



# Ground Systems Architecture Workshop – 2002

Breakout Session 11D

Human Systems Integration (HSI)  
Standardization

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- **What are the mandates for HSI standardization and Operational Architecture development activities?**
  - DoD 5000.2 requires comprehensive HSI program, yet gap exists in AFSPC mandate documents and implementation
  - Operators have different goals than AFSPC, which drive different design approaches.
    - Operators used during development are not the operators that will operate the system.
    - Operators tend to design system based on currently technology, may fail to consider how future technology can be employed
  - Comprehensive HSI processes often don't exist due to impression that “no harm can be done”.
    - Harm can be done... if critical data is not presented... critical information can't be processed and disseminated



- **What are the operational benefits/ impacts/ challenges USAF (and other) space systems operations?**
  - Results in systems that are easier to learn, error-resistant, safer and cost-effective.
  - Lack of clear definition of AF requirements impedes defining benefits/ impacts/ challenges.
    - Level of automation?
    - Required training level?
    - Skill level of operators/maintainers?
  - HSI is systems approach, more than just screens or hardware
  - Should design with the entire life cycle of the system in mind
    - Consideration must include operation of unhealthy vehicles



- **How can Commercial Off the Shelf (COTS) products help meet HSI standardization and operational architecture development needs?**
  - Not a full solution or a panacea, but has utility
    - COTS evolves much faster than development lifecycle
    - May end up with unsupported COTS products when fielding
  - No one COTS product can do it all
    - Wrappers for common user interface is expensive
    - Good Application Program Interfaces (APIs) are needed



- **Summary**
  - Need a baseline HSI process
    - Need to fully understand the mission and the requirements.
  - Must determine appropriate level of standardization.
    - Standardization of process is an essential step
  - HSI Research is essential to determining appropriate human performance criteria
    - What is a “good enough” system?
  - Need high level proponents to elevate criticality of HSI concerns



- **Panelist's Closing Statement**

- Tom Riebe: Many opportunities exist in HSI. Application of HSI can reduce costs and improve crew efficiency.
- Brian Louie: Critical to have an HSI process at the beginning and “spend the bucks” so that you don’t end up with a big mess several years later.
- Steve Scholz: HSI must have process. The process must include baseline and variations.
- Roger Dispoto: HSI is more than just screens and plays a role throughout the design of the system. If you apply HSI upfront and early you may hit the target.