Operational Guide for the Interoperability Continuum
Lessons Learned from RapidCom

Homeland Security

SAFECOM

Operational Guide for the Interoperability Continuum

Lessons Learned from RapidCom

RapidCom Overview and Summary

September 30, 2004 marked the official completion of the Rapid Emergency-Level Interim Communications Interoperability (RapidCom) initiative. The Department of Homeland Security (DHS) launched this initiative to strengthen incident commanders' ability to adequately communicate with each other and their respective command centers within one hour of a major incident.

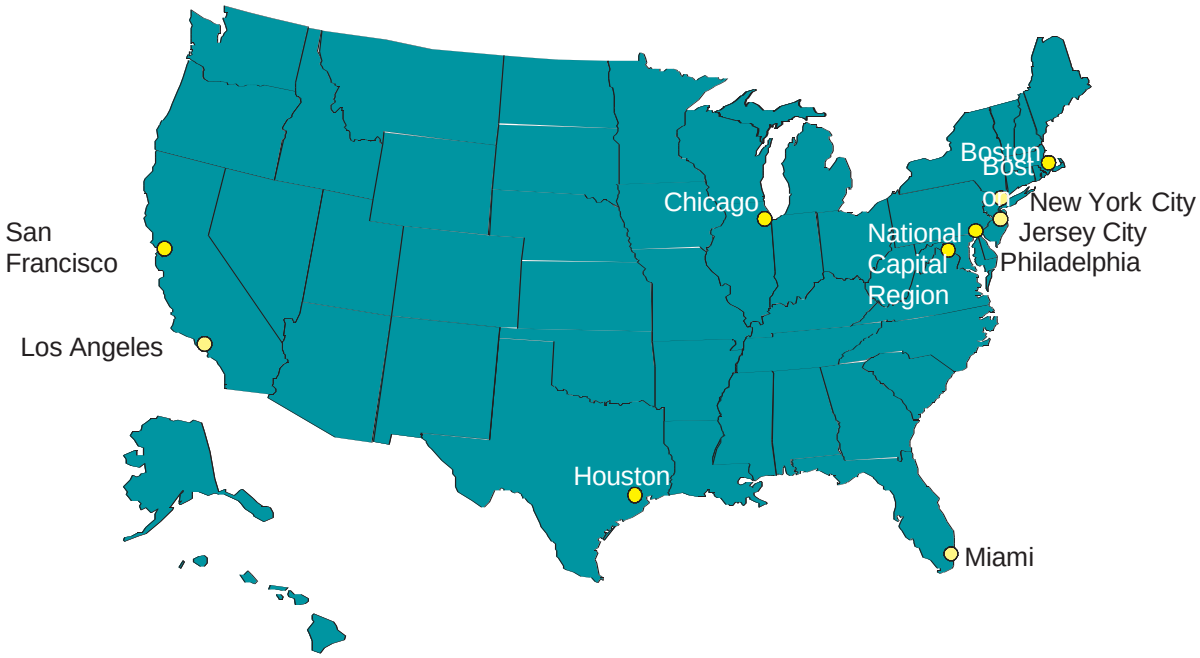
This report summarizes the key information collected throughout the RapidCom initiative and the RapidCom Urban Area Summit held on October 27th and 28th, in Washington DC. At the Urban Area Summit, public safety practitioners and leaders from the ten RapidCom urban areas along with key stakeholders from the local, state, and federal levels convened to share best practices, lessons learned, and other experiences gained from planning and implementing communications interoperability solutions. The purpose of this report is to share the valuable information learned from the representatives of the public safety community that participated in RapidCom and to provide a framework for communities and regions to use in their communications interoperability planning efforts.

RapidCom Background

In May 2004, DHS Secretary Tom Ridge announced the launch of RapidCom, an initiative to help improve capabilities for immediate, incident-level, interoperable emergency communications in ten high-threat urban areas. RapidCom's main objective was to provide assistance to incident commanders in each of these areas in order to improve their abilities to adequately communicate with each other and their respective command center within one hour of a major incident.

The DHS Office for Interoperability and Compatibility (OIC), housed within the Science and Technology (S&T) Directorate's Office of Systems Engineering and Development (SED) through SAFECOM, led this effort. SAFECOM worked in cooperation with federal partners such as the DHS Office for Domestic Preparedness (ODP), Department of Justice (DOJ) 25 Cities program, and National Institute of Justice (NIJ) CommTech program, in the following urban areas-

- Boston, Massachusetts
- Chicago, Illinois
- Houston, Texas
- Jersey City, New Jersey
- Los Angeles, California
- Miami, Florida
- National Capital Region
- New York, New York
- Philadelphia, Pennsylvania
- San Francisco, California



SAFECOM, a public safety practitioner-driven program, works to improve public safety response through more effective, efficient interoperable wireless communications. This practitioner-driven philosophy is rooted in the work accomplished by the National Task Force on Interoperability (NTFI). This task force was formed to ensure cooperation among all levels of government to improve public safety response through interoperable wireless communications.

RapidCom Assistance and Support

Consistent with this practitioner-driven philosophy, RapidCom's efforts in each urban area were driven by the local public safety community. RapidCom assembled teams of federal partners and public safety subject matter experts to meet with public safety communications leaders in each of the ten areas to assess needs, establish objectives, identify solutions, and take steps toward implementation. The initial meetings revealed issues consistent with the NTFI findings, such as incompatibility of equipment, the need for a governance structure, and the lack of planning and coordination.

RapidCom provided a variety of assistance and support activities to address the individual needs of each urban area, including-

- Conducting assessments and validations of current interoperability systems,
- Facilitating meetings in support of urban area working groups and governing bodies,
- Designing, planning, and delivering communications tabletop exercises,
- Developing interoperability guides,
- Offering comparative analyses of interoperable communications equipment, and
- Providing training materials and documentation.

While RapidCom was designed as a short-term initiative, several of the participating urban areas have already identified long-term opportunities to build upon RapidCom successes and continue improving incident-level interoperable communications.

RapidCom Key Findings and Responses

Although each of the RapidCom urban areas' needs varied based on the unique characteristics of the communities; common themes emerged throughout the initiative. To address these key findings and common themes, the RapidCom team responded with the following solutions.

Finding #1

RapidCom urban area participants were overwhelmed by disparate federal programs offering a variety of uncoordinated assistance activities.

Response

Federal Program Cooperation/Coordination: RapidCom formed alliances with federal partners to build on and leverage existing federal programs already operating in each urban area. This list includes, but is not limited to:

- Department of Homeland Security (DHS)
  - Office for Interoperability and Compatibility (OIC)/SAFECOM
  - Office for Domestic Preparedness (ODP)/Interoperable Communications Technical Assistance Program (ICTAP)
  - Wireless Management Office (WMO)
- Department of Justice (DOJ)
  - Wireless Management Office 25 Cities program
  - Community Oriented Policing Services (COPS) grant program
  - National Institute of Justice (NIJ)/CommTech
- National Guard Bureau (NGB) Civil Support Teams

Finding #2

RapidCom urban areas had procured equipment that was not yet fully operational. For example, one area procured a gateway solution and neglected to put the proper procedures and protocols in place. As a result, first responders did not know how to properly use the equipment. Additionally, urban areas were looking to broaden awareness of current communications capabilities and planning tools to help make their equipment operational.

Response

Comprehensive Operational Focus: RapidCom worked with urban areas to encourage a shift from a technology-centric approach to a comprehensive focus on all critical elements for planning and implementing an interoperability solution. This work included efforts such as:

- Coordinating and executing several communications interoperability-focused tabletop exercises that involved role playing from the technical, operational, and dispatcher perspectives across jurisdictions and disciplines,
- Attending a full, operational action training exercise to evaluate the communications interoperability components and deliver an after action report with collaborative procedural and training-related recommendations,
- Assisting with the documentation of standard operating policies and procedures that will encourage the use of existing technology, and
- Developing quick reference interoperability pocket guides for field responders.

Tools for Planning and Broadening Awareness: RapidCom developed several tools during the course of the initiative for use by the public safety community.

- Interoperability Continuum: Designed to help the public safety community and local, tribal, state, and federal policy-makers account for and address all the critical elements for success as they plan and implement interoperability solutions.
- Communications Tabletop Exercise Methodology: Developed a process for a communications-focused tabletop exercise that is replicable across urban areas. SAFECOM is using this process as a basis for a methodology that can be used by urban areas and regions nationwide.
- Tabletop Exercise After Action Report: Created a template for capturing key findings and identifying gaps following each tabletop exercise, driven by observations collected from the technical observers and participants following each tabletop exercise. This report template can be coupled with the tabletop methodology to document findings and actionable recommendations.
- Interoperability Pocket Guide: Crafted a process for creating an area-specific interoperability pocket guide to ensure local public safety officials are aware of current capabilities that exist in their areas. SAFECOM will make this template available for use by urban areas nationwide.

Finding #3

RapidCom urban area participants were interested in making more informed decisions through exchanging lessons learned and best practices with representatives from other urban areas.

Response

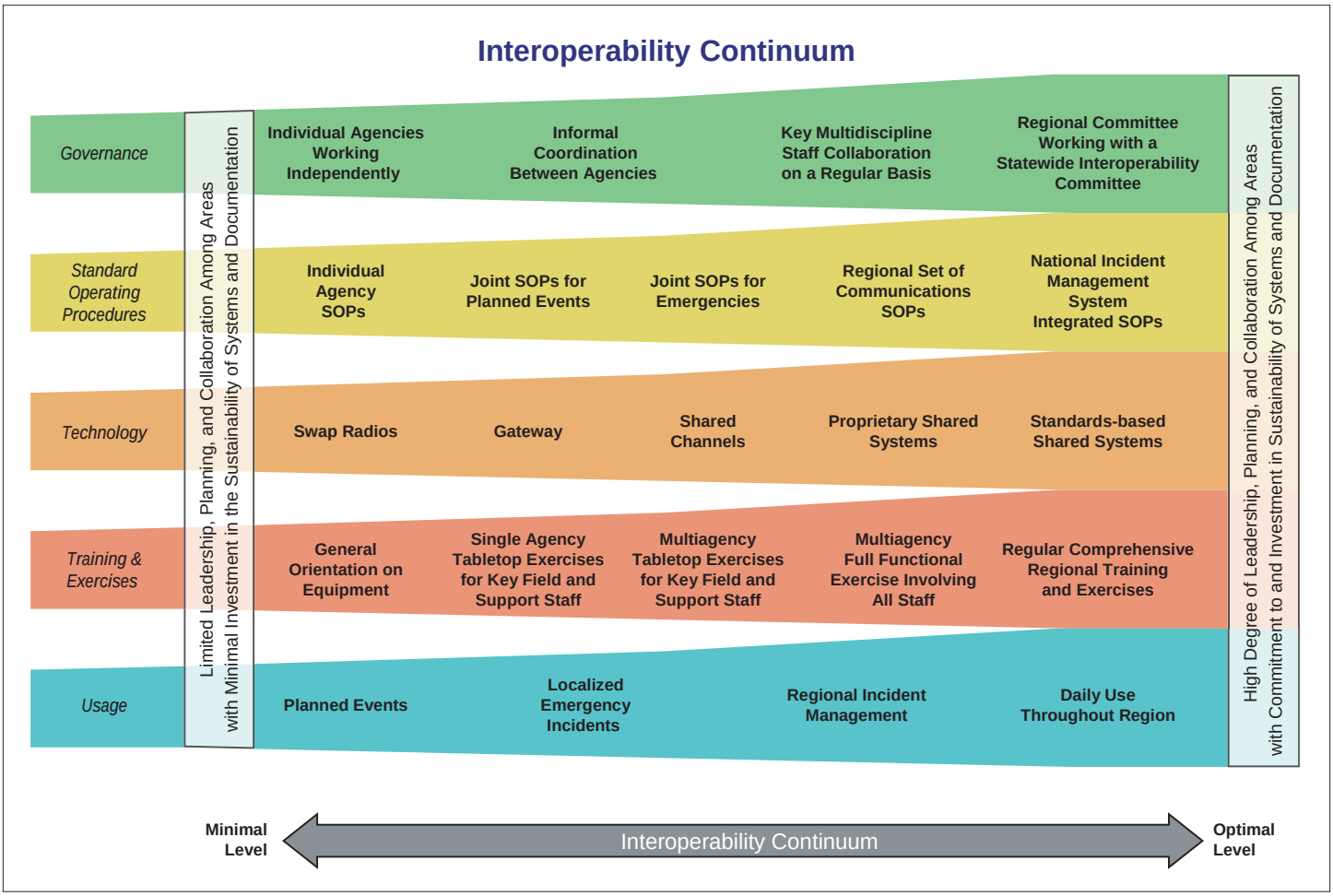
Urban Area Summit: During the course of the RapidCom initiative, urban area representatives expressed interest in having an opportunity to share experiences and lessons learned. An Urban Area Summit was designed for the public safety practitioners and leaders from the ten RapidCom urban areas, along with key stakeholders from the local, state, and federal level to:

- Share success stories, best practices, and lessons learned,
- Discuss and identify key initiatives to address each success factor on the Interoperability Continuum, and
- Create urban area plans for improving public safety communications interoperability.

Operational Guide for the Interoperability Continuum: Create a tool that summarizes the key information collected throughout the RapidCom initiative and the RapidCom Urban Area Summit held on October 27th-28th 2004, in Washington DC and provide a framework for communities and regions to use in their communications interoperability planning efforts.

The Interoperability Continuum

With input from the local public safety communities, RapidCom developed the Interoperability Continuum, a framework that graphically depicts the five critical elements of interoperability success - governance, standard operating procedures, technology, training/exercises, and usage of interoperable communications. These critical elements must be addressed to develop robust interoperability solutions. RapidCom used this framework to encourage a shift from a technology-centric focus to a comprehensive operational focus on the key interoperability success factors.



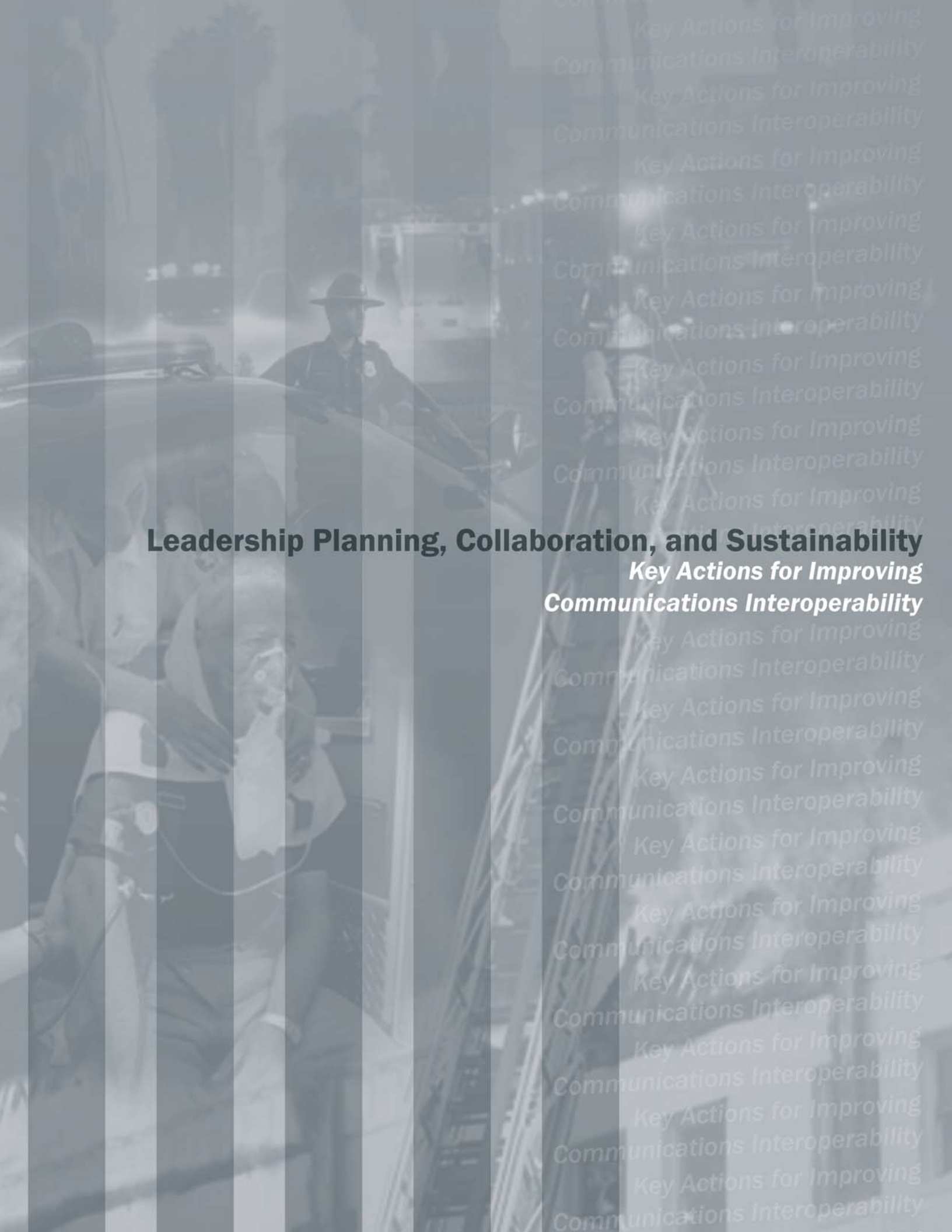
The Interoperability Continuum is a tool that communities, regions, and states can use to assess their current level of interoperability and to determine what elements need further development.

Making progress in all aspects of interoperability is essential, since the elements are interdependent. Therefore, to gain a true picture of a region's interoperability, progress along all five elements of the continuum must be considered together. For example, when a region procures new equipment, that region should plan training and conduct exercises to learn how to make the best use of that equipment.

This guide outlines the importance of each element of the Interoperability Continuum, provides common challenges to consider when working towards improved interoperability, and recommends key actions to increase an area's capabilities. The first section emphasizes the importance of leadership, planning, collaboration, and sustainability - essential cross-cutting issues that come into play regardless of which element of the continuum is being address. The sections that

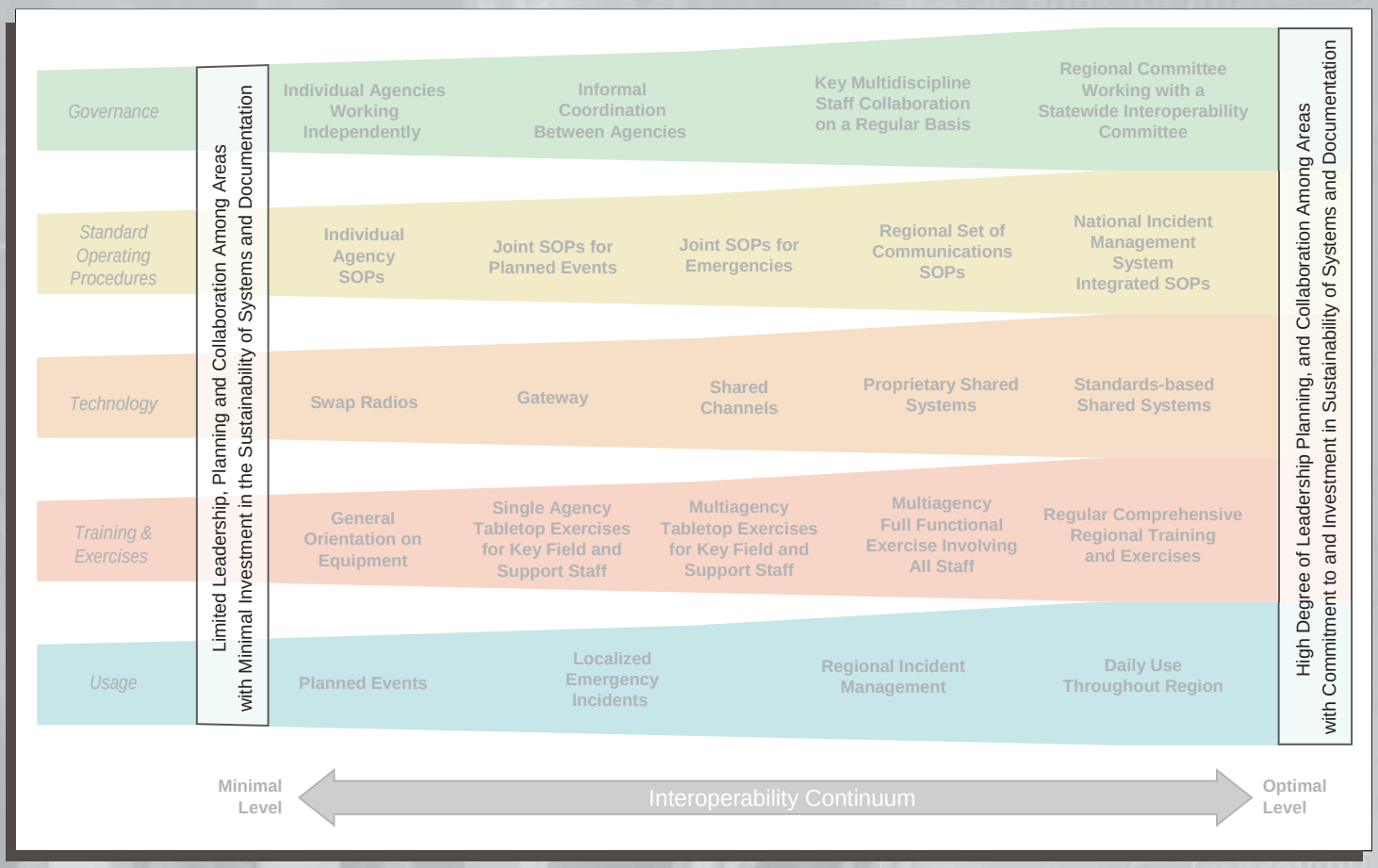
follow provide common challenges and key actions for the five elements of the Continuum: governance, standard operating procedures, technology, training/exercises, and usage of interoperable communications.

Without adaptation, the specific insights and lessons learned within this guide may not necessarily apply to other locations, such as rural areas, since they were collected mainly from urban areas during the RapidCom initiative. The broad principles outlined, however, should apply in every case. The SAFECOM Program is releasing this version of the "Operational Guide for the Interoperability Continuum" as the first iteration. This guide will continue to be updated based on input received from the public safety practitioner community as well as other initiatives the program may implement in other regions.



Leadership Planning, Collaboration, and Sustainability

Key Actions for Improving Communications Interoperability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Multiagency Tabletop Exercises for Key Field and Support Staff
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Planned Events
Localized Emergency Incidents
Regional Incident Management
Daily Use Throughout Region
High Degree of Leadership Planning, and Collaboration Among Areas with Commitment to and Investment in Sustainability of Systems and Documentation
Minimal Level
Interoperability Continuum
Optimal Level

Leadership, Planning, Collaboration, and Sustainability

The Importance of Leadership, Planning, Collaboration, and Sustainability for Communications Interoperability

The Interoperability Continuum is designed to help the public safety community and local, tribal, state, and federal policy-makers address critical elements for success as they plan and implement interoperability solutions. These elements include governance, standard operating procedures, technology, training/exercises, and usage of communications interoperability.

Making progress in all aspects of the Continuum is essential, since the elements are interdependent. Therefore, to gain a true picture of a region's interoperability, progress along all five elements of the Continuum must be considered together. For example, when a region procures new equipment, that region should plan training and conduct exercises to make the best use of that equipment.

In addition to progression along the five elements of the Continuum, regions should focus on planning, education and outreach, and maintaining an awareness of the specific issues and barriers that affect a particular area's movement towards increased interoperability. For example, many regions face difficulties related to political issues and the relationships within and across jurisdictions and disciplines (e.g., EMS, Fire, Law Enforcement). Leadership can help to work through these challenging internal and jurisdictional conflicts as well as set the stage for a region's commitment to the interoperability effort. Additionally, leaders must be willing to commit the time and resources necessary to ensure the success of any interoperability effort. For example, ongoing maintenance and support of the system must be planned for and incorporated into the budget.

Communications interoperability is an ongoing process, not a one-time investment. Once a governing body is set up, it must be prepared to meet on a regular basis, drawing on operational and technical expertise to plan and budget for continual updates for systems, procedures, and training and exercise programs. If regions expect first responders to use interoperable equipment on a daily basis, supporting documentation and the installed technology must be well-maintained with a long-term commitment to upgrades and the eventual replacement of equipment.

Lastly, an interoperability plan should include both short- and long-term solutions. Early successes can help motivate regions to tackle more time-consuming and difficult challenges. It is critical, however, that long-term objectives drive the planning process and short-term solutions function in support of incrementally achieving sustainable long-term solutions.

Questions to Consider

① What is the current state of communications interoperability in your area/region? How collaborative is the process and have all local, regional, state, and federal stakeholders been incorporated?

② What is the ideal future state of communications interoperability in your area/region?

Leadership, Planning, Collaboration, and Sustainability Key Challenges

The following challenges represent a variety of cross-cutting issues that communities face when attempting to improve communications interoperability across the region and/or state.

- High-level leadership often does not understand the importance of communications interoperability and therefore do not obligate appropriate time and resources.
- Regions face difficulties related to political issues and the relationships within and across jurisdictions and disciplines.
- Policy makers often do not prioritize interoperability when responding to constituent needs.
- There is no effective funding model to maintain and operate current solutions, train staff, and continue to increase communications interoperability for the future.
- Technicians and operations staff typically work independent of each other.

Questions to Consider

① What challenges does your area/region face with communications interoperability?

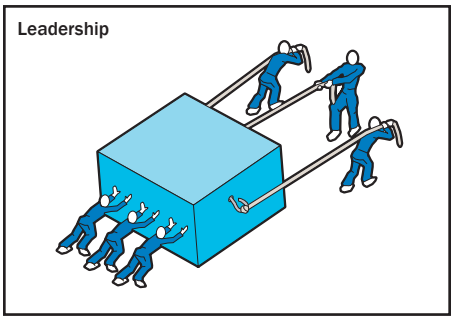
② What are you currently doing to overcome these challenges?

③ What else can be done to overcome these challenges?

④ What resources are required to overcome these challenges?

Key Actions to Support Communications Interoperability Efforts Across All Elements of the Interoperability Continuum

The key actions outlined below support progress along all elements of the Continuum and should be considered throughout the planning, development, and implementation process for communications interoperability initiatives, regardless of where the area/region is positioned on the Interoperability Continuum.



Key Action #1

Gain Leadership Commitment From All Disciplines

Supporting Ideas

☑ Establish key relationships with high-level representatives who have decision-making authority from various local, state, and federal agencies as well as associations.

☑ Educate key stakeholder organizations to help them understand the importance of the issue.

☑ Create a memorandum of understanding (MOU) between participating local, tribal, state, and federal agencies, and the governing body to establish a formal agreement that all participating groups will conform to the governing body's policies and procedures.

Key Action #2

Foster Collaboration Across Disciplines and Levels of Government

Supporting Ideas

- ☑ Establish a liaison process to link local regions with federal programs, initiatives, and standards.
- ☑ Provide opportunities for job shadowing across disciplines and jurisdictions.
- ☑ Seek informal opportunities to engage in discussions across disciplines and jurisdictions.

Key Action #3

Partner with Policy Makers to Gain Leadership Commitment and Resource Support

Supporting Ideas

- ☑ Gain support from leadership and practitioners for the overall emergency planning process.
- ☑ Gain authority to commit the community resources.
- ☑ Gain policy guidance and decision-making capabilities.
- ☑ Use the results of national and local interoperability baseline studies to educate policy-makers and elected officials regarding the state's interoperability needs in comparison to the national average.
- ☑ Establish relationships with local administrations and elected officials (e.g. mayors, council members, and governors) to educate them on the importance of committing resources to sustaining systems, procedures, and training.

Key Action #4

Plan and Budget for Ongoing Updates to Systems, Procedures, and Documentation

Supporting Ideas

- ☑ Identify additional sources of funding for communications interoperability initiatives and ensure money that has already been allocated is being spent according to practitioner-developed plans.
- ☑ Maintain an inventory of equipment, lifespan, maintenance and support policies, and migration plans.
- ☑ Present a unified front to vendors for buying decisions based on the established plan for replacing equipment in an organized fashion.
- ☑ Coordinate vendor demonstrations to stay educated and aware of new technologies.
- ☑ Consider communications interoperability as an ongoing investment when engaging in planning and budgeting activities.
- ☑ Charter a Sustainability Subcommittee within the larger interoperability governance body to meet regularly and concentrate on planning and budgeting for continual updates to systems, procedures, and training and exercise programs.

Key Action #5

Ensure Collaboration and Coordination Across all Continuum Elements

Supporting Ideas

- ☑ Recognize the interdependency of all elements along the Continuum and understand the interrelationships of key initiatives.
- ☑ Encourage training staff to work with technology owners as well as SOPs and training development staff to ensure new technology and procedures are incorporated into curricula on a regular basis.
- ☑ Encourage SOPs development staff to work with technology practitioners to ensure procedures are up-to-date.
- ☑ Ensure standing working groups are created with representation from all elements of the Continuum.

Questions to Consider

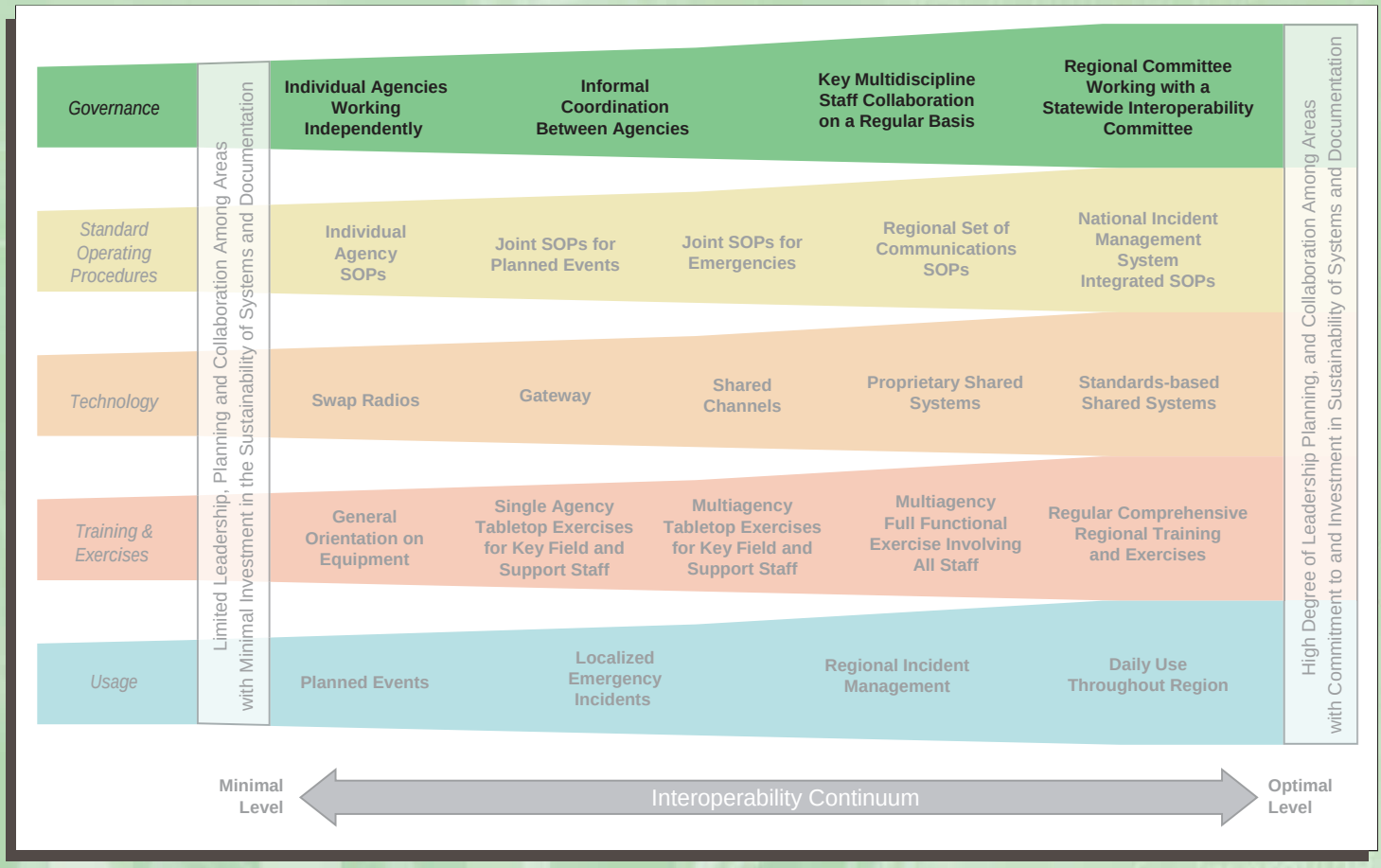
① What are the top 3-5 key initiatives that focus on gaining leadership support and improving planning, collaboration, and sustainability of communications interoperability solutions in your area/region?

② What are specific goals your area/region can set toward achieving the initiatives that allow for progression along all elements of the Continuum? How will your area/region measure progress and performance against those initiatives?

③ What does success look like for Leadership, Planning, Collaboration, and Sustainability in your area/region?

Governance

Key Actions for Improving Communications Interoperability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Governance

The Importance of Governance for Communications Interoperability

Governance refers to establishing a shared vision and an effective organizational structure to support any project or initiative that seeks to solve interoperability issues by providing guidance and support through common policies, processes, and procedures. Establishing a common governance structure will improve communication, coordination, and cooperation across the regions and disciplines that are essential in achieving an acceptable level of communications interoperability.

A governing body should consist of local, tribal, state, and federal entities, as well as representatives from all pertinent public safety disciplines within an identified region. This will vary from area to area. The following describes the points of progression along the Governance element of the Continuum. Communities can use these as reference points for evaluating their current state of interoperability and gauge improvement over time.

Governance Model Description

Individual Agencies Working Independently - No coordination among agencies responding to an incident requiring multiple agency support.

Informal Coordination Between Agencies - Loose line level or agency agreements that provide minimal incident interoperability.

Key Multidiscipline Staff Collaboration on a Regular Basis - A number of agencies and disciplines working together in a local area to promote interoperability.

Regional Committee Working with a Statewide a Interoperability Committee - Multidisciplinary agencies working together across a region pursuant to formal written agreements as defined within the larger scope of a state plan. Such an arrangement promotes optimal interoperability.

Questions to Consider

① What is the current governance structure for improving communications interoperability in your area/region?

② Where is your area/region positioned on the Governance element of the Interoperability Continuum?

③ What is your vision of the ideal future state of a governance structure that improves communications interoperability in your area/region?

④ Where should your area/region be positioned on the Governance element of the Interoperability Continuum (recognizing that staying in the current state may be acceptable for some areas/regions)?

⑤ Who are the key groups, functions, and stakeholders that need to be represented?

Governance Key Challenges

For any area/region to improve communications interoperability, collaboration and participation of pertinent public safety stakeholders in a governing body is essential. Governance structures provide the framework in which stakeholders can begin collaborating and making decisions that represent a common objective. However, establishing a formal governance structure that improves communica-

tions and interoperability can be a challenging process. It is common for an area/region to face significant difficulties when attempting to form a governing body while at the same time operating in a "business as usual" mode.

The following challenges have been commonly experienced and should be considered when working towards formalizing an interoperability governance structure in your area/region.

- Independent disciplines and jurisdictions have difficulty giving up authority in favor of a regional governing body.
- Current way of doing business supports independent decision-making rather than a shared decision-making process fostered by a well-designed governing body.
- Failure to consider key design elements for the governance structure can result in delays, inefficiencies, and sub-optimal decisions and solutions.
- Governing body membership is often not representative of all agencies, disciplines, and jurisdictions involved in a regional response.
- Few standard criteria or models have been established to help communities create a successful governance model.
- Policy makers are not aligned with the needs for a region's interoperability requirements and therefore do not commit the resources required.

Questions to Consider

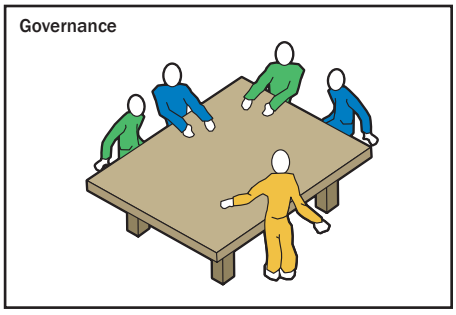
① What challenges has your area/region faced when organizing a formal governance structure that seeks to improve communications interoperability?

② What are you currently doing to overcome these challenges?

③ What else can be done to overcome these challenges?

④ What resources are required to overcome these challenges?

Key Actions for Developing and Maintaining a Governance Model



Establishing a governing body is critical for successfully addressing the key challenges associated with achieving interoperable communications. The key actions provided below can be used for those areas/regions that are in the beginning stages of forming a governance model and for those who are seeking to advance their governing body. A formalized governance structure provides a unified front across multiple jurisdictions and disciplines within a particular political constituency, which can aid the funding, effectiveness, and overall support for communications interoperability.

Key Action #1

Identify Key Players to Participate in Governing Body

Supporting Ideas

☑ Elect a leader who is familiar with interagency communication needs and technology, is respected in the community, and can serve as an agent for change.

☑ Assign authority and accountability to the leader for achieving the desired communications interoperability goal.

- ☑ Create a comprehensive list of all potential stakeholder agencies and ensure participation is representative of local, tribal, state, and federal entities.
- ☑ Governing body members should have the authority to make decisions on behalf of their agencies to gain access to and authority over funding resources as a grantee or budget owner.
- ☑ Membership should include representation from management/policy, operations, and technology sectors.
- ☑ Drive all efforts at the local level. Ensure the governing body has an appropriate level of local practitioner membership and voice.

Key Action #2

Develop a Clear Charter

Supporting Ideas

- ☑ Create a shared mission statement based on recognized needs that clearly states the group's purpose, authority, desired outcomes, operating principles, and management.
- ☑ Be clear on the scope of the group's effort, and understand what is within its scope/mission (i.e. statewide or regional, etc).
- ☑ Coordinate with existing efforts across the community, region, state, and federal level to leverage knowledge, resources, and best practices to ensure full collaboration, buy-in, and support.

Key Action #3

Establish and Run Governing Body

Supporting Ideas

- ☑ Organize the governance structure to reflect core functions (management, operations, and technical) and create working groups to support critical elements identified in the Interoperability Continuum.
- ☑ Establish explicit membership roles and responsibilities, a decision-making model, and reporting structure.
- ☑ Delegate authority and encourage collaboration using a leadership model (e.g., co-chair) that provides equal representation of fire and law enforcement agencies.
- ☑ Collaborate across jurisdictions and disciplines to draft acceptable memorandums of understanding (MOUs).
- ☑ Establish formal governance teams whose goal is obtaining formal MOUs among all participating agencies.
- ☑ Define a process for incorporating omitted players into the governance group.
- ☑ Establish a process for reporting and measuring progress as well as revisiting the plan regularly.
- ☑ Establish relationships with local administrators and elected officials (e.g. mayors and governors) to encourage their input and long-term commitment.
- ☑ Establish a regular meeting schedule that is convenient for members. Consider alternating locations if members are spread out geographically.
- ☑ Foster an environment that encourages participants to hang egos and badges at the door.

Key Action #4

Develop an Action Plan

Supporting Ideas

- ☑ Identify key initiatives to improve communications interoperability.
- ☑ Identify players able to implement those key initiatives.
- ☑ Convene an action planning meeting to identify owners and key players and establish a timeline for deliverables.

- ☑ Incorporate a method to measure success of initiatives.
- ☑ Develop a communications and outreach plan to educate and inform key stakeholders, politicians, and practitioners, as well as a process to receive and respond to their input and requests.
- ☑ Inform and educate politicians, stakeholders, and practitioners to gain support and necessary resources for initiatives.
- ☑ Establish a process to identify new funding sources and ensure dollars are being effectively spent.

Key Action #5

Coordinate and Align Statewide Key Initiatives and Goals

Supporting Ideas

- ☑ Conduct a statewide analysis to determine and coordinate key initiatives and goals - achievable in six month, annual, and multi-year plans.
- ☑ Ensure there is an interoperability coordinator responsible for overseeing all initiatives.
- ☑ Task key regional leaders to participate in statewide efforts.
- ☑ Identify factors not addressed by current statewide efforts and target those areas for future initiatives.
- ☑ Develop a coordinated strategy to leverage existing work, while decreasing unnecessary duplication of efforts.
- ☑ Communicate the results/findings to all stakeholders.

Key Action #6

Educate Potential Political Supporters

Supporting Ideas

- ☑ Educate political supporters that prioritizing interoperability solutions is a wise investment decision. Inform them that improvement strategies will build on and leverage existing projects and resources across an area/region in service of improving critical incident response.
- ☑ Approach elected officials with a united front and well-defined issues/missions. Be sure to clearly communicate the real issues at hand, eliminating technical and operational jargon.
- ☑ Remember that effective budgeting is a key issue for elected officials and the public. Properly designed regional solutions are often the most cost-effective solution, while at the same time providing the operational autonomy desired by agency heads with inherent interoperability of a shared system.
- ☑ Ensure constant communication with elected boards and the public through newspaper articles, e-mail, pamphlets, regular briefs, etc.

Questions to Consider

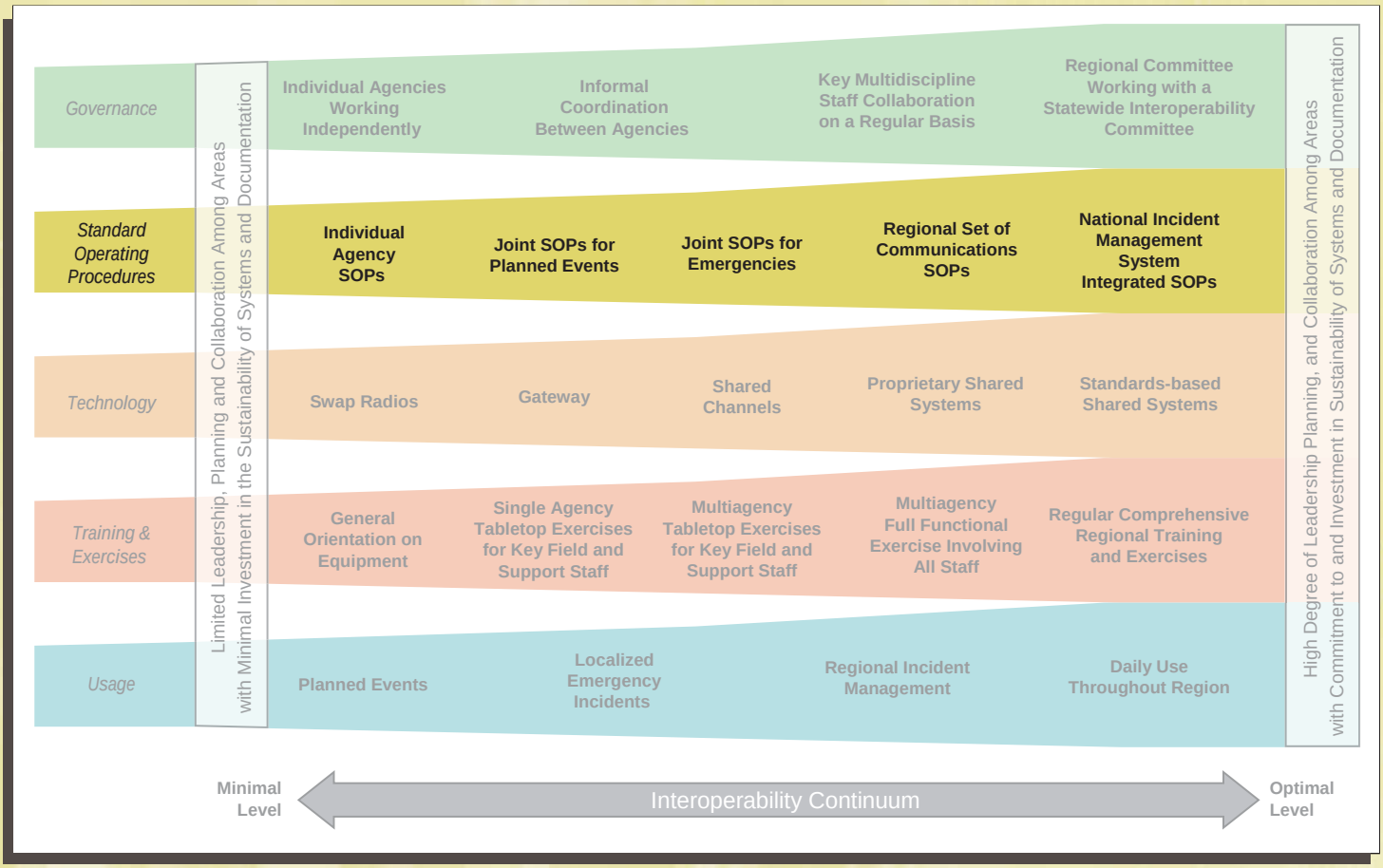
① What are the top 3-5 key initiatives that would help your area/region focus on establishing or advancing a governing body that is responsible for improving communications interoperability?

② What are specific goals your area/region can set toward achieving the initiatives that allow for progression along the governance element of the Continuum? How will your area/region measure progress and performance against those initiatives?

③ What does success look like along the Governance element of the Interoperability Continuum for your area/region?

Standard Operating Procedures

Key Actions for Improving Communications Interoperability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Regular Comprehensive Regional Training and Exercises
Planned Events
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Daily Use Throughout Region
High Degree of Leadership Planning, and Collaboration Among Areas with Commitment to and Investment in Sustainability of Systems and Documentation
Minimal Level
Interoperability Continuum
Optimal Level

Standard Operating Procedures (SOPs)

The Importance of Standard Operating Procedures for Communications Interoperability

Standard operating procedures (SOPs) are formal written guidelines or instructions for incident response. SOPs typically have both operational and technical components and enable first responders to act in a coordinated fashion across disciplines in the event of an emergency. Clear and effective SOPs are essential in the development and deployment of any solution. The following describes the points of progression along the SOPs element of the Continuum for communities to use as a starting point for evaluating their current state of interoperability and gauge improvement over time.

Standard Operating Procedures Model Description

Individual Agency SOPs- Uncoordinated procedures across agencies that can hinder effective multi-discipline/multi-agency response.

Joint SOPs for Planned Events- Development of SOPs for planned events. This typically represents the first phase as agencies begin to work together to develop interoperability.

Joint SOPs for Emergencies - SOPs for emergency-level response that are developed as agencies continue to promote interoperability.

Regional Set of Communications SOPs - Region-wide communications SOPs for multi-agency/multi- discipline/multi-hazard responses; an integral step towards optimal interoperability.

National Incident Management System (NIMS) Integrated SOPs - Regional SOPs molded to conform to the elements of the National Incident Management System.

Questions to Consider

① What is the current state of SOPs that support communications interoperability in your area/region?

② Where is your area/region positioned on the SOPs element of the Interoperability Continuum?

③ What is the ideal future state for SOPs that support communications interoperability in your area/region?

④ Where should your area/region be positioned on the SOPs element of the Interoperability Continuum (recognizing that staying in the current state may be acceptable for some)?

Standard Operating Procedures Key Challenges

SOPs are critical to successful incident response. Implementing a standard set of regional SOPs can be very challenging due to differences in technology, organizational structures, and first responders' overall experience. It is important to address common barriers to the planning and implementation process when developing SOPs that support interoperability.

The following commonly shared challenges were expressed and should be considered when developing SOPs in your area/region.

- Lack of established protocol leads to confusion during incidents.
- First responders are often unaware of established protocol because information has not been disseminated across the region.
- Dedication of time and resources to the development of SOPs is not a priority for regional officials.
- There are no models or templates for regions to reference to ensure all necessary information is included in a successful set of SOPs.
- Failure to address turf issues associated with lead agency/jurisdiction for incidents prior to an incident can lead to an uncoordinated, sub-optimal response.
- Lack of operational SOPs that communications SOPs can be developed around. There is no standard procedure for how two agencies should work together; thus it becomes challenging to define procedures for how they should communicate with each other.

Questions to Consider

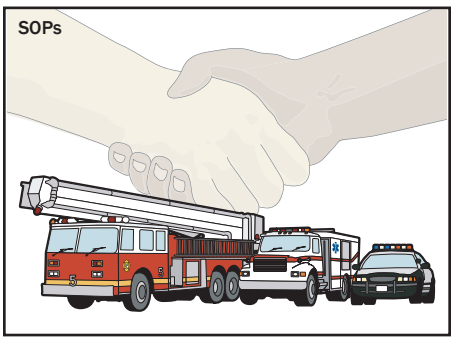
① What challenges does your area/region face when creating SOPs that support communications interoperability?

② What are you currently doing to overcome these challenges?

③ What else can be done to overcome these challenges?

④ What resources are required to address these challenges?

Key Actions for Developing and Maintaining Standard Operating Procedures



Creating SOPs that foster interoperable communications across an area/region is one of the more difficult elements to implement, as it relies heavily on the technology deployed and the current operational environment in place. However, it is one of the first areas where immediate improvements can be made without making a large financial investment. The following are key actions that facilitate the development and implementation of SOPs across an area and/or region.

Key Action #1

Supporting Ideas

Assemble a SOPs Committee

- ☑ Leverage existing regional governance body, comprised of practitioners and regional representatives, and create a subcommittee to address communications SOPs (this is a required first step before other initiatives around SOPs can take place).
- ☑ Determine strategy for developing and formalizing local and regional SOPs.
- ☑ Document all informal agreements currently in place and incorporate them into future SOPs.
- ☑ Seek authority (through legislation) to enact SOPs among agencies within an area or region.
- ☑ Form partnerships with the private sector and public works to coordinate SOPs.
- ☑ Institute a SOPs review panels between geographic areas with similar characteristics.

Key Action #2

Supporting Ideas

Develop and Implement Local/Regional Emergency Response SOPs

- ☑ Consider creating individual agency SOPs as a stepping stone for creating joint SOPs for planned events and emergencies.
- ☑ Formulate and document SOPs consistent with the National Incident Management System (NIMS) that will enable the public safety community to focus on the actual response to an incident rather than the organization of an incident response.
- ☑ Use technical, operational, and dispatch representatives to provide knowledge of the region's current ability to intercommunicate with their own systems.
- ☑ Consider developing SOPs that address multiple interoperability solutions for the local, regional, and statewide levels and establish clear roles, responsibilities, and expectations for implementing these solutions.
- ☑ Account for subtle differences within and across jurisdictions, disciplines, and levels of government - there is no "one size fits all" solution to SOPs and there must be attention to the diversity of various agencies and regional needs.
- ☑ Develop technical SOPs for how interoperability resources are used to make efficient use of available radio spectrum and avoid interference.
- ☑ Leverage vendor knowledge for best practices, case studies, technical guides, training, and support.
- ☑ Consider federal agency coordination with local incident response and develop SOPs that maximize the efforts of both parties.
- ☑ Consider developing SOPs at the local level first and then after acceptance, expand regionally. Focus initially on issues such as developing procedures for common language or identifying talk group or channel-naming conventions within a region.
- ☑ Implement SOPs that are easily applied to real world situations.
- ☑ Establish a set of common geographic maps across jurisdictions and disciplines in a region.
- ☑ Enforce the use of either plain English or a common set of nomenclature.
- ☑ Designate a clear sign-on/sign-off method for the interoperability channel and ensure there are policies in place to manage priorities of use (to assure there is no interference between training drills, planned events, and emergencies).
- ☑ Identify quantity and location of equipment and procedures for deployment.
- ☑ Use communications plans and SOPs to enforce pre-determined incident command roles and responsibilities for multi-agency response situations.

Key Action #3

Test, Evaluate, and Manage SOPs

Supporting Ideas

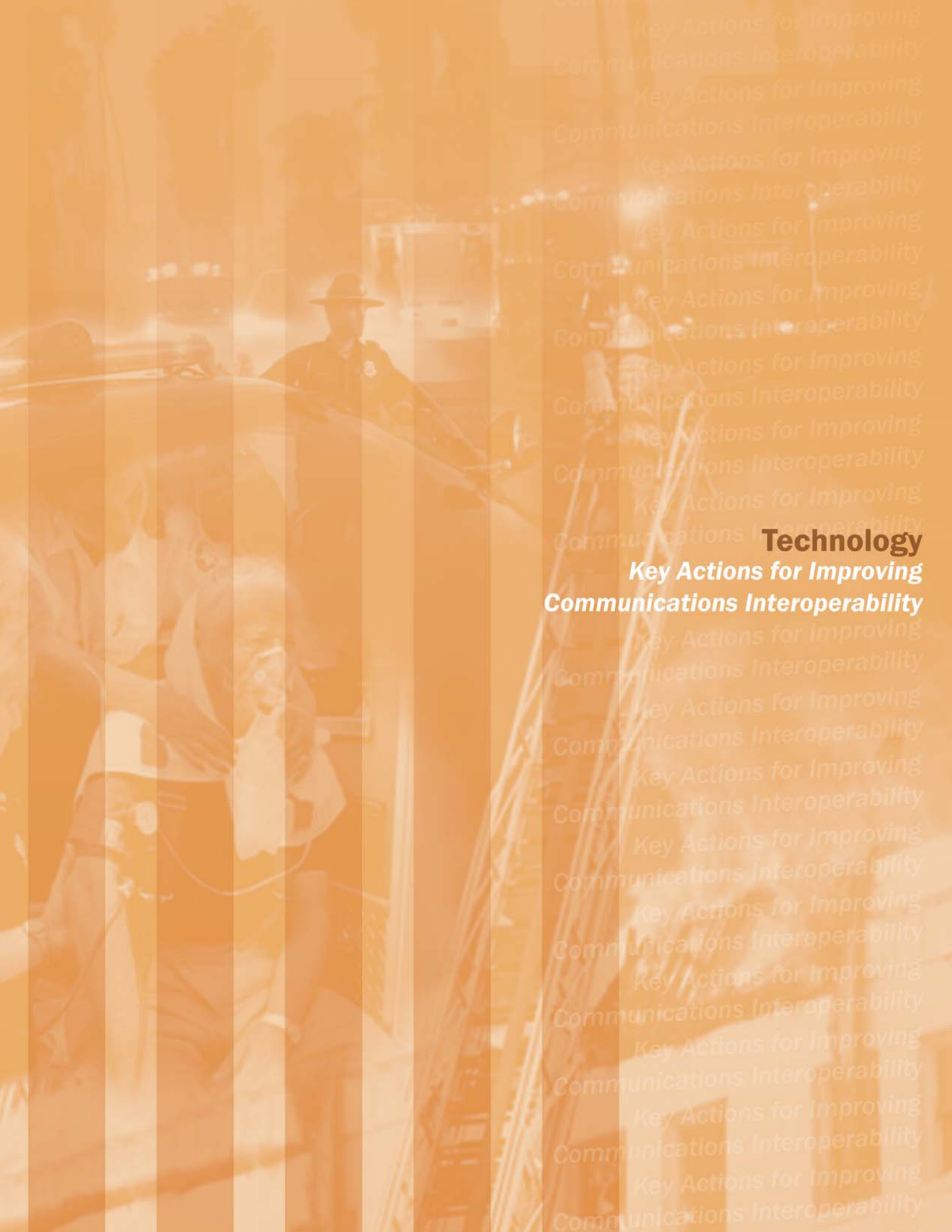
- ☑ Institute formal testing and evaluation programs throughout the SOPs development process to assess effectiveness.
- ☑ Conduct federal/state and local/private tabletop exercises that test SOPs.
- ☑ Develop an implementation plan that provides full support for new or upgraded SOPs and includes the development of training for updates.
- ☑ Re-visit SOPs regularly by incorporating them in every day exercises and/or training programs.
- ☑ Keep SOPs well documented with version controls.
- ☑ Ensure all stakeholders have access to SOPs and have been trained.
- ☑ Share best practices and lessons learned with SOPs committee and be sure that they are incorporated into SOPs.
- ☑ Create awareness of newly developed or recently updated SOPs.

Questions to Consider

① What are the top 3-5 key initiatives that would help your area/region focus on establishing or advancing SOPs to support communications interoperability?

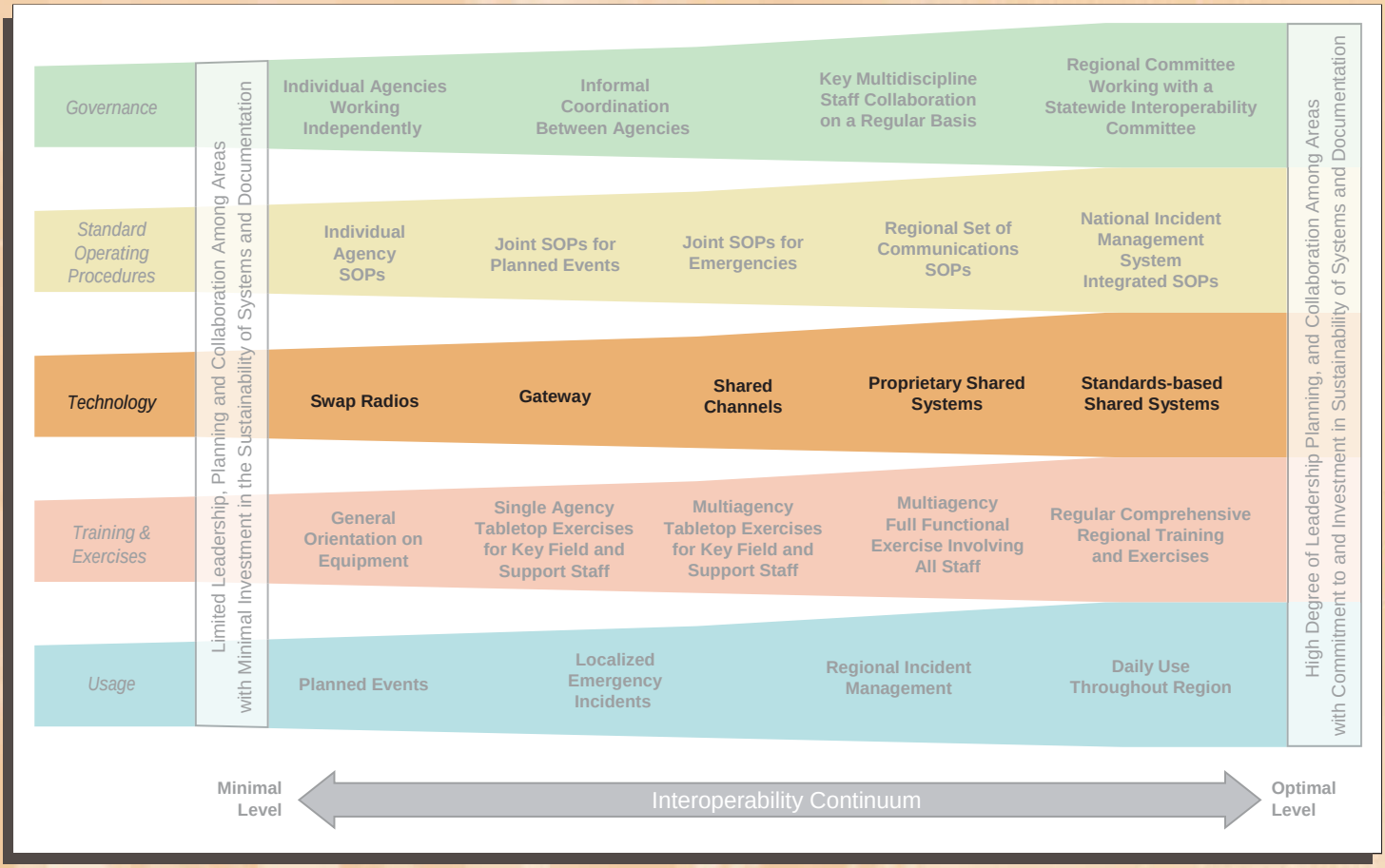
② What are specific goals your area/region can set towards achieving the initiatives that allow for progression along the SOP element of the Continuum? How will your area/region measure progress and performance against those initiatives?

③ What does success look like along the SOPs element of the Interoperability Continuum for your area/region?



Technology

Key Actions for Improving Communications Interoperability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Technology

The Importance of Technology for Communications Interoperability

Technology refers to the equipment/infrastructure, network, and applications that public safety disciplines use to exchange critical information when responding to incidents. Although technology is a critical tool for improving interoperability, it is not the sole component of an optimal solution. Success in each of the other elements of the Continuum is essential for technology solutions to be implemented effectively. An optimal technology solution should be coupled with an established formalized governance structure, responders that are trained on communications-specific procedures and interoperability plans, standard operating procedures that are documented and used regularly for incident response, and an operational environment in which responders use equipment on a regular basis.

The following describes approaches and methods of varying technical sophistication that can be used by the public safety community to evaluate their current state of interoperability and gauge improvement over time.

Technology Model Description

Swap Radios - Swapping radios or maintaining a cache of standby radios is an age-old solution that provides results, but is often time-consuming, management-intensive, expensive, and may only provide limited results due to channel availability.

Gateway - Gateways retransmit across multiple frequency bands and/or systems providing an interim interoperability solution as agencies move toward shared systems. However, gateways have three major limitations: (1) They are inefficient because, for each common talk path, they require one channel per interconnected system; (2) A gateway's effective geographic coverage area is limited to the area that is common to all systems participating in that link; and (3) Gateways often require significant time to set up and/or turn on such that an emergent incident may be over before a supporting link can be established.

Shared Channels - Interoperability is promoted when agencies share a common frequency band, air interface (analog or digital), and are able to agree on common channels. However, the general frequency congestion that exists across the United States can place severe restrictions on the number of independent interoperability talk paths available in some bands.

Proprietary Shared Systems and Standards-based Shared Systems - Regional shared systems are the optimal solution to interoperability. While proprietary systems limit the user's choice of product and manufacturer, standards-based shared systems promote competitive procurement and a wide selection of products to meet specific user needs. With proper planning of the talk group architecture, interoperability is provided as a byproduct of system design, creating an optimal technology solution.

Questions to Consider

① What are the current technologies used to achieve communications interoperability in your area/region?

② Where is your area/region positioned on the Technology element of the Interoperability Continuum?

③ What is the ideal future state for technology that supports communications interoperability in your area/region?

④ Where should your area/region be positioned on the Technology element of the Interoperability Continuum (recognizing that staying in the current state may be acceptable for some areas/regions)?

Technology Key Challenges

Technology is a critical enabler for interoperable communications; however, implementation of an optimal solution is not without its challenges. Consider the following challenges when implementing technology initiatives that support interoperability.

- Lack of information on existing equipment and solutions in the region to ensure new equipment will be compatible.
- Vendors are pushing technology on regions rather than regions demanding that vendors meet their unique requirements.
- Frequent changes in technology make it difficult for regions and disciplines to have the expertise and support to make informed decisions.
- Technology selections are made without consulting first responders to understand the real world operational environment.
- There is often limited coordination across disciplines and jurisdictions on technology procurement and ongoing life-cycle management and support.
- There is a lack of dedicated/common spectrum for regions to use for public safety.
- There is a lack of common standards resulting in proprietary solutions that are difficult to interconnect.

Questions to Consider

① What technology challenges or barriers does your area/region have in establishing communications interoperability?

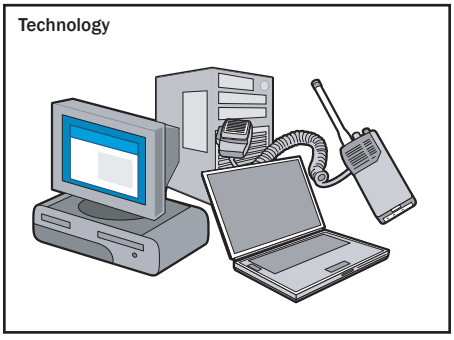
② What are you currently doing to overcome these challenges?

③ What else can be done to overcome these challenges?

④ What resources are required to overcome these challenges?

Key Actions for Improving Communications Technology and Interoperability

The following are key actions for the Technology element of the Interoperability Continuum to address immediate interoperability needs in your area/region.



Key Action #1

Conduct Technology Inventory and Gather Requirements

Supporting Ideas

☑ Develop a task force to conduct a regional assessment that identifies existing infrastructure, systems, user requirements, and initiatives. Be inclusive of all public safety agencies and any relevant critical infrastructure/private-sector support organizations (e.g., utilities, American Red Cross, etc).

- ☑ Evaluate and document how the infrastructure and systems are used, who uses them, and pertinent challenges/benefits of the solution.
- ☑ Encourage full participation and disclosure of information by creating an inclusive communications outreach plan.

Key Action #2

Supporting Ideas

Evaluate Findings and Determine Needs

- ☑ Identify regional vulnerable targets and address those gaps first.
- ☑ Conduct a gap analysis to identify where existing technology does not support operational requirements and prioritize them before selecting a technology solution.
- ☑ Differentiate between "nice to have" and "need to have" when prioritizing requirements.
- ☑ Leverage existing infrastructure, technology, and methods (where possible) by coordinating efforts.
- ☑ Collaborate across disciplines and jurisdictions to develop regional strategy to determine the best interoperable technology solutions.
- ☑ Consider regional systems to leverage economies of scale across a region and the state. Keep it simple and avoid too many solutions in any one locale - consolidate where necessary.
- ☑ Tie local technologies to federal technologies (consider encryption when including federal entities).
- ☑ Consider all security requirements and ensure the solution is scalable and includes appropriate redundancies.

Key Action #3

Supporting Ideas

Maximize Existing Technologies and Resources to Improve Interoperability

Due to the many technology options available, the ideas below identify a variety of options for regions to consider when maximizing their existing technologies and currently deployed resources. Not all ideas will be relevant to every area/region.

- ☑ Establish radio cache(s) to be made available in a region for shared use.
- ☑ Establish a dedicated interoperability channel and/or set up a shared channel capability for Fire, EMS, and Law Enforcement.
- ☑ Consider identifying where shared channels are assigned in the incident command structure (for command, operations, and tactical needs).
- ☑ Develop special tactical- and command-level interoperability channels, patches, and standard operating procedures that involve local, state, and federal public safety officials.
- ☑ Standardize channel names for all interoperability channels.
- ☑ Evaluate use of all proprietary systems and discuss near-term workarounds.
- ☑ Use audio bridges (i.e., gateways) to allow proprietary systems to interoperate.
- ☑ Explore shared voice radio systems. Ensure that subscriber units are programmed with all necessary frequencies and channel characteristics.
- ☑ Explore agreements with commercial cellular and internet service providers to set up priority communications.

Key Action #4

Provide Wireless Data System to Complement Voice Communications

Supporting Ideas

- ☑ Establish secondary communication paths between all users on the wireless network as authorized.
- ☑ Ensure that interconnections or gateways are established to provide data communications across jurisdictional boundaries and between appropriate agencies.
- ☑ Consider data and network security requirements, noting specific enhanced security requirements for law enforcement agencies to be enacted in October 2005 by the FBI.
- ☑ Work with practitioners from all agencies and jurisdictions to establish common user requirements and message standards.
- ☑ Consider spectrum availability to support wireless data.
- ☑ Consider the need for access to multiple regional databases.

Key Action #5

Engage in Activities that Support, Maintain, and Optimize Solution

Supporting Ideas

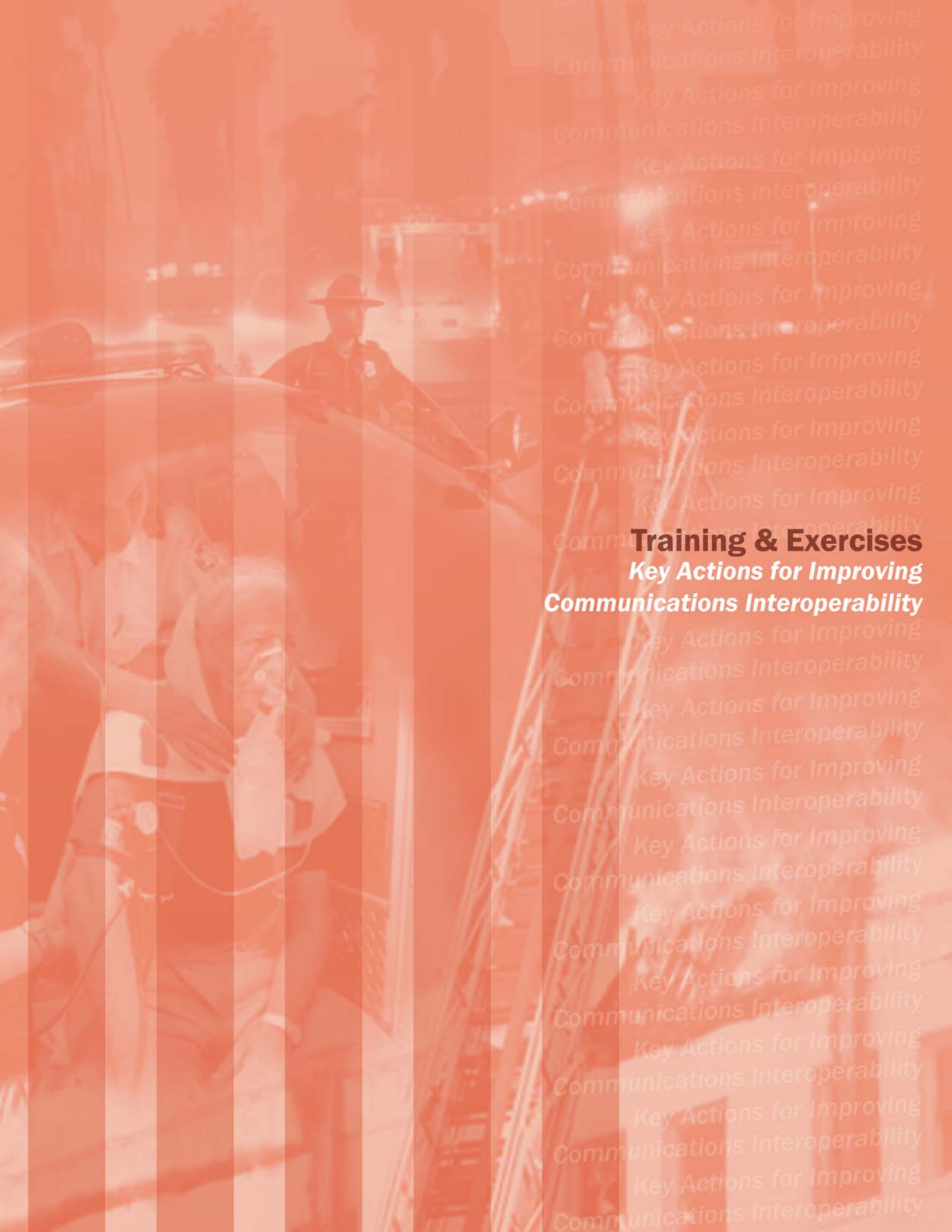
- ☑ Plan for support, maintenance, and replacement costs.
- ☑ Coordinate across the region and state to increase the buying power of the users and ensure:
  - ⊙ technology solutions are compatible,
  - ⊙ standards are implemented,
  - ⊙ best practices and lessons learned are shared, and
  - ⊙ resources are leveraged.
- ☑ Drive vendors to create technologies in response to public safety.
- ☑ Procure technology based on operational and functional requirements and use real world operational tests for acceptance from vendors.
- ☑ Work with federal entities to solve spectrum regulatory issues.

Questions to Consider

① What are the top 3-5 key technology initiatives that would help improve communications interoperability in your area/region?

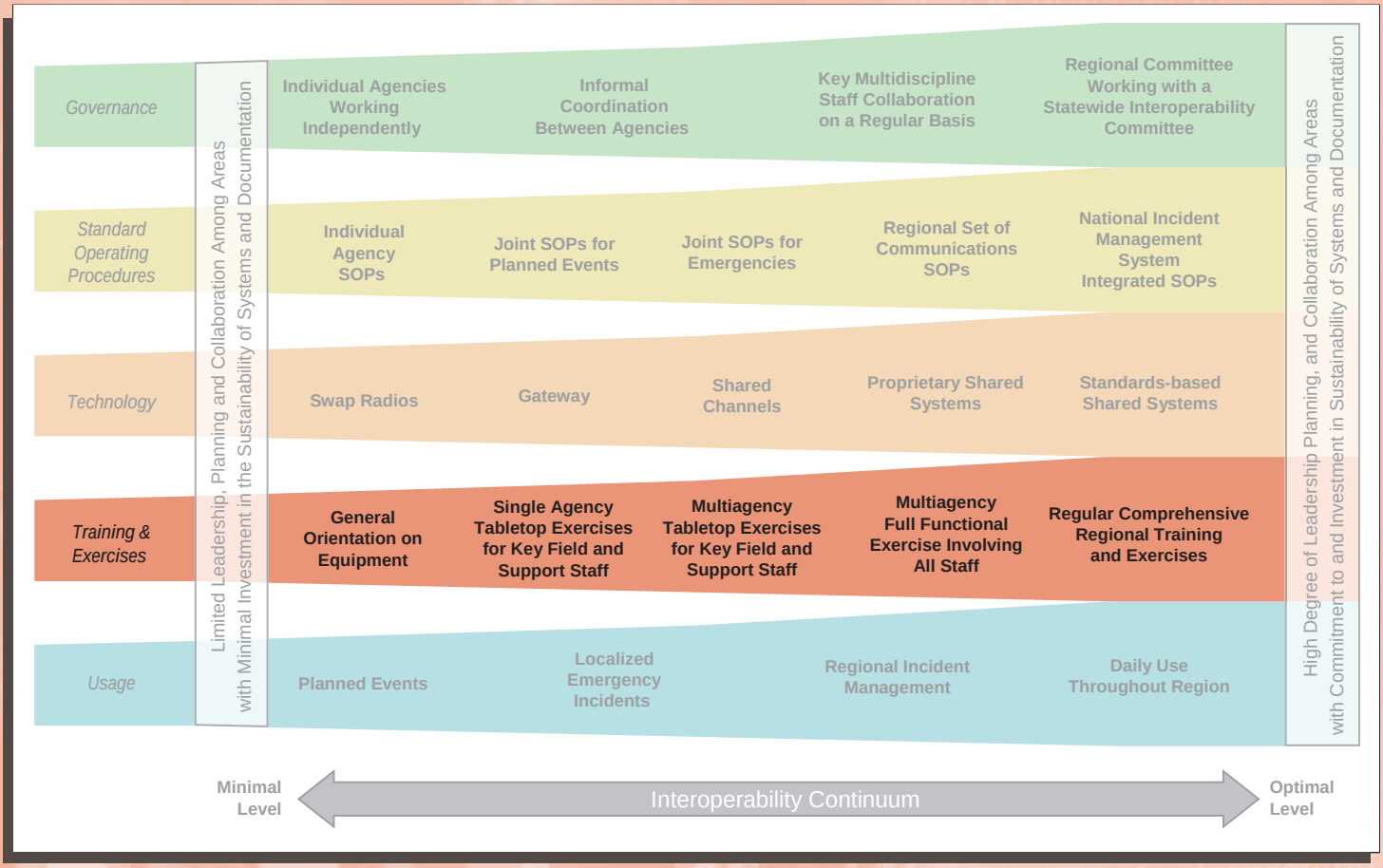
② What are specific goals your area/region can set towards achieving the initiatives that allow for progression along the Technology element of the Continuum? How will your area/region measure progress and performance against those initiatives?

③ What does success look like along the Technology element of the Interoperability Continuum for your area/region?



Training & Exercises

Key Actions for Improving Communications Interoperability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Training and Exercises

The Importance of Training and Exercises for Communications Interoperability

Training and Exercises refers to the instructional support designed to develop knowledge, skills, and performance of public safety personnel. Proper training and regular exercises are critical to the implementation and maintenance of a successful interoperability solution.

The following describes the points of progression along the Training and Exercises element of the Continuum for communities to use as a starting point for evaluating their current state of interoperability and gauge improvement over time.

Training and Exercises Model Description

General Orientation on Equipment - Agencies provide initial orientation to their users with regard to their own particular equipment. Multi-jurisdiction/multi-agency operations are often an afterthought to this training, if provided at all.

Single Agency Tabletop for Key Field and Support Staff - Structured tabletop exercises promote planning and identify response gaps; however, single agency activities do not promote interoperability across disciplines and jurisdictions. Additionally, management and supervisory training is critical to promoting routine use of interoperability mechanisms.

Multi-agency Tabletop for Key Field and Support Staff - As agencies and disciplines begin working together to develop exercises and provide field training, workable interoperability solutions emerge.

Multi-agency Full Functional Exercises Involving All Staff - Once multiagency/multi-discipline plans are developed and practiced at the management and supervisory level, it is then critical that all staff who will eventually be involved in actual implementation receive training and participate in exercises.

Regular Comprehensive Regional Training and Exercises - Optimal interoperability involves equipment familiarization and an introduction to regional/state interoperability at the time of hire (e.g., in an academy setting). Agency-specific education on local/regional interoperability is provided during initial agency orientation/training programs. Appropriate levels of training for interoperability and use of ICS/NIMS are provided during supervisory and management training as employees advance in rank. Success will be assured by regular, comprehensive, and realistic exercises that address potential problems in the region and involve the participation of all personnel.

Questions to Consider

① What are the current training and exercises programs that support communications interoperability in your area/region?

② Where is your area/region positioned on the Training and Exercises element of the Interoperability Continuum?

③ What is the ideal future state for training and exercises programs that improves communications interoperability in your area/region?

④ Where should your area/region be positioned on the Training and Exercises element of the Interoperability Continuum (recognizing that staying in the current state may be acceptable for some)?

Training and Exercises Key Challenges

Implementing effective training and exercises programs to practice communications interoperability is essential for ensuring that the technology works and responders are able to use it effectively to communicate during emergencies. The following are some key challenges to consider when implementing effective training and exercises programs.

- Communications interoperability is often not part of training and exercises programs.
- Equipment used for interoperability is often complex and the need for user and technician training is often underestimated or overlooked.
- Not allocating and committing appropriate time and resources to updating training and exercise programs when a new technology is procured or upgraded hampers technology implementation.
- Creating a common interoperability curriculum across a region is important, but difficult when one has not been established previously.
- Familiarity with using interoperability equipment is not second nature to first responders because training and exercises are not conducted broadly or frequently enough.

Questions to Consider

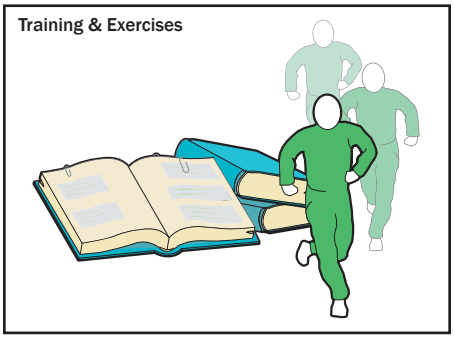
① What challenges does your area/region face regarding training and exercises programs that support communications interoperability?

② What are you currently doing to overcome these challenges?

③ What else can be done to overcome these challenges?

④ What resources are required to overcome these challenges?

Key Actions for Developing and Delivering Training and Exercises Programs that Support Communications and Interoperability



To progress along this element of the Interoperability Continuum, a high degree of coordination and interdependence with the usage of interoperable equipment is essential due to the need for increasing levels of complexity and regularity in the training and exercise curriculum. As communities become adept in using their localized jurisdictional interoperability solutions, the scope of the training and exercises should expand to involve cross-jurisdictional and cross-disciplinary aspects.

The goal of training and exercises is to be sure the public safety community can do their jobs effectively. Communications interoperability should be built into operational procedures that can be trained and exercised regularly. Progress along the training and exercise element of the Continuum intertwines with advancement along the technology element because it ensures operational field personnel are familiar with new technology as it is acquired. As new equipment, such as gateways and patching systems, are incorporated into a community's system, the tech-

nological capability for interoperability is achieved; however, without training and exercises, field responders will not be able to effectively use the technology in the event of a major incident.

The following are key actions for implementing successful training and exercise programs.

Key Action #1

Commit Resources to Manage Training and Exercise Program

Supporting Ideas

- ☑ Elect a champion from the governance body to manage and own the overall training and exercises content and process.
- ☑ Charter a Training and Exercises Committee within the larger interoperability governance body.
- ☑ Establish an outreach coordinator for the media and the public safety community to convey lessons learned, gap analyses, and after action results with the proper level of detail and security.
- ☑ Create a business case or justification to encourage participation and increase buy-in from participants and supporters.

Key Action #2

Identify Training and Exercise Requirements

Supporting Ideas

- ☑ Conduct an assessment of all training and exercises programs to determine what is currently being offered, what is missing, and what changes are necessary.
- ☑ Solicit requirements from local, state, and federal levels of public safety stakeholders as well as key field and support staff.
- ☑ Coordinate requirements gathering across jurisdictions and disciplines in an area or region.
- ☑ Coordinate with federal training and exercise agencies.
- ☑ Review after action reports to identify areas of focus and development opportunities.

Key Action #3

Develop Training and Exercises

Supporting Ideas

- ☑ Leverage vendors for services, content, and technical support.
- ☑ Base training and exercises on standards (where possible).
- ☑ Provide background information regarding equipment and procedures used during incidents to lead to more meaningful drills and exercises.
- ☑ Introduce drills; begin with fundamental drills followed by large-scale or complex incident scenarios.
- ☑ Collaborate with similar urban and regional areas to develop and deliver training.
- ☑ Provide opportunities for job shadowing across disciplines and jurisdictions.

Key Action #4

Implement Training and Exercises Requirements

Supporting Ideas

- ☑ Build awareness of interoperability capabilities using outreach materials such as brochures and training databases.

- ☑ Use print and electronic documentation and tools to institutionalize training across an area/region.
- ☑ Institute a multi-pronged approach (including marketing materials, guides, training, field exercises, tabletop exercises, shift change test procedures, video, and SOP practice) to educate first responders.
- ☑ Use roll call as an opportunity to build awareness of capabilities and deliver training.
- ☑ Conduct regular/weekly exercises with entire staff (including multiple agencies and jurisdictions) on the use of communications interoperability capabilities.
- ☑ Use real world scenarios that are meaningful and valuable to all participating agencies during training and exercises.
- ☑ Use senior field personnel to educate staff on interoperability solutions and procedures.
- ☑ Perform training and exercises on a continual basis with focus on operational personnel and processes.
- ☑ Incorporate communications interoperability into academy programs.
- ☑ Use NIMS as a guide to help incident management organizations and personnel when conducting exercises that include multi-disciplinary, multi-jurisdictional, and multi-sector interaction to improve integration and optimize resource utilization during incident operations.

Key Action #5

Implement Processes to Keep Training Program Up-to-Date

Supporting Ideas

- ☑ Create a process to incorporate feedback, lessons learned, and best practices in training and exercises programs.
- ☑ Implement a process for proper version control and management of training and exercises material, content distribution, and technical support, and delivery of material.
- ☑ Be aware of technology procurement life-cycle and coordinate with technology owner to ensure proper training and exercises are planned and developed when new technology is purchased and deployed.

Key Action #6

Create After Action Reports

Supporting Ideas

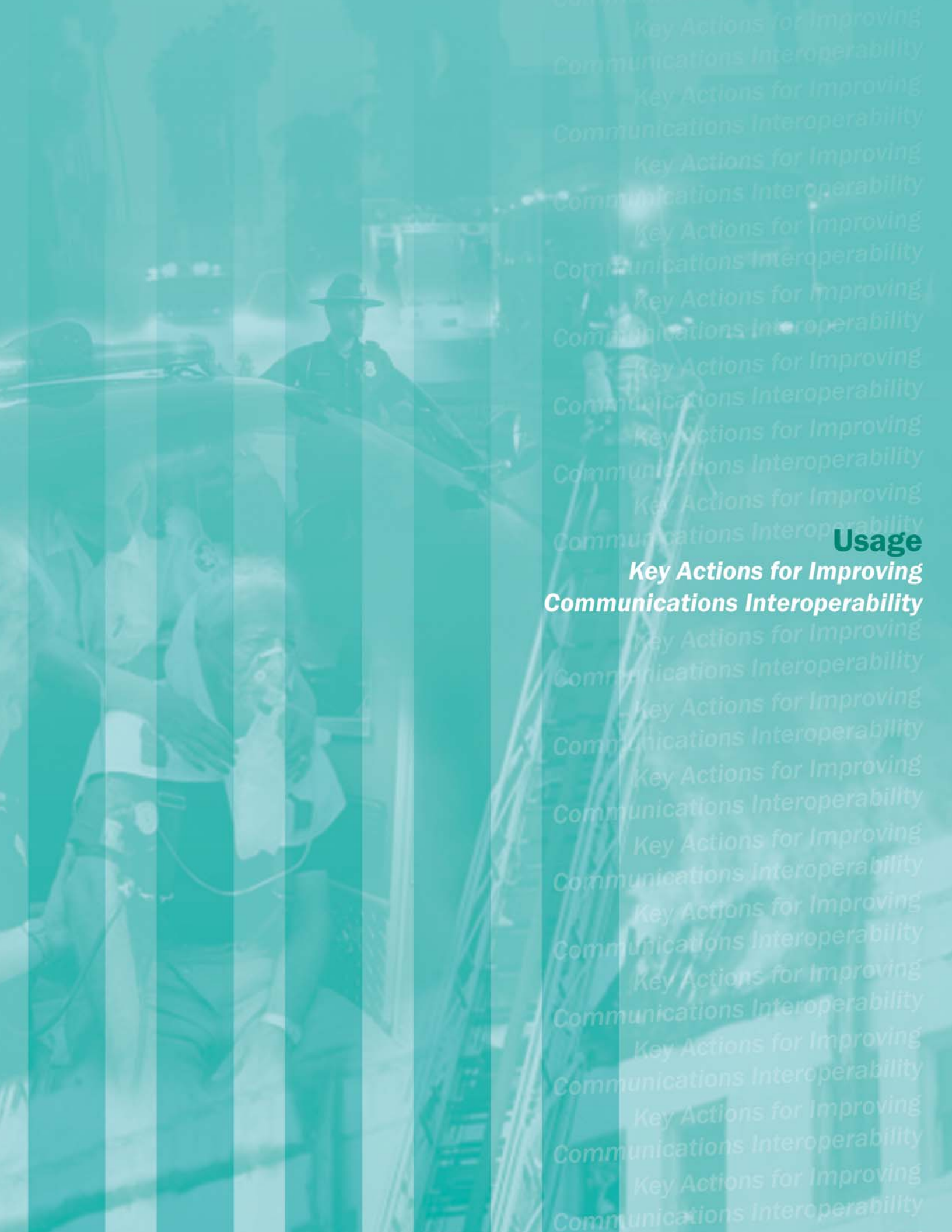
- ☑ Create after action reports after conducting exercises to document gaps and incorporate changes into training and exercises content.
- ☑ Include both engineering and process gap analyses.
- ☑ Avoid high risk security breaches by securing after action reports and managing the dissemination to an approved list of individuals.

Questions to Consider

① What are the top 3-5 key training and exercises initiatives that would improve communications interoperability in your area/region?

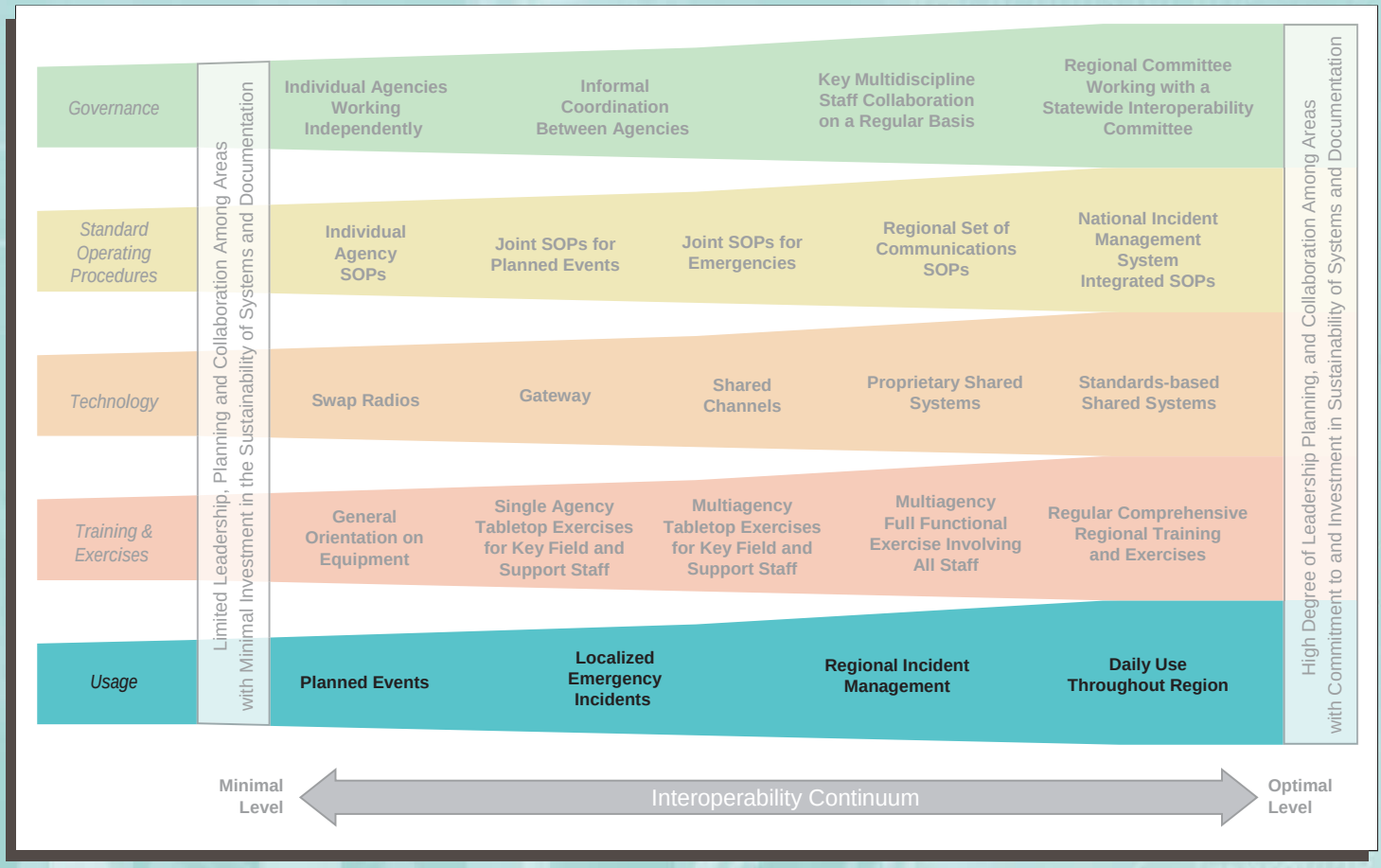
② What are specific goals your area/region can set towards achieving the initiatives that allow for progression along the Training/Exercises element of the Continuum? How will your area/region measure progress and performance against those initiatives?

③ What does success look like along the Training and Exercise element of the Interoperability Continuum for your area/region?



Usage

Key Actions for Improving Communications Interoperability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General Orientation on Equipment
Single Agency Tabletop Exercises for Key Field and Support Staff
Multiagency Tabletop Exercises for Key Field and Support Staff
Multiagency Full Functional Exercise Involving All Staff
Regular Comprehensive Regional Training and Exercises
Planned Events
Localized Emergency Incidents
Regional Incident Management
Daily Use Throughout Region
High Degree of Leadership Planning, and Collaboration Among Areas with Commitment to and Investment in Sustainability of Systems and Documentation
Minimal Level
Interoperability Continuum
Optimal Level

Usage

The Importance of Usage for Communications Interoperability

Usage refers to how often interoperable communications capabilities are used. Success in this element is contingent upon progress and interplay among the other four elements in the Interoperability Continuum.

Progression along the Usage element can be marked by the regularity with which a community uses and engages in interoperable communications across disciplinary and jurisdictional lines. The following describes the points of progress along the Usage element of the Continuum for communities to use as a starting point for evaluating their current state of interoperability and to gauge improvement over time.

Usage Model Description

Planned Events - Events for which the date and time are known and that involve multiple responding agencies. These include athletic events and large conferences or conventions.

Localized Emergency Incidents - Emergency events that involve multiple intra-jurisdictional responding agencies. A vehicle collision on a highway or street is an example of this type of incident.

Regional Incident Management - Routine coordination of responses across a region; includes automatic aid fire response to natural and man-made disasters.

Daily Use Throughout Region - Interoperability systems that are used every day for managing routine as well as emergency incidents. In this solution, users are familiar with the operation of the system and routinely work in concert with one another.

Questions to Consider

① What is the current usage of interoperable technologies in your area/region?

② Where do you think your area/region is currently positioned on the Usage element of the Interoperability Continuum?

③ What is your ideal future state is for your area/region regarding the use of interoperable technologies?

④ Where do you think your organization needs to be along the Usage element of the Interoperability Continuum (recognizing that staying in the current state can be acceptable for some areas/regions)?

Usage Key Challenges

Ideally, communities will use interoperability equipment and procedures on a daily basis; however, this has been difficult for some areas of the country. The following are typical challenges to consider when working towards increased usage of interoperable communications.

① Use of interoperability solutions is not second nature to first responders.

② Day-to-day operations do not include use of interoperability equipment.

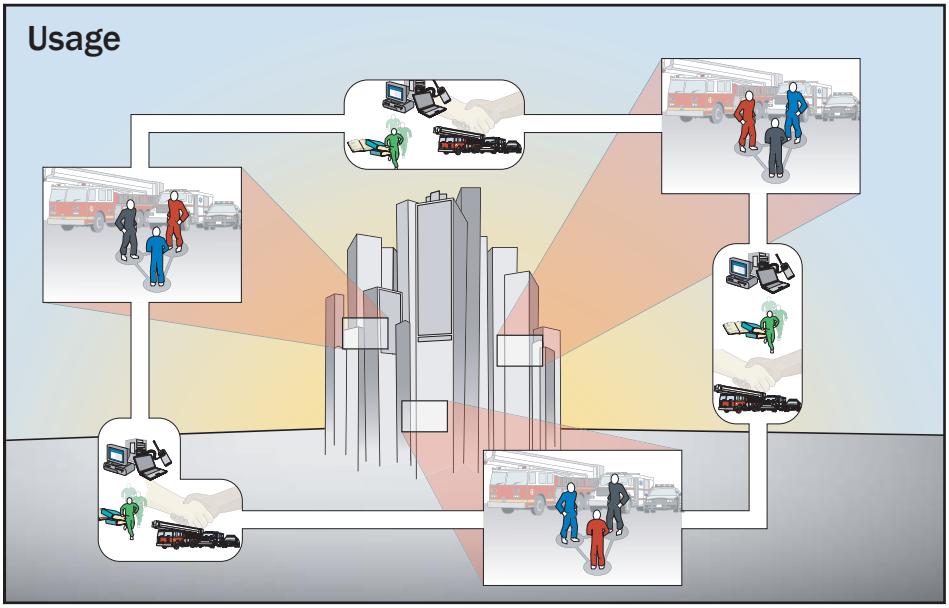
③ First responders from different jurisdictions and disciplines often do not interact on a daily basis.

Questions to Consider

① What challenges does your area/region face in using interoperable technologies?
② What are you currently doing to overcome these challenges?
③ What else can be done to overcome these challenges?
④ What resources are required to overcome these challenges?

Key Actions for Usage of Interoperable Communications that Support Communications and Interoperability

Progression along the Usage element is an evolution over time, as it is highly interdependent with the other elements of the Continuum. In some cases, the key actions identified do not directly relate to the milestones identified along the Usage element of the Continuum; however, these actions can serve to help communities promote proper use of interoperable solutions among first responders. Progress along this element can be a direct result of key actions that have been started in other lanes of the Continuum.



Key Action #1

Create Culture That Promotes Frequent Usage of Interoperable Communications

Supporting Ideas

☑ Through a formal governance structure:
- ⊙ Address cultural barriers such as the continued use of agency-specific nomenclature (for example, 10-codes).
- ⊙ Establish plain English as the standard for daily operations, except as required for officer safety transmissions.
- ⊙ Establish regionally recognized codes for special situations, primarily those that relate to officer safety.
- ⊙ Promote preparedness awareness events and/or activities to encourage interaction among first responders.

☑ Identify a champion or advocate in each agency to support efforts in the community to drive implementation and action on interoperability training and usage recommendations.

☑ Include a communications component in all training exercises.

Key Action #2

Supporting Ideas

Develop Interoperability Solutions That Reflect Operational Needs

- ☑ Develop incident-specific interoperability solutions and consider the diverse communication requirements of every functional level involved (e.g., tactical operations, command, and dispatch).
- ☑ Use NIMS-based ICS during training and operations.
- ☑ Base planning and decisions on the area/region inventory of spectrum assets to ensure efficient operations, use of assets, and inventory.
- ☑ Require a qualified ICS Communications Unit Leader for major incidents; this person must have strong partnerships with other jurisdictions and disciplines and sufficient technical knowledge to manage available resources.
- ☑ Assign ownership and responsibility to make operational plans available to practitioners and keep them up to date.

Key Action #3

Supporting Ideas

Incorporate Use of Interoperability Equipment into Daily Operations

- ☑ Institutionalize regular use and review of interoperability procedures to sustain optimal solutions. Ideas include:
  - ⊙ Promote general education on interoperability concepts for the state and region at entry level during the basic academy.
  - ⊙ Promote appropriate levels of training for interoperability and use of ICS/NIMS during supervisory and management training as employees advance in rank.
  - ⊙ Conduct training during roll call for all roles and ranks and practice connecting field units.
  - ⊙ Execute interoperability plans during all actual events.
  - ⊙ Develop regional task forces with a regular flow of communications.
  - ⊙ Invite potential incident commanders to communications exercises to prepare them in response to an event.
- ☑ Build awareness of the various communications interoperability capabilities across agencies and within regions and/or states.
- ☑ Build a level of familiarity with the equipment by identifying ways to use equipment daily.
- ☑ Test and exercise communications interoperability equipment on a regular basis.

Questions to Consider

- ① What are the top 3-5 key initiatives that would help improve the use of interoperable technologies in your area/region?
- ① What are specific goals your area/region can set towards achieving the initiatives that allow for progression along the Usage element of the Continuum? How will your area/region measure progress and performance against those initiatives?
- ① What does success look like along the Usage element of the Interoperability Continuum for your area/region?

Interoperability Continuum - *Quick Sheet*

Homeland Security

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	Potential Challenges	Key Actions
Governance	• Governing body membership is often not representative of all agencies, disciplines and jurisdictions involved in a regional response. • Failure to consider key design elements for the governing body structure can result in delays, inefficiencies, and sub-optimal decisions and solutions. • Few standard criteria or models have been established to help communitiescreate a successful governance model. Policy makers are not aligned with the needs for a region's interoperability requirements and therefore do not commit the resources required.	1. Identify Key Players to Participate in Governing Body 2. Develop a Clear Charter 3. Establish and Run Governing Body 4. Develop an Action Plan 5. Coordinate Align Statewide Key Initiatives and Goals 6. Educate Potential Political Supporters
Standard Operating Procedures	• Lack of operational SOPs that communications SOPs can be developed around. There is no standard procedure for how two agencies should work together; thus it becomes challenging to define procedures for how they should communicate with each other. • There are no models or templates for regions to reference to ensure all necessary information is included in a successful set of SOPs. • Dedication of time and resources for SOP development is not a priority for regional officials and first responders are often unaware of established protocol because information has not been disseminated across the region.	1. Assemble an SOP Committee 2. Develop and Implement Local/Regional Emergency Response SOPs 3. Test, Evaluate, and Manage SOPs
Technology	• Lack of information on existing equipment and solutions in the region to ensure new equipment will be compatible. • Vendors are pushing technology on regions rather than regions demanding that vendors meet their unique requirements. • Frequent changes in technology make it difficult for regions and disciplines to have the expertise and support to make informed decisions. • Technology selections are made without consulting first responders to understand the real world operational environment. • There is often limited coordination across disciplines and jurisdictions on technology procurement and ongoing life-cycle management and support. • There is a lack of a dedicated/common spectrum for regions to use for public safety. • There is a lack of common standards, resulting in proprietary solutions that are difficult to interconnect.	1. Conduct Technology Inventory and Gather Requirements 2. Evaluate Findings and Determine Needs 3. Maximize Existing Technologies & Resources to Improve Interoperability 4. Provide Data System to Complement Voice 5. Engage in Activities that Support, Maintain, and Optimize Solution 6. Create After Action Reports
Training & Exercises	• Communications interoperability is often not part of training and exercises programs. • Equipment used for interoperability is often complex and the need for user and technician training is often underestimated or overlooked. • Not allocating and committing appropriate time and resources to updating training and exercise programs when a new technology is procured or upgraded hampers technology implementation. • Creating a common interoperability curriculum across a region is important, but difficult when one has not been established previously. • Familiarity with using interoperability equipment is not second nature to first responders because training and exercises are not conducted broadly or frequently enough.	1. Commit Resources to Manage Training and Exercise Program 2. Identify Training & Exercise Requirements 3. Develop Training and Exercise Program 4. Deliver Training & Exercises 5. Implement Processes to Keep Training Program Up-to-Date
Usage	• Use of interoperability solutions is not second nature to first responders. • Day-to-day operations do not include use of interoperability equipment. • First responders from different jurisdictions and disciplines often do not interact on a daily basis.	1. Create Culture That Promotes Frequent Usage of Interoperable Communications 2. Develop Interoperability Solutions That Reflect Operational Needs 3. Incorporate Use of Interoperability Equipment into Daily Operations
	Funding • Funding is not being allocated, managed, or spent efficiently and regions are not held accountable. • There is no effective funding model to maintain and operate current solutions, train staff, and continue to increase communications • interoperability for the future. • Federal funding has short response time and narrow criteria for use of funds. • Regions incur significant overhead costs to administer federal support. **Federal Programs** • The lack of coordination among the federal interoperability programs is creating confusion and duplication. • A national strategy and approach to interoperability has not been disseminated, so regions are taking different approaches. • There is no baseline from which to measure effectiveness of federal programs. • There is no standard skill set required for individuals who provide federal support.	1. Gain Leadership Commitment From All Disciplines 2. Foster Collaboration Across Disciplines and Levels of Government 3. Partner with Policy Makers to Gain Leadership Commitment and Resource Support 4. Plan and Budget for Ongoing Updates to Systems, Procedures, and Documentation 5. Ensure Collaboration and Coordination Across all Continuum Elements

Leadership, Planning, Collaboration, and Sustainability

Leadership, Planning, Collaboration, and Sustainability

Minimal Level — Interoperability Continuum — **Optimal Level**

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SAFECOM is the overarching federal umbrella program managed by the Department of Homeland Security that coordinates all initiatives pertaining to public safety communications and interoperability.

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