



ANSI HOMELAND SECURITY
STANDARDS PANEL (ANSI-HSSP)

NINTH ANNUAL PLenary MEETING

NOVEMBER 9-10, 2010 | ARLINGTON, VA

ANSI-HSSP Co-Chairs:
Chris Dubay, Vice President and Chief Engineer,
National Fire Protection Association (NFPA)

Gordon Gillerman, Director, Standards Services Group,
National Institute of Standards and Technology (NIST)

**ANSI Homeland Security Standards Panel
Ninth Annual Plenary Meeting:
U.S. – European Collaboration on Security
Standardization Systems**

November 9-10, 2010

Final Meeting Report

Sheraton National Hotel
900 South Orme Street
Arlington, VA 22204
Galaxy Ballroom, 16th Floor

Tuesday - November 9, 2010

Welcome/Opening Remarks

Karen Hughes, Director, Homeland Security Standards, American National Standards Institute (ANSI) opened the meeting and welcomed the participants. Ms. Hughes began her remarks by acknowledging the support of Dr. Bert Coursey and his team at the Department of Homeland Security’s Science and Technology Directorate (DHS S&T), the ANSI-Homeland Security Standards Panel (ANSI-HSSP) co-chairs, Chris Dubay and Gordon Gillerman, and Dr. Alois Sieber and his team at the European Commission’s Joint Research Centre (JRC) in shaping the plenary program.

Ms. Hughes provided a background on the ANSI-HSSP specifically noting that the ANSI-HSSP leverages public-private sector collaboration to address critical needs in standardization in the area of homeland security. Ms. Hughes added that this plenary meeting is an example of building on collaborative success, as this meeting resulted from a joint meeting between DHS and the JRC in April 2010. During this meeting the following four key priorities were identified for potential collaboration between the United States and Europe: aviation security standardization, borders and maritime security standardization, global supply chain security standardization, and preparedness and crisis management standardization, and the agenda of the plenary meeting adequately represents all of those areas. Ms. Hughes then provided an overview of the agenda, noting that all panels were intended to facilitate an information exchange.

Ms. Hughes concluded her remarks by acknowledging the sponsors, HID Global, National Fire Protection Association, and the Homeland Security Studies and Analysis Institute, for their generous contributions in making the plenary event possible in addition to thanking all of the meeting participants for their active engagement and continued support of the ANSI-HSSP. Ms. Hughes then introduced Chris Dubay.

Chris Dubay, Vice President and Chief Engineer, National Fire Protection Association (NFPA), and ANSI-HSSP co-chair, welcomed everyone to the plenary meeting on behalf of the HSSP co-chairs. Mr. Dubay highlighted the international presence at the 2010 ANSI-HSSP plenary noting that with nine countries in addition to the U.S. represented, a vision for collaboration in the key areas included on the agenda is evident.

Mr. Dubay described the goal of the meeting as seeking concrete standards and conformity assessment solutions that will aid in addressing the gaps and challenges identified in each of the five panels in a consistent manner and eliminating potential duplication. Mr. Dubay noted that a meeting report summarizing the event proceedings would be issued after the meeting in order to begin collaboration on follow-up activities. Mr. Dubay then introduced Mr. Rolf Dietrich.

Keynote Address

Rolf Dietrich, Deputy Under Secretary for Science and Technology (Acting), US Department of Homeland Security (DHS), delivered the first keynote address. Mr. Dietrich began his remarks by thanking Dr. Bert Coursey and acknowledging his efforts in shaping the meeting. Mr. Dietrich then thanked ANSI for inviting him to participate in the event.

Mr. Dietrich described the new Science and Technology Directorate mission that was developed under Under Secretary O’Toole and briefly outlined the five overarching goals. Mr. Dietrich stressed a key objective of the new mission: to strengthen resiliency by providing knowledge products and innovative technology solutions for the Homeland Security Enterprise. Mr. Dietrich highlighted the connection between knowledge products and standards, and noted that standards play a large role in enabling resiliency. Mr. Dietrich added that conformity assessment standards allow independent testing, which is vital as it produces revenue which drives resiliency. Mr. Dietrich acknowledged the 2010 Quadrennial Homeland

Security Review (QHSR) as outlining the framework to guide the activities of homeland security toward a common goal. More information on the QHSR can be found by clicking [here](#). Mr. Dietrich highlighted the ongoing efforts of DHS in each of the subject areas shaping the plenary program.

Mr. Dietrich acknowledged the critical role of international cooperation in the area of homeland security and the value that it adds. Mr. Dietrich noted the existing DHS collaboration with bilateral partners abroad, and added that security is an international issue. Mr. Dietrich highlighted that, in support of the homeland security mission, DHS facilitates the matching of U.S. entities with foreign counterparts in order that they may partner in cooperative research activities. Mr. Dietrich concluded his remarks by adding that standards are required for ease of information exchange.

Mr. Chris Dubay then introduced the second keynote speaker, Dr. Alois J. Sieber, Unit Head, Security Technology Assessment, European Commission, Joint Research Centre.

Dr. Sieber began his remarks by thanking the meeting organizers, specifically Karen Hughes from ANSI and Bert Coursey and Tod Companion from DHS. Dr. Sieber then provided a brief description of the structure of the European Commission and the role of the Joint Research Centre (JRC).

Dr. Sieber highlighted the challenges that have been identified within the European Union, specifically related to the primary categories of sustainability and growth as well as safety and security. Dr. Sieber added that the European Commission is carrying out "Europe 2020", a strategy for smart, sustainable and inclusive growth stressing that the introduction of interoperable standards can ultimately lead to improved conditions for innovation. Additionally, as part of this, five measurable European Union targets have been proposed for 2010 in order to steer the process of meeting the challenges identified. Dr. Sieber noted that, in preparation of meeting the challenges faced, the European Commission will present a communication accompanied by a legislative proposal on standardization in order to speed up and modernize standards development to enable interoperability and foster innovation in fast-moving global markets. This proposal will be combined with a multi-annual program to anticipate new standardization needs and integration of standards and research and development projects.

Dr. Sieber proceeded to identify challenges in European standardization in order to promote innovation and competitiveness, including the need for improved European integration of standardization and research. Dr. Sieber added that new standardization should be based on threat or security scenarios, not on individual products. Dr. Sieber concluded his remarks by noting that security is a global issue and international collaboration is essential to avoid duplication in research and standardization.

Security Standardization Programming Mandate to the European Standardization Organizations

Dr. Ignacio Montiel-Sanchez, Policy Officer, Security Research and Development Unit H3, European Commission, Directorate General, Enterprise and Industry, delivered a presentation on the Security Standardization Programming Mandate to the European Standardization Organizations. Dr. Montiel-Sanchez described this mandate as a formal tool that the European Commission uses to request the development of standards by European standards organizations within the scope of security.

Dr. Montiel-Sanchez highlighted the characteristics of the mandate, adding that the goal is to identify security needs. Dr. Montiel-Sanchez identified additional areas of concern that the mandate will aim to address, including human factor issues and privacy concerns. Dr. Montiel-Sanchez noted the justification for the mandate as ensuring effective cross-border security within the European Union, as well as to develop specific standards frameworks to meet policy objectives and to harmonize the internal market. Dr. Montiel-Sanchez outlined the overall objectives of the mandated work noting that developing common technical specifications concerning interoperability, quality or safety levels, and test methods is of critical importance. Dr. Montiel-Sanchez added that the mandated work will include a gap analysis of existing formal security standards implemented in Europe, and a definition of the areas where CEN/CENELEC/ETSI standards in security should be established. Dr. Montiel-Sanchez noted the organizations involved in the mandated work represent cooperation with a wide range of interested groups and include the Joint Research Centre of the European Commission, European research institutes, technology platforms, and agencies.

Dr. Montiel-Sanchez concluded his remarks by noting that the mandated work is executed in multiple phases, with each phase focusing on various standardization needs and the development of standardization programs. Dr. Montiel-Sanchez added that the study and preparation of the work program will include ensuring that all standards that are developed are of wide interest to the European Union.

Panel 1: Aviation Security Standardization

Dr. Susan Hollowell, Director, Transportation Security Laboratory (TSL), US Department of Homeland Security (DHS), served as the moderator for this panel. Together with a panel of subject matter experts, Dr. Hollowell facilitated a discussion focusing on the need for new or revised standards for both X-ray technology for the screening of persons, cargo, and baggage (including hand-held baggage) and trace explosives detection. Together with input from plenary participants,

panelists highlighted what is working and what standards gaps need to be filled in order to anticipate evolving technologies. The panel presentations and the discussion that followed emphasized standards for technology rather than focusing on the specific threat.

Panelists for this session included:

- Dr. Larry Hudson, Physicist, Physical Measurement Laboratory, National Institute of Standards and Technology (NIST)
- David Kontny, Chief of Staff, Office of Infrastructure Protection, US Department of Homeland Security (DHS)
- Dr. Stefan R. Lukow, Trace Chemist, Transportation Security Laboratory (TSL), US Department of Homeland Security (DHS)
- Klaus Keus, Institute for the Protection and Security of the Citizen, European Commission, Joint Research Centre

Items addressed by panelists during their remarks and in response to questions from audience members included:

- Improvised explosive devices (IEDs) remain a realistic threat to aviation security.
- The government needs to communicate and work on including government needs in voluntary consensus standards in order to make the system work as a public-private sector collaborative effort.
- The development of consensus standards is needed to demonstrate the underlying capability of equipment that will result in the capability of passing performance requirements.
- There is a need for better communication for performance standards.
- A value of knowledge bases is needed, as is the development of test articles.
- Conformity assessment systems need to be established.
- When the Department of Homeland Security was created, the need for national radiation safety standards was identified for x-ray and gamma-ray security screening systems. The first versions or revisions of a complete suite of x-ray standards have been published as of 2010.
- New technical performance standards being developed should focus on both threat-based operation testing and technical imaging performance.
- Both ANSI N42.46:2008 *Measuring the Performance of X-ray and Gamma-ray Systems for Cargo & Vehicle Security Systems* and ASTM F-792-08:2008 *Standard Practice for Evaluating the Imaging Performance of Security X-Ray Systems* are outdated and are in need of revision.
- There are currently no existing standards for millimeter wave technology. Additionally, there is a need for standards in automated target recognition.
- The Scientific Work Group on Dog and Orthogonal detector Guidelines (www.SWGDOG.org) has developed the current best practices for testing and performance in the area of canine explosives detection.
- The use of canines in explosives detection needs standardization, specifically in the area of K-9 training. The lack of standards in this area can result in the limited capabilities of K-9 teams. These standards should be scientifically supported training and performance standards so that the proficiency of canine teams can be tested.
- Homeland Security Presidential Directive (HSPD) -19: *Combating Terrorist Use of Explosives in the United States* required the development of K-9 standards for training and performance in order to increase the number of K-9 teams that are trained to the standard.
- Budget issues remain a concern in K-9 training, as training programs are historically the first programs to be cut.
- Standards need to evolve so that they are current with world events. For example, two key areas include the need for vapor standards, specifically in regards to developing qualitative and quantitative methods and international standards for homemade explosives (HMEs).
- Collaboration is needed between Europe and the U.S. in aligning policies on both the use of security scanners and liquids screening equipment.
- Subject matter experts are needed to help facilitate the expansion of standards in the area of trace explosives for aviation security.
- Vehicle Born Improvised Explosive Devices (VBIED) standards are important to both DHS and DoD beyond just the airport checkpoint.
- The issue of privacy in aviation security is being addressed by DHS; however challenges exist in regards to creating privacy standards.
- Uniform international standards are needed in the area of aviation security in order to harmonize efforts and avoid duplication of efforts.

Panel 2: Borders and Maritime Security Standardization

Michael Hogan, Standards Liaison, Information Technology Laboratory, National Institute of Standards and Technology (NIST), moderated this panel. Mr. Hogan and the panelists facilitated an information exchange in regards to U.S. and European standardization priorities such as biometrics, video surveillance performance (e.g. how to effectively compare

video systems according to a standardized process), border and travel documentation for seafarers, and standards activities related to both technology and automated algorithms. Together with input from plenary participants, panelists highlighted what is working and what standards gaps need to be filled.

Panelists for this session included:

- Klaus Keus, Institute for the Protection and Security of the Citizen, European Commission, Joint Research Centre
- Charles Piersall, Chairman, ISO/TC 8 (Ships and marine technology)
- Will Graves, Chief of Biometric Standards and Technical Innovation Projects, US-VISIT, US Department of Homeland Security (DHS)

Items addressed by panelists during their remarks and in response to questions from audience members included:

- The use of new identification technologies is needed to ensure the security of society.
- Testing and standardization is needed in the area of biometrics based mobile solutions for the mobile identification (e.g. fingerprinting) of children.
- The European Union has launched a working group called e-MOBIDIG (Electronic European Mobile Identification Interoperability Group) in order to identify gap areas between current national solutions in Europe and upcoming new European requirements. The goal of e-MOBIDIG is to harmonize requirements and build a platform for research exchange.
- International standardization is needed in the area of maritime security, specifically in the areas of mobile identification and verification.
- ISO TC 8 is working to develop standards actions based on international government and industry assessments.
- The International Ship & Port Facility Security Code (ISPS Code) contains detailed security-related requirements and has been adopted by more than one hundred member countries of the International Maritime Organization (IMO). The ISPS Code ties to the ISO 28000-2007 *Specification for Security Management Systems for the Supply Chain* standard for certification as well as the entire ISO 28000 series.
- ISO 20858:2007 *Maritime Port Facility Security Assessments and Security Plan Development* is designed to facilitate the implementation of the International Ship and Port Facility Security (ISPS) Code.
- There is a need for biometric standards to ensure consistency in data definition and to facilitate interoperability. Types of biometric standards needed include data interchange, technical interface, profiles, testing and reporting, conformance testing, and cross-jurisdictional and societal issues.
- US-VISIT biometric standards aim to achieve interoperability with federal stakeholders and foreign countries. Additional information can be obtained at www.biometrics.gov/standards and www.biometriccatalog.org.
- Standardization efforts are currently underway in the areas of DNA and voice.
- There is a need for one common set of privacy standards and one standard security measure, as well as an international certified list of secure data hardware.
- Authentication methods for documentation need to be developed in order to aid in preventing counterfeiting.

Panel 3: Conformity Assessment Systems

Lane Hallenbeck, Vice President, Accreditation Services, American National Standards Institute (ANSI), moderated this panel. Panel members identified current conformity assessment efforts underway in Europe and/or the U.S. Examples included activities such as the ANSI ASQ National Accreditation Board Accreditation Program to ISO 28000 – Supply Chain Management Systems and the Domestic Nuclear Detection Office's (DNDO) Graduated Rad/Nuc Detector Evaluation and Reporting Program (GRaDER).

Panelists for this session included:

- Caroline Purdy, Principal Deputy Assistant Director, Systems Engineering & Evaluation Directorate (SEED), Domestic Nuclear Detection Office (DNDO), US Department of Homeland Security (DHS)
- Peter Boyce, Senior Business Manager, Security Management Systems, Asia, LRQA

Items addressed by panelists during their remarks and in response to questions from audience members included:

- The Graduated Rad/Nuc Detector Evaluation and Reporting (GRaDER) Program provides a means to independently test commercially available radiation detection and identification products against standards. Additionally, the program provides useful information to support funding decisions and procurement through government acquisitions and grants.
- The Illicit Trafficking Radiation Assessment Program+10 (ITRAP+10) tests parts of Standards (IEC, ANSI, etc.) and International Atomic Energy Agency (IAEA) guidelines with the goal of harmonizing standards and guidelines.

Additionally, ITRAP + 10 will seek to improve information exchange between the U.S., E.U, and other entities, promote new research and development, and provide appropriate recommendations to manufacturers.

- The DNDO and the Joint Research Centre (JRC) are collaborating on ITRAP+10 and will begin testing in January 2011. A joint document will be released upon the completion of testing and will be restricted to the European Commission and the U.S. Department of Homeland Security.
- Security performance must meet or exceed the needs of the organization, not just conform to a predefined set of instructions.
- ISO 28000:2007 *Specification for security management systems for the supply chain* is a security management system standard that defines best practices for managing organizational security needs. ISO 28000 certification is delivered by professional auditing organizations and offers a global solution to cross border challenges.
- In order for an organization to achieve security, the organization must determine who is accountable and responsible for the current security plans, and what the security implications of the current plans are.
- ISO 31000:2009 *Risk management -- Principles and guidelines* is a standard that offers methodology and guidance on security risk management as a total entity, and highlights the cost benefit analysis.
- Currently, there are no organizations in the United States that are accredited to ISO 28000.
- There is a need to create third party accreditation authorities in conjunction with customs departments in order to offer solutions to cross border challenges.
- Challenges in this area relate to funding, as well as organizations self-declaring vs. undergoing certification to a particular standard.

**Wednesday – November 10,
2010**

Panel 4: Global Supply Chain Security Standardization

David Taylor, Cargo Program Manager, US Department of Homeland Security (DHS), moderated this panel. Panel members facilitated a discussion on standards activities currently underway in Europe and the U.S. related to land, sea, and air cargo security. Additionally, panelists and plenary participants highlighted specific topics on what is working and what standards gaps need to be filled. The discussion also highlighted current efforts to use standards as part of an emerging National Strategy for Supply Chain Security as well as linkages to Global Supply Chain Comprehensive National Cybersecurity Initiative's Supply Chain Risk Management (CNCI-SCRM) efforts.

Panelists for this session included:

- Charles Piersall, Chairman, ISO/TC 8 (Ships and marine technology)
- Craig K. Harmon, President & CEO, Q.E.D. Systems
- Kang Lee, Electronics Engineer, Engineering Laboratory, National Institute of Standards and Technology (NIST)
- Klaus Keus, Institute for the Protection and Security of the Citizen, European Commission, Joint Research Centre
- Don Davidson, Chief, Outreach & Standardization, Trusted Mission Systems and Networks, OASD (NII)/DoD CIO, US Department of Defense

Items addressed by panelists during their remarks and in response to questions from audience members included:

- ISO 28000:2007 *Specification for security management systems for the supply chain* takes a risk-based approach and suggests how to improve resilience and preparedness performance in a cost effective way.
- Securing freight containers is a major supply chain issue that has not yet been adequately addressed.
- Supply chain goes beyond port to port issues and includes sustainability, recycling, and reuse.
- It is important that the supply chain community participate in the standards development process.
- Standardized sensor network interfaces are needed to facilitate interoperability.
- Through the ISO and IEEE Partner Standards Development Organization (PSDO) Agreement, the IEEE 1451.X family of sensor standards was adopted as ISO/IEC/IEEE 21451 *Smart transducer interface for sensors and actuators* series standards.
- Smart and wireless sensor and sensor integrated RFID standards can benefit cargo container security and supply chain security.
- The harmonization of national and international sensor and related standards needs to continue in order to foster worldwide interoperability for information exchange.
- The Sensor Standards Harmonization Working Group (SSHWG) is facilitated by NIST for the DHS S&T Standards Office in order to provide a forum to exchange information and improve understanding of sensor-related standards, as well as to identify opportunities for the harmonization of standards to meet the needs of the community.

- A comprehensive and effective multi-layered risk management approach is needed.
- There is a lack of harmonization and standardization of security equipment and requirements which constitute barriers to trade, law enforcement authorities (customs), and technology manufacturers and suppliers.
- A family of standards needs to be developed in order to manage security aspects of globalization. Additional standards are needed for outsourcing.
- There is a need for common customs requirements, procedures, and standards to be established globally to ensure interoperability of security devices.
- Commercially acceptable standards that advance the state of the art for managing a global Information and Communications Technology (ICT) supply chain are needed. These standards must be derived from commercial industry best practices.
- Supply Chain Risk Management (SCRM) standardization requires a public-private sector collaborative partnership as these standards will enable acquirers to better communicate requirements to systems integrators and suppliers in order that the supply chain can demonstrate better risk management best practices.
- There are currently no plans for the United States to require vendors and suppliers to be certified to the existing standards, as voluntary consensus standards are preferred. The National Technology Transfer and Advancement Act (NTTAA) requires each government agency to report their use of voluntary consensus standards. For more information please visit http://standards.gov/standards_gov/nttaa.cfm.
- The White House Office of Science and Technology Policy (OSTP) has issued a study that highlights the needs of the U.S. Government to focus on standardization in key categories including smart grid, cyber risk, and health care information technology. Additionally the study examines interagency policy. For more information on the OSTP please visit <http://www.whitehouse.gov/administration/eop/ostp>.
- There is currently a European Committee for Standardization (CEN) workshop agreement that focuses on Container Security Device (CSD) technical characteristics and is open to all for participation.

Panel 5: Preparedness and Crisis Management Standardization

Krister Kumlin, Senior Advisor, Swedish Civil Contingencies Agency, MSB & Chairman, ISO/TC 223 (Societal security), moderated this panel. Panel members facilitated a dialogue on how Europe and the U.S. can jointly collaborate to address standardization needs, specifically in regards to establishing a common list of standards and reference terms for managing crisis situations, harmonization of existing standards for interoperable communications amongst various nations, and conducting an impact assessment to address the need for common data standards. Additionally, topics where work is well underway in regards to community and private sector preparedness efforts were highlighted (e.g. Private Sector Voluntary Certification Program (PS-Prep) and ISO/TC 223 – Societal Security) in an effort to best coordinate among Europe and the U.S.

Panelists for this session included:

- Dr. Alois J. Sieber, Unit Head, Security Technology Assessment, European Commission, Joint Research Centre
- Klaus Keus, Institute for the Protection and Security of the Citizen, European Commission, Joint Research Centre
- Denis Gusty, Branch Chief, Knowledge Management Tools, US Department of Homeland Security (DHS)
- Dereck Orr, Program Manager for Public Safety Communications, National Institute of Standards and Technology (NIST)
- Mark Reichardt, President and CEO, Open Geospatial Consortium, Inc. (OGC)
- Donald Grant, Director, Incident Management Systems Integration Division, National Preparedness Directorate, Federal Emergency Management Agency (FEMA), US Department of Homeland Security (DHS)

Items addressed by panelists during their remarks and in response to questions from audience members included:

- ISO TC 223 develops international standards that aim to increase societal security. Societal security is multi-disciplinary and involves both the public and private sectors.
- A potential area for collaboration between the United States and European Union is in the validation of information in crisis situations. There is a need for standards to validate the results on the impact assessment coming from open source information.
- There is a need for international standards collaboration to provide interoperable and secure communications between first responders in crisis situations.
- The alignment of security policies is needed at the European and international levels.
- Cross-boundary information sharing presents a challenge in this area.
- The challenge for DHS is to provide all stakeholders with the right guidance to enable improved interoperable communications at all levels.
- The Emergency Data Exchange Language (EDXL) is a suite of message standards aimed at facilitating

emergency information sharing and data exchange across government and non-governmental organizations of different professions that provide emergency response and management services. The EDXL standards are maintained by the Organizations for the Advancement of Structured Information Standards (OASIS) and can be found at <http://edxlsharp.codeplex.com>.

- There is a need to identify gaps and bring standards into alignment with public safety needs, as well as a need for interoperability among public safety organizations at the international level. The Public Safety Communications Research (PSCR) group will be directly involved in commercial standards representing public safety requirements.
- The Open Geospatial Consortium (OGC) standards, along with ISO and CEN standards, provide an interoperable location for improved situational awareness and decision making with the requirements driven by the user community requirements.
- Gaps exist in alerting and notification, resource management, decision support information, situational awareness and reporting, and personal information sharing.
- The Voluntary Private Sector Preparedness Accreditation & Certification Program (PS-Prep) was established as a result of Title IX of Public Law 110-53, which mandates a voluntary program of accreditation and certification for the private sector to enhance nationwide resilience. As a result the following three standards have been formally adopted by DHS: ASIS SPC.1-2009 *Organizational Resilience: Security, Preparedness, and Continuity Management Systems - Requirements with Guidance for Use*, BS 25999-1-2006 *Code of Practice for Business Continuity Management*, and NFPA 1600-2010 *Standard on Disaster/Emergency Management and Business Continuity Programs*. The PS-Prep Resource Center can be found at www.fema.gov/privatesector/preparedness. Additionally, the ANAB Accreditation Rule 37 to inform certification bodies of ANAB requirements for becoming accredited to offer certification for the PS-Prep program can be found at <http://www.anab.org/media/22066/ar37.pdf>.
- Organizations are expected to begin certifying to the standards adopted as part of the PS-Prep program in 2011.
- The OGC is putting an emphasis on mass market standards as they are easy to use and are used more by consumers in the mass market. Additionally the OGC is currently working on a standard on SMS messaging as well as standards for sensors. The OGC has announced the availability of a book "SANY – an open service architecture for sensor networks" which can be found at <http://sany-ip.eu/publications/3317>.
- There is a need for broader coordination across the standards communities within the United States and the European Union.

Open Discussion: Based on what standards we know exist, can we identify the gaps that need to be filled and what are the priorities for European-U.S. collaboration?

Gordon Gillerman, Director, Standards Services Group, National Institute of Standards and Technology (NIST), led this discussion. Mr. Gillerman provided an overview of the standardization and conformity assessment needs that each panel had identified. A summary of the gaps, needs, and priorities for European-U.S. collaboration identified during each panel is provided below.

Panel 1: Aviation Security Standardization

- Better communication of performance requirements that may be classified.
- Development of consensus standards that can be used to demonstrate underlying capability of equipment that will result in capability of passing performance requirements.
- Value of Knowledge Bases.
- Development of test articles.
- Accessibility of T&E facilities for validation.
- Appropriate conformity assessment systems need to be established.
- Need for national standards for canine detection (including training, must be scientifically supported, etc.).
- Vehicle Born Improvised Explosive Devices (VBIED) standards are important to both DHS and DoD beyond just the airport checkpoint.
- Vapor standards are needed to develop quantitative and qualitative methods.
- Standards will be needed in the area of Homemade Explosives (HMEs).
- U.S. and E.U. collaboration is needed in the areas of security scanners and liquid screening equipment.
- Revision is needed for both ANSI N42.46:2008 *Measuring the Performance of X-ray and Gamma-ray Systems for Cargo & Vehicle Security Systems* and ASTM F-792-08:2008 *Standard Practice for Evaluating the Imaging Performance of Security X-Ray Systems*.
- There are currently no existing standards for imaging performance for mm-wave or technology-neutral standards.

Panel 2: Borders and Maritime Security Standardization

- Need for authentication methods for documentation to prevent counterfeiting.
- Mobile identification and verification, including multiple applications, is a good topic for a joint international standardization effort.
- Urgent need for maritime security standards.

- Need for a singular privacy standard.
- Need for one standard security measure.
- There is a need for an international certified list of secure data hardware.

Panel 3: Conformity Assessment Systems

- There is a need to create third party accreditation authorities in conjunction with Customs.
- Challenges related to funding.
- Self-declaration vs. certification.

Panel 4: Global Supply Chain Security Standardization

- Need to incentivize the processes used.
- Securing freight containers is not only a global supply chain security issue, but is a major issue that has not yet been adequately addressed.
- Standardized sensor network interfaces are needed to facilitate interoperability.
- Smart and wireless sensor and sensor integrated Radio Frequency Identification (RFID) standards can benefit both cargo container security and supply chain security.
- The harmonization of national and international sensor and related standards needs to continue in order to foster worldwide interoperability and information sharing.
- There is a lack of harmonization and standardization for security equipment and requirements.
- There is a need for a comprehensive and effective multi-layered risk management approach.
- There is a need for common customs requirements, procedures, and standards to ensure global interoperability.
- There is a need for a family of standards to manage security aspects of globalization.
- The public-private partnership is needed to secure critical infrastructure.
- Commercially acceptable global standards must be derived from commercial industry best practices.
- Standards are needed in the area of outsourcing.

Panel 5: Preparedness and Crisis Management Standardization

- The U.S. and E.U. could jointly implement standards to validate an impact assessment resulting from open source information.
- Need to establish international standards to provide interoperable and secure communications.
- Need for interoperability among public safety organizations at the international level.
- There is a need for the alignment of security policies at the European and international level.
- Cross-boundary information sharing presents a challenge in this area.
- Gaps exist in alerting and notification, resource management, decision support information, situational awareness and reporting, and personal information sharing.

Mr. Gillerman concluded the discussion by identifying potential next steps including an agreement to foster the collaboration with the European Union through European Standards Organizations in further dialogue on homeland security standardization, and to explore communicating the benefit of international standardization on cross-border issues. Mr. Gillerman then concluded the discussion and thanked the participants.

Closing Remarks

Gordon Gillerman, Director, Standards Services Group, National Institute of Standards and Technology (NIST), closed the meeting by thanking the meeting organizers and participants for a productive, informative meeting.

ANSI would like to thank the following sponsors:



Appendix A – Registration List

First Name	Last Name	Organization
Michael	Aisenberg	The Mitre Corporation
Akmal	Ali	U.S. Department of Homeland Security (DHS)
Jared	Babin	Quasars, Inc.
Vamsee	Bachu	Quasars, Inc.
Dan	Bart	Valley View Corporation
Richard	Bielen	National Fire Protection Association (NFPA)
William	Billotte	National Institute of Standards and Technology (NIST)
Peter	Boyce	LRQA
Jerry	Brashear	ASME - Innovative Technologies Institute
Roberta	Breden	U.S. Department of Homeland Security (DHS)
Tim	Brennan	National Institute of Standards and Technology (NIST)
Edward	Bromberg	L-3 Communications CyTerra
Joseph	Broz	Defense Capital Advisors, LLC
Audrey	Burke	ISOM Events
Carles	Cardona	OEA Consultores
Jessica	Carl	American National Standards Institute (ANSI)
Stephanie	Carroll	American National Standards Institute (ANSI)
George	Cavage	iControl Inc.
Asok	Chatterjee	Ericsson Inc.
Richard	Chavez	U.S. Department of Justice (DOJ)
Jin	Chun	Orbital Sciences Corp
Dave	Coleman	Biometrics Identity Management Agency (BIMA)
Tod	Companion	U.S. Department of Homeland Security (DHS)
Bert	Coursey	U.S. Department of Homeland Security (DHS)
James	Creel	ASME - Innovative Technologies Institute
Patrick	Cumba	Washington DC Protective Services
Don	Davidson	U.S. Department of Defense
Rolf	Dietrich	U.S. Department of Homeland Security (DHS)
Robert	Domenici	Strategic Responsive Initiatives, LLC
Chris	Dubay	National Fire Protection Association (NFPA)
Robert	DuPuy	LRQA
Alice	Dysart	Alice Dysart, inc.
Bjorn	Ericsson	The Swedish Employers Association for Private Security Companies
Al	Fatah	National Institute of Standards and Technology (NIST)
William	Ferguson	NYK Line (North America) Inc.
Jeffrey	Fischbeck	Stanley Associates, Inc.
Gordon	Gillerman	National Institute of Standards and Technology (NIST)
Donald	Grant	U.S. Department of Homeland Security (DHS)
Will	Graves	U.S. Department of Homeland Security (DHS)
Mark	Greene	U.S. Department of Justice (DOJ)
Denis	Gusty	U.S. Department of Homeland Security (DHS)
Lane	Hallenbeck	American National Standards Institute (ANSI)
Susan	Hallowell	U.S. Department of Homeland Security (DHS)
Jennifer	Halverson	U.S. Department of Homeland Security (DHS)
Douglas	Ham	U.S. Department of Homeland Security (DHS)
Tracy	Hannah	U.S. Department of Homeland Security (DHS)
Craig	Harmon	QED Systems
Patricia	Harris	National Institute of Standards and Technology (NIST)
Cheri	Hautala-Bateman	Domestic Nuclear Detection Office (DNDO)
Fred	Hayes	Packaging Machinery Manufacturers Institute (PMMI)

First Name	Last Name	Organization
Matthew	Hickman	U.S. Department of Homeland Security (DHS)
Kathleen	Higgins	U.S. Department of Homeland Security (DHS)
Michael	Hogan	National Institute of Standards and Technology (NIST)
Pat	Hogan	G4S Secure Solutions (IRELAND) Ltd,
Larry	Hudson	National Institute of Standards and Technology (NIST)
Karen	Hughes	American National Standards Institute (ANSI)
Adam	Isles	Raytheon Company
Jean	Johnson	National Electrical Manufacturers Association (NEMA)
Klaus	Keus	Institute for the Protection and Security of the Citizen, Joint Research Center of the European Commission (JRC)
Lars	Kjaer	World Shipping Council
Robert	Knetl	Georgia Tech Research Institute
Astrid-Christina	Koch	Joint Research Center of the European Commission (JRC)
David	Kontrny	U.S. Department of Homeland Security (DHS)
Krister	Kumlin	Swedish Civil Contingencies Agency, MSB & Chairman, ISO/TC 223 (Societal security)
Gary	Kushnier	American National Standards Institute (ANSI)
Brian	Le Gros	Canada Border Services Agency
Kang	Lee	National Institute of Standards and Technology (NIST)
Brian	Limperopulos	International Association of Movers
Stefan	Lukow	U.S. Department of Homeland Security (DHS)
Jonas	Maciulis	Honeywell International
Daniel	Madson	Science Applications International Corp. (SAIC)
Al	Manii	Transport Canada
Ruediger	Marquardt	German Institute for Standardization (DIN)
Jennifer	Marshall	National Institute of Standards and Technology (NIST)
Ileana	Martinez	National Institute of Standards and Technology (NIST)
Harry	Massey	National Electrical Manufacturers Association (NEMA)
Philip	Mattson	U.S. Department of Homeland Security (DHS)
Alex	McLellan	Homeland Security Studies and Analysis Institute
Andrew	McNeice	Cathay Seal LLC
Geraldine	Mijares	U.S. Department of Homeland Security (DHS)
Brook	Miller	Smiths Detection, Inc.
Ed	Mitchell, Jr.	Weatherford International
Stephen	Molitor	National Electrical Manufacturers Association (NEMA)
Ignacio	Montiel-Sanchez	European Commission, Directorate General, Enterprise and Industry
Ashley	Moore	U.S. Department of Homeland Security (DHS)
Yonas	Nebiyeloul-Kifle	Homeland Security Studies and Analysis Institute
Dereck	Orr	National Institute of Standards and Technology (NIST)
Ted	Osinski	MET Laboratories
Nick	Paulter	National Institute of Standards and Technology (NIST)
Michael	Penders	Environmental Security International
Charles	Piersall	Chairman, ISO/TC 8 (Ships and marine technology)
Robert	Platuns	National Institute of Standards and Technology (NIST)
Anthony	Policastro	Smiths Detection, Inc.
Marcus	Pollock	U.S. Department of Homeland Security (DHS)
Caroline	Purdy	U.S. Department of Homeland Security (DHS)
Erik	Puskar	National Institute of Standards and Technology (NIST)

First Name	Last Name	Organization
Paul	Ragsdale	U.S. Department of Homeland Security (DHS)
Mark	Reichardt	Open Geospatial Consortium, Inc. (OGC)
Joe	Reiss	American Science & Engineering (AS&E)
Ramon	Reyes	Morphotrak
Francois	Richard	Embassy of France
Cassandra	Robinson	Savannah River National Laboratory
Solveig	Roschier	Tekes at the Embassy of Finland
Daniel	Rosen	Morpho Detection, Inc.
Paul	Ross	Dynamic Security Concepts, Inc.
Wade	Sapp	American Science & Engineering (AS&E)
Fran	Schrotter	American National Standards Institute (ANSI)
Heather	Shaver	Smiths Detection, Inc.
Pleaman	Shaver	JWAC
Peter	Shebell	U.S. Department of Homeland Security (DHS)
Fazal	Sheikh	U.S. Department of Homeland Security (DHS)
Alois	Sieber	Joint Research Center of the European Commission (JRC)
Charles	Sleeper	U.S. Department of Homeland Security (DHS)
Jay	Spingarn	Sandia National Laboratories
Robert	Stenner	Pacific Northwest National Laboratory
Debra	Stoe	U.S. Department of Justice (DOJ)
Mark	Stolorow	National Institute of Standards and Technology (NIST)
Christoph	Stroschein	German European Security Association e.V. (GESA)
Greg	Struba	U.S. Department of Homeland Security (DHS)
Bernard	Sullivan	PPG Industries
David	Taylor	U.S. Department of Homeland Security (DHS)
William	Taylor	Washington Metropolitan Area Transit Authority (WMATA)
Anna	Tedeschi	U.S. Department of Homeland Security (DHS)
Michael	Thomas	World Safety Organization (WSO)
Malisa	Troutman	U.S. Department of Homeland Security (DHS)
Michael	Unterweger	National Institute of Standards and Technology (NIST)
Richard	Vandame	U.S. Department of Homeland Security (DHS)
Bob	Vondrasek	National Fire Protection Association (NFPA)
Toya	Watts	ISOM Events
Peter	Weaver	ILTA
Larry	Williams	Homeland Security Studies and Analysis Institute
Marjorie	Windelberg	University of Maryland
Kay	Winn	CSA America, Inc.
Robert	Zimmerman	Homeland Security Studies and Analysis Institute

Appendix B – Speaker Biographies

Peter Boyce

Responsible for the development, implementation and management of LRQA Global Certification services for Supply Chain Security as well as Business Continuity Management in Asia.

His recent activities include working with regulators for the adoption of ISO 31000 – Risk Management and the establishment of ISO 28000 – Security Management Systems for the Supply Chain as the common architecture for Customs Authorised Economic Operator (AEO) programs.

Prior experience includes;

- Manager, Security Training Services – Corporate Training, Qatar Petroleum
- Security and risk management consultant, expert witness and auditor.
- Management Systems Auditor – Quality Society of Australasia
- Chairman and Drafting Author, Australian Standard AS 4485 – Security for healthcare facilities
- Security and Emergency Manager, Queensland Hospital
- Australian Federal Government Security, Training, Operations and Management.
- Australian Federal Government, Airport Security Establishment Team.
- Australian Federal Police – Specialist services

Don Davidson

Mr. Davidson is currently assigned to Trusted Mission Systems and Networks, formerly known as the Globalization Task Force (GTF) in the Office of the Assistant Secretary of Defense for Networks and Information Integration and DoD Chief Information Officer (OASD-NII / DoD CIO), where he serves as Chief for Outreach & Standardization on the Comprehensive National CyberSecurity Initiative (CNCI) task #11, responsible for improving Supply Chain Risk Management for Information Communications Technology capabilities (ICT SCRM) across the US government.

He has 35 years of federal service to include 11 years active duty, as well as civilian assignments in Army Research Laboratory, Army Materiel Command, Army Secretariat, US Joint Forces Command, OSD-Acquisition, Technology & Logistics (AT&L) and now OASD-Networks and Information Integration (NII). He currently chairs a Global ICT-SCRM Ad-Hoc WG under American National Standards Institute / International Committee for Information Technology Standards (ANSI / INCITS). He serves as the government Co-Chair for the Acquisition & Outsourcing Working Group with the Software Assurance Program; SwA Program is a public-private partnership effort sponsored by DHS, DoD and DoC (NIST). He also serves as the Director for Defense Applications with SOLE, the International Society of Logistics (SOLE is a 501c3 not-for-profit organization).

He is a graduate of Brookings Institute's Executive Leadership 1 & 2 (2005), UNC's LOGTECH at Kenan-Flagler Business School of the University of North Carolina at Chapel Hill (2007) and the Defense Leadership and Management Program (DLAMP, 2008).

He has a Bachelor of Science Degree in Engineering from USMA at West Point NY (1978) and a Master of Science Degree in National Security Strategy with concentration in Information Resources Management from the National War College (NWC) at National Defense University (2004).

Rolf Dietrich

Mr. Rolf Dietrich assumed the duties of the Acting Deputy Under Secretary for Science and Technology Directorate for the Department of Homeland Security (DHS S&T) in July 2010.

Prior to this, he served as the Deputy Director of Research for DHS S&T, where he oversaw the integration of the basic research portfolio activities in the six divisions within DHS S&T (Explosives; Chemical/Biological; Command, Control, & Interoperability; Borders/Maritime; Human Factors; and Infrastructure/Geophysical) in support of DHS mission areas.

Mr. Dietrich has 34 years of experience in management, management consulting, engineering, application of technology, proposal development, and operation and sustainment of remote operations. In 12 ½ years at SAIC, he served as a line manager, program manager, technical director, project manager, and quality assurance manager. Earlier, he spent 20 years in the U.S. Navy in numerous positions of responsibility, culminating in command of a nuclear submarine. He has been with DHS S&T since January 2007; the first year of which he served simultaneously as the Deputy Director of Innovation, Deputy Director of Homeland Security Advanced Research Projects Agency (HSARPA), and the Director of Homeworks – responsible for the highest risk but highest potential reward programs at DHS S&T.

A member of Sigma Xi, Mr. Dietrich holds a B.S. in Mathematics from the U.S. Naval Academy, M.S. degrees in Mechanical Engineering and Ocean Engineering from MIT, and an MBA in International Business from the University of Maryland. He also is a graduate of the U.S. Naval Officer Nuclear Power School and holds a Professional Engineer's license in Virginia.

Christian Dubay

Mr. Dubay is Vice President and Chief Engineer at NFPA and oversees the Codes and Standards Technical Operations of the Association consisting of: Electrical Engineering, Fire Protection Applications & Chemical Engineering, Public Fire Protection, Building & Life Safety, and Codes and Standards Administration. He is responsible for the overall administration of NFPA's codes and standards, which develops the 300+ fire safety codes and standards that comprise the National Fire Codes; he serves as chief technical spokesperson for the Association.

Prior to assuming responsibility for NFPA's Technical Operations, Mr. Dubay served as Principal Fire Protection Engineer for NFPA's Automatic Sprinkler Systems Project which includes: NFPA 13, NFPA 13R, NFPA 13D, NFPA 24, NFPA 291 and NFPA

750, Standard on Water Mist. Mr. Dubay was editor for the 9th and 10th Editions of the Automatic Sprinkler Systems Handbook and the 1st Edition of the Residential Sprinkler Systems Handbook. He has been an instructor at NFPA's sprinkler system, fire pump, and inspection, test and maintenance seminars, and technical advisor during the development of these seminars.

Mr. Dubay holds a Bachelor of Science degree in Fire Protection Engineering from the University of Maryland. He is a registered Professional Engineer in the State of Connecticut and is a member of the Society of Fire Protection Engineers

Gordon Gillerman

Gordon Gillerman, Director, Standards Services Group at the National Institute of Standards and Technology (NIST), advises federal agencies, US industry and other stakeholders on standards and conformity assessment policy. The division operates the National Voluntary Laboratory Accreditation Program, the U.S. inquiry Point for the World Trade Organization's Technical Barriers to Trade Agreement and is a key information source for US industry on standards related market access issues.

Gordon has extensive experience coordinating standards policy and development across a wide range of critical issues in the U.S. including homeland security, safety, health and protection of the environment. Gordon is the Public Sector Co-Chair of the American National Standards Institute's (ANSI) Homeland Security Standards Panel, a member of the Toy Industry Association, Toy Safety Certification Program's Oversight Council and a sought after lecturer on standards, conformity assessment and regulation.

Previous experience include leading government affairs for the largest U.S. product safety certification and standard development organization, Underwriters Laboratories (UL) in Washington, DC, and Staff Engineer for the medical device and information technology sectors at UL's Northbrook, IL headquarters. Gordon has worked collaboratively within the standards community to enhance health, safety, the environment and security throughout his career. In 2008 he received an Environmental Protection Agency Gold Medal, a Department of Commerce Bronze Medal and the ANSI Meritorious Service Award.

Don Grant

Mr. Grant is the Deputy Assistant Administrator for the National Integration Center of the National Preparedness Directorate of the Federal Emergency Management Agency (FEMA). His division has developed the United States' Private sector Preparedness Program (PS-Prep™), National Incident Management System, National Response Framework and related publications to prevent, protect against, respond to, recover from and mitigate the effects of incidents, regardless of cause, size, location, or complexity.

Before coming to FEMA, he completed a successful career in the US Coast Guard and Coast Guard Reserve obtaining the rank of Captain. His final assignment was as the Division Chief responsible for the development and collection of data from the Maritime Security Risk Analysis Model that performs detailed risk assessments on all maritime critical infrastructure and key resources.

Prior assignments include: Maritime Defense Coordinator for the Assistant Secretary Defense – Homeland Defense; Joint Chiefs of Staff (J7), Chief, Plan Development & Review Branch; Deputy Director, Ceremonies for Joint Task Force – Armed Forces Inaugural Committee; and the first Coast Guard Officer assigned to serve on the Joint Chiefs of Staff, J5 -Strategic Plans and Policy Division – Homeland Security Directorate. He is also a past Senior Project Manager for several private hazardous waste cleanup firms.

William Graves

William Graves is the Chief of Biometric Standards and Technical Innovation Projects for US-VISIT and serves in the program's Information Sharing & Technical Assistance Branch. Mr. Graves is responsible for the development of biometric standards and leading the adoption of innovative technologies that impact the program.

The US-VISIT program was established in March 2003 as one of the initial programs within the U.S. Department of Homeland Security (DHS). US-VISIT was established to accurately record the entry and exit of travelers to the United States by collecting biographic information and biometrics – digital fingerprints and photographs.

Mr. Graves also serves as chair of the INCITS M1.6 Task Group on Cross Jurisdictional and Societal Issues as well as co-chair of the DHS Biometrics Coordination Group and Biometric Standards Working Group. In addition, he represents US-VISIT's interests as an active member of the National Science and Technology Council's (NSTC) Subcommittee on Biometrics and Identity Management.

Before joining the Information Sharing and Technical Branch, Mr. Graves served as an Information Technology Specialist with US-VISIT's Information Technology Management Division, a position that he held when he joined US-VISIT in 2005. As an Information Technology Specialist, Mr. Graves was responsible for national and international biometrics data sharing projects, budget formulation and execution, information systems security, data architecture and data management.

Mr. Graves received a B.A. in Economics from George Mason University and a Masters in Information Technology from American InterContinental University. He has a Masters Certificate in Project Management from George Washington University, and is a DHS Certified Acquisition Professional Program Manager and Contracting Officer's Technical Representative (COTR).

Denis Gusty

Mr. Gusty serves as the Branch Chief in the Command, Control and Interoperability Division's (CCI's) Knowledge Management Tools (KMT); in addition, he leads OIC's data interoperability programs which aims to improve incident response and recovery by developing tools which includes the FEMA Integrated Public Alert and the Commercial Mobile Alert System (CMAS) and the EDXL messaging standards that help emergency responders manage incidents and exchange information in real time. Mr. Gusty came to CCI from the U.S. General Services Administration (GSA), where he served as Director of GSA's Office of Intergovernmental Solutions. Prior to joining GSA, Mr. Gusty served as a Program Manager at the U.S. Department of Labor. In this role, he was responsible for helping to implement the President's Management Agenda by managing the e-Government initiative, GovBenefits.gov.

Lane Hallenbeck

Lane is Vice President for Accreditation Services at the American National Standards Institute (ANSI) headquartered in Washington, D.C., where he is responsible for the direction of internationally recognized accreditation services.

Lane's experience includes many years of technical leadership, including Vice President of the management systems registrar affiliate of the American Bureau of Shipping, and Program Manager for the TRW Space & Electronics Group. Lane was president of the Independent Association of Accredited Registrars (IAAR) from 1997 to 1999. He holds an MS in Technology Management from Pepperdine University and a BA in Life Sciences from the University of Colorado at Boulder, and has also been certified as a Quality Systems Lead Auditor.

Susan Hallowell

Dr. Hallowell is the Director of the Transportation Security Laboratory (TSL), a federal laboratory of the Science and Technology Directorate of the Department of Homeland Security. The TSL is the key U.S. Federal laboratory performing research, development, test, evaluation and validation of solutions to detect, deter and mitigate threats from explosives and weapons to transportation. From 2002 until 2005, she managed and executed R&D for explosives detection for the Department of Homeland Security, under the Transportation Security Administration. Under her leadership, TSL has developed dozens of deployment ready products resulting from R&D, including Explosives Detection Systems, Trace Explosives Detectors, Enhanced Walk through Metal Detectors, Access Control Systems, RFID tags, Suicide Bomb Detection Portals, Human Factors Image proficiency tests, aircraft hardened containers, and myriad technical studies concerning the detection of or protection against explosives. In order to leverage R&D resources, Dr. Hallowell has developed an expansive professional network with other organizations within and external to the Department of Homeland Security, including close relationships to other Governments fighting terrorism. Prior to this, she was manager of the Explosives and Weapons Detection R&D Branch of the Transportation Security Laboratory. She has worked for the DHS/FAA for 18 years in the area of explosives detection research and development, and is an expert in the area of trace detection of explosives, and has written numerous publications and has received many awards in this area. Prior to working for the FAA, she worked as a research chemist for the U.S. Army, in the area of detection of and protection against chemical warfare agents, and technical measures supporting CW treaty verification. She obtained a Ph.D. in Analytical Chemistry, sensor development, from the University of Delaware, and is a senior executive fellow from the John F. Kennedy School of Government at Harvard University. She holds a Bachelor of Arts from Western Maryland College with a major in chemistry. Dr. Hallowell is a member of the American Chemical Society, the American Association for the Advancement of Science, the New York Academy of Science, National Association of Female Executives, and is an elected member of Sigma Xi, the society of research scientists.

Craig Harmon

Craig K. Harmon is the President and CEO of Q.E.D. Systems. With over 25 years of proven experience in the information systems industry he is a leading expert on RFID standardization in the world. He is the author of four books on data collection technology, including *Reading Between The Lines* and *Lines of Communications*, and a soon to be released text on RFID, bar codes, two-dimensional symbols, and other automatic identification and data capture technologies. He provides the content for the web sites "autoid.org" and "qed.org".

He founded JTC 1/SC 31 and the RFID Experts Group (REG). He serves as chair of Accredited Standards Committee (ASC) MH 10 (Material Handling) and U.S. TAG to ISO TC 122 (Packaging). He chairs the ISO working group addressing RFID applications in the supply chain (ISO TC 122/WG 10 – Supply chain applications of RFID). He serves as the Senior Project Editor for the SC 31 Air Interface Standards (ISO/IEC 18000), and previously chaired the U.S. committee on RFID technical standards (ASC INCITS T6). He serves as a liaison officer to ISO TC 104 (Freight containers), TC 122 (Packaging), TC 204 (Intelligent transport systems), TC 247 (Fraud and anti-counterfeiting), and JTC 1/SG 7 (Sensor networks), ITU-R, ITU-T, and ETSI. He participates in the specification development of EPCglobal. He participates in the ITU-T efforts in the standardization of Network RFID. He chairs the Data Identifier Maintenance Committee – ASC MH10.8.2. He is responsible for the development and maintenance of the international vocabulary standards on bar codes, 2D symbols, RFID, and RTLS.

He served as Subject Matter Expert (SME) to CompTIA in the development of professional certification for "CompTIA RFID Certified Professional (RFID+)" where he also holds the RFID+ certification. He serves as Subject Matter Expert (SME) to RFID Revolutions™ *RFID Essentials*, a graphical, animated eLearning tool for RFID education. Both his upcoming text and *RFID Essentials* are targeted for translation to Spanish, Japanese, Korean, and Chinese.

He holds a Business Degree in Economics and International Trade from the University of Iowa and is the recipient of the 2004 Richard Dilling Award.

Mike Hogan

Mr. Michael D. Hogan has worked as an electronics engineer at the National Institute of Standards and Technology (NIST) since 1974. As the Standards Liaison for the NIST Information Technology Laboratory, he represents NIST at national and international fora that advance measurement science, testing, and standards in support of more interoperable, usable, scalable, reliable, and secure information technology (IT). Since September 2003, Mr. Hogan has been serving as the Convener of the international standards group: ISO/IEC JTC 1/SC 37 Working Group 4 - Biometric Functional Architecture and Related Profiles. Since the beginning of 2007, Mr. Hogan has served as the Co-Chair of the Standards and Conformity Assessment Working Group of the NSTC Subcommittee on Biometrics and Identity Management.

Larry Hudson

Dr. Larry Hudson is the lead NIST researcher in x-ray diffraction spectroscopy and has led projects on the medical, industrial, astrophysical, and security applications of x rays. After the deliberate contamination of the US mail with anthrax, Dr. Hudson assisted in design and coordination of experiments for the White House Task Force on Mail Irradiation resulting in the development of the protocol still in use to sanitize parcel mail with industrial x-ray sources. Dr. Hudson currently serves as the NIST project leader for the development of a suite of national standards related to the technical performance and radiation safety of x-ray and gamma-ray security-screening technologies, particularly for bulk-explosives detection.

Klaus Keus

Studied Mathematics, economics and computer science at the "Rheinisch Westfälisch Technische Hochschule Aachen (RWTH)" and received a degree as "Diplom Mathematician". He has around 30 years of experience in information technology including more than 20 years in ICT-Security. After assistant at the university, working for many years as project manager in international IT-companies, he worked for more than 17 years within the German Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik (BSI)) as head of different units. Based upon invitation, currently he is working as an expert for security for the European Commission JRC IPSC (Joint Research Center, Institute for the Protection and Security for Citizen) in Ispra (Italy), supporting the management in strategy for security.

He is author of numerous national and international publications and a well known speaker at national and international conferences for security issues. He is member of committees in national and international security conferences and senior member in several national, European and international security boards.

David Kontny

Mr. Kontny joined the Headquarters Department of Homeland Security's Office of Infrastructure Protection as the Chief of Staff in March 2010. Prior to assuming the role of Chief of Staff Mr. Kontny was assigned to the Protective Security Coordination Division in September 2007 and served as the Senior Advisor, National Canine Policy and Standards for the Division's Office for Bombing Prevention. He became the Office for Bombing Prevention Deputy Chief in December 2008, and in August 2009, the Protective Security Coordination Division Acting Deputy Director.

He was born in Worcester Massachusetts and is a graduate of Burncoat Senior High School. His military career began in February 1978, joining the Massachusetts Army National Guard. In February 1983, he entered active duty the United States Air Force as a Law Enforcement Specialist. After 15 years of honorable service he transferred from active duty to the United States Air Force Reserve where he earned the rank of Chief Master Sergeant.

Prior to joining the Protective Security Coordination Division, Mr. Kontny was assigned as the Director, National Explosives Detection Canine Team Program within the Transportation Security Administration (TSA). During his assignment, Director Kontny was instrumental in providing overall leadership of the TSA program and significantly increased the number of deployed explosives detection canine teams and funding levels within both the aviation and mass transit transportation sectors.

Prior to joining the TSA Mr. Kontny was assigned to Headquarters United States Air Force Directorate of Security Forces, Pentagon, Washington DC, as the Department of Defense (DoD) Military Working Dog Program Manager and the Superintendent of Force Protection. Before being assigned to the Pentagon he was assigned to Headquarters Air Combat Command (ACC), Directorate of Security Forces, as the MWD Program Manager and Superintendent, Contingency Operations Branch. Prior to his assignment at ACC he performed duties as the Superintendent, MWD Program and Superintendent, Current Operations Branch, Headquarters Strategic Air Command (SAC).

Mr. Kontny was the DoD Explosives Canine Coordinator for both the 1992 Republican National Convention and the 1994 World Cup Soccer events.

He is a graduate of the Federal Bureau of Investigation National Academy and is an active member of the International Association of Bomb Technicians and Investigators (IABTI). Dave also serves as the Vice Chairman for Scientific Working Group for Dog and Orthogonal Guidelines (SWGDOG) and the DHS Explosives Standards Working Group.

Dave and his wife Nancy reside in Montclair VA and have a son Kurt, and a daughter Kristen, as well as four lovely granddaughters, Aureanna, Kaitlyn, Ally, and Melody.

Krister Kumlin

Ambassador Krister Kumlin
Chairman, ISO/TC 223, Societal Security
Senior Adviser, Swedish Civil Contingencies Agency, MSB
Kungsgatan 53
10131 Stockholm

Born December 1938
Married, 5 children
Law degree at Stockholm University 1962
Entered Swedish Foreign service same year
Served at the Swedish embassies in Washington, Guatemala City, Bangkok, Paris and at the UN Delegation in New York
Vice President ,UN Economic and social Council 1985
Ambassador to Brazil, 1987
Head of press department , Spokesman of the Foreign ministry 1990
Ambassador to Greece 1993
Ambassador to Japan 1997
Prime Minister s office, Secretary General of the Stockholm International Forum, Preventing Genocide ,2003-2004
Executive secretary of the Euro-Atlantic Partnership Council Security Forum 2004-2005
Co-ordinator, Nordic-Africa initiative, Dar Es Salam, 2005
April 2006, Chairman of ISO/TC223, Societal Security
August 2006 , Executive secretary Stockholm International Conferences for Lebanons early recovery and on The humanitarian situation in Palestinian territories
January –June 2007, Ambassador, Charge d´affaires ai, Swedish Embassy in Paris
September 2007 , Secretary General, Trade and development Integrated Framework Conference ,Stockholm
May 2008, Executive secretary, Iraq compact annual review conference in Stockholm
November 2008- December 2009, Executive Coordinator, European Development Days in Stockholm
Marshal of the Diplomatic Corps, since September 2005

Kang Lee

Kang Lee leads the DHS sensor standards and cargo container security projects at the Engineering Laboratory of the National Institute of Standards and Technology (NIST). He also chairs the Sensor Standards Harmonization Working Group for DHS. Kang is the Chair of IEEE Instrumentation & Measurement Society's Technical Committee on Sensor Technology, TC-9, that establishes, 1) the family of six sensor standards designated as IEEE 1451, Standard for a Smart Transducer Interface for Sensors and Actuators, and 2) the IEEE 1588, Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems. These standards facilitate the interoperability of networking and precision time synchronization of sensor devices and equipment. Kang has chaired a number of conferences and workshops and contributed to ISO/IEC/JTC1 committees and working groups on sensor networks and cargo container standards. Kang is an IEEE Fellow. He has authored many papers on smart sensor standards. Kang was profiled by the EE Times in 2006 as one of twenty-nine innovators in the world. Kang's main research interests include sensor networking for distributed measurement and control, smart sensor interfaces and communication protocols, wireless sensor networks, sensor to RFID communication interfaces, and precision time synchronization of network measurement and control systems.

Stefan Lukow

Dr. Stefan Lukow received his Ph.D, in chemistry from Tufts University in 2005. His dissertation research in the area of electrochemistry focused on the development and validation of potentiometric sensor arrays for the detection of aqueous ions in soil samples of extreme environments. Since 2005, he has worked for the DHS Science and Technology Directorate, Transportation Security Laboratory specializing in trace explosive detection in the arena of personnel screening. His responsibilities include monitoring internal and external efforts across multiple focus areas such as sampling, explosive characterization, system development, and internal test and evaluation efforts.

Ignacio Montiel-Sanchez

Dr. Ignacio Montiel-Sánchez is a Telecommunication Engineer by the Universidad Politécnica de Madrid from Spain. He has a PhD on Telecommunications by the Alcala University. He has been working for more than 20 years in the National Institute of Aerospace Techniques, first as an antenna and RCS measurement engineer, afterwards as the Head of the Detectability Laboratory and finally as the Head of the Communications, Navigation and Radar Area. Since 2009, he is working for the European Commission as a Policy Officer in the Security Research and Development Unit H3, dealing with industrial policy matters and in charge of security standardisation.

Dereck Orr

Dereck Orr is the Program Manager for Public Safety Communication Standards at NIST's Office of Law Enforcement Standards, and has held that position since December 2002. In that role, he leads a program that serves as an objective technical advisor and laboratory to the Department of Homeland Security and public safety to accelerate the adoption and implementation of the most critical public safety communication standards and technologies. From October 2003 until October 2004, Mr. Orr was detailed to the Department of Homeland Security to serve as the Chief of Staff of the SAFECOM Office within the Science and Technology Directorate, to help establish the new program. Prior to working at NIST, Mr. Orr served as a professional staff member of the Senate Appropriations Subcommittee for the Departments of Commerce, Justice, and State, and Related Agencies under Senator Fritz Hollings. In that position, Mr. Orr was responsible for the appropriations accounts relating to state and local law enforcement issues. Prior to that, Mr. Orr served four years at the Office of Community Oriented

Policing Services (COPS) at the Department of Justice. Mr. Orr received a Masters in Public Policy from the College of William and Mary and a Bachelor of Arts in American History from the University of Texas at Austin.

Charles Piersall

Captain Charles H. Piersall is Chairman of ISO technical committee ISO/TC 8, *Ships and marine technology* (for 16 years). He is a retired US Navy Captain with over 52 years of distinguished maritime service – first as a senior naval officer and then as an industry executive. He is recognized worldwide as a leader in the field of international maritime and supply chain security standards. In addition to the highest military awards and honors, Capt. Piersall is also recipient of numerous high-level awards based on his contributions to international standardization, including the ANSI Astin-Polk International Standards Medal and the US Coast Guard's Distinguished Public Service Award. Capt. Piersall is a member of Sigma Xi (honorary science research society), the American Society of Naval Engineers (gold medal winner and life member), Fellow and former member of the Board of Directors of ASTM, a Fellow of the Society of Naval Architects and Marine Engineers and a Principal, Partnership for Public Service (formerly the Council for Excellence in Government).

Caroline Purdy

Caroline Purdy is currently the Principal Deputy Assistant Director for the Systems Engineering and Evaluation Directorate at Domestic Nuclear Detection Office in DHS. This office ensures that solutions to reduce the risk of nuclear terrorism are effective through a combination of systems engineering and defensible demonstration of system performance prior to deployment. As deputy, Caroline manages 3 divisions within the office. Beyond classical systems engineering activities, this office performs objective, defensible testing of rad/nuc equipment on either newly developed or commercially available rad/nuc equipment purchased and deployed by DHS. The pilot division focuses on the operational utility assessments of new technologies or concepts of operation. Under this division, technologies are evaluated in dynamic, real-world environments.

Prior to working in Domestic Nuclear Detection Office, Dr. Purdy managed the Infrastructure/Geophysical Division in the S&T Directorate of DHS. She has been working in technology development in DHS since the Department was created.

Dr. Purdy has a PhD from the University of Maryland in Nuclear Chemistry.

Mark Reichardt

Mark Reichardt is President and Chief Executive Officer of the Open Geospatial Consortium, Inc. (OGC). Mr. Reichardt has overall responsibility for Consortium operations, overseeing the development and promotion of OGC standards for worldwide use, and working to ensure that OGC programs foster member success. He works to establish and maintain formal partnerships with other standards development and professional organizations to assure that location information can be shared and processed seamlessly across the broad span of information technologies and communities of use.

Mr. Reichardt joined the Consortium in November 2000 as Executive Director of Marketing and Public Sector Programs; became the President of OGC and a member of the Board of Directors in September, 2004; and was appointed President and CEO in January 2008.

Mr. Reichardt joined OGC after a 20-year career managing geospatial production and technology development programs within the US Federal Government. His government career included an assignment with the Federal Geographic Data Committee to advance compatible Spatial Data Infrastructure practices in Africa, South America, Europe, and the Caribbean; and a one year assignment with the Vice President Gore's Partnership for Reinventing Government to improve federal to local coordination and decision making through the use of geospatial information and technologies.

Mr. Reichardt serves on the Board of Directors of the Global Spatial Data Infrastructure Association and the BuildingSmart Alliance Board of Direction.

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Master Degree and PhD in Solid State Physics

Senior University Lecturer (Habilitation) in Remote Sensing

Between 1974 and 1986 German Centre for Aerospace Research (DLR) in charge of various projects of earth observation with special emphasis on radar remote sensing

Principle Investigator for Space Shuttle experiments and experiments with the European remote sensing satellite ERS

Author of numerous publications, lecturer at several Universities, tutor for many PhD thesis.

Fellow member of IEEE Geoscience and Remote Sensing Society, to which he served as Vice President and Guest Editor for its Transactions

Since 1986 with the European Commission's Joint Research Centre in Ispra, Italy

- Responsible for a number of unique experimental facilities (remote sensing by means of electromagnetic waves)
- Since 1995 involved in effort to find advanced tools to make humanitarian mine clearance faster, safer and more cost-effective
- Since 2000 active in the field of security research, in particular regarding embedded sensor networks, secure communication, explosives and IED, protection of critical, networked infrastructure, and other topics.

He was chairman of the CEN BT working group 161 "*Standards for Protection and Security of the Citizen*". He was also chairman of the Working Group on "*Innovation*" of the European Security Research and Innovation Forum (ESRIF).

David Taylor

Mr. Taylor is a Program Manager for the Cargo Security Division within the Department of Homeland Security's Science & Technology Directorate's Border and Maritime Security Division with an expertise in Cargo Inspection Technology. Mr. Taylor previously worked for the DHS Domestic Nuclear Detection Office in the area of detection of special nuclear material and improvised nuclear devices in cargo

Mr. Taylor has over twenty years experience in acquiring and fielding surveillance and research and development systems for the Department of Defense and United States Navy. Mr Taylor was the recipient of the Domestic Nuclear Detection Office Director's Meritorious Service Award and was selected as a Department of Homeland Security Fellow in January 2007. Mr Taylor is currently on assignment to the DHS Cargo Policy Office as a Senior Science Advisor in the Global Supply Chain Security Strategy (GSCS) working group.

Mr. Taylor holds a Bachelor of Science Degree from Maine Maritime Academy; and a Masters Degree (with distinction) in International and Strategic Studies from the Naval War College.

Appendix C – Standards Referenced

<u>Developer</u>	<u>Designation</u>	<u>Document Title</u>
* under development		
ASIS	ANSI ASIS SPC.1-2009	Organizational Resilience: Security, Preparedness, and Continuity Management Systems - Requirements with Guidance for Use
ASTM	ASTM F792-2008	Standard Practice for Evaluating the Imaging Performance of Security X-Ray Systems
ASTM	ASTM F 1039-87 e1-1993	WITHDRAWN 2002 - Standard Test Method for Measurement of Low Level X-Radiation Used in X-Ray Security Screening Systems
BS	BS 25999-1:2006	Code of Practice for Business Continuity Management
BS	BS 25999-2:2007	Specification for Business Continuity Management
DHS	HSPD-19	Homeland Security Presidential Directive 19: Combating Terrorist Use of Explosives in the United States
EC	EC TAXUD/2006/1450	Authorised Economic Operators Guidelines
GAO	GAO-10-887	Supply Chain Security: DHS Should Test and Evaluate Container Security Technologies Consistent with All Identified Operational Scenarios to Ensure the Technologies Will Function as Intended (2010)
HB	HB-221:2004	Business Continuity Management
HPS	ANSI HPS N43.14	Safe Operating Practices for Active Interrogation Systems for Security Screening Using Fast Neutrons*
HPS	ANSI HPS N43.16	Radiation Safety for X-Gamma Cargo Security Screening Systems*
HPS	ANSI HPS N43.17-2009	Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation
HPS	ANSI HPS N43.3-2008	General Radiation Safety Standard for Installations Using Non-Medical X-ray and Sealed Gamma Ray Sources, Energies up to 10 MeV
IEC	IEC 62244 Ed. 1.0-2006	Radiation Protection Instrumentation - Installed Radiation Monitors for the Detection of Radioactive and Special Nuclear Materials at National Borders
IEC	IEC 62327 Ed. 1.0-2006	Radiation Protection Instrumentation - Hand-held instruments for the Detection and Identification of Radionuclides and for the Indication of Ambient Dose Equivalent Rate from Photon Radiation
IEC	IEC 62401 Ed. 1.0-2007	Radiation Protection Instrumentation - Alarming Personal Radiation Devices (PRD) for Detection of Illicit Trafficking of Radioactive Material
IEC	IEC 62463 Ed. 1.0-2010	Radiation Protection Instrumentation -X-ray Systems for the Screening of Persons for Security and the Carrying of Illicit Items
IEC	IEC 62484 Ed. 1.0-2010	Radiation Protection Instrumentation - Spectroscopy-based Portal Monitors Used for the Detection and Identification of Illicit Trafficking of Radioactive Material

Developer	Designation	Document Title
IEC	IEC 62523 Ed. 1.0-2010	Radiation Protection Instrumentation - Cargo/Vehicle Radiographic Inspection System
IEC	IEC 62533 Ed. 1.0-2010	Radiation Protection Instrumentation - Highly Sensitive Hand-Held Instruments for Photon Detection of Radioactive Material
IEC	IEC 62534 Ed. 1.0-2010	Radiation Protection Instrumentation - Highly Sensitive Hand-Held Instruments for Neutron Detection of Radioactive Material
IEEE	ANSI N42.45	Evaluating the Image Quality of X-ray Computed Tomography (CT) Security – Screening Systems*
IEEE	IEEE 1451.1 WG	Common Functionality and TEDS Working Group*
IEEE	ANSI N42.32-2006	Performance Criteria for Alarming Personal Radiation Detectors for Homeland Security
IEEE	ANSI N42.33-2006	Portable Radiation Detection Instrumentation for Homeland Security
IEEE	ANSI N42.34-2006	Performance Criteria for Hand-held Instruments for the Detection & Identification of Radionuclides
IEEE	ANSI N42.35-2006	American National Standard for Evaluation & Performance of Radiation Detection Portal Monitors
IEEE	ANSI N42.38-2006	Performance Criteria for Spectroscopy-Based Portal Monitors Used for Homeland Security
IEEE	ANSI N42.41-2007	Minimum Performance Criteria for Active Interrogation Systems Used for Homeland Security
IEEE	ANSI N42.43-2006	Performance Criteria for Mobile & Transportable Radiation Monitors used for Homeland Security
IEEE	ANSI N42.44-2008	Performance & Evaluation of Checkpoint Cabinet X-ray Imaging Security-Screening Systems
IEEE	ANSI N42.46-2008	Measuring the Performance of X-ray & Gamma-ray Systems for Cargo & Vehicle Security Systems
IEEE	ANSI N42.47-2010	Measuring the Imaging Performance of X-ray & Gamma-ray Systems for Security Screening of Humans
IEEE	ANSI N42.48-2008	Performance Requirements for Spectroscopic Personal Radiation Detectors for Homeland Security
IEEE	IEEE 1451.2-1997	IEEE Standard for a Smart Transducer Interface for Sensors and Actuators-Transducer to Microprocessor Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats
IEEE	IEEE 1451.4-2004	IEEE Standard for A Smart Transducer Interface for Sensors and Actuators - Mixed Mode Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats
IEEE	IEEE 1451.0-2007	IEEE Standard for a Smart Transducer Interface for Sensors and Actuators - Common Functions, Communication Protocols, and Transducer Electronic Data Sheet (TEDS) Formats
IMO	ISPS Code	International Maritime Organization - International Ship & Port Facility Security Code

Developer	Designation	Document Title
INCITS	INCITS 442-2010	Information Technology - Biometric Identity Assurance Services (BIAS)
INCITS	ANSI INCITS 398-2008	Information Technology - Common Biometric Exchange Formats Framework (CBEFF)
INCITS/ISO/IEC	ANSI/INCITS/ISO/IEC 19784-1/Amd.1-2008	Information Technology - Biometric Application Programming Interface - Part 1: BioAPI Specification, Amendment 1: BioGUI Specification
INCITS/ISO/IEC	INCITS/ISO/IEC 19784-2-2007	Information Technology - Biometric Application Programming Interface - Part 2: Biometric Archive Function Provider Interface
SI	INS 24001:2007	Security and continuity management systems – Requirements and guidance for use, Standards Institution of Israel
ISO	ISO/AWI 28005-1	Security Management Systems for the Supply Chain - Electronic Port Clearance (EPC) - Part 1: Message Structures*
ISO	ISO/FDIS 28005-2	ISO/FDIS 28005-2 Security Management Systems for the Supply Chain - Electronic Port Clearance (EPC) - Part 2: Core Data Elements*
ISO	ISO/IEC NP 27036	Information Technology - Security Techniques - Guidelines for Security of Outsourcing*
ISO	ISO/NP TS 26683-1	Intelligent Transport Systems - Freight Land Conveyance Content Identification and Communication - Part 1: Context, Architecture, and Referenced Standards*
ISO	ISO 17363:2007	Supply Chain Applications of RFID - Freight Containers
ISO	ISO 17364:2009	Supply Chain Applications of RFID - Returnable Transport Items (RTIs)
ISO	ISO 17365:2009	Supply Chain Applications of RFID - Transport Units
ISO	ISO 17366:2009	Supply Chain Applications of RFID - Product Packaging
ISO	ISO 17367:2009	Supply Chain Applications of RFID - Product Tagging
ISO	ISO 20858:2007	Ships and Marine Technology - Maritime Port Facility Security Assessments and Security Plan Development
ISO	ISO 28000:2007	Specification for Security Management Systems for the Supply Chain
ISO	ISO 28001:2007	Security Management Systems for the Supply Chain - Best Practices for Implementing Supply Chain Security, Assessments, and Plans - Requirements and Guidance
ISO	ISO 28003:2007	Security Management Systems for the Supply Chain - Requirements for Bodies Providing Audit and Certification of Supply Chain Security Management Systems
ISO	ISO 28004:2007	Security Management Systems for the Supply Chain - Guidelines for the Implementation of ISO 28000
ISO	ISO 31000:2009	Risk Management - Principles and Guidelines
ISO	ISO 9001:2008	Quality Management Systems - Requirements
ISO	ISO Guide 73:2009	Risk Management - Vocabulary
ISO	ISO/DTR 22312	Societal Security - Technological Capabilities*
ISO	ISO/PAS 18186:2010	Freight Containers - RFID Cargo Shipment Tag System
ISO	ISO/PAS 22399:2007	Societal Security - Guidelines for Incident Preparedness and Operational Continuity Management

Developer	Designation	Document Title
ISO	ISO/PAS 28002:2010	Security Management Systems for the Supply Chain - Development of Resilience in the Supply Chain - Requirements with Guidance for Use
ISO	ISO/TS 10891:2009	Freight Containers - Radio Frequency Identification (RFID) - License Plate Tag
ISO/IEC	ISO/IEC 15288:2008	Systems and Software Engineering - System Life Cycle Processes
ISO/IEC	ISO/IEC 15459-1:2006	Information Technology - Unique Identifiers- Part 1: Unique Identifiers for Transport Units
ISO/IEC	ISO/IEC 15459-4:2008	Information Technology - Unique Identifiers - Part 4: Individual Items
ISO/IEC	ISO/IEC 15459-6:2007	Information Technology - Unique Identifiers - Part 6: Unique Identifier for Product Groupings
ISO/IEC	ISO/IEC 15459-8:2009	Information Technology - Unique Identifiers - Part 8: Grouping of Transport Units
ISO/IEC	ISO/IEC 17025:2005	General Requirements for the competence of Testing and Calibration Laboratories
ISO/IEC	ISO/IEC 18000-3:2010	Information Technology - Radio Frequency Identification for Item Management - Part 3: Parameters for air interface communications at 13,56 MHz
ISO/IEC	ISO/IEC 18000-6:2010	Information Technology - Radio Frequency Identification for Item Management - Part 6: Parameters for air interface communications at 860 MHz to 960 MHz
ISO/IEC	ISO/IEC 18000-7:2009	Information Technology - Radio Frequency Identification for Item Management - Part 7: Parameters for Active Air Interface Communications at 433 MHz
ISO/IEC	ISO/IEC 24730-2:2006	Information Technology - Real-Time Locating Systems (RTLS) - Part 2:2,4 GHz Air Interface Protocol
ISO/IEC	ISO/IEC 27002:2005	Information Technology - Security Techniques - Code of Practice for Information Security Management
ISO/IEC	ISO/IEC 15418:2009	Information Technology - Automatic Identification and Data Capture Techniques - GS1 Application Identifiers and ASC MH10 Data Identifiers and Maintenance
ISO/IEC	ISO/IEC 15434:2006	Information Technology - Automatic Identification and Data Capture Techniques - Syntax for High-Capacity ADC Media
ISO/IEC	ISO/IEC 15459-5:2007	Information Technology - Unique Identifiers - Part 5: Unique Identifier for Returnable Transport Items (RTIs)
ISO/IEC	ISO/IEC 15963:2009	Information Technology - Radio Frequency Identification for Item Management - Unique Identification for RF Tags
ISO/IEC	ISO/IEC 19794-5:2005	Information Technology - Biometric Data Interchange Formats - Part 5: Face Image Data
ISO/IEC	ISO/IEC 27001:2005	Information Technology - Security Techniques - Information Security Management Systems - Requirements
ISO/IEC	ISO/IEC TR 18047-3:2004	Information Technology - Radio Frequency Identification Device Conformance Test Methods - Part 3: Test Methods for Air Interface Communications at 13,56 MHz
ISO/IEC	ISO/IEC TR 18047-6 2008	Information Technology - Radio Frequency Identification Device Conformance Test Methods - Part 6: Test Methods for Air Interface Communications at 860 MHz to 960 MHz

Developer	Designation	Document Title
ISO/IEC	ISO/IEC TR 18047-7:2010	Information Technology - Radio Frequency Identification Device Conformance Test Methods - Part 7: Test Methods for Active Air Interface Communications at 433 MHz
ISO/IEC	ISO/IEC TR 24769:2008	Information Technology - Real-time Locating System (RTLS) Device Conformance Test Methods - Test Methods for Air Interface Communication at 2,4 GHz
ISO/IEC/IEEE	ISO/IEC/IEEE FCD 21451-7	Information Technology — Smart Transducer Interface for Sensors and Actuators - Transducer to Radio Frequency Identification (RFID) Systems Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats*
ISO/IEC/IEEE	21451-5	Information technology — Smart Transducer Interface for Sensors and Actuators – Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats (in process)
ISO/IEC/IEEE	ISO/IEC/IEEE 21450:2010	Information technology — Smart Transducer Interface for Sensors and Actuators — Common Functions, Communication Protocols, and Transducer Electronic Data Sheet (TEDS) Formats
ISO/IEC/IEEE	ISO/IEC/IEEE 21451-1:2010	Information technology — Smart Transducer Interface for Sensors and Actuators — Part 1: Network Capable Application Processor (NCAP) Information Model
ISO/IEC/IEEE	ISO/IEC/IEEE 21451-2:2010	Information technology — Smart Transducer Interface for Sensors and Actuators — Part 2: Transducer to Microprocessor Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats
ISO/IEC/IEEE	ISO/IEC/IEEE 21451-4:2010	Information technology — Smart Transducer Interface for Sensors and Actuators — Part 4: Mixed-Mode Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats
ISO/IEC/IEEE	ISO/IEC/IEEE 8802-15-4:2010	Information Technology - Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks - Specific Requirements
NEMA	NEMA IIC 1v01	Digital Imaging and Communications in Security (DICOS) Information Object Definitions (IODs)
NFPA	NFPA 1600-2010	Standard on Disaster/Emergency Management and Business Continuity Programs
NIJ	NIJ 0603.01	Portable X-Ray Systems for Use in Bomb Identification
OASIS	OASIS HAVE v1.0-2008	Emergency Data Exchange Language (EDXL) Hospital Availability Exchange (HAVE) Version 1.0 (2008)
OASIS	OASIS EDXL-RM 1.0-2009	Incorporating Approved Errata - Emergency Data Exchange Language Resource Messaging (EDXL-RM) 1.0
OASIS	OASIS CAP v1.1-2005	Common Alerting Protocol
OASIS	OASIS EDXL-DE v1.0-2006	Emergency Data Exchange Language (EDXL) Distribution Element v.1.0
OGC	OpenGIS CS	OpenGIS Catalogue Service Implementation Specification
OGC	Open GIS GML	OpenGIS Geography Markup Language (GML) Encoding Standard
OGC	OpenGIS WFS	OpenGIS Web Feature Service (WFS) Implementation Specification
OGC	OpenGIS WMS	OpenGIS Web Map Service (WMS) Implementation Specification