

RFP - CPE

EXHIBIT 21, TECHNICAL REQUIREMENTS

CA Next Generation 9-1-1 - Call Processing Equipment

March 26, 2020

Issued by:

STATE OF CALIFORNIA

California Governor's Office of Emergency Services

Disclaimer: The original version and any subsequent addendums of the RFP released by the Procurement Official, remain the official version. In the event of any inconsistency between the Bidder's versions, articles, attachments, specifications or provisions which constitute the Contract, the official State version of the RFP in its entirety shall take precedence.

Technical Requirements

CA NG9-1-1 CPE Services Instructions

Bidders shall submit their narrative response to describe how the Technical Requirements in the 21.0-Technical Requirements Tab are met per the instructions in RFP Part 1, Technical Requirements instructions and submission requirements.

Bidder shall submit their narrative response in the form provided in SOW Exhibit 20 - Technical Requirement Response Template. The Bidder is responsible to ensure their response for each narrative requirement in 21.0 is no more than two (2) pages.

Bidder may submit no more than two (2) pages of diagrams to support each narrative response. The diagrams shall be a visual representation of the narrative response and will be limited to no more than 100 words per diagram, which will include diagram labels.

Any typed information that goes beyond the 2nd page of the SOW Exhibit 20 - Technical Requirement Response Template will not be considered as a part of this evaluation.

Bidder shall provide response, Yes "Y" or No "N", to the 'CPE Service Provider Agreement' on each tab, including the 21.0-Narrative Requirements.

EXHIBIT 21
 Narrative Requirements - CPE

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	CPE Service Provider Agrees to meet the Requirement YES/NO
<u>Interface Requirements</u>		
21.0.1	Describe how the CPE shall interface with the peripheral analog and digital equipment configurations already in place at all PSAPs. The description shall include the interface to CAD, radio, and logging recorder.	
21.0.2	Describe how CPE shall interface with phone system requirements for any PSAPs that have administrative telephone lines/ring down lines/business lines, PRI with caller ID, intercom, paging, local control circuits, PBX (IP or legacy), and Centrex with caller ID configured within the CPE at their PSAP. Description shall include how lines terminating on the CPE will be configured in a cloud CPE solution.	
21.0.3	Describe how the CPE shall support a direct interface to the NG911 network in California. Description shall include how CPE solution will interface to the PNSP and RNSP in a NENA i3 compliant format and how the connections will be redundant and geographically diverse.	
21.0.4	Describe the key success factors for CPE deployment, to include the initial deployment of the data center or native cloud solution interface with PNSP and RNSP. The description must include challenges and mitigation strategies that may impact the project's critical path.	
<u>Functionality Requirements</u>		
21.0.5	Describe how the CPE shall support long term recording as required by 21.2.4 and 21.2.5 of all circuits and positions at the data center or in the cloud solution. Describe how this will be accomplished via NENA i3 compliant SIP recording (SIPREC).	
21.0.6	Describe how the CPE shall be configured to avoid all single points of failure within the system and to ensure 99.999% availability. Description shall include integration of IP phone sets per 21.2.16	

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21.0.7	Describe how the system shall scale to meet expected demand over time, without limitation of any physical onsite hardware, human intervention, or system resources during disasters or high demand events while maintaining 99.999% availability for PSAPs deployed on your platform. Description shall include the maximum call volume the solution will support and how the proposed solution is scalable. Description shall include the role licensing agreements have in scalability, if applicable.	
21.0.8	Describe how system failures within an active operational component shall result in no loss of service or capability.	
21.0.9	Describe how CPE shall deliver and display secure NG9-1-1 traffic from RNSP and PNSP. Answer shall include accurate location information as well as supplemental data (Z axis coordinates, IoT streams, and video).	
21.0.10	Describe CPE Automatic Call Distribution (ACD) functionality at the PSAP. Describe how ACD supports NENA i3 call flow. Describe how ACD functions in conjunction with policy based routing.	

System Monitoring Requirements

21.0.11	Describe how the CPE solution shall maintain trouble ticket e-bonding with RNSP and PNSP using standardized API developed by PNSP. Description shall include the integration of system monitoring with the data delivered from each RNSP and the PNSP. Description shall include how CPE solution mitigates accountability discrepancies between PNSP, RNSP, and CPE vendor.	
21.0.12	Describe how the system monitoring dashboard will display and report the health of the CPE solution. Description shall include how the dashboard will monitor the health of CPE solution and any PSAP equipment to ensure that SLAs are being met.	
21.0.13	Describe CPE dashboard and how it provides near real time CPE outage monitoring and reporting to support the description provided in 21.0.12. Description shall include a definition of near real time. Description shall also include how CA 9-1-1 Branch will access the dashboard monitor, this shall include statistical data, printable reports, and outage notifications with duration.	

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Technology Requirements		
21.0.14	Describe if the CPE will be deployed as a cloud native or data center solution. The description shall include how the solution will utilize a geographically diverse, interconnected, redundant, and survivable platform within CONUS. The description shall include how the CPE will be dedicated to California with capability that provides 99.999% availability.	
21.0.15	Describe how all updates, fixes, upgrades, patches, etc. shall be executed in the cloud or data centers and pushed out to each PSAP in a manner consistent with evergreen support. Description shall include how your solution will roll back to previous versions if updates or changes cause unintended failures or performance problems at any PSAP.	
21.0.16	Describe how CPE will allow two-way communication with the 9-1-1 caller's device for push/pull notification. This includes PSAP video initiation and text from 9-1-1.	
21.0.17	Describe how CPE will utilize an open standards methodology where ever possible. Description shall include how proprietary standards and or protocols are minimized within the proposed CPE system and shall address any limitations that may result from those proprietary components. Finally, where systems utilize customized solutions, the description shall identify the standard or protocol substituted and provide a descriptive narrative with regard to meeting NENA i3 standards.	
21.0.18	Bidder shall describe what happens to an active call when one side of system call handling (i.e. Data Center A) or a cloud instance goes offline. Bidder shall explain where the call reappears. Bidder shall also describe what happens when an active call in ACD queue needs to route to another PSAP. Bidder shall include network diagrams.	
21.0.19	Bidder to describe how their solution and leadership is flexible to accommodate minor variations in functionality or PSAP needs that demonstrates a commitment to transparency within bidder's Exhibit 22 MRCs. For example: NENA updates the i3 specification for EIDO or requirement to comply with PSAP (Public Safety Answering Point) Credentialing Agency (PCA)	

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 Technical Requirements - CPE

Requirement	Mandatory CPE Interface Requirements The requirements are organized into General Requirements and then more specific requirements for each deployment method.	CPE Service Provider Agrees to meet the Requirement YES/NO
21.1.1	CPE shall include a Graphical User Interface (GUI) that allows PSAP and/or call taker to personalize the CPE screen layout.	
21.1.2	CPE shall utilize the standardized API developed by the PNSP and the CA 9-1-1 Branch for all interfaces to deliver 9-1-1 traffic to the CPE.	
21.1.3	CPE shall support a NENA i3 compliant interface to the existing CAD system in operation at the PSAP. All non-i3 ready CAD systems require interface providing serial ALL spill functionality	
21.1.4	CPE shall connect to analog or digital audio interface devices at the PSAP to support consistent audio levels from radio and CPE for the call taker.	
21.1.5	CPE shall interface with PSAP phone system. This includes administrative telephone lines, ring down lines, business lines, PRI with caller ID, intercom, paging, local control circuits, PBX (IP or legacy), or Centrex, etc. with caller ID configured within the CPE at their PSAP.	
21.1.6	CPE shall support the interface developed by PNSP and RNSP as directed by the CA 9-1-1 Branch for delivery of all 9-1-1 traffic and must support the NENA i3 standard.	
21.1.7	CPE shall interface with CA 9-1-1 Branch's call data record solution via NENA i3 logging standard, or the CA 9-1-1 Branch defined XML standard.	
21.1.8	CPE shall ingest and display the CA 9-1-1 Branch statewide GIS data layers, or shape files, and shall provide an interface at the PSAPs request. CA 9-1-1 Branch shall provide database for updated GIS files in a NENA i3 compliant format via secure file or secure web interface.	

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21.1.9	CPE interface shall comply with NENA i3 standard for the delivery of callback and location information to CAD, mapping applications, and voice recorders.	
21.1.10	CPE shall utilize CA 9-1-1 Branch provided NG9-1-1 trunk for the transport of any 9-1-1 traffic	
21.1.11	CPE shall interface with the peripheral equipment configurations already in place at all PSAPs: GIS, radio, logging recorder, etc.	
21.1.12	CPE shall provide a SIPREC compliant interface for on site logging recorder at the PSAP.	
21.1.13	CPE shall interface with the State PSAP Credentialing Agency (PCA), the top-level certificate authority for NG9-1-1 in California, which is administered by the CA 9-1-1 Branch and is implemented by the PNSP.	
21.1.14	CPE shall display caller ID from any non 9-1-1 line if provided by the originating service provider.	
21.1.15	CPE shall develop a Basic API that aligns to cost workbook element 22.3.5 at the request of the PSAP with direction from Cal OES to support a one time 1-3 month API development outside of NENA i3 and SOW requirements. Cal OES will be the sole arbiter to determine if the API needed is basic, intermediate, or complex.	
21.1.16	CPE shall develop an intermediate API that aligns to cost workbook element 22.3.6 at the request of the PSAP with direction from Cal OES to support a one time 3-6 month API development outside of NENA i3 and SOW requirements. Cal OES will be the sole arbiter to determine if the API needed is basic, intermediate, or complex.	
21.1.17	CPE shall develop a Complex API that aligns to cost workbook element 22.3.7 at the request of the PSAP with direction from Cal OES to support a one time 6-9 month API development outside of NENA i3 and SOW requirements. Cal OES will be the sole arbiter to determine if the API needed is basic, intermediate, or complex.	

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Requirement	Mandatory CPE Functionality Requirements The requirements are organized into General Requirements and then more specific requirements for each deployment method.	CPE Service Provider Agrees to meet the Requirement
		YES/NO
21.2.1	CPE shall generate NENA i3 Call Detail Record (CDR) automatically, and store all available information pertaining to all 9-1-1 traffic, on a server that allows access by or connectivity for state-wide reporting purposes.	
21.2.2	CPE shall provide automatic call distribution (ACD), configurable by the PSAP. ACD functionality shall support interactive voice response (IVR)	
21.2.3	CPE shall require users to manually log-on with a username/password combination. Two factor authentication must be provided as an option at no additional cost. Password parameters shall be flexible to meet PSAP needs. CA 9-1-1 Branch will validate two factor authentication method. PSAP shall have administrative rights controlling all account credentialing.	
21.2.4	CPE shall include audio, text, and video logging recording at the data center or in the cloud. Recording shall include separate recordings for operator and caller. Shall include active recording methodology of all circuits and positions via NENA i3 compliant SIPREC.	
21.2.5	CPE shall provide end-to-end encryption for all recordings, including voice, text, and video. Access to all recordings shall be controlled by the PSAP that owns the recording.	
21.2.6	CPE shall display live streamed video from IoT, caller, or supplemental data source.	
21.2.7	CPE shall allow the call-taker to initiate the viewing of video via a process initiated and controlled by the PSAP. Video should start recording immediately during transmission, but the call-taker should not be required to initiate viewing in order for the recording to begin.	
21.2.8	CPE shall allow the call-taker to stop viewing the video even while the video is still recording	
21.2.9	CPE shall allow call taker to send video to any PSAP authorized first responder or recipient outside of dispatch with a device that can play video	
21.2.10	CPE short term video storage shall be configurable by the PSAP. Video shall be locked so that it can only be viewed by authorized users. Additionally, meta data shall be made readily available to the PSAP in order to see a list of all viewers of any video.	

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21.2.11	CPE shall store all audio and video recordings in the cloud or at data center. Storage term shall be configurable by the PSAP for up to 180 days. System shall allow PSAP to auto-download data at PSAP defined intervals or as one time downloads. CPE shall also provide downloadable access and interface to the PSAP for local storage.	
21.2.12	CPE solution shall not cap the amount of storage needed to support 21.2.11	
21.2.13	CPE shall support instant recall recorder (IRR) play back of the recording of any call from an assigned workstation. The IRR shall interface with the existing operating environment within the PSAPs.	
21.2.14	CPE system shall provide the PSAP with configurable recording retention for IRR. System shall provide a minimum of 8 hours of talk time.	
21.2.15	CPE shall deliver caller ID during a transfer from a 9-1-1 line to any non-9-1-1 line.	
21.2.16	CPE system shall provide IP phone set(s), if requested by PSAP	
21.2.17	CPE shall allow for a visual display of the caller's telephone number and it shall be viewable at the workstation. At minimum, the display needs to meet the NENA i3 compliant standards for ANI display and all future NENA i3 standards at no additional cost.	
21.2.18	CPE shall accept, display, and send text-to-911 translation, including languages with non-English characters.	
21.2.19	CPE shall support the current operational needs of the PSAP as identified in the NENA i3 standard and the SOW.	
21.2.20	Any CPE system failure within an active operational component shall result in no loss of service or capability.	
21.2.21	CPE shall deliver location information to CAD and mapping applications via an IP connection and/or serial connection.	
21.2.22	CPE shall have adjustable audio volume control at the individual workstation.	
21.2.23	CPE shall ingress secure emergency voice, text, and video messaging directly from the PNSP and RNSP, including the delivery of accurate emergency calling party location information for all 9-1-1 traffic.	
21.2.24	CPE shall display the CA 9-1-1 Branch statewide alert and warning system.	
21.2.25	CPE shall provide abandoned call detail	
21.2.26	CPE shall incorporate time synchronization. Shall sync up with both the RNSP and PNSP as well as the PSAP with a stratum 0 clock in UTC format.	

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21.2.27	CPE shall define a list of phone numbers that can be entered into the solution and be routed to a specific position or login credential to support local 9-1-1 system testing.	
21.2.28	CPE shall provide one-button callback.	
21.2.29	CPE shall provide complete call progress detection including but not limited to idle, ringing, dial tone, ringback, and busy.	
21.2.30	CPE shall provide configurable outbound caller-ID and outbound text-ID to the PSAP.	
21.2.31	CPE shall provide automated abandoned call-back and text-back	
21.2.32	CPE shall have one button transfer capability to other PSAPs, configurable upon request. All transfers must occur across NG9-1-1 trunks, with location information. CPE shall transfer 9-1-1 calls to all CA PSAPs, off-net PSAPs, as well as to other states in the US.	
21.2.33	CPE shall provide local conferencing consisting of six (6) or more internal and/or external parties (including originator). The system's conferencing functionality shall allow the conference call to continue when the originating calling party disconnects.	
21.2.34	CPE shall provide distinct audible ringing options	
21.2.35	CPE shall provide speed dial functionality for both hold conference and no-hold conference for 9-1-1 calls as well as non-emergency calls	
21.2.36	CPE shall allow call taker muting capability during conference or transfer	
21.2.37	CPE shall support TDD/TTY functionality until no longer required by the FCC and upon the direction of the CA 9-1-1 Branch.	
21.2.38	Contractor to provide an on-line reference manual, users manual, help guide, live chat, or similar feature to PSAP. All reference materials must be continually updated to reflect CPE system updates and new functionality.	
21.2.39	Call taker screen layout shall be automatically locked when the user logs in as ready.	
21.2.40	A designated user shall have the ability to restore to last saved screen layout as well as default screen layout while making modifications.	
21.2.41	CPE shall display the information of at least the last 10 calls released at the answering workstation, configurable by the PSAP	
21.2.42	CPE shall provide the user with call holding as well as call parking (exclusive/non-exclusive hold) capability	

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21.2.43	Users with appropriate system permissions shall have the ability to silently listen to another user's telephone conversation from their workstation. Such action shall not cause any audio or visual disturbance at the monitored answering station.	
21.2.44	CPE shall provide supervisors or authorized users the ability to barge into an existing call with one click functionality	
21.2.45	Users with appropriate system permissions shall have the ability to temporarily remove themselves from a ring group (call queue) in order to conclude a previous call or perform another task such as radio dispatch, while remaining logged on.	
21.2.46	CPE shall enable two-way communication with the 9-1-1 caller's device for push/pull notifications and text from 9-1-1.	
21.2.47	CPE shall present historical details linked to the calling number. This feature shall accommodate information that call-takers have saved from previous calls, but should also include system generated (machine learned) information.	
21.2.48	CPE shall ingest and display any third party or State provided data via API within 6 months of notification from the CA 9-1-1 Branch.	
21.2.49	Browser based CPE shall work on a CA 9-1-1 Branch approved web browser based on system performance and security requirements.	
21.2.50	Non-Browser based CPE shall accessed through an application that can operate on any standard PC.	
21.2.51	CPE shall ingress, display, and send Real Time Text (RTT)	
21.2.52	CPE shall provide role based/skillset based profiling for call takers, and the ability to change roles without requiring logout and sign in.	
21.2.53	CPE shall provide call taker the ability to flag, create, and send out mis-routed 9-1-1 call reports electronically	
21.2.54	CPE shall support maximum 10 second system operation start-up from the time user ID and password are entered.	
21.2.55	CPE shall provide MIS functionality and shall provide call taker details. CPE shall provide remote access to PSAP defined MIS metrics.	
21.2.56	CPE shall interface with a universal log in service at PSAP if available. Universal log in shall apply across CAD or other platforms as specified by the PSAP, and support where available.	
21.2.57	CPE shall provide status indication ("ready/not ready/wrap up") at the workstation level, number of status states to be configurable by PSAP.	
21.2.58	CPE shall allow PSAP personnel to play back a pre-recorded PSAP message during the 9-1-1 call	

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21.2.59	CPE shall provide a visual indication to the call taker when 9-1-1 traffic is delivered via a policy based route.	
21.2.60	CPE bidder shall provide reader boards to PSAPs upon request.	
21.2.61	CPE solution shall provide an integrated mapping application	

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Requirement	Mandatory CPE System Monitoring Requirements The requirements are organized into General Requirements and then more specific requirements for each deployment method.	CPE Service Provider Agrees to meet the Requirement YES/NO
21.3.1	CPE shall provide near real-time performance data, to be monitored by CA 9-1-1 Branch as well as PSAPs upon request.	
21.3.2	Performance data shall include documented Mean Time Between Failure (MTBF) or Mean Time To Repair (MTTR) that may impact the availability of the system to deliver traffic	
21.3.3	Technical Service Bulletin (TSB) shall be provided to CA 9-1-1 Branch and PSAP for any update, patch, or bug fix.	
21.3.4	Contractor shall establish a network operation center (NOC) that includes but is not limited to alarming, reporting, monitoring, managing, and supporting CPE on a 24/7/365 basis, down to the workstation level.	
21.3.5	Contractor shall provide trouble ticket log that is visible to CA 9-1-1 Branch, originating PSAP, RNSP, and PNSP 24/7/365	
21.3.6	CPE shall support trouble ticket ebonding with RNSP and PNSP, and shall maintain trouble ticket ebonding	
21.3.7	The CPE solution shall provide a dashboard to display and report the health of the CPE solution. The dashboard will monitor the health of the CPE solution and any PSAP equipment to ensure that SLAs are being met. Monitoring shall be real time or near real time.	
21.3.8	CPE shall be subject to CA 9-1-1 Branch approved or contracted third party verification to ensure cloud/data center space and resources have been properly dedicated to California and meet physical and cyber security requirements.	

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21.3.9	Contractor shall notify the CA 9-1-1 Branch when any stop-clock condition exists, within 60 minutes of stop-clock discovery.	
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Requirement	Mandatory CPE Technology Requirements The requirements are organized into General Requirements and then more specific requirements for each deployment method.	CPE Service Provider Agrees to meet the Requirement YES/NO
21.4.1	CPE shall be deployed as a geographically diverse interconnected platform, housed within a minimum of two Tier 3 or better data centers or as a native cloud solution within CONUS, and as a dedicated single tenant to California with demonstrated capability that provides 99.999% availability.	
21.4.2	Any data center or cloud instance that is used to house the CPE shall be designed in a redundant, survivable manner and have multiple geographically diverse connections to the PNSP/RNSP.	
21.4.3	CPE shall be IP-based and shall fully comply with current and future NENA i3 standards for NG911.	
21.4.4	CPE shall utilize end-to-end IP connectivity (NG9-1-1 trunk), procured by CA 9-1-1 Branch from the PNSP/RNSP with a minimum of two diverse connections to each POI and data center.	
21.4.5	CPE shall interface with PNSP/RNSP at a minimum of two (2) logically and physically diverse locations and support 99.999% availability	
21.4.6	CPE shall be verified through testing at the CA 9-1-1 Branch NG9-1-1 Lab prior to issuing SOW to the PSAP for CPE purchase. Testing will be conducted by the Contractor in conjunction with the CA 9-1-1 Branch. Lab test results shall be provided to the CA 9-1-1 Branch upon request. The CA 9-1-1 Branch shall be the owner of all reports.	
21.4.7	All updates, fixes, upgrades, patches, etc. shall be executed in the cloud/data centers and pushed out to each PSAP in a manner consistent with traditional cloud-based evergreen software support.	
21.4.8	All updates, fixes, upgrades, patches, etc. shall be deployed in the cloud/data center, ensuring that 100% of the PSAPs are operating on the same cloud/data center software and firmware version. Maximum 15 day soak period for first customer application.	

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21.4.9	All updates, at the discretion of and coordinated by the CA 9-1-1 Branch, shall be tested and accepted in the CA 9-1-1 Branch NG9-1-1 Lab prior to deployment at the PSAP.	
21.4.10	All updates that have been tested and accepted by the CA 9-1-1 Branch NG9-1-1 Lab shall be deployed at all PSAPs supported by the Contractor within 14 calendar days of successful testing. This includes CPE that may have been tested and accepted by the CPE manufacturer working with the CA 9-1-1 Branch, independent of the contractor.	
21.4.11	CPE software shall, within 30 minutes of notification by the CA 9-1-1 Branch, roll back to prior version if updates or patches cause unintended failures or performance problems at the PSAP.	
21.4.12	Workstations shall support the minimum memory and processing capability to support CPE software and shall be equipped with all necessary audio and video interface equipment, including but not limited to: keyboard, mouse, speakers, audio integration device, keypad dialer, arbitrator, and minimum 22 inch flat panel monitors.	
21.4.13	Workstation, along with any other Contractor supplied peripheral hardware at each workstation shall be replaced every five (5) years, at minimum. PSAP is eligible for full system training at this time.	
21.4.14	Bidder shall supply PSAP with monitor at a minimum of 22" and a maximum of 50"	
21.4.15	If no PNSP/RNSP network degradation is present, all audio input/output from the CPE shall meet MOS score requirements. At five (5) minute intervals, via third party verification, 99% of the MOS measurements shall exceed 2.6 and 90% shall exceed 3.8. Degradation caused by PNSP/RNSP network shall not impact CPE MOS score.	
21.4.16	CPE hardware components installed at the PSAP shall be nonproprietary, with the sole exception of audio control devices, and shall support standard hardware interfaces.	
21.4.17	CPE shall include a workstation UPS and shall provide a minimum of 15 minutes of power to each workstation. CPE provider shall provide 2 hour backroom UPS.	

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21.4.18	All workstation peripherals shall be supplied by the Contractor and supported at the workstation: auxiliary keypad dialers, arbitrators, keyboard, mouse, and headset box.	
21.4.19	CPE shall connect to analog or digital audio interface devices at the PSAP, as directed by the PSAP.	
21.4.20	CPE shall not directly connect to the public internet at the PSAP. CPE shall ensure that any public data source is connected via a secure, controlled interface at data center/cloud. At a minimum the connection should address application layer inspection, secure flows, intrusion prevention, and intrusion detection.	
21.4.21	Contractor shall provide cabling at install, which may include cable paths through floors, walls, and ceilings.	
21.4.22	Cloud native solution shall utilize a cloud service provider that holds a verified FEDRAMP certification. Data center solution shall utilize a geographically diverse interconnected platform, housed within a minimum of two Tier 3 or better data centers.	
21.4.23	CPE shall ingress, handle, and display all incoming 9-1-1 traffic and supplemental information (i.e. location and/or caller information) in a manner that is compliant with all NENA i3 standards	
21.4.24	System availability shall be 99.999% regardless of the level of response required. CPE shall meet worst-case scenarios or dynamically expand without limitation of any physical onsite hardware, human intervention, or system resources (CPU, channels, etc.) during disasters or high demand events.	
21.4.25	Contractor shall provide on-site technical support personnel to resolve technical issues at the PSAP (workstations).	
21.4.26	CPE shall ingest and display Z coordinates from RNSP and PNSP when they become available	
21.4.27	CPE shall have secure connectivity, trust and identity, and threat defense from cloud or data center to the call-taking workstations	
21.4.28	CPE shall ingest, display, and utilize any standards-based information that can enrich the 911 call: viewing CCTV, street-level cameras, or IoT sensor data, upon initiation by the call taker.	
21.4.29	CPE shall include any universal sensor integration with open API, including seismic, weather, smoke detection, and traffic information.	

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21.4.30	CPE shall include secured firewalling of data transmission of IoT data streams. IoT Data streams shall be encrypted in transit.	
21.4.31	CPE shall be designed to industry standard and FCC best practices, including the NENA i3 standards	
21.4.32	CPE shall utilize an open standards methodology where applicable.	
21.4.33	Contractor shall ensure that proprietary standards and or protocols are minimized within the proposed CPE system. Where systems utilize customized solutions, the Contractor shall identify the standard or protocol substituted and provide a narrative with regard to meeting the NENA i3 requirement.	
21.4.34	Data center/cloud shall comply with NENA i3 cyber security standards and industry best practices for cyber security	
21.4.35	CPE system shall support BGP interfaces to PNSP and RNSP and comply with the IP addressing scheme provided by CA 9-1-1 Branch	
21.4.36	CPE shall support a logical connection over existing NG 911 trunk(s) that supports call delivery from cloud/data center to PSAP	
21.4.37	CPE shall support all elements of NENA i3. Any components that are implemented within the CPE shall not compromise the ability to support NENA i3 and the ability for the PNSP or RNSP to deliver the call to the PSAP, or to support transfers from one PSAP to another, regardless of CPE vendor.	
21.4.38	CPE shall implement new industry standards, including NENA i3 based on the timeline and deployment process as directed by the CA 9-1-1 Branch. For most, but not necessarily all updates, the CA 9-1-1 Branch will direct a minimum timeline of 6 months.	
21.4.39	CPE shall process and deliver all potential NENA i3 9-1-1 traffic from multiple NG 9-1-1 service providers.	
21.4.40	CPE testing in the Cal OES NG9-1-1 lab shall be completed within 10 working days from start of testing, as directed by the CA 9-1-1 Branch.	

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21.4.41	Cloud solution must include isolated, independent clusters of data centers located in close enough proximity to ensure extremely low latency (ability to perform synchronous data replication) and the ability for each cluster to continue operation in the case of a data center failure. Data center solution must be built in a fully redundant manner, where the loss of one data center does not affect the call takers functionality.	
21.4.42	Data centers and/or data centers used in a cloud solution within a geographic area must have independent power infrastructure.	
21.4.43	CPE shall have the ability to recognize multiple calls originating from the same geographic area and will provide the PSAP with a solution to process the calls based on operational needs.	
21.4.44	All servers, routers, firewalls, and other network elements at the PSAP shall have the current version or patch, deployed within 5 days of discovery of the need for updating.	
21.4.45	All workstations shall have current operating system and software version, deployed within 30 days of discovery of the need for updating. CPE vendor shall allow PSAP to control the update schedule such that no more than 25% of the workstations are updated at the same time. CPE vendor shall also allow PSAP to set the update window based on operational needs.	
21.4.46	All 9-1-1 traffic must be transferred using PNSP or RNSP core services, per NENA i3 standards.	
21.4.47	Data center/cloud solution shall not negatively impact the ability of the CA 9-1-1 Branch to acquire CJIS/CLETS certification of the network.	
21.4.48	CPE shall geospatially transfer to any primary or secondary PSAP based on PSAP boundary file. CPE shall offer a preferred transfer PSAP using geospatial data.	
21.4.49	CPE shall support data compression and other tools needed to meet bandwidth requirements.	
21.4.50	CPE shall support a busy hour of 475 calls or less with a 5 Mbps connection.	
21.4.51	CPE shall support a busy hour of 476 calls or more with a 50 Mbps connection.	
21.4.52	CPE shall refresh location information received from PNSP or RNSP every 2 seconds starting from the time PNSP or RNSP delivers the call to the CPE. The refresh rate shall be configurable, in 2 second intervals, by the PSAP.	