DoD CBRN Defense (CBRND)
Test & Evaluation Standards Development

JPEO-CBD Advanced Planning Briefings for Industry (APBI)
7 September 2011

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PURPOSE

To provide information to the Defense Industry on the establishment of DoD CBRND T&E standards and their role in the process.

TOPICS

CBRND T&E Executive Oversight Role
Why Have CBRND T&E Standards?
DoD CBRND T&E Standards Development Process
CBRND T&E Executive - Oversight Role

Ensure adequate T&E for CBRN defense systems

• Establish T&E Standards
• Coordinate community planning and investment in T&E infrastructure
• Provide T&E guidance for acquisition programs
  – Approve test documentation
  – Resolve T&E Issues
• Ensure early T&E involvement in acquisition programs
  – Facilitate test matrix that meets program budget/schedule
  – Reduce costly redundant testing
• Provide T&E Policy for the Enterprise
"It is essential for the Nation to have reliable CBRNE equipment that can be used with confidence for the protection of life, health, property, and commerce. The United States Government will, together with commercial and end-user communities, facilitate the development and implementation of national consensus standards, and develop an enduring capability to coordinate, prioritize, and implement CBRNE standards."

"A National Strategy for CBRNE Standards"
National S&T Council, Subcommittee on Standards
Signed by President’s Science Advisor 17 May 11
Understanding Test Data

We added a new performance test, but learned that the test itself is flawed.

Now our product fails our own tests and our customers are asking to see the test results.

Do I have permission to fake the test data?

I didn’t even know data can be real.
DoD CBRND T&E Standards

Background

- Army T&E Executive “dual-hatted” as the CBRND T&E Executive
- Joint community Test and Evaluation Capabilities and Methodologies
  Integrated Process Team (TECM IPT) established March 2005 to:
  - Provide CBDP technical Subject Matter Expertise (SME) for the CBRND T&E Executive
  - Identify T&E capability/infrastructure gaps in support of the POM and T&E strategies
- TECMIPT role expanded in July 2009 to include development of CBRND T&E Standards for CBRND T&E Executive approval
  - CBDP T&E Standards Development Plan - signed out in July 2010 with GO/SES concurrence from four service OTAs, JPEO-CBD, JSTO, JRO
  - TECMIPT now interagency, with DHS, NIST, EPA, DOE actively involved
  - TECMIPT T&E standards development coordinated with international partners

CBRND T&E Executive establishes T&E Standards through the TECMIPT
T&E Standards
National and International Priority

DUSA-TE currently coordinating CBRND community T&E standards with federal agency and international partners:

- DOD/DHS/EPA Technical Coordination Working Group (TCWG)

- White House National S&T Council (NSTC) Subcommittee on Standards (SoS) Roadmap Working Group (WG)
  - A National Strategy for CBRNE Standards (includes T&E Standards) was signed out by the President’s Science Advisor 17 May 2011

- ASCAUKUS CBR MOU Test, Evaluation and Simulation Working Group (TESWG) and other fora

Ultimate goal: Reliable data shared by all
Validated test infrastructure/methodologies that produce reliable, reproducible data to meet T&E community needs and inform decision makers

T&E Standards Documents

Test & Evaluation Capability Needs (TECN):
1. T&E Strategy: How will data be used?
2. Prioritized T&E Capability – Based Requirements

Verification & Validation Plan

Verification & Validation Report

Test Operating Procedure (TOP) with supporting info, SOPs

Documentation w/details are critical to common understanding of test data
Interagency T&E Standards

Benefits

• Enable quality, affordable defense systems for the Warfighter and First Responder. Standards provide:
  – Common T&E definitions, language
  – Common, quality test data that can be shared/understood by all
  – Reduced test redundancy
  – Validated T&E infrastructure that meets interagency data requirements

• Especially critical for T&E of Commercial Off the Shelf (COTS) equipment used by military and first responders

Interagency signature means:
• T&E Standard is technically sound
• Documentation is adequate in terms of detail, quality and clarity
• Agency will support use of test method and sharing of data

Community buy-in is critical for implementation of T&E Standards
DoD Process for Establishing T&E Standards

TECMIPT cross-community subject matter experts provide rigor to T&E standards development
TECMIPT Responsibilities

Nine TECMIPT sub-groups, i.e. Capability Area Process Action Teams (CAPATs)

• Identify and prioritize CBRND T&E capability gaps for POM input
• Develop and prioritize requirements for T&E capabilities
• Provide technical community-wide development/review of T&E standards documents, O6/GS-15 level concurrence to CBRND T&E Executive for approval

CAPAT SMEs provide technical rigor to T&E Standards
Deputy Under Secretary of the Army for Test and Evaluation

T&E Standards - Developed/Reviewed by CAPATs

- Test & Evaluation Capability Needs (TECN):
  - T&E Strategy (How will data be used?)
  - Prioritized Needs

- Verification & Validation Plan
- Verification & Validation Data
- Verification & Validation Report

Test Operating Procedure (TOP):
  - Supporting documentation
  - SOPs

Develop/concur upon requirements documents for T&E infrastructure

Review V&V data, provide input/concurrence for T&E infrastructure verification and validation

CAPAT SMEs critical to success
DHS, NIST, EPA now collaborate to establish/implement CBRN T&E standards

- **Rad/Nuc CAPAT**
  - Chaired by NIST, 22 other federal agencies participating under:
    - National Institute of Standards and Technology (NIST) (Chair)
    - Department of Defense (DoD)
    - Department of Homeland Security (DHS)
    - Environmental Protection Agency (EPA)
    - Department of Energy (DOE)
  - Developing an interagency Commercial Off The Shelf (COTS) test program
    - Includes ISO certification/accreditation of test labs
  - Reviewing/concurring on detection and decontamination T&E methodologies

**INTERAGENCY COLLABORATION SUCCESS STORY**

Quickly provided interagency Rad T&E Subject Matter Experts (SMEs) to help JPM-P answer urgent question from field in Japan following nuclear reactor incident: “Does CBD decon and personal protection equipment work against the Japan Rad threat?”
Current TECMIPT Interagency T&E Collaboration Examples

• JSTO, JHU/APL, DUSA-TE working toward T&E Standards and testbed for TRL 4 and above bio surveillance systems

• Initial planning meeting held 26 Aug 11

• Bio Surveillance Capability Area Process Action Team (CAPAT) WG to be established with interagency, academia, DoD members

• Chemical Detection and NTA CAPATs to also accept academia input

Bio Surveillance testing to be “born” interagency
Proposed Interagency T&E Standards Approach

T&E Infrastructure Investments (POM)

Future Infrastructure

• V&V Plans
• Data Reports
• Methodologies

• ASTM
• IEEE
• ANSI
• Mil Standards
• Existing DoD test methods

TECMIPT

CAPATs (with inter-agency SMEs)

• ID test capability gaps, needs
• Develop test capability req’ts
• Review V&V, test methods
• Formal concurrence

CBRND T&E Exec approves T&E Standards for DoD

Leadership Guidance:
DoD, DHS, EPA MOU
Technical Coordination Working Group (TCWG), White House NSTC Sub-Committee on Standards

GOAL: DHS/NIST/EPA Leadership approves interagency consensus T&E Standards

Add to existing standards data bases where appropriate
Summary

• T&E Standards facilitate quality CBRND systems for Warfighters, First Responders and all users

• Many different T&E “consensus standards” currently exist, but are not complete for CBRND performance testing

• DoD is united with other agencies for common CBRND T&E Standards through TECMIPT
  – Critical for President’s National Strategy
  – Provides consensus across more stakeholders

• CAPAT participation and the TECMIPT Standards processes to be extended to Industry partners for their valuable input

T&E Standards are critical for vendor data and product acceptance
Explosion of Interest in TECMIPT CBRND T&E Standards Process

- DHS
- EPA
- NIST
- NATO
- International Standards
- CBR MOU TESWG
- Multinational Test Procedures
- Industry Partners

DoD TECMIPT T&E Standards Development

- Reliable, Repeatable, Reproducible Results
- Enables Data Sharing
- Reduces redundant testing
- Saves $