21st Annual National Defense Industrial Association
Systems and Mission Engineering Conference

Human Systems Integration (HSI) Capabilities-Based Assessment (CBA) Activities Update

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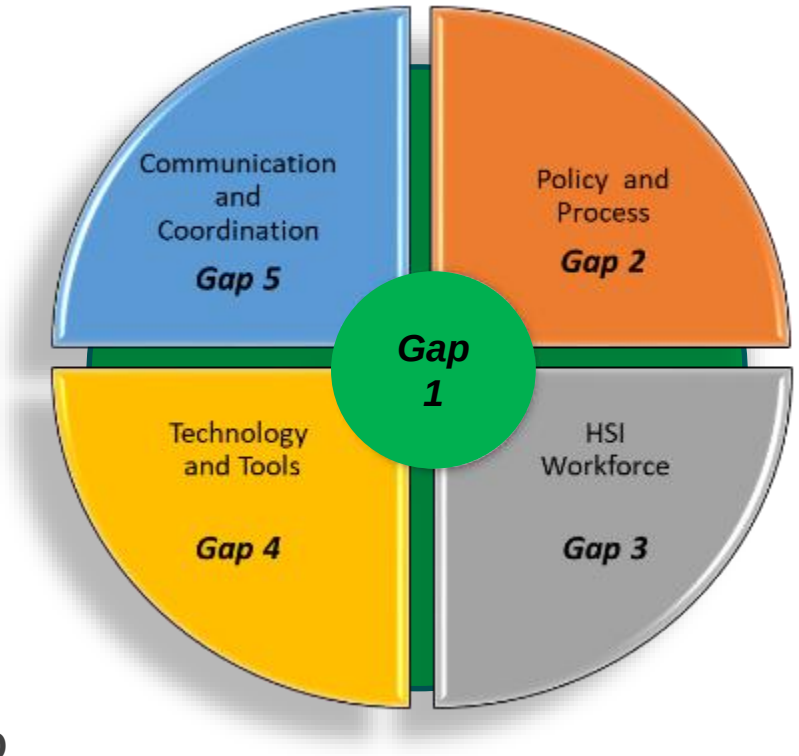
October 24, 2018





Background

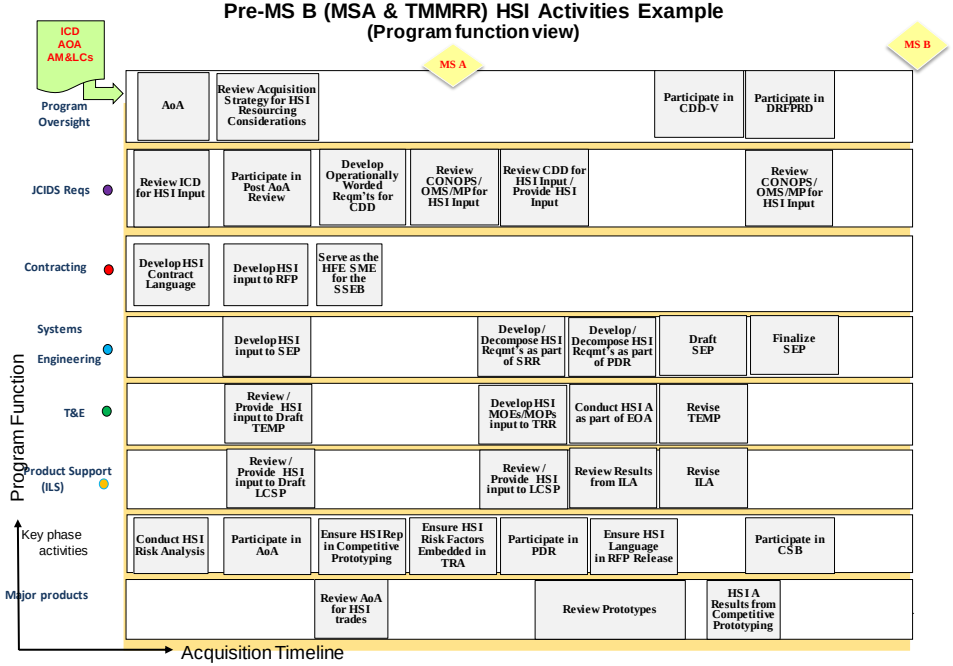
- Provide an update to the National Defense Industrial Association (NDIA) Systems Engineering (SE) community about the Joint Human Systems Integration (HSI) Enterprise activities.
- Office of the Secretary of Defense's (OSD's) objective is to improve HSI maturity and effectiveness by continuously and cost-effectively addressing the Joint Services' ability to positively impact warfighter performance and safety through HSI policy, process, and execution.
- Starting in April 2017, the JHSI Working Group (WG) conducted its Capabilities-Based Assessment (CBA) needs analysis to address five identified HSI gaps.



CBA Gaps Relationship Diagram

Gap 1 – HSI Body of Knowledge

- **Develop the HSI Body of Knowledge and institutionalize a living repository of knowledge areas, terms, activities and associated references and publications**
- **Formed sub Working Groups**
  - Hosted five meetings
  - 10+ cross-Service members to leverage the HSI Framework Acquisition tool
- **Way Ahead**
  - Continue sub-working group development of the HSI framework
  - Planning workshop in Fall 2018 to identify cross-collaboration opportunities between S&T and HSI acquisition communities to improve HSI early consideration in capability development



Gap 2 – HSI Standardization

- **Recommend that all HSI organizations adopt the seven HSI domains set forth in DoDI 5000.02 so that they can better leverage common policies, frameworks, and standards**
- **Collaborated with industry (SAE G45 HSI Technical Committee) to develop SAE6906, *Standard Practice for Human Systems Integration* (covers HSI tasks/scope for contractors)**
  - SAE G45 HSI Committee is lead developer; 20+ authoring teams
- **HSI MIL-HDBK provides government guidance on how SAE 6906 should be used, applied, and tailored (covers any additional government-specific HSI responsibilities)**
  - Navy is Preparing Activity; Managed by DoD HSI Standards WG
- **MIL-STD-1472H - Human Engineering Design Criteria**
  - Update being led by USN with multi-service representation (26 authoring teams)
- **Way Ahead**
  - HSI Standard: Final balloting complete; Publication expected 1Q FY19
  - MIL-STD-1472H: Publication in early FY19
  - HSI MIL-HDBK: Final version expected in 2Q FY19

Gap 3 – HSI Workforce

- **Recommend the Services establish an HSI career field and ensure related career fields appropriately include HSI elements**
  - Identify core competencies to include unique knowledge, skills and abilities needed to perform HSI
  - Develop training that provides HSI practitioners with expertise in the integration of HSI domains and that provides non-HSI practitioners with the opportunity to become familiar with HSI principles, processes, practices, methods, tools and data
- **Formed HSI Workforce Development Working Group (DHS and AF co-lead)**
  - Definition of an HSI Practitioner from other established competencies
  - Determining the number of practitioners within the service to define the existing workforce knowledge and skillset
  - Build a learning architecture framework to align needs of practitioners to training and coursework
  - Reviewed NPS HSI curriculum and identified impact areas for the MS Thesis and certificate programs to be addressed, Jul 2018
- **Way Ahead**
  - Publish 2018 DOD HSI Course catalog (update from 2012)
  - Coordinate with Naval Post-Graduate School (NPS) and Defense Acquisition University (DAU) for acquisition workforce development in HSI technical areas

Gap 4 – HSI Technology and Tools

- **Provide and Maintain Tools, Databases, and Processes to Support HSI Analyses Early in Acquisition**
  - Many sophisticated Modeling and Simulation (M&S) tools exist that support tradeoff analyses and quantitatively predict the impact of HSI domain tradeoffs on system-level performance
  - Investigate how to capture the life-cycle cost implications of HSI-related design decisions and assist Program Managers to assess the importance and dollar value of HSI recommendations
- **Way Ahead**
  - Develop, maintain, and make available a comprehensive catalog of available tools and methods
  - Provide approaches and training to reduce barriers to use of HSI tools and methods
  - Develop new capabilities to fill analytical gaps

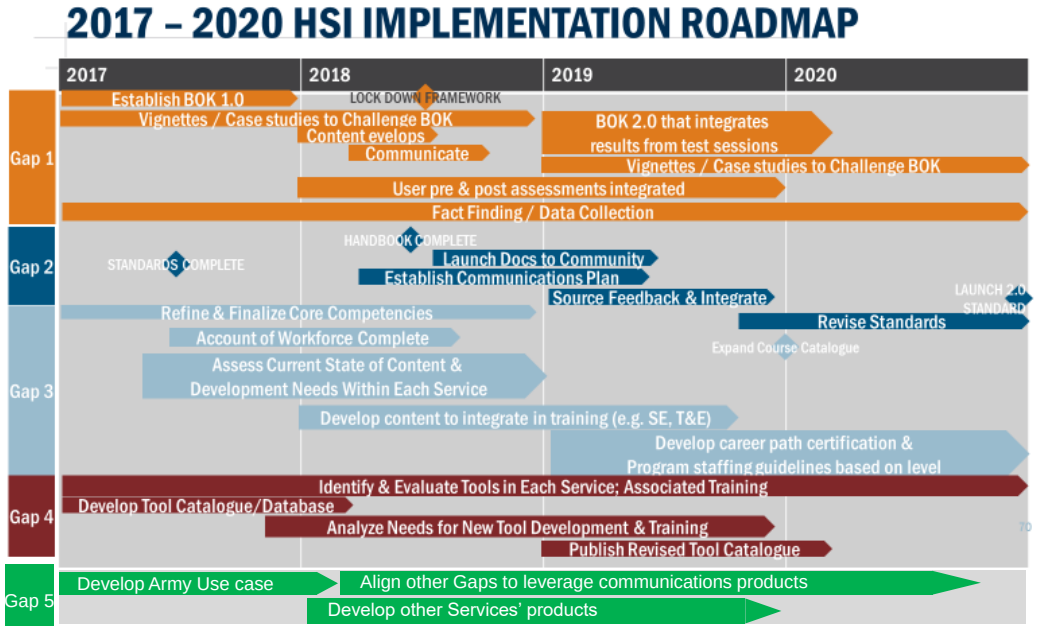
800+ users supporting Army, Navy, Air Force, Marine, NASA, DHS, DoT, Joint programs across the country

Gap 5 – HSI Communication and Coordination

- **Investment in a professional, comprehensive marketing effort to ensure a single, consistent message is delivered**
- **Completed initial phase of developing outreach products**
  - Outreach strategy developed a rebranding of HSI for new logos, style guides, and color schemes, and tailorable by the Services
  - Communication plan documents how to execute the strategy
  - Conducted Stakeholder analysis and defining the HSI population for publicizing HSI-related material
  - Experience map details the HSI practitioner's involvement and value added across the acquisition, contributing a single campaign approach
- **Way Ahead**
  - Each Service to model communication using Army products
  - Develop a plan of action for aligning other outreach products

Summary

- Services are actively engaging in the strategic shaping of the HSI enterprise across multiple areas
- Working groups have been meeting and formulating approaches and course of actions to close the gaps



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For Additional Information

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