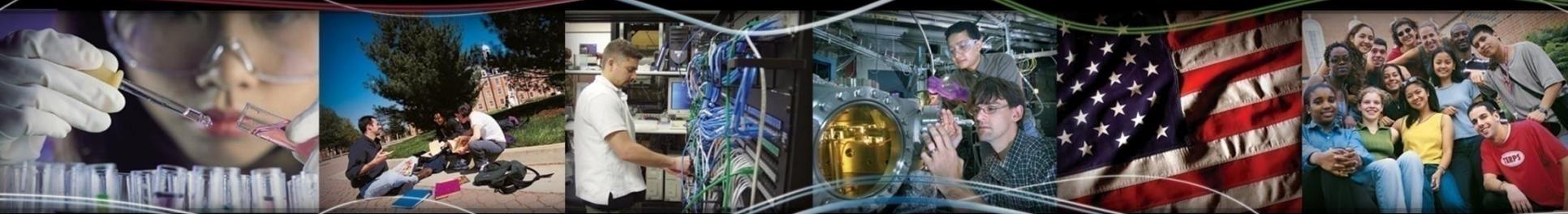


Standards for Homeland Security

From Science....Security



From Technology....Trust

NIST
September 20, 2010

Dr. Bert M. Coursey
Standards Executive



**Homeland
Security**

Quadrennial Homeland Security Review

Vision

A Homeland that is safe, secure and resilient against terrorism and other hazards where American interests, aspirations, and way of life can thrive.



**Homeland
Security**

Quadrennial Homeland Security Review

The Core Missions

1. Preventing terrorism and enhancing security;
2. Securing and managing our borders;
3. Enforcing and administering our immigration laws;
4. Safeguarding and securing cyberspace; and
5. Ensuring resilience to disasters.



**Homeland
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All Hands Meeting

Department of Homeland Security Science and Technology

Town Hall Meeting with Secretary Janet Napolitano

August 19, 2010

Bert Coursey:

“I'm Bert Coursey in the Test & Evaluations and Standards Division.... What do you see as the role of DHS in promoting standards for all technologies both within the private sector and in the international community?”

Secretary Janet Napolitano:

“Well, I think we're going to have an ever more important role. I think I would first start with technologies in the department and what the department procures and really looking at standards, requirements, operational testing protocols, things of that sort that S&T will help lead because the expertise, this is where it is seated in the department, and so you've really got to be thinking about how that would work. And that ties into some of my prior answers which is: What's the problem to be solved? What's the technology? Is it scalable? Is it usable? Can a border patrol agent use this? Can a TSO officer use that? Can a local first responder be trained to use something else? So the whole applied technology area is something where when we're buying and investing, we really want to make uniform across the department, and we want S&T to be leading that effort. ”

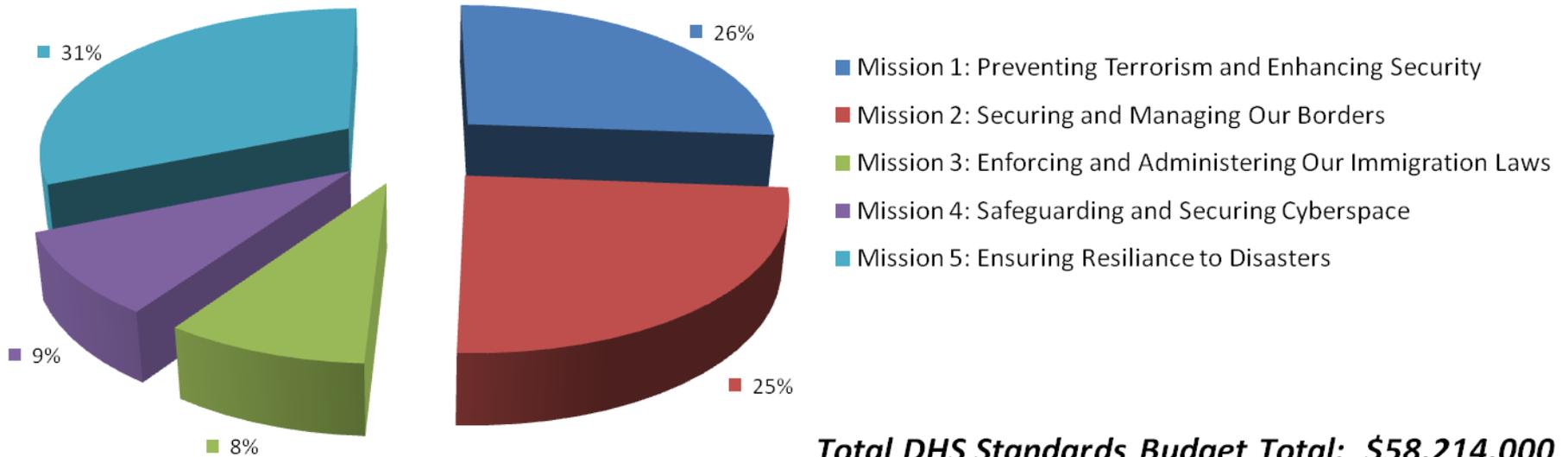


**Homeland
Security**

- Identify highest priority threats
- Consider scientific and technological countermeasures
- Work with standards community to develop immediate performance standards and test methods
- Work with SDOs to formulate standards and test methods as voluntary consensus standards



Total DHS Standards Investments by QHSR Mission Areas



**Homeland
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Why Standards in S&T?

Standards Policy: 6 U.S.C. 112 (g) directs that “[a]ll standards activities of the Department shall be conducted in accordance with section 12(d) of the National Technology Transfer Advancement Act of 1995 (15 U.S.C. 272 note) and Office of Management and Budget Circular A–119.”

- Directs that agencies will use *voluntary consensus standards* (VCS) as a means to carry out policy objectives

- Establishes a **Standards Executive** with responsibilities to ensure:
 - 1) Effective use of agency resources and participation.
 - 2) The development of agency positions that are in the public interest and that do not conflict with each other.
 - 3) The development of agency positions that are consistent with administration policy.
 - 4) The development of agency technical and policy positions that are clearly defined and known in advance to all federal participants on a given committee.



**Homeland
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*Serves as Standards Executive
for entire Department*

Standards Office Branches

– **Policy**

The mission of the Policy Branch is to be a resource to the Department by educating staff on standards adoption and use, coordinating standards activities within the Department, and releasing standards guidance and policy.

– **Planning**

The mission of the Planning Branch is to be a liaison between the user community and Standards Development Organizations (SDOs) to identify and prioritize requirements, to initiate the development of standards, and to review standards that are being developed to ensure user needs are being met.

– **Execution**

The mission of the Execution Branch is to manage and oversee the Standards Development projects funded by DHS S&T.



**Homeland
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Standards Policy, Guidance, and Process

- **Guidance:** Developed DHS guidance on participation in the development and use of non-government standards. Issued by the Deputy Secretary
- **Standards Council:** Established a DHS Standards Council to support the U/S S&T with the responsibility to coordinate standards activities in the Department.
- **SSAWGs:** Established a series of standards subject area working groups to further coordinate the adoption and implementation of standards within DHS



Guidance on Participation in the Development and Use of Non-Government Standards

December 2007

Version 1.0



Homeland Security

Science and Technology



DHS Standards Council

2008 Annual Report



Homeland Security

Science and Technology



Homeland Security

DHS Standards Partnerships



American National Standards Institute

American National Standards Institute
**HOMELAND SECURITY
STANDARDS PANEL**



**Underwriters
Laboratories Inc.**



**Homeland
Security**



National Institute of Justice

The Research, Development, and Evaluation Agency of the U.S. Department of Justice

American National Standards Institute (ANSI) Homeland Security Standards Panel (HSSP)

- Identifies existing consensus standards, or, if none exist, assists DHS and those sectors requesting assistance to accelerate development and adoption of consensus standards critical to homeland security.
- ANSI-HSSP promotes a positive, cooperative partnership between the public and private sectors in order to meet the needs of the nation in this critical area.
- www.hssd.us – A database for homeland security standards

American National Standards Institute
HOMELAND SECURITY
STANDARDS PANEL



**Homeland
Security**

DHS Standards Subject Area Working Groups (SSAWGS)

Geospatial Information Standards Working Group	(OCIO)
Emergency Management Standards Working Group	(FEMA)
Technical Capabilities Working Group	(DNDO)
Explosives SSAWG	(TSA)
Biometrics SSAWG	(S&T HFD, US VISIT)
Chemical Detection SSAWG	(CBP)
Biological Countermeasures SSAWG	(S&T CBD, OHA)
Interoperable Sensors SSAWG	(NIST)
Private Sector Emergency Preparedness Working Group (PS PREP)	(FEMA, NPPD, PSO, S&T, OGC)
Personal Protective and Operational Equipment SSAWG	(NIST)
Explosives Hardening & Mitigation WG	(NPPD)

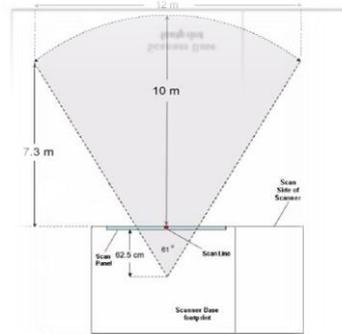
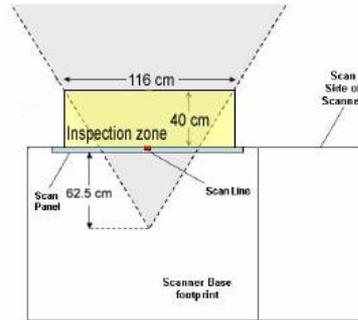


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**Homeland
Security**

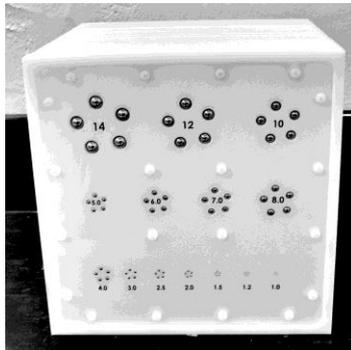
Christmas Day - Detroit Airline Bomb Attempt



ANSI-IEEE Standards for System Performance

ANSI N42.47-2010

ANSI N42.47 test article



ANSI-Health Physics Society (HPS) Standards For Radiation Safety

ANSI/HPS N43.17-2009 (revision of 2002) *Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation*

IEC 62463-2010 *Radiation Protection Instrumentation - X-Ray Systems for the Screening of Persons for Security and the Carrying of Illicit Items.*



Homeland Security

NIST – DHS and the Standards landscape

Many types of standards developed at NIST

- Physical & chemical measurement standards
- Normative standards (ASTM, IEEE, NFPA....)
- Calibration and test methods
- Standard Reference Materials
- Proficiency testing programs
- Standard Reference Data
- Information Technology Standards (biometrics, encryption,..)
- Building codes and standards (fire, earthquake, blast...)

Plus

- Laboratory accreditation programs
- Conformity Assessment programs



**Homeland
Security**

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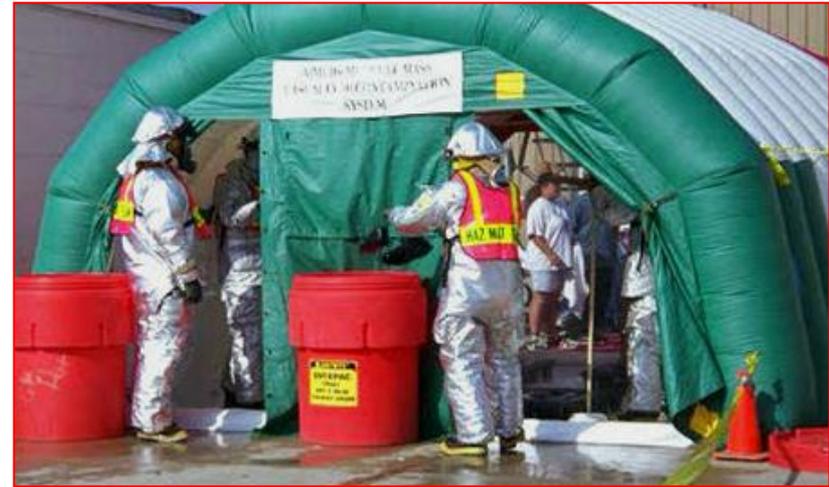
DHS needs them all & more!



**Homeland
Security**

Standards Needs for CBRNE Equipment

Decontamination Equipment



Personal Protective Equipment (PPE)



Operational Equipment



Detection Equipment

Impacts

- Guide procurement decisions of end-users (e.g., First Responders, private-sector end-users, government)
- Provide First Responders with independently-validated tools for incident management
- Provide commercial sector with guidance for developing tools that meet the needs of Public Health and First Responders



Standards enable the mission of stakeholders

Representative Chemical, Radiological/Nuclear, and Explosive Equipment Performance Standards



Designation: E 2411 – 07

An American National Standard

Standard Specification for Chemical Warfare Vapor Detector (CWVD)¹

This standard is issued under the fixed designation E 2411; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

The primary function required for the chemical warfare vapor detector (CWVD) is as a chemical warfare agent (CWA) point detector that can be used to detect, identify, quantify, and warn personnel of the presence of vapor or gas phase CWAs. The CWVD will provide visual and audible indicators and alarms, it will display the CWA class and point concentration, and it will record and store CWA concentrations as a function of time. This information will be made available locally and for transmission to a remote location.



American National Standard
Performance Criteria for Spectroscopy-
Based Portal Monitors Used
for Homeland Security



American National Standard
Minimum Performance Criteria for
Active Interrogation Systems Used
for Homeland Security



American National Standard Data
Format Standard for Radiation
Detectors Used for Homeland Security



American National Standard
Performance Criteria for Mobile and
Transportable Radiation Monitors Used
for Homeland Security

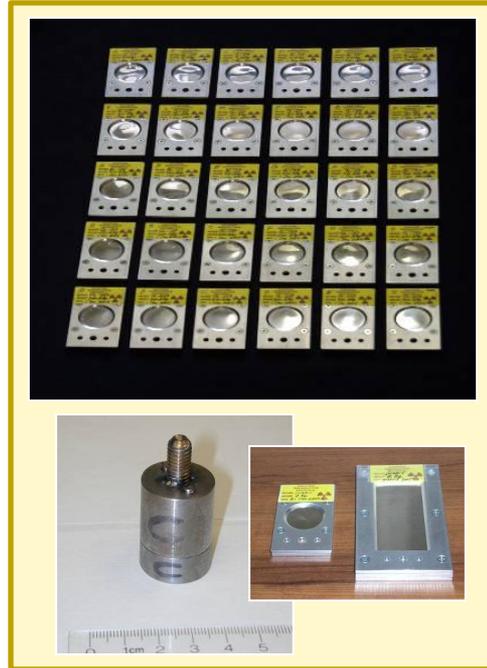


American National Standard
Performance Requirements for
Spectroscopic Personal Radiation
Detectors (SPRDs) for Homeland
Security

Accredited by the American National Standards Institute
Sponsored by the
National Committee on Radiation Instrumentation, N42

IEEE
3 Park Avenue
New York, NY 10016-5989 USA
23 May 2008

ANSI N42.40-2008



N42.38

N42.41

N42.42

N42.43

N42.48

Interoperability Standards for CBRNE Equipment

- Ergonomics – ease of use and special capabilities for mission need
- Data standards – EDXML for formatting spectroscopic data
- Hardware standards – IEEE 1451.5 plug and play interfaces for sensors



Standard Operating Procedures

Biological Detection



Designation: E 2458 – 06

Standard Practices for Bulk Sample Collection and Swab Sample Collection of Visible Powders Suspected of Being Biological Agents from Nonporous Surfaces¹

This standard is issued under the fixed designation E 2458; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.



Designation: X XXXX-XX

Work Item Number: WK 26640

Date: 12/8/09

Standard Guide for Operational Guidelines for Initial Response to a Suspected Biothreat Agent¹

This standard is issued under the fixed designation X XXXXX; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

Radiological Response



Designation: E 2601 – 08

Standard Practice for Radiological Emergency Response¹

This standard is issued under the fixed designation E 2601; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

Explosives Detection

U.S. Department of Justice
Federal Bureau of Investigation
Bomb Data Center



National Guidelines for Bomb Technicians



PUBLICATION OR REPRODUCTION PROHIBITED
LAW ENFORCEMENT SENSITIVE
Revised 4/2006

- Identify highest priority threats
- Consider scientific and technological countermeasures
- Work with standards community to develop immediate performance standards and test methods
- Work with SDOs to formulate standards and test methods as voluntary consensus standards
- Develop Conformity Assessment models to assure that products and services meet design standards



**Homeland
Security**

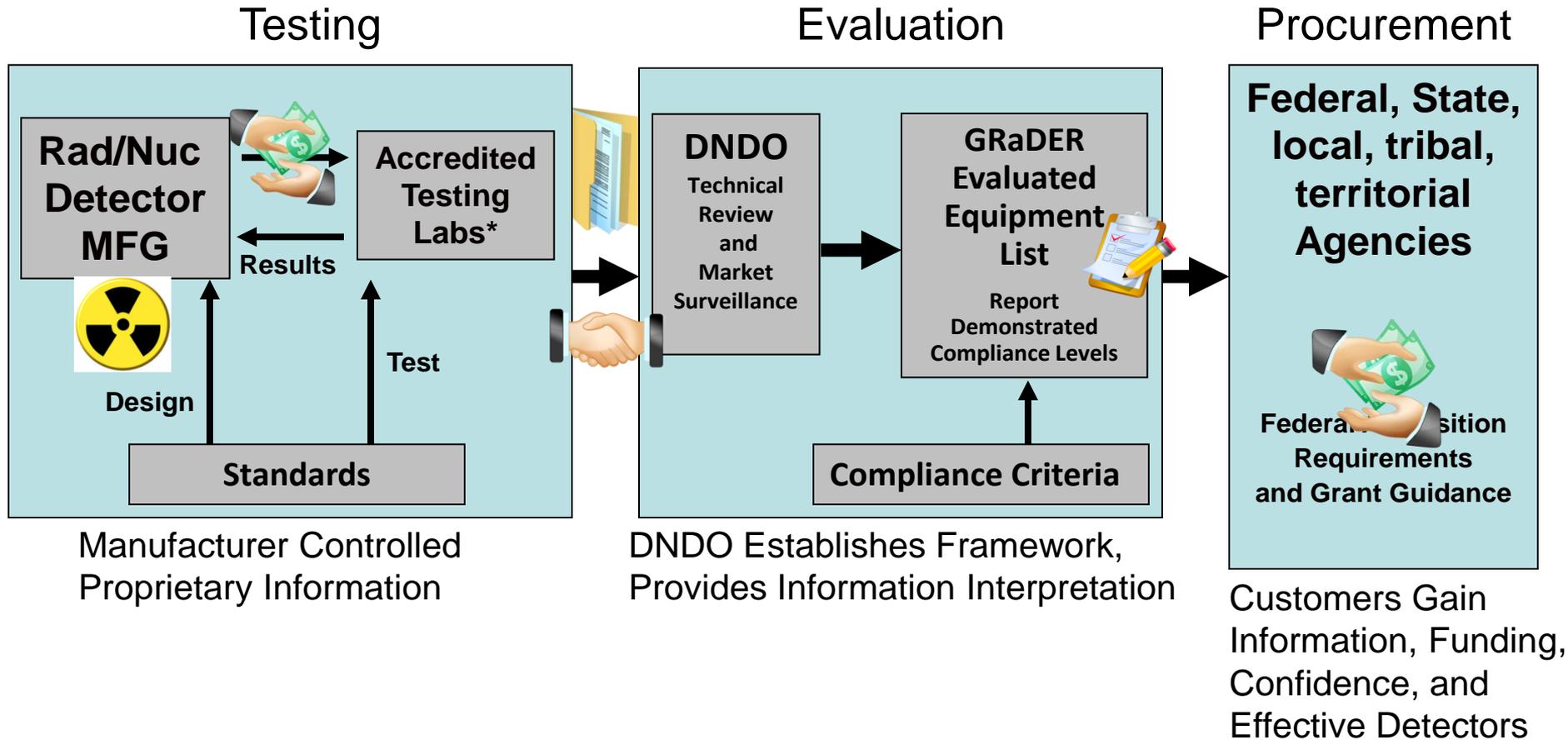
Conformity Assessment within DHS

- A few conventional and robust programs exist such as C-TPAT - performance testing against ISO 17712
- Some components have programs under development; radiation detectors, biometrics cards/readers, chemical detectors
- An assortment of Qualified Products Lists (QPLs)



**Homeland
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GRaDER Process and Phases



Homeland Security

* NVLAP Accreditation



Homeland Security