



# CALIFORNIA STATEWIDE COMMUNICATION INTEROPERABILITY PLAN



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## LETTER FROM THE STATEWIDE INTEROPERABILITY COORDINATOR

Greetings,

As the Statewide Interoperability Coordinator (SWIC) for California, I am pleased to present to you the 2022 California Statewide Communication Interoperability Plan (SCIP). The SCIP represents the State's continued commitment to improving emergency communications interoperability and supporting the public safety practitioners throughout the State. In addition, this update meets the requirement of the current U.S. Department of Homeland Security grant guidelines.

Representatives from the California Governor's Office of Emergency Services (CalOES), California Statewide Interoperability Executive Committee (CalSIEC), and regional Planning Areas collaborated to update the SCIP with actionable and measurable goals and objectives that have champions identified to ensure completion. These goals and objectives focus on Governance, Technology and Cybersecurity, and Funding. They are designed to support our State in planning for emerging technologies and navigating the ever-changing emergency communications landscape. They also incorporate the SAFECOM/National Council of SWICs (NCSWIC) State Interoperability Markers which describe California's level of interoperability maturity by measuring progress against 25 markers.

As we continue to enhance interoperability, we must remain dedicated to improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from public safety practitioners statewide, we will work to achieve the goals set forth in the SCIP and become a nationwide model for statewide interoperability.

Sincerely,

**Budge Currier** Digitally signed by Budge Currier  
Date: 2023.04.12 11:35:14  
+07'00'

Budge Currier  
California Statewide Interoperability Coordinator  
California Governor's Office of Emergency Services

## INTRODUCTION



The SCIP is a one-to-three-year strategic planning document that contains the following components:

- **Introduction** – Provides the context necessary to understand what the SCIP is and how it was developed. It also provides an overview of the current emergency communications landscape.
- **Vision and Mission** – Articulates California’s vision and mission for improving emergency and public safety communications interoperability over the next one-to-three-years.
- **Governance** – Describes the current governance mechanisms for communications interoperability within California as well as successes, challenges, and priorities for improving it. The SCIP is a guiding document and does not create any authority or direction over any state or local systems or agencies.
- **Technology and Cybersecurity** – Outlines public safety technology and operations needed to maintain and enhance interoperability across the emergency communications ecosystem.
- **Funding** – Describes the funding sources and allocations that support interoperable communications capabilities within California along with methods and strategies for funding sustainment and enhancement to meet long-term goals.
- **Implementation Plan** – Describes California’s plan to implement, maintain, and update the SCIP to enable continued evolution of and progress toward the State’s interoperability goals.

The Emergency Communications Ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications, alerts, and

warnings, requests for assistance and reporting, and public information exchange. The primary functions are depicted in the 2019 National Emergency Communications Plan.<sup>1</sup>

The Interoperability Continuum, developed by the Department of Homeland Security’s SAFECOM program and shown in Figure 1, serves as a framework to address challenges and continue improving operable/interoperable and public safety communications.<sup>2</sup> It is designed to assist public safety agencies and policy makers with planning and implementing interoperability solutions for communications across technologies.

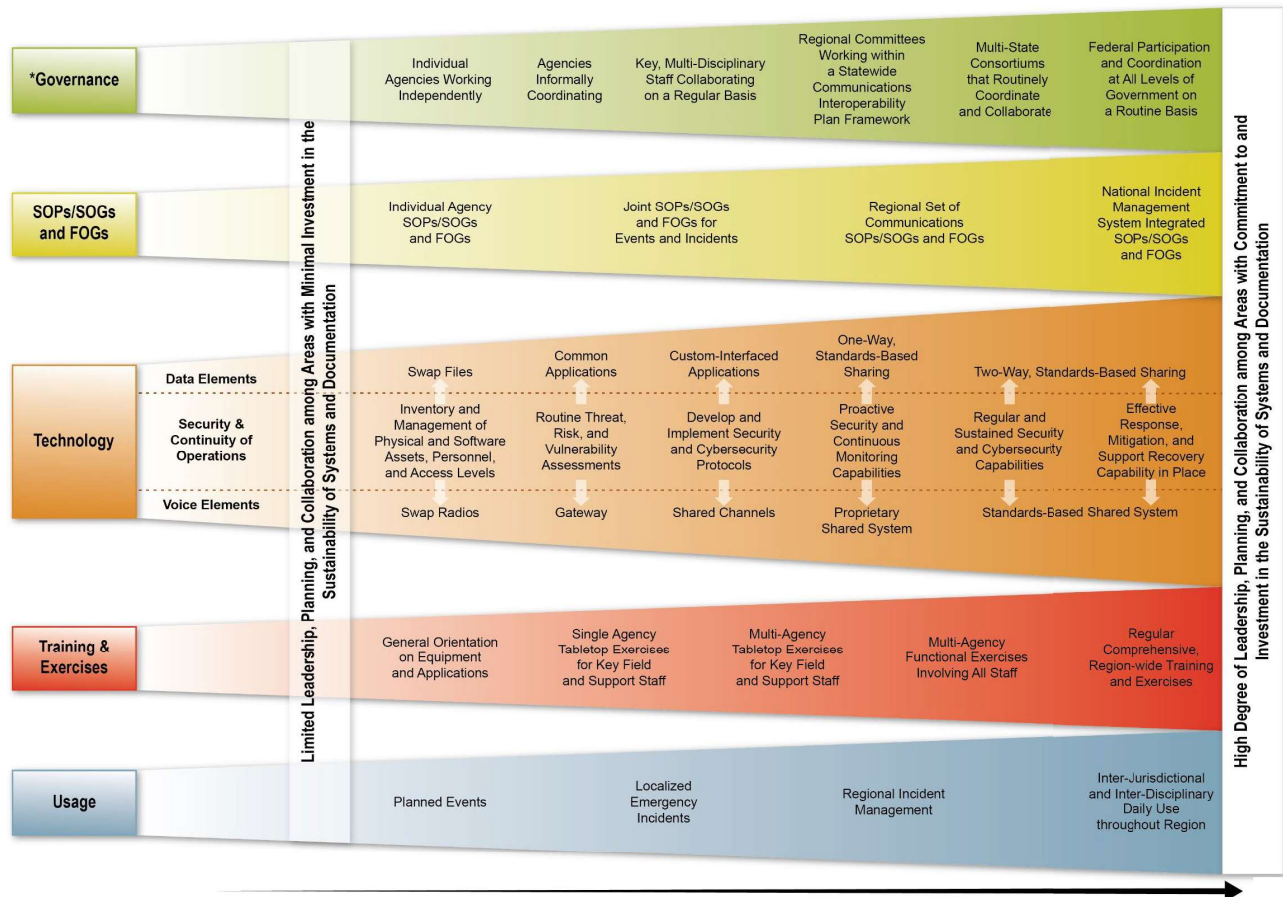


Figure 1: Interoperability Continuum

## Interoperability and Emergency Communications Overview

Interoperability is the ability of emergency response providers and relevant government officials to communicate across jurisdictions, disciplines, and levels of government as needed and as authorized. Reliable, timely communications among public safety responders and between public safety agencies and citizens is critical to effectively carry out public safety missions, and in many cases, saving lives.

Traditional voice capabilities, such as land mobile radio (LMR) and landline 9-1-1 services have long been and continue to be critical tools for communications. However, the advancement of internet protocol-based technologies in public safety has increased the type and amount of

<sup>1</sup> [2019 National Emergency Communications Plan](#)

<sup>2</sup> [Interoperability Continuum Brochure](#)



information responders receive, the tools they communicate with, and complexity of new and interdependent systems. Emerging technologies increase the need for coordination across public safety disciplines, communications functions, and levels of government to ensure emergency communications capabilities are interoperable, reliable, and secure.

An example of this evolution is the transition of public-safety answering points (PSAPs) to Next Generation 9-1-1 (NG9-1-1) technology that will enhance sharing of critical information in real-time using multimedia—such as pictures, video, and text — among citizens, PSAP operators, dispatch, and first responders. While potential benefits of NG9-1-1 are tremendous, implementation challenges remain. Necessary tasks to fully realize these benefits include interfacing disparate systems, developing training and standard operating procedures (SOPs) and ensuring information security.

## VISION AND MISSION

This section describes California’s vision and mission for improving emergency and public safety communications interoperability:

### **Vision:**

*Achieve sustainable statewide interoperable communications*

### **Mission:**

*Provide strategic direction for interoperable communications that addresses the unique requirements of emergency responders and designated public service organizations serving the people of California*

## GOVERNANCE

The California Governor’s Office of Emergency Services (Cal OES) is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within the state, The California Statewide Interoperability Executive Committee (CalSIEC) is tasked with managing the interoperability spectrum and developing governance on behalf of all California public safety emergency responders. There are four planning areas which have their own established governance structure for interoperable communications. The planning areas are the Northern Planning Area, Capital-Bay Planning Area, Central Planning Area, and the Southern Planning Area. Going forward it is important for the planning areas to have more structure and participation both in their planning area meetings and CalSIEC meetings. It is also important for the planning areas to share information and plan events between the operational areas. Increased information sharing from Cal OES and CalSIEC to the stakeholders statewide is needed. Accomplishing this will require more collaboration between the two organizations.

Other governance related priorities of the state include developing a better training process for personnel, continuing the development of the bi – state Tahoe Basin Communications Center,

regular reviews of governance documents and ensuring consistency across them, and creating a law scope communications technical working group under the CalSIEC. The need for a better training process comes from having a high turnover rate of emergency communications personnel. High personnel turnover rate is a problem nationwide, so it is unlikely it will be able to be solved. However, improving the training process will allow new personnel to learn at a much quicker pace and will minimize the productivity effects that a high turnover rate cause. The Tahoe Basin Communications Center was a goal on California’s previous SCIP. While the continuation of this project is important, it did not seem necessary to be put in this SCIP as a goal since the project is in progress.

California’s governance structure is depicted in Figure 2.

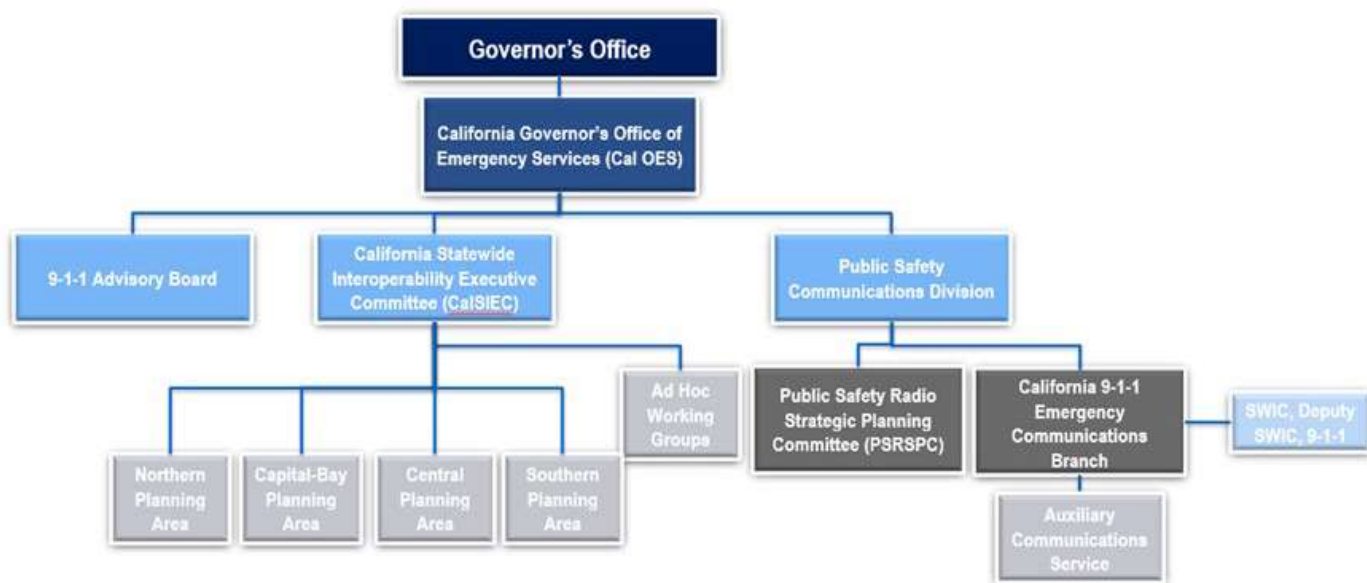


Figure 2: California’s Governance Structure

The following table outlines goals and objectives related to Governance:

Governance	
Goal	Objectives
<b>1. Increase outreach and information sharing from Cal OES and CalSIEC to stakeholders across the state</b>	1.1 Continue coordinated relationships across Planning Areas and with professional associations and other public safety organizations and identify points of contact
	1.2 Share information through updated Cal OES website on trainings and exercises, revised process for PTBs, and grant opportunities
	1.3 Establish consistent messaging from Cal OES and CalSIEC to stakeholders
	1.4 Increase attendance of Cal OES and CalSIEC at gatherings of public safety communications stakeholders to disseminate their resources (Ex: NENA, APCO)
	1.5 Invite legislators to CalSIEC meetings



Goal	Objectives
<b>2. Conduct regular review of California governance guidance</b>	2.1 Conduct regular review of California Interoperability Field Operations Guide (Cal-IFOG), California Law Mutual Aid (CLMA) (Red and Blue Book), CalOES policy documents, and CalSIEC charters and bylaws to ensure consistency across documents
	2.2 Review and update policies and procedures with Planning Areas
	2.3 Ensure communications annex of emergency operations plans are consistent with aforementioned documents
<b>3. Create law scope communications technical working group under CalSIEC</b>	3.1 Performing outreach to public safety communications community to establish by in for working group
	3.2 Create bylaws for working group
	3.3 Establish regular meeting cadence for working group
	3.4 Develop interoperability channel plan
	3.5 Guide the planning for establishing mutual aid talk groups
<b>4. Continue to encourage collaboration between Planning Areas, Cal OES, and CalSIEC</b>	4.1 Identify planned events, training, and communications exercises that can be used to support collaboration (Ex: radio rodeos)
	4.2 Continue to reach out to Planning Areas and encourage participation in planned events between Operational Areas and Planning Areas to include law enforcement, fire, and EMS
	4.3 Educate planning areas on having communications injects in their exercises

## TECHNOLOGY AND CYBERSECURITY

### Land Mobile Radio

California uses the California Radio Interoperable System (CRIS). To expand the use of CRIS across the state it is necessary for consistent messaging to be developed and delivered. It is also important to inform stakeholders of the capabilities of CRIS. Another high priority is to keep CASM updated. To accomplish this a CASM coordinator should be named in each Planning and Operational Area who leads the way on the CASM updates.

### Broadband

The biggest priority related to broadband is strengthening the working relationship between broadband providers and Cal OES. To accomplish this Cal OES should have more calls with providers before incidents occur, status update meetings with telecommunications providers about new improvements, and use CalSIEC meetings as a time to discuss broadband at the state level.

### Cybersecurity

The California Cybersecurity Integration Center (CCIC) is the main cybersecurity body of the state. It would be beneficial to see more coordination between CCIC and CalSIEC. Cybersecurity is a topic of huge importance nationwide so it is critical to have CCIC participation in CalSIEC. This will allow the stakeholders statewide to be informed about current and emerging cybersecurity issues. California

should also utilize the cybersecurity resources provided by CISA. There are also a wide offering of cybersecurity TAs available. It is also important for the state to have best practices for cybersecurity related issues. Using AARs would be a good resource for the state to use to create the best practice guide. Another area of discussion during the workshop was the importance of increasing the coordination and education between IT and LMR.

Technology and cybersecurity goals and objectives include the following:

<b>Technology and Cybersecurity</b>	
<b>Goal</b>	<b>Objectives</b>
<b>5. Increase participation and awareness of the CRIS</b>	5.1 Identify emerging technologies for potential integration
	5.2 Communicate interoperability capabilities of CRIS to stakeholders (Ex: APCO)
	5.3 Create consistent messaging about what CRIS is
<b>6. Promote and leverage Communication Assets Survey and Mapping (CASM) and similar shared resources</b>	6.1 Validate CASM applications to meet operational needs
	6.1 Establish representative in each Planning and Operational Area to serve as the CASM Coordinator
<b>7. Increase situational awareness from telecommunications providers</b>	7.1 Establish more coordination calls with providers before incidents occur
	7.2 Establish strong consistent relationships with telecommunications representatives
	7.3 Regular check in with all telecommunications providers about their improvements specifically about deployable availability, greater dissemination of information about deployables
	7.4 Establish regular communication between providers and Cal OES about outages and coverage
	7.5 Use CalSIEC as platform to discuss broadband issues statewide
	7.6 Request up to date list of POCs on provider sites
<b>8. Encourage dissemination of cybersecurity best practices and resources</b>	8.1 Leverage CISA cybersecurity resources
	8.2 Create and share cyber AARs and best practices
	8.3 Educate stakeholders on ITSL position and training opportunities
	8.4 Increase CCIC participation at CalSIEC

## FUNDING

The biggest theme that emerged during the SCIP workshop in regard to funding was information sharing. The first way this needs to occur is through Cal OES and CalSIEC sharing grant funding information with counties. To accomplish this important information sharing CalOES needs a user-friendly grant section on their website. In addition, the sharing of radio contracts statewide can help counties save money on their radios. Maintaining funding for upkeep of current equipment needs is a continued priority.

Funding goals and objectives include the following:

Funding	
Goal	Objectives
<b>9. Identify and disseminate funding opportunities for public safety communications</b>	9.1 Increased sharing of information to counties on grant funding opportunities
	9.2 Establish communications centric grant section on Cal OES website
	9.3 Increased information sharing of different radio contracts across state

## IMPLEMENTATION PLAN

Each goal and its associated objectives have a timeline with a target completion date, and one or multiple owners will be responsible for overseeing and coordinating its completion. Accomplishing goals and objectives will require the support and cooperation from numerous individuals, groups, or agencies, and will be added as formal agenda items for review during regular governance body meetings. The Cybersecurity and Infrastructure Security Agency's (CISA) Interoperable Communications Technical Assistance Program (ICTAP) has a catalog<sup>3</sup> of technical assistance (TA) available to assist with the implementation of the SCIP. TA requests are to be coordinated through the SWIC.

California's implementation plan is shown in the table below.

Goals	Objectives	Owners	Completion Date
<b>1. Increase outreach and information sharing from Cal OES and CalSIEC to stakeholders across the state</b>	1.1 Continue coordinated relationships across Planning Areas and with professional associations and other public safety organizations and identify points of contact	Cal OES, CalSIEC, ICWG	Ongoing
	1.2 Share information through updated Cal OES website on trainings and exercises, revised process for PTBs, and grant opportunities		
	1.3 Establish consistent messaging from Cal OES and CalSIEC to stakeholders		
	1.4 Increase attendance of Cal OES and CalSIEC at gatherings of public safety communications stakeholders to disseminate their resources (Ex: NENA, APCO)		
	1.5 Invite legislators to CalSIEC meetings		
<b>2. Conduct regular review of California governance guidance</b>	2.1 Conduct regular review of California Interoperability Field Operations Guide (Cal-IFOG), California Law Mutual Aid (CLMA) (Red and Blue Book), Cal OES policy documents, and CalSIEC charters and bylaws to ensure consistency across documents	Cal OES, CalSIEC, SWIC	Ongoing
	2.2 Review and update policies and procedures with Planning Areas		
	2.3 Ensure communications annex of emergency operations plans are consistent with aforementioned documents		
<b>3. Create law scope communications technical working group under CalSIEC</b>	3.1 Perform outreach to public safety communications community to establish by in for working group	Cal OES, CalSIEC	Ongoing
	3.2 Create bylaws for working group		April 2023
	3.3 Establish regular meeting cadence for working group		April 2023
	3.4 Develop interoperability channel plan		August 2023
	3.5 Guide the planning for establishing mutual aid talk groups		August 2023

<sup>3</sup> [Emergency Communications Technical Assistance Planning Guide](#)

Goals	Objectives	Owners	Completion Date
4. Continue to encourage collaboration between Planning Areas, Cal OES, and CalSIEC	4.1 Identify planned events, training, and communications exercises that can be used to support collaboration (Ex: radio rodeos)	Cal OES, CalSIEC, Planning Areas	Ongoing
	4.2 Continue to reach out to Planning Areas and encourage participation in planned events between Operational Areas and Planning Areas to include law enforcement, fire, and EMS		
	4.3 Educate planning areas on having communications injects in their exercises		
5. Increase participation and awareness of the CRIS	5.1 Identify emerging technologies for potential integration	Cal OES and CRIS Unit	Ongoing
	5.2 Communicate interoperability capabilities of CRIS to stakeholders (Ex: APCO)		
	5.3 Create consistent messaging about what CRIS is		
6. Promote and leverage Communication Assets Survey and Mapping (CASM) and similar shared resources	6.1 Validate CASM applications to meet operational needs	Planning and Operational Areas, Cal OES	Ongoing
	6.2 Establish representative in each Planning and Operational Area to serve as the CASM Coordinator		September 2023
7. Increase situational awareness from telecommunications providers	7.1 Establish more coordination calls with providers before incidents occur	CalSIEC and Cal OES	Ongoing
	7.2 Establish strong consistent relationships with telecommunications representatives		
	7.3 Regular check in with all telecommunications providers about their improvements specifically about deployable availability		
	7.4 Establish regular communication between providers and Cal OES about outages and coverage		
	7.5 Use CalSIEC as platform to discuss broadband issues statewide		
	7.6 Request up to date list of POCs on provider sites		
8. Encourage dissemination of cybersecurity best practices and resources	8.1 Leverage CISA cybersecurity resources	CalSIEC and Cal OES	Ongoing
	8.2 Create and share cyber AARs and best practices		Ongoing
	8.3 Educate stakeholders on ITSL position and training opportunities		Ongoing
	8.4 Increase CCIC participation at CalSIEC		April 2023
9. Identify and disseminate funding opportunities for public safety communications	9.1 Increased sharing of information to counties on grant funding opportunities	CalSIEC and Cal OES	Ongoing
	9.2 Establish communications centric grant section on Cal OES website		
	9.3 Increased information sharing of different radio contracts across state		

## APPENDIX A: STATE MARKERS

In 2019, CISA supported states and territories in establishing an initial picture of interoperability nationwide by measuring progress against 25 markers. These markers describe a state or territory's level of interoperability maturity. Below is California's assessment of their progress against the markers as of 4/12/23.

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
1	<b>State-level governing body established (e.g., SIEC, SIGB).</b> Governance framework is in place to sustain all emergency communications	Governing body does not exist, or exists and role has not been formalized by legislative or executive actions	Governing body role established through an executive order	Governing body role established through a state law
2	<b>SIGB/SIEC participation.</b> Statewide governance body is comprised of members who represent all components of the emergency communications ecosystem.	Initial (1-2) Governance body participation includes: <input type="checkbox"/> Communications Champion/SWIC <input type="checkbox"/> LMR <input type="checkbox"/> Broadband/LTE <input type="checkbox"/> 9-1-1 <input type="checkbox"/> Alerts, Warnings and Notifications	Defined (3-4) Governance body participation includes: <input type="checkbox"/> Communications Champion/SWIC <input type="checkbox"/> LMR <input type="checkbox"/> Broadband/LTE <input type="checkbox"/> 9-1-1 <input type="checkbox"/> Alerts, Warnings and Notifications	Optimized (5) Governance body participation includes: <input type="checkbox"/> Communications Champion/SWIC <input type="checkbox"/> LMR <input type="checkbox"/> Broadband/LTE <input type="checkbox"/> 9-1-1 <input type="checkbox"/> Alerts, Warnings and Notifications
3	<b>SWIC established.</b> Full-time SWIC is in place to promote broad and sustained participation in emergency communications.	SWIC does not exist	Full-time SWIC with collateral duties	Full-time SWIC established through executive order or state law
4	<b>SWIC Duty Percentage.</b> SWIC spends 100% of time on SWIC-focused job duties	SWIC spends >1, <50% of time on SWIC-focused job duties	SWIC spends >50, <90% of time on SWIC-focused job duties	SWIC spends >90% of time on SWIC-focused job duties
5	<b>SCIP refresh.</b> SCIP is a living document that continues to be executed in a timely manner. Updated SCIPs are reviewed and approved by SIGB/SIEC.	No SCIP OR SCIP older than 3 years	SCIP updated within last 2 years	SCIP updated in last 2 years and progress made on >50% of goals
6	<b>SCIP strategic goal percentage.</b> SCIP goals are primarily strategic to improve long term emergency communications ecosystem (LMR, LTE, 9-1-1, A&W) and future technology transitions (5G, IoT, UAS, etc.). (Strategic and non-strategic goals are completely different; strategy – path from here to the destination; it is unlike tactics which you can "touch"; cannot "touch" strategy)	<50% are strategic goals in SCIP	>50%<90% are strategic goals in SCIP	>90% are strategic goals in SCIP



Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
7	<b>Integrated emergency communication grant coordination.</b> Designed to ensure state / territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.	No explicit approach or only informal emergency communications grant coordination between localities, agencies, SAA and/or the SWIC within a state / territory	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding but does not review proposals or make recommendations	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding and reviews grant proposals for alignment with the SCIP. SWIC and/or SIGB provides recommendations to the SAA
8	<b>Communications Unit process.</b> Communications Unit process present in state / territory to facilitate emergency communications capabilities. Check the boxes of which Communications positions are currently covered within your process: <input checked="" type="checkbox"/> COML <input checked="" type="checkbox"/> COMT <input checked="" type="checkbox"/> ITSL <input checked="" type="checkbox"/> RADO <input checked="" type="checkbox"/> INCM <input checked="" type="checkbox"/> INTD <input checked="" type="checkbox"/> AUXCOM <input checked="" type="checkbox"/> TERT	No Communications Unit process at present	Communications Unit process planned or designed (but not implemented)	Communications Unit process implemented and active
9	<b>Interagency communication.</b> Established and applied interagency communications policies, procedures and guidelines.	Some interoperable communications SOPs/SOGs exist within the area and steps have been taken to institute these interoperability procedures among some agencies	Interoperable communications SOPs/SOGs are formalized and in use by agencies within the area. Despite minor issues, SOPs/SOGs are successfully used during responses and/or exercises	Interoperable communications SOPs/SOGs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established among agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.
10	<b>TICP (or equivalent) developed.</b> Tactical Interoperable Communications Plans (TICPs) established and periodically updated to include all public safety communications systems available	Regional or statewide TICP in place	Statewide or Regional TICP(s) updated within past 2-5 years	Statewide or Regional TICP(s) updated within past 2 years
11	<b>Field Operations Guides (FOGs) developed.</b> FOGs established for a state or territory and periodically updated to include all public safety communications systems available	Regional or statewide FOG in place	Statewide or Regional FOG(s) updated within past 2-5 years	Statewide or Regional FOG(s) updated within past 2 years

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
12	<b>Alerts &amp; Warnings.</b> State or Territory has Implemented an effective A&W program to include Policy, Procedures and Protocol measured through the following characteristics: (1) Effective documentation process to inform and control message origination and distribution (2) Coordination of alerting plans and procedures with neighboring jurisdictions (3) Operators and alert originators receive periodic training (4) Message origination, distribution, and correction procedures in place	<49% of originating authorities have all of the four A&W characteristics	>50%<74% of originating authorities have all of the four A&W characteristics	>75%<100% of originating authorities have all of the four A&W characteristics
13	<b>Radio programming.</b> Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state / territory.	<49% of radios are programmed for interoperability and consistency	>50%<74% of radios are programmed for interoperability and consistency	>75%<100% of radios are programmed for interoperability and consistency
14	<b>Cybersecurity Assessment Awareness.</b> Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 9-1-1, and A&W)	Public safety communications network owners are aware of cybersecurity assessment availability and value (check yes or no for each option) <input type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W	Initial plus, conducted assessment, conducted risk assessment. (Check yes or no for each option) <input type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W	Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option) <input type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W
15	<b>NG9-1-1 implementation.</b> NG9-1-1 implementation underway to serve state / territory population.	Working to establish NG9-1-1 governance through state/territorial plan. <ul style="list-style-type: none"><li>Developing GIS to be able to support NG9-1-1 call routing.</li><li>Planning or implementing ESInet and Next Generation Core Services (NGCS).</li><li>Planning to or have updated PSAP equipment to handle basic NG9-1-1 service offerings.</li></ul>	More than 75% of PSAPs and Population Served have: <ul style="list-style-type: none"><li>NG9-1-1 governance established through state/territorial plan.</li><li>GIS developed and able to support NG9-1-1 call routing.</li><li>Planning or implementing ESInet and Next Generation Core Services (NGCS).</li><li>PSAP equipment updated to handle basic NG9-1-1 service offerings.</li></ul>	More than 90% of PSAPs and Population Served have: <ul style="list-style-type: none"><li>NG9-1-1 governance established through state/territorial plan.</li><li>GIS developed and supporting NG9-1-1 call routing.</li><li>Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS).</li><li>PSAP equipment updated and handling basic NG9-1-1 service offerings.</li></ul>

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
16	<b>Data operability / interoperability.</b> Ability of agencies within a region to exchange data on demand, and needed, and as authorized. Examples of systems would be: - CAD to CAD - Chat - GIS - Critical Incident Management Tool (- Web EOC)	Agencies are able to share data only by email. Systems are not touching or talking.	Systems are able to touch but with limited capabilities. One-way information sharing.	Full system to system integration. Able to fully consume and manipulate data.
17	<b>Future Technology/Organizational Learning.</b> SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)	<input checked="" type="checkbox"/> LMR to LTE Integration <input type="checkbox"/> 5G <input type="checkbox"/> IoT (cameras) <input type="checkbox"/> UAV (Smart Vehicles) <input checked="" type="checkbox"/> UAS (Drones) <input type="checkbox"/> Body Cameras <input checked="" type="checkbox"/> Public Alerting Software <input type="checkbox"/> Sensors <input type="checkbox"/> Autonomous Vehicles <input checked="" type="checkbox"/> MCPTT Apps	<input type="checkbox"/> Wearables <input type="checkbox"/> Machine Learning/Artificial Intelligence/Analytics <input type="checkbox"/> Geolocation <input checked="" type="checkbox"/> GIS <input checked="" type="checkbox"/> Situational Awareness Apps- common operating picture applications (i.e., Force Tracking, Chat Applications, Common Operations Applications)	<input type="checkbox"/> HetNets/Mesh Networks/Software Defined Networks <input type="checkbox"/> Acoustic Signaling (Shot Spotter) <input checked="" type="checkbox"/> ESInet <input type="checkbox"/> 'The Next Narrowbanding' <input type="checkbox"/> Smart Cities
18	<b>Communications Exercise objectives.</b> Specific emergency communications objectives are incorporated into applicable exercises Federal / state / territory-wide	Regular engagement with State Training and Exercise coordinators	Promote addition of emergency communications objectives in state/county/regional level exercises (target Emergency Management community). Including providing tools, templates, etc.	Initial and Defined plus mechanism in place to incorporate and measure communications objectives into state/county/regional level exercises
19	<b>Trained Communications Unit responders.</b> Communications Unit personnel are listed in a tracking database (e.g., NQS One Responder, CASM, etc.) and available for assignment/response.	<49% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>50%<74% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>75%<100% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response
20	<b>Communications Usage Best Practices/Lessons Learned.</b> Capability exists within jurisdiction to share best practices/lessons learned (positive and/or negative) across all lanes of the Interoperability Continuum related to all components of the emergency communications ecosystem	Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices	Initial plus review mechanism established	Defined plus distribution mechanism established

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
21	<b>Wireless Priority Service (WPS) subscription.</b> WPS penetration across state / territory compared to maximum potential	<9% subscription rate of potentially eligible participants who signed up WPS across a state / territory	>10%<49% subscription rate of potentially eligible participants who signed up for WPS a state / territory	>50%<100% subscription rate of potentially eligible participants who signed up for WPS across a state / territory
22	<b>Outreach.</b> Outreach mechanisms in place to share information across state	SWIC electronic communication (e.g., SWIC email, newsletter, social media, etc.) distributed to relevant stakeholders on regular basis	Initial plus web presence containing information about emergency communications interoperability, SCIP, trainings, etc.	Defined plus in-person/webinar conference/meeting attendance strategy and resources to execute
23	<b>Sustainment assessment.</b> Identify interoperable component system sustainment needs;(e.g., communications infrastructure, equipment, programs, management) that need sustainment funding. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased - state systems only)	< 49% of component systems assessed to identify sustainment needs	>50%<74% of component systems assessed to identify sustainment needs	>75%<100% of component systems assessed to identify sustainment needs
24	<b>Risk identification.</b> Identify risks for emergency communications components. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased. Risk Identification and planning is in line with having a communications COOP Plan)	< 49% of component systems have risks assessed through a standard template for all technology components	>50%<74% of component systems have risks assessed through a standard template for all technology components	>75%<100% of component systems have risks assessed through a standard template for all technology components
25	<b>Cross Border / Interstate (State to State) Emergency Communications.</b> Established capabilities to enable emergency communications across all components of the ecosystem.	Initial: Little to no established: <input type="checkbox"/> Governance <input type="checkbox"/> SOPs/MOUs <input type="checkbox"/> Technology <input type="checkbox"/> Training/Exercises <input type="checkbox"/> Usage	Defined: Documented/established across some lanes of the Continuum: <input type="checkbox"/> Governance <input type="checkbox"/> SOPs/MOUs <input type="checkbox"/> Technology <input type="checkbox"/> Training/Exercises <input type="checkbox"/> Usage	Optimized: Documented/established across all lanes of the Continuum: <input checked="" type="checkbox"/> Governance <input checked="" type="checkbox"/> SOPs/MOUs <input checked="" type="checkbox"/> Technology <input checked="" type="checkbox"/> Training/Exercises <input checked="" type="checkbox"/> Usage

## APPENDIX B: ACRONYMS

Acronym	Definition
AAR	After-Action Report
AUXCOMM/AUXC	Auxiliary Emergency Communications
A&W	Alerts and Warnings
Cal OES	California Governor's Office of Emergency Services
CalSIEC	California Statewide Interoperability Executive Committee
CASM	Communication Assets Survey and Mapping
CISA	Cybersecurity and Infrastructure Security Agency
COML	Communications Unit Leader
COMT	Communications Unit Technician
COMU	Communications Unit Program
COOP	Continuity of Operations Plan
DHS	Department of Homeland Security
ESInet	Emergency Services Internal Protocol Network
FOG	Field Operations Guide
GIS	Geospatial Information System
ICTAP	Interoperable Communications Technical Assistance Program
INCM	Incident Communications Center Manager
INTD	Incident Tactical Dispatcher
IP	Internet Protocol
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
MHz	Megahertz
MOU	Memorandum of Understanding
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
PSAP	Public Safety Answering Point
SCIP	Statewide Communication Interoperability Plan
SOP	Standard Operating Procedure
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TICP	Tactical Interoperable Communications Plan
WPS	Wireless Priority Service