



# 2015 IAB RESEARCH & DEVELOPMENT PRIORITY LIST

This R&D survey was vetted through the IAB membership. The research and development items were assessed based on the following criteria: mission performance, life safety of first responders and civilians, strengthening response

systems, and anticipation of purchase by communities in need. To learn more about the IAB and survey, please visit [www.interagencyboard.org](http://www.interagencyboard.org).

1.	<b>USE OF UAV SYSTEMS BY LAW ENFORCEMENT</b>	Research and development into specific uses of UAVs by law enforcement. Research into both conventional uses and possible uses by law enforcement.
2.	<b>NATIONAL INCIDENT COLLABORATION SYSTEM</b>	An open source, electronic platform that collects and displays need to know information for response decision and management support from any and all sources that impact the emergency services sector information sphere.
3.	<b>HIGH FIDELITY, IMMERSIVE, VIRTUAL SIMULATION TRAINING SYSTEM (HF/IVS) FOR CIVILIAN FIRST RESPONDERS</b>	A training system using virtual reality technology which completely "surrounds" all senses (vision, hearing, touch, smell, temperature perception, proprioception) of the trainee.
4.	<b>AUTOMATED GPS TRACKING AND UNIVERSAL SYMBOLOGY FOR LARGE AREA SEARCH EVENTS AND WIDESPREAD DISASTERS</b>	Automated GPS tracking and data logging via smartphone or other devices with the ability to input universal symbology and download into a master system to get data picture at a disaster.
5.	<b>DEVELOP PERFORMANCE REQUIREMENTS &amp; TEST METHODS FOR BALLISTIC-RESISTANT BODY ARMOR FOR WOMEN</b>	Research is needed to support the development of performance requirements and test methods for shaped (non-planar) body armor worn by women.
6.	<b>RESEARCH INTO THE EFFECTS OF BLAST OVERPRESSURE FROM AN EXPLOSIVE DEVICE</b>	Research is needed to address protection of a bomb technician (wearing a bomb suit) from blast overpressure caused by an explosion to include the effects on the human body.
7.	<b>MISSION CRITICAL SECURE COMMUNICATION OVER NON-LMR NETWORKS</b>	As LTE, WiFi and other network technologies become more ubiquitous among first responders, collaborative devices will be used to proxy mission critical voice traffic over non-LMR networks. There is a challenge in providing security, routing, and priority of voice packets over non-LMR networks.
8.	<b>STRUCTURAL FIREFIGHTER PPE INTERFACE IMPROVEMENTS TO REDUCE CONTAMINATION</b>	An effort to examine the interfaces between existing firefighter PPE, specifically the coat to hood, hood to SCBA facepiece, facepiece to helmet, coat to trouser, and trouser to boot. The effort should provide tangible, actionable recommendations to modify these interfaces for better protection.
9.	<b>ISOLATING SPECIALIZED SYSTEMS TO IMPROVE SECURITY</b>	This effort seeks tools and technology to harden first responder systems at the end point and during transmission, develop detective devices to identify anomalous activity network and host-based, and evaluate techniques to assist first responder IT professionals to more effectively secure the system.



## CONTACT INFORMATION

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10.	<b>RESEARCH INTO IMPROVED METHOD FOR ASSESSING HELMETS FOR PROTECTION AGAINST BALLISTIC BLUNT IMPACT</b>	Research is needed to support development of a test method to assess the performance of law enforcement helmets against behind-helmet deformation caused when a bullet strikes the helmet but does not perforate.
11.	<b>DECONTAMINATION OF LAW ENFORCEMENT AFTER A CRIME SCENE</b>	Guidance on when/how law enforcement personnel should decontaminate after leaving a fire scene to decrease the level of contamination and long-term effects on their health.
12.	<b>CHALLENGES OF FILTERING FACEPIECES</b>	Provide a disposable air-purifying, filtering facepiece respirator that provides protection to the user from infectious disease.
13.	<b>STANDARDIZED NATIONAL TRAINING PROGRAM FOR EMERGENCY MANAGEMENT</b>	Develop a series of terminal and enabling objectives for audiences at all levels in response, recovery and mitigation of federal disaster programs.
14.	<b>LESS HARMFUL / SAFER AND MORE EFFECTIVE HUMAN CAPTURE AND RESTRAINT DEVICES</b>	Police and correction officers need more effective, safer yet less harmful technologies to capture humans in flight as well as restrain them for prolonged periods of time. New technologies must reduce physical and psychological harm potential while increasing the safety and efficiency of law enforcement operations.
15.	<b>NATIONAL STANDARDIZED SUITE OF RISK ASSESSMENT TOOLS</b>	Develop common risk assessment criteria, policies, and protocols for conducting, analyzing and disseminating information.
16.	<b>RESEARCH INTO TEST METHOD FOR ASSESSING FRAGMENTATION PROTECTION OF BALLISTIC SHIELDS</b>	Research is needed to support development of a test method to assess the performance of ballistic shields against fragments from an improvised explosive device.
17.	<b>WEARABLE INTRINSICALLY SAFE MINIATURIZED MULTI-DETECTOR SENSOR PLATFORM THAT TRANSMITS DATA THROUGH INTEGRATED WIRELESS OR ANY EXISTING COMMUNICATION SYSTEM</b>	Multiple sensors that are preferably miniaturized and wearable that can be integrated into a single platform with wireless communication capability or that can transmit data through any existing communication system.
18.	<b>AUTOMATED CBRNE EVENT ISOLATION AND EVACUATION</b>	Portable device and V2V (vehicle to vehicle) network application that automatically isolates a CBRNE event from civilians and provides a clear path for first responders to incident.
19.	<b>PORTABLE (HAND-HELD), RUGGEDIZED, RAPID BIODETECTION KIT</b>	Rapid, advanced, field grade PCR-based technology to deliver reliable and sensitive ID and detection of biological pathogens (biothreat, food/water, and environmental); FDA approved.
20.	<b>META-ANALYSIS OF PREVENTABLE CAUSES OF DEATH OF LAW ENFORCEMENT</b>	A comprehensive analysis of the preventable causes of death including death by weapons and vehicles as well as wellness issues such as cardiac and cancer.

21.	<b>INTERACTIVE SIMULATOR FOR COMMAND CENTER TRAINING (VIRTUAL PLAYBOOK)</b>	Develop a recommended process to allow disciplines to theoretically respond to and operate at major emergencies which allow for any decision making and infrastructure protection.
22.	<b>ONE-TIME USE TORSO COOLING UNDERGARMENT FOR SHORT DURATION OPERATIONS</b>	Development of a non-battery powered, non-refrigerant light weight torso cooling garment to be worn under a bomb suit or heavy ballistic vest
23.	<b>INEXPENSIVE, PORTABLE RUGGEDIZED POINT-OF-CARE LAB TESTING DEVICE</b>	Develop a hand-held device for point-of-care testing of bloodwork. It must be inexpensive, rugged, rapid (results < 10 minutes) and have high sensitivity/specificity of lab based blood tests.
24.	<b>RAPID, UNIVERSAL, BATTERY CHARGER FOR PORTABLE IN-HOME MEDICAL DEVICES</b>	A battery charger for portable in-home medical devices that rapidly charges the back-up batteries when electricity is unavailable in the home.
25.	<b>REDACTION OF IMAGERY FROM BODY WORN, VEHICLE, OR SURVEILLANCE CAMERAS FOR PUBLIC RELEASE</b>	Provide technology tool to assess imagery for information and images that contain personally identifiable information that cannot be shared publicly and redact the information for public release.
26.	<b>EFFICACY OF FUSION CENTERS AT THE LOCAL/STATE/FEDERAL LEVEL</b>	Fusion centers have grown in size and scope; however, metrics or assessment methodologies do not exist to determine efficacy of fusion operations of products. Assessment metrics of measurement tool based on common and established criteria is needed.
27.	<b>BODY WORN VIDEO ANALYTICS</b>	Create video analytics for body worn video devices to make the devices more useable/intuitive (i.e. automatic BOLO detection, plate/ID recognition and processing, and gesture deciphering).
28.	<b>NON-BURNING TREATMENT SYSTEM FOR ILLEGAL FIREWORKS</b>	Develop and EPA-approved mobile treatment unit for treatment, recycle/reuse, and destruction of fireworks, other explosives, and pyrotechnics that are safe and protective of human health and the environment.
29.	<b>DEVELOP A FULLY INTEGRATED SCBA/SEATBELT SYSTEM FOR FIRE APPARATUS</b>	A SCBA/seatbelt that allows the firefighter to securely and safely don the SCBA while being buckled into the apparatus.
30.	<b>DATA INTERFACE BETWEEN NEMESIS COMPLAINT, PATIENT CARE REPORTS &amp; HOSPITAL MEDICAL RECORDS</b>	Technology to allow for bi-directional and data-sharing of record of EMS care to follow the patient to the hospital to allow for EMS patient care reports to be accessible by hospital staff.
31.	<b>STANDARDIZED MODEL FOR POPULATION RESPONSE TO DISASTER EVENTS</b>	This model will represent the reactions of various segments of the populace to inputs representing the unfolding of the disaster event and the response to the disaster.
32.	<b>SMALL PORTABLE DECON KIT FOR VIP</b>	An inexpensive, FDA-approved for skin decon kit for use on human skin.