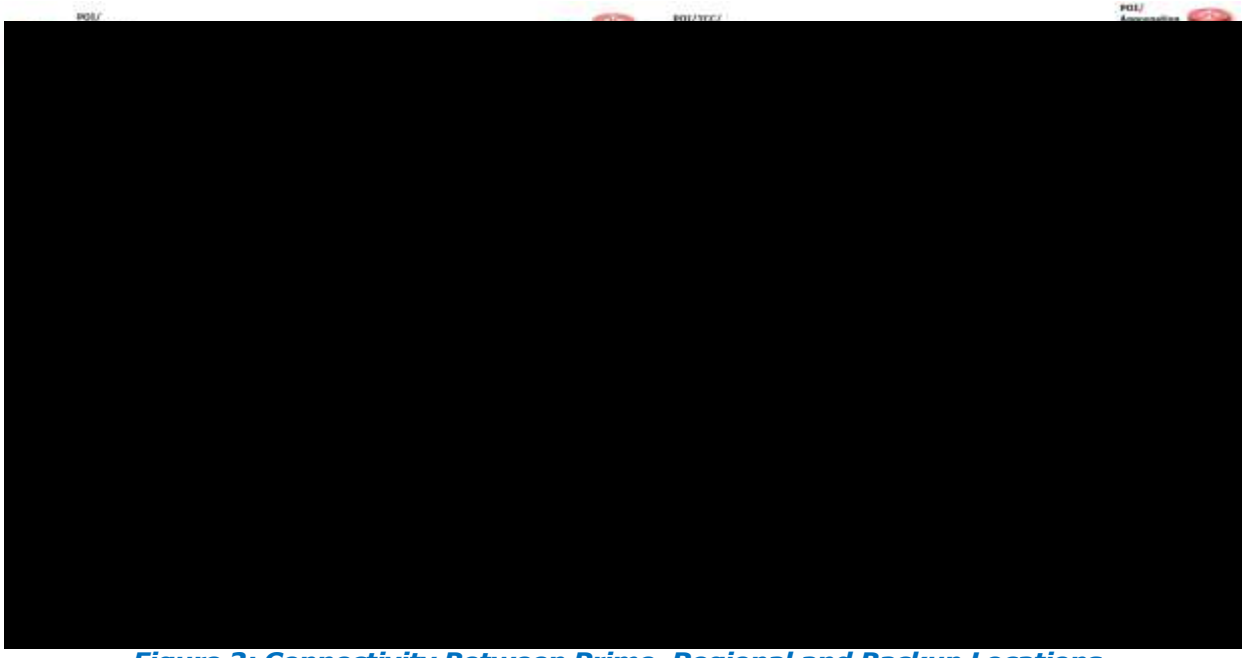


Figure 2: Connectivity Between Prime, Regional and Backup Locations

21.0.5 - Describe the methodology that will be employed after contract award to ensure NG9-1-1 services provided are consistent with tariff filings.

Atos Response: As previously described, Atos will assign a Project Director and Project Manager for Transformation. Atos will also assign a Program Manager. These resources will be consistent throughout the project and the Program Manager will be responsible for service delivery following transformation.

This team will also be responsible for continuous monitoring all NG9-1-1 services provided. The Program Manager in conjunction with our Product House team, and Product Management will ensure that all services provided are consistent with our tariff filings and all related industry standards.

The complete team follows ITIL methodology to ensure consistency and compliance with tariff filings. This includes the usage of a compliance register, compliance review and various policies/regulations. This ensures that standards and guidelines are followed, or that proper, consistent tracking or other practices are being employed. This includes ensuring that external legal/regulatory requirements are fulfilled.

21.0.6 - Describe how the solution will define and maintain the interface to PSAPs, in coordination with CA 9-1-1 Branch. Interface shall be capable of interfacing with multiple NG9-1-1 Core Service Providers and shall support integration with all existing and future NENA i3 compliant CPE or call handling equipment regardless of model/manufacturer and software / firmware version.

Atos Response: The Prime NGCS solution from Atos Public Safety is based on a collection of functional elements that are designed in support of all applicable IETF (SIP, HELD, LoST, PIDF-LO, etc.) and NENA i3 standards. The functional elements are separate, independent components utilizing standard interfaces throughout the call path from origination to delivery. As part of the overall Prime NGCS solution, Atos Public Safety will work closely with CA 9-1-1 Branch to develop and maintain Interface Control Documents (ICD) for the OSP, Regional NGCS, and PSAP that describe the standard interfaces implemented for call origination and delivery. The collaborative process between Atos Public Safety and CA 9-1-1 Branch used to develop these ICDs will ensure the use of current released standards and also incorporate applicable new clarifications/advancements contained in NENA-STA-010.3 (draft). In addition, the combined industry experience within Atos Public Safety and our selected subcontractors will be applied to provide guidance and recommendations for best practice approaches and interpretation of standards to deliver the highest levels of security and interoperability possible.

The Atos solution will use NENA i3 specifications as the governing guidelines for interface to multiple NGCS. Our solution will adhere to the standards in both the NENA i3 and ATIS specifications along with published RFCs to ensure interoperability with all vendors. Atos is already validating interoperability by taking part in industry testing such as ICE as well as lab vendor to vendor testing as an ongoing practice. As the PNSP we will ensure that all call handling systems interface using i3 standards either as native i3 PSAP or legacy PSAP using the LPG as defined by NENA. This will ensure a future path to upgrade to NENA i3. Atos will define a demark at the PSAP to ensure our solution is agnostic to the call handling vendor and software versions.

Atos will perform PSAP survey at each PSAP to determine the capability of the PSAP and if the PSAP will support native i3 calls or require an LPG for demark. The PNSP interface solution will be consistent for PNSP and RNSP interface into the PSAP.

21.0.7 - Describe how the solution will support Location Based Routing using location data provided by either an Originating Service Provider, a device operating system, or a location clearing house as directed by CA 9-1-1 Branch.

Atos Response: Location based routing utilizes the location of the caller to determine the appropriate target based on geographic boundaries of a jurisdiction, responding agency, PSAP, etc. The Atos Public Safety NGCS solution supports all IETF and NENA standard modalities of caller location including location by value and location by reference.

Location data provided by an OSP can be delivered with the call or can be referenced in the Prime NGCS LDB system. The LNG functionality provided in the Atos Public Safety NGCS solution will interwork legacy calls to SIP, which utilizes the geolocation header to transport the appropriate location object (PIDF-LO for fixed locations and reference for mobile locations). OSPs that deliver calls natively using SIP trunks may include location data with

the call, either by value as PIDF-LO or by reference to the OSP LIS. Both methods are supported by the Atos Public Safety NGCS solution.

Location data provided by the calling device operating system is conveyed in a similar manner. Calls will be presented through an OSP to the aggregation center and delivered to either the Prime or Region NGCS system (depending on the OSP type). A native i3 call from a calling device will utilize geolocation data in the supported PIDF-LO format or OSP LIS reference.

Supplemental location data managed by a third-party clearing house can also be utilized for call routing. When the CA 9-1-1 Branch determines this data is suitable (time it takes to acquire and accuracy of data) for emergency call routing, the LDB of Atos Public Safety NGCS solution can be configured to retrieve supplementation location data from the clearing house as part of the standard HELD request used during the call routing process. The ESRP of the Atos Public Safety NGCS solution can be configured to utilize this supplemental location with fallback to traditional LDB managed location data for call routing purposes.

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21.0.8 - Describe how the LDB shall be available to Originating Service Providers (OSPs) or other authorized users so they can verify that civic addresses will return PSAP or emergency responder Uniform Resource Identifier (URI)s.

Atos Response: The Atos Public Safety NGCS solution includes full feature / capability LDB and ECRF / LVF functional elements. OSPs will utilize VPNs for secured access to controlled segments of these functional elements via Public Security Control Zone (PSCZ) areas of the NGCS infrastructure. Secured by physical DMZ LAN segments, firewalls, and VPN access, OSPs will have authenticated and authorized access to LDB and LVF, web browser-based query portals, and data management functions for subscriber Service Order Input (SOI) updates. Once access is established, OSPs can execute different ECRF / LVF scenarios, either directly using LoST or indirectly using the query portal, to test specific location objects against various service URNs in order to validate PSAP or emergency responder Uniform Resource Identifiers (URI) responses used by the call routing process.

In an NG environment, Originating Service Providers and other authorized users verify civic addresses against the authoritative GIS dataset utilizing the LVF. While the NENA i3 standard-defined LVF includes a machine-to-machine interface for bulk validation, there have been many requests for a human interface to the LVF for single address validation requests. The [redacted]LVF Query Portal provides and interactive human interface with a map view and query tool. [redacted]The LVF Query Portal also includes raw LoST XML request and response display so human users can really dig in to understand how the protocol is working and can query the map to investigate why a location might not be properly validating. [redacted] LVF Query Portal is unique because it also supports ECRF queries including those with geodetic locations as well, which can be enabled via configuration.

Once logged in and validated as an authorized user, the process starts with entering the address information into the LVF Query Builder window within the LVF Query Portal page (left image below). Once the data is entered, the user "builds" the query by clicking on a button and the detailed query content is provided (right image below).

When an exact match results, the address point is indicated on the map (see red circle on the map below), and each matching address element is indicated by a green checkmark next to the element field (red arrows pointing to elements with green check marks).

Figure 4: LVF Query Portal – Response Display

When the result is only a partial match, elements which were not matched are indicated by a red X mark next to that element, and suggested possible matches are indicated visually on the map (see address points inside red circles). This could either be the result of a data entry error, an incorrect address being entered, or a discrepancy in the GIS data.

21.0.9 - Describe how the Emergency Call Routing Function (ECRF) and Location Validation Functions (LVF) shall comply with GIS standards that include but are not limited to NENA STA-010.2-2016 Detailed Functional and Interface Standards for the NENA i3 Solution.

Atos Response: The Atos Public Safety NGCS solution includes ECRF/LVF functional elements that are IETF 5222 compliant LoST server systems, providing the NENA i3 ECRF functional element as defined in NENA-STA-010.2 and NENA-STA-010.3 (draft). The ECRF can fulfill multiple roles in LoST hierarchies, including Forest Guides, state level ECRFs, and regional "leaf node" ECRFs. The ECRF supports:

- NENA Detailed Functional and Interface Standards for the NENA i3 Solution (NENA-STA-010.2-2016)
- NENA Standard for NG9-1-1 GIS Data Model (NENA-STA-006.1-2018)
- NENA Standards for the Provisioning and Maintenance of GIS data to ECRF and LVFs (NENA-STA-005.1.1-2017)

In addition, the following best practices recommendations are also utilized:

- NENA Information Document for Location Validation Function Consistency (NENA-INF-027.1-2018)
- NENA Information Document for Development of Site/Structure Address Point GIS Data for 9-1-1 (NENA-INF-014.1-2015)

The solution provides administrative dashboard for monitoring real-time statistics, load, query response behavior, and individual query contents, system-wide and per server. NENA i3 logging mechanisms are supported as well as internal logging and network monitoring system interfaces. The ECRF is architected to support a fully redundant, secure, multi-tier load balanced server architecture.

LoST query input supports PIDF-LO geodetic location types of point, polygon, circle, ellipse, and arc-band as well as PIDF-LO civic location types, including fine grained components handling building, floor, suite, room, and seat.

The ECRF facilitates the discovery of additional location data, by complying with the additional data discovery mechanisms described in NENA-STA-010.2. The ECRF supports discovering additional data using all location types defined in RFC 5222 – civic locations (including optional sub-address elements), points, circles, polygons, ellipses, and ArcBands.

Supports the discovery of agency locator records as defined in NENA-STA-010.2.

Supports NENA i3 standards-compliant SI for provisioning change-only GIS data updates in near real time, on a scheduled or ad-hoc basis.

21.0.10 - Describe transition and assimilation of GIS database from CA 9-1-1 Branch GIS selected vendor.

Atos Response: Atos Public Safety will provide professional services to transition and assimilate the state's statewide GIS dataset for use in the Prime NGCS system. The Atos Public Safety GIS project team will work with CA 9-1-1 Brach to collect the GIS dataset(s) for the project, develop an understanding of the various existing GIS workflows in the state, and analyze how those workflows will work with the operation of the proposed NG9-1-1 GIS system including ongoing updates and maintenance. The project initiation includes a complete assessment of the GIS dataset for PSAP boundary definition (overlap and gaps), schema, data format, and data quality for call routing (LVF verified). Once the GIS dataset is baselined, Atos Public Safety will submit the entire dataset to the Prime GIS QA / QC system (the same system PSAP jurisdictions will utilize) to validate initial data quality and initialize the SI for load into the Prime NGCS ECRF system.

Atos Public Safety will follow a defined, planned approach to implementing the ECRF, LVF and SI. This process will include several phases including:

- Phase One: Project Initiation
- Phase Two: SI, ECRF, and LVF Implementation
- Phase Three: ECRF and LVF Software Training
- Phase Four: Software Acceptance Testing
- Phase Five: Post-Deployment Support Services

During the On-going Operational Support, Atos Public Safety will have a GIS team available to provide on-going support and consulting related to the GIS data QC and error resolution and workflow-based tools. Atos Public Safety CA 9-1-1 Branch will discuss, analyze, and finalize the workflows for jurisdictions to submit changes to the GIS system which will be managed by Atos Public Safety. This will include defining the error resolution process for topology/boundary updates to the PSAP boundary layer.

21.0.11 - Describe recommended method to ensure all RNSPs comply with GIS dataset maintained by PNSP to support routing all 9-1-1 traffic based on geolocation without violating the LoST protocol.

Atos Response: Atos Public Safety recommends thorough QA/QC processes combined with the implementation of standards-based data structures (NENA i3 GIS data model and SI) and interfaces (IETF RFC 5222 LoST) as methods to ensure all RNSPs comply with the GIS dataset maintained by the PNSP to support routing all 9-1-1 traffic based on geolocation without violating the LoST protocol.

Atos Public Safety has partnered with [redacted] to provide a Spatial Interface (SI) that is compliant with the NENA i3 standard. Integrated within the Prime NGCS, the [redacted] SI will provide GIS data feeds to the RNSPs for use in the RNSP ECRF for routing 9-1-1 call traffic. During the preplanning phase of the project the final statewide GIS data model will be established following the NENA data model. The RNSPs will be required to utilize a standards-based data model and standards-based protocol for receiving the GIS data from the PNSP via NENA standard compliant SI.

[redacted] proposed GIS data management solution provides the most stringent QA/QC checks related to boundary gaps and overlaps to ensure data of the highest quality and accuracy will be utilized. This is the first and most important step in the methodology to mitigate and resolve data and query conflicts between the PNSP and RNSP ECRF systems and to ensure all RNSPs comply with the GIS dataset maintained by the PNSP.

Another important step in the methodology is to run the entire LDB data against the LVF of each of the PNSP and RNSPs for verification of LoST query results. This will identify which address points would result in different routing results prior to going live. Once identified, additional analyses will need to be performed to identify the reason for the different routing results, whether it be a minor gap / overlap in polygons and the vendors' differing algorithms generated different results, or it was due to the differing geocode services employed by the various vendors. Once the reason is known, the possible corrective actions would be determined, and the overall process methodology will be adjusted throughout the steady run state of each system.

In addition, operating as the prime ECRF, the [redacted] ECRF will be able to recursively query the regional ECRFs to enable centralized automation of the validation methodology. Finally, a user-friendly LoST query tool (web browser-based application) will be provided to assist in validating the regional ECRFs are utilizing the GIS data and LoST protocols correctly.

The [redacted] ECRF is an IETF 5222 compliant LoST server system, providing the NENA i3 ECRF functional element as defined in NENA-STA-010.2. General features of the [redacted] ECRF include:

- IETF RFC 5222 compliant LoST Server
- NENA-STA-010.2 compliant ECRF
- Calculates service URI for 9-1-1 call routing and selective transfer based on a caller location
- Operate under multiple roles within LoST hierarchies, including Forest Guides, state level ECRFs, and regional "leaf node" ECRFs
- Administrative dashboard for monitoring real-time statistics, load, query response behavior, and individual query contents, system-wide and per server
- Supports NENA i3 logging mechanisms, includes internal logging, and provides network monitoring system interfaces
- Architected to support a fully redundant, secure, multi-tier load balanced server architecture
- Supports PIDF-LO geodetic location types of point, polygon, circle, ellipse, and arc-band
- Supports PIDF-LO civic location types, including fine grained components handling building, floor, suite, room, and seat
- Facilitates the discovery of additional location data, by complying with the additional data discovery mechanisms described in NENA-STA-010.2. The GeoComm ECRF supports discovering additional data using all location types defined in RFC 5222 – civic locations (including optional sub-address elements), points, circles, polygons, ellipses, and ArcBands.
- Supports the discovery of agency locator records as defined in NENA-STA-010.2.
- Supports NENA i3 standards-compliant SI for provisioning GIS data updates in near real time, on a scheduled or ad-hoc basis

Atos Public Safety will provide a complete toolset for GIS data validation (QC), GIS data quality, and discrepancy reporting. These tools support managing the GIS data validation workflow including a tool within ArcGIS desktop to submit the data to the system and a tool to easily view discrepancy results and resolve them right in ArcGIS Desktop.

Services will be provided for Project Initiation Meeting, GIS Collaboration meetings and requests, GIS Data Submission Workflow Development, QC Plan Development, System User Training, and system configuration. Based on the combined experience Atos Public Safety and select subcontractor with statewide NG GIS data preparation projects, these services are vital to a successful implementation and getting to a steady state. The results will establish a common data schema, common documented workflow, common GIS data validation checks, along with education and training. The Prime NGCS solution will provide GIS data validation (QC) and GIS data discrepancy reporting and MSAG Conversion Services.

Atos Public Safety proposes, as the PNSP for Spatial Interface (SI), to provide a NENA i3 compliant SI feed to the RNSP for use in the Regional NGCS system. If an alternative delivery method is required, Atos Public Safety may provide based on a defined set of requirements and negotiation into the project.

21.0.12 - Describe the tools and resources that provide the ability to manipulate, edit, process discrepancies, provide updates, provision of functional elements, and provide data normalization of the GIS database.

Atos Response: The proposed NG9-1-1 GIS system will provide the State of California with a seamless GIS data management, ECRF, LVF and SI from a select Atos Public Safety subcontractor, [redacted]. The solution includes:

[redacted]

The GIS Data Hub will provide ongoing GIS data transformation, data validation/QC and reporting, and aggregation (as needed) on the State's GIS dataset. The GIS data workflow would be as follows:

- Identified jurisdictions upload GIS data to GIS Data Hub on an up to daily basis
- The system scans the received files to ensure they are not corrupt
- Data would automatically be transformed into a schema and projection adhering to NENA GIS Data Model standards for the NG9-1-1 i3 requirements (if it does not already)
- The data would be processed through configured QC checks based on NENA standards and the QC plan developed with the State
- Multiple QC checks will be performed. They will ensure proper topology and data integrity, and ultimately ensure only accurate GIS data is included in the NG9-1-1 GIS dataset.
- Spatial and attribute data is evaluated, based on compliance with the NENA GIS database model standard
- Data quality reports will be delivered to the submitting agency
- The submitting agency will correct the GIS data errors outlined in the reports and resubmit updated data back to GIS Data Hub

Topology and boundary issues will be escalated to CA 9-1-1 Branch to resolve with the jurisdictions and submit to the GIS Data Hub system for updating the statewide dataset. Once data quality is confirmed, the GIS data will be made available for provisioning to the ECRF and LVF. Data is provisioned to the Prime NGCS ECRF and LVF via the NENA i3 compliant PNSP Spatial Interface (SI). As the PNSP SI, the GIS data will also be made available to RNSPs via the same SI. Additional methods may be supported after confirming requirements and adjusting scope during negotiations.

This process would be followed for both initial and ongoing GIS updates, resulting in a continuous feedback loop of GIS data updates from local jurisdictions, GIS data performance measurements and reporting, and data transformation.

Once the system is cut over, data passing QC checks in the GIS Data Hub will continue processing without interruption. Data will be provisioned to the ECRF and LVF after being processed through the QC checks. Datasets not passing validation checks will be returned to the submitting agency for remediation.

As needed, as an alternative, jurisdictions may subscribe to the GIS update process at three levels:

- To provide data feedback
- To mark change requests on a map for submission to the GIS system for commitment to the map
- To edit the data within the system

This means, GIS data may be updated in the PSNP one of four ways:

1. Submission of GIS data to Hub for QC processing and aggregation with error reports being delivered to the submitting jurisdiction for remediation
2. Submission of feedback to the GIS system via Contributor feedback user subscription for resolution by the locally authoritative jurisdiction
3. Submission of change requests to the GIS system via Contributor for resolution by the locally authoritative jurisdiction
4. Submitting online data edits to a copy of the data set for ingest by the PSNP.

Each participating jurisdiction will be required to subscribe to only one authoritative method for providing GIS data changes to the statewide PSNP managed dataset.

GIS Data Editing Process

The GIS Data Hub has a designed user permission structure that allows the software to be configured for various user skillsets within a geographic area. For users who do not have GIS skills, such as OSP's or local agencies with no GIS support, the system can be configured for the users to provide feedback on the GIS data which then gets submitted to the GIS system for integration into the statewide dataset by locally authoritative jurisdictions. For users who have an understanding of map data yet not the GIS expertise, a permission level exists where the locals can receive feedback from the OSP's and integrate that feedback themselves into the master GIS dataset and make any other updates to the layers available. For users with a strong understanding of GIS and Esri tools, the system can be used by OSPs to submit feedback which would then be directed to the Esri Desktop users to work through in their native environment. These users can then submit their updated data though GIS Data Hub for integration into the master GIS dataset.

For PSAP boundaries all users can login to the system to redline up desired changes, these changes would get directed to effected agencies for approval, once all agencies signoff those redlines will be directed to an Atos Public Safety professional services review and integrate into the master GIS dataset as needed.

GIS Update Process

The offered tool set provides the workflow to manage the entire GIS update process. GIS updates (adds / deletes / changes to addresses provided by the OSPs) are submitted by the OPSs via a web-based interface. These update requests can then be served to the local, authoritative agencies to work in either the local agencies' desktop tools using tools designed to assist in managing discrepancies and changes or served via a web-based application where tools to assign in managing discrepancies and changes are integrated in. An option exists to leverage [redacted] as the local data maintainer (via a separate agreement) in which case all GIS updates submitted via the web-based interface will be directed to [redacted] for resolution. Once the GIS update is committed to the dataset by the authoritative agency, they can submit their GIS dataset to the statewide GIS system for normalization, QC validation and reporting, and provisioning to the ECRF and LVF. For PSAP boundaries all users can securely access the system to redline up desired changes. These changes will get directed to impacted agencies for signoff. Once all agencies signoff those redlines will be directed to a GIS Specialist (provided as professional services) to review and integrate into the master GIS dataset as needed.

All data improvement and editing will be performed by the local data authority. Jurisdictions that are not capable of completing routine GIS maintenance services for their locally authoritative datasets may enter into a separate agreement with [redacted] to edit address points and other GIS data needed for the project.

System Monitoring

21.0.13 - Describe how the dashboard will display and report the health of the Prime and Regional networks from ingress to egress. Description shall include how the Dashboard will monitor all 9-1-1 traffic and all NG9-1-1 trunks to ensure that SLAs are being met. Description shall also include how CA 9-1-1 Branch will access the Dashboard Monitoring, this shall include statistical data, printable reports, and outage notifications with duration.

Atos Response: Atos Public Safety is proposing a full-featured and integrated system monitoring and dashboard solution [redacted] This solution utilizes many different metrics to provide real-time service visibility and context across the entire Prime and Regional networks from ingress to egress. NGCS functional elements and system components support SNMP, syslog, WMI, and other direct query methods for the collection of system health data. This data is aggregated to within [redacted] where custom dashboards will be built for CA 9-1-1 Branch to show statistical data, printable reports, and outage notifications with duration. These inputs also facilitate infrastructure discovery, relationship mapping, performance and availability monitoring, event management, and action automation. Network metrics are provided directly from the Prime ESInet [redacted] router, firewall, and switch components in the form of NetFlow and IPSLA. These metrics serve as inputs to several Prime ESInet Key Performance Indicators (KPI) such as bandwidth utilization, latency, jitter, packet loss, and MOS reports. [redacted] supports all major network equipment manufacturers allowing diversity between regional ESInet systems while maintaining a single consistent monitoring and dashboard solution.

Atos Public Safety will provide professional services to create personalized dashboards for CA 9-1-1 Branch that provide the KPIs required to monitor all 9-1-1 traffic and all NG9-1-1 trunks to ensure SLAs are being met. The dashboard view also provides a statewide geographic representation (map) of the Prime and Region ESInets in CA with the ability to quickly assess potential performance and service availability issues, providing drill down capability to the Atos Public Safety service desk for CA 9-1-1 Branch. The service desk utilizes [redacted] with [redacted] integration for CMDB discovery and maintenance as well as incident creation and updates, providing SLA statistical data, printable reports, and outage notifications with duration.

CA 9-1-1 Branch will have dedicated VPN access to the monitoring tools and dashboards. The dashboards will be provided over a web browser interface and will be jointly customized and configured with input and use cases from CA 9-1-1 Branch. CA 9-1-1 Branch will be able to drill down through the reports and statistics pages to analyze both network and call flow statistics.

Figure 5: System Monitoring Dashboard

Figure 6: ESInet Monitoring Dashboard

Figure 7: Service Desk Integration

21.0.14 - Describe the integration of system monitoring with data delivered / provided from each Regional network to include the e-bonded trouble ticket process.

Atos Response: The Atos Public Safety system monitoring solution supports all standard interfaces such as SNMP, syslog, WMI, and other direct query methods. Network metrics are provided directly from the ESInet router, firewall, and switch components in the form of NetFlow and IPSLA, or similar network vendor supported interfaces. The proposed [redacted] solution supports all major network equipment manufactures allowing diversity between regional ESInet systems while maintaining a single consistent monitoring and dashboard solution. The regional ESInet providers will deliver the required system monitoring metrics to the Prime NGCS system via ESInet-to-ESInet interconnections.

Atos Public Safety is proposing a full-featured and integrated service desk solution from [redacted]. This solution provides integration for synchronizing CMDB information and maintaining incidents generated by the [redacted] monitoring system. In addition, the [redacted] instance for CA 9-1-1 Branch includes e-Bonding support for integration with the Regional NGCS system providers. The level of data and the direction of the data that is exchanged depends on the level of integration. In a uni-directional integration, a third-party system creates an incident ticket, passes data to the Prime ServiceNow instance, and receives a ticket ID back as confirmation. In a bi-directional integration, incident data is exchanged, synchronized, and updated while data is sent between the systems. Atos Public Safety will work with CA 9-1-1 Branch to define the correct level of integration between the prime and regional ticketing systems.

21.0.15 - Describe realistic timeline for Dashboard development that includes at a minimum Real Time Network Outage Monitoring and Reporting to support the description provided in 21.0.13.

Atos Response: At project start a dedicated instance of the Dashboard monitoring tool will be created and set specifically for exclusive use by the CA 9-1-1 Branch.

Prior to any Prime and Regional network implementation, Atos will work with the CA 9-1-1 Branch during month 3 to design the application dashboards based on use cases and requirements outlined by the CA 9-1-1 Branch. This will be an iterative agile process with continuous feedback from all parties.

Atos will begin integrating and configuring monitoring services and dashboard implementation once the initial Prime and Regional networks are deployed. [redacted]

[redacted]:

Figure 8: Preliminary PDP Timeline

As the Prime and Regional networks from ingress to egress are deployed, monitoring will be provisioned promptly within the Dashboard to provide Real Time Network Outage Monitoring and Reporting to the CA 9-1-1 Branch.

As monitoring data starts to get collected over the buildout, Atos will begin the implementation services as described below:

Atos Public Safety will provide professional services and training days for system deployment and integration as well as implementation of system monitoring dashboard views as described in 21.0.13 and 21.0.14. The approximate breakdown of professional services is as follows:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

Aggregation

21.0.16 - Describe the solution's OSP traffic aggregation service and how it is capable of integrating all OSPs in the State of California. The aggregation service shall include all OSPs in the State of California including the aggregation plan for wireless. Describe how POI locations will be determined to support the ingress of OSP traffic and how the bidder will work with the OSPs, CA 9-1-1 Branch, and the CPUC throughout this process.

Atos Response: Atos proposes to have a minimum of two POI in each region. The POI will support both TDM and SIP trunk interconnects from the carriers that serve that region. Each POI will be able to support either TDM or SIP and will be strategically located within each region. [redacted] Carriers will dual connect to each POI for redundancy based on the interconnect type the carrier can support. Atos will work with all of our carriers to connect using SIP trunks as much as possible. If SIP trunks are not supported by the carrier, then T1 CAS would be the next preference. For wireless carriers who do not support SIP trunks, the preference will be SS7 over T1/T3. Analog interconnects for CAMA circuits will be supported at each POI as an exception if no other interconnect is supported. Atos will work hand in hand with carriers during the interconnect phase from both a

technical consultation and project management perspective. Atos will also leverage relationships between carriers and CPUC or CA 9-1-1 Branch to get the carriers where they need to be to support the transition. This is an area that Atos has extensive experience and expertise in transformation projects and complex transition plans. Atos will work with the CPUC and 9-1-1 Branch to keep them updated on progress and challenges.

If Carriers require additional equipment or technical solutions to assist with the transition, Atos is well equipped to support the carriers to make this successful.

Each of the POI centers will connect to the MPLS network based on the anticipated bandwidth for interconnect to the aggregation center for call normalization. The trunks will be SIP trunks over MPLS access network and will adhere to SLAs based on the requirements. Each POI will have a primary trunk to the aggregation center in the region and a secondary trunk to the neighboring region aggregation center. Since all of the POI and aggregation sites are connected to the access MPLS network, we can configure any POI to connect to any aggregation center as multiple redundant paths to ensure connectivity. These are policies that can be set based on LATA restrictions and CPUC guidelines.

Each aggregation center will support both SIP and legacy trunk interconnects and will be connected to the ingress NG trunks. The aggregation centers can also be provisioned for multiple path options to the Prime NGCS datacenters or the regional NGCS data centers.

Figure 9: PNSP OSP Solution Architecture

21.0.17 - Describe how the bidder's proposed aggregation plan complies with the SOW and Exhibit 21. The description shall include how the PNSP would route 9-1-1 traffic to the correct Regional core service provider, if the Prime core service is unable to deliver 9-1-1 traffic to PSAP. Describe how the bidder will support connections to each of the Regional Aggregation facilities to support the ingress of OSP traffic.

Atos Response:

There are several reasons why the PNSP NGCS cannot route calls to a PSAP:

- Trunk service to PSAP from PNSP is down
- PNSP routing is not available due to service
- PSAP not available
- Each of the above scenarios have different remediation flow.

If the PNSP NGCS has detected that trunk service to a PSAP is not available due to connection failure, alternate policies in PRF can be configured to defer to trunk-based routing to the regional NGCS over SIP trunk. Each PSAP can have a rule to define the RNSP for the PSAP. Also, other re-route policies can be put into place based on PRF policy store and negotiation with the PSAP.

If PNSP is not able to service 9-1-1 calls, the aggregation centers in each region would fail to heartbeat the PNSP and determine the PNSP path is not available. The aggregation center will then use the secondary configured path to forward 9-1-1 calls to the RNSP. Under this scenario, both PNSP datacenters will not be available and not respond to heartbeat requests from the aggregation center.

If the PSAP is not available for routing based on PRF state notifications or heartbeat response failures to the PSAP, the PRF policies in the PNSP will use the alternate routes configured in the PSAP policy based on the configuration from the policy store.

The general rule is the aggregation center will forward calls to one of the PNSP datacenters based on availability. If the PNSP is not available to service 9-1-1 calls, the aggregation center will use the RNSP NGCS centers for processing 9-1-1 calls. If the PNSP NGCS receives the 9-1-1 call from the aggregation center, it will do its best to deliver the call to the PSAP and use PRF policy rules to route calls. If the policies cannot be executed, the PNSP will then attempt the RNSP NGCS. This will need to be defined in the PRF policies per PSAP.

NG Core Services

21.0.18 - Describe how the bidder will receive and maintain the centralized policy routing instructions used in each of the regions and how the PNSP will support policy routing in the event of a RNSP failure.

Atos Response: Atos PSNP solution will consist of a policy store. The policy store will adhere to the interface described in the STA -010.2 NENA i3 specification. The policy store web portal will be available to all regional providers (RNSP) to input their policies for the PSAPs. As policies are updated, the regions will need to push changes to the PNSP. If there are override policy changes for a region performed in the PNSP, those changes will be pushed to the region over the policy store interface published by the region. This will be negotiated during workflow coordination with the regions.

In the event a region is unable to route 9-1-1 calls and the PNSP must take over the routing for the region, the NGCS in the PNSP will use the policies for the regional PSAPs from the policy store. The PNSP will also use the regional PSAP policies from the policy store for text to 9-1-1 call routing for those PSAPs.

Atos will publish an ICD (interface control document) for the centralized policy store for pushing policies int the policy store and providing updates. The policy store is modeled using the NENA i3 specifications.

21.0.19 - Describe the security and firewalls needed to protect NG9-1-1 Services in accordance with NENA NG-SEC 75-001. The solution must be able to detect, mitigate and report TDOS, DDOS, and any other Cyber attacks

Atos Response: The Atos security solution will use the following tools to detect and mitigate security threats in real time:

- TDOS – Atos will use [redacted] for TDOS detection and monitoring.
- DDOS - independent [redacted] firewalls at both ingress and egress. These will perform stateful firewall policies as well as whitelist for trusted sources. The default policy will be to deny all traffic and sources unless specifically allowed.
- Application level firewall – With the use of multiple vendors in the solution, Atos will use policy-based routing to ensure traffic between vendor equipment will be firewalled from one another. This will ensure no single vendor component can infect or penetrate the solution in the event of a security threat.
- IPS/HIDS – Atos will be deploying the [redacted] to ensure anti-virus, malware, and intrusion detection for all applications throughout the solution.
- Active directory/ Authentication – Atos will use the best practices for sign on and two Factor Authentication as well as RBAC to authorize access throughout the system. Only Atos approved PCs with smartcards will be used for administrative access for all critical components with tracking and logging for all changes.
- SIEM – security incident management will be provided using [redacted].

Atos uses best practices from NGSEC as well as JITC to ensure the highest level of security is achieved. This practice will be overlaid with the methodology we used to secure other critical solutions such as the Olympic games, bringing in best practices from other industries.

The solution proposed by APS includes [redacted] Routers and [redacted] Firewalls at each ingress and egress point to the Next Generation Core Services. On the Ingress side the firewalls will be positioned immediately behind the routers and in front of the Ingress BCFs. On the egress side these will reside just inside the egress routers behind the BCFs. For the DMZ the Firewalls will be positioned just inside the DMZ routers (ISR4400).

The [redacted] routers provide a high degree of protection against DoS attacks at the global level and at the VPN routing and forwarding level. The routers will be configured by APS network experts using features such as [redacted].

The NGFWs provide deep packet visibility and advanced security features such as next-generation IPS, URL filtering and advanced malware protection.

In addition, the NGFWs are centrally managed by the [redacted] This provides enhanced event and device management as well as policy management over security functions such as application control, threat prevention, URP filtering and advanced malware protection.

21.0.20 - Provide a diagram(s) that shows 9-1-1 traffic flow architecture from ingress to egress using a non-proprietary NENA i3 compliant solution with dedicated NG Core Services for California.

Atos Response:

Figure 10: NGCS Logical Call Flow Diagram (Prime)

Each OSP within a region will connect to two POI facilities for redundancy. The OSP can connect using legacy Analog / TDM circuits such as CAMA or T1 trunks. OSPs can also connect using SIP trunk to multiple aggregation facilities.

The POI facility will perform protocol conversion from legacy protocol to SIP using PIF gateways. The POI facilities connect to the MPLS network through an SBC to ensure SIP security into the network. The SBCs will ensure G711 codec for all voice traffic into the NGCS. POI facilities connect to two or more aggregation facilities and are configured as primary / secondary.

The aggregation facility will aggregate all 9-1-1 traffic from the POI and SIP trunks from VOIP carriers within the region or outside the region. The aggregation function will normalize all 9-1-1 traffic to SIP TLS and sRTP to the dual datacenters for 9-1-1 call processing in the NGCS. The aggregation facilities will connect to the dual MPLS networks with the option to use CAPSNET for redundancy. The aggregation facilities support multimedia calls (voice, video, text).

Once the calls are ingress into the datacenter, they are routed through the [redacted] firewall for secure access to the NGCS. In the NGCS the calls are anchored to the BCF-I pair, load balanced by the aggregation SBCs. The BCF-I can also receive calls from regional NGCS and TCC service in addition to the aggregation facilities. The 9-1-1 calls are converted to NENA i3 SIP calls, changing the request URI to urn:service:sos and adding the associated IDs and suspicion identifiers to the call header.

The call is then processed in the OSER where ESRP functions are performed. The ESRP will execute the following functions in order:

1. Perform HELD query with the LDB using the ESRD / ANI received from the ingress source
2. Perform LoST query with the ECRF for target PSAP based on location and service
3. Perform PRF policies for call routing based on target PSAP policies in the policy store and state

Queries to the LDB and ECRF will be load balanced across multiple database instances and availability. The LDB will have additional interfaces for record updates as well as E2 location updates from MPC. The ESRP will be updated with PSAP states based on NENA i3 subscriptions if the downstream PSAP supports that capability. The ESRP can support administered states for the PSAPs if they do not support state notifications. All PSAP PRF policies will be stored in the NGCS policy store from each region. These policies will be pushed down to the regional NGCS and statewide NGCS.

The call is then sent to the BCF-E (egress) where calls can be recorded to a long-term recorder using SIPREC and sent out to the PSAP through egress firewalls to the PSAP MPLS trunks. The egress SIP header includes the NENA i3 header components with the location as PIDF-LO and associated IDs as well as any additional data from the ADR.

The PSAP call handling system can initiate network conference with the NGCS bridging components (media Server).

For PSAPs that do not support i3 capabilities, an LPG will be used to support integration to the NGCS. The PSAP will be able to get location updates from the NGCS using AQS to HELD gateway in the LPG.

Text to 9-1-1 TCC service will have two paths to deliver calls to PSAPs. For PSAPs that support text to 9-1-1 over embedded SIP i3 calls, those calls will ingress to the BCF-I in the NGCS datacenters and delivered to the PSAP as described above. For PSAPs that require Over Tthe Top (OTT) service, these PSAPs will get TCC web service directly through the NGCS web proxy.

The NGCS will have the functionality to execute NENA i3 test calls to each PSAP in addition to monitoring service capability. As the MSP functionality of the solution, all the NGCS and aggregation / POI components will be monitored in near Realtime and reported on. Additional probes are placed at PSAP endpoints and aggregation/POI facilities for end to end synthetic testing for serviceability and voice quality metrics to ensure SLA requirements are met. A customer portal will be available to the state for transparency of the network and resources throughout the solution. All components will be using SNMP v3 and secure syslog to communicate status.

21.0.21 - Describe how NGCS shall use a non-proprietary NENA i3 compliant multi-layered redundancy of systems, software, and facilities with no single point of failure that supports the ability to update all system components including but not limited to routers, router tables, servers, NG Core Services, and all NG9-1-1 functions without any loss of service 24x7x365.

Atos Response: The NGCS solution proposed by Atos contains multiple levels of redundancy and resiliency to assure smooth operation of NG9-1-1 functions without any loss of service or interruptions. Atos makes use of non-proprietary NENA i3 compliant multi-layered redundancy. Each component uses standards-based protocols and synchronization techniques between redundant set of components. These include protocol level failover, alternate paths, database sync, etc.

The solution is replicated across two hardened geographically separated data centers. The primary data center is in [redacted]. All NGCS deployed in these data centers are dedicated to the CA 9-1-1 Branch operations.

The upgrade process for the solution allows isolating a single lane for the new candidate upgrade software or hardware. A "lane" is a collection of VMs and network hardware that is the path for processing 9-1-1 calls. Our upgrade process is performed on components one lane at a time. During this process, calls are diverted to components in the other active processing lanes either in the same data center or the redundant data center. This lane separation is done to ensure there is no interruption to new or existing calls for 24/7/365 continuous service. Any calls already in progress will be migrated to the other lane in the same datacenter. Each lane in the datacenter supports hitless failover of calls from one lane to another.

The concept of lanes provides processing groups and redundant sets for each functional component. When a specific component is being upgraded within a processing lane, the failover associated pair in another lane will take over processing. This is a hitless failover of that component. For example, a router in lane 1 will have a hitless failover router in lane 2, or an ESRP VM will have a hitless failover member in lane 2, etc.

When performing the upgrade, we execute changes one component at a time to minimize the impact on the new and currently active calls. The aggregation centers as well as the regional networks will direct traffic to two IP endpoints at each data center. The traffic is load balanced between the IP endpoints. If one IP endpoint is not available during upgrade, all of the traffic from the aggregation center and NGCS are directed to the available IP endpoint.

Once the candidate lane for the upgrade is isolated, the upgrade process is performed and completed, initial testing of the new software/hardware can be performed on the N+1 lane without interrupting 9-1-1 traffic flow. Once the upgrade is accepted, calls can be diverted to the N+1 lane and the process continues to the next lane until all lanes are upgraded. Routing tables in routers and switches are updated to ensure continuous traffic flow through the active processing path.

Figure 11: Process Isolation During Upgrades

Software upgrades and configuration changes can be done in isolation on SW applications or network/compute hardware while still processing 9-1-1 calls.

At any point in the upgrade process, the upgrade can be reverted back to the original version without interruption to 9-1-1 traffic. Network infrastructure, such as routers, firewalls and LAN switches are all redundant within each data center, in addition each appliance has redundant power supplies.

As resilient as a single data center might be, the entire solution is replicated across both data centers with fully redundant inter data center connectivity. Data Center infrastructure will include dual diverse power to each rack as well as redundant diverse network connectivity throughout the solution.

As a final measure of resiliency there will be a backup / data recovery solution to provide full replication of all applications and data across both data centers. Overall, this solution is designed to meet and exceed 99.999% uptime requirements.

Atos upgrade and configuration change management process ensure continuous 24x7x365 service to 9-1-1 calls. The architecture is explicitly designed to ensure mission critical media and data is isolated from the software and devices during the upgrade process. In addition, we will have the ability to isolate data centers for major upgrades and still support the requirements for call volumes and SLA.

All other NGCS components, which are redundant pools for processing will go through a similar upgrade process of isolating the upgrade candidate from the pool, and upgrade one at a time.

21.0.22 - Describe how the bidder's solution will support a minimum of two geographically diverse cores or a cloud based equivalent, dedicated to California and located in the CONUS, with the capability to maintain 99.999% availability.

Atos Response: The proposed Prime NGCS ESInet solution is dedicated to California and will be deployed in two SOC2 Type 2, PCI DSS, and HIPAA compliant data centers located in [redacted] Each data center will provide private, secured areas to collocate the cabinets containing all compute and network components. All [redacted]server and [redacted] network hardware components are deployed in one or more pairs to ensure no single point of failure. The Prime NGCS solution runs in a virtualized environment utilizing [redacted]. All functional elements are deployed with multiple, active instances to ensure no single point of failure. Where applicable, redundant load balancers are utilized to ensure service availability.

Each Prime NGCS ESInet solution deployment in each data center has been sized to support the entire call volume of California and to provide 99.999% availability. In the event the Prime NGCS must serve as backup to the Regional NGCS, the system will support this load for a sustained duration. In the unlikely event of a data center outage, the surviving data center will continue to operate and support the entire call volume load.

This allocation of network, server, and NGCS functional element infrastructure will be dedicated to the California Prime NGCS ESInet.

Figure 12: Data Center Infrastructure (dedicated to CA)

Figure 13: NGCS ESInet Topology

NG Text to 9-1-1

21.0.23 - Describe how the bidder will implement Statewide RealTime Text to 911 services in accordance with all technical requirements in Exhibit 21.

Atos Response: The Atos OpenScape BCF and OpenScape Emergency Router (OSER) ESRP support both MSRP peer-to-peer (IETF RFC4975) and MSRP relay (IETF RFC4976) utilizing encrypted TLS connections. RTT capability is offered using IETF RFC4103. The routing of RTT media through the Atos NGCS is supported either in combination with voice, or by itself. This provides support of ATIS-0700029 Real Time Text Mobile Device Behavior and ATIS-I-0000026 ATIS Interim Non-Voice Emergency Services (INES) Report and Recommendations. Routing policy is supported for RTT calls in the same manner as voice calls.

Since RTT calls will be delivered from Wireless OSPs, Atos will work with CA 9-1-1 Branch and the Wireless OSPs to receive these calls at the Prime Aggregation Centers instead of the Region Aggregation Centers. Once received at the Prime NGCS Data Centers, the Atos OSER will identify the media type (text) and either route based on policy to PSAPs that have elected "native CPE" via SIP, or forward to the Text to 9-1-1 system for PSAPs that have elected "OTT" via HTTP. This is also the approach to be used for MSRP calls, simplifying the overall solution under a single routing strategy for all text calls, summarized as follows:

- MSRP originates at the TCC, RTT originates at the Wireless OSP (both treated as gateways between originating networks and the ESInet)
- OSER receives the call, routes based on configured PRF policy (including either delivering to PSAP natively or forwarding to Text to 9-1-1 OTT service)

21.0.24 – Describe how the Text-to-9-1-1 service will be integrated with the NG9-1-1 AWS and how the Text-to-9-1-1 service supports Text-from-911.

Atos Response: The Text to 9-1-1 system and Alert and Warning System (AWS) will share the same GIS dataset used by the Prime and Regional NGCS. This data integration allows the Text to 9-1-1 and AWS systems to utilize all PSAP boundary polygons and validated address points (contacts) in the GIS dataset as a baseline for the build out of a complete statewide AWS contact list. Once the statewide GIS dataset is completed and handed off to the PNSP, this data will be transformed/imported into the PNSP ECRF system where it will receive additional QA/QC validation. The dataset will then be available via standard SI to the RNSP ECRF systems. This dataset, which includes PSAP boundaries and address points, will be available for continuous integration into both the Text to 9-1-1 and AWS systems for a complete, integrated PNSP solution.

The Text to 9-1-1 service supports outbound text callbacks (Text from 9-1-1) from the PSAP. SMS short codes establish a direct chat session between the PSAP Agent using the Over The Top (OTT) web browser-based text application initiating the Text from 9-1-1 session and the Callback Number (CBN). If a Text to 9-1-1 session ends due to an inactivity timeout, the PSAP Agent can initiate a Text from 9-1-1 session by selecting the CBN and then selecting the "Text Back" function on the user interface.

21.0.25 - Describe how the bidder will function as the State TCC. The description shall include how all PSAPs in California currently accepting Text-to-9-1-1 will be transitioned to NG Text-to-9-1-1 services and shall include a proposed timeline for completion.

Atos Response: The proposed Atos Prime NGCS solution will function as the State Text Control Center (TCC) by aggregating Text to 9-1-1 messages from the TCC service providers. NG Trunks will interconnect the TCC service providers to the Prime NGCS data centers located in [redacted]. Atos will coordinate with the TCC service providers to ensure Text to 9-1-1 calls are load balanced between the NGCS data centers. Once received at the Prime NGCS Data Centers, the Atos OpenScape Emergency Router (OSER) ESRP will identify the media type (text) and either route based on policy to PSAPs that have elected "native Customer Premise Equipment (CPE)" via SIP, or forward to the Text to 9-1-1 system for PSAPs that have elected "web browser

based Over The Top (OTT)" via HTTP. This is also the approach to be used for Real Time Text (RTT) calls, simplifying the overall solution under a single routing strategy for all text calls, summarized as follows:

- Text to 9-1-1 Message Session Relay Protocol (MSRP) originates at the TCC, RTT originates at the Wireless OSP (both treated as gateways between originating networks and the PNSP ESInet)
- OSER receives the call, routes based on configured PRF policy (including either delivering to PSAP natively or forwarding to Text to 9-1-1 OTT service)

Atos will work with each PSAP individually by first conducting a survey of current capabilities, as well as negotiate the transition timeline with the PSAP for interconnectivity and text calls delivery. The type of delivery model will depend on the current call taking platform at the PSAP and the PSAP's timeline for upgrading their system from OTT delivery to integrated CPE (i3).

For PSAPs that currently have either integrated Text to 9-1-1 or OTT service from an existing TCC provider, Atos will work with those PSAPs on a transition plan. The transition plan will be as follows:

Atos will have NG Trunk connections to the existing TCC service providers to both CA NGCS datacenters.

- Interconnect the PSAP to the NGCS datacenters through the PNSP NG Trunk service
- Negotiate the text delivery model based on PSAP capability (Integrated or OTT)
- Test Text to 9-1-1 service to the PSAP from the PSNP NGCS and Text to 9-1-1 service.
- Work with the existing TCC vendors to migrate the PSAP text calls through Atos PNSP NGCS solution.
- Once acceptance tests are successful, the PSAP can terminate existing connections their current providers.
- Atos Text to 9-1-1 solution will adhere to the technical requirements outlined in Exhibit 21

The overall timeline for the transition service will start immediately after the PNSP NGCS are live and PSAP surveys have begun.

Atos will schedule PSAP surveys immediately after award based on priority negotiated during contract. The priority will be for existing PSAPs that currently have Text to 9-1-1. Atos will ensure migration for those PSAPs from the existing service to the new PNSP Text to 9-1-1 service within 180 days of contract start. During that period as other PSAPs begin to request text service, those PSAPs will be scheduled out 180 days from the request date. This will allow Atos to prioritize existing text capable PSAPs with new requests. PSAP survey schedule may be adjusted based on outlined priorities and new requests coming in during this time line.

Atos will build a schedule to be service ready for all CA PSAP within one year of contract (365 days). As PSAPs are connected to PNSP and text ready, those PSAP will be turned online for text delivery. The final schedule will have to be negotiated between PSAP schedule and CA 9-1-1 Branch. Refer to the Text to 9-1-1 PDP for overall schedule and timeline.

Figure 14: Preliminary PDP Timeline for Text to 9-1-1

NG9-1-1 Alert and Warning

21.0.26 - Describe how the NG9-1-1 Alert and Warning System (NG9-1-1 AWS) shall publish public safety emergency alerts to the targeted geographic area using 9-1-1, self-registration, and local uploaded contact data. The description shall include how NG9-1-1 AWS will support importing existing alert and warning data from local, county, regional, and state systems.

Atos Response: The NG9-1-1 Alert & Warning System from our partner [redacted] includes GIS capabilities at the core of the solution and empowers clients to manage critical events and communicate to desired contacts based on geographic requirements. Users may target a geographic area by a pre-loaded shapefile (evacuation zone(s)), drawing a polygon around the target area and/or by dropping a marker on the map and selecting a distance from that marker to notify. The [redacted] GIS section can hold an unlimited number of shapefiles created by the user and imported into [redacted] or created and saved in the [redacted] UI.

Clients may also leverage our Incident Zones capabilities which support automatically sending multi-modal alerts to people who enter a geo-fenced area with an active event. This empowers clients to easily reach people who may have just arrived at a location and were not sent previous alerts.

Contact data may include any desired data sources (such as 9-1-1 data, self-registered contacts, and local data sets from any jurisdiction) and the data may be supplied by the client or obtained through [redacted] using our Resident Connection offering (which includes not only traditional landlines, but also wireless, VoIP, and both resident and business data).

Data can be exported from any local, county, regional, or state data source, including public utility data, that may be obtained and can be imported by authorized client administrators (based on assigned Security Role) using a Comma Separated Value (CSV) file format. The process can be conducted manually (HTTPS TLS), may be automated (SFTP and/or API), and data management operations can be conducted at any frequency and volume required.

Specifically, the Alert and Warning System (AWS) will share the same GIS dataset used by the Prime and Regional NGCS. This data integration allows the AWS system to utilize all PSAP boundary polygons and validated address points (contacts) in the GIS dataset as a baseline for the build out of a complete statewide AWS contact list. Once the statewide GIS dataset is completed and handed off to the PNSP, this data will be transformed/imported into the PNSP ECRF system where it will receive additional QA/QC validation. The dataset will then be available via standard SI to the RNSP ECRF systems. This dataset, which includes PSAP boundaries and address points, will be available for continuous integration into the AWS systems for a complete, integrated PNSP solution.

21.0.27 - Describe how the NG9-1-1 AWS shall send emergency notifications through the Integrated Public Alert and Warning System (IPAWS). Include how these emergency notifications meet the Federal Emergency Management Agency (FEMA) policies, how it will be verified that local users meet FEMA training requirements, and how the solution will interface with the California Earthquake Early Warning system. Describe how the solution can support the capacity for statewide alert and warning.

Atos Response: [redacted] is certified as an IPAWS Alert Origination Service Provider (https://www.fema.gov/media-library/assets/documents/25916) and can provide our Memorandum of Agreement (MOA) as required.

We empower FEMA authorized clients to target all currently available IPAWS dissemination channels for their area(s) of jurisdiction – in conjunction with (or separate from) all other delivery methods available in the solution. The [redacted] IPAWS environment supports both live and test certificates issued by the FEMA IPAWS Comms lab. The test certificate allows users to train and send IPAWS test notifications to the IPAWS JITC lab and view the results without the possibility of the test notification being sent out to a live citizen environment. The [redacted] UI will be WEA 2.0 compliant on July 31, 2019 in anticipation of the WEA 2.0 FEMA release (FEMA release TBD). The WEA 2.0 release will allow for WEA messages to be sent in Spanish as well as English with a character count of 90 and 360 characters. [redacted] can consult with clients and assist in training their users to successfully load their IPAWS certificates and launch IPAWS messages based on FEMA training requirements through our Professional Services team.

From the perspective of interfacing with other systems (such as the California Earthquake Early Warning System):

- [redacted] has been working with the ShakeAlert organization to run pilot integrations for our customers. [redacted] is now working with ShakeAlert to build an integration with the earthquake early warning system. This integration allows our customers to configure rules to notify residents in the impacted area via multi-modal notifications (SMS, Voice, Push Notifications, etc.) when an earthquake early warning has been issued for that particular area. Clients can configure the flexible rules so that notifications are sent via the modalities of their choice to all residents in the polygon of the Earthquake early warning alert. This integration will be available in August 2019, and;

- Integration with other systems (both existing and emerging) can also be achieved using our [redacted]

Clients may send communications to any desired audience, including statewide, without issue. All [redacted] services are delivered as per the required Service Level Agreement.

CA NG9-1-1 - Prime Technical Requirements Summary

21.0 Prime Narrative Requirements
21.1 Prime Functions and Services
21.2 Prime NG Core Services
21.3 Prime Aggregation Services
21.4 NG9-1-1 Trunk Services
21.5 Prime Statewide GIS
21.6 Prime Text to 9-1-1
21.7 Prime NG9-1-1 Alert and Warning System

Requirement	**Contractor must provide a written narrative for the requirements noted in Exhibit 21.0 and include with its Final Bid Submission in accordance with Section 6, Proposal/Bid Format and Submission Requirements**	**Tariff Service Info**
	Interface, Compatibility, and Interoperability - Prime	
21.0.0	Describe the key success factors for the PNSP and how the PNSP will measure, monitor, and ensure timely implementation of NG 9-1-1 services. The description must include challenges and mitigation strategies that impact the project's critical path.	To be updated during next Advice Letter filing
21.0.1	Describe the process that uses a non-proprietary NENA i3 compliant solution to route any 9-1-1 traffic within California when the Regional NG Core Services are not available, or RNSP cannot reach the PSAP, or when a call needs to be transferred to a PSAP not in the Region.	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.0.2	Describe the interface with the Statewide CAPSNET microwave backhaul to each PSAP as a diverse path, as directed by CA 9-1-1 Branch and shall actively monitor CAPSNET connection. Note: the CAPSNET is currently being upgraded to MPLS, prior to the completion of the upgrade redundancy must be included via an alternate connection.	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12 Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.0.3	Describe how resources will be dedicated to provide the leadership, program management, collaboration, and communication needed for the overall management and direction of standards and best practices for consistency of 9-1-1 traffic between the Regions and Prime that demonstrates a commitment to transparency.	Title 3.3 Item 3.3.1 Page 95.1 Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12

21.0.4	Describe how the PNSP, in coordination with CA 9-1-1 Branch, will connect to all four regions, define interfaces (region, aggregation, PSAP), and how the PNSP will maintain interoperability.	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.0.5	Describe the methodology that will be employed after contract award to ensure NG9-1-1 services provided are consistent with tariff filings.	Title 3.4 Item 3.4.1 Page 95.36
21.0.6	Describe how the solution will define and maintain the interface to PSAPs, in coordination with CA 9-1-1 Branch. Interface shall be capable of interfacing with multiple NG9-1-1 Core Service Providers and shall support integration with all existing and future NENA i3 compliant CPE or call handling equipment regardless of model/manufacturer and software / firmware version.	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9 Title 3.3 Item 3.3.12 Page 95.9
21.0.7	Describe how the solution will support Location Based Routing using location data provided by either an Originating Service Provider, a device operating system, or a location clearing house as directed by CA 9-1-1 Branch.	Title: 3.3 Item: 3.3.1 - 3.3.8 Page No: 95.1 - 95.5

	NG Statewide 9-1-1 GIS	
21.0.8	Describe how the LDB shall be available to Originating Service Providers (OSPs) or other authorized users so they can verify that civic addresses will return PSAP or emergency responder Uniform Resource Identifier (URI)s.	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26 Title 3.3 Item 3.3.29 Page 95.29
21.0.9	Describe how the Emergency Call Routing Function (ECRF) and Location Validation Functions (LVF) shall comply with GIS standards that include but are not limited to NENA STA-010.2-2016 Detailed Functional and Interface Standards for the NENA i3 Solution.	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.31 Page 95.31

21.0.10	Describe transition and assimilation of GIS database from CA 9-1-1 Branch GIS selected vendor.	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.0.11	Describe recommended method to ensure all RNSPs comply with GIS dataset maintained by PNSP to support routing all 9-1-1 traffic based on geolocation without violating the LoST protocol.	Title 3.3 Item 3.3.29 Page 95.29 Item 3.3.26 Page 95.25 Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.0.12	Describe the tools and resources that provide the ability to manipulate, edit, process discrepancies, provide updates, provision of functional elements, and provide data normalization of the GIS database.	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

	System Monitoring	
21.0.13	Describe how the dashboard will display and report the health of the Prime and Regional networks from ingress to egress. Description shall include how the Dashboard will monitor all 9-1-1 traffic and all NG9-1-1 trunks to ensure that SLAs are being met. Description shall also include how CA 9-1-1 Branch will access the Dashboard Monitoring, this shall include statistical data, printable reports, and outage notifications with duration.	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.0.14	Describe the integration of system monitoring with data delivered / provided from each Regional network to include the e-bonded trouble ticket process.	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.0.15	Describe realistic timeline for Dashboard development that includes at a minimum Real Time Network Outage Monitoring and Reporting to support the description provided in 21.0.13.	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18

	Aggregation	
21.0.16	Describe the solution's OSP traffic aggregation service and how it is capable of integrating all OSPs in the State of California. The aggregation service shall include all OSPs in the State of California including the aggregation plan for wireless. Describe how POI locations will be determined to support the ingress of OSP traffic and how the bidder will work with the OSPs, CA 9-1-1 Branch, and the CPUC throughout this process.	Title: 3.3 Item: 3.3.9 - 3.3.10 Page No: 95.6 - 95.7
21.0.17	Describe how the bidder's proposed aggregation plan complies with the SOW and Exhibit 21. The description shall include how the PNSP would route 9-1-1 traffic to the correct Regional core service provider, if the Prime core service is unable to deliver 9-1-1 traffic to PSAP. Describe how the bidder will support connections to each of the Regional Aggregation facilities to support the ingress of OSP traffic.	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
	NG Core Services	
21.0.18	Describe how the bidder will receive and maintain the centralized policy routing instructions used in each of the regions and how the PNSP will support policy routing in the event of a RNSP failure.	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.0.19	Describe the security and firewalls needed to protect NG9-1-1 Services in accordance with NENA NG-SEC 75-001. The solution must be able to detect, mitigate and report TDOS, DDOS, and any other Cyber attacks	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.0.20	Provide a diagram(s) that shows 9-1-1 traffic flow architecture from ingress to egress using a non-proprietary NENA i3 compliant solution with dedicated NG Core Services for California.	Title 3.3. Item 3.3.13 Page 95.11
21.0.21	Describe how NGCS shall use a non-proprietary NENA i3 compliant multi-layered redundancy of systems, software, and facilities with no single point of failure that supports the ability to update all system components including but not limited to routers, router tables, servers, NG Core Services, and all NG9-1-1 functions without any loss of service 24x7x365.	Title 3.3. Item 3.3.13 Page 95.11
21.0.22	Describe how the bidders solution will support a minimum of two geographically diverse cores or a cloud based equivalent, dedicated to California and located in the CONUS, with the capability to maintain 99.999% availability.	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9

	NG Text to 9-1-1	
21.0.23	Describe how the bidder will implement Statewide RealTime Text to 911 services in accordance with all technical requirements in Exhibit 21.	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.0.24	Describe how the Text-to-9-1-1 service will be integrated with the NG9-1-1 AWS and how the Text-to-9-1-1 service supports Text-from-911.	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.0.25	Describe how the bidder will function as the State TCC. The description shall include how all PSAPs in California currently accepting Text-to-9-1-1 will be transitioned to NG Text-to-9-1-1 services and shall include a proposed timeline for completion.	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35 Title: Section 3.3 Item: 3.3.33 Page No: 95.33

	NG9-1-1 Alert and Warning	
21.0.26	Describe how the NG9-1-1 Alert and Warning System (NG9-1-1 AWS) shall publish public safety emergency alerts to the targeted geographic area using 9-1-1, self-registration, and local uploaded contact data. The description shall include how NG9-1-1 AWS will support importing existing alert and warning data from local, county, regional, and state systems.	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27 - 95.28
21.0.27	Describe how the NG9-1-1 AWS shall send emergency notifications through the Integrated Public Alert and Warning System (IPAWS). Include how these emergency notifications meet the Federal Emergency Management Agency (FEMA) policies, how it will be verified that local users meet FEMA training requirements, and how the solution will interface with the California Earthquake Early Warning system. Describe how the solution can support the capacity for statewide alert and warning.	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27

Requirement	**Mandatory NG Prime Functions & Services Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement** **YES/NO**	**Tariff Service Info**
21.1.1	Shall not charge OSPs, 9-1-1 Service Providers, PSAPs, CPE providers, or any other service provider from ingress to egress of the 9-1-1 traffic, as these services in there entirety are paid for by the State of California.	**Yes**	Title 3.3 Item 3.3.1 Page 95.1
21.1.2	Implement NENA i3 standards and CPE delivery standards, as directed by CA 9-1-1 Branch, for each of the defined regions to support CA statewide interoperability.	**Yes**	Title 3.3 Item 3.3.1 Page 95.1
21.1.3	Have a minimum of two (2) geographically diverse Cores or the cloud based equivalent, within CONUS, dedicated to California with demonstrated capability that provides 99.999% avaliability.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.1.4	Shall have the overall management and direction of standards and best practices for consistency of 9-1-1 traffic between the Regions and Prime based on direction from CA 9-1-1 Branch.	**Yes**	Title 3.3 Item 3.3.1 Page 95.1
21.1.5	Shall process and route any 9-1-1 traffic within California when the Regional NG Core Services are not available, or when a call needs to be transferred to a PSAP not in the Region.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.1.6	Process and route all OSP traffic types in the State of California.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.10 Page No: 95.6 - 95.7
21.1.7	Shall be responsible for maintaining the centralized policy routing instructions used in each of the regions.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.1.8	Shall be responsible for Policy Routing in the event of a Regional failure.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12

21.1.9	Shall provide the security and firewalls needed to protect NG9-1-1 Services in accordance with NENA NG-SEC 75-001. The Network Service Provider shall detect, mitigate and report TDOS, DDOS and any other Cyber attacks	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.1.10	Shall agree to CA 9-1-1 Branch utilizing a third party vendor to validate network security for all NG9-1-1 Services in accordance with NENA NG-SEC 75-001 and subsequent standards.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6

21.1.11	The current NENA approved security standard (NENA-INF-015.1-2016, NENA 75-001, NENA 75-502) Security for Next-Generation 9-1-1 Standard (NG-SEC) Standard and the associated NENA Next Generation 9-1-1 Security (NENA-INF-023.1-2017, NENA 75-002 - NG-SEC Audit Checklist) are required to be implemented. As the NENA security requirements evolve and mature and at the request of CA 9-1-1 Branch, Network Service Provider shall provide a plan to implement updates, adjustments, or modifications to maintain compliance with the current NENA security standard. The Network Service Provider shall monitor additional security repositories to identify threats and vulnerabilities to the system in the context of avoiding cybersecurity issues Sites that are often utilized such as https://cve.mitre.org/, https://nvd.nist.gov/, and https://www.us-cert.gov/ can assist in the identification and analysis of potential vulnerabilities within the NGCS. Once a vulnerability or a threat has been identified, the Network Service Provider shall perform the initial and emergency response to the security event and will have no more than 24 hours to provide CA 9-1-1 Branch a document describing the measures taken, and any additional implementation plans to fully avoid a breach.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.1.12	Shall supply a Configuration management database that documents all of the software, systems, network protocols, port usage and relevant system related information in a mutually agreed upon format. This configuration database shall include a linkage to their change management process to ensure that any change request that is implemented will result in update to the configuration management database. The shall follow industry standards best practices such as ITIL or the equivalent, and shall maintain a configuration management database that can be accessed by CA 9-1-1 Branch. Items that need to be included in the configuration management database include: o Bandwidth at each interface o Capacity and demand management as adjustments to the interfaces o Access management and any adjustments to the identification and access management to the NGCS o Service Level and Performance adjustments to adhere to the SLA o Security changes and adjustments – Physical and Operational o Configuration database dashboard or other method to allow real time access to the CA 9-1-1 Branch o As-built information contained in the system as the baseline configuration to provide a historical reference to the system "as delivered"	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.1.13	Shall provide 9-1-1 traffic flow architecture from ingress to egress.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11

21.1.14	Shall interface with the Statewide CAPSNET microwave backhaul to each PSAP as a redundant path, as directed by CA 9-1-1 Branch. Shall provide the ability to ensure CAPSNET connection is actively monitored. Note: the CAPSNET is currently being upgraded to MPLS. The diverse path provided over CAPSNET by Cal OES will be extended to every PSAP, if possible. The interface to CAPSNET will be via BGP (Layer 2 or Layer 3) at each PSAP and at additional points based on mutually agreed connections to the PNSP data centers.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.1.15	The LVF shall be available to Originating Service Providers (OSPs) or other authorized users so they can verify that civic addresses will return PSAP or emergency responder URIs. The LVF shall be made available via an LVF proxy in the public internet in a secure controlled manner. The LVF shall return a PSAP name from an entered geo-coordinate.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.31 Page 95.31
21.1.16	Shall connect to all four regions, define interfaces based on direction from CA 9-1-1 Branch based on NENA i3, and shall maintain interoperability.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.1.17	Shall define the interface at aggregation, between region and prime, and at PSAP based on direction from CA 9-1-1 Branch.	**Yes**	Title 3.3 Item 3.3.12 Page 95.9
21.1.18	Shall define the interface to the POI that support all OSP types based on direction from CA 9-1-1 Branch based on the NENA i3 standard.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.10 Page No: 95.6 - 95.7
21.1.19	Shall support Location Based Routing using location data provided by either an Originating Service Provider, a device operating system, or a location clearing house as directed by CA 9-1-1 Branch.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.8 Page No: 95.1 - 95.5
21.1.20	Shall support the NENA i3 standards and guarantees a non proprietary solution that supports interoperability.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.1.21	Shall provide services to process location data integration similar to Advanced Mobile Location (AML) for emergency location-based service that can support Data SMS and HTTPS data message formats and shall integrate the data as supplemental location information integrated into CPE that is capable of displaying the best available geolocation of the caller to a dedicated end-point as determined by CA 9-1-1 Branch.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.1.22	Shall define and maintain interface to PSAPs based on CA 9-1-1 Branch' direction. Interface shall be capable of interfacing with multiple NG9-1-1 Core Service Providers and shall support integration with all existing and future NENA i3 compliant CPE or call handling equipment regardless of model/manufacturer and software / firmware version.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12

21.1.23	PNSP shall provide a network master clock that meets the NENA PSAP Master Clock Standard. PNSP shall provide availability for each RNSP to connect in to the network master clock.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.1.24	PNSP shall provide a connection using an NG9-1-1 Trunk to the CA 9-1-1 Branch NG 9-1-1 Lab and shall participate in all acceptance testing in the NG 9-1-1 Lab environment or in other mutually agreed upon laboratory locations.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.8 Page No: 95.1 - 95.5
21.1.25	PNSP shall develop and maintain trouble ticket e-bonding for all PNSP and RNSP trouble tickets.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.1.26	The service shall provide software, equipment and/or services that meet National Emergency Number Association (NENA) Next Generation 9-1-1 (NG9-1-1) requirements and standards now available, and as they become available in the future within 6 months of publication. Contractor shall provide an annual compliance report stating how they meet all applicable standards.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

Requirement	**Mandatory NG Core Services Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement? YES/NO**	**Tariff Service Info**
21.2.1	Shall use a multi-layered redundancy of systems, software and facilities with no single point of failure.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.2	Shall provide ability to update all system components including but not limited to routers, router tables, servers, NG Core Services and all NG9-1-1 functions without any loss of service 24x7x365.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.3	Shall provide NENA i3 logging for all functional elements within the NGCS.	**Yes**	Title 3.3 Item 3.3.24 Page 95.23
21.2.4	Shall be responsible to log all 9-1-1 metadata traffic to include Text-to-9-1-1.	**Yes**	Title 3.3. Item 3.3.24 Page 95.22
21.2.5	Shall utilize SIP metadata and i3 logging to monitor, track and verify data flow.	**Yes**	Title 3.3. Item 3.3.24 Page 95.22
21.2.6	Shall be able to provide a data push and/or pull of i3 logging data from all RNSPs.	**Yes**	Title 3.3 Item 3.3.15 Page 95.13 Item 3.3.24 Page 95.23
21.2.7	Shall provide NG9-1-1 services built upon the NENA i3 requirements and standards documents. The NENA i3 solution shall support end to end IP connectivity. Gateways shall be used to accommodate legacy wireline and wireless origination networks as well as legacy PSAPs that interconnect to the NENA i3 solution architecture.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.14 Page 95.12
21.2.8	Shall provide Emergency Call Routing Function (ECRF) and Location Validation Functions (LVF) that comply with GIS standards that include but not be limited to NENA STA-010.2-2016 Detailed Functional and Interface Standards for the NENA i3 Solution.	**Yes**	Title 3.3 Item 3.3.13 Page 95.10-95.11 Item 3.3.31 Page 95.31
21.2.9	Shall provide Emergency Services Routing Proxy (ESRP) to perform the IP routing of all calls through the NG9-1-1 system based on information from the SIP header.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11

21.2.10	Shall provide a PRF which is a functional component of an ESRP that determines the next hop in the SIP signaling path using the policy of the nominal next element determined by querying the ECRF with the location of the emergency calling party.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.11	Shall be capable of transferring calls utilizing functions like ECRF/PRF, to / from another NGCS or PSTN including the delivery of accurate emergency calling party location information.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.12	Shall utilize the Border Control Function (BCF) as part of the NGCS to manage network edge control and SIP message handling in accordance with the NENA i3 requirements.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.13	Shall utilize the BCF, both ingress and egress, to support the following security related techniques including Monitoring, Detections, Mitigation, and Response.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.14	Shall provide at least two (2) ECRF/LVF instances utilized for the NGCS.	**Yes**	Title 3.3. Item 3.3.13 Page 95.11
21.2.15	Shall provide a dashboard to display and report the health of the Prime and Regional networks from ingress to egress. The solution shall provide QoS information, per NENA i3 standards.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.2.16	Shall integrate system monitoring from / provided by each RNSP.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.2.17	Shall include at a minimum Real Time Network Outage Monitoring and Reporting for Regions to support failover interoperability and 9-1-1 traffic, show network uptime and downtime duration in the dashboard.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.2.18	Shall monitor all 9-1-1 traffic to ensure that SLAs are being met in the dashboard.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18

21.2.19	Shall provide CA 9-1-1 Branch access to Dashboard Monitoring and statistical data and printable reports.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.2.20	Shall provide CA 9-1-1 Branch access to Dashboard Monitoring and statistical data and printable reports. The Dashboard Monitoring service shall be a dedicated resource for California to support this contract.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17 Item 3.3.19 Page 95.18
21.2.21	Shall provide ability to dispatch technical support to any location where the contractor has equipment within 30 minutes of notifying technician of an outage that requires on-site technical support.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17
21.2.22	Shall retain all network, CDR and 9-1-1 traffic metadata for a period of ten (10) years.	**Yes**	Title 3.3 Item 3.3.24 Page 95.22-95.23
21.2.23	Shall provide a point of contact, with a toll free telephone number, 365/24/7 for CA 9-1-1 Branch personnel and PSAP personnel to report trouble on the Prime NG9-1-1 Services.	**Yes**	Title 3.3 Item 3.3.18 Page 95.16-95.17
21.2.24	Shall integrate and maintain the LDB developed by Statewide GIS vendor (DDTI) to maintain the wireline and VoIP OSP data needed to route 9-1-1 traffic unless OSP's deliver location data with the call.	**Yes**	Title 3.3 Item 3.3.29 Page 95.29 Item 3.3.27 Page 95.26
21.2.25	Shall provide the data needed from the PNSP LDB and PNSP LVF to support the RNSP LVF validation function of the RNSP. The goal is to ensure that the PNSP remains the authoritative source for the LoST protocol.	**Yes**	Title 3.3 Item 3.3.29 Page 95.29 Item 3.3.26 Page 95.25
21.2.26	Shall provide a secure web portal that allows OSP's to validate and update LDB entries.	**Yes**	Title 3.3 Item 3.3.29 Page 95.29

Requirement	**Mandatory NG9-1-1 Aggregation Services Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement** **YES/NO**	**Tariff Service Info**
21.3.1	The Prime Network Service Provider and any subcontractor providing aggregation services must have a CPCN and tariff filing.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.3.2	Shall provide an OSP traffic aggregation service capable of integrating all OSPs in the State of California. The aggregation service shall include all OSP's in the State of California excluding wireless, AT&T wireline, Consolidated Communications, and Frontier wireline. Note: Aggregation Service must include "hot standby" plan for wireless.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.10 Page No: 95.6 - 95.7
21.3.3	Shall have a minimum of one (1) geographically diverse aggregation locations per CA 9-1-1 Branch defined NG Region.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.3.4	Shall have a minimum of two (2) POIs per CA 9-1-1 Branch defined NG Region.	**Yes**	Title 3.3 Item 3.3.12 Page 95.9
21.3.5	Shall be connected to each of the Regional Aggregation Service providers to support the ingress of OSP traffic.	**Yes**	Title 3.3 Item 3.3.12 Page 95.9
21.3.6	Shall provide ability to route 9-1-1 traffic to the correct Regional core service provider, if the Prime core service is unable to deliver 9-1-1 traffic to PSAP.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.3.7	Shall provide outage notifications to CA 9-1-1 Branch.	**Yes**	Title 3.3 Item 3.3.11 Page 95.8
21.3.8	Shall provide outage notifications with duration to system monitoring dashboard.	**Yes**	Title 3.3 Item 3.3.11 Page 95.8

21.3.9	Shall provide interface needed to support Real Time Text aggregation directly from the wireless carriers.	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.12 Page No: 95.6 - 95.9
21.3.10	PNSP shall support aggregation of wireless OSPs in the event RNSP aggregate wireless OSPs is not available that includes active NG9-1-1 trunks and failover testing	**Yes**	Title: 3.3 Item: 3.3.9 - 3.3.10 Page No: 95.6 - 95.7

Requirement	**Mandatory NG9-1-1 Trunk Services Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Service Network Provider Agrees to meet the Requirement** YES/NO	Tariff Service Info
21.4.1	Shall comply with NENA i3 standards for 9-1-1 traffic delivery. NENA-STA-010.2-2016 and later versions	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.8 Page No: 95.1 - 95.5
21.4.2	NG9-1-1 Trunk service shall be designed with logical and physical diversity where available and must to comply with NENA 75-001 Standard for Next Generation 9-1-1 Security. Shall notify CA 9-1-1 Branch of any locations without logical and physical diversity and obtain CA 9-1-1 Branch approval using the Project Milestone Report (PMR) of any NG9-1-1 Trunk Service without diversity	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.3	NG9-1-1 Trunk service shall allow for 9-1-1 call isolation by stream or channel or via other means to enable the tracking of 9-1-1 traffic from ingress at the OSP to egress at the PSAP or to RNSP.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.4	NG9-1-1 trunk service shall support a minimum of one NG 9-1-1 Trunk with 10Mbps throughput to each PSAP. In the event a 10 Mbps connection is not available, the state will work with the PNSP to determine the connection to the PSAP.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.5	Shall utilize NG9-1-1 Trunk service to connect to all PSAPs, to the Regional NG Core Service provider, to aggregation, and all other internal and external connections.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.6	Shall transport NG9-1-1 traffic and other 9-1-1 related traffic included but not limited to NG9-1-1 Alert and Warning, as directed by CA 9-1-1 Branch.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.7	Shall provide ability to monitor throughput statistics in real time.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6

21.4.8	Shall provide outage notifications to CA 9-1-1 Branch.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.9	Shall provide outage notifications with duration to system monitoring dashboard.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.10	Shall provide path diversity with both physical and carrier diversity. The CA 9-1-1 Branch understands that all bandwidths for NG 9-1-1 trunks may not be supported at all PSAPs and will work with the PNSP to determine path diversity. For each of the PSAP locations the individual circuits being provisioned to the site, by PSNP, shall meet CA 9-1-1 Branch carrier diversity/redundancy standards. CA 9-1-1 Branch shall be the sole arbitrator in determining their approval of the proposed circuit provider, the route and PSAP point of entry or other guidelines they deem essential to deliver redundancy.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.11	Shall provide a private hosted SDWAN Controller by PNSP / RNSP accessible over private network, including secure connectivity, trust and identity, and threat defense from PSAP to OSP / SaaS applications, to support interoperability between and RNSP.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.12	SD WAN shall include transport independence. Centrally managed and shared VPN schema across any WAN circuit (i.e. CAPSNET Microwave, LTE, MPLS, broadband, etc.) and shall support flexible VPN extension to all end points (IaaS, PSAP branch, PSAP DC)	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6
21.4.13	Shall provide a secure SD WAN architecture that supports open security standards such as IPsec etc.	**Yes**	Title: 3.3 Item: 3.3.1 - 3.3.10 Page No: 95.1 - 95.6

Requirement	**Mandatory Statewide GIS Services Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement** **YES/NO**	**Tariff Service Info**
21.5.1	Shall transition and assimilate the GIS database from CA 9-1-1 Branch' GIS selected vendor, Digital Data Technologies Inc. (DDTI).	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.2	Shall provide the tools and resources needed to manipulate, edit, process discrepancies, provide updates, provision to functional elements, provide data normalization of the GIS database. These tools can be used by local GIS authorities to update and maintain GIS data. The GIS tools shall support up to 500 login accounts.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.3	Shall utilize GIS database for routing all 9-1-1 traffic and shall be used to support ECRF.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.4	Shall comply with GIS standards to include, but not limited to, NENA NG9-1-1 GIS Data Model, NENA 02-010, and NENA 02-014 and all subsequent updates.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.5	Shall provide updates to the GIS database and pushed to the Regional NGCS, without disruption of ECRF LoST service. Updates shall be at least daily and shall be capable of receiving data updates 24x7x365 and provide confirmation receipt of data within 4 hours.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

21.5.6	Shall expedite GIS and ECRF updates upon notification by a 9-1-1 Authority for 9-1-1 call routing changes as needed to support state emergency management situations.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.7	The GIS tools shall have a process for ad hoc updates and dynamic boundary changes for 9-1-1 routing.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.8	The GIS tools shall provide a maintenance function to allow jurisdictions to upload the data that is consumed by the ECRF and LVF to ensure proper routing of calls.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.9	Shall provide statewide 9-1-1 GIS synchronization and 9-1-1 database normalization between PNSP and RNSP. The GIS synchronization process will rely on validation from the local GIS authority for all updates.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.10	Shall provide database management services needed for the entire database platform for NG9-1-1 traffic delivery.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.11	Shall route any type of 9-1-1 traffic to the appropriate PSAP based on geospatial data.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

21.5.12	Shall allow local government geospatial programs to remain the authoritative source for accurate GIS data to be used for NG9-1-1	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.13	Shall provide a secure web portal for local 9-1-1 entities to submit GIS updates and changes and to communicate discrepancy feedback.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.14	Shall provide OSP a secured web portal to view GIS entries.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.15	Shall provide on demand reports, performance measurements, discrepancy tracking, for GIS quality assurance and system status.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.16	Shall provide a dashboard or other tool to view system operation and data metrics.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.17	Shall ensure that the GIS tools provide the capability to manipulate the GIS based map display and utilize the GIS datasets in existence.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

21.5.18	Shall ensure that the GIS tools provide the capability to draw geometric shapes on the GIS based map display.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.19	Shall ensure that the GIS tools provide the capability to select data from the drawn geometric shapes on the GIS based map display.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.20	Shall ensure that the GIS tools provide the capability to search the NG9- 1-1 data by any selected geometric shape drawn on the GIS based map display.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.21	Shall ensure that the GIS tools provide the capability to search the NG9- 1-1 data repositories by any user generated geometric shape.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.22	Shall ensure that the GIS tools provide the capability to display query results on the GIS based map display.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.23	Shall ensure that the GIS tools display the emergency responder agency for a given location.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

21.5.24	Shall ensure that the GIS tools provide the capability of displaying any information in the databases associated with any locations on the GIS based map display, where such information is not restricted by security or policy.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.25	Shall ensure that the GIS tools provide capability to display a Caller Location on a GIS map display.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.26	Shall provide outage notifications to CA 9-1-1 Branch.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.27	Shall provide outage notifications with duration to system monitoring dashboard.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.28	Shall provide an interface and file format for local GIS authorities for GIS updates that is compatible with ESRI or other GIS standard formats as mutually defined by Cal OES and the PNSP.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.29	GIS tools shall support logins that define role based logins including but not limited to, Administration or User.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

21.5.30	Contractor shall provide a Location Database (LDB) to be made be available to Originating Service Providers (OSPs) or other authorized users so they can verify that civic addresses will return PSAP or emergency responder Uniform Resource Identifier (URI)s, or be edited and updated based on input from the OSPs.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26
21.5.31	The PNSP shall provide all PSAPs the functionality to support database location queries that integrate to CPE.	**Yes**	Title: Section 3.3 Item: 3.3.23, 3.3.25-3.3.27 Page No: 95.21, 95.24-95.26

Requirement	**Mandatory Text-to-9-1-1 Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement** **YES/NO**	**Tariff Service Info**
21.6.1	The general Text to 9-1-1 requirements are applicable to all deployment methods and the service shall aggregate all incoming Text-to-9-1-1 and deliver to all statewide PSAPs.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.2	Shall manage the Statewide Text-to-911 services in accordance with all technical requirements in Exhibit 21. The PNSP shall serve as the terminating TCC for California.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.3	Shall provide statewide Real Time Text (RTT) for Network to Network Interface (NNI) capable wireless OSPs via a POI and NG 9-1-1 trunk that aligns with federal implementation guidelines and mutual agreed timeline with CA 9-1-1 Branch and PSNP.	**Yes**	Title: Section 3.3 Item: 3.3.35 Page No: 95.35
21.6.4	Shall aggregate incoming Short Message Service (SMS) text messages from the public through one interface, to include other TCCs, any direct wireless carriers/Over the Top (OTT) providers, and all other modalities for routing to the appropriate PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.33 Page No: 95.33
21.6.5	The service shall provide software, equipment and/or services that meet National Emergency Number Association (NENA) Next Generation 9-1-1 (NG9-1-1) requirements and standards now available, and as they become available in the future within 6 months of publication. Contractor shall provide an annual compliance report stating how they meet all applicable standards.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.6	The service shall comply with the Alliance for Telecommunications Industry Solutions (ATIS) / Telecommunication Industry Association (TIA) J-STD- 110, Joint ATIS/TIA Native SMS to 9-1-1 Requirements & Architecture Specification A J-STD-110 Standard that are now available, and as they become available in the future within 6 months of publication. Contractor shall provide an annual compliance report stating how they meet all applicable standards.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.7	The service shall be compatible with all Text to 9-1-1 deployment methods to the PSAPs. This includes secure Web-based, i3 Integrated via VPN, and State Managed ESINet.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.8	The service shall allow for text overflow to be turned on or off by the PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.9	The service shall re-route text sessions to another designated deployed PSAP, if the original PSAP is being abandoned due to an emergency. The step-by-step instructions on activating an emergency re-route shall be provided to the PSAP and accessible through an Admin Text Portal or Help Desk Request.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.10	The service shall allow each PSAP to set the number of concurrent text sessions delivered to the PSAP (whether initial or transferred), during the initial provisioning for deployment.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.11	The service shall provide the Texter's location to the Telecommunication's display. Depending on the Text deployment method, the Telecommunicator shall be able to refresh and update the Text Caller's location a minimum of 10 times.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.12	The service shall utilize all available Geographic Information System (GIS) PSAP jurisdictional shape file data within 10 business days of receipt and integrate any GIS based updates for accurate routing of the Text to 9-1-1 sessions.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.13	The service shall allow text messages to be transferred between any deployed PSAPs at will, no matter what text deployment method, with the awarded provider.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.14	The service shall allow the Telecommunicator to select the transfer-to PSAP without the TCC changing the desired selection. The TCC shall not re-acquire the location and base the transfer on potential new coarse location.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.15	The service shall provide text transfers to all PSAPs live with Text to 9-1-1 within California and allow for a text session to be transferred a minimum of 5 times The service shall provide auto-population of the text being transferred with a text supplement message stating ' PSAP A transferring a text session call to PSAP B'. The service shall provide confirmation of successful text transfer to the initiating PSAP and shall be captured in the text session history.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.16	The service shall provide for the original PSAP to retain control of the text session if the transfer is unsuccessful. A notice of "FAILED TRANSFER" notification including the PSAP name and shall be included within the Texter's session history.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.17	The service shall provide updated location information of the texter to the transferred-to PSAP, upon request from the Telecommunicator, if available from the Wireless Carrier.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.18	The service shall allow the Telecommunicator to hand over control of the texting conversation to another Telecommunicator in the same PSAP. This is applicable to the Web Based service only.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.19	The contractor shall send an “end of Text session” message to the texter when the Telecommunicator closes the text session, such as depressing the end text session button at the PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.20	Training to the PSAP Telecommunicator shall include all features on how to transfer a text session, including how to retrieve text session if it cannot be transferred and obtain updated location information.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.21	The service shall be functional on all PSAP CPE: Standalone or Host-Remote configurations, which permit the use for the deployment method chosen by the PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.22	Contractor is required to provide all staff required to implement all services within the Text to 9-1-1 contract including a single point of contact and technician.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.23	The service shall interface all text session detail records to the incumbent CA 9-1-1 Call Detail Record Management & Reports system (CDRMR), which is available to all PSAPs. The service shall coordinate and burden all associated costs to connect and provide all the Call Detail Record/Text detail/transcripts Records via the Text Control Module and send all the text detail/transcript information. Irrespective of whether the text session is closed, or still open, every 15 minutes or less, the data shall be made available to the CDRMR system in XML format.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.24	All Contractor facilities that will perform services as part of this contract shall be housed in the United States.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.25	For the on-site deployment, the bidder shall provide a Single Point of Contact and technical expertise to work directly with the PSAP's IT department so that the network, firewall, and connection is established as needed. The connection to the PSAP shall be provided using a NG9-1-1 Trunk, but coordination with the PSAP's IT department is required.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.26	The web text service shall provide the Telecommunicator with a Graphical User Interface (GUI) within the web browser.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.27	The web text service shall present the Telecommunicator, at a minimum, with the status of the following categories as described below #1-4.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.28	1) Number of Active Text to 9-1-1 sessions at the PSAP in total	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.29	2) Number of Text to 9-1-1 sessions unassigned to a Telecommunicator	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.30	3) Number of Telecommunicator logged on	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.31	4) Number of Text to 9-1-1 sessions assigned to each Telecommunicator logged on.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.32	For Web-based text solutions, an administrative portal shall be accessible 24x7x365 to PSAP administrators to for all of the following (at a minimum) as described below #1-9.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.33	1) activate text re-route to another PSAP,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.34	2) add or delete number from deny list,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.35	3) overflow functionality,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.36	4) time of day routing,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.37	5) view text session conversation history,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.38	6) manage users (add or delete),	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.39	7) reset passwords,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.40	8) manage preset messages,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.41	9) manage PSAP transfer list (add or delete PSAPs).	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.42	The web text service shall provide a URL to enter a user name and password for secure access. The service shall provide the PSAP the ability to define unique User IDs and passwords for each Telecommunicator. This shall not require a security device (FOB) to access the web browser. Nor an email address for login. Upon login, the service shall send notification via the CDRMR system for PSAP login status.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.43	The web text service shall provide a logout method. Upon logout, the service shall send notification via the CDRMR system for PSAP login status. If the web browser is closed by the Telecommunicator, the service shall automatically log the dispatcher out. If a PSAP has no Telecommunicator's logged in, the service shall log the date and time, and provide in a monthly report.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.44	The web text service shall provide a flat map with a user optional on/off aerial satellite display if available at the PSAP. The map shall show the lat/lon of the texter by a pin icon provided by the originating service provider along with the uncertainty (meters) and confidence (%) if delivered with text by OSP/TCC.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.45	The service shall provide the PSAP Administrator the ability to define a minimum of 20 sortable PSAP messages based upon the PSAPs prioritization and the ability to define what each preset message says with a minimum of 160 characters.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.46	The Web Based text service shall provide the Telecommunicator, on their text screen, with an alphabetized drop down menu of PSAPs, to which the text session can be transferred.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.47	The transferred text conversation from the original PSAP shall be color coded or 'marked' when received at the next PSAP allowing the Telecommunicator to differentiate with communications were conducted by their PSAP and which were conducted by another PSAP. The transferred text session to next PSAP, shall contain the complete history of initial text session history, and the name of the sending PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.48	The Web Based Text to 9-1-1 shall provide the Telecommunicator, at a minimum, the last 10 text sessions, for the entire PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.49	The Web Based Text to 9-1-1 service shall provide the PSAP with a choice of at least three unique notification tones, which are PSAP selectable along with the associated volume. The service shall provide every initial incoming text message a distinctive audio tone, even if subsequent texts arrive at a Telecommunicator with a text session already open. The audio tone is mandatory on the first text. The distinctive audio tone shall repeat every 30 seconds, until the initial text session is answered.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.50	The Web Based Text to 9-1-1 service shall be available on the following internet platforms: Currently supported versions of Internet Explorer, Google Chrome and Firefox. If a security concern is identified, PSAP and CA 911 Branch shall be notified in writing.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.51	The Contractor for the integrated service shall have personnel available to work directly with the CPE provider so that the network, firewall, and connection is established.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.52	The integrated text service shall interface, using NENA i3 with the text ready CPE Providers, as listed on the CA 9-1-1 Contract number 8500-2016 at www.caloes.ca.gov. The service shall allow the text messages to display at every Telecommunicator workstation as described below #1-4.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.53	1) The integrated text service shall interface to the future State managed ESINets.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.54	2) Initial tests between the Contractor and the ESINet shall be accommodated to ensure connectivity.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.55	3) If the ESINet is available and the PSAP's CPE is text ready, the service shall deliver to the ESINet entry point.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.56	4) The ESINet connection for each PSAP does not depend on the number of Telecommunicator positions.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.57	The integrated text service shall provide a secure firewall to interface to an IP secure connection (internet) at the PSAP.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.59	An administrative portal shall be accessible 24x7x365 to PSAP administrators to for all of the following (at a minimum) as described below #1-5.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.60	1) activate text re-route to another PSAP,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.61	2) add or delete number from deny list,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.62	3) overflow functionality,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.63	4) time of day routing,	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.64	5) view text session conversation history.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.65	Integrated - ACD Functionality, the service for an Integrated deployment shall arrive on a specific path uniquely identified.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.66	The contractor shall have personnel that will be responsible to coordinate all efforts with the CPE provider for PSAP deployments including but not limited to establishing the connection and handoff between the integrated text service and the CPE provider.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.67	The Single Point of Contact may have additional duties not defined but will be required as mutually agreed upon by Contractor and CA 9-1-1 Branch	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.68	The service shall provide transaction of text messages, in the form of the complete text session transcript and store text sessions for a minimum of 2 years and have a method for the PSAP to retrieve and archive session transcripts via the PSAP Admin Portal and have the appropriate security consideration measures in place to protect the confidentiality and accidental release of the information contained in the text messages. The reporting information shall be formatted to the specification of the reporting tool used by CA 9-1-1 Branch.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.69	Shall transition all PSAPs in California currently accepting Text to 9-1-1 within 12 months of contract award and accepted Project Deployment Plan.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

21.6.70	The service shall re-route text sessions to another PSAP if there is a service failure and if the receiving PSAP approves to receive the additional text sessions at that time.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35
21.6.71	The web browser service and integrated solution shall be provided as an application for use at the PSAP via a NG9-1-1 Trunk.	**Yes**	Title: Section 3.3 Item: 3.3.32 - 3.3.35 Page No: 95.32 - 95.35

Requirement	**Mandatory Alert and Warning System Requirements** The requirements are organized into General Requirements and then more specific requirements for each deployment method.	**Prime Network Service Provider Agrees to meet the Requirement** **YES/NO**	**Tariff Service Info**
21.7.1	The NG9-1-1 Alert and Warning System (NG9-1-1 AWS) shall publish public safety emergency alerts to the targeted geographic area using a 9-1-1 data, self-registration data, and local uploaded contact data.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27 - 95.28
21.7.2	The NG9-1-1 AWS shall distribute recorded voice, text-to-voice, text message, email and fax notifications to a list of contacts, not using GIS map data.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.3	The NG9-1-1 AWS shall include public safety personnel notifications based on local pre-determined protocol.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.4	NG9-1-1 AWS shall include capability to interface with and send emergency alerts and warnings through the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS) in accordance with the Integrated Public Alert and Warning System (IPAWS) Open Platform for Emergency Networks (OPEN) IPAWS-OPEN Web-Service Interface Design Guidance document available from FEMA by request sent to IPAWS@fema.dhs.gov.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.5	The NG9-1-1 AWS shall distribute recorded voice, text-to-voice, text message, email and fax notifications to an area identified by a GIS polygon or predefined GIS tool.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.6	The NG9-1-1 AWS shall include self-registration portal shall allow users to create secure login credentials and have 24/7 access to update, edit and/or delete contact information for any device capable of receiving alerts and warnings	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.7	The NG9-1-1 AWS portal shall allow users to select five (5) separate valid address locations, within California, to be registered to receive emergency alert notifications.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.8	The NG9-1-1 AWS shall ingest local, regional and/or state customized shapefiles that conform to statewide GIS dataset used for NG9-1-1. Customized shapefiles loaded in to the system shall be available to use on the map to select contact data to publish an emergency alert.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27

21.7.9	The NG9-1-1 AWS shall provide an import function to support importing local, county, regional and/or state customized data in a .csv format from existing alert and warning software and tools used by local, region, county or state agencies.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.10	The NG9-1-1 AWS shall include an On-line training portal and all training materials shall be maintained on-line.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.11	The NG9-1-1 AWS shall provide a web based application for Alert and Warnings that provides jurisdiction initiated alerts and is fully integrated with the NG9-1-1 core services, CPE, and CAD.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.12	The NG9-1-1 AWS shall provide user login credentials for all local, regional or state users within California using a hierarchical structure for credential management. The credential management system shall be aligned with CA 9-1-1 Branch Statewide Emergency Management System Guidelines and must be aligned with statewide GIS dataset polygons.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.13	The NG9-1-1 AWS shall be integrated with the statewide GIS dataset used for 9-1-1 call routing with the ability to draw an alert and warning polygon within a jurisdictional boundary	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.14	The NG9-1-1 AWS shall save notification details for reuse in the future or to preplan for alert and warning scenarios.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.15	The NG9-1-1 AWS interface shall include the ability to submit corrections to errors found in the address / phone records.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.16	The NG9-1-1 AWS Shall include a self registration portal for users to register VOIP, wireless, landline and other devices capable of receiving alerts and warnings via a web-based portal.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.17	the NG9-1-1 AWS shall publish notifications using voice, data, to include email, SMS and/or MMS message alerts.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.18	The NG9-1-1 AWS shall visually display and record the count of phone numbers for the associated polygon	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.19	The NG9-1-1 AWS shall exclude either a Do Not Call group, or any other predefined list including a list already used.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27

21.7.20	The NG9-1-1 AWS provide the ability to set unique ANI (Caller ID number) on the fly, per message	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.21	The NG9-1-1 AWS shall provide the ability to display proper Caller-ID for those receiving the alert and warning based on a user-definable phone number.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.22	The NG9-1-1 AWS shall upload .wav or other files of prerecorded messages	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.23	The NG9-1-1 AWS shall provide validation of successful method/connection was completed that includes timestamp and validation that attempts were not made after successful delivery	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.24	The NG9-1-1 AWS shall include ability to build complex contact groups	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.25	The NG9-1-1 AWS shall include ability to route messages through a call routing tree.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.26	The NG9-1-1 AWS shall include detailed reports for all published notifications.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.27	The NG9-1-1 AWS shall publish pre-defined notifications with response capabilities for the recipient.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.28	the NG9-1-1 AWS shall include detailed Reporting analytics that can be used to validate sending and receiving of alert and warnings, success rate of delivery and results.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.29	The NG9-1-1 AWS shall provide credentialing system that will validate User/role-based securities/permissions e.g.: ability to restrict users to only maintenance, or allow calling campaigns as validated by CA 9-1-1 Branch.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.30	The NG9-1-1 AWS shall include 24/7 support and all trouble tickets shall be processed through the PNSP ticket system.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.31	The NG9-1-1 AWS shall include training for all users in the Train-the-Trainer format. Training shall include requirements for each identified user role in the system.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27

21.7.32	The NG9-1-1 AWS shall provide capability to send up to 250,000 alerts and warnings per minute. The capability shall facilitate limitations in the carrier's ability to send alerts and warnings.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.33	The NG9-1-1 AWS shall interface with California Earthquake Early Warning system and provide ability to send out the notification	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.33	The NG9-1-1 AWS shall provide capability to support an API that can be used by both 9-1-1 call handling and / or Computer Aided Dispatch and / or an additional platform to display the polygon for the alert and upon the dispatcher clicking on the polygon will display key information related to the alert.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.34	The NG9-1-1 AWS shall provide capability for CA 9-1-1 Branch to monitor all existing and previous alerts and warnings sent through the NG9-1-1 AWS.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27
21.7.35	Shall provide outage notifications with duration to system monitoring dashboard.	**Yes**	Title: Section 3 Section: 3.3, Item 3.3.28 Page Number: 95.27

CA NG911 - Prime Cost Summary

Length of Contract in Years: 5

CA NG 911 Prime Cost Summary Table	Total NRC Costs	Total MRC 10 yr Extended Costs
Total Evaluated Non-Recurring Costs (NRC) - NG9-1-1 Trunks	$ 305,000.00	
Total Evaluated Cost (120 month of MRC) - NG9-1-1Trunks		$ 76,428,000.00
Total Evaluated Non-Recurring Costs (NRC) - Aggregation	$ 1,595,983.42	
Total Evaluated Cost (120 month of MRC) - Aggregation		$ 5,196,666.60
Total Evaluated Non-Recurring Costs (NRC) - Prime Specific	$ 8,430,420.90	
Total Evaluated Cost (120 month of MRC) - Prime Specific		$ 93,940,308.60
Total Evaluated Non-Recurring Costs (NRC) - Text	$ 970,000.00	
Total Evaluated Cost (120 month of MRC) - Text		$ 7,440,000.00
Total Evaluated 1st year Labor Rate	$ 4,170,320.00	
NRC Total	$ 15,471,724.32	
120 month MRC Total		$ 183,004,975.20

GRAND TOTAL (NRC + 120 months MRC) USED FOR EVALUATION		$ 198,476,699.52

Estimated Annual Cost of NG9-1-1 Prime Contract $ 36,600,995.04

CA NG 9-1-1 Prime Trunk Costs - All implementation/on going maintenance is all inclusive of costs

A	B	C	D	E	F	G	H	I
Line Item #	Feature Name	Feature Description	Quantity	Unit of Measure	Monthly Recurring Charge	Non-Recurring (One Time Charge)	Total Extended Annual Cost (D*Fx12mo)	Total Extended NRC Costs
22.2.1	NG 9-1-1 One-time Circuit Install & Test	Service testing	1100	Per Connection	-	150.0000	-	$ 165,000.00
22.2.2	NG 9-1-1 Alternate Technology to Support Diverse Path	NG 9-1-1 Diverse Path	0	Per Connection	100.0000			
22.2.3	NG 9-1-1 Monthly Circuit Cost (1 Mbps)	NG 9-1-1 Trunk - 1 Mbps	0	Per Connection	500.0000	-	$ -	-
22.2.4	NG 9-1-1 Monthly Circuit Cost (10 Mbps)	NG 9-1-1 Trunk - 10 Mbps	880	Per Connection	760.0000	-	$ 8,025,600.00	-
22.2.5	NG 9-1-1 Monthly Circuit Cost (100 Mbps)	NG 9-1-1 Trunk - 100 Mbps	200	Per Connection	2,400.0000	-	$ 5,760,000.00	-
22.2.6	NG 9-1-1 Monthly Circuit Cost (1000 Mbps)	NG 9-1-1 Trunk - 1000 Mbps	20	Per Connection	4,500.0000	-	$ 1,080,000.00	-
22.2.7	NG 9-1-1 Trunk SD WAN service - NRC is Non-Tarriff item	SD WAN Service	1	Statewide	5,000.0000	100,000.0000	$ 60,000.00	$ 100,000.00
22.2.8	NG 9-1-1 Trunk Data Center Cross Connects	Non-Bidder owned Data Center cross connections	200	Per Connection	150.0000	200.0000	$ 360,000.00	$ 40,000.00
	MRC Annual 12 month Total						$ 15,285,600.00	
	NRC Total							$ 305,000.00

CA NG 911 Prime Aggregation Costs - All implementation/on going maintenance is all inclusive of costs

A	B	C	D	E	F	G	H	I
Line Item #	Feature Name	Feature Description	Quantity	Unit of Measure	Monthly Recurring Charge	Non-Recurring (One Time Charge)	Total Extended Annual Cost (D*Fx12mo)	Total Extended NRC Costs
22.3.1	NRC Project Initiation and Design - NRC is Non-Tarriff item	Aggregation Service Initialization	4	Per Region	-	348,048.5100	-	$ 1,392,194.04
22.3.2	OSP Integration MRC and NRC	Upon successful OSP integration into Aggregation	14	Per OSP	1,250.0000	14,285.7100	$ 210,000.00	$ 199,999.94
22.3.3	Prime Aggregation	Recurring cost for Statewide Aggregation Service for Prime	1	Statewide	54,111.1100	-	$ 649,333.32	-
22.3.4	Point of Interconnection	Interconnection between disparate technologies such as originating carrier network and NG9-1-1 network	8	2 Per Region	1,875.0000	473.6800	$ 180,000.00	$ 3,789.44
	MRC Annual 12 month Total						$ 1,039,333.32	
	NRC Total							$ 1,595,983.42

CA NG 911 Prime Specific Costs - All implementation/on going maintenance is all inclusive of costs

A	B	C	D	E	F	G	H	I
Line Item #	Feature Name	Feature Description	Quantity	Unit of Measure	Monthly Recurring Charge	Non-Recurring (One Time Charge)	Total Extended Annual Cost (D*Fx12mo)	Total Extended NRC Costs
22.4.1	NGCS per NENA i3 requirements and standards - NRC is Non-Tarriff item	NGCS to include all functional elements	1	Statewide	853,126.2800	416,666.6700	$ 10,237,515.36	$ 416,666.67
22.4.2	LPG - Legacy PSAP Gateway	Interface service to the PSAP	440	Per PSAP	144.2800	-	$ 761,798.40	-
22.4.3	Regional Interoperability Connection and Integration (ESInet to ESInet) - NRC is Non-Tarriff item	ESInet to ESInet connection	4	Per Region	7,727.2700	187,500.0000	$ 370,908.96	$ 750,000.00
22.4.4	PSAP Integration Deployment	Implementation Services at each PSAP	440	Per PSAP		5,000.0000	$ -	$ 2,200,000.00
22.4.5	Multi NG Service PSAP Integration - When Region connects	Managed Service at PSAP for Multiple ESInets	440	Per PSAP	169.4900	5,000.0000	$ 894,907.20	$ 2,200,000.00
22.4.6	System Monitoring and Dashboard Interface	Statewide System monitoring	1	Statewide	19,024.0200	-	$ 228,288.24	
22.4.7	Outage Reporting	Automated system for outage reporting	1	Statewide	5,000.0000	-	$ 60,000.00	
22.4.8	NRC Project Initiation and Design - Non-Tarriff item	Project Initialization for NGCS	1	Statewide		230,769.2300	$ -	$ 230,769.23
22.4.9	NRC New Technology Statewide Integration	Technologies beyond standard updates	1	Statewide		100,000.0000	$ -	$ 100,000.00
22.4.10	NRC New Technology PSAP Integration	Integration service at PSAP	440	Per PSAP		3,000.0000	$ -	$ 1,320,000.00
22.4.11	Statewide 911 GIS	Manage GIS Updates	440	Per PSAP	94.2600	947.3700	$ 497,692.80	$ 416,842.80
22.4.12	Call Data Record Management System / 9-1-1 Traffic Logging	Meta data and i3 logging	440	Per PSAP	93.3300	197.7800	$ 492,782.40	$ 87,023.20
22.4.13	GIS Regional synchronization- NRC will be a non-tariff item	Synch GIS with each Region	4	Per Region	1,893.7900	18,946.4200	$ 90,901.92	$ 75,785.68
22.4.14	GIS DB Editing Support	Complex editing service	200	Per Record Correction	1.0400		$ 2,496.00	
22.4.15	GIS update process	Automated editing service	12,000	Per valid record	0.0240	-	$ 3,456.00	
22.4.16	NG 9-1-1 Statewide Alert and Warning- NRC will be a non-tariff item	Statewide Emergency Notification System	1	Statewide	415,760.8700	300,000.0000	$ 4,989,130.44	$ 300,000.00
22.4.17	LDB Editing Support	Automated editing service	200	Per Record Correction	0.8900		$ 2,136.00	
22.4.18	LDB update process	Complex editing service	12,000	Per valid record	0.0170	-	$ 2,448.00	
22.4.19	LVF Synchronization - NRC will be a non-tariff item	Synch LVF with each Region	4	Per Region	3,200.0000	83,333.3300	$ 153,600.00	$ 333,333.32
	MRC Annual 12 month Total						$ 18,788,061.72	
	NRC Total							$ 8,430,420.90

CA NG 911 Prime Text Costs - All implementation/on going maintenance is all inclusive of costs

A	B	C	D	E	F	G	H	I
Line Item #	Feature Name	Feature Description	Quantity	Unit of Measure	Monthly Recurring Charge	Non-Recurring (One Time Charge)	Total Extended Annual Cost (D*Fx12mo)	Total Extended NRC Costs
22.5.1	Statewide Text Aggregator - NRC is Non-Tarriff item	Serve as the terminating TCC for CA	1	Statewide	40,000.0000	500,000.0000	$ 480,000.00	$ 500,000.00
22.5.2	NG Text to 9-1-1 – Web Based OTT	Web solution at each PSAP	140	Per PSAP	100.0000	500.0000	$ 168,000.00	$ 70,000.00
22.5.3	NG Text to 9-1-1 – Integrated	Integrated solution at each PSAP	300	Per PSAP	200.0000	1,000.0000	$ 720,000.00	$ 300,000.00
22.5.4	RTT service - NRC is Non-Tarriff item	Statewide RTT solution	1	Statewide	10,000.0000	100,000.0000	$ 120,000.00	$ 100,000.00
	MRC Annual 12 month Total						$ 1,488,000.00	
	NRC Total							$ 970,000.00

Note: For the Prime, the total position count in CA is 1950 currently deployed for Text. However there may be about 50 PSAPs that choose an integrated text service.

CA NG 911 Prime Specific Costs - All implementation/on going maintenance is all inclusive of costs

A	B	C	D	E	F	G	H	I
Line Item #	Feature Name	Feature Description	Quantity	Unit of Measure	Monthly Recurring Charge	Non-Recurring (One Time Charge)	Total Extended Annual Cost (D*Fx12mo)	Total Extended NRC Costs
22.6.1	NRC New Technology PSAP Integration (est. 50hrs per each 440 PSAPs)	Per the Requirements in Exhibit 21	22,000	Per Hour	-	148.9400	$ -	$ 3,276,680.00
22.6.2	NG9-1-1 Training	Per SOW Requirements	6,000	Per Hour		148.9400		$ 893,640.00
	MRC Annual 12 month Total						$ -	
	NRC Total							$ 4,170,320.00

The rates for years 1 through 10 are fixed. Estimating for the Prime to have 50hrs at each PSAP per year = 22,000 hours

CA NG 911 Prime Aggregation Costs - Each Cost Element lists the Technical Requirments from Exhibit 21 that shall be included with each cost element

A	B	C	D
Cost Element	Technical Requirements Included in Cost Element.	Feature Description	Technical Elements Included in each Cost Element
22.2.1	NG 9-1-1 One-time Circuit Install & Test	Service testing	21.4.5, 21.4.10
22.2.2	NG 9-1-1 Alternate Technology to Support Diverse Path	NG 9-1-1 Diverse Path	21.4.5, 21.4.6, 21.4.10
22.2.3	NG 9-1-1 Monthly Circuit Cost (1 Mbps)	NG 9-1-1 Trunk - 1 Mbps	21.4.5, 21.4.6, 21.4.10
22.2.4	NG 9-1-1 Monthly Circuit Cost (10 Mbps)	NG 9-1-1 Trunk - 10 Mbps	21.4.4, 21.4.5, 21.4.6, 21.4.10
22.2.5	NG 9-1-1 Monthly Circuit Cost (100 Mbps)	NG 9-1-1 Trunk - 100 Mbps	21.4.5, 21.4.6, 21.4.10
22.2.6	NG 9-1-1 Monthly Circuit Cost (1000 Mbps)	NG 9-1-1 Trunk - 1000 Mbps	21.4.5, 21.4.6, 21.4.10
22.2.7	NG 9-1-1 Trunk SD WAN service	SD WAN Service	21.4.11, 21.4.12, 21.4.13
22.2.8	NG 9-1-1 Trunk Data Center Cross Connects	Non-Bidder owned Data Center cross connections	Dependent on Solution
22.3.1	NRC Project Initiation and Design	Aggregation Service Initialization	Paid through Contract
22.3.2	OSP Integration MRC and NRC	Upon successful OSP integration into	21.3.5, 12.3.10
22.3.3	Prime Aggregation	Recurring cost for Statewide	21.2.7, 21.3.2, 21.3.3, 21.3.9
22.3.4	Point of Interconnection	Interconnection between disparate technologies such as originating carrier network and NG9-1-1 network	21.1.13, 21.3.4
22.4.1	NGCS per NENA i3 requirements and standards	NGCS to include all functional elements	21.1.2, 21.1.3, 21.1.6, 21.1.7, 21.1.8, 21.1.9, 21.1.11, 21.1.13, 21.1.15, 21.1.19, 21.1.20, 21.1.21, 21.1.23, 21.1.24, 21.2.1, 21.2.2, 21.2.8, 21.2.9, 21.2.10, 21.2.11, 21.2.12, 21.2.14, 21.2.21, 21.5.3, 21.5.4, 21.5.11
22.4.2	LPG - Legacy PSAP Gateway	Interface service to the PSAP	21.1.13, 21.2.7
22.4.3	Regional Interoperability Connection and Integration (ESInet to ESInet)	ESInet to ESInet connection	21.1.4, 21.1.5, 21.1.16, 21.1.17, 21.1.18, 21.3.6
22.4.4	PSAP Integration Deployment	Implementation Services at each PSAP	21.2.7
22.4.5	Multi NG Service PSAP Integration - When Region connects	Managed Service at PSAP for Multiple ESInets	21.1.14
22.4.6	System Monitoring and Dashboard Interface	Statewide System monitoring	21.1.12, 21.2.6, 21.2.13, 21.2.15, 21.2.16, 21.2.18, 21.2.19, 21.2.20, 21.3.8, 21.4.3, 21.4.7, 21.4.9, 21.5.27, 21.7.34
22.4.7	Outage Reporting	Automated system for outage reporting	21.1.25, 21.2.17, 21.2.23, 21.3.7, 21.4.8, 21.5.26, 21.7.35
22.4.8	NRC Project Initiation and Design - Non-Tarriff item	Project Initialization for NGCS	Paid through Contract
22.4.9	NRC New Technology Statewide Integration	Technologies beyond standard updates	Based on New Technologies
22.4.10	NRC New Technology PSAP Integration	Integration service at PSAP	Based on New Technologies
22.4.11	Statewide 911 GIS	Manage GIS Updates	21.5.1, 21.5.2, 21.5.6, 21.5.7, 21.5.8, 21.5.13, 21.5.14, 21.5.15, 21.5.16, 21.5.17, 21.5.18 through 21.5.25, 21.5.28, 21.5.29

22.4.12	Call Data Record Management System / 9-1-1 Traffic Logging	Meta data and i3 logging	21.2.3, 21.2.4, 21.2.5, 21.2.22
22.4.13	GIS Regional synchronization- NRC will be a non-tariff item	Synch GIS with each Region	21.5.5, 21.5.9
22.4.14	GIS DB Editing Support	Complex editing service	21.5.10, 21.5.12
22.4.15	GIS update process	Automated editing service	21.5.10, 21.5.12
22.4.16	NG 9-1-1 Statewide Alert and Warning- NRC will be a non-tariff item	Statewide Emergency Notification System	21.7.1 through 21.7.33
22.4.17	LDB Editing Support	Automated editing service	21.2.26
22.4.18	LDB update process	Statewide Emergency Notification System	21.2.26
22.4.19	LVF Synchronization - NRC will be a non-tariff item	Synch LVF with each Region	21.2.24, 21.2.25
22.5.1	Statewide Text Aggregator	Serve as the terminating TCC for CA	21.6.1, 21.6.2, 21.6.4 through 21.6.49, 21.6.67 through 21.6.72
22.5.2	NG Text to 9-1-1 – Web Based OTT	Web solution at each PSAP	21.6.50
22.5.3	NG Text to 9-1-1 – Integrated	Integrated solution at each PSAP	21.6.51 through 21.6.66
22.5.4	RTT service	Statewide RTT solution	21.6.3