Addressing the Infrastructure Needs for Cybersecurity T&E

Briefing for:
NDIA

32nd Annual National Test and Evaluation Conference
By
Chip Ferguson, Test Resource Management Center
Agenda

• TRMC Overview

• FY 2017 NDAA

• Executive Agent for Cyber Test Ranges
  – Congressional direction
  – Vision of the EA
  – Near-term Activities to begin achievement of that vision
  – Participation by the Services and Agencies

• TRMC Increasing Capacity for Cyber T&E
TRMC Overview
TRMC Mission

T&E Infrastructure

- MRTFB Planning, Assessment and Oversight
- Strategic Plan for DoD T&E Resources
- T&E Budget Certification
  
  *Updated every 2 years in coordination with the Military Departments, Defense Agencies, and specified OSD offices*

T&E Investments

- Test & Evaluation/Science & Technology (T&E/S&T) Program
- Central Test & Evaluation Investment Program (CTEIP)
- Joint Mission Environment Test Capability (JMETC)
- National Cyber Range (NCR)

  *T&E advanced technology development*
  *T&E capability development*
  *T&E distributed test integration*
  *Cyber T&E Environment*
FY2017 NDAA
FY2017 NDAA Language Affecting TRMC and DT&E

**FY2017 NDAA**

- Dismantles USD(AT&L) Acquisition, Technology, and Logistics
- Establishes in its place:
  - USD(R&E) Research and Engineering *Responsibility for developmental activities and programs*
  - USD(A&S) Acquisition and Sustainment
- Abolishes statutory requirement for DT&E
- Retains statutory requirement for TRMC
  - But Director, TRMC is no longer directed to be a 3-star equivalent
- Did not strike language prohibiting DOT&E from overseeing DT&E activities

**Senate Report on FY2017 NDAA**

- Directs Secretary of Defense study “to review appropriate balance between developmental and operational T&E activities and the resources required to accomplish related activities within OSD”
FY2017 NDAA Takeaways

- USD(AT&L) will be reorganized into USD(R&E) and USD(A&S)
- FY2017 NDAA included language to specifically eliminate various political appointee positions (to include Senate confirmed and President confirmed)
  - One of the positions eliminated was DASD(DT&E)
- There was no change to the overarching TRMC language
- FY2017 NDAA included language to specifically eliminate grade levels
  - One of the grade levels eliminated was D, TRMC (no longer required to be 3-star or equivalent)

- Our interpretation is that all of these changes were made to provide a “blank slate” for efforts to make Acquisition more efficient
- Any major reorganizations arising out of the “balancing” study directed by the Senate Report on FY2017 NDAA will not be implemented until February 2018
Executive Agent for Cyber Test Ranges
1) **Develop the Biennial Integrated Plan** which includes:
   a. Maintaining comprehensive list of test capabilities (DoD and non-DoD)
   b. Organizing and managing designated test capabilities
      • Establish priorities
      • Develop and Enforce standards
      • Guidance to integrate designated capabilities
      • Finding cost reductions
      • Add or consolidate cyber test capabilities
      • Enhance quality and expertise of workforce
      • Coordinate with interagency and industry partners
   c. Define architectures to:
      • Meet evolving needs
      • Coordinate with interagency and industry partners
      • Allows integrated closed loop and EW
      • Supports S&T, R&D, DT&E, OT&E, etc.
      • Connectivity to existing ranges

2) **Certify cyber test infrastructure**

3) **Generate requirements and standards for cyber security test infrastructure.**
Cyber T&E Infrastructure (CT&EI) OV-1a
The CT&EI is composed of existing non-kinetic Cyber test capabilities integrated with representations of kinetic and C2 systems (e.g., hardware-in-the-loop (HWIL) facilities, system integration labs (SILs), and software-in-the-loop (SWIL) facilities) via network connectivity, enabling testing those systems in a realistic combat, including cyber and interoperability, environment. We have to integrate these existing facilities in a cyber environment with low risk of damage.
Near Term Actions

• **Documentation**
  – Roles and Responsibilities
    – Signed by DSD March 8, 2016
  – MOA with Army as the Cyber Training Range EA
  – DoD Directive
    – Draft worked with P&R and EA for Cyber Training Ranges
  – Comprehensive List of Cyber Ranges
    – In coordination with Services
  – Biennial Plan for DoD Cyber Ranges
    – Drafting with EA for Cyber Training Ranges

• **Vision**
  – White Paper
  – Drafting Implementation Plan

• **Engagement with Intelligence Community**

• **Requirements to Implement the Vision**

• **Standards**
Requirements Generation to Implement the Vision of the CT&EI

• Lead an FFRDC to study, identify, and recommend requirements to realize the vision.
  – Use Cases

• Form a Cyber T&E Requirements Working Group with Service T&E representatives to review and recommend validation and priorities for those requirement(s).

• Example requirements to implement the vision:
  – A common architecture
  – Standards to implement the integrated architecture
  – Methodology to integrate kinetic and C2 system representations without unacceptable risk of causing damage
  – Common processes
  – Common tools
  – An accepted lexicon

• Pivot to development of Standards
TRMC Increasing Capacity for Cyber T&E
National Cyber Range (NCR) Buildout

Mission: Improve the mission resiliency of our warfighters in the cyber-contested battlespace by conducting testing and training events in mission-representative cyberspace environments

Current NCR Computing Assets/Facility (LMCO Orlando, FL)

- FY16: 5 Test Beds, 55 events/year, Single Location
- FY19: 32 Test Beds, ~300-400 events/year, 4+ Locations

- Complete recapitalization of existing NCR facility in Orlando
  - Use as baseline architecture for capacity expansion
- Build 3 additional NCR-like facilities at Government locations
  - Increase technical and concurrent event capacity by 8X+
- Work with the AF on their requirements for Avionics Cyber Lab

Estimated Best Case Build-Out Timelines
Support to Training

• **Current NCR supports training events**
  – Approximately 50%
  – Never turned down a training requirement

• **CT&EI will continue support of training requirements**

• **Need clear definition of requirements from the training community for cyber range infrastructure**
  – Working with PEO STRI to determine requirements to support PCTE
  – Based on PCTE Acquisition Strategy, we are brokering a meeting this month with PEO STRI, ARCYBER, P&R, TRMC, and the other Designated Ranges
  – Expect TRMC will have a seat on the PCTE Executive Board
Summary

- TRMC is addressing the needs for Cyber T&E Infrastructure
  - Test and Training requirements
- The T&E Cyber Range EA is Up and Running
Contact Information

Deputy Cyber T&E Range EA:

Chip Ferguson

benard.b.ferguson.civ@mail.mil

571-372-2697
BACK UP