Mind The Gaps – A Systems Engineering Implementation of DODI 5000.02

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Overview

• Purpose
• Background
• ASC Engineering Assessment
• Summary
Purpose

• To present ASC/EN’s unique approach to implement current policy DODI 5000.02
Background

- DoDI 5000.02 released in Dec 2008
- Directed by ASC Director of Engineering to identify local policy impacts and implementation
- Conducted a preliminary assessment in early 09 and recommended an offsite for a gap analysis
- Held an ASC engineering offsite in Mar 09
  - Members: Engineering Senior Leaders, Wing DOEs, ASC/EN division chiefsotech directors, XR, AQ DOEs, and ASC/AQ staff
Background

• Promulgated across AF to raise awareness
  – Resulted in other functionals to do the same

• Presented results at the SAF/AQR ILCM Tech Forum and HQ AFMC Engineering Council in May 09
ASC/EN Assessment
ASC/EN Assessment Approach

- Evaluated 5000.02 changes for each Milestone and Phase
- Identified gaps (processes/tools/training) between DoDI 5000.02 and current ASC systems engineering processes/toolset
- Consolidated and prioritized gaps
- Outbriefed to ASC Director of Engineering in Mar 09

Goal: To meet statutory and regulatory requirements
5000.02 Major Changes

User Needs & Technology Opportunities

Program Initiation

Concept Refinement
Technology Development
System Development & Demonstration

Defense Acquisition Management Framework - 2003

IOC
FOC

Production & Deployment
Operations & Support

Focus of major changes

User Needs
Technology Opportunities & Resources

Defense Acquisition Management System - 2008

Materiel Solution Analysis
Materiel Development Decision

Materiel Development
Technology Development
Engineering and Manufacturing Development

PDR
Post PDR Assessment
Post-CDR Assessment
FRP Decision Review

Operational Support
Requirements Flow-Down

Dominant Air Power: Design For Tomorrow…Deliver Today

- **OSD**
  - DoDI 5000.02
  - DAG being updated

- **AF**
  - AFPD 63/20-1 and AFI 63-101, 63-1201
  - D&SWS initiatives
  - SAF/AQ policy memos

- **HQ AFMC**
  - AFMCI 63-1201
  - AFMC policy memos

- **ASC**
  - PEO Memos
  - ASC/EN SE Toolset
5000.02 Key Emphasis for Engineering

- **More Robust Systems Engineering**
  - Emphasis much earlier in life cycle
  - More robust Analysis of Alternatives (AoA)
  - Manufacturing emphasis

- **Technical Risk Reduction**
  - Competitive prototyping

- **Independent SME Reviews**

- **Additional Program Documentation**
  - Technology Development Strategy
  - PDR assessment report
  - CDR assessment report
Prioritized Gaps

Dominant Air Power: Design For Tomorrow…Deliver Today

Near Term Efforts:

• **Engineering Manpower Strategy**
  - PDR Bfr MS B Gap: No manpower allocations to execute TD phase objectives (i.e., prototyping/PDR)
  - PDR Bfr MS B Gap: Independent SME manpower driver, to include RFP prep, source selection support, and other predecessor PDR reviews (i.e., SRR)
  - EMD Gap: Independent SME manpower driver (EN HO and Wings)
• **MDD Gap:** No technical planning document exists to guide early systems engineering activities – ASC/EN and XRE
• **TD Gap:** RAM strategy not uniformly implemented across all programs
• **TA Gap:** Lack of EN-corporate process for TRA/MRAs
• **EMD Gap:** No template for PDR/CDR Reports

Long Term Efforts:

• **MS A Gap:** No template for Technology Development Strategy (TDS)
• **TR Gap:** Lack of definition for “independent SME”
• **MDD Gap:** Lack of formalized process for engineering SME reach-back support
• **MSA AoA Execution Gap (process):** Lack of formalized process for engineering SME reach-back support
• **MSA Gap:** New requirement (SAF/AQR/AFMC/EN) to develop Organizational SEP (O-SEP) or Operating Instructions (OIs)/training
• **TD Gap:** Lack of decision analysis guidance on determining requirements for maturity of critical technologies and/or competitive prototyping
• **TD Gap:** No template for Data Management Strategy
Summary

- Better understanding of 5000.02 impacts
- Focusing on near term efforts
- Still in flux – additional guidance will follow
  - Weapon Systems Acquisition Reform Act of 2009, dated May 09
  - Will implement as additional guidance becomes available
- May drive additional manpower