- Panel -
Systems Engineering and DT&E for Systems Suitability

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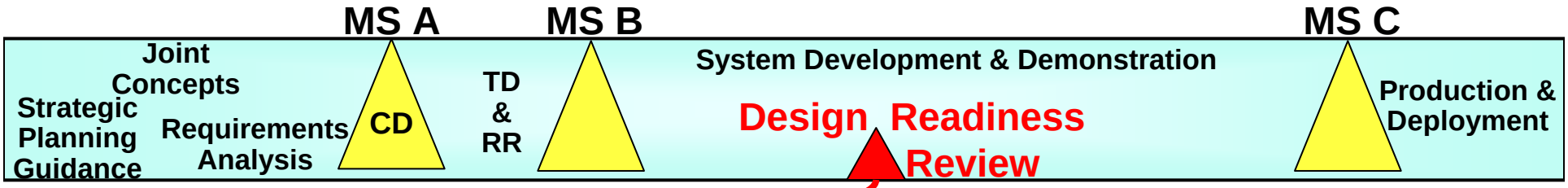
DT&E and suitability...do we have a problem?

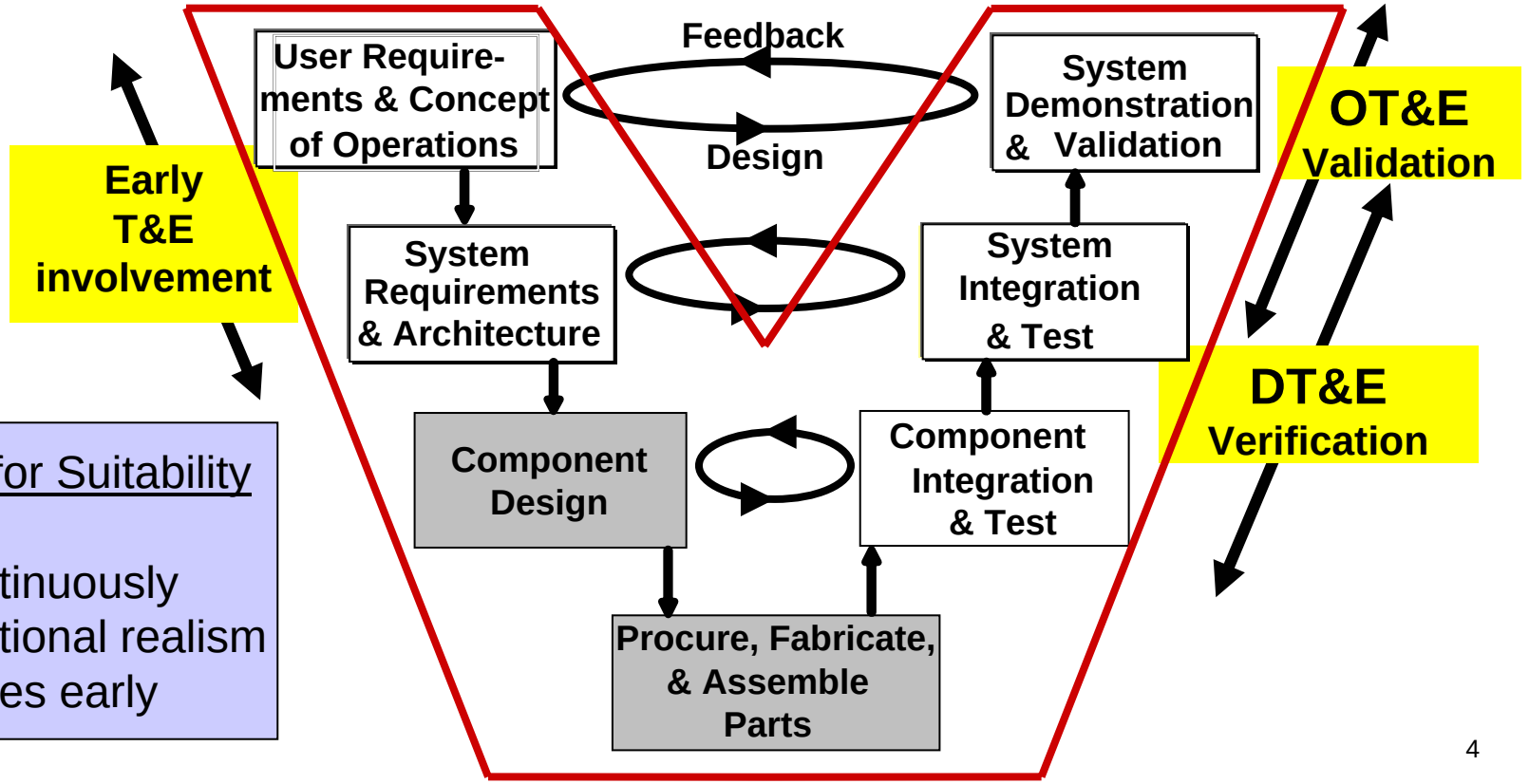
Systemic DT&E Findings
OSD Program Support Reviews

- Maturing suitability in SDD is not a priority
  - Few efforts observed to design-in reliability
  - Many reliability requirements lack a mission context
  - Maturation timeframes or maturity at IOC not defined in requirements
  - Log Demos to evaluate IETMs and diagnostics effectiveness rarely held
    - Log demos in PD phase are conducted too close to IOT&E
- Most programs lack quantifiable MS C entrance criteria
  - Don’t address R&M, manufacturing, integration, Net Ready, etc.
- Many programs downgraded ACAT ID to ACAT IC at MS C
  - Not supported by demonstration of full capabilities, including suitability

SE, DT&E and Suitability



DRR evidence of...system reliability based on demonstrated reliability rates

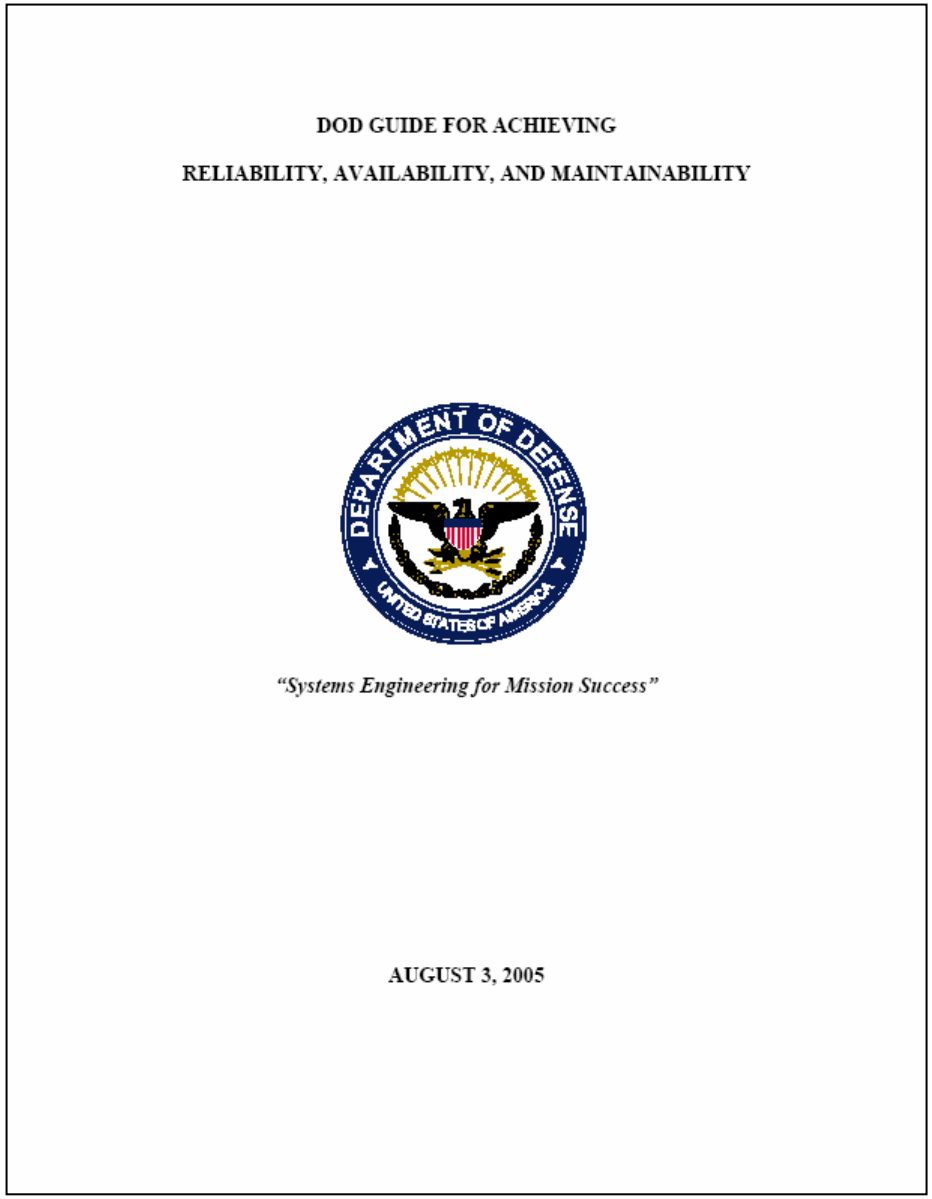


Concepts for Suitability

- Start early
- Focus continuously
- Add operational realism
- Raise issues early

DOD Guide for Achieving Reliability, Availability, and Maintainability

http://www.acq.osd.mil/se/publications/pig/RAM%20Guide%20(080305).pdf



Panel Format

1. Initial remarks by each panelist

2. Panel Q&A

- Moderator asks Q
- 1 panelist takes initial A - no time limit
- Panelist fire-at-will after initial A
- Moderator calls time at ~8 minutes

Panelists

- **Dr. David M. Jerome**

  Deputy Director of Air, Space and Information Operations

  Headquarters, Air Force Materiel Command

- **Mr. Richard L. Schubert**

  Vice President and Chief Engineer

  Lockheed Martin's Integrated Systems and Solutions

- **Mr. Brian M. Simmons**

  Director, US Army Evaluation Center

- **Mr. Ray Lytle**

  Director of Life Cycle Engineering

  Raytheon Missile Systems

Question 1

How well do the systems being fielded in Iraq meet their sustainability expectations?

Question 2

How do we resolve the conundrum:

- The user drives rapid fielding ("tyranny of the urgent");
- But DOT&E raises the issue of sustainability, while rapid fielding bypasses a disciplined approach to suitability.

Question 3

Do system requirements sufficiently address sustainment?

Question 4

How could we modify traditional DT & OT processes to improve sustainment? (and, how to evolve DT/OT to fit the rapid fielding process)?

Question 5

How is DT&E for software different from hardware for the suitability, effectiveness and sustainability arena?

Question 6

Can we link M&S used in suitability analyses, with M&S used in system performance analyses, so more complete and early decisions can be made for systems engineering?

Question 7

Do system development contracts instruct industry sufficiently to design & deliver sustainability?