Community LASR Capacity Building

Standards-Based Scientific Research by UAS Academy

Federal Emergency Management Agency (FEMA) Compliant Land.Air.Sea Robotics Programs

In Support of Public Safety

MAY 2017 Update

US National Vision & Enabling Statutes

- National preparedness is a shared responsibility—everyone has a role to play to ensure that our nation can address its greatest risks. The National Preparedness System outlines an organized process for everyone in the whole community to move forward with their preparedness activities and achieve the National Preparedness Goal. Visit http://www.fema.gov/national-preparedness-system for more information.
- PD-5
- PD-8

PD-5: Key MDI to NRP Elements

February 8, 2003
PRESIDENTIAL POLICY DIRECTIVE/PPD-5
SUBJECT: Management of Domestic Incidents

- The NRP, using the NIMS, shall, with regard to response to domestic incidents, provide the structure and mechanisms for national level policy and operational direction for Federal support to State and local incident managers and for exercising direct Federal authorities and responsibilities, as appropriate.
- The NRP will include protocols for operating under different threats or threat levels; incorporation of existing Federal emergency and incident management plans (with appropriate modifications and revisions) as either integrated components of the NRP or as supporting operational plans; and additional operational plans or annexes, as appropriate, including public affairs and intergovernmental communications.
- The NRP will include a consistent approach to reporting incidents, providing assessments, and making recommendations to the President, the Secretary, and the Homeland Security Council.
- The NRP will include rigorous requirements for continuous improvements from testing, exercising, experience with incidents, and new information and technologies.

PD-8: Key NP to CCB Elements

March 30, 2011
PRESIDENTIAL POLICY DIRECTIVE/PPD-8
SUBJECT: National Preparedness

- This directive is aimed at strengthening the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the Nation, including acts of terrorism, cyber attacks, pandemics, and catastrophic natural disasters. Our national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens. Everyone can contribute to safeguarding the Nation from harm. As such, while this directive is intended to galvanize action by the Federal Government, it is also aimed at facilitating an integrated, all-of-Nation, capabilities-based approach to preparedness.
- Therefore, I hereby direct the development of a national preparedness goal that identifies the core capabilities necessary for preparedness and a national preparedness system to guide activities that will enable the Nation to achieve the goal. The system will allow the Nation to track the progress of our ability to build and improve the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of the Nation.
- The Assistant to the President for Homeland Security and Counterterrorism shall coordinate the interagency development of an implementation plan for completing the national preparedness goal and national preparedness system. The implementation plan shall be submitted to me within 60 days from the date of this directive, and shall assign departmental responsibilities and delivery timelines for the development of the national planning frameworks and associated interagency operational plans described below.

UASA Research Hypotheses

- $H_0$1: LASR-Air (drones) are not going to shorten the SAR times.
- $H_0$2: LASR-Air (drones) do not reduce public safety personnel time on task.
- $H_0$3: LASR-Air (drones) do not reduce public safety personnel exposure to high risk environments.
- $H_0$4: LASR-Air (drones) do not increase the quality of damage assessment.

UASA Program Accomplishments to Date

- ✓Validate UASA 510 as a body of Knowledge for LASR-Air In Public Safety
- ✓Validate UASA 512 as a set of Skills for LASR-Air in Public Safety
- ✓Verify the KSAs of the LASR-Air Qualification Course Sequence
- ✓Establish an Operational Standard for LASR-Air Public Safety Pilots
- ✓Implement Automation to Support Longitudinal Assessment of LASR-Air Operations in Public Safety
- ✓Implement FEMA Compliant LASR-Air Workflows that Foster Community Based Capacity to Support the NRP
- ✓FEMA-aligned Curriculum, Materials, Validation Data, Courses

UASA Findings to Date

- Incident response qualifications other than LASR-Air are required
- Programs that skip the MOST team development process are likely to fail
  - MOST Trend Reporting Required to Have Readiness
  - Strike Team under FEMA Operations branch of ICS is best alignment
    - For LASR-Air Strike Teams – under Air Operations or Joint Cell Ops/Comms
    - For LASR-Land and LASR-Sea Strike Teams under Operations
      - Land Robotics Operations is rapidly emerging as a possible Land Operations specialty
        - Armed Intervention
        - CBRNE
        - Force Multiplier
- KSA development takes 4 days (UASA 510-512 V & V Report)
- KSA mastery takes:
  - 10 Hours of Crew Time, and
  - 4 Hours of Pilot Flying time Every 60 Days, and
  - Perpetual to be Minimally Qualified to be a LASR-Air Pilot at an Incident
    - Known as the “10/4 in 60” Standard for UASA Certification and Proficiency

NIMS Doctrine Supporting Guides & Tools

- The following tools and aids assist users in understanding and implementing the processes and principles of the NIMS. These tools and aids address specific content and processes to ensure that whole community partners are enabled to build and sustain their emergency management capabilities.

  - Mutual Aid Capability
  - Resource Typing
  - Credentialing
  - Standards
    - LASR STRIKE TEAMS
      - LASR-Air

Title	Date
National Incident Management System (NIMS) Basic Guidance for Public Information Officers (PIOs)	November 2007
NG 0001: National NIMS Resource Typing Criteria	March 2007
NG 0002: National Credentialing Definition and Criteria	March 2007
NG 0004: National Incident Management System (NIMS) Communications and Information Management Standards	January 2008
NG 0005: National Incident Management System (NIMS) Preparedness and Incident Management Standards	January 2008
NIMS Guideline for the Credentialing of Personnel	August 2011
NIMS Intelligence/Investigations Function Guidance and Field Operations Guide	October 2013

The National Mutual Aid System

- The National Mutual Aid System is built upon the integration of all types of mutual aid that are most often described by geo-political boundaries, including: local, intrastate, regional, interstate, tribal, and international mutual aid into a single system. Each level utilizes the level below it to create a unified national system for response to significant incidents. When integrated and working in a unified manner, the system strengthens the overall preparedness and readiness of the Nation.
- Mutual aid agreements already exist in various forms among and between all levels of government. These agreements authorize mutual aid between two or more neighboring communities, between all jurisdictions within a state and between states. Agreements can also be with and between private sector entities, NGOs, and other whole-community partners. The emergency management community should consider resources and capabilities across the whole community, and develop written agreements that facilitate access to potentially needed resources.

Resource Management & Mutual Aid

- The purpose of this page is to provide information on NIMS resource typing, NIMS credentialing, inventorying, and the National Mutual Aid System. It also contains a link to the Resource Typing Library Tool. This page is intended for all emergency management and response organizations as well as whole community partners.
  - NIMS Resource Typing & Credentialing
  - Inventorying
  - National Mutual Aid System

Inventorying

- Resource owners and providers should inventory and maintain current information on their shareable resources. Resource inventories should be adaptable and scalable. In order to ensure adaptability and scalability, a jurisdiction or entity's inventory should employ interoperable standards for information sharing. While a resource inventory can be as simple as a paper or electronic spreadsheet, many resource providers use information technology (IT) based inventory systems.
- Incident Resource Inventory System (IRIS) - The Incident Resource Inventory System (IRIS) is a distributed software tool, provided at no-cost by FEMA. It is standards-based and allows for the seamless exchange of information with other instances of IRIS and with other standards-based resource inventory and resource management systems. IRIS allows users to identify & inventory their resources, consistently with NIMS resource typing definitions, for mutual aid operations based on mission needs and each resource's capabilities, availability and response time, and share information with other agencies. IRIS stores data locally on the user's computer or on the user's network if configured during installation.
- To download IRIS to your computer or network use this link: https://nimstools.preptoolkit.org/.

Resource Typing

- **Resource Typing Library Tool (RTLT)** – The RTLT is the online catalogue of all NIMS resource typing definitions and job titles/position qualifications that have been released by FEMA as final publication or interim guidance.
- The RTLT and all NIMS resource typing definitions and job titles/position qualifications released by FEMA can be found here: https://rtlt.preptoolkit.org.
- Using consistent resource management concepts such as typing, inventorying, organizing, and tracking will facilitate the dispatch, deployment, and recovery of resources before, during, and after an incident. For more information about Resource Management, visit http://www.fema.gov/resource-management.
- An Independent Study course on Resource Management is also available through FEMA's Emergency Management Institute at http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-703.a

Authorized Access/Entry Privileges

For an individual/team to be granted access to an incident site by the proper authorizing agent(s), the following three requirements must be presented:

1. Two forms of photo identification to verify identity, of which at least one of which must be issued by a governmental authority (i.e. see examples below);

2. Proof of qualifications/certification, issued by the proper authority as authorized by the State; and

3. Authorization for deployment (i.e. which includes, but is not limited to, the examples below).

EXAMPLES OF ID AND CREDENTIALS (*two from Identity and one from the other columns*)

Identity	Qualification	Invitation
Drivers license/Government issue ID	NWCG Redcard	Letter of Invitation
Passport	NIMS Qualification Card (TBD)	EMAC Verification
ID - Immigration	Red Cross Card	Deployment Orders
ID - Indian Affairs	Medical Corps ID Card	
ID - Company-Employer	Company Qualification Card	
ID - Military		
ID - Law Enforcement		
ID - Fire/EMS		
ID - Public Works		
ID - Hospital		

NWCG = National Wildfire Coordinating Group
NIMS = National Incident Management System
EMAC = Emergency Management Assistance Compact

All of the examples must be signed by the agent authorized by the State Director (or the Governor's designated official).

(1) While acknowledging that the NIMS credentialing is voluntary, this is not to imply that NIMS credentialing allows for circumventing any licensures and/or other professional accreditation requirements.

Scaling the Results

- Nationally Recognized Operating Manual for LASR-Air (FAA sUAS)
- Credentials Are Required IAW FEMA NIMS
- Inventory Typing IAW FEMA NIMS
- Dispatch or Orders IAW FEMA NIMS
- Mutual Aid Agreements
  - Community Mutual Aid CONOPS
    - CERT
    - Other Local Sources
- Continuous LASR Program MOST Trending is Required