



# MISSISSIPPI STATEWIDE COMMUNICATION INTEROPERABILITY PLAN



June 2023

Developed by the Mississippi Wireless Communication Commission 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 Mississippi, I am pleased to present to you the 2023 Mississippi 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 across Mississippi 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 Mississippi'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,

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Dent Guynes  
Mississippi Statewide Interoperability Coordinator  
Mississippi Wireless Communication Commission

## 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 Mississippi’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 Mississippi 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 Mississippi along with methods and strategies for funding sustainment and enhancement to meet long-term goals.
- **Implementation Plan** – Describes Mississippi’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.<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.

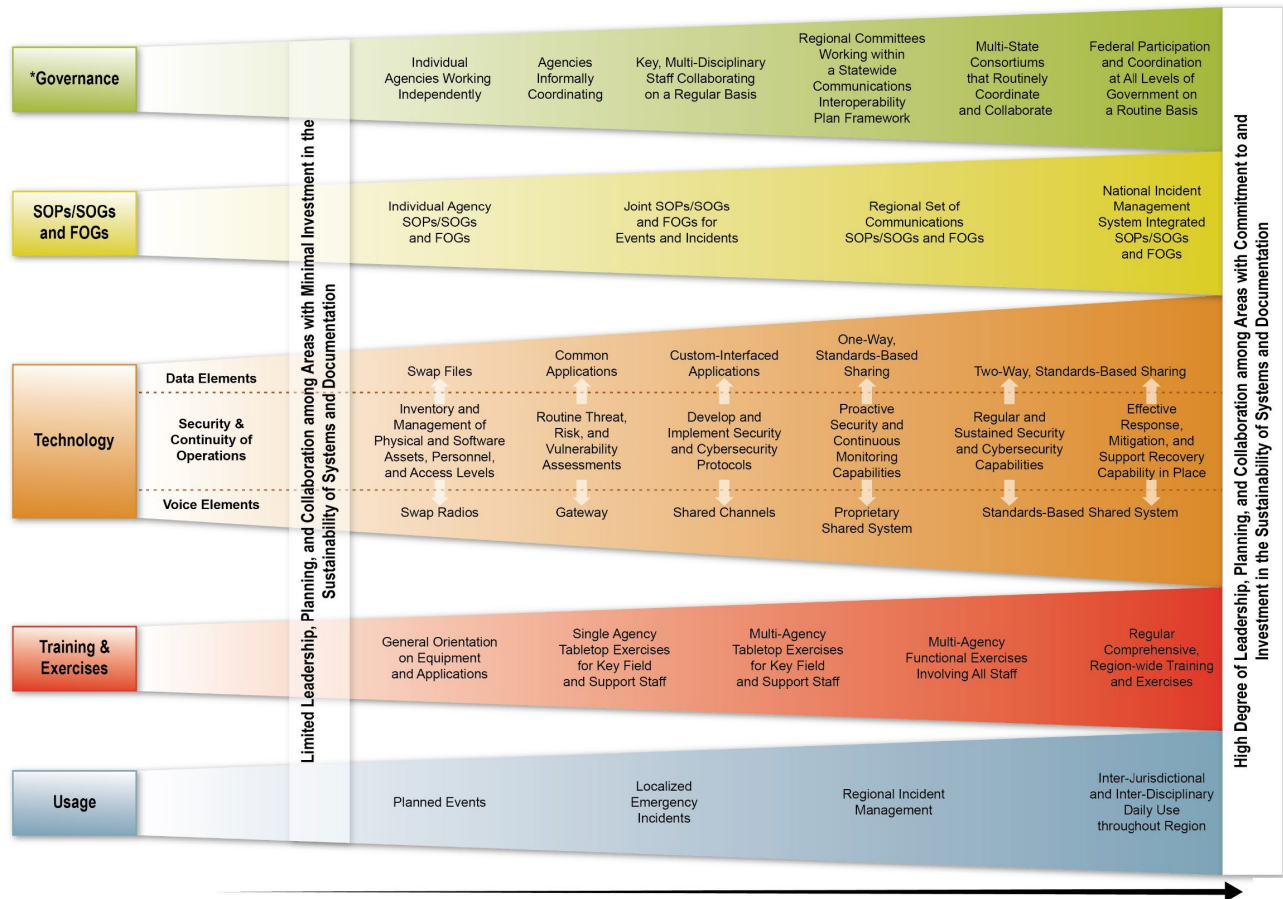


Figure 1: Interoperability Continuum

## 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 911 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 information

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

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

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 911 (NG911) 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 NG911 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 Mississippi's vision and mission for improving emergency and public safety communications interoperability:

### **Vision:**

*Safe, secure, and interoperable public safety-related communications across the State of Mississippi*

### **Mission:**

*Provide the strategic framework for integrated local, state, tribal, and federal collaboration supporting all public safety communications across the state*

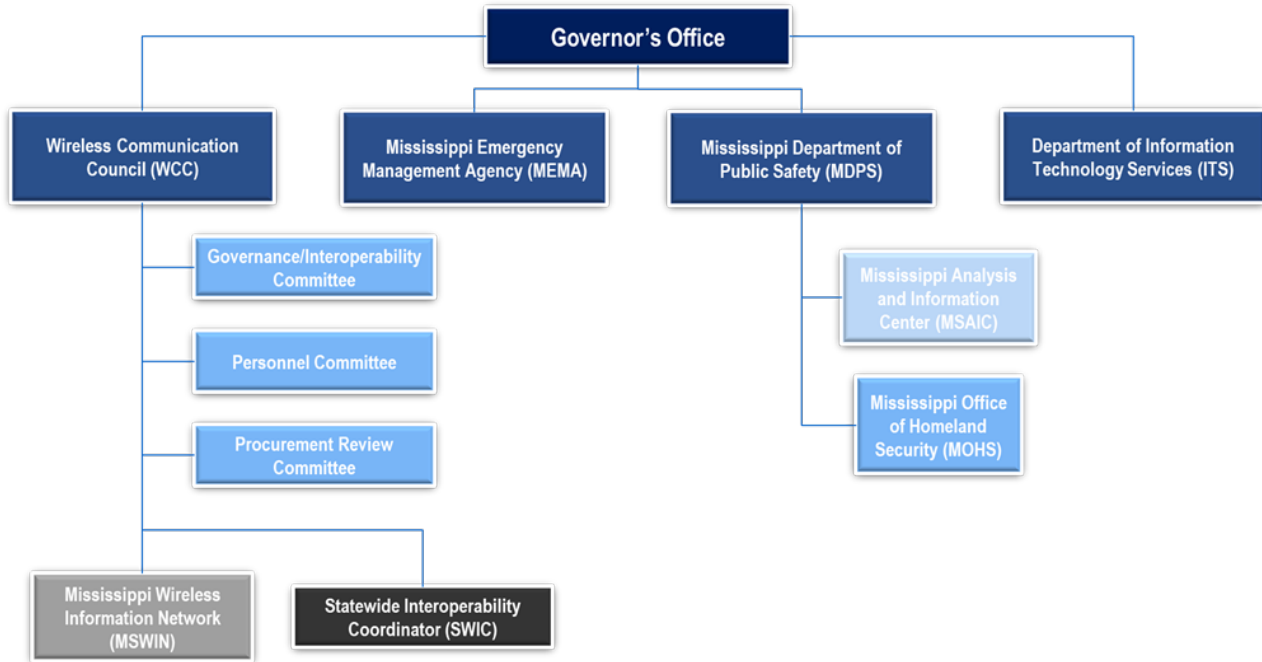
## GOVERNANCE

The Mississippi Wireless Communications Commission (WCC) serves as the state's interoperable communications governance body. It includes three standing committees focused on governance/interoperability, personnel, and procurement review, as well as one ad-hoc committee.

During the SCIP workshop, governance topics of discussion included information sharing, training and exercises, and retaining institutional knowledge from long term staff. To increase information sharing, Mississippi wants to prioritize updating the WCC website. The WCC website will include information on available trainings and exercises and the Mississippi Statewide Information Network (MSWIN), the statewide LMR network. A specific training needed is on interoperability channels for public safety workers, and the need is even greater in rural/volunteer fire departments. To retain institutional knowledge, Mississippi wants to formalize the onboarding process for new commissioners. Formalizing the onboarding process ensures that relevant information is passed down to new staff and will help to lessen the amount of knowledge lost as commissioners retire.

Mississippi's emergency communications governance map is depicted in Figure 2.

Figure 2: Mississippi’s Emergency Communications Governance Map



The following table outlines goals and objectives related to Governance:

Governance	
Goal	Objectives
1. Conduct outreach and education across various levels of government	1.1 Update the WCC website
	1.2 Identify meetings/conferences across the state for WCC commissioners and staff to attend
	1.3 Include information about the MSWIN system on the WCC website and in trainings/exercises
	1.4 Include information about available trainings and exercises on the WCC website
2. Reinvigorate the WCC membership and conduct membership education	2.1 Create formalized onboarding process for new commissioners including: <ul style="list-style-type: none"> <li>a. Bios and photos of commissioners</li> <li>b. White paper on the history of the WCC and MSWIN</li> <li>c. WCC bylaws/rules and regulations</li> <li>d. Expectations, roles and responsibilities of commissioners</li> </ul>
	2.2 Invite more speakers at WCC meetings to talk about MSWIN successes
	2.3 Encourage commissioners to take part in training and exercises
	2.4 Create a training and exercises working group on the WCC
3. Conduct regular review of statewide emergency communications policies and procedures	3.1 Create a TICP/FOG working group with the WCC that includes state, local, tribal, and federal stakeholders



Goal	Objectives
4. Increase WCC staff from 5 to 10 people	4.1 Recruit and advertise open WCC staff positions

## TECHNOLOGY AND CYBERSECURITY

### Land Mobile Radio

The Mississippi Wireless Information Network (MSWIN) is a statewide Project 25 (P25) Phase II 700 Megahertz (MHz) public safety LMR system and data network. The system provides operable and interoperable communications for local, state, tribal, and federal public safety entities and first responders. It consists of more than 156 communications towers, some leased and others owned. It also has over 55,000 subscribers and 10 million push-to-talk (PTT) users, with a max capacity of 250,000 subscribers. Most talk groups are time-division multiple access (TDMA). The WCC manages MSWIN system, while the state owns the system. Recently, several school systems in the state have signed Memorandums of Understanding (MOUs) to join MSWIN. Six school have joined so far.

Participants at the SCIP workshop discussed multiple desired states in the LMR space. The conversations focused on enhancing the MSWIN system, including making the system fully TDMA (except for the 40 frequency division multiple access [FDMA] special event channels), increased training and exercises for MSWIN usage, adding more fire departments and every county on the system, using Wi-Fi or long-term evolution (LTE) radios on the MSWIN system, and creating the ability to text through the system. Participants also discussed developing a cost benefit analysis on owning and leasing MSWIN towers.

### 911

Mississippi has 121 PSAPs across its 82 counties. There is no statewide 911 commission, and the WCC is not involved in 911 governance. The WCC will continue to support NG911 implementation statewide within the scope of WCC authority.

### Broadband

Mississippi opted into FirstNet in 2017. In 2022, the state created the Broadband Expansion Accessibility of Mississippi (BEAM) Office under the Department of Finance and Administration.

LTE radios will work on the MSWIN system, and Motorola APX NEXT radios have been approved to be on the system. The WCC has not formally recommended a specific PTT application to use with MSWIN, however it is currently working with a vendor to create an in-house PTT application. Mississippi aims to have more knowledge of broadband technologies at the responder level, as well as to increase information sharing on different FirstNet plans.

### Alerts and Warnings

In Mississippi, local agencies have different opt-in alerting systems. At the state level, the Department of Public Safety issues Silver/American's Missing: Broadcast Emergency Response (AMBER) Alerts, with the Mississippi Emergency Management Agency (MEMA) serving as the backup. Messages can originate from the Governor or designated representative in the State

Emergency Operations Center (SEOC) through the State Relay Network. A handful of agencies are authorized to send alerts through the Federal Emergency Management Agency (FEMA) Integrated Public Alert and Warning System (IPAWS).

The state looks to enhance IPAWS usage, including getting out information to local responders about IPAWS, more training on how to use IPAWS, and getting more agencies authorized to use IPAWS. Participants at the SCIP workshop also discussed the desired to send alerts and warnings through MSWIN.

## Cybersecurity

The Mississippi Department of Information Technology Services (ITS) provides coordinated oversight of the cybersecurity efforts across all state agencies. ITS sends out regular communication on cybersecurity threats and resources, and has representation on the WCC. The WCC strongly recommends the Advanced Encryption Standard (AES) for radios on MSWIN system. The state has also requested a Technical Assistance (TA) offering for a cybersecurity assessment of MSWIN system, which looks to kick-off in 2023.

During the SCIP workshop, participants identified increasing cybersecurity training and awareness at the local and state level and setting statewide cybersecurity standards as priorities for cybersecurity.

Technology and cybersecurity goals and objectives include the following:

Technology and Cybersecurity	
Goal	Objectives
<b>5. Maintain and enhance operable and interoperable resilient mission critical voice and data capabilities across the state</b>	5.1 Create a working group to update and disseminate suggested guidelines on when and how to use interoperable channels
	5.2 Identify funding to install an 800 and 700 mutual aid repeater on MSWIN sites
	5.3 Provide a template for locals to establish an ordinance for Bi-Directional Amplifiers (BDAs)
	5.4 Conduct a cost benefit analysis of owning vs. leasing MSWIN Towers
	5.5 Survey all 82 county fire coordinators to develop a list of interoperable communications needs
<b>6. Increase broadband capabilities of MSWIN system</b>	6.1 Analyze and test different push to talk and mobile messaging capabilities to recommend a specific option
<b>7. Enhance alerts and warnings capabilities across the state</b>	7.1 Educate the end users on the capability of MSWIN radios to receive voice and text communications
	7.2 Identify capability for IPAWS awareness training
<b>8. Increase cybersecurity awareness and resiliency</b>	8.1 Create a cybersecurity working group within the WCC in coordination with other state agencies in order to create a cybersecurity plan
	8.2 Complete cybersecurity assessment of MSWIN system
	8.3 Coordinate and conduct cybersecurity awareness training
	8.4 Conduct cybersecurity tabletop exercise to create cybersecurity best practices

## FUNDING

Mississippi identified funding as a challenge, specifically local level funding. In addition, software licensing costs are rising at a rapid rate. It is hard for Mississippi, especially at the local level, to keep up with the increasing costs. The cost of equipment and equipment maintenance are also rapidly increasing.

To combat the challenges identified above, Mississippi has determined it needs to develop a priority list of what to upgrade with the funds that they have available. It is unlikely that there will be enough money to upgrade all of the desired technology, so a priority list will greatly aid the state in using the available funds in the most efficient way. Another need identified during the SCIP workshop was the education of legislators on emergency communications funding needs. As previously mentioned, technology-related expenses are rapidly increasing. Having legislators understand why funding needs are increasing could help the Mississippi WCC have more funds available to them.

Funding goals and objectives include the following:

Funding	
Goal	Objectives
9. Increase sustainable funding for equipment upgrades, maintenance, and emerging technologies	9.1 Develop and update sustainable funding plan with a priority list for what to upgrade
	9.2 Educate legislators on costs of equipment/technologies
	9.3 Increase communication with Mississippi first responder caucus

## 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.

Based on the discussions during the SCIP Workshop, CISA recommends the following TAs to support Mississippi's SCIP goals:

- TICP Development/Implementation Workshop
- TIC-FOG Development/Update
- 911/PSAP/LMR Cyber Awareness
- 911/PSAP/LMR Cyber Assessment

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

Goals	Objectives	Owners	Completion Date
<b>1. Conduct outreach and education across various levels of government</b>	1.1 Update WCC website	WCC admin staff	Ongoing (quarterly starting Jan 2023)
	1.2 Identify meetings/conferences across the state for WCC commissioner and staff to attend	WCC staff and commissioners	Ongoing (annually starting Jan 2023)
	1.3 Include information about MSWIN system on the WCC website and in trainings/exercises	WCC admin staff/SWIC	Ongoing (quarterly starting Jan 2023)
	1.4 Include information about available trainings and exercises on the WCC website	WCC admin staff	Ongoing (quarterly starting Jan 2023)
<b>2. Reinvigorate the WCC membership and conduct membership education</b>	2.1 Create formalized onboarding process for new commissioners including: <ul style="list-style-type: none"> <li>a) Bios and photos of commissioners</li> <li>b) White paper on the history of the WCC and MSWIN</li> <li>c) WCC bylaws/rules and regulations</li> <li>d) Expectations, roles, and responsibilities of commissioners</li> </ul>	WCC staff and commissioners	Q2 2023
	2.2 Invite more speakers at WCC meetings to talk about MSWIN successes	WCC staff and commissioners	Q1 2023
	2.3 Encourage commissioners to take part in training and exercises	WCC chairman	Ongoing

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

Goals	Objectives	Owners	Completion Date
	2.4 Create a training and exercises working group on the WCC	WCC chairman	Q2 2023
3. Conduct a regular review of statewide emergency communications policies and procedures	3.1 Create a TICP/FOG working group within the WCC that includes state, local, tribal, and federal stakeholders	WCC Governance and Interoperability Committee	Q4 2023
4. Increase WCC staff from 5 to 10 people	4.1 Recruit and advertise open WCC staff positions	WCC Executive Director	June 2023
5. Maintain and enhance operable and interoperable resilient mission critical voice and data capabilities across the state	5.1 Create a working group to update and disseminate suggested guidelines on when and how to use interoperable channels	SWIC/WCC staff	Q2 2023
	5.2 Identify funding to install and 800 and 700 mutual aid repeater on MSWIN sites	WCC staff	Q4 2024
	5.3 Provide a template for locals to establish an ordinance for Bi-Directional Amplifiers (BDAs)	WCC technical staff	Q3 2023
	5.4 Conduct a cost benefit analysis of owning vs. leasing MSWIN towers	WCC admin staff	Q4 2024
	5.5 Survey all 82 county fire coordinators to develop a list of interoperable communications needs	SWIC/WCC admin staff	Q4 2023
6. Increase broadband capabilities of MSWIN system	6.1 Analyze and test different push to talk and mobile messaging capabilities to recommend a specific option	WCC Emerging Technologies Ad-Hoc Committee	Q4 2023
7. Enhance alerts and warnings capabilities across the state	7.1 Educate the end users on the capability of MSWIN radios to receive voice and text communications	WCC technical staff	Ongoing
	7.2 Identify capability for IPAWS awareness training	MEMA/SWIC	Q4 2025
8. Increase cybersecurity awareness and resiliency	8.1 Create a cybersecurity working group within the WCC in coordination with other state agencies to create a cybersecurity plan	WCC chairman and technical staff	Q3 2023
	8.2 Complete cybersecurity assessment of MSWIN system	WCC chairman, technical staff, and CISA	Q4 2023
	8.3 Coordinate and conduct cybersecurity awareness training	WCC chairman, technical staff, and CISA	Q1 2024

Goals	Objectives	Owners	Completion Date
	8.4 Conduct cybersecurity tabletop exercise to create cybersecurity best practices	WCC chairman, technical staff, and CISA	Q2 2024
9. Increase sustainable funding for equipment upgrades, maintenance, and emerging technologies	9.1 Develop and update sustainable funding plan with a priority list for what to upgrade	WCC admin staff, commissioners, and legislative liaisons	Ongoing (annual starting Jan 2023)
	9.2 Educate legislators on costs of equipment/technologies	WCC admin staff, commissioners, and legislative liaisons	Ongoing
	9.3 Increase communication with Mississippi first responder caucus	WCC chairman	Ongoing

## 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 Mississippi’s assessment of their progress against the markers as of June 5, 2023.

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"/> 911 <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 checked="" type="checkbox"/> 911 <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"/> 911 <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, 911, 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
7	<b>Integrated emergency communication grant coordination.</b> Designed to ensure state /	No explicit approach or only informal emergency	SWIC and/or SIGB provides guidance to agencies and	SWIC and/or SIGB provides guidance to agencies and

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
	territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.	communications grant coordination between localities, agencies, SAA and/or the SWIC within a state / territory	localities for emergency communications grant funding but does not review proposals or make recommendations	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><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:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> COML</li> <li><input checked="" type="checkbox"/> COMT</li> <li><input type="checkbox"/> ITSL</li> <li><input type="checkbox"/> RADO</li> <li><input checked="" type="checkbox"/> INCM</li> <li><input type="checkbox"/> INTD</li> <li><input type="checkbox"/> AUXCOM</li> <li><input type="checkbox"/> TERT</li> </ul>	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	<p><b>Alerts &amp; Warnings.</b> State or Territory has Implemented an effective A&amp;W program to include Policy, Procedures and Protocol measured through the following characteristics:</p> <p>(1) Effective documentation process to inform and control message origination and distribution</p> <p>(2) Coordination of alerting plans and procedures with neighboring jurisdictions</p> <p>(3) Operators and alert originators receive periodic training</p> <p>(4) Message origination, distribution, and correction procedures in place</p>	<p>&lt;49% of originating authorities have all of the four A&amp;W characteristics</p>	<p>&gt;50%&lt;74% of originating authorities have all of the four A&amp;W characteristics</p>	<p>&gt;75%&lt;100% of originating authorities have all of the four A&amp;W characteristics</p>
13	<p><b>Radio programming.</b> Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state / territory.</p>	<p>&lt;49% of radios are programed for interoperability and consistency</p>	<p>&gt;50%&lt;74% of radios are programed for interoperability and consistency</p>	<p>&gt;75%&lt;100% of radios are programed for interoperability and consistency</p>
14	<p><b>Cybersecurity Assessment Awareness.</b> Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 911, and A&amp;W)</p>	<p>Public safety communications network owners are aware of cybersecurity assessment availability and value</p>	<p>Initial plus, conducted assessment, conducted risk assessment. (Check yes or no for each option)</p> <p><input type="checkbox"/> LMR</p> <p><input type="checkbox"/> LTE</p> <p><input type="checkbox"/> 911/CAD</p> <p><input type="checkbox"/> A&amp;W</p>	<p>Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option)</p> <p><input type="checkbox"/> LMR</p> <p><input type="checkbox"/> LTE</p> <p><input type="checkbox"/> 911/CAD</p> <p><input type="checkbox"/> A&amp;W</p>
15	<p><b>NG911 implementation.</b> NG911 implementation underway to serve state / territory population.</p>	<p>Working to establish NG911 governance through state/territorial plan.</p> <ul style="list-style-type: none"> <li>• Developing GIS to be able to support NG911 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 NG911 service offerings.</li> </ul>	<p>More than 75% of PSAPs and Population Served have:</p> <ul style="list-style-type: none"> <li>• NG911 governance established through state/territorial plan.</li> <li>• GIS developed and able to support NG911 call routing.</li> <li>• Planning or implementing ESInet and Next Generation Core Services (NGCS).</li> <li>• PSAP equipment updated to handle basic NG911 service offerings.</li> </ul>	<p>More than 90% of PSAPs and Population Served have:</p> <ul style="list-style-type: none"> <li>• NG911 governance established through state/territorial plan.</li> <li>• GIS developed and supporting NG911 call routing.</li> <li>• Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS).</li> <li>• PSAP equipment updated and handling basic NG911 service offerings.</li> </ul>

Marker	Best Practices / Performance Markers	Initial	Defined	Optimized
16	<p><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:</p> <ul style="list-style-type: none"> <li>- CAD to CAD</li> <li>- Chat</li> <li>- GIS</li> <li>- Critical Incident Management Tool (- Web EOC)</li> </ul>	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	<p><b>Future Technology/Organizational Learning.</b> SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> LMR to LTE Integration</li> <li><input checked="" type="checkbox"/> 5G</li> <li><input checked="" type="checkbox"/> IoT (cameras)</li> <li><input checked="" type="checkbox"/> UAV (Smart Vehicles)</li> <li><input checked="" type="checkbox"/> UAS (Drones)</li> <li><input type="checkbox"/> Body Cameras</li> <li><input type="checkbox"/> Public Alerting Software</li> <li><input type="checkbox"/> Sensors</li> <li><input type="checkbox"/> Autonomous Vehicles</li> <li><input type="checkbox"/> MCPTT Apps</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Wearables</li> <li><input type="checkbox"/> Machine Learning/Artificial Intelligence/Analytics</li> <li><input checked="" type="checkbox"/> Geolocation</li> <li><input checked="" type="checkbox"/> GIS</li> <li><input type="checkbox"/> Situational Awareness Apps-common operating picture applications (i.e., Force Tracking, Chat Applications, Common Operations Applications)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> HetNets/Mesh Networks/Software Defined Networks</li> <li><input type="checkbox"/> Acoustic Signaling (Shot Spotter)</li> <li><input checked="" type="checkbox"/> ESInet</li> <li><input type="checkbox"/> 'The Next Narrowbanding'</li> <li><input type="checkbox"/> Smart Cities</li> </ul>
18	<p><b>Communications Exercise objectives.</b> Specific emergency communications objectives are incorporated into applicable exercises Federal / state / territory-wide</p>	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	<p><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.</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	>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	<p><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</p>	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 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	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

## APPENDIX B: ACRONYMS

Acronym	Definition
AAR	After-Action Report
AES	Advanced Encryption Standard
AMBER	American's Missing: Broadcast Emergency Response
AUXCOMM/AUXC	Auxiliary Emergency Communications
A&W	Alerts and Warnings
BEAM	Broadband Expansion Accessibility of Mississippi
BDA	Bi-Directional Amplifier
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
FEMA	Federal Emergency Management Agency
FDMA	Frequency Division Multiple Access
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 Alert and Warning System
ITS	Department of Information Technology Services
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
LTE	Long-Term Evolution
MEMA	Mississippi Emergency Management Agency
MHz	Megahertz
MOU	Memorandum of Understanding
MSWIN	Mississippi Wireless Information Network
NCSWIC	National Council of Statewide Interoperability Coordinators
NECP	National Emergency Communications Plan
NG911	Next Generation 911
PSAP	Public Safety Answering Point
PTT	Push-To-Talk

Acronym	Definition
P25	Project 25
RADO	Radio Operator
SCIP	Statewide Communication Interoperability Plan
SEOC	State Emergency Operations Center
SOP	Standard Operating Procedure
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TDMA	Time-Division Multiple Access
TERT	Telecommunications Emergency Response Team
TICP	Tactical Interoperable Communications Plan
WCC	Wireless Communications Commission
WPS	Wireless Priority Service