ANSI Homeland Defense and Security Standardization Collaborative (HDSSC)

Meeting Report:

A Roundtable on InterAgency Board for Equipment Standardization and Interoperability (IAB) Standards Needs

Report prepared February 2014

1.0 Background

The American National Standards Institute's (ANSI) Homeland Defense and Security Standardization Collaborative (HDSSC) has as its mission to identify existing consensus standards, or, if none exist, assist government agencies and those sectors requesting assistance to accelerate development and adoption of consensus standards critical to homeland security and homeland defense. The Collaborative seeks broad engagement with the Department of Homeland Security (DHS), Department of Defense (DOD), National Institute for Occupational Safety and Health (NIOSH), National Institute of Standards and Technology (NIST), state agencies, and other relevant entities.

As part of that continuing effort the HDSSC convened the Roundtable Discussion: *InterAgency Board for Equipment Standardization and Interoperability (IAB) Standards Needs*, on February 6, 2014, in Arlington, VA. The half-day meeting focused on discussing standards priorities identified by emergency response and preparedness practitioners from law enforcement, fire, and other public safety agencies.

2.0 HDSSC Co-Chair Opening Remarks

HDSSC Co-Chairs Chris Dubay, NFPA, and Gordon Gillerman, National Institute of Standards and Technology (NIST), opened the meeting.

Chris Dubay welcomed the attendees and thanked them for their participation. Mr. Dubay discussed the HDSSC, noting that the HDSSC can help standards developers and users of standards identify gaps in standards and discuss how those gaps can be filled.

Gordon Gillerman then addressed the group, again expressing appreciation for their participation. Two gaps that Mr. Gillerman identified during his remarks were the need to move from the identification of needs to actual standards development, and the need for making the business case for standards becoming the standard practice of doing business.

Mr. Gillerman closed his remarks by indicating that the roundtable discussion is intended to understand the eight identified IAB standards priorities and discuss the development of a process to address those needs.

3.0 IAB Deputy Chair Opening Remarks

Joseph Booth, IAB Deputy Chair, provided opening remarks to the group. Mr. Booth began by thanking the ANSI-HDSSC for its involvement in organizing this discussion and providing the opportunity for the IAB to participate.

Mr. Booth described lack of standards as the reason for the formation of the IAB in 1998. The IAB came together to address issues in equipment and training standardization, as end users were not driving the standardization process. The equipment capabilities are driven by the first responder community, and the effort to get the responder community to provide input in the standardization process is vital in order to have standards that address their needs. IAB has been at the forefront of the need for standards for first responders and has always seen and emphasized the value of standards.

4.0 Introduction to IAB Priorities

Casandra Robinson, NIST, provided an introduction to the IAB priorities. Ms. Robinson described the IAB process of identifying standards priorities, which begins when an IAB member submits a recommendation for a standards need via an online form. The recommendation is then reviewed by the Standards Coordination SubGroup (SCSG) which then provides additional information. The IAB then reviews the submitted needs and responds via survey, resulting in the IAB prioritized list. The list of standards priorities prior to 2013 are published on www.iab.gov.

During the discussion the Standards Developing Organizations (SDOs) in attendance gave a brief description of their standardization processes. These processes include standardization committees within each SDO receiving identified needs for standards, reviewing the need, and if approved beginning the process of drafting and reviewing the standards through voting and collaboration within each committee. Standardization committees typically have a balanced process wherein one interest group cannot outweigh the others.

ANSI accredits the procedures of SDOs to the ANSI Essential Requirements: Due process requirements for American National Standards. Accreditation by ANSI signifies that the procedures used by the SDO in connection with the development of American National Standards meet the Institute's requirements for openness, balance, consensus, and due process. Consensus, public review, consideration and incorporation of comments, and the right to appeal are all hallmarks of the ANSI process.

5.0 IAB Standards Priorities

Eight standards needs were identified to the IAB in FY 2013. Those needs were reviewed by the IAB based on their categorization and description, resulting in the IAB prioritized list. The eight standards priorities were summarized and discussed during the meeting, and a path forward was developed for each as described below.

Priority 1: Standard for Public Safety Bomb Suits – Additional Requirements

The goal of this priority is to develop performance requirements and test methods to be added to the current version of NIJ Standard 0117, *Public Safety Bomb Suit Standard*, to address blast overpressure protection and chemical and biological protection. Research and testing is needed in order to integrate chemical and biological protection, as well as to determine the impacts of blast overpressure. The DOD: PEO Soldier is researching the next generation bomb suit, and the report is now available.

NFPA will take the lead on this priority to determine the landscape and gather information in order to create a consolidated document assessing research that has been done in this area as well as research that is still needed that can help develop a path forward. NFPA will then determine if it will take the lead on a standard development project.

DHS will discuss this priority with the First Responder Group (FRG) to gauge their interest, specifically on the research and development side of the issue.

Priority 2: Standardized Equipment Training Program Format

The goal of this priority is to develop a standardized equipment training program format to provide manufacturers and vendors with guidance for developing training courses, instructions, and materials for end users. The standard format should be for equipment requiring a specialist to technician level of skill. IAB has published a white paper containing relevant information to this topic that could serve as a basis for this standard. IEEE standards in the N42 series include training equipment and will be examined to determine if they could also act as a starting point for a standard in this area. ANSI/IEEE N42.3-2006 is available for free download at: http://standards.ieee.org/findstds/standard/N42.37-2006.html. FEMA has released a training development tool, firstrespondertraining.gov, that will also be reviewed by the group to determine its relevance in this area.

DHS will examine existing standardized protocols for the training sphere that are already within DHS, and will report back to the group.

ASTM will present this topic to the E54 committee to determine if there is interest based on the information that ASTM receives from this group.

Priority 3: Standard Test Method for Respirator Fit Test Equipment

This priority addresses the need for a standard test method for assessing the performance of respirator fit test equipment. Responders who wear respiratory protection have expressed concern that manufacturer testing is not sufficient. There are existing standards for respirator fit programs and test methods, but not for the fit test equipment. NIST has issued a report on "Porta Count" machine that is applicable in this area.

Both ASTM and NFPA have expressed interest in this area. Additionally NIOSH is currently looking into doing research that could support the development of a standard in this area, and will determine the availability of funding for this effort after their mid-year review.

The NIST document is posted to the HDSSC website for the group's review. The group will provide feedback within one month of receiving the report and it will then be determined who will move this priority forward.

Priority 4: Performance Standard for Protective Helmets

This priority describes the need for standards to define performance requirements and test methods for head protection, including protection against bullet threats and blunt trauma. Several different types of head protection are used by law enforcement and corrections officers, and a comprehensive standard addressing all types of protection is needed. The IAB is currently developing a practitioner needs and requirements document focused on this area. Several existing standards address parts of this issue and can be used as a starting point including: NIJ Standard-0106.01, NIJ Standards-0104.02, UK Home Office Police Scientific Development Branch (PSDB) Publication No. 21/04, Canadian Standards Association CAN/CSA-Z617-06 (R2011), as well as numerous standard test methods for sports equipment and other similar equipment.

ASTM Committee E54.04 has expertise in this area with a cross over from the ASTM sports equipment groups. E54.04 is very interested in taking the lead in moving this priority forward, and will form a task group for the development of a standard in this area. ASTM will discuss if eyewear is considered part of the helmet and will then decide if it will be included in this topic. ASTM will wait for the IAB requirements document to become available before beginning their task group work.

Priority 5: Performance Standard for Protective Shields

This priority addresses the need for a standard for protective shields to address ballistic threats from firearm bullets and fragments/shrapnel from explosions. Many manufacturers claim that the shields used by tactical officers, bomb technicians, etc., are capable of protection against specific firearm rounds and fragments, but there is currently no standard to demonstrate ballistic protection or explosives protection of shields. It is recommended that a modular test method approach be used resulting in separate test methods for fragmentation, blunt impact, ballistic, etc. These standard test methodologies could then be used for many types of equipment. NIJ has performed testing of ballistic shields against fragmentation, and the report is now available. The IAB is planning on developing a practitioner needs and requirements document on this priority. UL 752 on ballistic aspects could be a potential starting point for this priority.

ASTM is currently working on this topic in their E54.04 PPE subcommittee. ASTM will work with UL using the UL standard to collaborate on developing a standard for this priority.

Priority 6: Performance Standard for Explosive Containment Vessels

This priority addresses the need for a standard including performance requirements and test methods to evaluate the functionality of vented and total containment vessels. Unofficial testing has been conducted by the U.S. Marine Corps Explosive Ordnance Disposal program using vessels manufactured by NABCO Inc. and Mistral Security Inc., but that testing has been reliant upon the manufacturer for operational use and specifications.

Phil Mattson will take the lead on moving this priority forward from both the DHS S&T perspective and his role on the ASTM E54.08 subcommittee. DHS will talk to the first responder group (FRG) about this priority as well as the DHS Office of Bombing Prevention. DHS will research the parameters and business case of moving this priority forward prior to reaching out to these groups.

Priority 7: Performance Standard for Tactical Operation Video Cameras

This priority highlights the need for a performance standard to access capabilities of video cameras used by law enforcement and military officers in tactical operations for surveillance and situational understanding. These cameras are available in several configurations: covert placement, hand-deployed, and pole-mounted. The standard must address all system features such as image quality, audio quality, ruggedness of both the camera and monitoring device, length of battery operation, and remote control capabilities.

UL will take the lead on moving this priority forward. UL 2802 examines image quality and would be a good starting point for this priority. NFPA has done work with thermal imaging cameras that may be able to serve as a test method for what could go into a performance standard, and will coordinate with UL under the ANSI pilot project for coordinated efforts to

develop joint standards between multiple SDOs. Additionally NFPA has a data exchange standard – 950 or 951: data and exchange of data, on which they are partnering with APCO. NFPA will share information with UL on these standards as well. UL will also coordinate with the Security Industry Association (SIA) with respect to data format, and will review the ASTM robot standard test for visual acuity.

Priority 8: Standard for Robot Operator Self-Evaluation and Training Program

This priority identifies the need for standardized methods of testing or evaluating operator capabilities and providing follow-on training. ASTM International has developed a suite of robot test methods describing test environments and specific procedures for assessing robot capabilities, and it is likely that an operator assessment methodology could be added to the suite of ASTM standards. The set of test methods would need to focus on situational awareness, maneuvering tasks, terrain and obstacle negotiation, and manipulator strength, reach, and dexterity tasks with an emphasis on vehicle-borne improvised explosive device (VBIED) applications. The objective is to encourage squads to build and use the test apparatuses at their home training locations and possibly create portable test apparatuses that can be shipped to regions for special events.

ASTM will take the lead on moving this priority forward as ASTM E54.08 is already working on a standard in this area. DHS is funding a pilot of setting up apparatus and working with the National Bomb Squad Commanders Advisory Board (NBSCAB) to identify a suite of standards that might be appropriate to assess responders and gather data. DHS will work with ASTM E54.08 in this area.

6.0 Closing Remarks

The HDSSC Co-chairs and ANSI thanked the participants for their thoughts and contributions to the discussions. It was noted that participants would be welcome to submit further ideas to the HDSSC Director (mdeane@ansi.org) at any time.

7.0 Acknowledgements

Recognition and appreciation are due to the following:

- Casandra Robinson, National Institute of Standards and Technology (NIST), Phil Mattson, Department of Homeland Security (DHS), Gordon Gillerman, National Institute of Standards and Technology (NIST), and Chris Dubay, NFPA, for their leadership of this effort.
- All of the attendees for sharing their expertise and introducing key concepts utilized during the discussion.

8.0 Next Steps

During the discussions the following next steps were identified for each priority:

Priority 1: Standard for Public Safety Bomb Suits – Additional Requirements	NFPA will take the lead on this priority to determine the landscape and gather information in order to create a consolidated document assessing research that has been done in this area as well as research that is still needed that can help develop a path forward. NFPA will then determine if it will take the lead on a standard development project.
Priority 2: Standardized Equipment Training Program Format	DHS will examine existing standardized protocols for the training sphere that are already within DHS, and will report back to the group. ASTM will present this topic to the E54 committee to determine if there is interested based on the information that ASTM receives from this group.
Priority 3: Standard Test Method for Respirator Fit Test Equipment	Both ASTM and NFPA have expressed interest in this area. Additionally NIOSH is currently looking into doing research that could support the development of a standard in this area, and will determine the availability of funding for this effort after their mid-year review. The NIST document is posted to the HDSSC website for the group's review. The group will provide feedback within one month of receiving the report and it will then be determined who will move this priority forward.
Priority 4: Performance Standard for Protective Helmets	ASTM Subcommittee E54.04 is very interested in taking the lead in moving this priority forward, and will form a task group for the development of a standard in this area. ASTM will wait for the IAB requirements document to become available before beginning their

	task group work.
Priority 5: Performance Standard for Protective Shields	ASTM is currently working on this topic in their E54.04 PPE subcommittee. ASTM will work with UL using the UL standard to collaborate on developing a standard for this priority.
Priority 6: Performance Standard for Explosive Containment Vessels	Phil Mattson will take the lead on moving this priority forward from both the DHS S&T perspective and his role on the ASTM E54.08 subcommittee. DHS will talk to the first responder group (FRG) about this priority as well as the DHS Office of Bombing Prevention. DHS will research the parameters and business case of moving this priority forward prior to reaching out to these groups.
Priority 7: Performance Standard for Tactical Operation Video Cameras	UL will take the lead on moving this priority forward. UL 2802 examines image quality and would be a good starting point for this priority. NFPA has done work with thermal imaging cameras that may be able to serve as a test method for what could go into a performance standard, and will coordinate with UL under the ANSI pilot project for coordinated efforts to develop joint standards between multiple SDOs. Additionally NFPA has a data exchange standard – 950 or 951: data and exchange of data, on which they are partnering with APCO. NFPA will share information with UL on these standards as well. UL will also coordinate with the Security Industry Association (SIA) with respect to data format, and will review the ASTM robot standard test for visual acuity.
Priority 8: Standard for Robot Operator Self-Evaluation and Training Program	ASTM will take the lead on moving this priority forward as ASTM E54.08 is already working on a standard in this area. DHS is funding a pilot of setting up apparatus and working with NBSCAB to identify a suite of standards that might be appropriate to assess responders and gather data, and DHS will work with ASTM E54.08 in this area.

Appendix A – Agenda

 **ANSI Homeland Defense and Security Standardization Collaborative (HDSSC)**	A Roundtable on: **InterAgency Board for Equipment Standardization and Interoperability (IAB) Standards Needs** **Agenda** **Thursday, February 6, 2014** **Location: Sheraton Pentagon City Hotel** **900 S Orme Street** **Arlington, VA 22204** **Room North 1**

8:00am – 8:30am	**Registration Desk Opens (Continental Breakfast Available)**
8:30am – 9:00am	**Welcome & Opening Remarks** • Chris Dubay, HDSSC Co-Chair, National Fire Protection Association • Gordon Gillerman, HDSSC Co-chair, National Institute of Standards and Technology The HDSSC Co-chairs will provide opening remarks about the HDSSC and the roundtable. Participants will be requested to introduce themselves.
9:00am-9:15am	**IAB Opening Remarks** • Joseph Booth , IAB Deputy Chair Executive Director, LSU – Stephenson Disaster Management Institute The IAB Deputy Chair will provide opening remarks about the IAB.
9:15am-9:30am	**Introduction to IAB Priorities** • Casandra Robinson, National Institute of Standards and Technology Ms. Robinson will provide an introduction to the IAB standards needs priorities including how the list was developed.

9:30am-10:30am	**IAB Standards Priorities (1-4)** 1. Standard for public safety bomb suits – additional requirements 2. Standardized equipment training program format 3. Standard test method for respirator fit test equipment 4. Performance standard for protective helmets A description of the standards need will be provided and there will be an opportunity for the participants to discuss the need and ask questions. Ms. Robinson, NIST, will facilitate.
10:30am-10:45am	**Break**
10:45am-11:30am	**IAB Standards Priorities (5-8)** 5. Performance standard for protective shields 6. Performance standard for explosive containment vessels 7. Performance standard for tactical operation video cameras 8. Standard for robot operator self-evaluation and training program A description of the standards need will be provided and there will be an opportunity for the participants to discuss the need and ask questions. Ms. Robinson, NIST, will facilitate.
11:30am-12:00pm	**Path Forward** • Casandra Robinson, National Institute of Standards and Technology Ms. Robinson will lead a discussion on the next steps on the process for assignment of the standards priorities including any additional discussions that need to be arranged.
12:00pm-12:15pm	**Participants Feedback on Roundtable** • Michelle Deane, ANSI/HDSSC Participants will be able to provide feedback on the roundtable as well as provide suggestions for handling future standard needs.
12:15pm – 12:30pm	**Review of Action Items** • Michelle Deane, ANSI/HDSSC A review of action items and next steps will be provided by Ms. Deane.
12:30pm	**Adjournment**

Appendix B – Roster of Attendees

Name	Organization
Christina Baxter	Technical Support Working Group
Bill Billotte	National Institute of Standards and Technology (NIST)
Joseph Booth	LSU – Stephenson Disaster Management
Greg Cade	National Fire Protection Association (NFPA)
Jessica Carl	American National Standards Institute (ANSI)
Michelle Deane	American National Standards Institute (ANSI)
Chris Dubay	National Fire Protection Association (NFPA)
Gordon Gillerman	National Institute of Standards and Technology (NIST)
Pat Gleason	Safety Equipment Institute
Diane Haithcock	Underwriters Laboratory
Earl Hall	Powell County (MT)
Rick Lake	ASTM International
Phil Mattson	DHS Office of Science and Technology
Pat Morrison	International Association of Fire Fighters
Tim Rehak	National Institute for Occupational Safety and Health
Cassy Robinson	National Institute of Standards and Technology (NIST)
Debra Stoe	National Institute of Justice (NIJ)
Chris Tillery	National Institute of Justice (NIJ)
Dave Trebisacci	National Fire Protection Association (NFPA)
Mike Tuominen	US Forest Service
Brian Washburn	Santa Clara (CA) Sheriff's Office