



# **20<sup>th</sup> Annual Systems Engineering Meeting**

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## **HSI Best Practice Standard**

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# Background



- **1984:** NATO DRG Workshop on Applications of Systems Ergonomics to Weapon System Development
- **1986:** US Army establishes MANPRINT program.
- **2003:** DoD requires HSI on major system acquisition programs (DODD 5000.01/DODI 5000.02)
- **2005:** DoD establishes Joint HSI Working Group
- **2005-2007:** Development of HSI Program Plan DID (DI-HFAC-81743)
- **2007:** USAF establishes AFHSIO for policy, advocacy and oversight
- **2008:** DOD establishes Joint HSI Steering Committee
- **2008-2011:** Development of HSI Report DID (DI-HFAC-81833)
- **2010:** DoD, USAF and US Navy release/update HSI Management Plans
- **2012:** DoD establishes HSI Standard Working Group
- **2016-Present:** SAE International Leads Development of HSI Standard

- OSD and Service HSI efforts have largely focused on “in-house” (Government) activities.
- Only one Service has a current HSI implementing regulation (AR 602-2).
- The SAE International G-45 Human Systems Integration committee has focused on developing and improving DoD and industry HFE and HSI requirements since 1976.
- SAE International was selected in 2016 to lead development of a new industry HSI Standard.
- Development of a new HSI Best Practice Standard is a challenge due to its complexity and the short development schedule requested by DoD.

# Why Do This?

- DODD 5000.01 and DODI 5000.02 require the Services to “plan for and implement HSI beginning early in the acquisition process and through the product life cycle.”
- We have an HSI Program Plan DID...
- We Have an HSI Report DID...
- Everyone “Knows” We Should “do HSI” on Acquisition Programs....

- Application of HSI in contracts is uneven...
- Lots of people think HSI is HFE....
- Most times, a full HSI program is not contracted for...
- Sometimes an HSI Plan is required, but execution is not....

- Build on HFE, Safety and Training domains; they already have documented standards.
- Force Protection, Manpower, Personnel, and Habitability domains have neither DoD nor industry standards....So, the SAE committee documented task assumptions for the domains that have no documented standards.
- The standard is divided into two major sections;
  - Informational, describing HSI, its domains, and activities
  - Guidance, specifying those HSI activities that “shall” or “should” be conducted on system acquisition programs



# Standard Organization



1. Forward
2. Background
3. Terms and Definitions
4. General Requirements (HSI and Domain Overviews)
5. Detailed Requirements – HSI Process (see next slide)
6. Notes
7. Appendices

- **Human Systems Integration Process**
- **Program Initiation**
- **Pre-Milestone B Activities**
- **HSI Program Advocacy and Coordination**
- **HSI Tradeoffs**
- **Requirement Refinement, Decomposition and Flow-Down**
- **HSI in Subcontracting**
- **System Architecture Support**
- **Risk Issue and Opportunity Identification and Management**
- **HSI Analysis**
- **Preliminary and Detailed Design and Procedure Support**
- **HSI Requirement Verification**
- **HSI in Sustainment**
- **HSI Documentation and Product Handoffs**
- **Management and Customer Coordination, Progress Reporting**
- **HSI Quality Control**



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**Questions?  
Additions?**



- Many different and interesting topics to address!
- Not many contractor HSI Leads, experienced with leading “full HSI” programs (all domains)
- Not many contractor SMEs experienced in Manpower, Personnel, Habitability, Force Protection and Survivability
- A two-year standard development schedule is desired by DoD.



# Current Status



- First full-draft standard was reviewed on May 22, 2017. A few areas still need some work...
- 95% solution by August, 2017 face-to-face G-45 meeting in Marietta, GA.
- Assessment by a Senior Review Group is scheduled for November, 2017.
- Final standard should be ready for SAE balloting and DoD adoption review by April, 2018.
- Companion DoD Handbook is expected soon thereafter....



# Significance of HSI Standard



- The DoD (and other Federal Agencies) will have a contractible standard for HSI on major system acquisition contracts (15 years after DoD established the HSI requirement!)
- This standard builds upon, and is consistent with, existing DOD Policy and HSI DIDs.

- Author Domain standards for Manpower, Personnel, Habitability and Force Protection and Survivability domains!
- DoD monitor HSI Standard Implementation, Effectiveness, Cost, and Benefits.... once the standard has been adopted.



# Questions/Comments?



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A blue, multi-pointed starburst graphic with a white outline, containing the text "And Remember!".

**And  
Remember!**