

# Addressing the Infrastructure Needs for Cybersecurity T&E



**Briefing for:**

**NDIA**

**32<sup>nd</sup> Annual National Test and Evaluation Conference**

**By**

**Chip Ferguson, Test Resource Management Center**



# Agenda



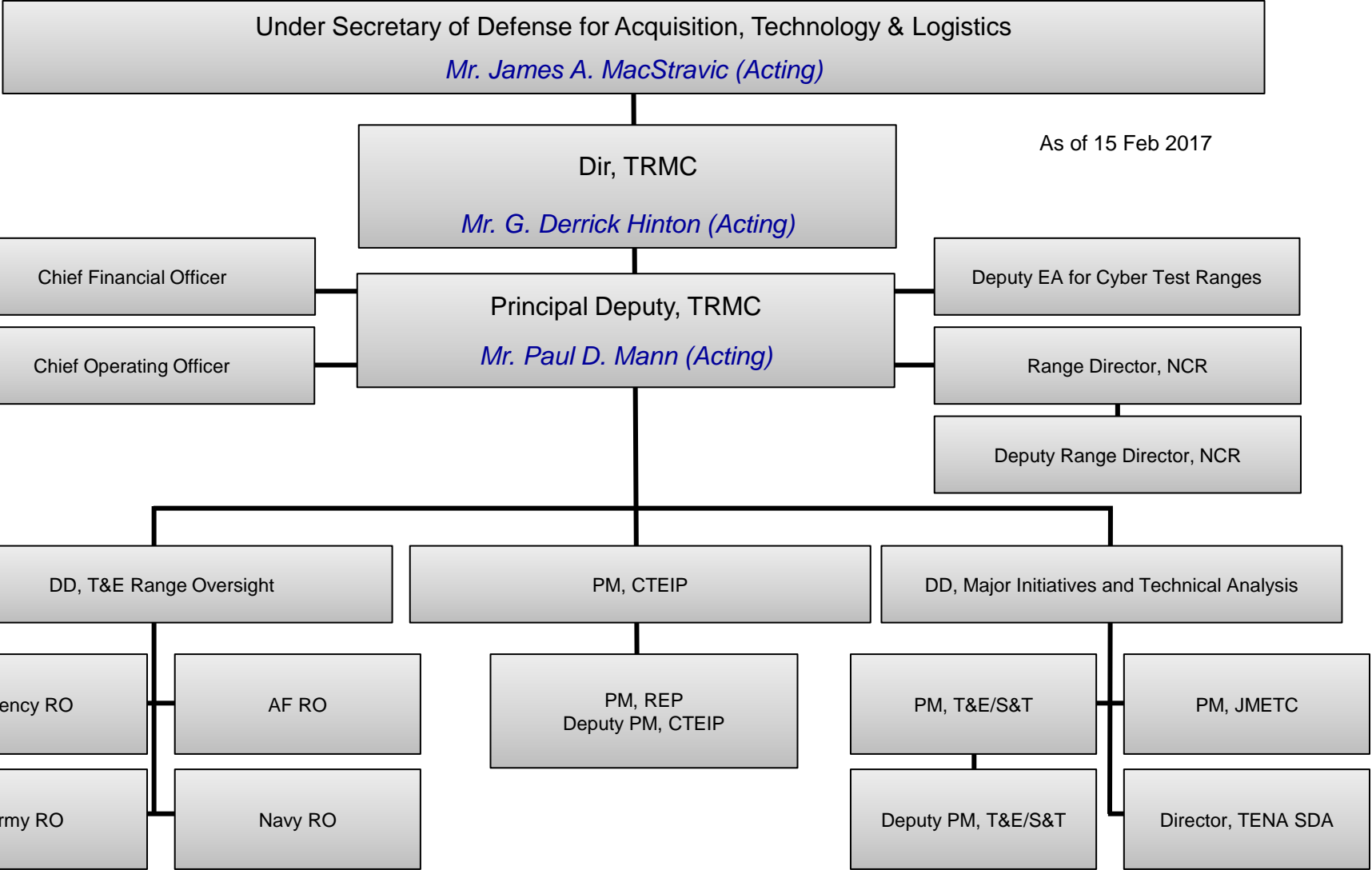
- **TRMC Overview**
- **FY 2017 NDAA**
- **Executive Agent for Cyber Test Ranges**
  - Congressional direction
  - Vision of the EA
  - Near-term Activities to begin achievement of that vision
  - Participation by the Services and Agencies
- **TRMC Increasing Capacity for Cyber T&E**



# TRMC Overview



# TRMC Organization





# TRMC Mission

## TRMC Mission

### T&E Infrastructure

MRTFB Planning, Assessment and Oversight

Strategic Plan for DoD T&E Resources



*Updated every 2 years in coordination with the Military Departments, Defense Agencies, and specified OSD offices*

T&E Budget Certification

*Certify to the Secretary of Defense adequacy of DoD T&E Budgets*

### T&E Investments

Test & Evaluation/Science & Technology (T&E/S&T) Program

*T&E advanced technology development*

Central Test & Evaluation Investment Program (CTEIP)

*T&E capability development*

Joint Mission Environment Test Capability (JMETC)

*T&E distributed test integration*

National Cyber Range (NCR)

*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”**
  - *Interim Report 01 Mar 2017 / Final Report 01 Aug 2017 / Implementation ~ Feb 2018*



# 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



# 2015 NDAA Requires Executive Agent (EA) for Cyber Test to:



- 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.**

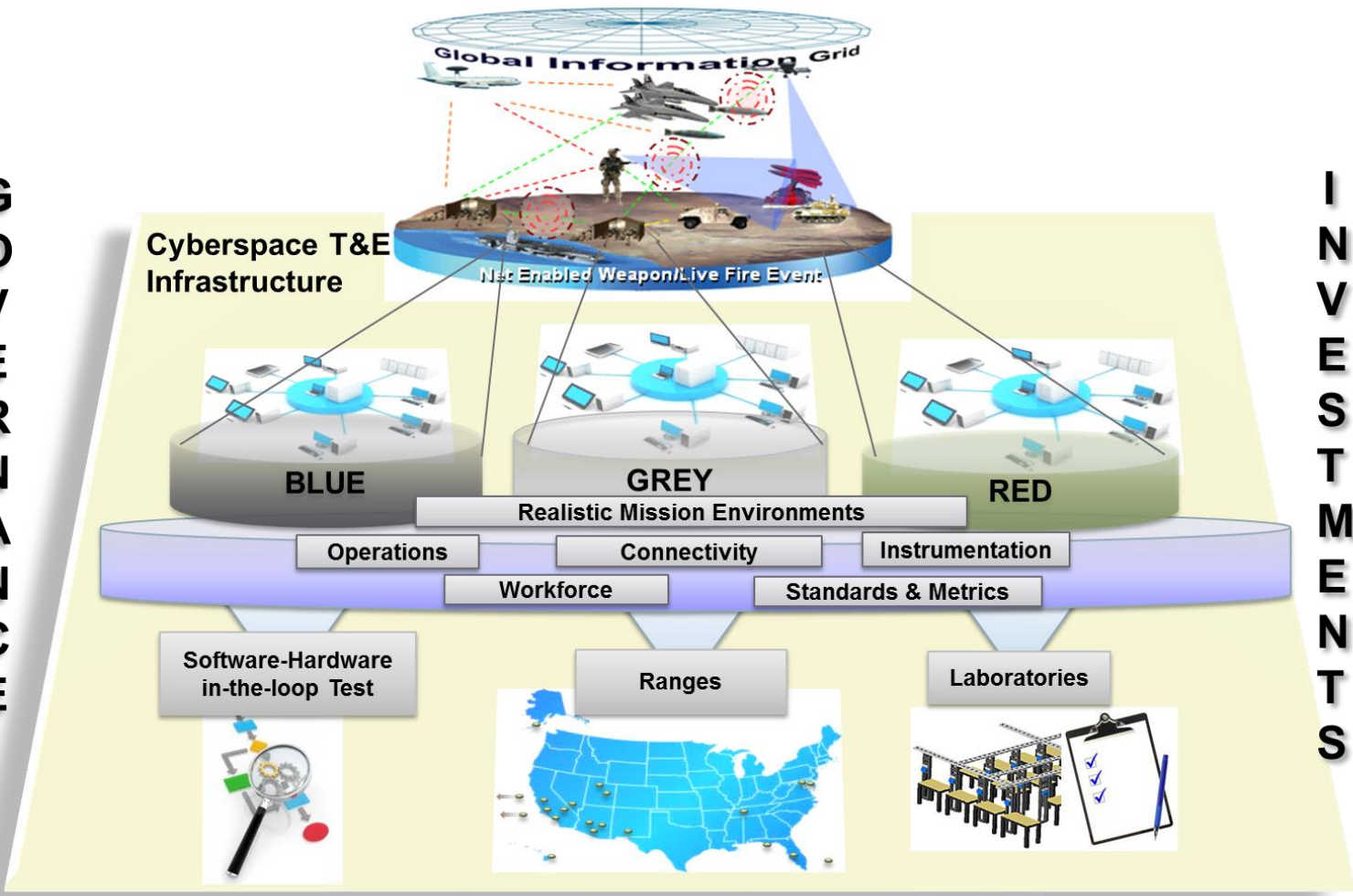


# Cyber T&E Infrastructure (CT&EI) OV-1a



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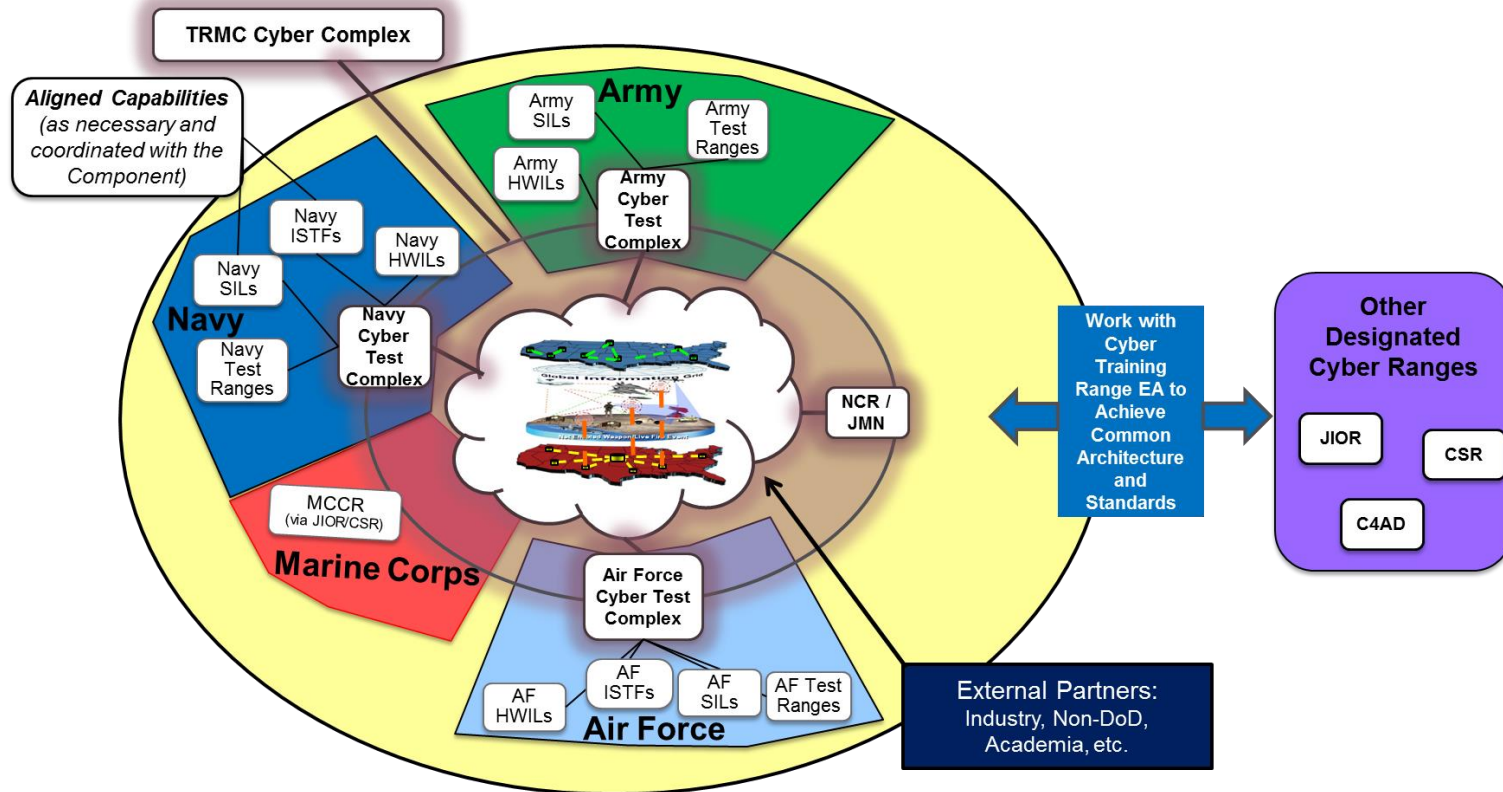
Industry and Academia

Allies and Partners



# Cyber T&E Infrastructure (CT&EI)

## OV-1b



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



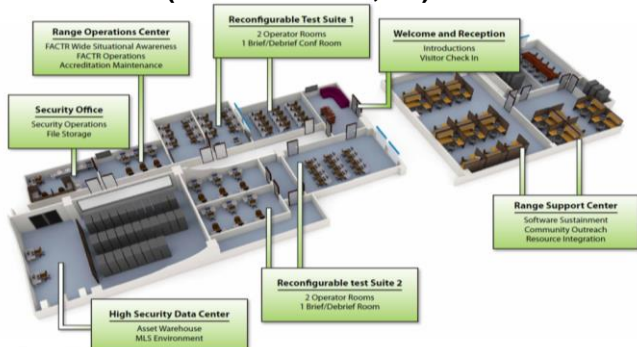


# National Cyber Range (NCR) Buildout

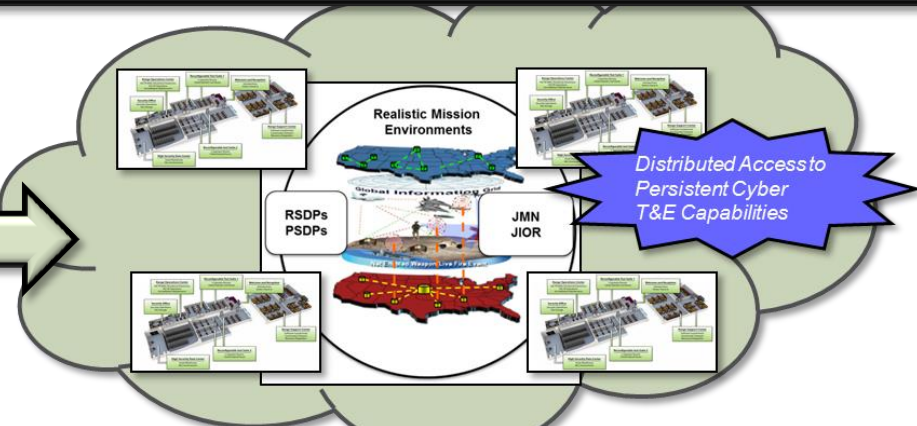


**Mission:** Improve the mission resiliency of our warfighters in the cyber-contested battlespace by conducting testing and training events in mission-representative cyberspace environments

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



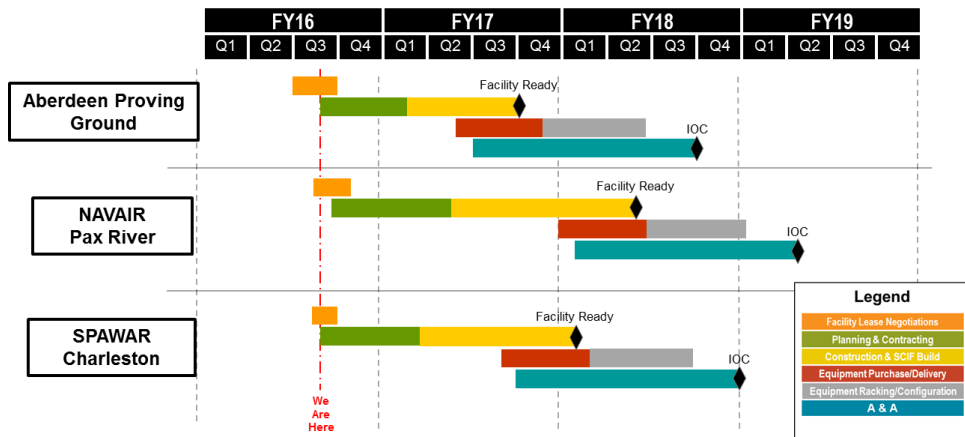
FY17-FY19



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



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# BACK UP

