An Introduction to Specific Tools for Communications Interoperability Improvement

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"Putting First Responders First"

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Science & Technology

Agenda

1. Introduction to the Office for Interoperability and Compatibility (OIC)
2. The Interoperability Challenge
3. Specific Tools:
   - *Improving Interoperability Through Shared Channels*
   - *Interoperable Communications for Planned Events*
4. Next Steps

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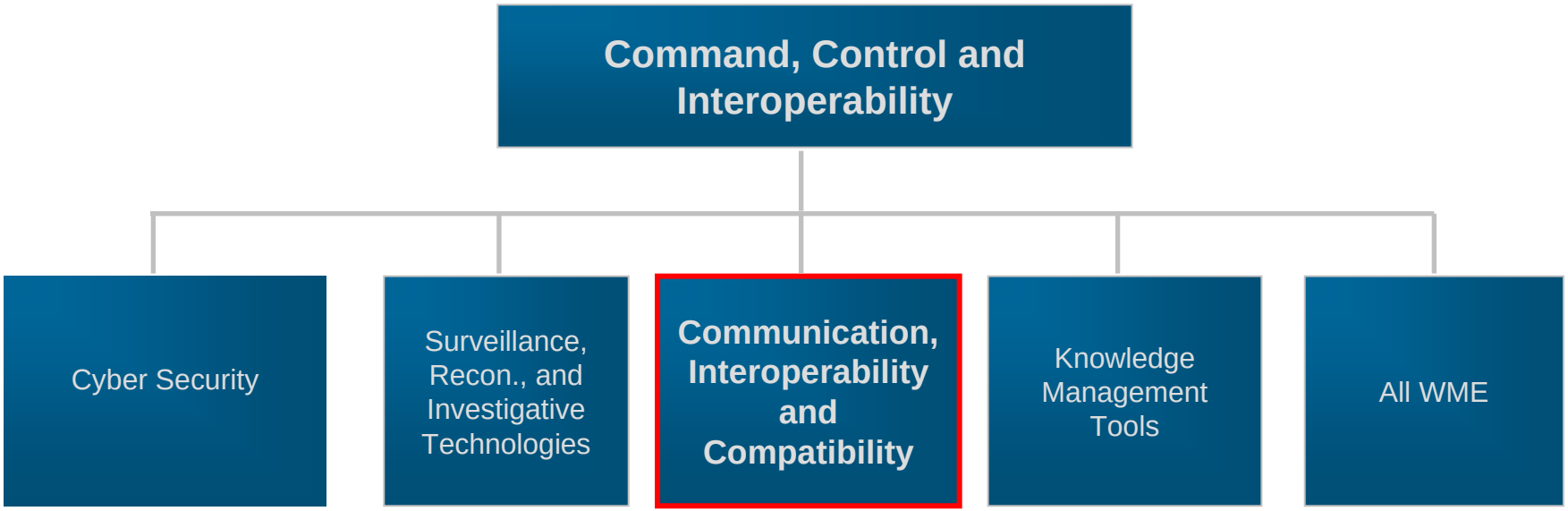
Command, Control and Interoperability

The mission of the Science and Technology (S&T) Directorate's Command, Control and Interoperability Division is to transform new and promising concepts into real operational capabilities. With its Federal partners, the Division is working to strengthen communications interoperability, improve Internet security and integrity, and accelerate the development of automated capabilities to help identify potential national threats.



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Office for Interoperability and Compatibility (OIC)

The Office for Interoperability and Compatibility (OIC) is working with the emergency response community and Federal partners to improve local, tribal, state, and Federal emergency preparedness and response. OIC focuses on research, development, testing, evaluation, and standards aspects related to interoperability.

OIC is committed to developing tools—methodologies, templates, models, and educational materials—that effectively meet the critical needs of emergency responders in the field.

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The Interoperability Challenge

Emergency responders—police officers, fire personnel, emergency medical services—need to share vital voice and data information across disciplines and jurisdictions to successfully respond to day-to-day incidents and large-scale emergencies.

Responders often cannot talk to some parts of their own agencies—let alone across cities, counties, and states. Ineffective communications risk the lives of responders in the field, and can mean the difference between life and death for those awaiting help.

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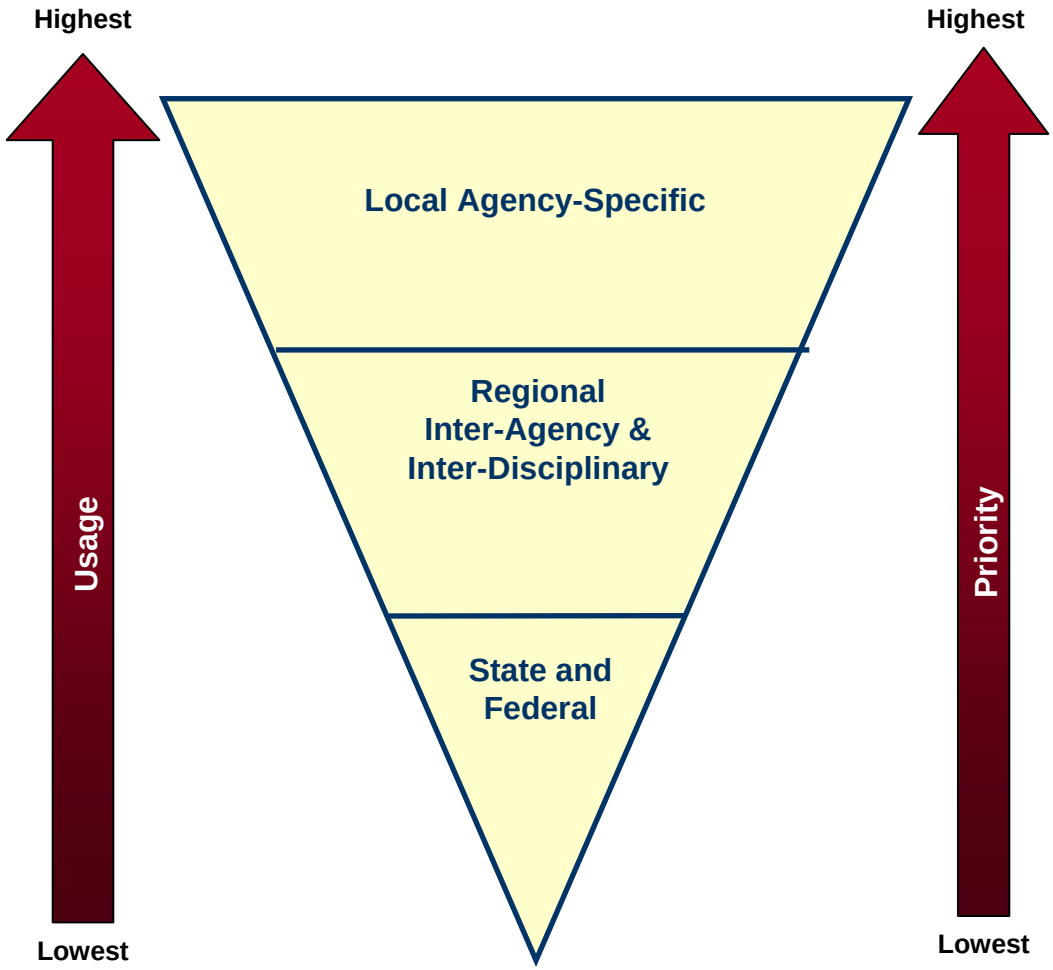
The Interoperability Challenge

A successful strategy for improving interoperability must be based on user needs and driven from the bottom up.

OIC advocates a unique, practitioner-driven approach. OIC benefits from the critical input of the emergency response community and from local, tribal, state, and Federal policy makers and leaders. This input ensures that OIC resources are aligned with responders' needs.



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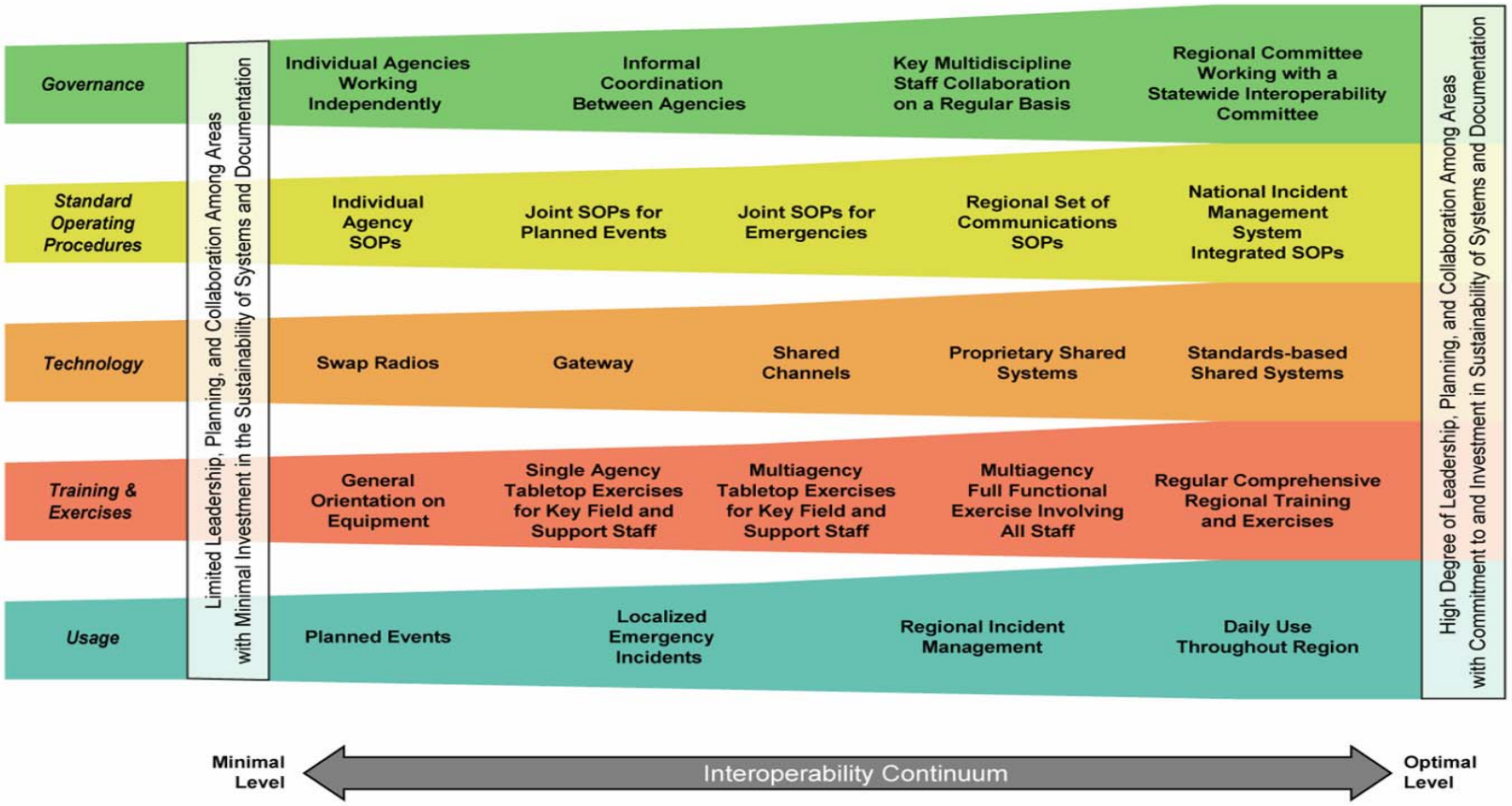
A Multi Dimensional Challenge



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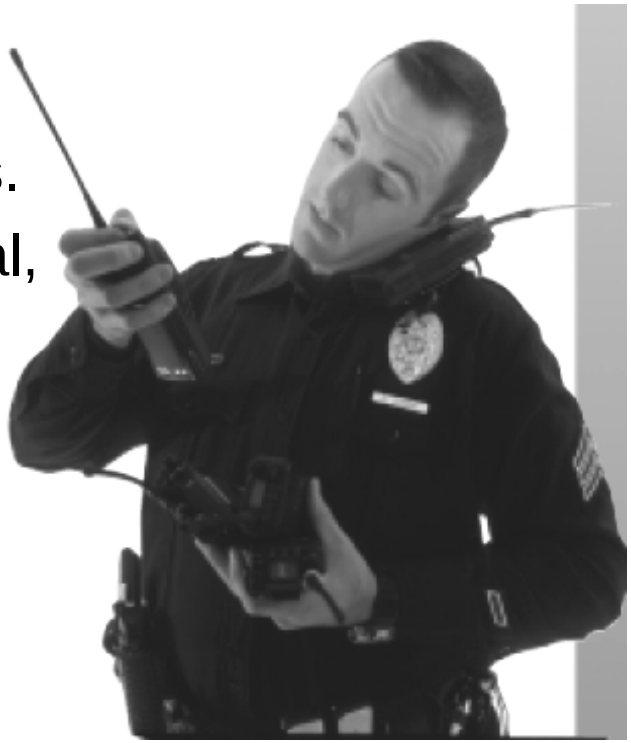
The Interoperability Challenge

- Interoperability is not solely a technology problem that can be solved with the “right” equipment or the “right” communications system.
- Some technology solutions are useful for command elements, but are hopelessly impractical for individual emergency responders.
- There are not any “silver bullet” solutions.
- Achieving interoperability involves tactical, technological, strategic, and cultural changes.
- OIC publishes tools and methods to help officials enact these changes.



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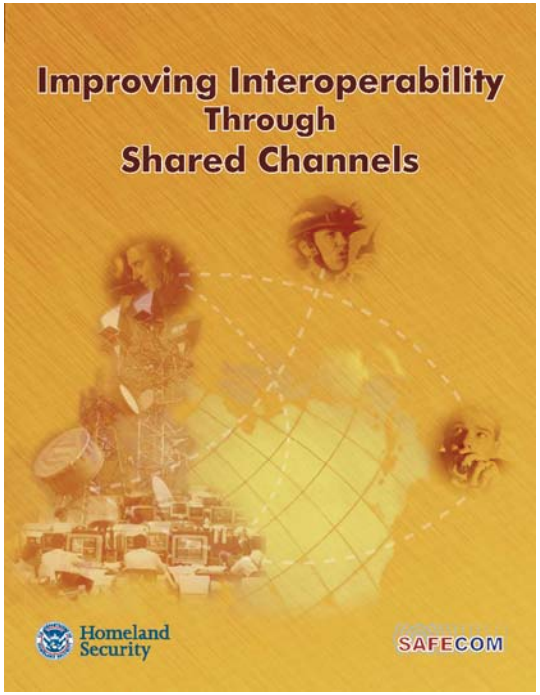
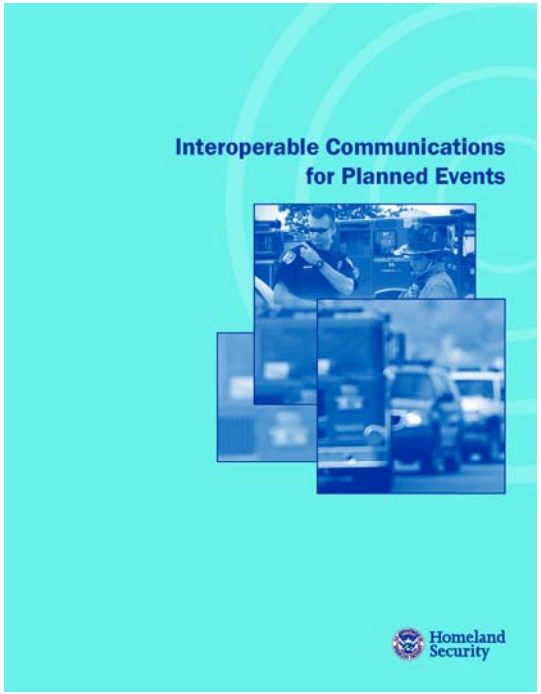
Recent Tool Publications

OIC has recently released two documents that provide simple and applicable best practices and lessons learned intended to help officials improve local, tribal, state, and Federal communications interoperability.





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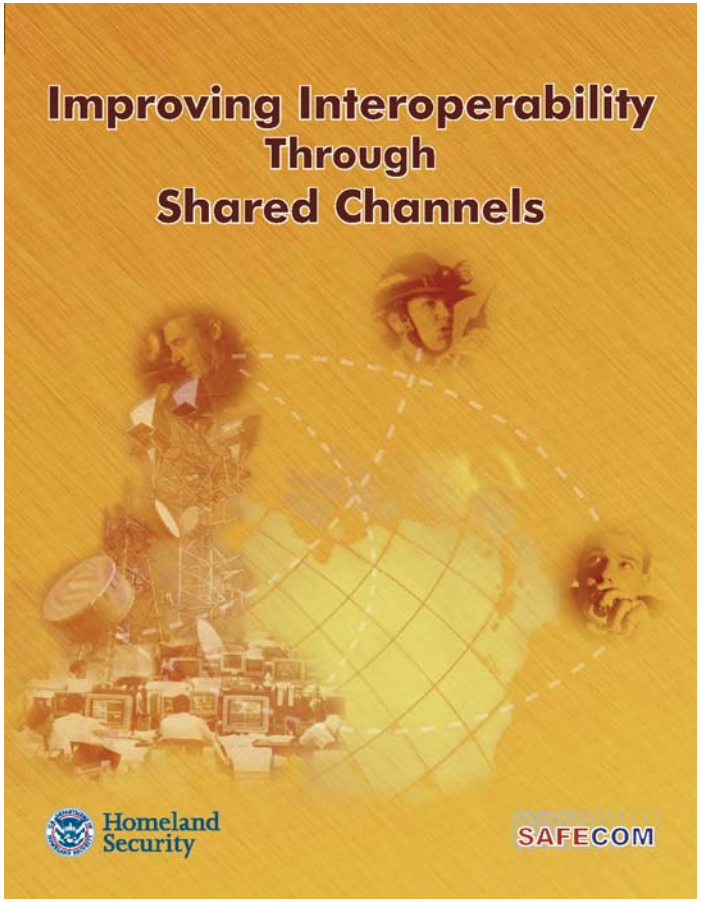
Improving Interoperability Through Shared Channels

Improving Interoperability Through Shared Channels is intended to:

- Create awareness of the shared channel solution for communications interoperability
- Help the emergency response community understand the level of effort, resources, and key actions necessary for implementation
- Provide a set of best practices from existing shared channels implementations



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Challenge

- Each emergency response agency has unique communications resources, needs, and requirements.
- Agencies and communities have chosen to address their communications needs at various times using a mixture of technical approaches.
- Over the years, these independent decisions created a patchwork of communications systems utilizing agency-specific VHF, UHF, T-Band, or 800 MHz radio frequencies.
- The result is a group of emergency response agencies within a city or region that cannot talk to each other.

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Method

- The guide helps emergency response officials overcome this challenge by presenting a cost and spectrum efficient solution.
- While shared channels have been historically used between agencies in the same discipline (e.g., fire services), this guide is focused on creating a multi-discipline, multi-jurisdictional solution.
- The guide outlines key questions, actions, and considerations for implementing a regional interoperability governance structure, creating a shared channel communications strategy, and rolling out a regional shared channel plan.

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Provided in the Tool

- A description of technology solutions for interoperability, identifying benefits and limitations
- An introduction to shared channels
- Key questions to consider when deciding to implement a shared channel solution
- Technology considerations
- Key actions for developing and implementing shared channels
- Additional resources—spectrum related information

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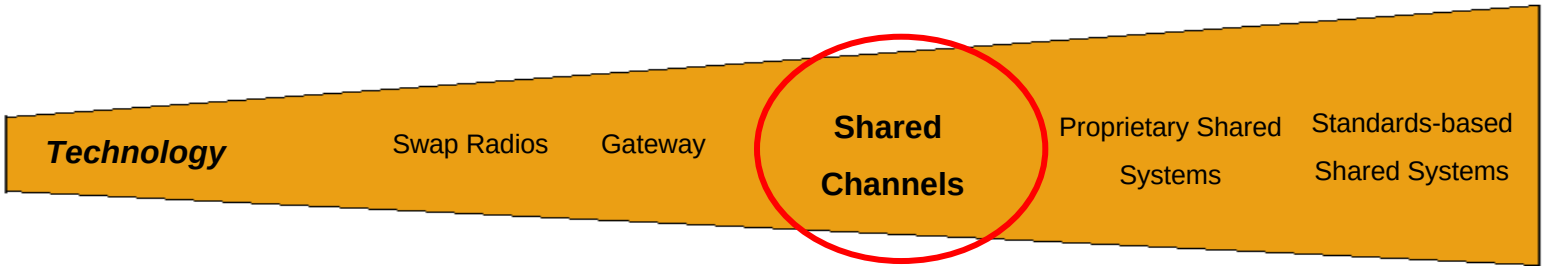
What are Shared Channels?



- Shared channels consist of frequencies licensed to individual agencies by the Federal Communications Commission (FCC) and allocated by the licensee for use by other agencies for the purpose of interoperability.
- The use of shared channels can improve interoperability by establishing a common frequency over which multiple jurisdictions or disciplines can communicate.

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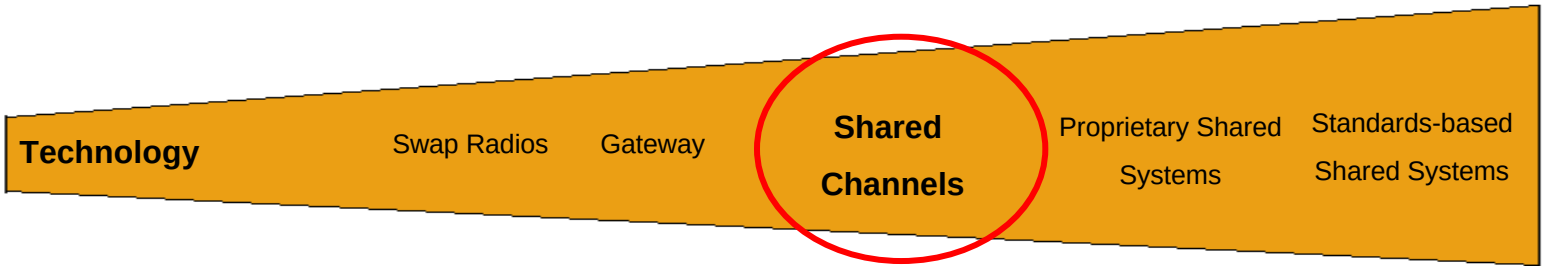
What are Shared Channels? (Cont'd)



- This solution can be achieved using existing systems and resources as long as the shared channels are pre-programmed into each piece of equipment, and the radios operate in the same frequency band.
- Shared talkgroups are specific radio resources that are shared with other agencies and disciplines throughout a trunked radio system.

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Shared Channels Key Actions

1. Establish a Governance Structure and Gain the Proper Leadership Commitment
2. Conduct an Operational Assessment
3. Conduct a Technical Assessment
4. Identify Shared Channels and Establish Policies and Procedures
5. Create a Regional Channel or Talkgroup Plan
6. Develop a Regional Memorandum of Understanding (MOU)
7. Program Radios
8. Train and Exercise on the Use of Shared Channels
9. Regularly Use Shared Channels

Shared Channels Impact

- Emergency response agencies often have the technical elements to become interoperable, yet have not fully assessed its capabilities or engaged in the coordination to make capabilities operational.

- The guide will create awareness of the shared channel solution, a capability inherent in all radios, and provide officials with an understanding of the key actions necessary for implementing the solution.

- A shared channel case study document will be published by DHS in the first quarter of 2008 highlighting shared channel solutions in the state of Montana, the Central Florida region, and the Boston Metropolitan Area.

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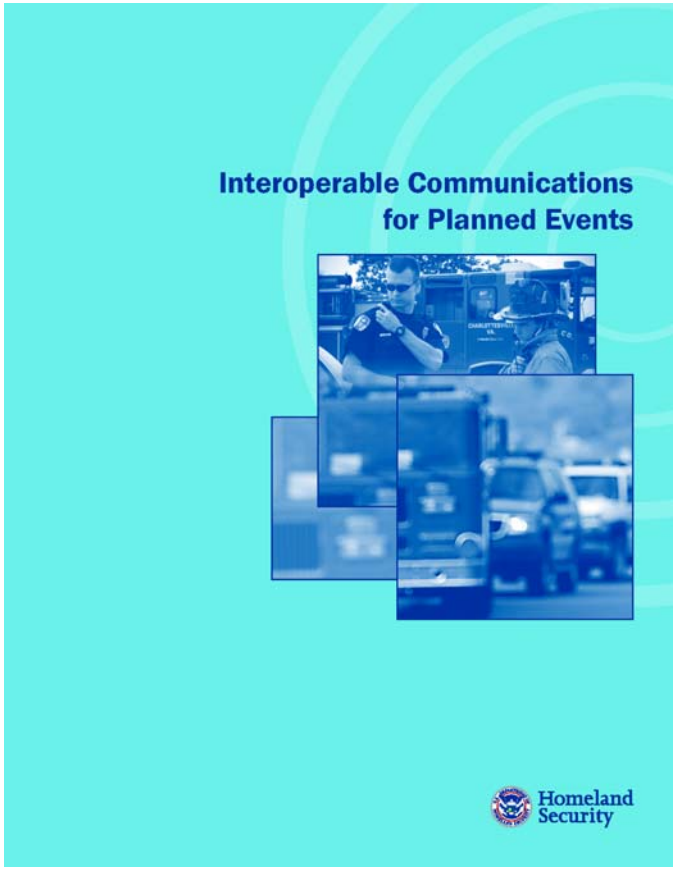
Interoperable Communications for Planned Events

Interoperable Communications for Planned Events is intended to:

- Assist emergency response officials in designing and executing communications plans for planned events.
- Provide best practices and lessons learned gathered from practitioners across the country.
- Give a methodology for using planned events as a way to test equipment in real-life situations and better prepare for unplanned future events.



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Challenge

- Emergency response agencies often support planned events without a solid leadership team, communications plan, or training, thereby leading to an inefficient operation or possible confusion between staff.
- Planned events are unique opportunities for emergency response officials because they require a different set of skills than everyday events.
- Agencies tend to support planned events without documenting their work, failing to capture lessons learned for future events.
- Planned events provide an opportunity to train and use communications equipment needed during unplanned or everyday events.

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Method

- Created a set of actions and considerations for emergency response officials responsible for planning communications support

- Gathered a set of best practices and lessons learned based on practitioner input from Thunder Over Louisville, Super Bowl XLI – Miami, Super Bowl XXXIX –Jacksonville

- Included a continuous improvement loop to help officials use gaps and lessons learned from previous events to guide officials in future planned and unplanned events

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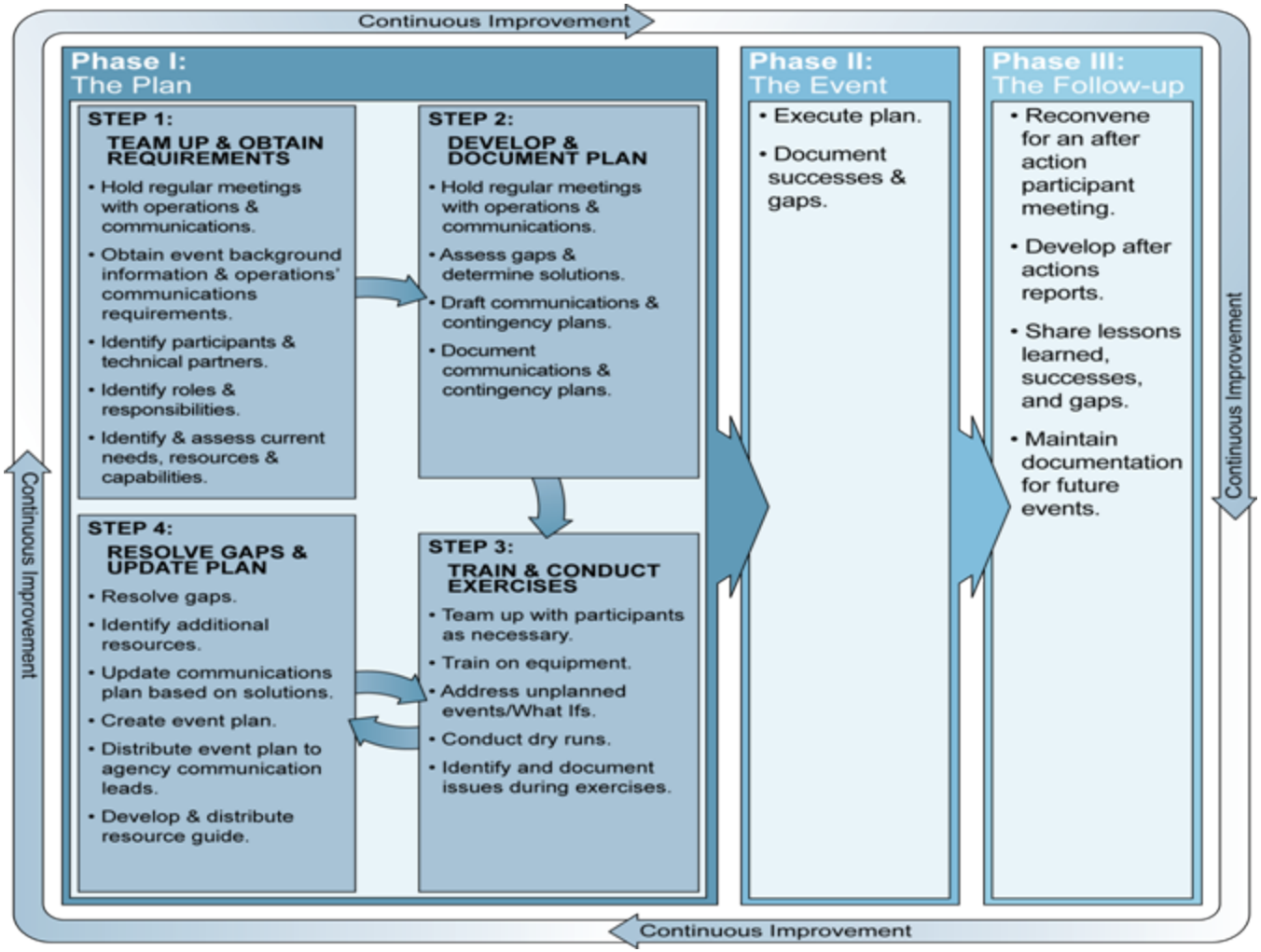
Provided in the Tool

- Planned Events Interoperable Communications Process
  - Phases, steps, and key considerations
  - Continuous Improvement
- Lessons Learned
- Best Practices

Planned Events Preparation



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Planned Events Preparation (Cont'd)

- Phase 1: The Plan
  - Step 1: Team Up & Obtain Requirements
  - Step 2: Develop & Document Plan
  - Step 3: Train & Conduct Exercises
  - Step 4: Resolve Gaps & Update Plan

- Phase 2: The Event

- Phase 3: The Follow-up
  (Continuous Improvement Throughout)

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Interoperable Communications for Planned Events Impact

- This guide helps officials increase overall awareness of the existing voice and data communications interoperability capabilities in their area.

- The importance of establishing relationships with surrounding communities and developing committees comprised of leaders from the local, tribal, state, and Federal agencies to develop the event communications plans is stressed.

- Agencies can begin to identify gaps and implement improvements to increase interoperability for future events.

- Officials can develop and execute successful interoperable communications plans for the next planned event.

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Next Steps

- Pick up, share, and use copies of each document after the session
- More tools and methods available on the SAFECOM Web site at www.safecomprogram.gov

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