Interoperable Communications for Planned Events

Homeland Security

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Interoperable Communications for Planned Events

Introduction

This guide is intended for emergency response officials responsible for designing and executing interoperable communications plans for planned events (e.g., festivals, concerts, and sporting events) in their community. Interoperable communications plans include not only voice but also data considerations. The content presented in this guide is based on input from emergency responders, including lessons learned and best practices.

To use communications equipment and systems effectively in all types of emergencies, emergency response personnel must have multi-disciplinary and multi-jurisdictional opportunities to become familiar with the equipment, practice Standard Operating Procedures (SOPs), and enhance their preparedness. Too often, communities procure communications equipment for interoperability with the intent of using it only when disaster strikes or the need arises. Technology alone, no matter how expansive or advanced, is limited in its effectiveness unless it is used regularly in day-to-day operations.

A planned event is a way for personnel to test equipment in real-life situations. It also provides an opportunity to learn, practice, and implement interoperability solutions and to better prepare for unplanned future events. Communities can modify the methodology presented in this guide to meet the specific needs, realities, and cultures of their areas.

What Is Interoperability?

Communications interoperability refers to the ability of emergency responders to communicate on demand, in real time, when needed, and as authorized, resulting in an effective shared understanding and situational awareness among the responders and the command structure.

Background

The Department of Homeland Security (DHS), with its Federal partners, provides research, development, testing and evaluation, guidance, tools, and templates on communications-related issues to emergency response agencies. DHS helps the emergency response community and local, tribal, State, and Federal policy makers address critical elements for success as they plan and implement interoperability solutions. To encourage a comprehensive approach on improving interoperability, DHS created a framework called the Interoperability Continuum (Figure 1). The framework was developed based on practitioner input and through practical experience working with local governments across the Nation. It visually depicts the core facets of interoperability according to the stated needs and challenges of the emergency response community. The Interoperability Continuum can be used to assist emergency response practitioners and policy makers in evaluating their short- and long-term interoperability efforts.

Of the five elements of the Continuum, Usage is one of the most critical components of interoperability. Usage refers to how often interoperable communications technologies are employed. As highlighted below, the first level within the Usage lane is Planned Events. Through planned events, communication technologies can be tested during day-to-day operations, allowing the community to better prepare for any unplanned events.

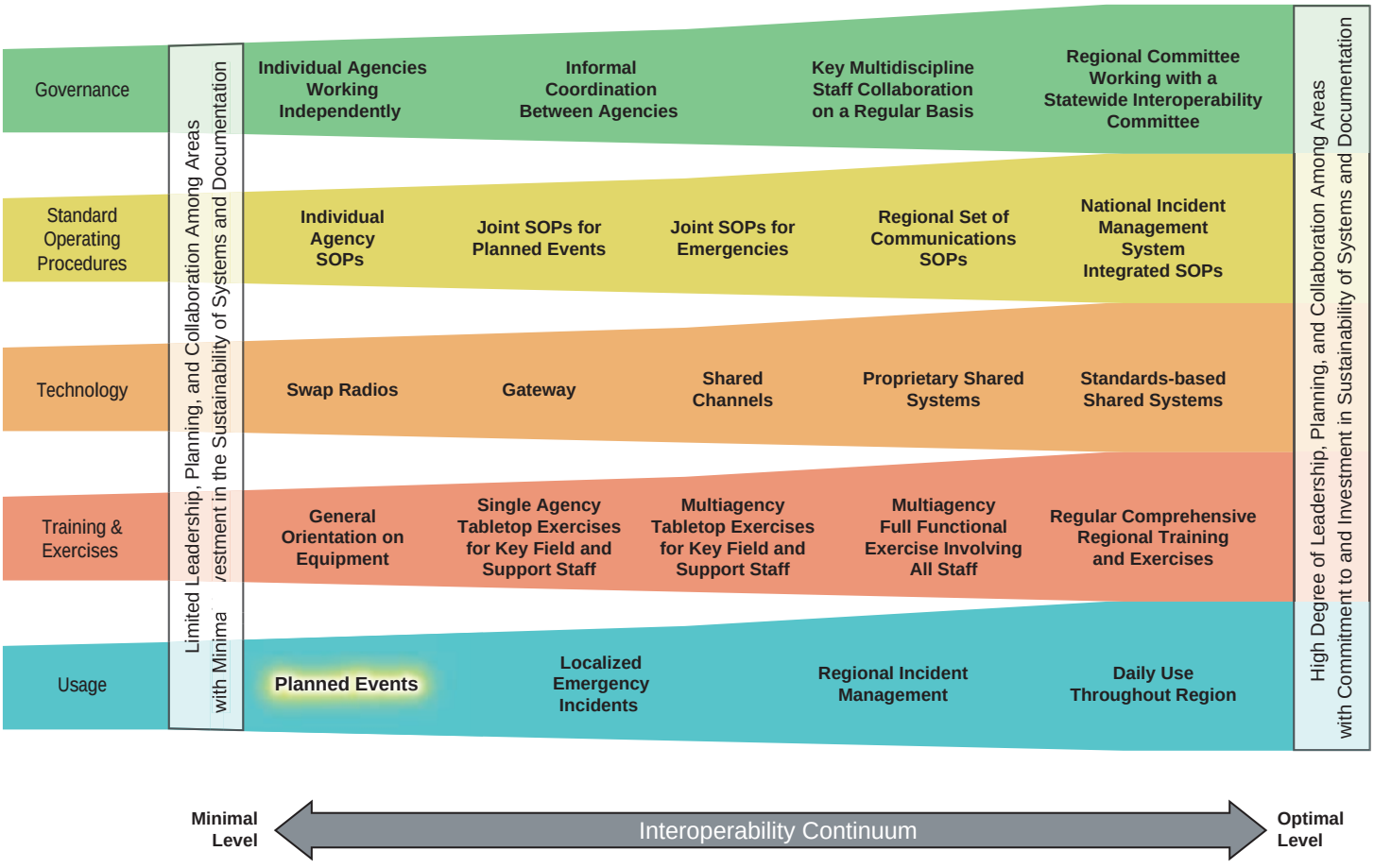

Figure 1

Planned Events Interoperable Communications Process

Successful implementation of interoperable communications for planned events requires detailed planning, participant coordination, accurate documentation, and continuous improvement. The diagram below (Figure 2) highlights the phases, steps, and action items that help lead emergency response officials through the process of planning interoperable communications for planned events. Each phase is explained in more detail in this guide. As the diagram demonstrates, "Phase I: The Plan" is the largest phase. It includes the most steps and action items in the guide. However, each phase within the process is equally important in implementing and executing a complete interoperable communications plan.

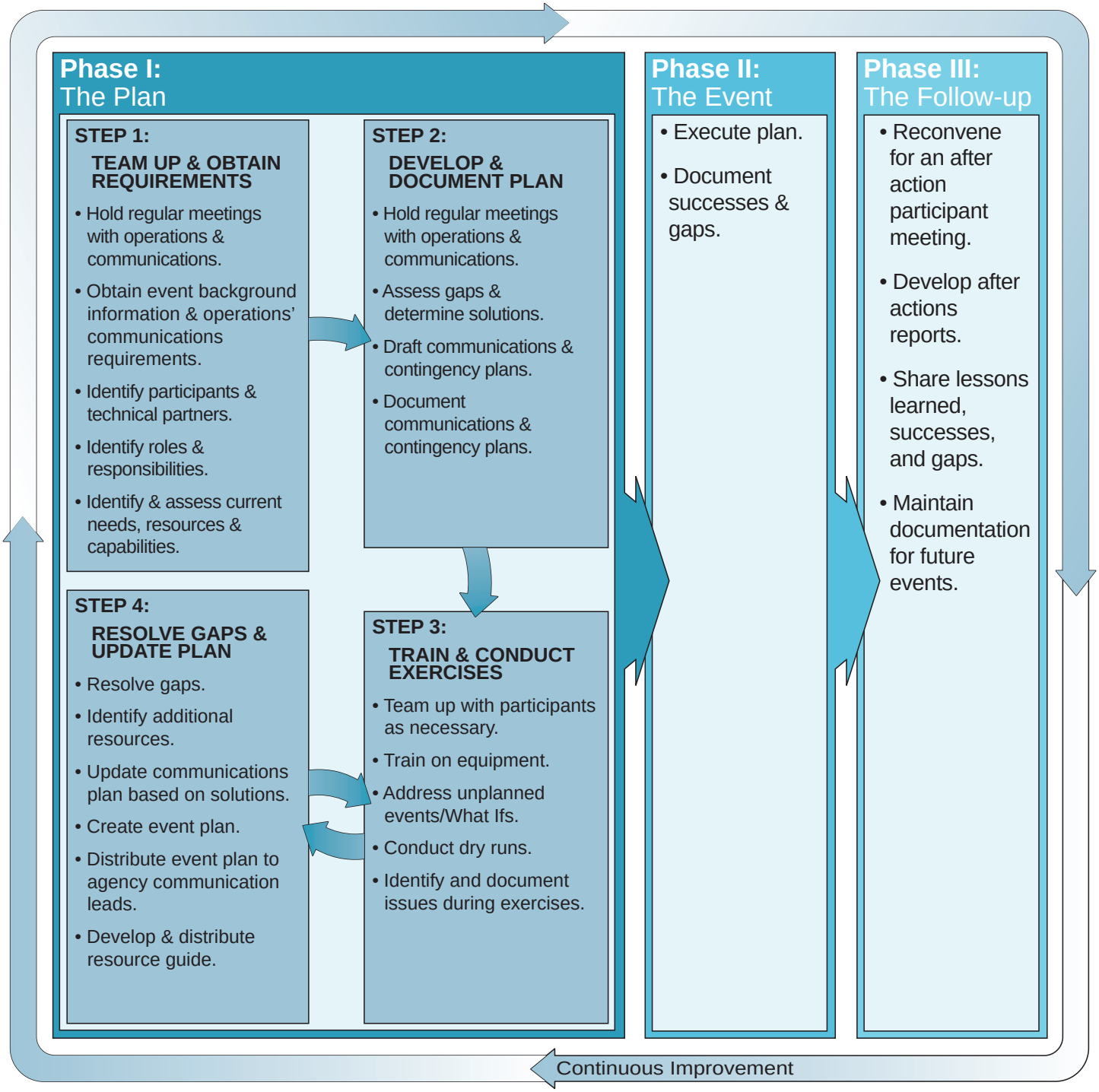

Figure 2

Phase I: The Plan

The first phase in planning communications interoperability for a planned event starts with formulating "The Plan." This phase includes the following four steps:

Step 1: Team Up & Obtain Requirements

Step 2: Develop & Document Plan

Step 3: Train & Conduct Exercises

Step 4: Resolve Gaps & Update Plan

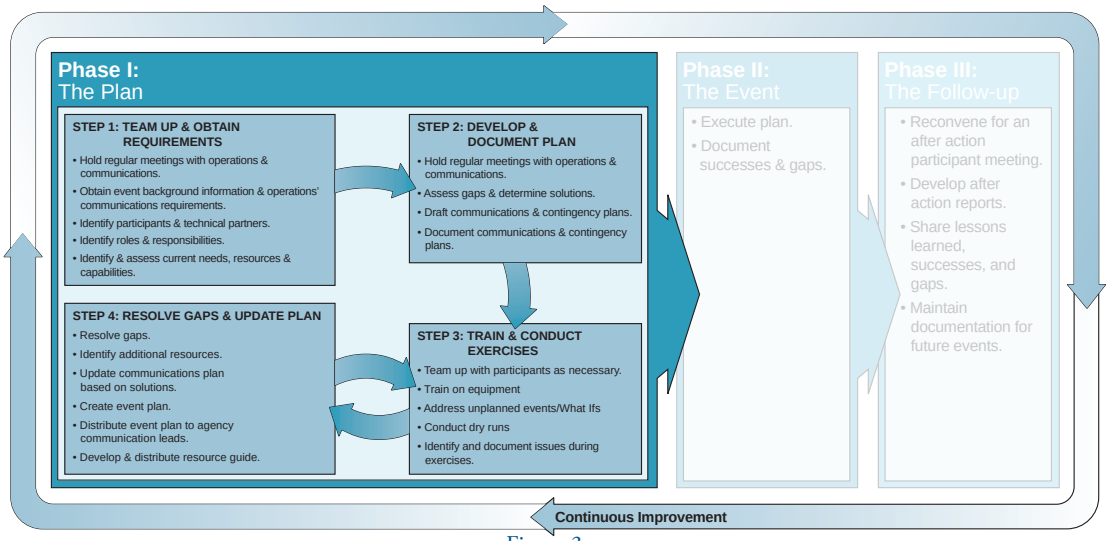

Figure 3

The size and nature of the planned event will determine how far in advance the planning starts. However, the lead communications agency needs to be involved from the beginning to understand and support operational needs during the event. It is important to identify and establish regular communication between communications teams, operations teams, and other identified participants in the event.

STEP 1: TEAM UP & OBTAIN REQUIREMENTS

The first step in Phase I is to establish planning teams and obtain the communications requirements as needed. To do this, perform the following actions:

- ✓ Hold regular meetings with operations and communications.
- ✓ Obtain event background information and operations' communications requirements.
- ✓ Identify participants and technical partners.
- ✓ Identify roles and responsibilities.
- ✓ Identify and assess current needs, resources, and capabilities.

Hold regular meetings with operations and communications

It is important to begin Step 1 by teaming the communications and operations teams from the initial stages of the planning process and establishing the communication capabilities that are needed during the event. The communications team should handle communications requests from operations, including different operational elements such as law enforcement, fire response, emergency

"The main objective of interoperable communications is to provide human interoperability. When developing a communications plan for an event or incident, the operational needs of the event should determine the type of technology used. Don't overcomplicate things when you don't have to."

-Sergeant Robert Sisley,
Communications Unit,
Miami-Dade Police Department.

medical services (EMS), tactical, marine, air, investigative, and intelligence units. It should assist in describing capabilities as well as limitations. Although the event details will not be made final in early meetings, the communications supervisor should be involved early on to identify needed resources that could take considerable time to secure. The communications team should continue to regularly attend operations meetings, as communications requirements may often change during initial planning.

Obtain event background information and operations' communications requirements

In meetings with operations, the communications team will gather all necessary background information about the event. When establishing the requirements, the teams should map out who needs to talk to whom and who needs to share information and data with whom (i.e., who needs to interoperate). It is important to identify additional participants that are going to be involved in the event, such as law enforcement, fire response, EMS, specialty units from other jurisdictions, and State and Federal agencies. These additional participants may bring in additional resources and capabilities about which the communications supervisor will need to be aware.

Identify participants and technical partners

Once the communications team receives the initial requirements, it will be able to identify any additional communications partners that are needed, such as local fire response, EMS, public works agencies, the U.S. Coast Guard (if the event occurs near waterways), the Federal Aviation Administration, and the Federal Communications Commission. It is critical in the early planning stages to identify all emergency response agencies and jurisdictions that need to be involved in the communications planning for the event. This pre-planning makes it possible for everyone involved to be aware of the communications equipment and infrastructure set up for the event. By involving multiple agencies and jurisdictions in the planning, potential communications weak spots (e.g., procedural inconsistencies between the multiple agencies and jurisdictions) can be identified well in advance of the day of the event.

Identify roles and responsibilities

Regular meetings will need to be held to determine roles, responsibilities, and technical needs. For any event, the communications team supports all operations staff at every step in the planning process. The team is there to provide the most practical and effective communication solutions for the stated operational needs.

Depending on the scale of the event, the communications team may want to create a specific team, separate from daily operations, responsible for designing, executing, and evaluating the communications plan. This team should be comprised of representatives from local, State, and Federal agencies who have both voice- and data-oriented backgrounds and can coordinate all necessary communications resources for the event, including information sharing resources (e.g., laptops, personal digital asssistants (PDAs), secured data infrastructures). It is important for members of this team to be creative, flexible, and conciliatory to run the process smoothly.

The National Incident Management System (NIMS) Incident Command System (ICS) is highly recommended for planned events. Within this structure, a Communications Unit Leader (COML) is designated. The COML can staff his or her own communications unit, to include technical and dispatch personnel, ideally with operational experience. Within this unit, each staff member is assigned specific roles and responsibilities.

For more information, go to: http://www.nimsonline.com/nims_3_04/the_planning_process.htm#responsibilities

Identify and assess current needs, resources, and capabilities

Once roles and responsibilities are established, current needs, resources, and capabilities need to be identified and assessed to determine how to meet operational needs. The following questions should help start the process:

- Are there agreements in place with all required agencies and jurisdictions?
- What governing structure exists to assist the planning process?
- Do mutual aid response agreements applicable to the event define or shape interoperable communication needs?
- Are SOPs in place?
- Have agencies and jurisdictions agreed to train and plan together?
- How will communications and information progress relative to the activities listed in the operational requirements?
- Where are the activity areas that will require communication support?
- What critical activities in the event need to be connected for interoperability?
- What are specific communication resources needed by each group and activity?
- Will data interoperability need to be addressed in the planned event? If so, to what extent?
- What is the best method for obtaining a common operating picture of the event (i.e., printed maps, shared software)?
- Are laptops or PDAs necessary to share information?
- Will the scope of the event require different types of technology?
- What current technologies are used regularly in day-to-day operations that could be used during the planned event?
- What technologies may need to be brought in for the event?
- What are all the potential technological and/or communications resources available for an event?
- Will swap radios, radio caches, or other devices be needed to communicate on compatible equipment?
- Should a shared channel or channels and/or a shared data network be assigned to provide the required interoperability?
- Should gateways and/or messaging switches be set up to connect channels from agencies or systems?
- Should shared system resources (i.e., talk groups) be established to support required communications among the agencies?
- Will emergency operations center software/command and control software be needed?
- Is there a need for a separate incident communications center or dispatch unit to handle all calls for this event?
- Is there a separate secure data network for this event?
- Are there Federal resources that can be leveraged for this event?
- Will encrypted channels be needed?
- What is the timeline for designing, executing, and evaluating the event?

Bear in mind the constraints faced by those involved in the planning process. For most individuals, this planning process will be a lower priority than daily duties, but it needs to stay on their "radar."

LESSONS LEARNED/BEST PRACTICES:

- Attending another community's similar planned event is a good way to get an idea of planning for an interoperable communications event. Check to see if the lead agency has an after action report (AAR), or schedule a meeting with the staff that planned the event.
- Multi-agency planning can be difficult if there is no clear understanding between all participants on who is the lead agency. It is good to establish one single point of contact for communications needs.
- The communications team should have decision makers during the planning meetings to define the communications requirements for the event. These individuals should have the authority to volunteer available communications resources for the event. Communications for planned events are most successful with regional executive sponsorship and high-level support.
- It is important at the beginning of the planning stage to address day-to-day operations and the effect the event will have on communications needs of these operations.
- A resource template can be used to document what technical solutions participating agencies employ, their available frequencies, quantity of radios, laptops, and PDAs, and other pertinent information.
- Check in advance to see what types of Federal resources may be available for any particular event. Participating Federal entities may bring a multitude of resources to the event. Building on other local, tribal, State, and Federal relationships may elicit additional resources and support.

"Usually the communications part is an afterthought and forgotten until the day before the event. The communications team needs to be involved from start to finish."

-Debbie Fox,
Deputy Director, MetroSafe,
Louisville, KY

STEP 2: DEVELOP & DOCUMENT PLAN

The next step in Phase I is to develop and document the communications and contingency plans. To do this, perform the following actions:

- ✓ Hold regular meetings with operations and communications.
- ✓ Assess gaps and determine solutions.
- ✓ Develop communications and contingency plans.
- ✓ Document communications for the event.

The NIMS ICS structure can aid in determining who needs to talk to whom, and how to assign frequencies and shared information systems. ICS forms can be used to document and provide views of these frequencies and shared information systems for everyone involved in the event.

For more information go to: www.fema.gov/emergency/nims

Hold regular meetings with operations and communications

The communications team needs to continue to attend meetings with operations even after the communications planning has begun because details of the event will continue to change and issues and concerns will need to be addressed.

Assess gaps & determine solutions

While developing interoperable communications solutions for the event, it is important to assess any weak or problematic areas in the plan and design solutions to address them. Previously the communications team identified and assessed current needs, resources, and capabilities. Now the communications team should assess gaps that are not covered by current resources, and then determine solutions. If there are any previous event after action reports (AARs), the communications team should review any previously determined gaps that were not resolved, and find out whether new solutions exist.

The following questions should be considered as the group assesses interoperable communications:

- Have communication interoperability gaps been thought through?
- Have solutions been found to work around them or through them?
- Are the interoperability solutions set up to appropriately meet the operational tasks this event requires?
- Will all required agencies and jurisdictions participate during the planned event?

Engaging in this assessment allows the team an opportunity to identify and categorize any gaps and address them before the actual event. The group then needs to identify specific and detailed actions for addressing each challenge. This work must be characterized by collaboration, creativity, and empowerment, so significant interoperability issues can be resolved.

Develop communications & contingency plans

Once gaps have been assessed and solutions determined, it is time to create the communications plan. As with any plan, it is important to develop a contingency plan in case the initial plan does not work on the event day.

In developing the communications plan, execute the following actions:

- Draft a timeline for the event and get a commitment from the communications team.
- Agree on a plan for communications design—Specify facilities and reporting locations.
- Develop a communications structure—How will all communications equipment connect with each other?
- Determine participant roles and responsibilities.
- Determine equipment and Radio Frequency (RF) assignments.
- Determine how data will be used:
  - Develop a data plan—How, when, and with whom will information be shared?
  - Equipment—What tools can be used to share data and obtain a common operating picture (e.g., laptops, PDAs, shared software, shared maps)?
  - Data infrastructure—How will data ownership be established, what types of data security will be implemented, what are the bandwidth requirements, etc.?

> *"The key to great communications planning…is communicating…and planning…then communicating the plan. Start early, meet often, challenge assumptions, but test everything else several times. Plan to succeed, but have backup plans for when (not if) something in the plan fails.*
>
> *Run – Execute the plan*
>
> *Review – Analyze what happened*
>
> *Revise – Make adjustments as needed*
>
> *Rerun – Execute the new plan, repeat."*
>
> -Lieutenant William R. Russell,
> Jacksonville Sheriff's Office

- Develop procedures, including:
  - Command and Control—Who is in charge of what and who needs to talk to whom?
  - Equipment—What channels to use and when? Are required resources and equipment available?
  - Use of plain language— Is plain language being used? If plain language is not used by all agencies or jurisdictions during the event, it may be necessary to examine all 10-codes used by those agencies or jurisdictions to ensure cohesiveness of the codes.
  - Staffing—Who is assigned to what station at the event?
  - Training—Who from the communications team as well as other event participants will be trained, and on what equipment? How will they be trained?
  - Demobilization—How will staff record returned equipment?

Contingency plans will need to be developed from the communications plan to establish solutions for potential problem areas. Consider the following in contingency planning:

- Equipment—What equipment will be used if main equipment does not function?
- Staffing—Has additional on-call staff been identified? What are their roles and responsibilities?
- Channel frequencies—Have backup frequencies been identified?
- Bandwidth—Are there resources for additional bandwidth, if needed?
- Procedures—Have separate procedures been established for when to implement contingency plans?
  - Command and Control—If an unplanned event occurs during the planned event, will command of the planned event change? If so, who is in charge of what? Who needs to talk to whom?
  - Equipment—What channels or backup channels to use, and when?
- Training—Will training be needed on additional equipment identified for contingency plans?

Document communications for the event

As solutions are determined, the communications team should compile and validate all communications-related decisions and establish and promote SOPs. Further, the communications team should document the following: event overview, communications structure and plans, contact information, roles and responsibilities, timelines, staffing requirements, frequency assignments, data plans, maps, and contingency plans. It is important to take the time to document all critical information and distribute it to any responders who will use the interoperability solutions on the day of the event. If the information collected is not written down, then the event may not happen according to plan. If the National Incident Management System (NIMS) Incident Command System (ICS) is being used by operations, the communications team will use ICS forms (e.g., forms 204, 205, 214, 217) to document frequency assignments and other communications information.[1]

[1] *For more information and access to ICS forms, go to: www.fema.gov/emergency/nims*

LESSONS LEARNED/BEST PRACTICES:

- Be flexible to constantly changing operational requirements.
- Keep everyone involved and apprised of what is happening during the process to ensure cohesiveness and allow for all to respond in a timely manner to new requests and changes.
- Create common maps and terminology (i.e., plain language) to describe locations of responders, command posts, etc. to ensure all the various participating agencies are interoperable in all aspects of the planned event.
- The use of plain language vs. 10-codes when working with multiple jurisdictions and agencies during a planned event will greatly reduce the chances for error when communicating.
- Gain consensus on common resource typing across jurisdictions to ensure there is no confusion when referring to equipment.

"Had the lead agency not included communications and other areas within the planning process from the beginning to understand scope, then [the plan] would not have worked as well as it did in the end. Sometimes people forget how actions impact other jurisdictions and agencies without having the agencies involved from the get go."

-Beth Horn,
Information Systems Manager,
Jacksonville Sheriff's Office.

STEP 3: TRAIN & CONDUCT EXERCISES

The next step in Phase I is to train and conduct exercises based on the communications plan. To do this, perform the following actions:

- ✓ Team up with participants as necessary.
- ✓ Train on equipment.
- ✓ Address unplanned events/What Ifs.
- ✓ Conduct dry runs for the communications and contingency plans.
- ✓ Identify and document issues during exercises.

Team up with participants as necessary

Before training, determine who needs to be trained on what equipment or systems. Then contact the necessary participants (surrounding counties, Federal officials, vendors, etc.) for involvement in the training exercises and dry runs.

Train on equipment

It is important to train staff on new equipment and procedures well in advance of the event. Training must also occur on any backup equipment that could be used for the planned event. Further, any staff from other agencies or new staff should be trained on any equipment they are not familiar with.

Address unplanned events/What Ifs

Create "What If" scenarios to determine how resources would be escalated for any unplanned events within the planned event. Document any limitations or gaps that result from these scenarios. Below are questions to think about when creating "What If" scenarios:

- What communication is required (from whom/to whom)?
- What operational task is aided with each communication?
- How will the communication connection be established (equipment, frequency, shared access to software and systems, shared infrastructure/data connection, etc.)?
- What if the planned resources get overloaded? Is there a need for additional resources? Are additional resources available?

For the Super Bowls in 2005 and 2007, both Jacksonville and Miami-Dade participated in "RF War Games" prior to game day. During this time, all communications equipment was turned on at once to make sure there was no interference between frequencies and other radio resources. All agencies with communications participated, including vendors and media. This was also a good time to test all equipment, including backups.

Conduct dry runs for communications & contingency plans

Once the communications and contingency plans have been reworked, as necessary, the communications team will need to run drills or tabletop exercises with operations to verify the communications solutions for the day of the event. In verifying the communications solutions, exercises need to test not only whether the equipment works, but also whether the procedures work. It is sometimes assumed that communications is the one component that will run smoothly, but often AARs mention communications as the one area that had complications. It is important to validate the communications solutions documented in the plans before the actual event. The goal of conducting exercises is to do everything possible to test the initial plan and contingency plan, and creatively design communications solutions.

Identify and document issues during exercises

During the dry runs, continue to identify and document any weaknesses or gaps in the communications and contingency plans. This is important to ensure a record exists and to promote better accuracy in the future.

LESSONS LEARNED/BEST PRACTICES:

- Train before any exercises or dry runs are scheduled, especially with new equipment.
- While the exercises are conducted, let the participants know that it is safe to discuss any and all flaws and issues. If these flaws are not discussed and resolved, they may occur during the actual event.
- Set up multiple communications posts with extra equipment to allow for quick response to any problems. Make sure the communications team has all information on personnel, frequencies, shared bandwidth, and resources provided by other agencies.
- Pre-test all equipment prior to any exercises with operations.
- Before the event, test equipment to make sure there is no radio frequency interference. Also, test data exchanges to ensure bandwidth is sufficient and users have appropriate access to information.
- Contingency plans should include not only additional equipment, but also staff and other non-technology-driven plans. E.g., what is the plan if all types of communications go down? Think about backup staffing such as cadets, explorers, or volunteers for use as couriers.

STEP 4: RESOLVE GAPS & UPDATE PLAN

The next step in Phase I is to resolve the identified communications gaps and update the plan, as necessary. To do this, perform the following actions:

- ✓ Resolve gaps.
- ✓ Identify additional resources.
- ✓ Update communications and contingency plans based on solutions.
- ✓ Create event plan.
- ✓ Distribute event plan to agency communication leads.
- ✓ Develop and distribute resource guide.

Resolve gaps

The results of the exercises in Step 3 will create a list of potential and actionable issues that need to be worked through prior to the event. This list should be prioritized by the communications team with input from other event participants. When working through the list of gaps and issues, consider the following:

- Have communications interoperability gaps been thought through and has the communications team identified means to either work around or through them?
- Will the participation needed during the exercises be received from all agencies and jurisdictions?
- Will an appropriate mix of cross-discipline and cross-jurisdictional resources provide information about potential issues and gaps?

Identify additional resources

Once the gaps and issues have been identified and resolutions defined, additional resources, equipment, and staffing may be required to implement the resolution. These resources will need to be identified prior to the event, and as necessary, tested and trained.

Update communications plan based on solutions

As gaps are identified during exercises and solutions are developed, the communications plan will need to be updated appropriately. Any changes in the structure, procedures, equipment, and staffing will also need to be updated in the plan.

NOTE: *In the process diagram (Figure 2 on page 3) between Steps 3 and 4, circular arrows are displayed. Once training and exercises have been conducted and initial gaps have been found and resolved, the plan is updated, and needs to be tested. If new resources, procedures, or equipment are added or updated, training with those items will be needed. These steps are cyclical; they will constantly proceed from one to the other until solutions are applied and documented in the final plan.*

Create event plan

Once all solutions are developed and executed, an event plan will be set. The event plan should include any backup plans that were discussed.

Distribute event plan to agency communication leads

Before event day, a copy of the event plan—including frequency assignments, points of contact information, maps, backup plans, and additional information— should be distributed to all agency communication leads involved in the event.

Develop and distribute resource guide

For the rest of the staff involved in the event, develop a resource guide that contains the main frequency assignments, points of contact information, and any additional information staff will need as it executes the plan on event day.

LESSONS LEARNED/BEST PRACTICES:

- Once table top exercises are completed, determine any gaps in the process and identify additional resources and solutions that will address what did not work.
- Document the issues and resolutions, when they need to be resolved, and who will take ownership for their resolution. This process should create integrity within the group and allow members to hold each other accountable to assigned tasks.
- Set expectations for when and how to follow up each task.
- The team needs to be adaptable not just to the technical side of the communications plan, but also to involved personnel and agencies that may appear with additional resources (e.g., Secret Service, Bureau of Alcohol, Tobacco and Firearms, Drug Enforcement Administration, and Federal protection agencies).
- A pocket resource guide is a good reference to hand out to all personnel in the event. The guide should include channel assignments, contact phone numbers, and additional event information for attendees, such as event hours, first aid and parking lot locations.
- Distribute laminated cards with channel assignments and point of contact information for personnel to attach to their identification cards or keep in their pockets.

Phase II: The Event

After developing and documenting the plan, put it into action. Phase II consists of the following steps:

- ✓ Execute plan.
- ✓ Document successes and gaps.

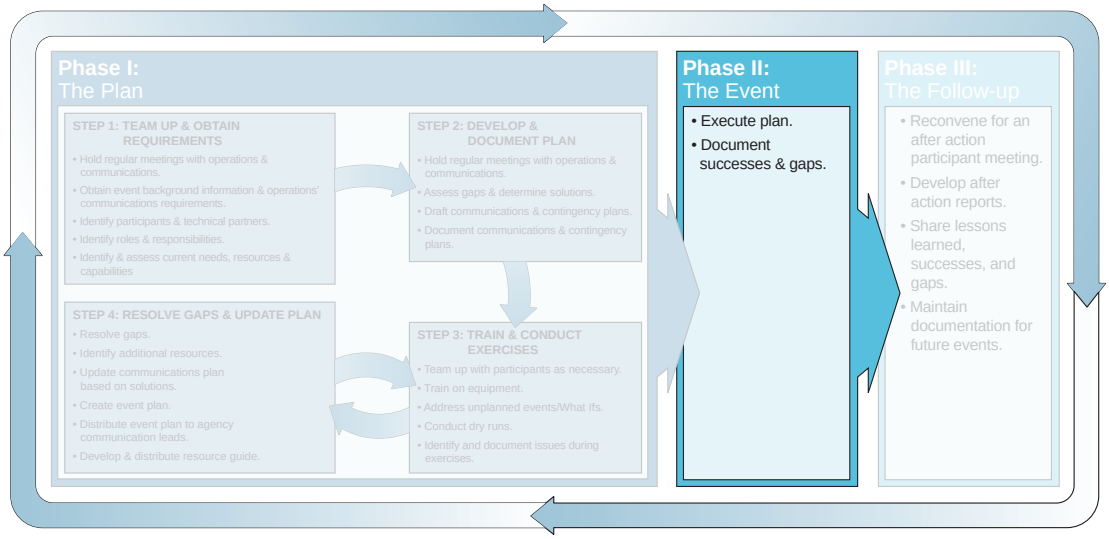

Figure 4

While the event is occurring, document any major successes as well as any gaps for review during the follow-up phase. Since most people will face some changes to their plan, it is important to document these alterations so they may be included in planning for future events. Such data is invaluable during the follow-up phase of a planned event. Information captured during the event will provide more context and background information in order to document future resolutions and best practices.

LESSONS LEARNED/BEST PRACTICES:

- During the actual event, it is helpful to have someone assigned to document the changes that needed to take place, what worked well, and what needs additional work for the next event. If you are able to dedicate a member of the communications team, writing an AAR will be easier.
- Demobilization of equipment will occur as the event is happening and as personnel change shifts. Assigning a communications person to different locations within the event will aid in recapturing equipment efficiently.
- When distributing equipment, have an information sheet available with easy instructions on how to use the equipment. Many agencies have different systems, so when handing out radios or laptops, include detailed instructions for specific features that might be used. Last-minute training on equipment also may be needed the day of the event.
- Relaying information, whether over the radio, through the computer aided dispatch system, or through another data system is important on the day of the event. To ensure information is being relayed, assign a dispatcher outside of daily operations to the planned event.
- When distributing loaner cached radios, laptops, or other equipment and systems, good record keeping will aid during demobilization and ensure all equipment and systems are accounted for and returned.
- When responding to an unplanned event within a planned event, resist the pressure to deploy units as fast as they check in. Do not let units deploy to their posts until command staff has verified that the team or individual has all of their logistical, operational and communications needs met.

For the Super Bowls in Miami-Dade and Jacksonville, video cameras were an integral part of the interoperable communications plan. They allowed a single picture to substitute for many words and helped provide a common view of events. Jacksonville installed over 200 cameras around the city and in the stadium. Miami-Dade had cameras installed throughout the stadium and in helicopters deployed throughout game day.

Phase III: The Follow-Up

Phase III involves reviewing and analyzing the successes, gaps, and issues documented during the event with the agencies that participated in it.

Phase III consists of the following steps:

- ✓ Reconvene for an after-action participant meeting.
- ✓ Develop after action reports (AARs).
- ✓ Share lessons learned, successes, and gaps.
- ✓ Maintain documentation for future events.

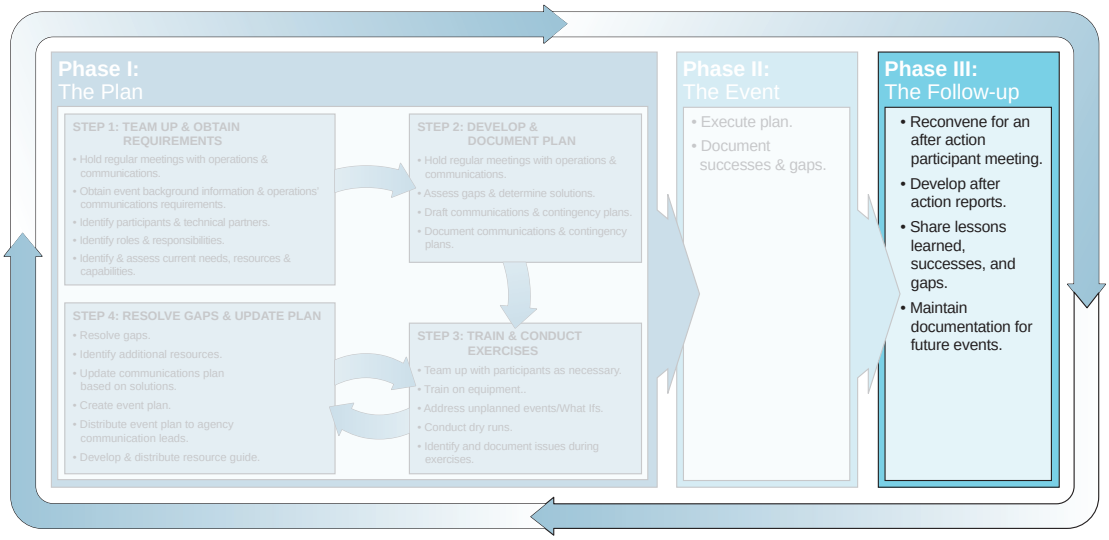

Figure 5

Reconvene for an after action participant meeting

Immediately after the event, begin the follow-up process by inviting all participants to attend an after action meeting. The goal of the after action meeting is to allow all participants to share their observations on successes and failures during the event and to spur ideas for future improvements. Include consideration of situations where interoperable communications capabilities existed, but were not called in during the event. This could be considered a potential flaw, and may indicate the need to increase personnel training prior to the event.

The event follow-up discussion can start with the following questions:

- What worked well?
- What communications capabilities were overlooked?
- What, if any, communications gaps and interoperability gaps exist?
- What initiatives are suggested for resolving communications gaps?
- What capabilities or assets exist that were not known before the event?
- What are suggested upgrades for future exercises?

Every participant should be allowed to share his or her constructive comments. All comments should be captured so that the information can be shared with event participants and used for future events. These post-event observations will aid the development of any necessary incident action reports as well as the AAR.

Develop after actions reports

The purpose of the AAR is to clearly present the communications interoperability issues and resolutions identified during the event and as a part of the follow-up review. Its content should be based on results and observations from event participants, and any follow-up matters uncovered during the post-event communications gap analysis. The communications-specific AAR may be added to a larger, event AAR that includes operational issues and resolutions.

To develop the AAR, take the following actions:

- Review and evaluate participant observations and comments to identify local, tribal, State, or Federal interoperable communications gaps.
- Examine identified gaps, categorize gaps along the Interoperability Continuum, and document them in an improvement plan.
- Provide recommendations for resolving communications gaps.
- Develop recommendations for each gap designed to mitigate or eliminate the gap's negative impacts on interoperability and to improve regional communications.
- Document successes, gaps, and recommendations for resolving each gap in the AAR.

It is essential to document all gaps in the AAR to ensure that these gaps are addressed and do not happen again. The AAR is not an in-depth technical document, but rather a review of the major issues identified during the event. It should be written to summarize the results and mobilize action and support from regional policy and decision makers.

Share lessons learned, successes, and gaps

The AAR, or relevant components of it, should be shared with all event participants. It should also be shared with regional policy and decision makers who can fund and allocate resources for initiatives to bridge the identified interoperable communications gaps. A well-crafted AAR gives a regional decision making body a documented list of recommendations and suggested actions to improve regional emergency response communications and interoperability. As mentioned in earlier phases of this methodology, it is critical to establish support from the regional decision-making body to consider the recommendations of the AAR, before planning and holding future events.

Other participant groups who might benefit from reading the AAR and sharing lessons learned, successes, and gaps include:

- Emergency response supervisors
- Agency communications specialists
- Dispatchers
- Field personnel
- Other event planners

Maintain documentation for future events

Planned events are constantly occurring within communities. By continually updating the communications plan, participants do not have to reinvent the wheel. They can use existing communications plans and update them according to the unique needs of the event. By maintaining documents such as AARs, participants are able to refer to past issues and solutions, see what worked well, and ensure that previously identified weaknesses and gaps do not reappear. Further, if the personnel within the team changes, all information is available for new participants to review and learn about past planned events.

LESSONS LEARNED/BEST PRACTICES:

- Setting up an all-agency meeting/debrief after the event is a sound way to ensure comprehensive feedback.
- Event leaders should meet to summarize the interoperability gaps that were observed.
- Documenting and maintaining the documentation is key to ensuring successful future events.
- AARs and other documentation can also help in identifying daily equipment use. For example, any new equipment purchased for a planned event, such as a gateway system, may be beneficial to different agencies for day-to-day operations.

Continuous Improvement Loop

The continuous improvement loop indicates the ongoing effort to make incremental improvements to the region's interoperable communications capability. As indicated in the diagram (Figure 2 on page 3), the loop circles around all three phases to allow for continued improvement in each phase. Along with an AAR, a documented Improvement Plan can help the team focus on increased effectiveness in specific areas. An initial Improvement Plan should be developed by an event evaluation team. The plan should be based on the findings of an analysis team from the data collected from after-action meetings. The Improvement Plan is the means by which the lessons learned from the event are turned into concrete, measurable actions that will result in improved response capabilities; in addition, the plan establishes the continuous improvement loop. As continuous improvement ensures cohesive interoperable communications for the future, it is a process that should be applied to both planned events and daily operations.

Below are key steps to develop and execute an Improvement Plan:

- Identify the lessons learned from the AAR.
- Identify areas of opportunity and target specific problems:
  - What were the problems that were encountered?
  - What can be done differently?
- Generate and implement improvements based on lessons learned and identified gaps.
- Build measurement tools, monitor implementation, and evaluate measurements.
- Identify actions to address each recommendation presented in the AAR.
- Identify the individual or agency responsible for taking an action.
- Set a timeline for completing the actions.

Conclusion

Through the phases, steps, and action items outlined in this guide, DHS supports communities in their efforts to:

- Increase overall awareness of the existing voice and data communications and interoperability capabilities in their area.
- Understand 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.
- Identify gaps and begin implementing improvements to increase interoperability for future events.
- Develop and execute successful interoperable communications plans for the next planned event.

This guide is based on information gathered from MetroSafe in Louisville, KY, Miami-Dade Police Department, Miami-Dade County Enterprise Technology Services, Jacksonville Sheriff's Office, Las Vegas Police Department, Chicago Fire Department, State of California Operations, Fairfax County Fire and Rescue, and Washington State Police.

Interoperable Communications for Planned Events Checklist

- ☑ Gained a better understanding on designing and executing interoperable communication plans for planned events.

Phase I: The Plan

STEP 1: TEAM UP & OBTAIN REQUIREMENTS

- ☐ Hold regular meetings with operations and communications.
- ☐ Obtain event background information and operation's communications requirements.
- ☐ Identify participants and technical partners.
- ☐ Identify roles and responsibilities.
- ☐ Identify and assess current needs, resources, and capabilities.

STEP 2: DEVELOP & DOCUMENT PLAN

- ☐ Hold regular meetings with operations and communications.
- ☐ Assess gaps and determine solutions.
- ☐ Develop communications and contingency plans.
- ☐ Document communications for the event.

STEP 3: TRAIN & CONDUCT EXERCISES

- ☐ Team up with participants as necessary.
- ☐ Train on equipment.
- ☐ Address unplanned events/What Ifs.
- ☐ Conduct dry runs for the communications and contingency plans.
- ☐ Identify and document issues during exercises.

STEP 4: RESOLVE GAPS & UPDATE PLAN

- ☐ Resolve gaps.
- ☐ Identify additional resources.
- ☐ Update communications and contingency plans based on solutions.
- ☐ Create event plan.
- ☐ Distribute event plan to agency communication leads.
- ☐ Develop and distribute resource guide.

Phase II: The Event

PHASE II: THE EVENT

- ☐ Execute plan.
- ☐ Document successes and gaps.

Phase III: The Follow-Up

PHASE III: THE FOLLOW-UP

- ☐ Reconvene an after action participant meeting.
- ☐ Develop after action reports (AARs).
- ☐ Share lessons learned, successes, and gaps.
- ☐ Maintain documentation for future events.

Notes

Notes

Notes

The Department of Homeland Security (DHS), with its Federal partners, provides research, development, testing and evaluation, guidance, tools, and templates on communications-related issues to emergency response agencies. DHS helps the emergency response community and local, tribal, State, and Federal policy makers address critical elements for success as they plan and implement interoperability solutions.

Homeland Security

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