

# Slogan-Based T&E: Words Have Meaning

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U.S. Army Test and Evaluation Command



# Agenda

Purpose of T&E Defined

Definitions

- Capability
- System Performance
- Evaluation Measures
- Capability to Performance

Framework

- Linkages
- Example

Framework Benefits



# Purpose of T&E

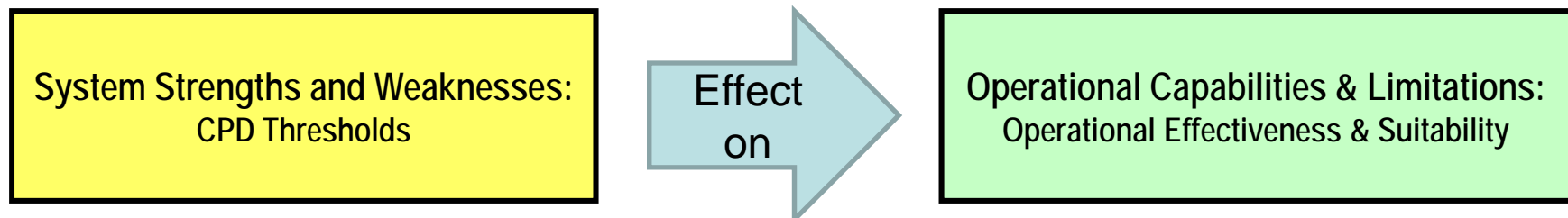
## Fundamental Principals guiding all T&E<sup>1</sup>:

“All testing and evaluation programs should experiment to learn and understand the **strengths and weaknesses of a system** and its components, **and the effect on operational capabilities and limitations.**”

## Reporting of OT&E Results<sup>2</sup>:

“The primary purpose of initial OT&E is contained in the first clause quoted above: to **determine operational effectiveness and suitability.** ...

The second purpose of OT&E stated in 5000.02 is more closely linked to the development and acquisition process, which is ‘to determine if **thresholds in the approved CPD** and critical operational issues have been satisfied.’”



1. Office of the Under Secretary of Defense (AT&L), Section 231 Report, Jun 07.

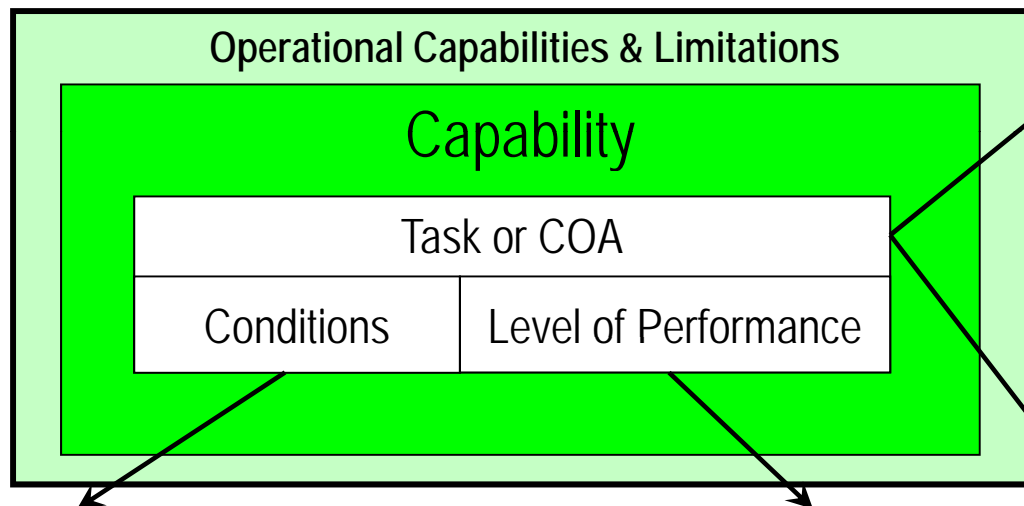
2. DOT&E Memo, Reporting of OT&E Results, 6 Jan 10.



# Definitions - Capability

## Capability<sup>3</sup>

“The ability to complete a **task** or execute a **course of action** under specified **conditions** and **level of performance**.”



## Task<sup>4</sup>

A clearly defined action or activity specifically assigned to an individual or organization that must be done as it is imposed by an appropriate authority.

## COA<sup>4</sup>

1. Any sequence of activities that an individual or unit may follow. 2. A scheme developed to accomplish a mission.

## Condition<sup>4</sup>

Those variables of an operational environment or situation in which a unit, system, or individual is expected to operate and may affect performance.

## Measure of Performance<sup>4</sup>

A criterion used to assess friendly actions that is tied to measuring task accomplishment.

3. Chairman Joint Chiefs of Staff Instruction, CJCSI 3170.01, 23 Jan 2015.

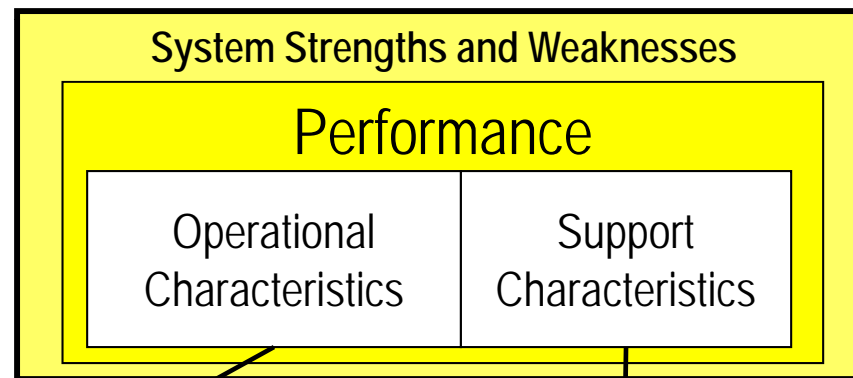
4. Joint Pub.1-02, 8 Nov 10 (as amended 20 Jan 15).



# Definitions – System Performance

## System Performance<sup>5</sup>

“Those **operational and support characteristics of the system** that allow it to effectively and efficiently perform its assigned mission over time. The support characteristics of the system include both supportability aspects of the design and the support elements necessary for system operation.



## Measure of Performance<sup>5</sup>

System-particular performance parameters such as speed, payload, range, time-on-station, frequency, or other distinctly quantifiable performance features.

## Measure of Suitability<sup>5</sup>

Measure of an item's **ability to be supported** in its intended operational environment. MOSs typically relate to readiness or operational availability and, hence, reliability, maintainability, and the item's support structure.

5. DAU, Glossary of Defense Acquisition Acronyms & Terms, 15<sup>th</sup> ed. Dec 12.



# Definitions – Evaluation Measures

## Operational Capabilities & Limitations

**Capability:** ability to accomplish a task

Task/COA: action or sequence of activities assigned to individual or unit

Conditions:  
operational environment

Level of Performance:  
Task accomplishment

Evaluated by

Measure of Effectiveness

MOE<sup>2</sup>

“The data used for evaluation are appropriately called measures of effectiveness, because they measure the **military effect (mission accomplishment)** that comes from the use of the system in its expected environment.”

## System Strengths and Weaknesses

**Performance:** characteristics of a system

Operational Characteristics:  
performance parameters

Support Characteristics:  
ability to be supported

Evaluated by

Measure of Performance

MOP<sup>2</sup>

“The measures used are appropriately referred to in the **context of ‘performance’** as in ‘key performance parameters,’ or ‘measures of performance.’ As such they should be referred to as measures of performance (MOP) and not measures of effectiveness (MOE).”

2. DOT&E Memo, Reporting of OT&E Results, 6 Jan 10.

Note: Definition of mission: “The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. (JP 3-0).”



# Definitions – Capability to Performance

## Operational Capabilities & Limitations

**Capability:** ability to accomplish a task

Task/COA: action or sequence of activities assigned to individual or unit

Conditions:  
operational environment

Level of Performance:  
Task accomplishment

Evaluated by

**MOE:**  
measure of the Military effect (task/COA/mission Accomplishment)

Effect on

**Systems Engineering<sup>6</sup>** "A logical sequence of activities and decisions that transforms an operational need into a description of system performance parameters and a preferred system configuration."

## System Strengths and Weaknesses

**Performance:** characteristics of a system

Operational Characteristics:  
performance parameters

Support Characteristics:  
ability to be supported

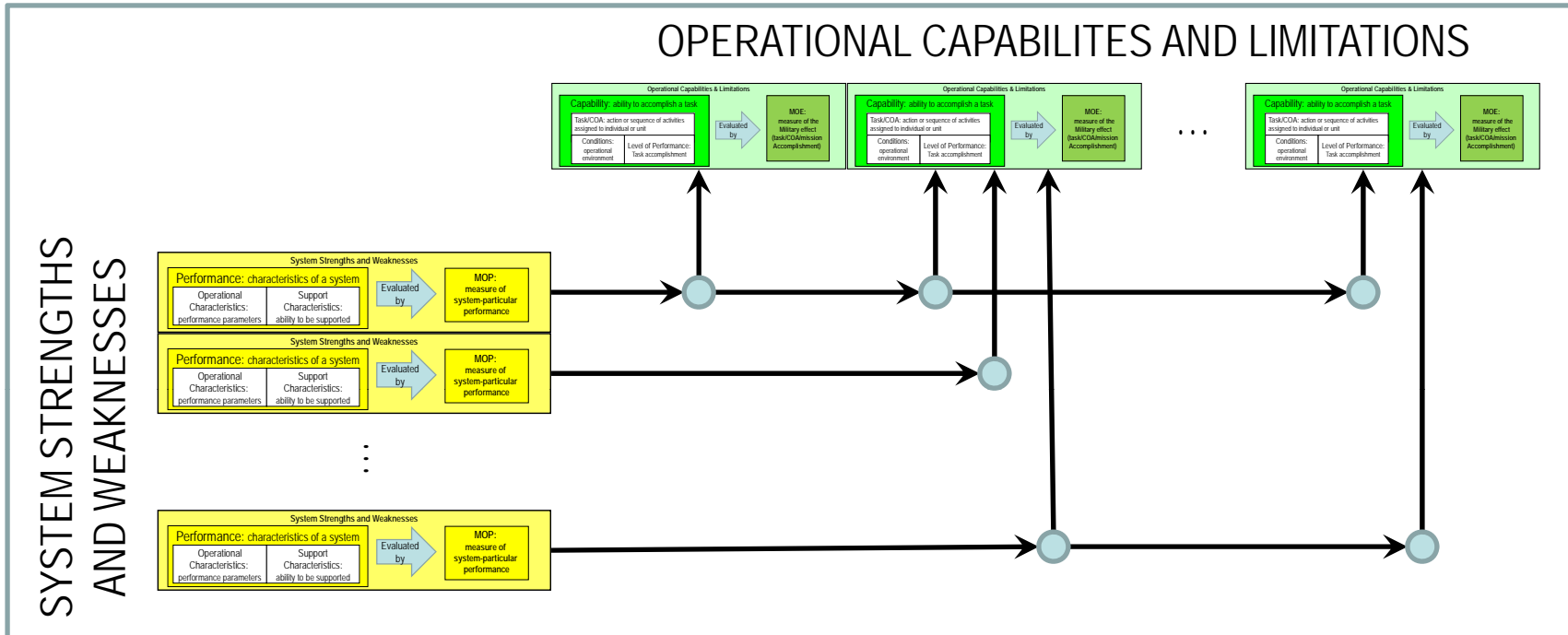
Evaluated by

**MOP:**  
measure of system-particular performance

6. MIL-STD-499A, Engineering Management, 1 May 1974, now cancelled.



# Framework - Linkages



Fundamental Principals guiding all T&E:

- ✓ “...strengths and weaknesses of a system ...and the effect on operational capabilities and limitations.”

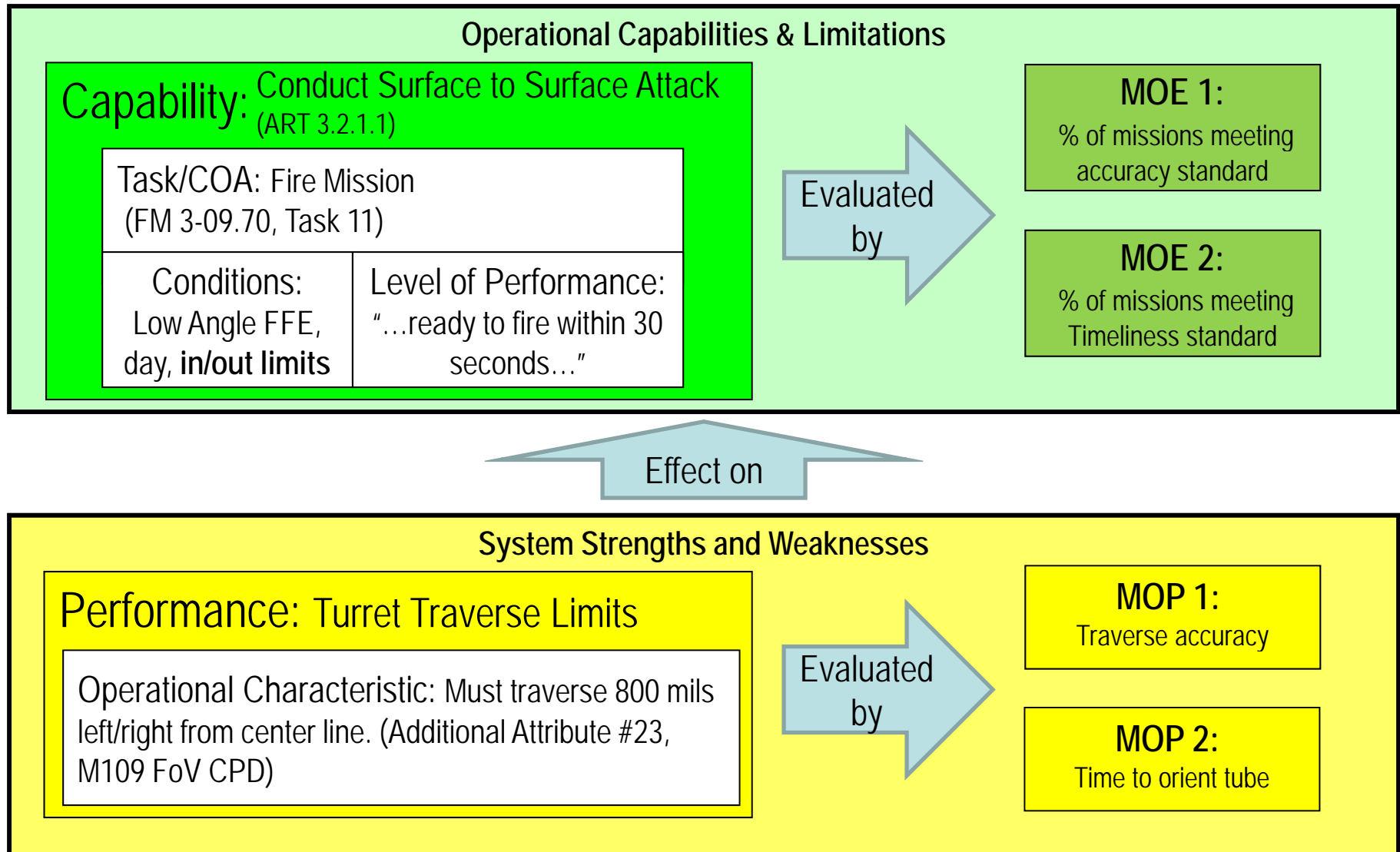
Reporting of OT&E Results:

- ✓ “...determine operational effectiveness and suitability...”
- ✓ “...determine thresholds in the approved CPD...”



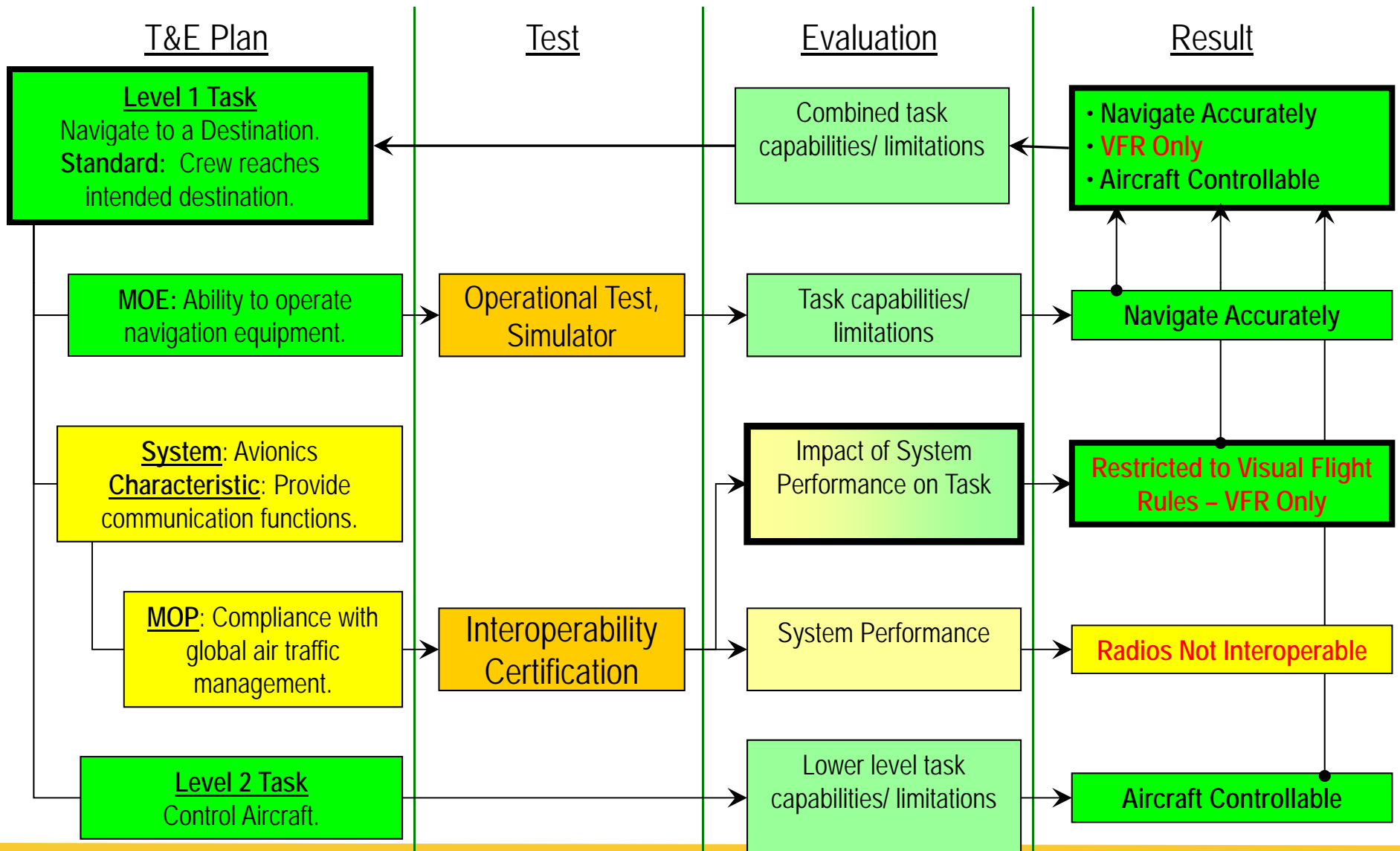


# Framework - Linkage Example





# Framework - Reporting Example





# Framework Benefits

**A** Report **effectiveness, suitability and survivability** based on **capabilities** and limitations.

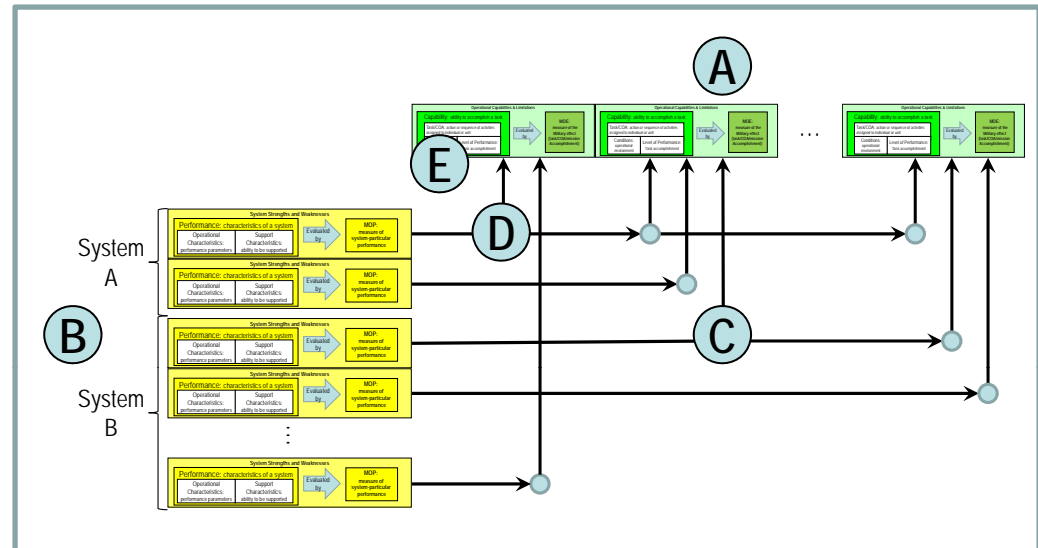
**B** Supports Joint, networked, **system-of-systems T&E**.

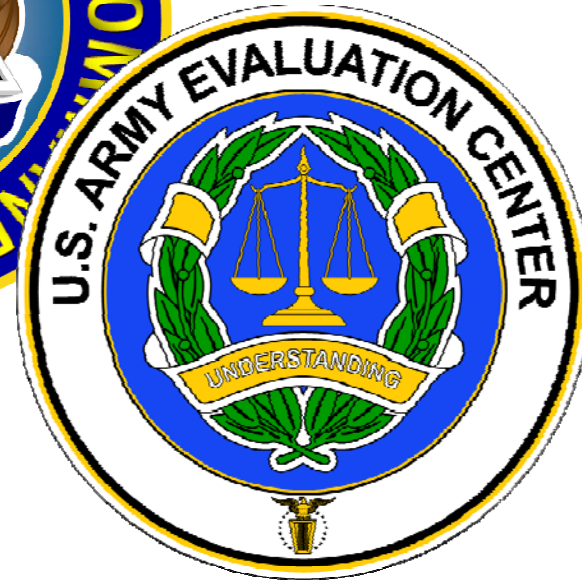
**C** **Right scoped OT** based on how system impacts operational capabilities

**D** Impact of DT results on operational capability known through linkage of performance and capabilities. Allows **integration of Developmental (DEF) and Operational frameworks (COLs)** integrated to **identify deficiencies early** and provide **continuous evaluation** of progress.

**E** Integrated T&E through...

- **Operational conditions** from capability **applied to DT conditions**;
- **Integrated use** of contractor, DT, OT and M&S; and
- Focus OT on system **function impact on task capability**.





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