



The InterAgency Board for Equipment Standardization and InterOperability

Strategic Plan for Developing a Suite of Chemical, Biological, Radiological, Nuclear, and Explosives Protective Equipment Standards

Executive Summary

A common suite of First Responder equipment standards is needed to establish minimum performance, and interoperability requirements for Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) equipment utilized by local, state, and federal First Responders to acts of terrorism and CBRNE incidents. Such standards, and the associated requirements and test protocols, serve multiple purposes including: 1) establishing baseline capabilities and limitations for currently available equipment, 2) guiding production and technological developments by manufacturers and designers, and 3) guiding equipment procurement decisions by the public safety and health communities. This document presents the strategy and process within the InterAgency Board (IAB) for Equipment Standardization and InterOperability for identifying, adopting, modifying, and developing CBRNE equipment standards. The priorities for developing standards will be established and periodically reviewed by the IAB Standards Coordination Committee (SCC). It does not address the specifics of schedules, resources, or those standardization processes that are agency and organization-specific. It is relevant to note that no such suite of CBRNE equipment standards exists today, and it is a goal of the IAB to remedy this shortcoming.

This CBRNE Equipment Standards process will be accomplished through two phases – a “Preparation Phase” and an “Implementation Phase.” During the Preparation Phase, requirements for standards will be identified from local, state, and federal First Responder functional and operational equipment requirements. These equipment requirements will be compared to existing standards to determine if existing standards can be adopted into the CBRNE Equipment Standards Suite, if modifications are required, or if gaps exist requiring new standards to be developed. During the Implementation Phase, the recommendations of the equipment SubGroups will be coordinated with appropriate standards organizations to facilitate adoption, modification, and development of standards for incorporation into the CBRNE Equipment Standards Suite. Gaps in standards will be presented to sponsoring agencies and organizations for new standards development. A review process will be established and managed by the SCC to periodically validate the Suite and all incorporated standards.

The National Institute of Standards and Technology, Office of Law Enforcement Standards (NIST/OLES), as the executive agent for the SCC, will implement and administer the CBRNE Equipment Standards Suite repository, to include promulgation where appropriate. Implementation of this suite of standards is expected to be a multi-year process. In the interim, to address the user communities’ needs for CBRNE equipment information, NIST/OLES, on behalf of the SCC, will publish and administer a First Responder equipment set of guides to assist First Responder agencies in making informed procurement decisions.

The Strategic Plan for Developing a Suite of CBRNE Protective Equipment Standards

1.0 Purpose

A common suite of CBRNE equipment standards is necessary to ensure compliance with minimum requirements for performance, commonality and interoperability of equipment utilized by local, state, and federal First Responders in the public safety and health communities. Such standards, as well as the specifications and test protocols that evolve from them, are needed to guide the efforts of the manufactures and equipment developers; and to serve as a guide for informed procurement decisions by criminal justice, medical/public health and public safety agencies. The phrase “public safety and health communities” includes law enforcement, fire

fighters, HAZMAT, emergency medical and other related agencies that consist of the first elements to respond to CBRNE incidents or attacks, and also pertains to organizations that are involved in the mitigation and recovery phases of such attacks. This document describes the strategy and process that the CBRNE Equipment Standards Project will take to develop that common CBRNE Equipment Standards Suite. This document further serves as the action plan for the CBRNE Equipment Standards Project and identifies the tasks that must be undertaken, and the organizations responsible for undertaking them, that are necessary to implement a CBRNE Equipment Standards Suite. It does not address the specifics of schedules, resources, or those standardization processes that are agency-specific. Those remain to be developed within the context of this strategic plan.

The IAB Standards Coordination Committee (SCC) will establish the prioritized order for developing or adopting standards, and will periodically review and revise the prioritization as requirements change or as standards are implemented.

2.0 Goals and Objective

2.1 Goal of the CBRNE Equipment Standards Project – The goal of the CBRNE Equipment Standards Project is to enhance public safety and health by defining and promulgating a set of standards for CBRNE equipment that ensures minimum performance, quality, reliability and that are accepted by public safety and health communities. This suite of standards will be disseminated to the local, state, and federal public safety and health communities to facilitate informed equipment procurement and to guide manufacturers, developers, and the test-and-evaluation community to ensure product compliance.

2.2 Objective of the CBRNE Equipment Standards Project – The objective of the CBRNE Equipment Standards Project is to facilitate the adoption of standards that can be used by local, state, and federal public safety and health communities. In order to accomplish this, strong working relationships must be established with the public safety and health communities, to the point where the communities' representatives play a key and integral role in all facets of the standards process. Further, the project must be oriented, to the maximum extent possible, toward using the approaches, standards, specifications, etc., that already exist within Standards Development Organizations (SDOs), Standards-Related Organizations (SROs), and Standards Enforcement Organizations (SEOs). This project will not reinvent work previously done or provide redundant products, but rather will take advantage of all available information and standards that may be applicable. This project will conform to the regulatory statutes and guidance governing the SDOs, SROs, and SEOs, as applicable.

3.0 Overview of the CBRNE Equipment Standards Suite Development Process

The standards development process consists of two distinct phases — the “Preparation Phase” and the “Implementation Phase.” During the preparation phase, functional requirements are defined and existing standards are surveyed to determine if they address these requirements. During the implementation phase, gaps in the existing standards will be addressed. Additionally, because the implementation of this suite of standards is necessarily a time-consuming process, some interim steps will need to be taken to provide manufacturers, developers and procurement officials guidance upon which they can act now.

3.1 Preparation – During the Preparation Phase requirements for standards will be identified by determining the First Responder functional equipment requirements and comparing those requirements against existing standards to see: 1) if existing standards can be adopted into the CBRNE Equipment Standards Suite; 2) if they need to be modified before being adopted; or, 3) if new standards need to be developed. Functional requirements are derived in equal measure from an assessment of the threat(s) with which First Responders will have to deal and the operational practices and procedures (i.e., how they do business) that they will bring to bear to deal with that

threat. Users will be involved in every stage of this process, providing initial input and feedback on final products.

3.1.1 Identification of the Threat – The first step in the standards development process will be to do a threat assessment to identify the particular agents that are likely to be encountered in a CBRNE terrorism situation, the scenarios in which these agents are likely to be used by terrorists, and the likely methods of agent delivery in a civilian environment. Since the best information is likely to be held by national security organizations and will most likely be classified, it will, of necessity, be restricted to a limited number of people who have the proper security clearances. The second step of the threat assessment will then involve situations where simulated releases can be conducted, using simulants, to develop the appropriate “models” and response methods, while working with trained public safety and medical teams.

3.1.2 Identification of Operational Requirements – This step involves collection of detailed information regarding the functional and operational requirements of CBRNE equipment based on user needs, practices and procedures, i.e., how they go about their business. While identification of the threat defines the nature of the agent(s) and the design parameters for a self-contained breathing apparatus, for example, practices and procedures will define the size and weight of that apparatus, how long it needs to function, and how, and if, it needs to be decontaminated. The information will be summarized and catalogued by equipment type.

3.1.3 Survey and Assessment of Existing Standards

3.1.3.1 A comprehensive survey of existing standards that are relevant to CBRNE equipment will be performed to identify if there are any that can be used without any modification, as well as those that can be used with some modification. The SCC will develop a review and approval procedure for both adoption and modification of existing standards. That procedure must take into account the agency-specific requirements and procedures of organizations currently involved in the development of standards.

3.1.3.2 In instances where the SCC review of existing standards has determined that a particular standard(s) not be adopted in whole or in part, it shall issue a report to the IAB, documenting the limitations and/or shortcomings of the existing standard(s).

3.1.3.3 Recommendations for adoption, modification and adoption, as well as the identification of new standards to be developed will be recorded for action during the implementation phase.

3.1.3.4 Implementation – During the implementation phase, recommendations resulting from the preparation phase will be carried out through coordination with appropriate SDOs, SROs, and SEOs to facilitate adoption, modification, and development of standards for incorporation into the CBRNE Equipment Standards Suite. A periodic review process to validate that the Suite and the standards incorporated into it will also be implemented.

3.2 *Adoption of Existing Standards* – Standards that require no modification will be added ‘as is’ to the CBRNE Equipment Standards Suite. The adoption and inclusion of a standard into the Suite will follow the review and approval process as developed by the SCC. Cognizant SDOs, SROs, and SEOs will be notified. These standards will be disseminated to the state, local, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.1 Modification of Existing Standards – If the SCC determines that an existing standard needs to be modified before it can be used, the review process and a discussion of the limitations shall be documented. Modification to standards will be coordinated with the cognizant SDOs, SROs, and SEOs for implementation. In cases where existing standards are

not able to be modified to meet the specific needs of the IAB, then a new standard will be developed as discussed in paragraph 3.2.2. These modified standards will be disseminated to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.2 Development of New Standards – This type of document will need the most time and resources to develop as well as the most extensive review process to ensure consensus. Where applicable, the need for new standards will be coordinated with the cognizant SDOs, SROs, and SEOs for development. If the appropriate SDOs, SROs, and/or SEOs cannot be convinced to modify a standard, or if no cognizant SDO/SRO/SEO can be found to develop a new standard, then the identified requirement will be addressed through the issuance of a voluntary standard(s). These standards will be issued as National Institute of Justice (NIJ) standards. These standards will be disseminated to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.

3.2.3 Methodology for Reviewing Standards – A process will be put in place so that, on a biannual, periodic basis, the standards included in the CBRNE Equipment Standards Suite will be reviewed in light of evolving threats, evolving technologies, user practices, and user procedures to:

- Reaffirm still useful standards and disseminate that information to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.
- Recall obsolete standards once a review finds a document obsolete, and disseminate that information to the local, state, and federal public safety and health communities and to manufacturers, developers, and the test-and-evaluation community.
- Provide notification when any standards incorporated into the CBRNE Equipment Standards Suite are updated, modified, revised, replaced, or superseded by the SDO or SRO; and when exceptions or waivers are granted by SEOs.

3.3 *Interim Steps* – A First Responder equipment compendium and set of guides will be developed and published to assist First Responder agencies in making informed procurement decisions prior to the implementation of a CBRNE Equipment Standards Suite. These documents will catalogue existing CBRNE equipment and their characteristics and contain test data where found. Of necessity, interim voluntary standards and/or comparative evaluation protocols for testing of CBRNE equipment will also be developed and implemented for selected categories of equipment and threats.

4.0 Organization and Responsibilities

4.1 The key organizations within the IAB that facilitate the development of the CBRNE Equipment Standards Suite are the Equipment SubGroups and the Standards Coordination Committee. The Equipment SubGroups take the lead for developing the functional requirements for equipment in their commodity areas, in close collaboration with the user community. They also identify and recommend to the SCC existing standards for direct incorporation into the CBRNE Equipment Standards Suite, standards that could be incorporated with modification, and new standards that need to be developed. The SCC, which includes the chairs of the Equipment SubGroups, will manage this process and will be principally responsible for implementation and management of the suite.

4.2 Standards Coordination Committee (SCC)

4.2.1 The SCC consists of a panel of representatives from various federal and private standards organizations, and the Co-chairs of the equipment SubGroups and the co-chairs of the Science

and Technology Committee. The SCC is responsible for coordinating CBRNE Equipment Standards projects of the IAB SubGroups with other organizations and enforcing authorities including, but not limited to, National Institute for Occupational Safety and Health (NIOSH), National Fire Protection Association (NFPA), Occupational Safety and Health Administration (OSHA), National Institute of Justice (NIJ), Department of Energy (DOE), Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), and the Office of Law Enforcement Standards (OLES) of the National Institute of Standards and Technology (NIST). As the various equipment SubGroups of the IAB determine minimum performance, quality, reliability, and other qualification requirements for their respective commodities, the SCC, representing regulatory, consensus, and voluntary standards organizations, will endeavor to create national harmonization by incorporating the requirements into their standards. The SCC will also serve as a reviewer during the development of qualification requirements by other SubGroups to:

- Alert SubGroups and request reconciliation when contradictory requirements for complementary equipment are proposed
- Alert SubGroups when proposed requirements are contradictory to federal or state regulations
- Raise attention to similar or additional qualification requirements under internal development within the regulatory, consensus, and voluntary standards organizations
- Provide technical and non-technical advice for improvements

4.2.2 In the absence of appropriate standards for equipment deployed by emergency responders, the SubGroup members will serve as liaisons to their respective organizations to encourage development and harmonization of standards. The Office of Law Enforcement Standards at the National Institute of Standards and Technology (NIST/OLES), as the executive agent for the SCC, will implement and administer the CBRNE Equipment Standards Suite, to include promulgation.

4.3 Equipment SubGroups – There are four equipment SubGroups established by the IAB. These SubGroups are composed of subject matter experts that address domestic preparedness equipment, systems, and protection issues related to a specific commodity area. The four equipment SubGroups are: 1) the Medical SubGroup, 2) the Personal Protective and Operational Equipment SubGroup, 3) the Detection and Decontamination SubGroup, and 4) the InterOperable Communications and Information Systems SubGroup. Each SubGroup has two co-chairs, one from the ranks of the SubGroup’s local and state ranks, and the second from federal or private ranks. The role of each SubGroup is to maintain and update its portion of the Standardized Equipment List and to address the ways and means by which technology can support CBRNE response concerns. Additionally the SubGroups take the lead for developing the functional requirements for equipment, and identify and develop priorities for standards development within their respective commodity areas. The SubGroups identify existing standards that may be incorporated into the CBRNE Equipment Standards Suite without change, identifies standards that may be incorporated into the Standards Suite after modification, and recommends areas for development of standards where none currently exist.

4.4 The Science and Technology Committee (STC) – The mission of the STC is to identify interagency (local, state, and federal) First Responder research and development (R&D) requirements and innovative technologies (fieldable in the next six months to five years) that address CBRNE detection, individual and collective protection, medical support, decontamination, communications systems, information technology, and miscellaneous

operational support. The STC consists of subject matter experts in the R&D field, the co-chairs of the equipment SubGroups and the co-chairs of the SCC.

5.0 Execution

5.1 The CBRNE Equipment Standards Suite will be developed, promulgated and administered as outlined above. The work will be conducted during regularly scheduled meetings of the IAB, specially convened SubGroup sessions, and by members of the SubGroups as directed by the SubGroup chairs.

5.2 Standards Coordination Committee - The SCC will solicit input from the equipment SubGroups, consolidate input, and develop priorities for subsequent efforts, as outline in section 3.0. The SCC will develop, maintain, and publish the list of IAB adopted CBRNE Protective Equipment standards, and develop a schedule for periodic review of these standards.

5.3 Equipment SubGroups - The equipment SubGroups will perform the steps outlined in section 3.0 according to a schedule developed by the Standards Coordination Committee.

5.4 NIST/OLES - Serves as the executive agent for the SCC, and implements, administers and promulgates the CBRNE Equipment Standards Suite repository as appropriate. Additionally, NIST/OLES will publish, administer and maintain a set of First Responder CBRNE equipment guides. These guides will catalogue existing CBRNE equipment and their characteristics and will contain test data where available.