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NDIA Systems Engineering Division Meeting
February 26, 2009
Agenda

• Background
• DoD Challenge
• Opportunities for SSE Engagement
• NDIA Collaboration
• SSE Organization Overview
• Selected SSE Initiatives
Background

• Organizational Self-assessment
  – Getting immersed in what we do
  – Understanding overall mission
  – Working with the team to refine path forward
  – Evaluating results of “what’s wrong with acquisition”

• Results
  – Acquisition challenges
  – Organizational Considerations
    • Integrated Policy and Guidance
    • Strategic Outreach and Initiatives
    • Proactive Program Oversight
DoD Challenge: “A”cquisition Process

- ICD, CDD, CPD
- Future Threat and Op Tempo

- Planning, Programming, and Budgeting Process
- FYDP
- POM Process
- Appropriation and Authorization of Funds

- Acquisition Policy, Guidance, and Oversight.
- MDAP Decision Authority
DoD Goal: Increase the Overlap

Requirements

Acquisition

Industry

OSD

Senior Leaders

Test and Evaluation

Program Management

Systems Engineering
DoD Goal: Increase the Overlap

Requirements

Budgeting

“Sweet Spot”

Acquisition

SYSTEMS & SOFTWARE ENGINEERING DIRECTORATE, DUSD(A&T)
Opportunities for SSE Engagement

SSE
Policy & Guidance
- Systems Engineering
- DT&E

Program Support
- Program Support Reviews
- OIPT, T&E and SE WIP Ts
- AOTR, Post-CDR Review & Assessment

Workforce Planning
- Competency Models
- Certification Reqs
- Education & Training

Outreach
- SE Forum
- Engagement Strategy

Congress
Sec Def
Requirement Developers
Service Acquisition Executives
PEOs
Program Office
Prime Contractors
Second Tier Contractors
Education & Collaboration Infrastructure
Professional/Industry Associations
(NDIA, INCOSE, AIA, ITEA, TechAmerica, etc.)
DAU, Academic Institutions, SERC

Statutory Direction
AT&L Direction
ICD, CDD, CPD
DAB, ITAR, DSAB, OIPT
PSR, SEP, TEMP, Technical Reviews
CSEP-Acq, Research, Industry/University SE Workforce Initiatives, Industry/Gov’t
Cross Communication

**GOAL:** Break stovepipes and cross boundaries to improve communication and increase awareness across the affected communities.

**INDUSTRIAL WORKING GROUPS**
- Industrial Committee on Operational T&E (ICOTE)
- Industrial Committee on PM (ICPM)

**AFFILIATES**
- AIS
- INCOSE
- NTSA
- IEEE
- AIAA
- SAE

**DIVISIONS**
- Interaction
- Collaboration
- Interface

**SYSTEMS ENGINEERING**
- Environment & Energy
- Logistics
- Manufacturing
- Procurement
- Science & Engineering Technology
- Science, Technology, Engineering & Mathematics (STEM) Workforce
- Test & Evaluation

**CURRENT COLLABORATION EXAMPLES**
- Joint Systems & Manufacturing Engineering for Producibility Committee
- T&E and Logistics Tracks at Annual SE Conference
- SSE Presentation on SERC to C4ISR Division
NDIA Collaboration

• Encourage cross communication between divisions and committees
  – Joint meetings
  – Joint products
  – Participation in conferences
• Engage correct people
  – Demographic analysis
  – Practitioner, staff, decision makers
• Continue to grow industry and government participation in SE conference through focused marketing
Systems & Software Engineering
Organization Overview

- Systems and Software Engineering
  Director
  Gordon Kranz

- Communications & Outreach
  Lead
  Col Sean McAllum

- Strategic Initiatives
  Deputy Director
  Kristen Baldwin, SES

- Engineering and Test Policy and Guidance
  Deputy Director
  Chris DiPetto, SES

- Human Capital and Specialty Engineering
  Deputy Director
  Nic Torelli, SES

- Acquisition Systems Engineering and Test Support
  Deputy Director
  Jim Thompson, SES
SSE Vision/ Mission

• Vision:
  – Systems engineering principles and disciplines are fully accepted and assimilated into the DoD acquisition workforce positioning the DoD for acquisition excellence leading to a stronger national defense.

• Mission:
  – Provide flexible systems engineering acquisition policy, guidance, and training to the DoD acquisition workforce.
  – Foster an acquisition environment of collaboration, teamwork, and joint ownership of program success through a proactive program oversight process ensuring appropriate levels of systems engineering are applied through all phases of program development.
  – Engage all stakeholders across government, industry, and academia to collectively achieve acquisition excellence.
SSE’s 2009 Priorities

• Acquisition work force development
• Increased level of visibility for our role in developmental test and evaluation
• Renewed focus on early application of systems engineering to affect affordability and total ownership cost
• Systems of Systems engineering tools and techniques
• Integration of program protection activities into acquisition oversight to address cyber threat
• Measuring results of our efforts
OSD SSE Strategy

- Achievable Acquisition Strategy
- Enhanced Gate Review Process
- Enhanced Staff Capabilities
- Milestones A/B Critical
- Correct SE Staffing
- Component Development Planning
- Pre-MS A analysis
- Integrated DT/OT
- Reliability Improvement
- Early SE
- Access to Relevant Data for Evaluation & Decisionmaking

*Based on 3,700 Program Assessment findings from 40 Programs Support Reviews
Overview of Selected Policy Changes*

- Mandatory Materiel Development Decision (MDD)
- Mandatory competing prototypes before MS B
- Mandatory PDR and a report to the MDA ("the sliding PDR")
  [PDR Report to MDA if before MS B; formal PDR Assessment by MDA if after MS B]
- Configuration Steering Boards at Component level to review all requirements changes

Renewed emphasis on manufacturing during system development:
- Re-titles SDD phase to EMD with two sub phases: Integrated System Design and System Capability and Manufacturing Process Demonstration
- Establishes consideration of manufacturing maturity at key decision points
- Mandatory system-level CDR with an initial product baseline and followed by a Post-CDR Report to the MDA
- Post-CDR Assessment by the MDA between EMD sub phases

* DoDI 5000.02, 8 December 2008 (http://www.dau.mil/)
Increased Focus on Early Acquisition

What are the implications of these changes for programs?

How can systems engineering enable the program during this early phase?
What’s relevant:

- **Mandatory** Materiel Development Decision
- **Mandatory** Milestone A for all “major weapon systems”
- **Mandatory** PDR* and CDR* with reports to the MDA*

*PDR – Preliminary Design Review  *CDR – Critical Design Review  *MDA - Milestone Decision Authority*
New Opportunities for Independent Reviews

What’s relevant:
- Mandatory Milestone A for all “major weapon systems”
- MS B after system-level PDR* and a PDR Report to the MDA
- EMDD with Post-CDR* Report and MDA Assessment
- PSR and AOTR in policy

Program Support Reviews (PSRs)
- All ACAT ID and IAM
- To inform the MDA on technical planning and management processes thru risk identification and mitigation recommendations
- To support OIPT program reviews and others as requested by the MDA

Assessments of Operational Test Readiness (AOTRs)
- All ACAT ID and special interest programs
- To inform the MDA, DOTE, & CAE of risk of a system failing to meet operational suitability and effectiveness goals
- To support CAE determination of materiel readiness for IOT&E

Summary

• The Acquisition community has a variety of challenges that need to be overcome to be successful.
• Teamwork and collaboration and ownership are key elements to maximize our probability of success.
• We view NDIA as a key partner to foster collaboration between government and industry.
• We look forward to our cooperative efforts this coming year.
Contact Information

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http://www.acq.osd.mil/sse/