

# 2011 InterAgency Board (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](http://www.iab.gov).

<b>1</b>	<b>Seamless Communication with Environments that Interfere with Radio Transmissions</b>	Need seamless communication system that enables communication in environments that interfere with normal radio transmissions (e.g. high rises, tunnels, basements).
<b>2</b>	<b>3-D Tracking of Personnel</b>	Technology for tracking location coordinates of personnel operating in a 3-D environment.
<b>3</b>	<b>Handheld Standoff Chemical and Explosive Identifier</b>	This requirement is for an instrument capable of detecting and identifying chemical substances (CWA TICs) and explosives from outside of exposure or contamination zone, at standoff distances.
<b>4</b>	<b>Noise-Filtering Digital Speaker/Microphone for SCBA Facepiece</b>	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.
<b>5</b>	<b>Hands-Free Radio Intercom</b>	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 ( $\leq 30$ 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.
<b>6</b>	<b>Emergency Responder Body-Worn Integrated Electronics System Development</b>	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.
<b>7</b>	<b>Incident Management Accountability System</b>	An accountability card that holds a radio frequency chip and relays that information to command automatically when you show up on scene.
<b>8</b>	<b>Bomb Suit Protective Ensemble with SCBA Interface</b>	Development of a CBRNE certified ensemble that incorporates SCBAs from a wide range of manufacturers as well as providing CBRN protection and integrated cooling.
<b>9</b>	<b>Vehicle-Borne Improvised Explosive Device (VBIED) Render-Safe Tool</b>	A method and equipment to effectively and quickly enter/examine/diagnose/render safe a potential vehicle borne improvised explosive device (VBIED).
<b>10</b>	<b>Rapid System(s) to Decontamination Vehicle Interiors</b>	This requirement is essential for protection against contagious and infectious pathogens (capable of pandemic spread). The primary focus is bacterial and viral decontamination with the secondary focus being chemical and radiological decontamination.
<b>11</b>	<b>Radio and Battery Usage Rating Standardization</b>	

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This task is to adopt a national radio and battery operational standard set by the user that would require all radio and battery manufacturers to comply.

## **12 Respiratory Escape Device for SCBA**

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

## **13 Unknown Substance Field Screening Skills Proficiency Evaluation Program**

A standardized national proficiency evaluation program should be developed and made available to personnel who have assigned responsibilities to conduct presumptive unknown substance field screening so that personnel can demonstrate proficiency.

## **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 Conops Analysis for Robotic Applications within the Fire Service**

R&D is needed to determine how existing and developing robotics technologies can be leveraged for use in the fire service. The Conops Analysis would first determine possible robotics uses in fire service, which would then be used to guide funding for development of fire service oriented technologies.

## **16 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 emphasis on safety, performance & planning standards, and sources for collaboration & reference.

## **17 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).

## **18 Proactive Training Resource (PTR) Initiative**

A compendium or electronic resource that "proactively" accepts all types of emergency response debriefings. Then identifies training strengths & challenges from those debriefs, generates an output matrix that identifies trend indicators, and allows users to be directed to a PTR for use in developing training improvement programs.

## **19 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.

## **20 Enhanced Decontamination Capability for Special Needs Victims**

This requirement is for equipment to decontaminate 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.

## **21 Weapons Contamination/Decontamination Study**

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