20th 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)
- **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....
But.....

- 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....
Approach

• 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
Organization (Section 5)

- 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
Organization (Section 5)

- Human Systems Integration Process
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Questions? Additions?
## Development Schedule

**First Standard Review** - May 2017

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**Final Standard Joint Review** – May 2018
Challenges

• 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.
Still to be Done

• 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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And Remember!