



InterAgency Board (IAB)

2010 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. 3-D Tracking of Personnel

Technology for tracking location coordinates of personnel operating in a 3-D environment.

2. Seamless Communication with Environments that Interfere with Radio Transmissions

Need seamless communication system that enables communication in environments that interfere with normal radio transmissions (e.g. high rises, tunnels, basements).

3. Handheld Standoff Chemical and Explosive Identifier

An instrument capable of detecting and identifying chemical substances (CWA TICs) & explosives from outside of exposure or contamination zone, at standoff distances.

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. Specifically, the breathing sounds from the SCBA and any other competing background noise need to be eliminated from the radio's transmission.

5. Hands-Free Radio Intercom

Portable radio/accessory combination that must allow for: 1. Hands-free, intercom style communications via portable radios amongst a small group of persons in close proximity to each other (≤ 30 feet), and 2. Simultaneous ability to listen to a command channel, and when keying a microphone, have the ability to talk on the command channel.

6. Performance Criteria and Testing Protocol Validate SCBA Facepiece Performance in High Temperature Environments

The findings of several NIOSH Fire Fighter Fatality Investigations has shown that the fire fighter was alive and had breathing air in their SCBA cylinder when the facepiece lens failed. This allowed hot air, gases and combustion by-products to be inhaled.

7. Incident Management Accountability System

An accountability card that holds a radio frequency chip and relays that information to command automatically when you show up on scene.

8. Emergency Responder Body-Worn Integrated Electronics System Development

Development of a body worn electronics system integrating enhanced communications capabilities, locations and tracking capabilities, situational awareness and environmental sensing capabilities, physiological status monitoring capabilities, and respiratory protective equipment status.

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9. Personal Bluetooth (like) Radio Interface

Device would develop a personal interface between the wearer and their existing radios to provide wireless communications capability while wearing Personal Protective Equipment (PPE) and respirators.

10. Vehicle-Borne Improvised Explosive Device (VBIED) Render-Safe Tool

A method and equipment to effectively and quickly enter/examine/diagnose/render safe a potential vehicle borne improvised explosive device (VBIED).

11. Bomb Suit Protective Ensemble with SCBA Interface

Development of a CBRNE certified ensemble that incorporates SCBAs from a wide range of manufacturers as well as providing CBRN protection and integrated cooling.

12. Respiratory Escape Device for SCBA

Develop respiratory escape device for firefighters who run out of air in SCBA.

13. Rapid System(s) to Decontamination of Vehicle Interiors

This requirement is essential for protection against contagious and infectious pathogens (capable of a pandemic spread). The primary focus of this requirement is bacterial and viral decontamination with the secondary focus being chemical and radiological decontamination.

14. Device for Standoff Casualty Triage

A portable device that provides the capability for stand-off casualty triage that is needed and that locates patients that are still viable.

15. Guide for Increasing Patient Transport Capability

The development of a written guide on equipment, procedures, and standards for converting non-medical transportation assets to patient transport assets would improve the federal, state, and local patient and victim transport capability. The guide should focus on commonly available ground transportation assets (metro and school buses, vans, etc), but consideration should also be given to air transportation assets (fixed & rotary wing).

16. Modeling, Simulation, Gaming Software Evaluation Tool

The proposed software tool will allow users to search for a model, simulation, simulator, or game appropriate for their particular requirement and receive recommendations based on the criteria developed, the user's constraints, and ranking of relative importance of those criteria.

17. Equipment/Supply Guide for Relocating Special Needs Evacuees

This requirement is for an equipment & supply guide for the transport and relocation of individuals in nursing homes, homecare, or with special medical needs, with emphases on safety, performance & planning standards, and sources for collaboration & reference.

18. Enhanced Decontamination Capability for Special Needs Victims

This requirement is for equipment to decontamination special-needs populations: bariatric, pediatric, service animals, etc. Current decontamination equipment is not available in pediatric sizes or large enough to accommodate morbidly obese non-ambulatory victims.

19. Weapons Contamination/Decontamination Study

A comprehensive study needs to be conducted on the effects of contamination and subsequent decontamination of weapons.