

MARYLAND STATEWIDE COMMUNICATION INTEROPERABILITY PLAN



June 2022

Developed with support from the Cybersecurity and Infrastructure Security Agency



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LETTER FROM THE STATEWIDE INTEROPERABILITY COORDINATOR

Greetings,

As the Statewide Interoperability Coordinator (SWIC) for the State of Maryland, I am pleased to present the 2022 Maryland 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 (DHS) grant guidelines.

Representatives from across the State of Maryland 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, which are designed to support our state in planning for new technologies and navigating the ever-changing emergency communications landscape. They also incorporate the state interoperability markers, which describe Maryland's level of interoperability maturity by measuring progress against 25 markers.

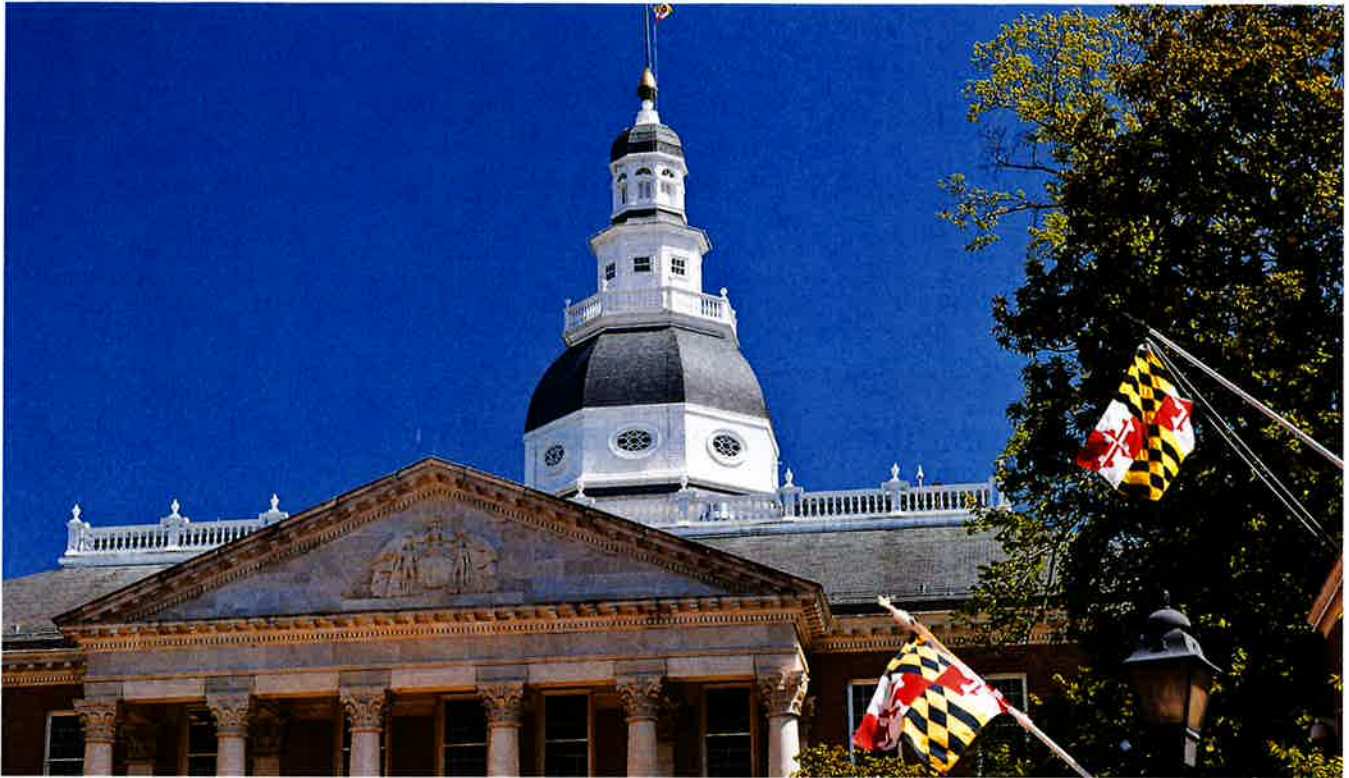
As we continue to enhance interoperability, we must remain dedicated to improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from public safety practitioners statewide, we will work to achieve the goals outlined in the SCIP and become a nationwide model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

Sincerely,



Bud Frank
Maryland Statewide Interoperability Coordinator
Maryland Department of State Police

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 Maryland’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 Maryland 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 Maryland, along with methods and strategies for funding sustainment and enhancement to meet long-term goals.
- **Implementation Plan** – Describes Maryland’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 and alerts and warnings, requests for assistance and reporting, and public information exchange. The primary functions are depicted in the 2019 National Emergency Communications Plan.¹

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.² It is designed to assist public safety agencies and policymakers with planning and implementing interoperability solutions for communications across technologies.

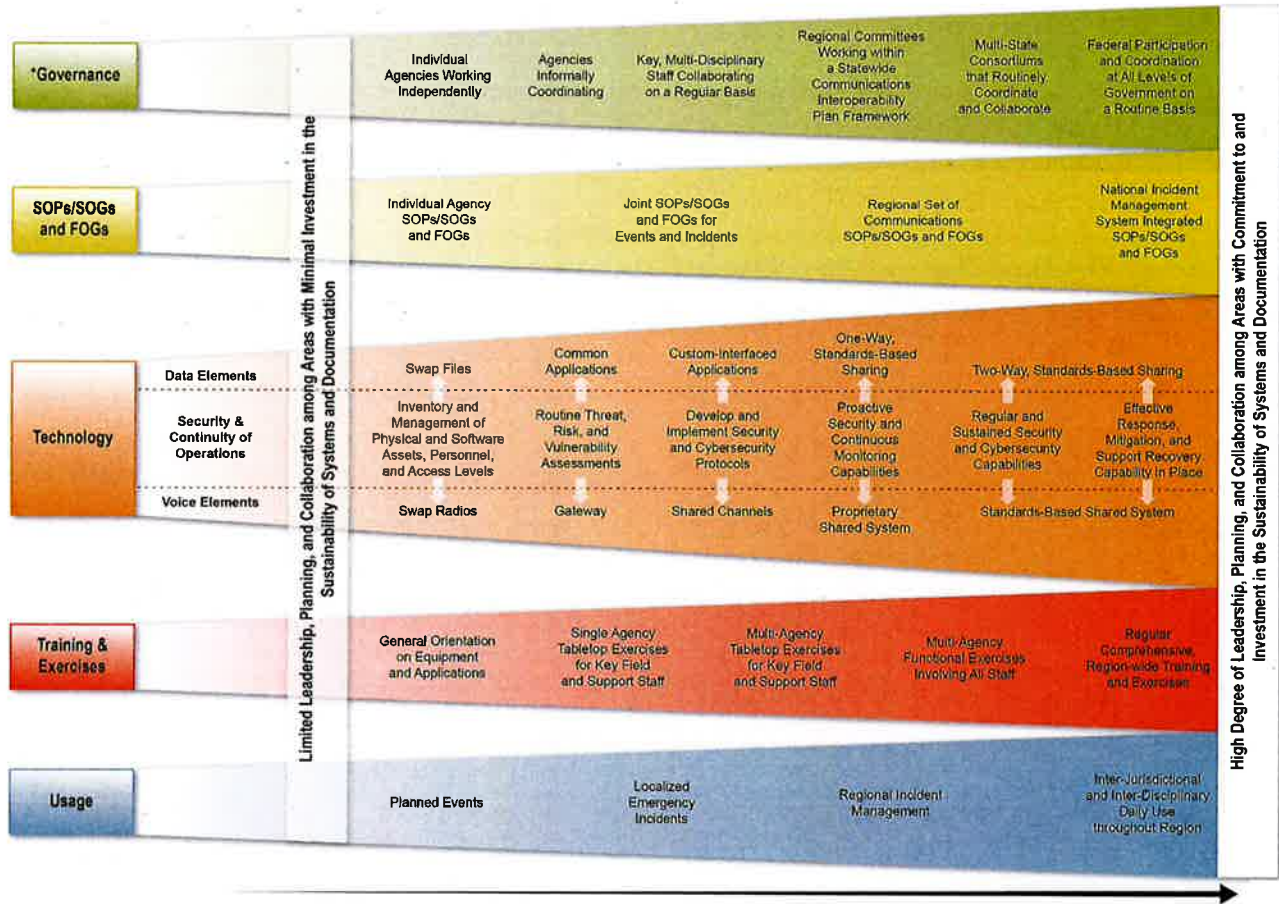


Figure 1: Interoperability Continuum

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 are critical to effectively saving lives in many cases.

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, internet protocol-based

¹ [2019 National Emergency Communications Plan](#)

² [Interoperability Continuum Brochure](#)

technologies in public safety have increased the type and amount of information responders receive, the tools they communicate with, and the complexity of new and interdependent systems. New 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 The State of Maryland’s vision and mission for improving emergency and public safety communications interoperability:

Vision:

Achieving Statewide interoperable communications for Maryland’s Emergency Communications Ecosystem for effective, resilient and efficient response, management, and mitigation for any event or emergency incidents.

Mission:

Support the achievement of operational interoperability for the State of Maryland.

GOVERNANCE

There are multiple levels of governance representing the emergency communications ecosystem in Maryland. With a focus on the National Emergency Communications Plan (NECP's) Goal 1 - Governance and Leadership, the State seeks to reengage Maryland's Statewide Interoperability Executive Committee (SIEC) to ensure collaboration and efficiencies, facilitate communications amongst stakeholders with a focus on transparency by engaging the whole community.

The SIEC will continue to support best practices for coordination and usage of interoperable communications capabilities throughout the emergency communications ecosystem. The SIEC will focus on areas such as working with local partners to develop Tactical Interoperable Communications Plans (TICPs), encouraging the testing, and exercising of interoperable communications capabilities to ensure resiliency and continuity. The SIEC will work with local, county, state, and federal stakeholders to review After Actions Reporting and support risk mitigation through corrective action planning.

The Department of Information Technology (DoIT) is required by Maryland State law (M.D. State Finance and Procurement Code Ann. § 3A-301-309) to develop and implement policy, standards, and implementation guidance to promote the mission-effective and cost-efficient use of various types of IT to enable a wide range of State Agency mission and support functions. DoIT manages and maintains the statewide mission critical radio system known as Maryland FiRST. DoIT is supported by the Radio Control Board, a committee of stakeholders and practitioners from throughout the state.

Within the State, multiple Regional Radio Systems also support Public Safety Agencies, which are overseen by various governing bodies.

The Maryland 911 Board works and coordinates with representatives from the 9-1-1 community for the establishment of standards and enhancements for the state's 24 PSAPs.

Maryland is bordered by Washington, DC, and four Maryland counties, and municipalities are part of the area referred to as the National Capitol Region (NCR) which includes northern Virginia. Major events or Incidents can have a larger affect to other counties in MD both in emergency response and management, traffic management, and use of resources.

The Metropolitan Washington Council of Governments (COG), housed in Washington, is an independent, nonprofit association, where officials and experts connect through COG to share information and develop solutions to the region's major challenges. Through various committees and work groups, COG coordinates and collaborates to address various components of Interoperability. Maryland officials and responders participates with this work by COG to improve actions in the NCR. In Maryland, we should remain cognizant of this work as we address the interoperability needs throughout the state.

The following table outlines goals and objectives related to Governance:

Governance	
Goal	Objectives
1. Reinvigorate the SIEC	1.1 Hold a meeting
	1.2 Review relevance and SIEC mission

Goal	Objectives
	1.3 Determine membership
	1.4 Review and approve the SCIP
2. Review the current Maryland Statewide Communication Interoperability Plan Executive Order to determine if a revised Executive Order or Legislation is needed	2.1 Draft Legislation or Executive order to be vetted by appropriate stakeholders prior to Governor's office
	2.2 Provide recommendations to the Governor's Office
3. Continue to support best practices for coordination and usage of interoperable communications capabilities	3.1 Work with local partners to develop TICPs
	3.2 Develop a FOG for Maryland
	3.3 Encourage the testing and exercising of interoperable communications capabilities to include the collection of AARs from both exercises and real-world events; develop a corrective action plan to address gaps
4. Support a COMU program	4.1 Ensure the program follows national standards and best practices
	4.2 Ensure SIEC group works with local, state, and federal agencies to develop the group
	4.3 Creation of a COMU Working Group

TECHNOLOGY AND CYBERSECURITY

The State Interoperable Executive Committee (SIEC) acknowledges that the Technology and Cybersecurity section is applicable to the State of Maryland and the individual jurisdictions and municipalities utilizing the various technologies for interoperable systems and existing working groups.

Land Mobile Radio

Maryland FiRST is a statewide Project 25 (P25) Phase II 700 MHz land mobile system that supports both operable and interoperable mission critical communications. Maryland FiRST is managed and maintained by Maryland's Department of Information Technology. The Radio Control Board acts in an advisory role for Maryland FiRST operations. Over 24,000 first responders use Maryland FiRST for daily operations, and over 50,000 use the system for interoperability.

Broadband

Maryland opted into First Responder Network Authority (FirstNet) in September 2017. FirstNet users in the state expressed the need for broader FirstNet coverage to ensure reliability and protection of public safety broadband throughout the state. Interoperability, collaboration, and cooperation is needed between carriers and applications to provide reliable coverage. A Public Safety broadband working group could help identify entities responsible for broadband throughout the state and collaborate with the Governor's office to resolve any issues.

9-1-1/Next Generation 9-1-1

NG9-1-1 services legislation passed in April of 2019 to establish statewide minimum standards for systems access for those with disabilities and records retention. Maryland currently has 24 Public safety answering points and 72 secondary public safety answering points. Maryland NG9-1-1 commission published yearly reports with recommendations. The shared responsibility of the 9-1-1 board and the Maryland Association of Counties (MaCo) – Emergency Communications Committee (ECC) is to coordinate the support of existing and future 9-1-1 technology (including CAD) plan and coordinate implementation of Next Generation 9-1-1 technology and coordinate response and dispatch operations in the region.

Alerts and Warnings

There are multiple alerting services throughout the State of Maryland. The Maryland Department of Emergency Management (MDEM) and other state agencies maintain situational awareness 24/7. The Maryland Joint Operation Center (MJOC) is responsible to notify the MDEM duty officer in the event of an emergency. Maryland implemented a statewide installation of EmNet and utilizes the Integrated Public Alert and Warning System (IPAWS) as part of their alerts, warnings, and notifications capabilities however not all jurisdictions have IPAWS capabilities. Maryland looks to enhance coordination on alerts and warnings, develop notification system for carrier and 9-1-1 disruptions and to increase opportunities for advanced IPAWS coverage throughout the state. This in combination with county and municipal systems accomplish alert and warnings to the public for pending and existing emergencies.

Cybersecurity for Public Safety Technology

In the State of Maryland, DoIT makes available cybersecurity policies and best practices for most state agencies. There is currently cybersecurity training and multiple groups working on cybersecurity throughout the state but there is a need to identify all the working groups and standing entities to create synergies between them. The Maryland Department of Emergency Management recently stood up a Cyber Preparedness Unit, but this needs to be expanded as a statewide resource. The creation of a Cybersecurity Working Group would create a collaborative link across the State of Maryland for the strengthening of its cybersecurity posture in alignment with NECP Goal 6 - Cybersecurity.

Technology and cybersecurity goals and objectives include the following:

Technology and Cybersecurity	
Goal	Objectives
5. Leverage partnerships with private sector and public safety agencies to develop strategies/tools to incorporate cybersecurity awareness and training	5.1 Coordinate and conduct cybersecurity preparedness education initiatives
	5.2 Develop document on liabilities and risk for leadership
	5.3 Ensure coordination of efforts
	5.4 Coordinate and leverage CISA resources

FUNDING

In the State of Maryland, there is a need for funding to address the long-term viability of legacy regional communications systems, ongoing maintenance, and system administration costs. As an example, Motorola is contracted through November 2022 to expand and maintain Maryland FiRST and Maryland is seeking to extend the contract for an additional 3 years pending approval of Board of Public Works (BPW). There is a need for dedicated funding throughout the State of Maryland for proper system resources and personnel, coordinated NG9-1-1 opportunities, greater collaboration on regional/statewide projects and increase knowledge of funding levels.

All investment justifications seeking federal funding for communications are coordinated through the SWIC.

Funding goals and objectives include the following:

Funding	
Goal	Objectives
6. Work collaboratively to Identify priorities and funding needed to complete local, county and state initiatives	6.1 Make recommendations to Governor for projects and required funding
	6.2 Work with legislative champions to educate the General Assembly on funding needs and priorities
	6.3 Collaboration with the local users to support funding needs
	6.4 Life cycle funding planning to include reoccurring cost for communications projects (licensing, upgrades, maintenance)
	6.5 Education and outreach for decision makers
7. T.A. request for grant workshop	7.1 Educate stakeholders on programmatic and best practices on funding and opportunities

IMPLEMENTATION PLAN

Each goal and its associated objectives have a timeline with a target completion date, and one or multiple owners that 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 catalog³ of technical assistance (TA) available to assist with the implementation of the SCIP. TA requests are to be coordinated through the SWIC.

The SIEC will review goals and objectives on a bi-annual basis to track forward process.

Based on the discussions during the SCIP Workshop, CISA recommends the following T.A.s to support The State of Maryland's SCIP goals:

- Tactical Interoperable Communications Field Operations Guide (TIC-FOG) Development/Update
- Governance Documentation Review, Assessment, and Development (GOV-DOC)
- 9-1-1/PSAP/LMR Cyber Assessment
- Communications Unit Exercise (COMMEX) for Communications Unit Trainees
- Grant Funding for Emergency Communications Webinar

The State of Maryland's implementation plan is shown in the table below.

Goals	Objectives	Owners	Completion Date
1. Reinvigorate the SIEC	1.1 Hold a meeting 1.2 Review relevance and SIEC mission 1.3 Determine membership 1.4 Review and approve the SCIP	SWIC, State agencies identified as SIEC members	July 2022-1st meeting
2. Review the current Maryland Statewide Communication Interoperability Plan Executive Order to determine if a revised Executive Order or Legislation is needed	2.1 Draft Legislation or Executive order to be vetted by appropriate stakeholders prior to Governor's office 2.2 Provide recommendations to the Governor's Office	SWIC, SIEC, Region 20 operations committee, 9-1-1 Board	September 2022 (2.1) October 2022 (2.2)
3. Continue to support best practices for coordination and usage of	3.1 Work with local partners to develop TICPs 3.2 Develop a FOG for Maryland	SWIC, SIEC,	January 2023

³ [Emergency Communications Technical Assistance Planning Guide](#)

Goals	Objectives	Owners	Completion Date
interoperable communications capabilities	3.3 Encourage the testing and exercising of interoperable communications capabilities to include the collection of AARs from both exercises and real-world events; develop corrective action plan to address gaps	Region 20 (3.3)	
4. Support a COMU program	4.1 Ensure the program follows national standards and best practices 4.2 Ensure SIEC group works with local, state, and federal agencies to develop the group 4.3 Creation of an COMU Working Group	COMU Working Group	March 2023
5. Leverage partnerships with private sector and public safety agencies to develop strategies/tools to incorporate cybersecurity awareness and training	5.1 Coordinate and conduct cybersecurity preparedness education initiatives 5.2 Develop document on liabilities and risk for leadership 5.3 Ensure coordination of efforts 5.4 Coordinate and leverage CISA resources	MDEM, DoIT	Ongoing
6. Work collaboratively to identify priorities and funding needed to complete local, county and state initiatives	6.1 Make recommendations to Governor for projects and required funding 6.2 Collaboration with the local users to support funding needs 6.3 Life cycle funding planning to include reoccurring cost for communications projects (licensing, upgrades, maintenance) 6.4 Life cycle funding planning to include reoccurring cost for communications projects (licensing, upgrades, maintenance) 6.5 Education and outreach for decision makers	SWIC, SIEC, SAA	July 2023 (Annually in July)
7. T.A. request for grant workshop	7.1 Educate stakeholders on programmatic and best practices on funding and opportunities	SWIC, SIEC, MDEM	October 2022

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 Maryland's assessment of their progress against the markers.

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
1	State-level governing body established (e.g., SIEC, SIGB). 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	SIGB/SIEC participation. 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 checked="" type="checkbox"/> Communications Champion/SWIC <input checked="" type="checkbox"/> LMR <input type="checkbox"/> Broadband/LTE <input type="checkbox"/> 9-1-1 <input checked="" 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	SWIC established. 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	SWIC Duty Percentage. 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	SCIP refresh. 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	<p>SCIP strategic goal percentage. 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)</p>	<50% are strategic goals in SCIP	>50%<90% are strategic goals in SCIP	>90% are strategic goals in SCIP
7	<p>Integrated emergency communication grant coordination. Designed to ensure state / territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.</p>	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	<p>Communications Unit process. 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:</p> <ul style="list-style-type: none"> <input type="checkbox"/> COML <input type="checkbox"/> COMT <input type="checkbox"/> ITSL <input type="checkbox"/> RADO <input type="checkbox"/> INCM <input type="checkbox"/> INTD <input type="checkbox"/> AUXCOM <input type="checkbox"/> TERT 	No Communications Unit process at present	Communications Unit process planned or designed (but not implemented)	Communications Unit process implemented and active

<p>9</p>	<p>Interagency communication. Established and applied interagency communications policies, procedures and guidelines.</p>	<p>Some interoperable communications SOPs/SOGs exist within the area and steps have been taken to institute these interoperability procedures among some agencies</p>	<p>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</p>	<p>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.</p> <p>Statewide or Regional TICP(s) updated within past 2 years</p>
<p>10</p>	<p>TICP (or equivalent) developed. Tactical Interoperable Communications Plans (TICPs) established and periodically updated to include all public safety communications systems available</p>	<p>Regional or statewide TICP in place</p>	<p>Statewide or Regional TICP(s) updated within past 2-5 years</p>	<p>Statewide or Regional TICP(s) updated within past 2 years</p>
<p>11</p>	<p>Field Operations Guides (FOGs) developed. FOGs established for a state or territory and periodically updated to include all public safety communications systems available</p>	<p>Regional or statewide FOG in place</p>	<p>Statewide or Regional FOG(s) updated within past 2-5 years</p>	<p>Statewide or Regional FOG(s) updated within past 2 years</p>
<p>12</p>	<p>Alerts & Warnings. 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</p>	<p><49% of originating authorities have all of the four A&W characteristics</p>	<p>>50%<74% of originating authorities have all of the four A&W characteristics</p>	<p>>75%<100% of originating authorities have all of the four A&W characteristics</p>

<p>13</p>	<p>Radio programming. Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state / territory.</p> <p>Cybersecurity Assessment Awareness. Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 9-1-1, and A&W)</p>	<p><49% of radios are programmed for interoperability and consistency</p> <p>Public safety communications network owners are aware of cybersecurity assessment availability and value (check yes or no for each option)</p> <p><input type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W</p>	<p>>50% < 74% of radios are programmed for interoperability and consistency</p> <p>Initial plus, conducted assessment, conducted risk assessment. (check yes or no for each option)</p> <p><input checked="" type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W</p>	<p>>75% < 100% of radios are programmed for interoperability and consistency</p> <p>Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option)</p> <p><input type="checkbox"/> LMR <input type="checkbox"/> LTE <input type="checkbox"/> 9-1-1/CAD <input type="checkbox"/> A&W</p>
<p>14</p>	<p>NG9-1-1 implementation. NG9-1-1 implementation underway to serve state / territory population.</p>	<p>Working to establish NG9-1-1 governance through state/territorial plan.</p> <ul style="list-style-type: none"> Developing GIS to be able to support NG9-1-1 call routing. Planning or implementing ESInet and Next Generation Core Services (NGCS). Planning to or have updated PSAP equipment to handle basic NG9-1-1 service offerings. 	<p>More than 75% of PSAPs and Population Served have:</p> <ul style="list-style-type: none"> NG9-1-1 governance established through state/territorial plan. GIS developed and able to support NG9-1-1 call routing. Planning or implementing ESInet and Next Generation Core Services (NGCS). PSAP equipment updated to handle basic NG9-1-1 service offerings. 	<p>More than 90% of PSAPs and Population Served have:</p> <ul style="list-style-type: none"> NG9-1-1 governance established through state/territorial plan. GIS developed and supporting NG9-1-1 call routing. Operational Emergency Services I.P. Network (ESInet)/Next Generation Core Services (NGCS). PSAP equipment updated and handling basic NG9-1-1 service offerings.
<p>15</p>	<p>Agencies are able to share data only by email. Systems are not touching or talking.</p>	<p>Agencies are able to share data only by email. Systems are not touching or talking.</p>	<p>Systems are able to touch but with limited capabilities. One-way information sharing.</p>	<p>Full system to system integration. Able to fully consume and manipulate data.</p>
<p>16</p>	<p>Data operability / interoperability. Ability of agencies within a region to exchange data on demand, and needed, and as authorized. Examples of systems would be:</p> <ul style="list-style-type: none"> - CAD to CAD - Chat - GIS - Critical Incident Management Tool (- Web EOC) 	<p>Agencies are able to share data only by email. Systems are not touching or talking.</p>	<p>Systems are able to touch but with limited capabilities. One-way information sharing.</p>	<p>Full system to system integration. Able to fully consume and manipulate data.</p>

<p>17</p>	<p>Future Technology/Organizational Learning. SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)</p>	<p><input checked="" type="checkbox"/> LMR to LTE Integration <input checked="" type="checkbox"/> 5G <input checked="" type="checkbox"/> IoT (cameras) <input checked="" type="checkbox"/> UAV (Smart Vehicles) <input type="checkbox"/> UAS (Drones) <input type="checkbox"/> Body Cameras <input checked="" type="checkbox"/> Public Alerting Software <input checked="" type="checkbox"/> Sensors <input type="checkbox"/> Autonomous Vehicles <input type="checkbox"/> MCPTT Apps</p>	<p><input type="checkbox"/> Wearables <input type="checkbox"/> Machine Learning/Artificial Intelligence/Analytics <input checked="" type="checkbox"/> Geolocation <input checked="" type="checkbox"/> GIS <input type="checkbox"/> Situational Awareness Apps-common operating picture applications (i.e., Force Tracking, Chat Applications, Common Operations Applications)</p>	<p><input type="checkbox"/> HetNets/Mesh Networks/Software Defined Networks <input type="checkbox"/> Acoustic Signaling (Shot Spotter) <input type="checkbox"/> ESInet <input type="checkbox"/> 'The Next Narrowbanding' <input type="checkbox"/> Smart Cities</p>
<p>18</p>	<p>Communications Exercise objectives. Specific emergency communications objectives are incorporated into applicable exercises Federal / state / territory-wide</p>	<p>Regular engagement with State Training and Exercise coordinators</p>	<p>Promote addition of emergency communications objectives in state/county/regional level exercises (target Emergency Management community). Including providing tools, templates, etc.</p>	<p>Initial and Defined plus mechanism in place to incorporate and measure communications objectives into state/county/regional level exercises</p>
<p>19</p>	<p>Trained Communications Unit responders. Communications Unit personnel are listed in a tracking database (e.g., NQS One Responder, CASM, etc.) and available for assignment/response.</p>	<p><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 Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices</p>	<p>>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 Initial plus review mechanism established</p>	<p>>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 Defined plus distribution mechanism established</p>
<p>20</p>	<p>Communications Usage Best Practices/Lessons Learned. 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</p>	<p>Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices</p>	<p>Initial plus review mechanism established</p>	<p>Defined plus distribution mechanism established</p>

21	<p>Wireless Priority Service (WPS) subscription. WPS penetration across state / territory compared to maximum potential</p>	<p><9% subscription rate of potentially eligible participants who signed up WPS across a state / territory</p>	<p>>10%<49% subscription rate of potentially eligible participants who signed up for WPS a state / territory</p>	<p>>50%<100% subscription rate of potentially eligible participants who signed up for WPS across a state / territory</p>
22	<p>Outreach. Outreach mechanisms in place to share information across state</p>	<p>SWIC electronic communication (e.g., SWIC email, newsletter, social media, etc.) distributed to relevant stakeholders on regular basis</p>	<p>Initial plus web presence containing information about emergency communications interoperability, SCIP, trainings, etc.</p>	<p>Defined plus in-person/webinar conference/meeting attendance strategy and resources to execute</p>
23	<p>Sustainment assessment. 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)</p>	<p>< 49% of component systems assessed to identify sustainment needs</p>	<p>>50%<74% of component systems assessed to identify sustainment needs</p>	<p>>75%<100% of component systems assessed to identify sustainment needs</p>
24	<p>Risk identification. Identify risks for emergency communications 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)</p>	<p>< 49% of component systems have risks assessed through a standard template for all technology components</p>	<p>>50%<74% of component systems have risks assessed through a standard template for all technology components</p>	<p>>75%<100% of component systems have risks assessed through a standard template for all technology components</p>
25	<p>Cross Border / Interstate (State to State) Emergency Communications. Established capabilities to enable emergency communications across all components of the ecosystem.</p>	<p>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</p>	<p>Defined: Documented/established across some lanes of the Continuum: <input type="checkbox"/> Governance <input checked="" type="checkbox"/> SOPs/MOUs <input checked="" type="checkbox"/> Technology <input type="checkbox"/> Training/Exercises <input checked="" type="checkbox"/> Usage</p>	<p>Optimized: Documented/established across all 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</p>

APPENDIX B: ACRONYMS

Acronym	Definition
AAR	After-Action Report
A&W	Alerts and Warnings
BPW	Board of Public Works
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
DoIT	Department of Information Technology
DHS	Department of Homeland Security
ESInet	Emergency Services Internal Protocol Network
FirstNet	First Responder Network Authority
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
IPAWS	Integrated Public Alerts and Warnings System
IT	Information Technology
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
MDEM	Maryland Department of Emergency Management
MHz	Megahertz
MOU	Memorandum of Understanding
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
PSAP	Public Safety Answering Point
P25	Project 25
RADO	Radio Operator
SCIP	Statewide Communication Interoperability Plan
SIEC	Statewide Interoperability Executive Committee
SOP	Standard Operating Procedure
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TERT	Telecommunications Emergency Response Team
TICP	Tactical Interoperable Communications Plan
WPS	Wireless Priority Service