SITUATION MANUAL

National Mutual Aid Technology Exercise

NAPSG Foundation

June 28-29, 2017
FEMA Headquarters, Washington DC

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1. Exercise Goals and Objectives

1.1 Goal

Demonstrate and exercise functionality and interoperability of mutual aid technology systems through seamless exchange of relevant situational awareness, resource management, and mutual aid information.

1.2 Objectives

Mutual aid operations are an essential component of successful disaster operations needed to stabilize communities and meet the needs of survivors affected by a disaster. The National Mutual Aid Technology Exercise (NMATE) is an opportunity to collectively:

1) Establish and coordinate dialogue and collaboration among the owners of technology-enabled mutual aid systems commonly in-use today.

2) Bring technologists and users together in a no-fault environment to demonstrate and exercise interoperability among mutual aid technology-enabled systems.

3) Identify ongoing challenges and technology requirements needed to support multi-jurisdictional and/or cross-discipline mutual aid operations.

4) Exercise and attempt to resolve interoperability issues in real-time as they arise.

5) Capture and compile interoperability success, challenges, and identify solution sets.

1.3 Outcomes

This exercise focuses on achieving the following outcomes:

- Establish a shared understanding of current and emerging interoperability between mutual aid technology systems.

- Improve collaboration across mutual aid providers and system owners – decision makers, operators, technologists.

- Develop mutual aid technology guidance for sharing real-time information to support mutual aid resource management, situational awareness, and interoperability.

- Document un-met needs, emerging requirements, areas for improvement, and suggested solutions for further exploration.

1.4   Output

The following output will result from this exercise:

- After Action Report (AAR) addressing key discussion points, technical findings, solution sets, and summary of areas for inclusion into guidance documents and follow-on actions. It will include a specific and time-bound action plan aimed at addressing the highest priority needs and requirements in the near- and mid-term. The AAR will be submitted to DHS S&T and shared with all exercise participants.

2.   Agenda

Day 1 * June 28

0815   **Non-Federal Participants Arrive at FEMA Security for Sign-In and Escort**

0900   **Welcome and Introductions**
Dan Cotter, Director, First Responders Group, DHS S&T
Ted Okada, Chief Technology Officer, FEMA
Daniel Alexander, Acting Director, National Integration Center, FEMA

0940   **Orientation to Facility**

0945   **Overview of Exercise Goals and Objectives**
Rebecca Harned, Director Federal and National, NAPSG Foundation

0955   **Orientation to PrepToolkit Exercise Collaboration Space and NAPSG CENTER**
David Blakeman, Contract Support, National Exercise Division, FEMA
Tari Martin, Program Specialist, NAPSG Foundation

1010   **(StartEx) Mutual Aid Technology Exercise**
Facilitator: Dave Halstead, Senior Advisor, NAPSG Foundation
1010 - 1040   Inject 1 (30 min)
1040 - 1050   Incident Scenario and Status Briefing 1 (10 min)

1050   **Morning Break** (Coffee Provided)

1100   **Mutual Aid Technology Exercise (Continued)**
Facilitator: Dave Halstead
1100 - 1130   Inject 2 (30 min)
1130 - 1155   Inject 3 (25 min)
1155 - 1210   Inject 4 (15 min)

1210   **Lunch** (Provided)

Day 1 * June 28 * *Continued*

1310   **Mutual Aid Technology Exercise (Continued)**
                  Facilitator: Dave Halstead
                  1310 - 1320   Incident Status Briefing 2 (10 min)
                  1320 - 1350   Inject 5 (30 min)
                  1350 - 1420   Inject 6 (30 min)
                  1420 - 1450   Inject 7 (30 min)

1450   **Afternoon Break**

1500   **Hot Wash Discussion, After Action Improvement Planning for
                  Interoperability, Information Sharing, and Technology Capabilities**
                  Dave Halstead, NAPSG Foundation
                  Ryan Lanclos, Director, State and Local, NAPSG Foundation
                  Rebecca Harned, NAPSG Foundation

1630   **Day 1 Rewind | Day 2 Introduction**

Day 2 * June 29

0815   **Non-federal participants arrive at FEMA Security for Sign-In and Escort**

0900   **Welcome and Issues from Day 1**
                  Ron Langhelm, Program Manager, First Responders Group, DHS S&T
                  Rebecca Harned, NAPSG Foundation

0915   **Mutual Aid Technology Exercise (Continued)**
                  Facilitator: Dave Halstead
                  0915 - 0925   Incident State Briefing 3 (10 min)
                  0925 - 0955   Inject 8 (30 min)
                  0955 - 1025   Inject 9 (30 min)
                  1025 - 1055   Inject 10 (30 min)

1055   **Morning Break** (Coffee Provided)

1105   **Mutual Aid Technology Exercise (Continued)**
                  Facilitator: Dave Halstead
                  1105 - 1150   Inject 11 (45 min)

1150   **Lunch** (Provided)

1250   **Mutual Aid Technology Exercise (Continued)**
Facilitator: Dave Halstead
1250 - 1300   Incident Status Briefing 4 (10 min)
1300 - 1310   Inject 12 (10 min)
1310 - 1320   Inject 13 (10 min)
1320 - 1330   Inject 14 (10 min)
1330 - 1340   Inject 15 (10 min)
1340 - 1350   Inject 16 (10 min)
1350 - 1400   Inject 17 (10 min)

1400   **EndEx: Afternoon Break**

1410   **Participant Team Briefings**

1510   **Resource Management and Business Practices Hot Wash Discussion**

1540   **Technical Hot Wash Discussion**

1610   **After Action Improvement Planning – Mapping Next Steps**
Ron Langhelm
Rebecca Harned

1630   **National Mutual Aid Technology Exercise Concluded**

3.   Participants

3.1   Participant Teams

Provided below is a list of agencies or organizations and their respective mutual aid technology systems participating in this exercise. Each agency/organization team consists of individuals capable of filling the following roles:

- **System Technician/Technologist:** Individual in this role can discuss their system's architecture and limitations, make just-in-time adjustments to address immediate interoperability during exercise play, and make recommendations for near/long-term enhancements.

- **Operator/Operations Specialist:** Individual in this role can fully use and operate their system and provide public safety operational insight to mutual aid business practices, procedures, and/or polices of the system owner.

- **Decision Maker/Commander:** Individual in this role can provide insight and recommendations regarding deployment, employment, and adjudication of resources

requested/provided as well as inform unified mutual aid smart practices, procedures, and/or validate information exchange requirements.

Participating Agencies and Systems

Agency/Organization	Mutual Aid Technology or System Name
National Emergency Management Association / Emergency Management Assistance Compact	• Mutual Aid Support System • Emergency Operations System
New Hampshire National Guard	• Domestic Operations Viewer
California Governor's Office of Emergency Services	• SCOUT • WebEOC with AGOL Extension
Agency/Organization	Mutual Aid Technology or System Name
USDA/US Forest Service	• Resource Ordering and Status System
International Association of Fire Chiefs	• MutualAidNet
Federal Emergency Management Agency National Preparedness Directorate	• Incident Resource Inventory System • Resource Typing Library Tool
Illinois Mutual Aid Box Alarm System	• Illinois Mutual Aid Box Alarm System
DHS/National Information Exchange Model	• VORTEX

Observing Agencies and Organizations

Agency/Organization	Related Effort
American Red Cross	▪ RCView
American Water Works Association	▪ WARN System
National States Geographic Information Council	▪ GIS Inventory
Federal Emergency Management Agency	▪ Office of Response and Recovery, Response Planning and Exercise Division ▪ National Preparedness Directorate, National Integration Center ▪ Office of the Chief Information Officer

3.2   Scope and Assumptions

Participants should consider the following exercise ground rules to ensure exercise objectives are met in a reasonable amount of time and that the exercise runs smoothly. Keep the following ground rules and assumptions in-mind throughout the exercise:

- **No-Fault Environment**
  This exercise provides a no-fault environment for all participants to come together with their existing technology systems. As many systems were developed prior to the availability of open standards and the use of legacy governance structures and business practices.
  - There are no hidden agendas, trick tasks, or trick questions.

- **Participate openly and focus discussions on appropriate topics related to exercise objectives**
  Asking questions; sharing thoughts; and offering forward-looking, problem-solving suggestions are strongly encouraged, as these will enhance everyone's exercise experience.
  - This is a safe environment for you to share information about your system, including any technical limitations or technical architecture considerations.

- **Focus your comments and consider time constraints**
  In any exercise, assumptions may be necessary to complete discussions in the time allotted. During this exercise, the following assumptions apply:
  - The scenario and likely affects to the communities and surrounding area(s) are plausible, and events occur as they are presented.
  - Be prepared to "parking lot" certain issues and discussions due to time constraints.

4.   Exercise Format

The exercise is designed as a technically-oriented functional exercise and tabletop discussion for all participants and observers, across all disciplines and roles. It has been designed to go beyond discussions and provide an environment for developing, testing, and examining potential solutions and defining next steps that will strengthen mutual aid technologies and business practices.

4.1   Venue Layout

The exercise will be conducted in one large room that simulates an Emergency Operations Center (EOC) environment with participants in pre-assigned sections and seats based on their organization and role. Screens are configured at the front of the room that the Master Control Cell will coordinate for the sharing of applications as needed. There are no separate break-out rooms or spaces.

4.2   Scenario and Simulation

The exercise is based on a single scenario and all participants will receive the injects at the same time via email and shared on the screens. Since this is a technology exercise, the scenario is not the focus of the exercise. The scenario is only intended to provide incident context to the exercise. This exercise has been designed so that you can essentially replace it with any other incident type for the scenario and replay the injects with minor modification.

The exercise has been designed to achieve a basic level of simulation. The Master Control Cell (MCC) is simulating multiple agencies based on those likely to be involved in the incident scenario. However, the technologies being employed by the MCC are not necessarily those used by the agencies being simulated. This was intentional in the exercise design process to reaffirm that the exercise is focused on technology and is not specific to any one incident type or scenario. Each participant will simulate their own agency or organization using their existing mutual aid technology system(s) throughout the exercise.

4.3   Roles/Responsibilities

Participants, observers, and staff/facilitators will be responsible for recording discussions, capturing notes and ideas, and informing after-action products.

- **Staff:** Each of the NAPSG Foundation team members provides either operational or technical subject matter expertise to their specific roles and responsibilities.

- **Facilitators:** Facilitates discussions, ensuring discussions stay on target to achieve objectives.

- **Participants:** Participate and take detailed notes of discussions, successes, innovations, and areas for improvement.
  - System Technician/Technologist
  - Operator/Operations Specialist
  - Decision Maker/Commander

- **Observers:** Contribute to discussions, observer exercise play, and take detailed notes of discussions, successes, innovations, and areas for improvement based on your domain or discipline.

Staff Roles and Responsibilities

Staff Member	Roles/Responsibilities in Exercise
David Halstead Senior Advisor	- Lead Facilitator throughout the exercise - Capturing ideas and solution sets for After Action Report
Rebecca Harned Director, National and Federal	- Co-Facilitator for discussion sessions and hot wash - Managing the Master Scenario Exercise List and inject release - Capturing ideas and solution sets for After Action Report
Michael Domingue Senior Advisor	- Leading discussion on Resource Management Dashboards - Drawing out state National Guard coordination in the context of the exercise

	▪ Floating between teams to cultivate group-level discussion and evaluating Resource Management Dashboards ▪ Capturing ideas and solution sets for After Action Report
Carla Boyce Senior Advisor	▪ Supporting discussion facilitation as needed ▪ Floating between teams to cultivate group-level discussion and observe systems and applications ▪ Capturing ideas and solution sets for After Action Report
Tari Martin Program Specialist	▪ Leader of the Master Control Cell ▪ Running the state-level instance of IRIS ▪ Managing the NAPSG CENTER and the Situational Awareness Journal ▪ Capturing technical needs and requirements for solution sets
Ryan Lanclos Director, State and Local	▪ Providing technical expertise and support to each participant team as needed ▪ Floating between teams to cultivate group-level discussion and observe systems and applications ▪ Capturing ideas and identifying solution sets

5.   Scenario Narrative

5.1   Scenario Overview

Exercise and demonstration activities explore information-sharing needed for unified mutual aid decision-making across four key areas and specific functions under each:

- Operations, Support, and Coordination
    - Incident management and emergency management
- Emergency Services
    - Fire, EMS, law enforcement, emergency communications, and search & rescue
- Mass Care
    - Sheltering and Feeding
- Infrastructure
    - Water, wastewater, and electric

For each of these key areas participants will be asked to consider several problem statements given likely consequences of the following two scenarios.

5.2   Situation

A 5,000-acre wildfire has started north of the Wolf River Nature Preserve between Grand Junction and Williston Tennessee and is burning out of control. The fire is immediately threatening 2,000 homes as it continues to spread and move to the east and northeast. At the rate the fire is moving it may endanger as many as 10,000 more homes and businesses if current conditions continue. The wildfire is 0% contained and will continue moving in an east-northeast direction, spreading rapidly with no natural barrier in its way to limit the spread of the wildfire into inhabited areas. Local resources are limited in number, already deployed, and are overwhelmed by the size and magnitude of the event. The need for mutual aid includes:

- Wildfire resources for wildfire containment and control

- Air resources: helicopters and fixed wing

- Fire resources for structural protection

- Overhead for Incident Management Teams

5.3   Guiding Discussion Questions

Focus Area	Questions

Interoperability and Information Sharing	- Can/Do mutual aid technology systems seamlessly share information across systems in real-time?
	  – If so, how and why?
	  – If not, what technical requirements are needed to be able to successfully share information?

Resource Adjudication	- Are there checks and balances within and across systems to ensure resources are not counted multiple times? - Can systems ingest, publish, and/or share incident-specific requirements to support resource adjudication and ensure the right resources are reaching the right places (hardest hit/greatest need) at the right time?
Resource Support	- Can systems display, import, export, and/or publish resource support information such as staging areas, fueling points, landing zones, or other wrap-around services needed to employ/sustain resource(s)?
Situational Awareness	- Can systems share incident-specific data to provide a common operating picture and promote shared situational understanding visually across agencies and organizations? - Examples include: event boundaries/track, initial consequence projections, restricted air space, and incident response actions

5.4   Resource Management Information Requirements

Provided below is a summary of the highest priority resource information point that is required to support resource management during an incident requiring mutual aid. This list was developed by a group of local, state, and federal stakeholders during a work session conducted in December 2016. The list below is not ranked in order of priority.

Resource Information Point	Description
1. Resource kind/type	The most critical information point resource requestors need to know when assessing if a resource can fulfill the necessary capability is the resource kind & type. This information should be consistent with NIMS resource typing definitions. Additionally, this information should be maintained by resource owners as an integral component of their preparedness efforts, which facilitates readiness. This information should be available prior to an event and is required within 0-12 hours from initial incident.
2. Resource response availability	The next most important information point for resource requestors is the response availability of a given resource. This relates to determining if the resource is fully available now and for what type/level of mutual aid.
3. Deployment time	This information point is critical for resource requestor to select/accept a given resource. The requestor needs to know how long (or how fast) it will be until the resource arrives at staging and can be employed in operations. This point includes variables associated with time to deployment and travel time to the assigned area.
4. Resource cost	The estimated cost of a resource and identification of "responsible party" with fiscal obligation to pay for the resource is also a key information point requestors need prior to accepting a resource.
5. Resource readiness	Status of a resource and its readiness to deploy is also a critical information point for requestors. They need to know if a resource is already deployed, available for request, in-service, out of service, etc. This is information needed in the first 0-12 hour operational period in order to determine which resources to request and/or offer for potential deployment. In the case of forecasted noticed events, resource readiness information should be pre-determined.

5.5   Situational Awareness Information Requirements

Provided below is a summary of the highest priority common operational information for situational awareness information specifically. This list was developed by a group of local, state, and federal stakeholders during a work session conducted in December 2016. The list below is not ranked in order of priority.

Situational Awareness Information Point	Description
1. Event scale	This point refers to event complexity, extent, and general location. It is an initial information point needed as soon as available, even if it is a preliminary determination of event location and extent based on best available data or just-in-time/predetermined planning assumptions immediately following an incident.
2. Event forecast/prediction	For notice events, such as hurricanes and planned events, assumptions and predictions are commonly used to assess event magnitude and severity. This includes forecasting consequences to areas directly affected and potential cascading consequences to/from neighboring communities.
3. Event magnitude	For both notice and no-notice events, magnitude is generally assessed within 0-12 hours of initial incident. By about 24 hours, the magnitude of the event has typically been ground-truthed and decision makers are provided with updated consequence analysis.
4. Demographic trends	Key demographic indicators within affected areas are critical information points for both notice and no-notice events. Demographic information for aiding decision-making is not just basic population and data on number of households. This information must go deeper to include trends and other factors, such as primary languages spoken, socio-economic/income brackets, populations with access or functional needs, transportation dependencies, and analysis of commodity and support service requirements based on demographic trends.
5. Critical Infrastructure Impact	No later than 24 hours post incident, decision makers need to be provided with information regarding effects on critical infrastructure. This specifically relates to impacts on community lifelines such as transportation infrastructure, electricity, communications, health systems, potable water, sewer/sanitation, and others. Updates to this information should be provided on a regular basis, but updated once a day at minimum, or as additional information becomes available.

6.   Discussion Questions

6.1   Day 1 Hot Wash Questions

Each team provides a 5 minute brief to all participants about successes and challenges in sharing and consuming resources from the other systems.

Resource Information Questions

- What were the technical methods you used to consume information from other systems?

- What would have made it easier and/or faster to consume that information?

- Were decision makers and operators able to use that information in your systems to prepare for decision-making about resource requests and potential deployments?

- Were players able to identify potential duplication (double counting) of resources?

- Were the resources requested and shared across systems consistently recognized against standardized resource typing definitions?

Situational Awareness Questions

- Identify smart practices to visualize and share common operational information.

- What suggestions do you have to quickly improve system functionality for visualizing and sharing common operational information?

6.2   Day 2 Hot Wash Questions

Each system owner provides a 10 minute briefing and demonstration covering:

- Results and key findings from the exercise based on their system perspective
- Most critical lessons learned from the exercise based on their system perspective
- What are the highest priority enhancements needed for your system?

Resources Management & Business Practice Questions:

- Are existing mutual aid governance structures and agreements sufficient?
    - If so, please explain.

    - If not, what policy and governance is needed to address gaps?

    - Does existing policy/governance adequately support the need to connect systems to enable more efficient and effective mutual aid prior to and during a response?

- What, if any, double/triple counting of resources across systems did you experience in the exercise (or during real world events)?

    - How can live connections between systems help to prevent double/triple counting of resources?

    - What are the highest priority live connections needed to prevent double/triple counting of resources?

- What are the most critical features and capabilities in your resource management dashboards or interfaces that aided you in selecting which resources you would potentially share to support the incident?

    o   Are there any additional applications (Apps) or features that may further aid decision-making on resource management during an incident requiring mutual aid?

- What potential opportunities and challenges does the National Qualifications System (NQS) pose in supporting unified and consistent mutual aid?

    o   What technology capabilities or solutions would enable faster and easier implementation of the NQS?

Technical Questions:

- Does there need to be a set of common fields and/or a base-level resource database schema that all mutual aid systems can incorporate into their systems?

    o   Bearing in mind that each system will have additional and specific fields/databases, this would just serve as a base/foundation.

    o   What are the most critical fields that would be required to fulfill the sharing/exchange of the core mutual aid resource information points already defined?

- What enhancements does IRIS need to support better integration with third party systems?

- How can Vortex be used to support information exchange for mutual aid across local, state, and national levels?

- What features or capabilities does RTLT need to provide to support automation of standardized resource typing definitions and position qualifications?

  o Are the RTLT API services sufficient?

  o If not, what additional capabilities are required?

  o What challenges did you experience in rapidly updating your systems with the new /updated position qualifications?

7.   Participant Evaluation Form

1) Indicate what role you had in the exercise
   (Circle One)

   Participant

   Observer

   NAPSG Staff

   Federal Partner

   Other _____

2) Did the exercise successfully address all the exercise objectives?
   (Circle One)
   Yes

   No

   Explain your response: _____
   _____
   _____
   _____

3) How valuable was it to have all the other leading mutual aid partners participating in the exercise?
   (Circle One)
   Very Valuable

   Valuable

   Somewhat Valuable

   Not Valuable
   Explain your response: _____
   _____
   _____
   _____

4) Did you find the exercise beneficial in informing enhancements to your own system?
   (Circle One)

   Yes

   No

   Explain your response: _____
   _____
   _____
   _____

5) Would you be interested in learning about each other's system enhancement efforts over the next 12 months?
   (Circle One)

   Yes

   No

   Explain your response: _____
   _____
   _____
   _____

6) Did the exercise help you anticipate technical updates that may be required in your systems to support implementation of the NQS?
   (Circle One)

   Yes

   No

   Explain your response: _____
   _____
   _____
   _____

7) How could the exercise design be improved on to further address the exercise objectives?
   _____
   _____
   _____
   _____
   _____