

HSI planning
in the Air Force Acquisition Life Cycle Management
Plan (LCMP)
(aka Life Cycle Sustainment Plan)
and Systems Engineering Plan (SEP):

Providing guidance to HSI practitioners
and other acquisition personnel

POCs:

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DoD Human Factors Engineering Technical Advisory Group Meeting 63, 4 May 2010



Study Goals:

- Embed HSI planning in existing acquisition planning processes
- Minimize negative impacts to program manager's budget and schedule
- Tie HSI planning documentation in with acquisition documents in harmonious manner



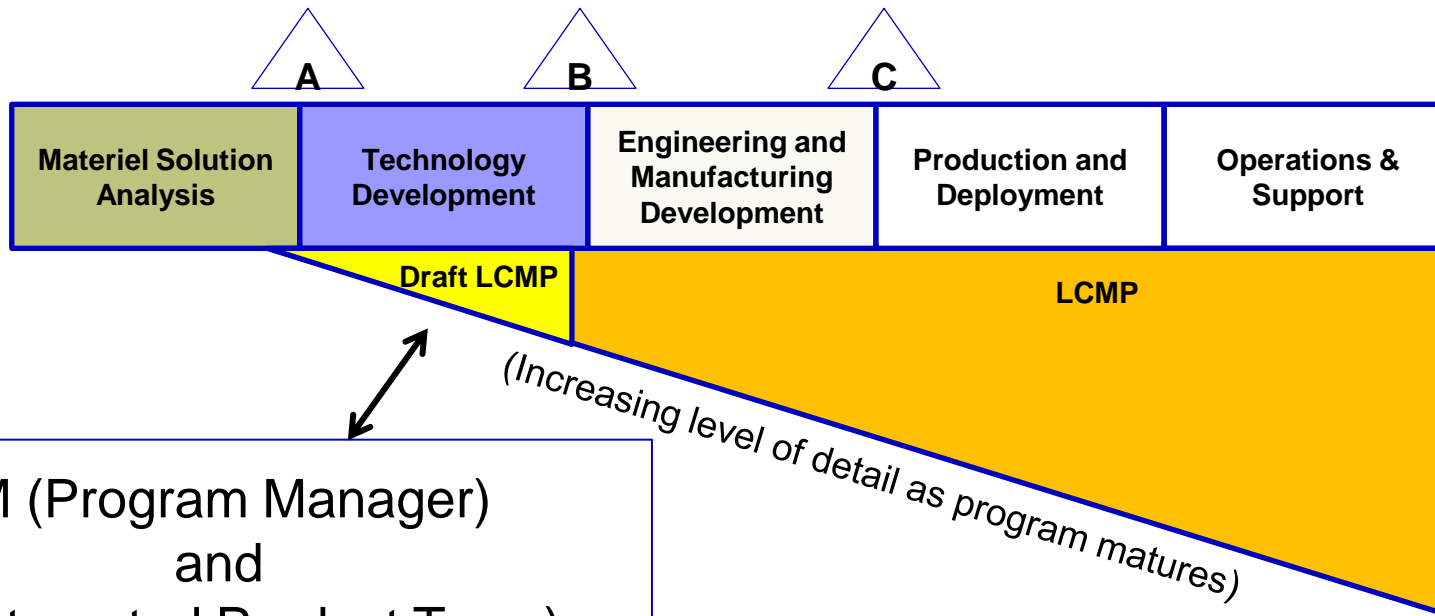
Air Force LCMP - Overview

Life Cycle Management Plan

- combines both the acquisition and sustainment strategies for a program
- guides the program execution from initiation to disposal
- consolidates all other program plans for the program
- identifies required approvals
- documents changes to capability and strategy
- includes HSI planning



LCMP – Roles, Detail and Timing



PM (Program Manager)
and
IPT (Integrated Product Team):

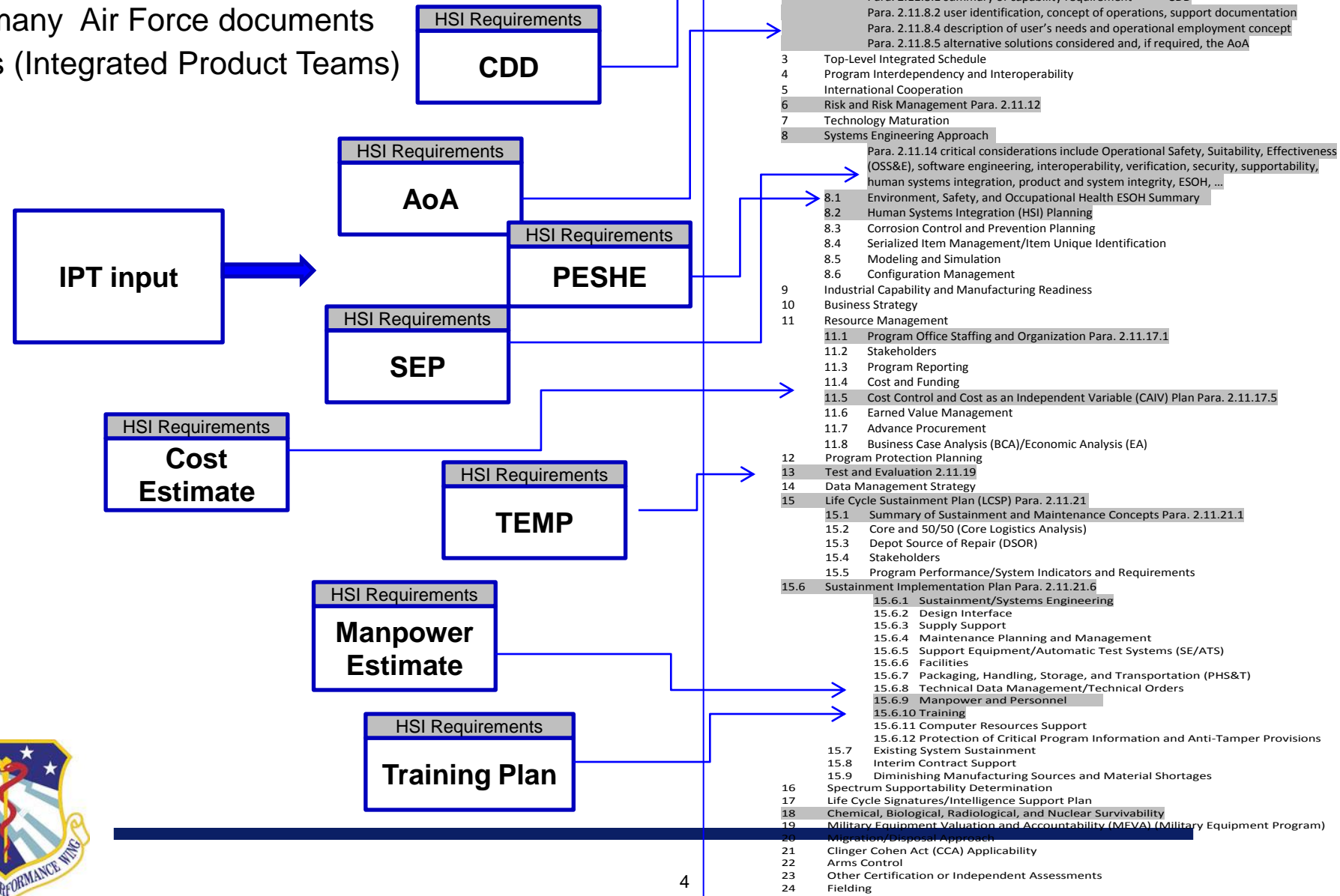
HSI, Finance, Legal, Acquisitions, Logistics,
Systems Engineering, Safety, Occupational
Health, Contracting, Intelligence, Test, ...

- IPT, led by PM, draft the LCMP 'as early in the program as possible'
- Several iterations are often necessary with input from all stakeholders and Acquisition Strategy Panel (ASP)
- Approved LCMP for Milestone B
- LCMP is updated and approved throughout life cycle



HSI in the LCMP

HSI requirements “feed” in to LCMP from many Air Force documents & IPTs (Integrated Product Teams)



Findings:

Benefits of the LCMP:

- LCMP summarizes HSI planning from various sources/documents
- LCMP requires HSI planning be covered adequately from program initiation to sustainment - with PM accountability

Issues:

- HSI issues/resolutions could 'slip through the cracks' in roll-up to LCMP from the various sources/documents
- PMs/logisticians/IPTs responsible for HSI and LCMPs need updated usable information that helps to ensure HSI is addressed throughout the program



Solutions:

<https://afkm.wpafb.af.mil/ASTK>

- Acquisition & Sustainment toolkit: Air Force HSI review

- HSI checklist and other HSI points incorporated
- subject to CCB approval

- Update HSI Handbook and LCMP guidance/policy

- Provide easy-to-use information:

Flowchart

- links to readily available supporting information
- accessible through A&S Toolkit and possibly HSI Handbook

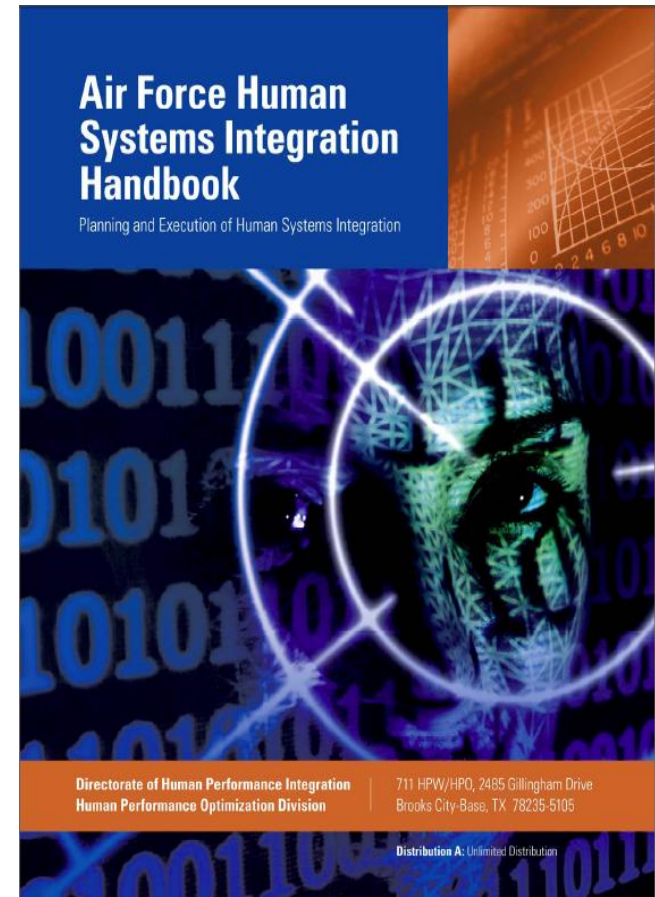
- Develop checklist (by HSI domain) as attachment to

AFPAM 63-128 and HSI Handbook



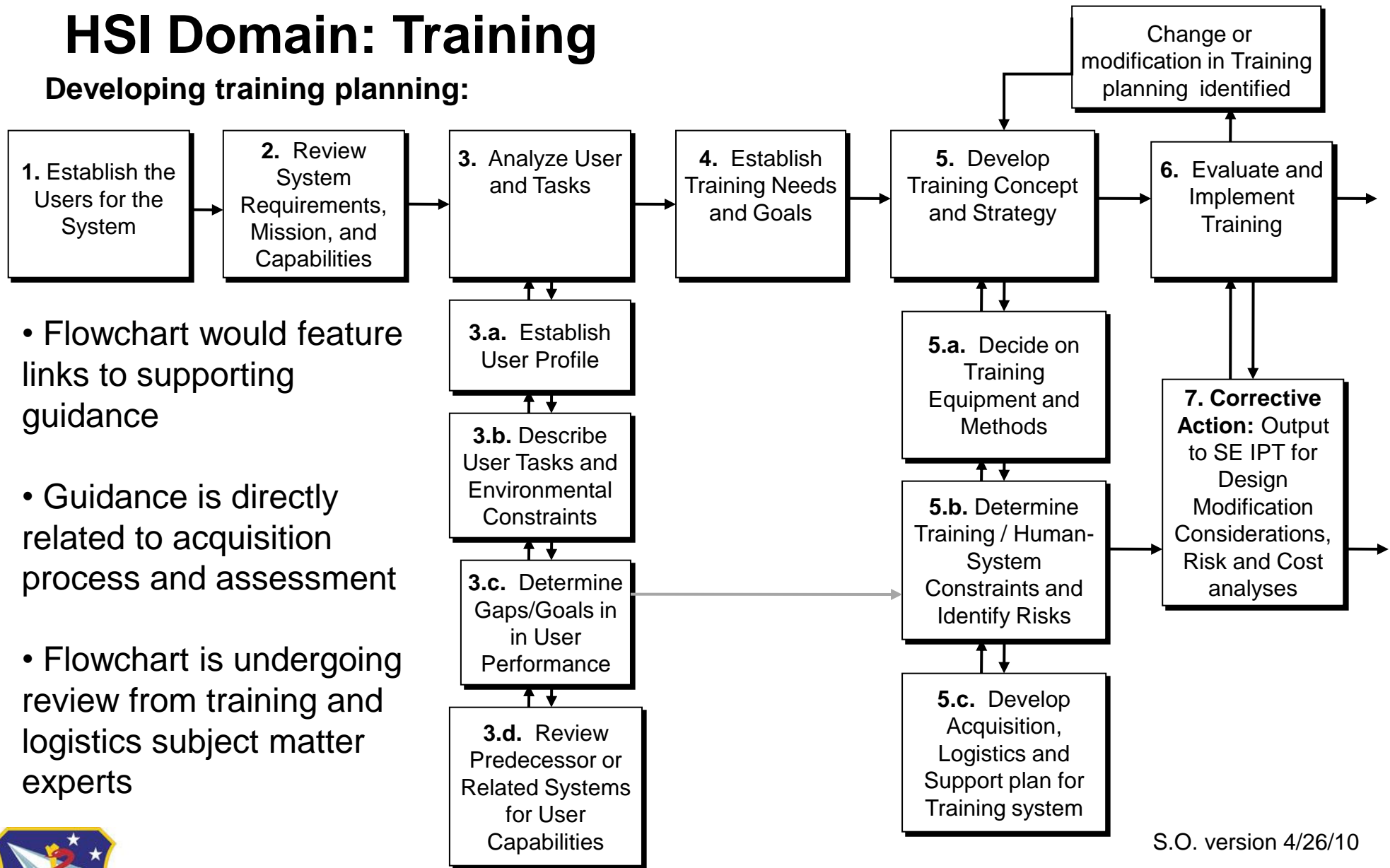
Air Force HSI Handbook and other HSI references are available at :

<http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=13675>



HSI Domain: Training

Developing training planning:



- Flowchart would feature links to supporting guidance

- Guidance is directly related to acquisition process and assessment

- Flowchart is undergoing review from training and logistics subject matter experts



S.O. version 4/26/10

HSI Domain: Training

Developing training planning:

1. Establish the Users for the System
[\[more info\]](#)

2. Re System Requirements Mission

Change or modification in Training planning identified

1. Establish the Users for the System

A 'User Category' is the type of intended user of the System.

Examples: Pilot 1, Pilot 2, Ground Support-fueling, Maintenance 1

A 'User Category' can be a job title of the intended user, should include all operators, maintainers and support personnel, and should include any other humans that touch the system such as "behind the scenes" personnel, and humans being transported by the system.

1.(1) Have the capability documents (ICD, CDD, CPD), Personnel, and Manpower estimates been reviewed to determine the User Categories for the System?

1.(2) Have all personnel been accounted for in training planning? Consider the appropriate number, type and mix of personnel to be trained: operators, maintainers, support personnel. Include personnel required during System Development Phase to support system test and evaluation. Include separate categories of operator, maintainer, and supporter that may exist, for the System.

Further supporting guidance that is accessed by clicking on link:



4/26/10

Systems Engineering Plan

▶ SEP Prep Guide

- First stop when building a SEP



Some use of previous documents

- Some ignore all together
- Guide includes three formats
 - One for each milestone



Systems Engineering Plan Preparation Guide



"Technical Planning for Mission Success"

Version 2.01
April 2008

Department of Defense

Office of the Deputy Under Secretary of Defense for
Acquisition and Technology

Systems and Software Engineering
Enterprise Development



Systems Engineering Plan MS B & EMD (SDD)

Program Overview	Reqs.	Staffing & Organization	Baseline Management	Reviews	Management Integration
Program Description & Applicable Documents 1.1	Capabilities and Key Performance Parameters 2.1	Lead/Chief Systems Engineer & Functional Leads 3.1	Technology Baseline Management Responsibility 4.1	Event-Driven Technical Reviews 5.1	Linkage with Other Program Plans 6.1
Current Program Status 1.2	Statutory and Regulatory Requirements 2.2	IPT Organization/ Structure 3.2	Defining, Approving and Maintaining the Technical Baseline 4.2	Technical Review Management 5.2	Program Manager's Approach to Using Technical Reviews 6.2
Approach for SEP Updates 1.3	Specified and Derived Requirements 2.3	IPT Staffing/ Functional Skills 3.3	Requirements Traceability and V&V 4.2 4.3	Chairing of Technical Reviews 5.3	Risk Management Integration 6.3
	Certification Requirements 2.4	IPT Coordination 3.4	Specification Tree & WBS Link 4.4	Stakeholder Participation in Technical Reviews 5.4	Test and Evaluation 6.4
	Design Requirements 2.5	Integration with Contractor(s) & External Organizations 3.5	Technical Maturity 4.5	Peer Participation at Technical Reviews 5.5	Sustainment Integration 6.5
					Contracting Considerations 6.6



July 2009 Addendum Directs HSI Inclusion in All SEP Sections

- ▶ Summarize the Human Systems Integration (HSI) approach
- ▶ Explain how HSI is integrated with
 - Technical and technical management processes,
 - Integrated Product Team (IPT) organization structure, IPT staffing and functional skills
- ▶ Explain how HSI will be assessed at planned technical reviews.
 - DoDI 5000.02, Enclosure 8, Section 2.a.-g, *HSI Planning* for domains
 - DAG, Chapters
 - 4.2 – SE Technical and Technical Management Processes
 - 6 -- HSI
 - SEP Prep Guide
 - Sections 3 - 5



Activities

- ▶ Integrating SEP Prep-guide Contents for All Milestones
 - One template to serve all milestones and updates
- ▶ Developing Guidance
- ▶ Creating Template
 - Using systems engineering spreadsheet tool for building SEP to track content inclusion and maturity
- ▶ Study complete October 2010



Mapping Phased HSI Content to SEP Sections Include Self-Assessment

	Not Applicable		Addressed or Partially Addressed - needs updating or a consistency check		
	Addressed in another section or area		Addressed in Boilerplate fashion - needs PAR specific information or development		
	Addressed - no updates at this time		Not Addressed - needs PAR specific information or development		
ASC EN SEP Guide					
Section	Text	Assigned Number	Short Title	Status	Where in SEP? Comments
1.0 Introduction	Discuss the purpose of the SEP, who will use it, and how the SEP will be used to define the blueprint for the conduct, management, and control of the technical aspects of the program from development to disposal. Discuss the essential elements of the program—system description, referencing other applicable major program documents and the hierarchy of those documents; and program technical status at the time of SEP submittal. Discuss the commitment to update the document in the System Development and Demonstration (SDD) phase and throughout the program’s life cycle to make it a living document, and the plans to link the contractor’s Systems Engineering Management Plan (SEMP) to the SEP.	1.0-01	Purpose of the SEP		Section 1.0
		1.0-02	Who will use SEP		Section 1.0
		1.0-03	How will the SEP be used		Section 1.0
1.1 Program Description and Applicable Documents	Provide a top-level system and mission description that summarizes the user’s requirements as documented in the Capability Development Document (CDD). Convey the overall key elements of the program, including any System of Systems (SoS) relationships by using appropriate DoD Architecture Framework views (e.g., Operational View-1) and supporting narrative. Include a system description, and a notional diagram of the system.	1.1-01	Top level system and mission description		Section 1.1.1
		1.1-02	Summarize user requirements per CDD		Section 1.1.1
		1.1-03	Convey overall key elements to include SoS (via DoDAF views)		Section 1.1.1
		1.1-04	System Diagram		Section 1.1.1



Summary

- ▶ SEP and LCMP are complementary documents
 - One emphasizes design
 - One emphasizes sustainment
 - Both are intended to characterize the entire life cycle
- ▶ Developing Templates and Guidance to Ensure HSI is Integrally Considered
 - Reducing cost and time of generating
- ▶ Making recommendations to related policy guiding HSI planning in these documents

