



2013 IAB R&D PRIORITY LIST & DESCRIPTIONS

This R&D survey was vetted through the IAB membership. The research and development items were assessed based on the following criteria: urgent need, life safety, mission performance, incident management, compatibility or interoperability, use by multiple responder disciplines, and use in day-to-day operations as well as major incidents.

To learn more about the IAB and the surveys, please visit www.iab.gov.

1. ENHANCE COMMUNICATIONS IN ENVIRONMENTS THAT INTERFERE WITH RADIO TRANSMISSIONS

Portable network extension of current radio capabilities into areas where coverage is prohibited by environment/terrain (e.g. tunnels, canyons, large structures, ships etc.).

2. 3-D TRACKING OF PERSONNEL

Continued technology development for tracking operating personnel in a 3-D environment until these systems are fielded.

3. HANDHELD STANDOFF CHEMICAL AND EXPLOSIVE IDENTIFIER

Instrument capable of detecting and identifying chemical substances (e.g., CWAs and TICs) and explosives from outside the exposure or contamination zone, at standoff distances. This item must be intrinsically safe, able to withstand temperature and humidity changes, and must be ruggedized for field use.

4. NOISE-FILTERING DIGITAL SPEAKER/MICROPHONE FOR SCBA FACEPIECE

Digital radio needs to clearly transmit spoken audio while a responder is wearing an SCBA facepiece. Breathing sounds and any other competing background noise must be eliminated from the radio's transmission.

5. HANDS-FREE RADIO INTERCOM

Portable radio/accessory combination that allows for hands-free, intercom style communications via portable radios amongst a small group of persons in close proximity to each other ($\leq 30'$), simultaneous ability to listen to a command channel, and the ability to talk on the command channel when keying a microphone.

6. FIELD DETECTION/ANALYSIS DEVICES FOR FIRE GASES & PARTICULATES

Hand-held or "man portable" device that will detect and quantify levels of toxic gases, vapors, and particulates commonly found in the post-fire environment.

7. VEHICLE-BORNE IMPROVISED EXPLOSIVE DEVICE (VBIED) RENDER SAFE TOOL

A method for and equipment that will effectively and quickly enter/examine/diagnose/render safe a potential vehicle borne improvised explosive device

8. DEVELOP MODEL PROCEDURES AND/OR LESSONS LEARNED FROM FIRST RESPONDERS TO ATYPICAL EMERGENCIES

Integrated police, fire, and EMS responses will be necessary to mitigate more and more emergencies. Capturing lessons learned will be critical for future development of this capability.



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Photo Courtesy of City of Plantation
(FL) Fire Department

9. SMART RESPONSE VEHICLES

Development of smart emergency response vehicles and systems that use a networked approach to safely respond to emergencies.

10. PUBLIC SAFETY SECURE VOICE COMMUNICATIONS

The need to use encryption to protect sensitive radio communications that can easily be interpreted with commercial, off-the-shelf radio scanner equipment.

11. NATIONAL VIRTUAL COMMAND AND CONTROL INTERFACE TOOL

A single location that integrates the various command and control systems to grant the sharing of information to allow them to make informed decisions.

12. COMPREHENSIVE NATIONAL LIBRARY THAT TRACKS FIRST RESPONDER R&D PROJECTS

An extensive database that would identify the institution, program, university, or private industry to allow for better coordination and decreasing duplication amongst parties

13. PROACTIVE TRAINING RESOURCE (PTR) INITIATIVE

A compendium or resource that accepts all types of ER reports (AAR, lessons learned, IPs, threats, etc.), identifies training strengths and challenges, generates a PTR that

identifies trends and facilitates targeted guidance, training, or protocols.

14. NATIONAL PATIENT TRACKING SYSTEM

A single National Patient Tracking System that is scalable from small to large incidents and can cross jurisdictional boundaries. System should be scaled across local, state, and federal agencies to allow for sharing.

15. CONOPS ANALYSIS FOR ROBOTIC APPLICATIONS WITHIN THE FIRE SERVICE

This analysis would be used to guide funding for development of fire service oriented robotics technologies as they are deemed necessary/possible.

16. MODELING, SIMULATION, & SIMULATOR SOFTWARE EVALUATION TOOL

Software tool that allows users to search for a model, simulation, or simulator appropriate for their particular requirement and receive recommendations based on the criteria developed, the user's constraints, and ranking of importance.

17. INCIDENT STRESS MANAGEMENT SYSTEM

Vetted system for incident stress management and stress surveillance for use following incidents.

18. FIRST RESPONDER APPLICATION STORE

A single place for all first responder applications for mobile devices. This location could be managed by a federal agency and updated as new applications are developed, to allow for easy access by first responders.

19. FIRE RESOURCE DEPLOYMENT MODELING TOOL

A common modeling program to help identify the deployment of resources for day-to-day operations and for disaster operations. This model could be run to identify gaps in coverage based on predicted scenarios or from historical data.

20. IMPROVED GOOD SAMARITAN LAW AT FEDERAL LEVEL AND RELATED PSAS

Research existing Good Samaritan laws, which are all state specific, and craft a law at the federal level covering Good Samaritan activity.