



AF Modification Process

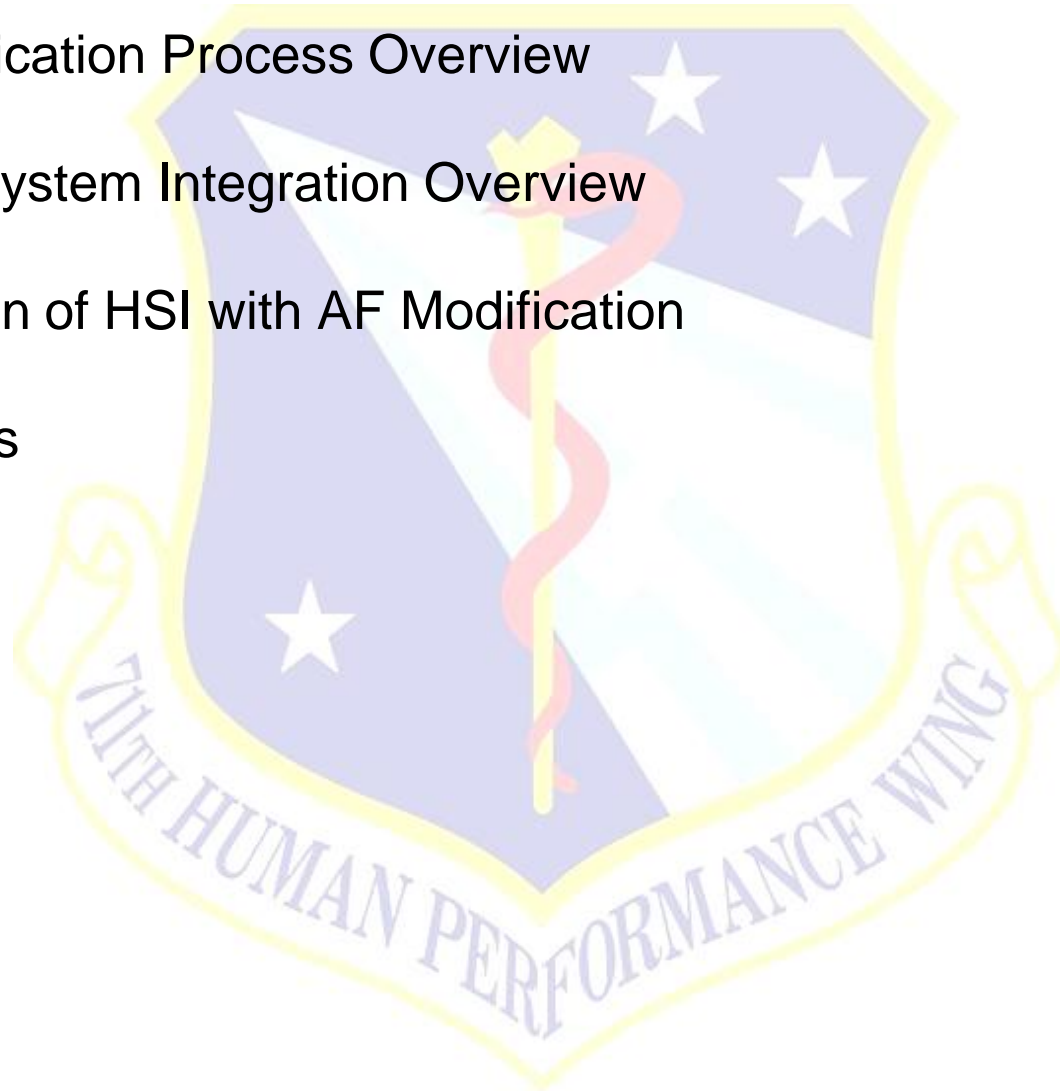
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Agenda

- ▶ AF Modification Process Overview
- ▶ Human System Integration Overview
- ▶ Integration of HSI with AF Modification
- ▶ Questions



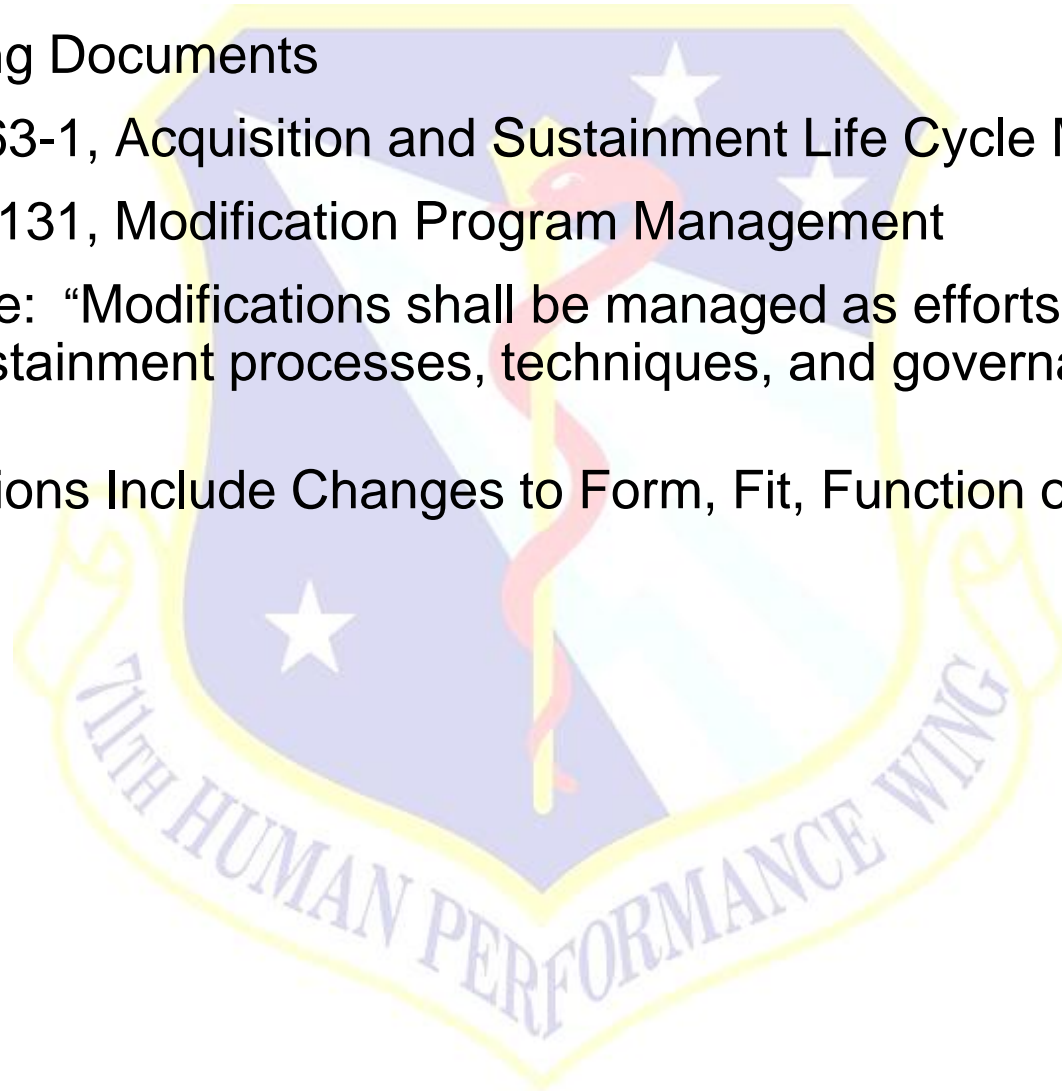
AF Modification Process - Overview

▶ Controlling Documents

- AFPD 63-1, Acquisition and Sustainment Life Cycle Management
- AFI 63-131, Modification Program Management

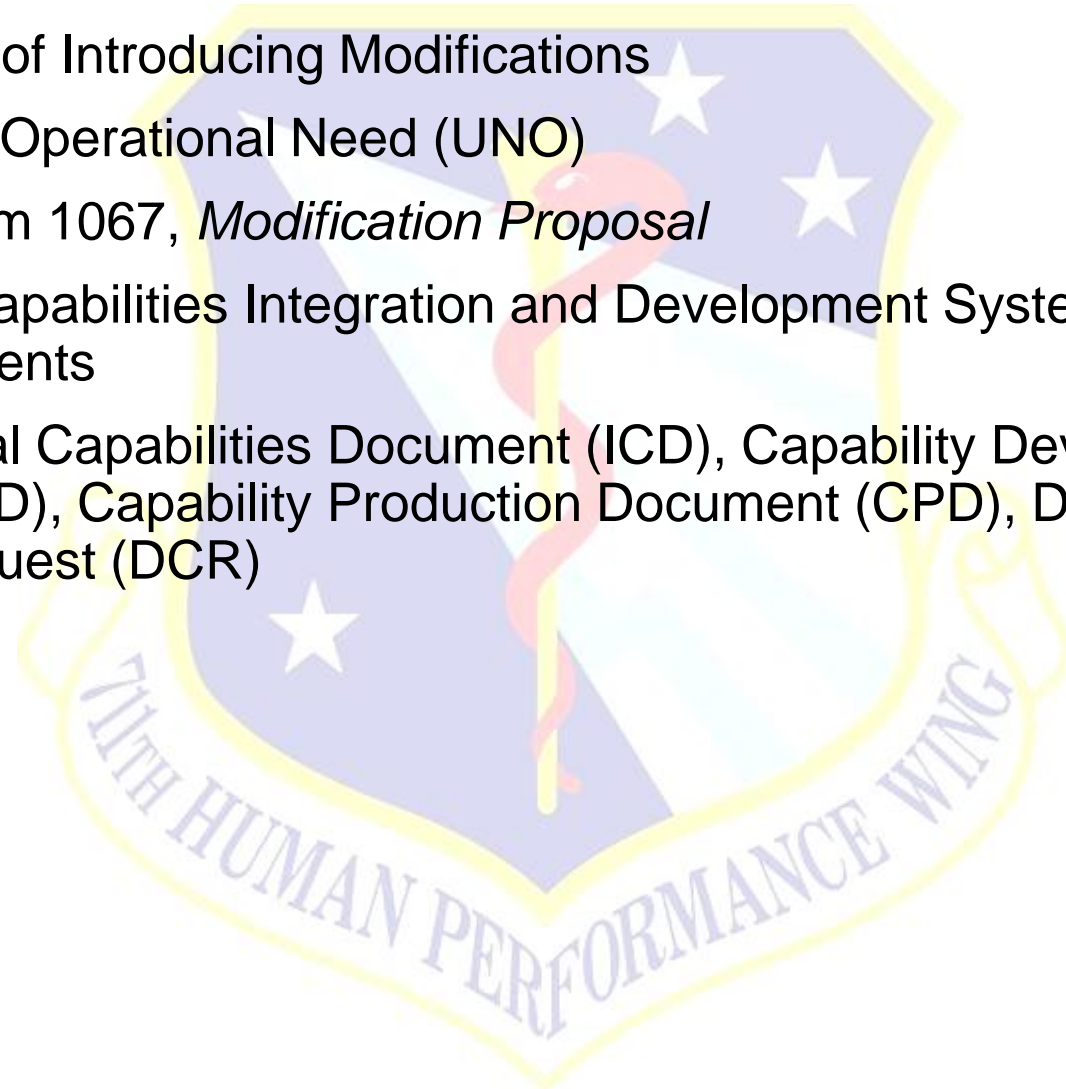
Purpose: “Modifications shall be managed as efforts using acquisition and sustainment processes, techniques, and governance “

▶ Modifications Include Changes to Form, Fit, Function or Interface



AF Modification Process - How

- ▶ Methods of Introducing Modifications
 - Urgent Operational Need (UNO)
 - AF Form 1067, *Modification Proposal*
 - Joint Capabilities Integration and Development System (JCIDS) Documents
 - Initial Capabilities Document (ICD), Capability Development Document (CDD), Capability Production Document (CPD), DOTMLPF Change Request (DCR)



AF Modification Process - Why

- ▶ Reasons for Modifications
 - Correct Original System Design
 - Sustainability/Maintainability
 - New Capabilities
 - New Restrictions



Human System Integration - Overview

- ▶ Not Just Human Factors Engineering (HFE)
- ▶ Nine Total Domains
 - Manpower, Personnel, and Training
 - Safety, Occupational Health, and Environmental
 - Habitability, HFE, and Survivability
- ▶ Not Subject Matter Expert –Broker of Trade Space Between Domain Owners
- ▶ Represent the Human Throughout the System's Life Cycle



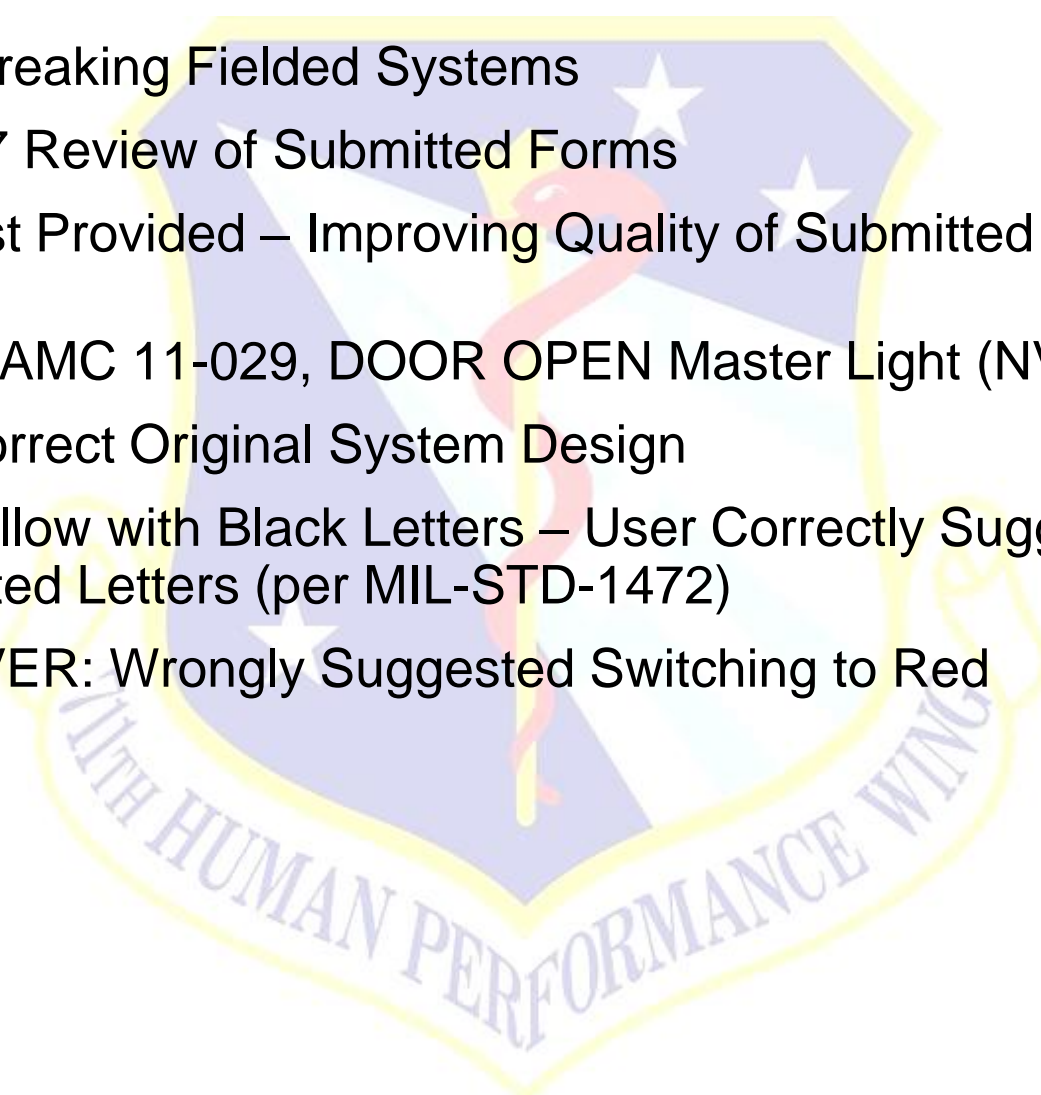
AF-1067 HSI
Guidance Checklist

Integrating HSI into the Modification Process - 1

- ▶ HSI as Part of Initial System Design
 - JCIDS Documents – Reviews and Working Groups
 - ✓ Program Participation
 - ✓ High Performance Teams
 - Cockpit Working Groups (CWG)
 - ✓ Trade Space
 - ✓ Verification/Validation
- ▶ Example: KC-135 Block 45
 - Why: Sustainability – Electrical Engine Instrument Display (EEID)
 - CWG – Trade Space: Improved User Interface for Pilot Feedback
 - Verification – Included HSI in Maintenance-Demo

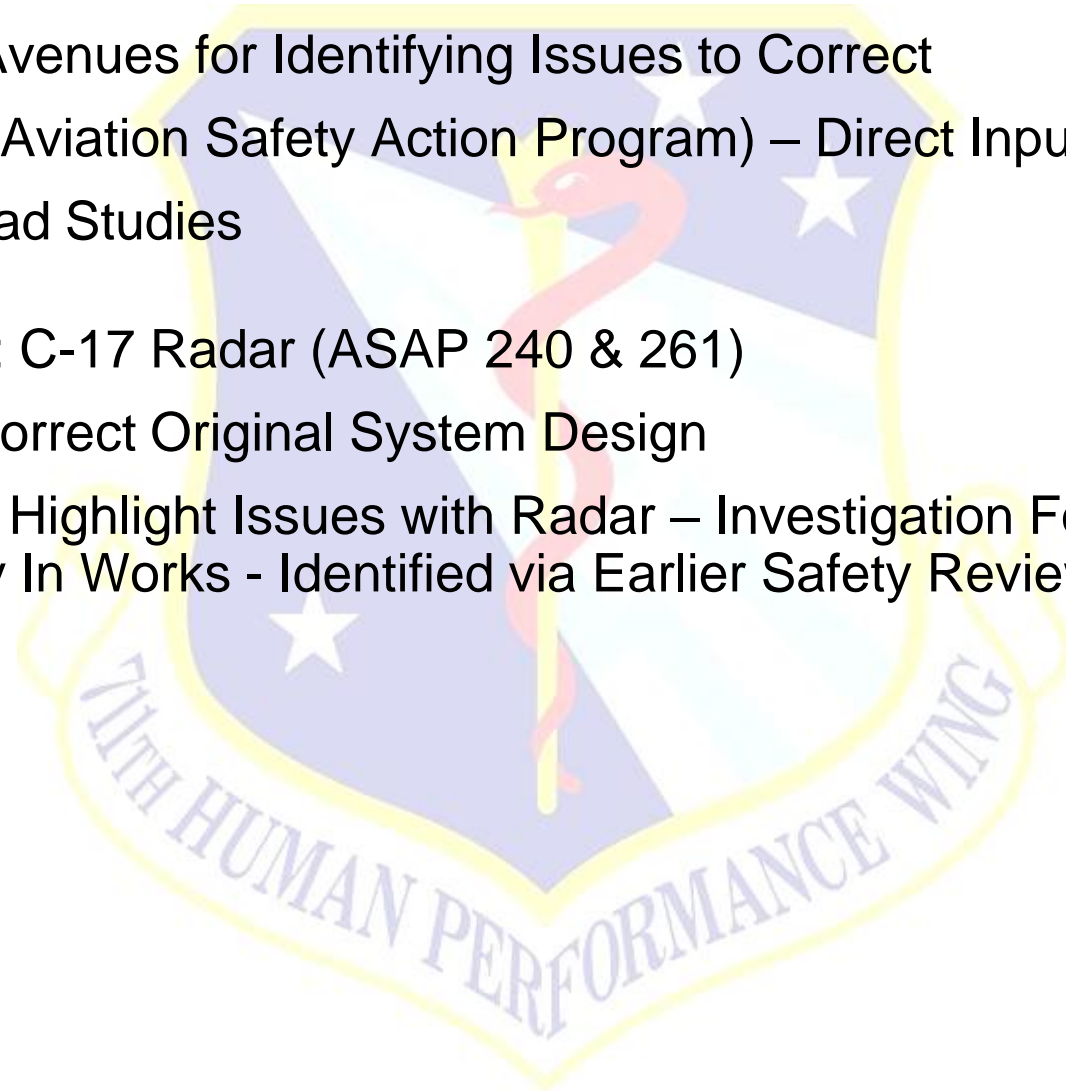
Integrating HSI into the Modification Process - 2

- ▶ Prevent Breaking Fielded Systems
 - AF-1067 Review of Submitted Forms
 - Checklist Provided – Improving Quality of Submitted AF-1067s
- ▶ Example: AMC 11-029, DOOR OPEN Master Light (NVIS)
 - Why: Correct Original System Design
 - Light Yellow with Black Letters – User Correctly Suggest Black Lens with Illuminated Letters (per MIL-STD-1472)
 - HOWEVER: Wrongly Suggested Switching to Red



Integrating HSI into the Modification Process - 3

- ▶ Finding Avenues for Identifying Issues to Correct
 - ASAP (Aviation Safety Action Program) – Direct Inputs from Aircrews
 - Workload Studies
- ▶ Example: C-17 Radar (ASAP 240 & 261)
 - Why: Correct Original System Design
 - ASAPs Highlight Issues with Radar – Investigation Found Correction Already In Works - Identified via Earlier Safety Review



Questions?

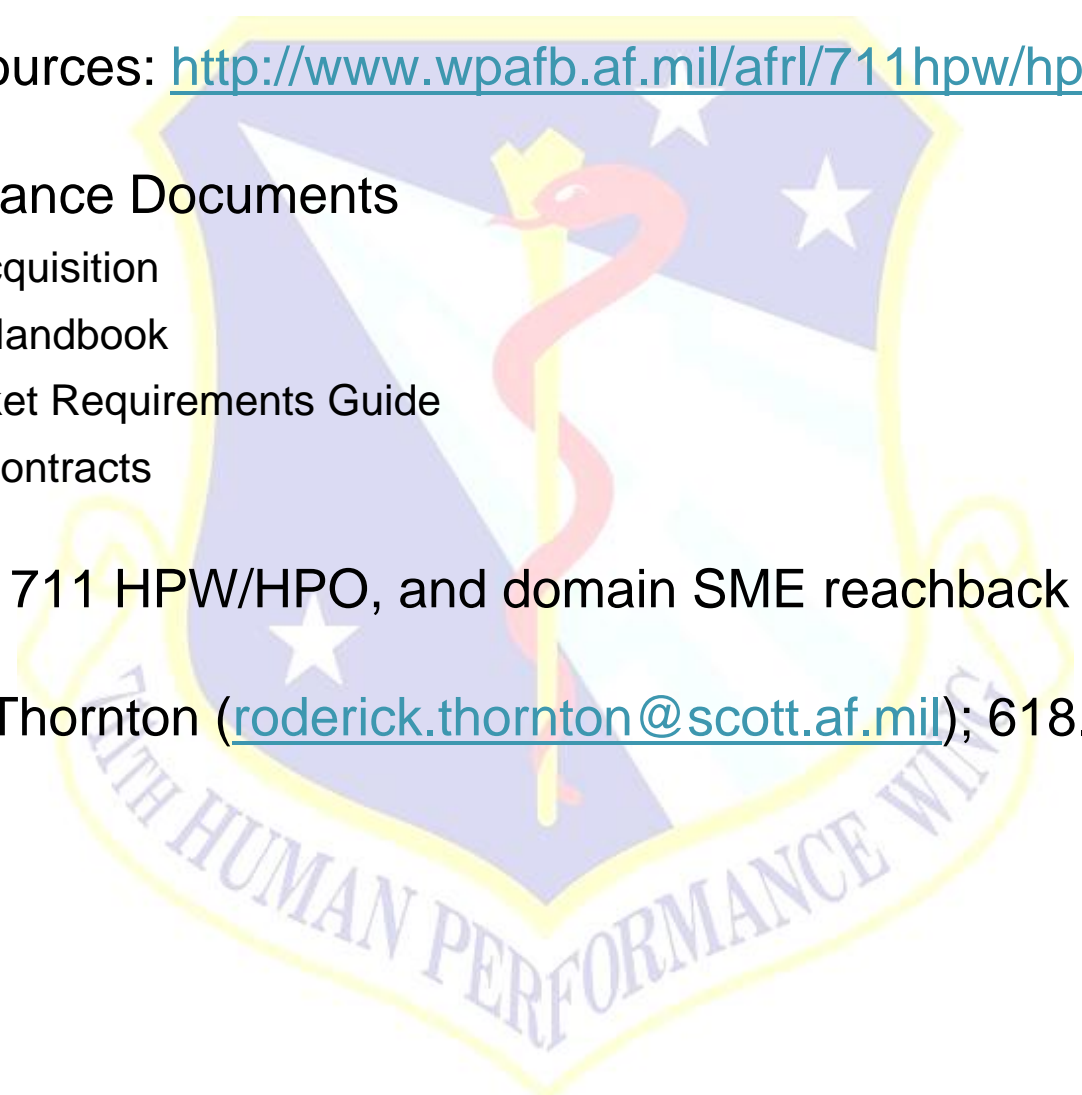


Backup Slides

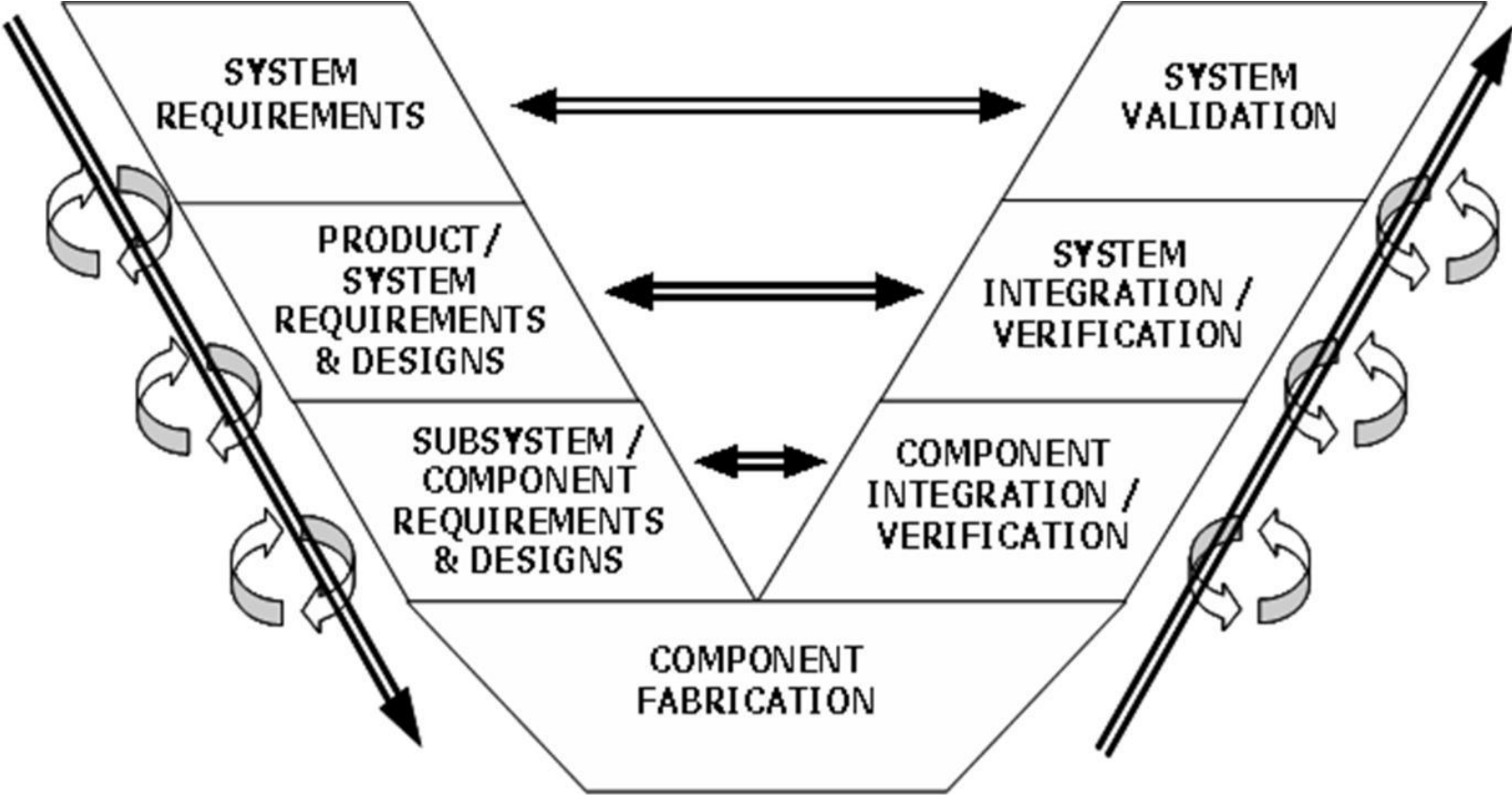


AMC HSI Cell Resources

- ▶ HSI Resources: <http://www.wpafb.af.mil/afri/711hpw/hpi.asp>
- ▶ HSI Guidance Documents
 - HSI in Acquisition
 - AF HSI Handbook
 - HSI Pocket Requirements Guide
 - HSI for Contracts
- ▶ AFHSIO, 711 HPW/HPO, and domain SME reachback
- ▶ Mr. Rod Thornton (roderick.thornton@scott.af.mil); 618.229.4099

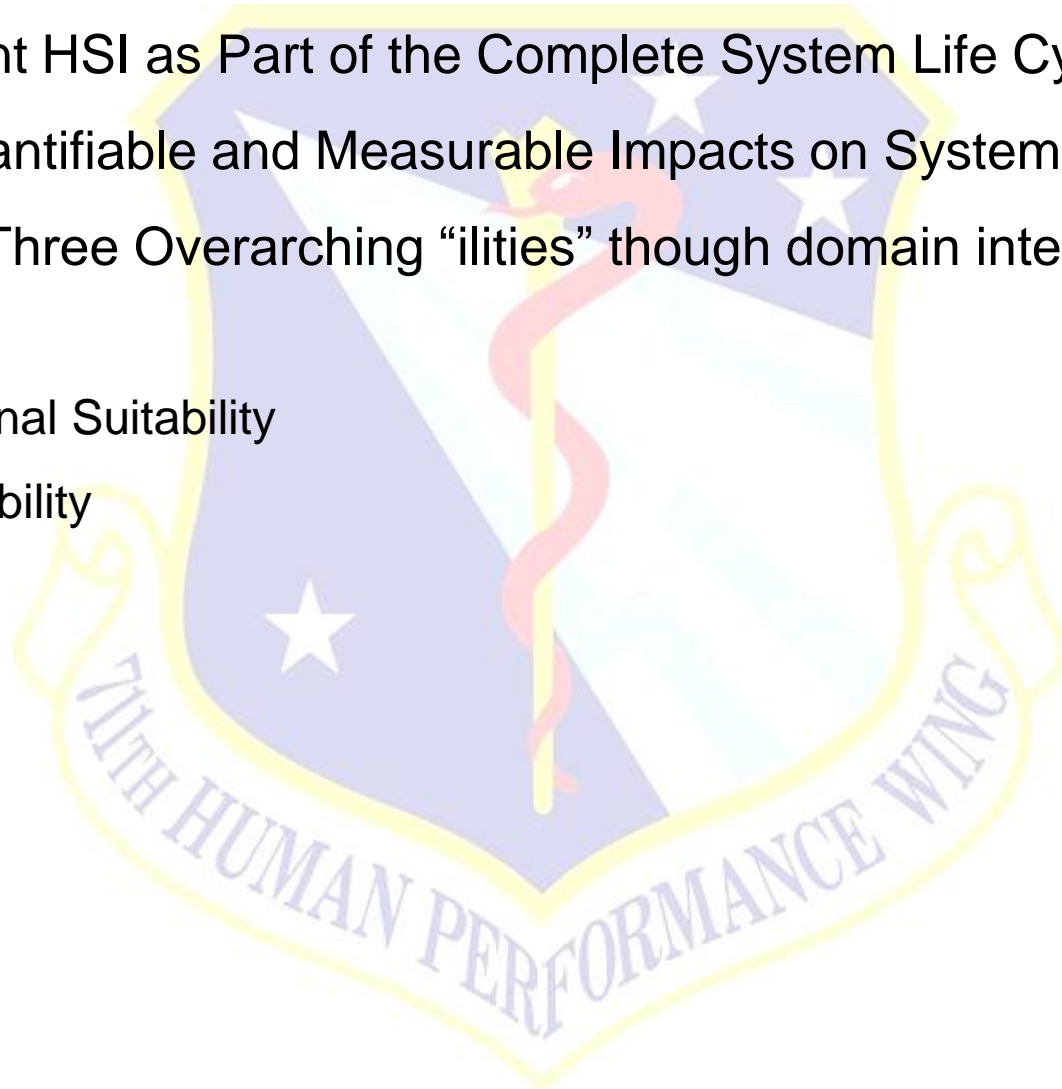


System Engineering V-Diagram



HSI – Goals

- ▶ Implement HSI as Part of the Complete System Life Cycle
- ▶ Yield Quantifiable and Measurable Impacts on System Design
- ▶ Support Three Overarching “ilities” through domain integration
 - Usability
 - Operational Suitability
 - Sustainability



AF HSI Organizations

- ▶ AFHSIO – (SAF/AQ) Develops Policy and Provides Oversight
- ▶ 711th HPW/HP – (AFRL) Provides Execution and Application of HSI in Systems Acquisition Process
- ▶ AMC Representation with reachback to AFHSIO and 711 HPW/HP
 - Pilot Physician
 - Human System Analyst

