



# Fostering Partnerships in T&E and Acquisition

Evaluation Frameworks Enable  
Integrated TE&C of Agile-Developed  
Programs

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# Integrated Mission-Based Testing Approach

## Focus of Brief

### Develop Test and Evaluation Strategy

- Early Involvement from all key players
- Mission Based Evaluation Framework (EF)
- Data Source Matrix (DSM)
- Joint Operational Context for Test (JOC-T)

### Characterize Integrated Test

- Group requirements into capabilities
- Develop capability based risk assessment
- Identify Test Resources, Schedule, and Scenarios

*Modeled after the Joint Test & Evaluation Methodology, Capability Test Methodology for Testing in a Joint Environment*

### Plan Integrated Test

- Plan for data reuse
- Agreed upon environment / conditions
- Common test tools & data formats
- Map to test measures

- ★ Involve key players from the start
- ★ Identify mission / business process early
- ★ Complete evaluation strategy before integrated testing begins
- ★ Map new capabilities to mission / business process

### Analyze Results

- Assess capabilities delivered in each release
- Focus on determining mission impact of identified shortfalls

### Execute Test

- Execute as the warfighter intends to use the capability
- IA as a mission: Protect, Detect, React & Restore (PDRR)
- Mission enabler: Interoperability
- Manage the data

### Establish Realistic Test Environment

- Determine limitations of test environment
- Identify differences in test vs. operational environments
- Loading or metrics collection
- Continuous Monitoring for RAM

*Integrate DT, OT, Information Assurance & Interoperability events into a seamless and efficient Test, Evaluation & Certification (TE&C) process*

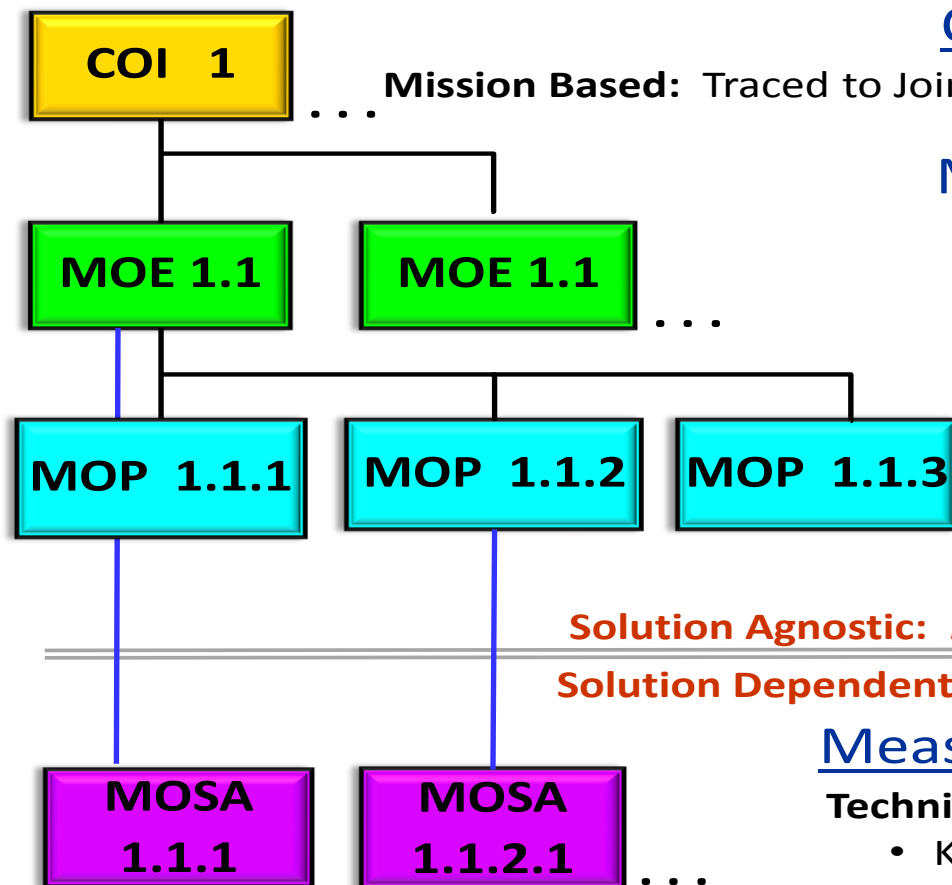
# Definitions



- **Integrated Testing**
  - Designing test event(s) to generate **data usable by all** testing stakeholders
- **Agile-Developed Programs**
  - Capabilities developed in **small increments**
  - System-specific requirements change based upon **evolving user priorities and needs**
- **Evaluation Framework**
  - Hierarchal measurement structure (COIs, MOE/MOS, MOP/MOSA) used for determining operational effectiveness, suitability, interoperability, and security

- **Mission-based Evaluation Framework**
  - **Pedigreed** by DoD Doctrine (Joint Capability Areas)
  - **Solution agnostic** (to extent possible)
  - Met/Not Met criteria **measured at operational mission/activity/task levels**
    - Specific data elements (e.g., samples) clearly defined
- **Developed Jointly by Stakeholders**
  - Program Management Office
  - Operational Users
  - Testers
- **Established before development begins**

# Evaluation Framework



## Critical Operational Issues

... **Mission Based:** Traced to Joint Capability Areas (JCAs), levels 1-3

## Measures of Effectiveness / Measures of Suitability

**Activities Focused:** JCAs Level 4-7  
or OV-5 system's activity model

## Measures of Performance

... **Task Directed:** Traced to Universal  
Joint Task List (UJTLs) or User  
input on tasks performed

**Solution Agnostic: *Mission Focused Measures***

**Solution Dependent : *System Specific Measures***

## Measures of System Attributes

**Technical Measures:**

- Key Performance Parameters (KPPs)
- Key System Attributes (KSAs)
- Critical Technical Parameters (CTPs)

**Scenarios exercise capability to accomplish operational tasks (MOP level)**

# Establish the Evaluation Framework Early

## To Ensure:

- **Building the “right thing”**
  - Clear definition of **supported missions, activities and tasks**
- **Building the “thing right”**
  - Clear definition of **operational performance expectations**
- **Expedited test planning**
  - New system requirements binned within the **existing framework**
  - **Pre-existing scenarios** exercise new functionality in operational context
- **Integrated test design**
  - Test data identified up front; tests designed to **generate all data**
- **Clear operational impacts**
  - Clear mapping of **system functions to operational missions**



# Take Aways



## **Early, dedicated participation by operational users, PMO, and testers is CRITICAL**

- Establish mission-based Evaluation Framework before system development
- Define success criteria at mission / activity / task levels
- Link system-specific requirements to the mission tasks they support
- Develop scenarios to measure task accomplishment

***Do the work early ... realize benefits and improved efficiencies!***