

DATA ITEM DESCRIPTION

Title: Human Systems Integration Program Plan (HSIPP)

Number: DI-HFAC-81743

Approval Date: 04 April 2007

AMSC Number: N7716

Limitation: N/A

DTIC Applicable: No

GIDEP Applicable: No

Office of Primary

Applicable Forms: N/A

Use/relationship:

The Human Systems Integration Program Plan (HSIPP) describes the contractor's human systems integration (HSI) program, identifies the HSI elements, and how the HSI domains will be managed and integrated with other program elements.

- a. This Data Item Description (DID) contains the format and content preparation instructions for the HSIPP resulting from applicable tasks delineated in the contract Statement of Work (SOW).

Requirements:

1. Reference documents. The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions shall be as cited in the current issue of the Department of Defense Index of Specifications and Standards (DODISS) at the time of the solicitation.
2. Format. The HSIPP format maybe contractor selected but shall contain all of the elements discussed below. Unless effective presentation would be degraded, the initially used format shall be used for all subsequent submissions. All updates shall be conspicuously indicated in a manner consistent with standard editorial practices.
3. Tailoring. The HSIPP may be tailored to reflect the program needs, acquisition category and phase of development. Additionally, the HSIPP shall contain proposed tailoring of the requirements and guidelines as applicable to the contract, in addition to any tailoring already accomplished by the procuring activity. Proposed tailoring of the guidelines shall identify specific provisions, by paragraph, as applicable including supporting rationale. If no tailoring is proposed beyond that specified by the procuring activity, this shall be stated.
4. Content. The HSIPP shall contain the following information:
 - a. Table of contents, list of illustrations, acronyms/abbreviations.

- b. Overview. Provide the HSIPP purpose and scope, system description, mission description, operational environment, predecessor system(s) and related lessons learned, system acquisition strategy, acquisition category and phase of development. Describe the overall Human Systems Integration (HSI) objective and integration strategy of individual HSI domain objectives. Describe what must be accomplished in the application of HSI to the system development, consistent with the contract statement of work (SOW), system requirement and specification(s) and Work Breakdown Structure (WBS).
- c. Organization. Identify and describe the contractor's primary organization element(s) and HSI working group responsibility, authority and accountability for complying with HSI requirements. Define the functions and internal structure of this element(s), to the individual HSI domain level. Include the number of proposed personnel on an annual basis and summary job descriptions for key positions (e.g. HSI manager, domain leads, practitioners) and minimum required qualifications. Describe each domain's interactions with all other HSI domains and program integrated product teams or working groups. Describe the relationships of the HSI element(s) to other organizational elements responsible for areas impacted by HSI such as systems engineering and those charged with hardware and software design, test and evaluation, integrated logistic support, other engineering specialty programs (e.g. availability, reliability, maintainability, configuration management, and risk management) and government HSI elements.
- d. HSI in Support of Affordability and Performance Goals. Describe the methods by which the contractor will identify and conduct tradeoffs between HSI domains in support of HSI primary goals: reduce total system ownership costs, optimize total system performance and ensure that the system is built to accommodate the characteristics of the user population that will operate, maintain, and support the system.
- e. HSI Issues and Risks. Describe the approach and procedures for identifying, documenting, validating, prioritizing, tracking, reporting, resolving and mitigation verification of HSI issues and risks over the life of the program. Describe the process for trading off the HSI risk and issues between HSI domains, and between HSI and other disciplines. Explain the contractor procedures for communication and conflict resolution. Present the method and process for integrating HSI issues and risks with those issues and risks tracked by the government team.
- f. Human Systems Integration in subcontractor efforts. If any work related to system components or software having operator, maintainer or supporter interface is to be performed under subcontract describe the subcontractor's organizational element responsible for human system integration and the subcontractors HSI process and activities. Fully described the method(s) by which the prime contractor monitors subcontractor compliance. Provide a complete description of the overall process

for the flow down and implementation of requirements and integration across subcontractors and all HSI domains.

- g. Human Systems Integration in system analysis. Identify those HSI efforts in system analysis, which are contractually applicable, and the organizational element(s) responsible for their performance. Describe HSI participation in requirements flow down, alignment and derivation; system mission analysis; determination of system functional requirements and capabilities; determination of system architecture; allocation of system functional requirements to humans, hardware, or software; development of system functional flows; and performance of system effectiveness analyses, studies and modeling. Describe the analyses to be conducted in support of system definition (e.g., manpower estimation, critical function analysis and allocation, personnel safety and survivability analyses) for each HSI domain. Also describe any data, computer programs, databases, models or other information required from the procuring activity.
- h. Human Systems Integration in System design. Describe the HSI effort in system design to ensure compliance with the applicable provisions of the HSI requirements and guidance specified in the contract. Describe HSI participation in studies, tests, mock-up evaluations, dynamic simulation, usability assessments, detail drawing reviews, systems and program reviews and system design and performance specification preparation and reviews. Describe the development and evaluation of conformance to benchmarks or criteria for performance. Explain the planned involvement of end-user personnel (e.g., Soldiers, Airmen, Sailors, Civilians etc.) in design assessments.
- i. Human Systems Integration in procedure development. Describe the HSI effort in procedure development to ensure compliance with the contract HSI requirements. Describe the methods, models, simulation tools and processes to ensure that:

 - (1) Operator, maintainer and supporter functions and tasks are allocated, organized, and sequenced for optimal operational effectiveness with efficient levels of manpower and personnel, appropriate human factors, safety, occupational health, survivability, and habitability, training and minimizing system life cycle cost.
 - (2) The results of HSI analyses and design activities are incorporated into operational, technical, and training publications and in training system design.
- j. Human Systems Integration in Habitability. Describe methods by which the contractor will analyze, design and validate requirements for the physical environment (e.g., adequate personnel space and environment control) and, if appropriate, requirements for personnel services (e.g., medical, and mess) and living conditions (e.g., berthing, education, recreation and personal hygiene) that have an impact on meeting or sustaining system performance or the quality of life.

- k. Human Systems Integration in Personnel Survivability Describe the methods by which the contractor will analyze, design and validate requirements for systems with missions that might require exposure to natural and combat threats, Describe the methods by which the contractor shall ensure that operator, maintainer and support personnel survivability is analyzed and that results are incorporated into system design to facilitate personnel survivability. Issues to be addressed include: protection against fratricide, detection, protection from injury, nuclear, biological, and chemical effects; the integrity of the crew compartment; life support equipment and provisions for rapid egress when the system is severely damaged or destroyed.
- l. Human Systems Integration in manpower, personnel and training. Describe the methods by which the contractor will analyze, design and validate operator, maintainer and support personnel and training requirements based upon human performance requirements developed from system analysis data. Described the following:
- Tradeoff analysis involving numbers, knowledge, skills and abilities of personnel, active duty versus reserves, military versus civilian personnel, contractor versus DOD personnel.
 - Experience level analysis.
 - Manpower affordability analysis.
 - Tradeoff analysis between system design and Training requirements (e.g., user interface commonality, usability and complexity versus training cost)s
 - Manpower and personnel estimation, analysis and reporting.
 - Estimates of the life cycle cost of operations and support related to manpower, personnel and training
- m. Human Systems Integration in Environment, Safety and Occupational Health (ESOH) Describe the methods by which the contractor will analyze, design and validate the prevention of ESOH hazards where possible and manage ESOH hazards where they cannot be avoided. Include
- The strategy for incorporating ESOH considerations into the system acquisition process
 - Methods of documenting hazardous materials used in the system or system manufacturing, and a plan for system demilitarization and disposal

- n. Human Systems Integration in Human Factors Engineering. Describe the approach by which the contractor will apply Human Factors Engineering principles, methods, criteria, best practices and standards to ensure operator, maintainer and support personnel system interfaces are designed to optimize human performance and maximize total system performance (human, hardware, software). Describe the Human Factors Engineering activities including mission and functional analyses, system design requirement analyses, human versus system functional allocation, modeling and simulation, human system interface design and procedures, system design inputs and evaluations, design reviews, drawing reviews and sign-off, user surveys and test and evaluations

- o. Human Systems Integration in test and evaluation Describe HSI participation in test and evaluation as an integrated effort within the contractor's total test and evaluation program Include specific information to show how and when the contractor will test, evaluate and validate requirements related to human systems integration. Identify design milestones at which HSI tests are to be performed to assess compatibility among human performance, manpower, personnel and training requirements, and systems design aspects of human, and hardware interfaces. Describe test and demonstration objectives and proposed test methods. Also identify the number, location and role of human systems integration personnel involved in test and evaluation. Provide a summary test schedule that depicts HSI tests, evaluations, and demonstrations in relationship to project milestones such as system design releases, project level design reviews, development test, operational test, first article demonstration tests, and commencement of procuring activity testing.

- p. Data Sources. Identify contractor, industry, technical society and government standards and documents that will be applied to the HSI effort and activities and any proposed tailoring of those standards and documents. Also identify primary customer requirements documents and contract documents that impact the contractor's HSI effort and activities.

- q. Human Systems Integration deliverable data products. Identify and briefly describe each human systems integration deliverable data product specified in the contract or proposed by the contractor.

- r. Time-Phase schedule and level of effort. Provide a milestone chart that identifies each separate human systems integration effort to be accomplished during each acquisition phase. The schedule shall show key HSI decision points and their relationship to the program decision points.

- s. HSI Program Quality Control. Describe the approach for periodically assessing the quality of HSI program efforts over the course of the system development contract. Describe the method and criteria for evaluating the quality (relative success, progress) in each HSI domain. Describe how the

prime contractor will assess the following measures of subcontractor HSI program success: top level leadership, focus on human-centered design, source selection policy, organizational integration of HSI domains, documentation Integration into the procurement process, quantitative human performance, HSI technologies, test and evaluation assessments, highly qualified practitioners, and education and training. Define the frequency by which these assessments shall be made and provided to the customer.