Defense Information Systems Agency
Department of Defense

T&E for Joint Capabilities

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Thoughts on Joint T&E

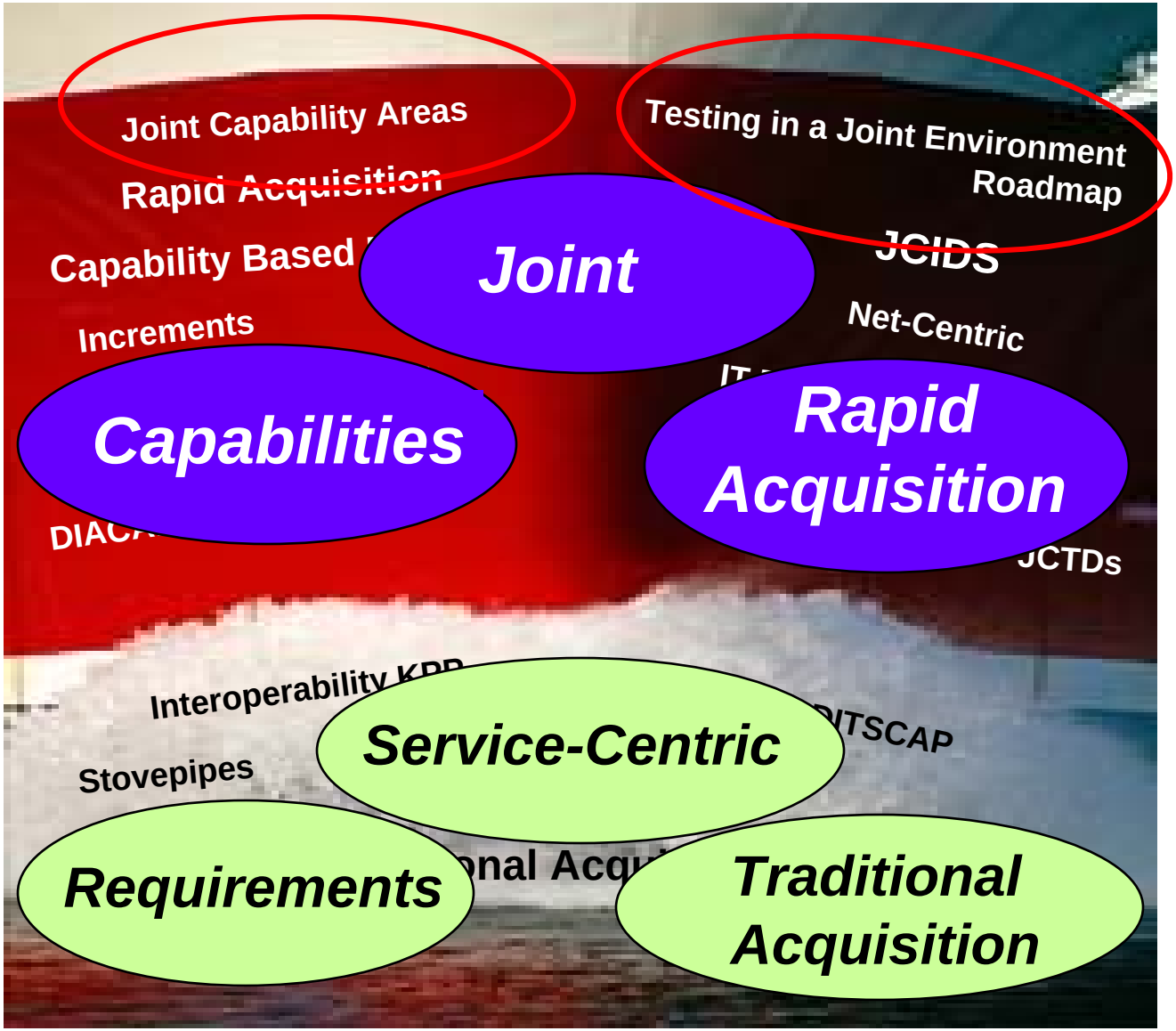
"As joint operations have become the mainstay of warfighting, it is imperative that our acquisition programs are evaluated in such an environment. I am concerned about the rate of progress in developing the capability to support such evaluations."

Memorandum, Subject: Testing in a Joint Environment Roadmap, signed by Dr. McQueary, 27 June 2007

"Currently, there is no effective method for conducting OT&E which cuts across Service lines … The interactions among Services become extremely important during combat, and critical military missions transcend Service boundaries and responsibilities (for example Close Air Support …). Because of the lack of joint OT&E, it is not only very difficult to detect certain kinds of deficiencies and to predict combat capability in advance, but it is also difficult to make decisions relating to overall force composition."

Report of the Blue Ribbon Defense Panel, 1 July 1970

Signs of Change



MOT&E

Multi-Service Operational Test and Evaluation (MOT&E)

OT&E conducted by two or more Service OTAs in a representative Joint operational environment for systems. MOT&E is conducted according to the T&E directives of the lead OTA, or as agreed in a memorandum of agreement between the participants.

MOT&E MOA

MULTI-SERVICE TEST AND EVALUATION

T&E conducted by two or more DoD Components for systems to be acquired by more than one DoD Component (Joint acquisition program), or for a DoD Component's systems that have interfaces with equipment of another DoD Component. May be developmental testing or operational testing (MOT&E).

DAU T&E Management Guide

JOT&E

Joint OT&E:

The test, of any capability intended for Joint operational use, under realistic operational conditions, including combat, when employed by typical users, for the purpose of determining effectiveness and suitability, and the evaluation of the results of such test.

JTEM Capability Test Methodology (CTM)

6 Steps
14 JTEM Processes

0. Develop T&E Strategy

- T&E Strategy (TES)
- T&E Master Plan (TEMP)

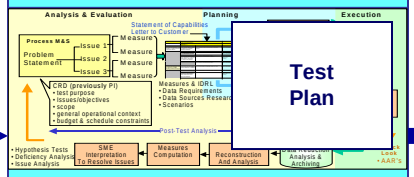
- Develop Capability/SoS Description
- Develop Joint Operational Context for Test (JOC-T)
- Develop Evaluation Strategy
- Develop/Refine Capability Crosswalk

1. Characterize Test

- Program Introduction Document (PID)
- Statement of Capabilities (SOC)

- Develop Test Concept
- Refine Evaluation Strategy
- Technical Assessment

2. Plan Test



- Develop Test Design
- Perform LVC Distributed Environment Analysis
- Develop Test Plan

3. Implement LVC-DE

- System Design Document (SDD)

- Design LVC Distributed Environment Configuration
- Integrate LVC Distributed Environment

4. Manage Test Execution

- Event Management Plan

5. Evaluate Capability

- Joint Capability Evaluation (JCE)

- Analyze Data
- Evaluate SoS & Joint Mission Effectiveness

Test Concept

Joint Operational Context for Test

Test Data

Integrated Vignettes

LVC Distributed Environment Design

Joint Mission Environment

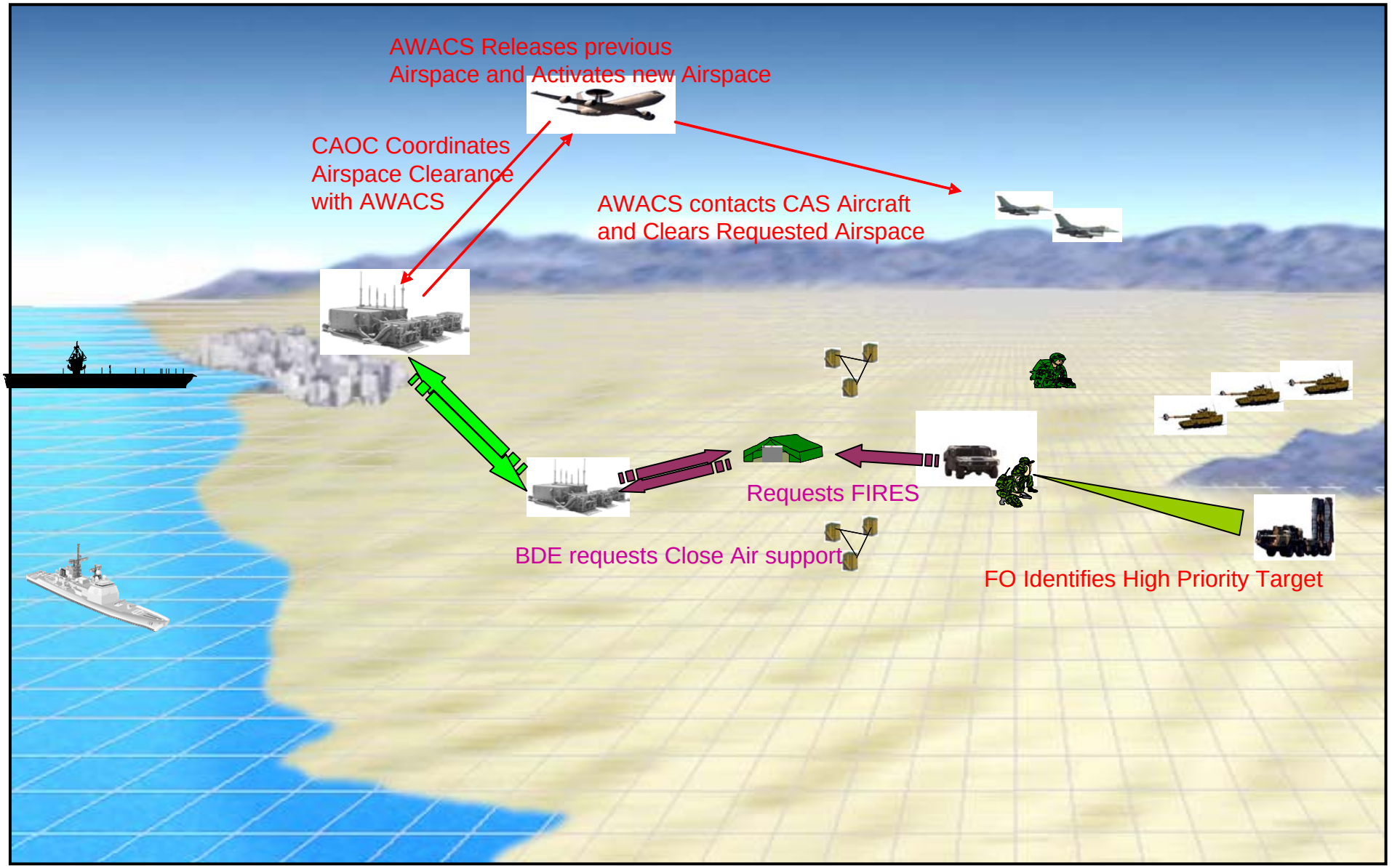
Test Control & Monitoring

Definitions

Joint Mission Environment:

The entities and environmental conditions within which forces employ capabilities to execute joint tasks to meet a mission objective.

Mission Thread Example



Definitions

Joint Mission Environment:

The entities and environmental conditions within which forces employ capabilities to execute joint tasks to meet a mission objective.

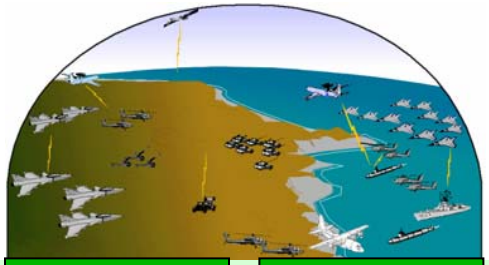
Joint Test Environment:

The appropriate combination of representative systems, forces, threats and environmental conditions assembled for test in a joint mission environment to support evaluations. These representations can be live, virtual, constructive or distributed combinations thereof.

JMETC

Joint Operational Scenarios

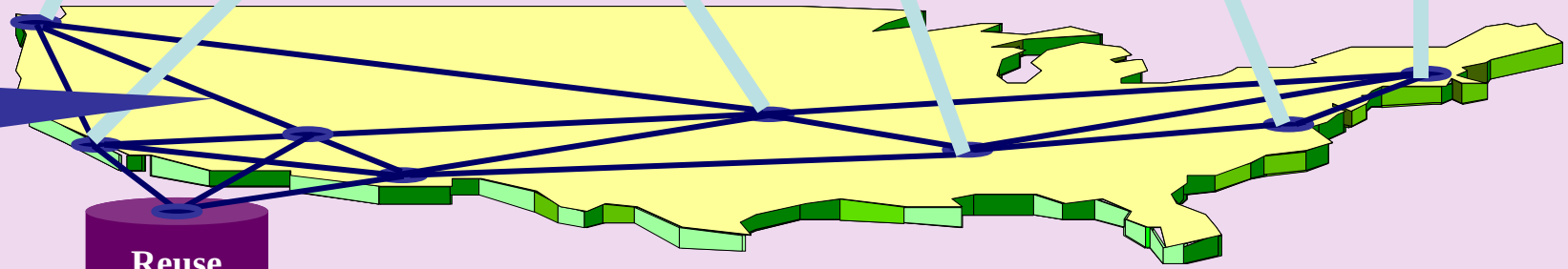
Systems Under Test



Integrated Test Resources

Virtual Prototype	Hardware in the Loop Lab	Installed Systems Test Facility	Range	Environment Generator	Threat Systems
TENA Standard Interface Definitions	TENA Standard Interface Definitions	TENA Standard Interface Definitions	TENA Standard Interface Definitions	TENA Standard Interface Definitions	TENA Standard Interface Definitions
TENA Common Middleware	TENA Common Middleware	TENA Common Middleware	TENA Common Middleware	TENA Common Middleware	TENA Common Middleware

JMETC VPN on SDREN



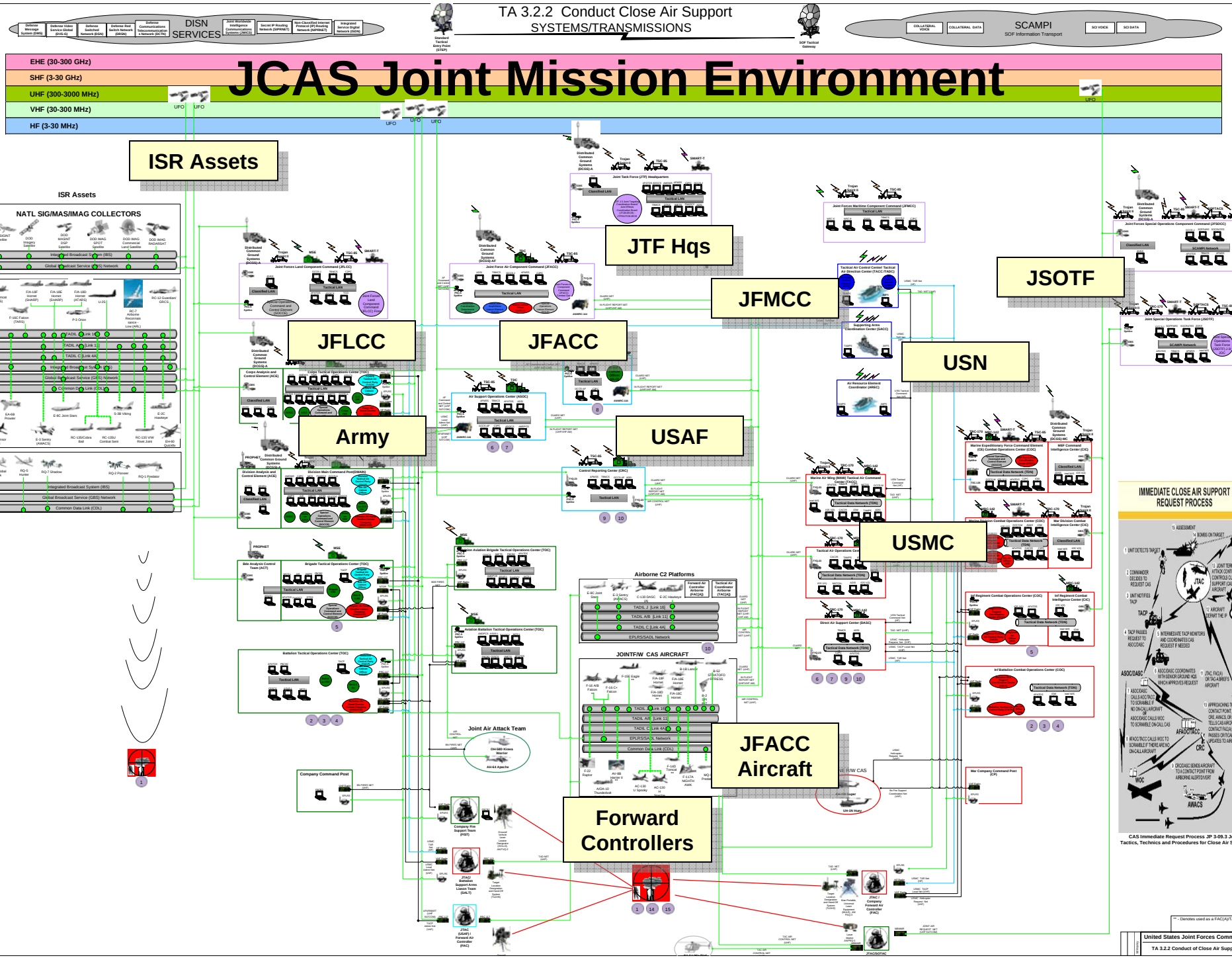
Reuse Repository

JMETC Infrastructure

Distributed Test Support Tools

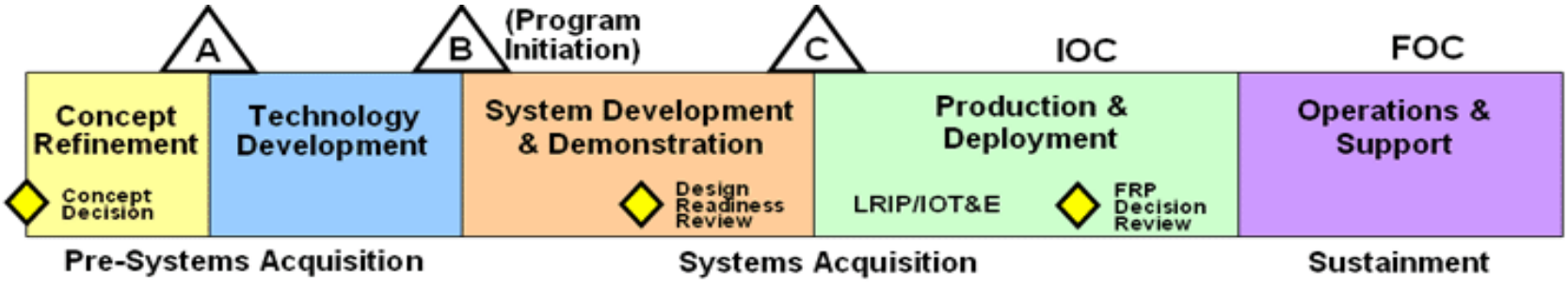
Data Management Solutions

Customer Support



CAS Immediate Request Process JP 3-09.3 Joint Tactics, Technics and Procedures for Close Air Support

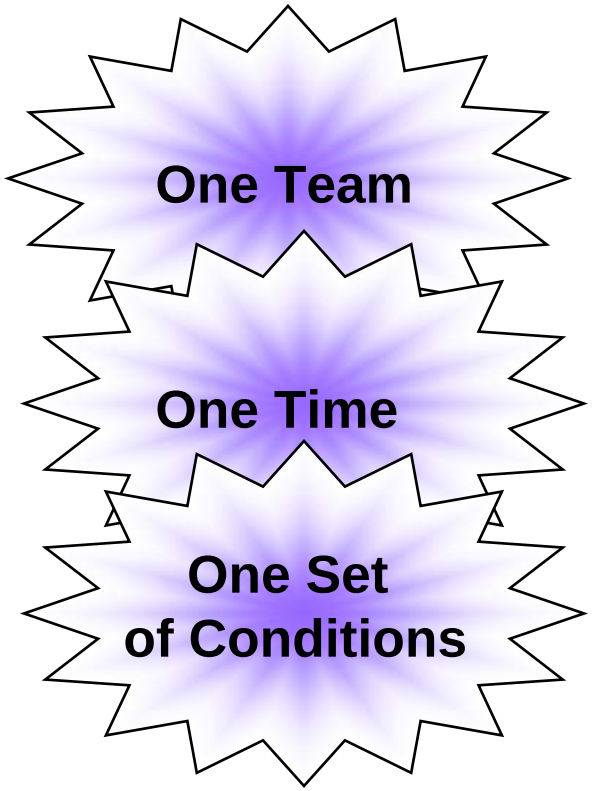
T&E for Information Technologies



Activity	Test Agent	Conditions	Customer	Reference
DT&E	PMO/Contractor/ Government DT organization	As determined by PMO; generally benign, lab; developer personnel	PMO	DOD 5000
OT&E	Indep OTA	"operationally realistic,… typical users"	MDA	Title 10 DoD 5000
Joint Interoperability Test Certification	JITC	"applicable capability environments"	J6	DODD 4630.5 DODI 4630.08 CJCSI 6212.01D
IA C&A* (Security T&E) (DIACAP)	OTA, DIA, FSO, NSA	Operational, Lab	DAA	DoDI 8510.01 * Note also the DOT&E Policy testing IA during OT&E

DISA Model: Capability T&E

- Reduce risk
- Reduce cost
- Improve quality of T&E
  - Fully integrated DT, OT, IOP, IA
  - Early Users (“beta test”)
- Eliminate duplication and improve data sharing
- Provide decision makers better understanding of capabilities and limitations
- Speed delivery of enhanced capabilities to the warfighter
- Leverages
  - JTEM
  - FDCE, JMETC, IO Range, etc
  - Live, Virtual, Constructive, Distributed T&E



Joint Tester's Toolkit

- **A Resource for the Joint Tester**
  - **Metrics**
  - **Mission Threads**
  - **Scenario**
  - **Methodologies**
  - **Access to Joint Resources**
    - **Troops**
    - **JMETC**
    - **IO Range**
  - **Training**
  - **Sample Plans, Reports**
  - **etc…**

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