16272 - Human Systems Integration (HSI) & Environment, Safety, and Occupational Health (ESOH) Handbook for Pre-Milestone A Joint Capabilities Integration Development System (JCIDS) and Analysis of Alternatives (AoA) Activities

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Agenda

- Purpose
- Background
- Handbook development
- Conclusion

Briefing Purpose

- Provide an overview on the Defense Safety Oversight Council (DSOC) Acquisition and Technology Programs Task Force (ATP TF) and Human Systems Integration Task Force (HSI TF) initiative to develop a handbook for integrating Human Systems Integration (HSI) and Environment, Safety, and Occupational Health (ESOH) inputs into Pre-Milestone A Joint Capabilities Integration Development System (JCIDS) and Analysis of Alternatives (AoA) activities

- Provide an introduction to the content of this Handbook

Background: USD (AT&L) Memo – 21 Nov 2006

- ATP TF prepared AT&L memo to "influence the entire life cycle of systems" in order to effectively integrate ESOH considerations into:
  - Fielded systems – where ESOH problems manifested; where pain is felt (by the operator)
  - System development process – to meet JCIDS requirements
    - Must address each High and Serious ESOH risk and applicable safety technology requirements in program reviews
  - JCIDS document development process – define ESOH criteria
    - Support achieving war fighter capability needs by introducing ESOH criteria early in the JCIDS process to influence system development

Background: 21 Nov 2006 JCIDS Task Statement

- "The Acquisition & Technology Programs Task Force will develop a process to provide the DoD Joint Capabilities Integration and Development System with recommendations that have the potential to cost effectively prevent accidents. These inputs should include all aspects of the MIL-STD-882D System Safety Process."

Background: Scope of JCIDS Task

- "accident" as used by SECDEF = mishap
  MIL-STD-882E definition of mishap
  - "Any event or series of events resulting in unitential death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. For the purposes of this Standard, the term "mishap" includes negative environmental impacts from planned events "
- "all aspects of the MIL-STD-882 System Safety Process"
- Thus, "potential for preventing accidents" requires focus on "reducing ESOH risks"

ESOH in JCIDS Focus: preserving combat capability by reducing the risk of mishaps

Background Example: F-35 Program

- ESOH personnel identified potential for community noise levels to impact testing and basing of the F-35 Joint Strike Fighter
  - Part of the ESOH risk management and National Environmental Policy Act (NEPA) compliance analyses
  - Established "need" for enhancing fidelity of community noise impact computer models for the F-35 engine and F-35 operating modes
- Program office funded design and construction of 3-D noise data collection towers and equipment
- Budget problems led to re-baselining of all F-35 program spending
- Program office could not link noise data collection and modeling improvements to a capability statement in the F-35 JCIDS documentation
- RESULT: Noise analyses funding was eliminated due to lack of requirements traceability

Background: ESOH in JCIDS Objective

- To be able to successfully influence system design development from an ESOH perspective, have to first influence the JCIDS document development process
- Need to have key ESOH requirements captured in the JCIDS documents in terms of "capability statements"
  - Enable program office ESOH staff to trace ESOH technical requirements to the JCIDS requirements
  - Enhance program office ESOH staff ability to successfully advocate for ESOH considerations in design trade off decisions
  - Link ESOH risk reduction to system cost, schedule, and performance requirements

Background: ESOH in JCIDS Continuous Learning Module

- In 2010, ESOH in JCIDS Defense Acquisition University (DAU) Continuous Learning Module (CLM) first developed
- Target audience:
  - ESOH Subject Matter Experts (SMEs) supporting JCIDS document development
- Content:
  - Overview of the JCIDS process
  - Developing and prioritizing applicable and appropriate ESOH capability statements
  - Effective participation in the JCIDS document development process, i.e., how to be an effective advocate for incorporating ESOH capability statements
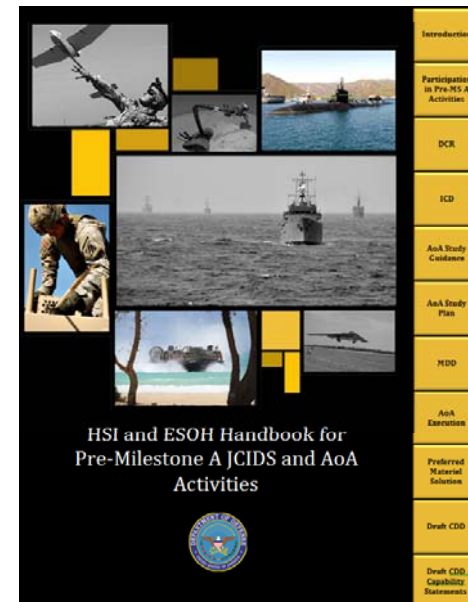
Handbook Development

- Initiative Objective

  - Develop a Handbook that would offer the best opportunity to influence system design to reduce avoidable life cycle costs by eliminating or mitigating risks to personnel, equipment, and the environment

- Address the following gaps:

  - Lack of clear, overarching guidance for incorporating HSI and ESOH perspectives into the JCIDS process and Pre-Milestone A activities

  - HSI and ESOH communities' tendency to try to influence system development later in the acquisition process, making it difficult and expensive to address HSI and ESOH considerations

  - Lack of guidance for HSI and ESOH practitioners leads to vague requirements and untestable requirements

HSI and ESOH Handbook for
Pre-Milestone A JCIDS and AoA
Activities

Handbook Development Process

- Project Kickoff

  - ODUSD(I&E), David Asiello

  - SAF/AQXA, Sherman Forbes

  - NSWCDD, Owen Seely

  - Concurrent Technologies Corporation

  - Booz Allen Hamilton

- HSI/ESOH JCIDS Working Group (WG)

  - DoD Acquisitions ESOH Integrated Product Team (IPT)

  - Joint Human Systems Integration (HSI) WG

  - Concurrent Technologies Corporation

  - Booz Allen Hamilton

Handbook Development Process

- Outline
  - Identified Handbook areas of focus for JCIDS and pre Milestone A activities
  - Identified platforms for developing draft Capability Development Document (CDD) statements
  - Researched Government policy, guidance, lessons learned from Services, and industry publications

Handbook Development Process

- Handbook

  - Held monthly meetings with HSI/ESOH JCIDS WG members to gain consensus and/or re-direction

  - Researched JCIDS and acquisition documentation relevant to the handbook, such as Analysis of Alternatives (AoAs) and CDDs and worked with subject matter experts to refine product

  - Developed guidance to inform HSI and ESOH practitioners on inputs they should provide to the Pre-Milestone A activities starting with the outputs of the Capabilities-Based Assessment process (DOTmLPF-P Change Recommendation and Initial Capabilities Document)

  - Developed examples of draft CDD statements for multiple portfolios

  - Finalized based on HSI/ESOH JCIDS WG feedback

Handbook Development Process

- Outreach

  - Provided Handbook for posting on the Acquisition and Technology Programs Task Force (TF) website, the JHSI WG website, and the Acquisition Community Connection (ACC) ESOH Community Portal

  - Developed announcement for the Defense Acquisition Portal

  - Completed steps to link Handbook to DAU Learning Modules

    - CLR 030 (ESOH in JCIDS)

    - CLE 062 (HSI in Acquisition)

    - SYS 269 (AFIT HSI in Acquisition)

Handbook Content

1. Introduction
2. Participation in Pre-Milestone A Activities
3. Doctrine, Organization, Training, materiel, Leadership and education, Personnel, Facilities, and Policy (DOTmLPF-P) Change Recommendation (DCR)
     3.1 Staffing, Validation, and Approval
     3.2 HSI and ESOH Inputs in the DCR
4. Initial Capability Document (ICD)
     4.1 ICD Content
     4.2 Review, Validation, and Approval Process
     4.3 HSI and ESOH Inputs in the ICD
5. Analysis of Alternatives (AoA) Study Guidance

HSI and ESOH Handbook for Pre-Milestone A JCIDS and AoA Activities
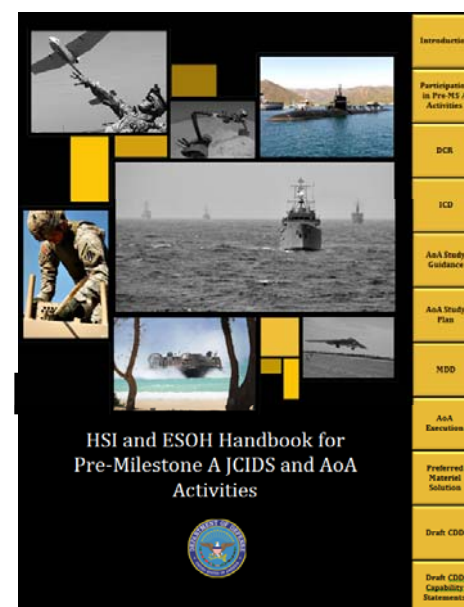
Handbook Content

6. Analysis of Alternatives (AoA) Study Plan

    6.1   HSI and ESOH Inputs in the AoA Study Plan

7. Materiel Development Decision (MDD)

8. Analysis of Alternatives (AoA) Execution

    8.1   HSI and ESOH and the AoA Study Team

    8.2   Effectiveness Analysis

    8.3   AoA Final Report

9. Preferred Materiel Solution

10. Draft Capability Development Document (CDD)

Handbook Content

11. Draft CDD Statements

    11.1   Cross-Platform Considerations and General CDD Statements

    11.2   Manned Aircraft

    11.3   Unmanned Aircraft

    11.4   Space Launch Vehicles

    11.5   Satellites

    11.6   Surface Ships

    11.7   Submarines

    11.8   Manned Tactical Ground Vehicles

    11.9   Unmanned Tactical Ground Vehicles

Handbook Content

11. Draft CDD Statements (continued)

Conclusion

- The HSI-ESOH Handbook
  - Includes detailed descriptions of key pre-Milestone A activities, including, Joint Capabilities Integration Development System (JCIDS) activities for the Human Systems Integration (HSI) and Environment, Safety, and Occupational Health (ESOH) Practitioner
  - Contains examples of draft capability statements for all the HSI domains and ESOH disciplines

- Handbook:
  http://acc.dau.mil/esoh
  http://acc.dau.mil/hsi-esohguide
  https://prext.osd.mil/RFM/readiness/dsoc

ESOH in Acquisition Planning

New!
PESHE Guide
HSI Handbook

ESOH Overview
ESOH Policy & Regulatory Compliance
ESOH in Acquisition Process & Documents
ESOH Risk Reporting Procedures
PESHE
ESOH Risk Management
Toxic & Hazardous Materials Management
ESOH Technology Requirements Reporting

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Questions?