



SYSTEMS MANAGEMENT STANDARD

SAE1007™

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Standard Practice for Habitability

RATIONALE

This standard addresses a need within the U.S. Department of Defense (DoD) for a Habitability standard for application on system acquisition programs. However, its applicability is not limited to the DoD and can be used by any organization executing Human Systems Integration (HSI) Habitability activities.

FOREWORD

This standard describes best practices for conducting Habitability activities in support of a system acquisition or sustainment contract. Habitability domain activities ensure that the environments provided for system operators, maintainers, trainers, and support personnel are safe, comfortable, and conducive to high levels of human performance, safety, and morale.

The G-45 Human Systems Integration (HSI) Committee of SAE International developed this standard practice document, in collaboration with U.S. Government agencies, including the Department of Defense, U.S. Army, U.S. Navy, U.S. Marine Corps, U.S. Air Force, U.S. Coast Guard, NASA, Department of Homeland Security (DHS), and representatives from industry.

Habitability activities are often conducted in support of Human Systems Integration (HSI). Habitability is one of the seven HSI domains recognized by the DoD and other Federal agencies. While HSI responsibility comprises tasks to plan, manage, and integrate the HSI domains, it does not include the activities of the Habitability domain itself. It is important to distinguish between HSI and domain responsibilities. The purpose of this standard is to describe the Habitability domain responsibilities.

Habitability activities and processes may be performed by a variety of personnel, depending on factors that are unique to the particular acquisition program and contractor organization. These factors include acquisition category, system complexity, operational environment, budget, and expertise availability, among others. Whereas large-scale complex systems may require a dedicated Habitability professional; smaller acquisitions may have a human factors engineer (HFE) or safety practitioner fulfill the Habitability role. Regardless of who has the responsibility for Habitability, it is important that the analyses and processes defined in this standard are applied with an appropriate level of rigor and professionalism.

This standard includes prime and sub-contractor Habitability activities; it does not include Government Habitability activities. The compliance matrix in **Appendix A** is provided to assist Habitability specialists in ensuring that all requirements have been satisfactorily addressed. **Appendix B** provides a detailed listing of Habitability considerations.

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BACKGROUND

For many years, Habitability requirements have been included in the DoD human engineering design criteria standard, MIL-STD-1472, and a variety of other requirements documents, such as the system specifications. However, the scope of Habitability can far exceed that of human engineering. To date, there has not been a best practice standard for contractor activities in planning and executing Habitability activities in support of system acquisition programs.

The DoD established an HSI Standards Working Group on 28 June 2012 to develop a new standard for HSI to provide comprehensive guidance to industry. The DoD selected the SAE International G-45 Human Systems Integration Committee to lead this task. SAE International executed a multi-year effort beginning in May 2016 that resulted in the development and release of a best practice standard for HSI in February 2019 (SAE6906).

To achieve a full, seven-domain HSI program, acquisition contracts must contain HSI program requirements as well as requirements in all seven domains. As of 2020, military and/or industry standards existed in five of the seven HSI domains: Human Factors Engineering (HFE), Training, Safety and Occupational Health (SOH) and Manpower and Personnel. Best practice standards are needed in the other two domains: Habitability, and Force Protection and Survivability. If the intent is for the contractor to perform activities to achieve Habitability, then the acquisition contract should contain Habitability requirements.

This standard addresses Habitability domain activities that should be conducted as part of a “stand-alone” Habitability program (4.1). Additionally, Habitability domain activities that should be conducted in support of an HSI program, when HSI is required, are addressed in 4.2.

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1. SCOPE

This Standard specifies the Habitability processes throughout planning, design, development, test, production, use and disposal of a system. Depending on contract phase and/or complexity of the program, tailoring of this standard may be applied. The primary goals of a contractor Habitability program include:

- Ensuring that the system design complies with the customer Habitability requirements and that discrepancies are reported to management and the customer.
- Identifying, coordinating, tracking, prioritizing, and resolving Habitability risks and issues and ensuring that they are:
 - Reflected in the contractor proposal, budgets, and plans
 - Raised at design, management, and program reviews
 - Debated in Working Group meetings
 - Coordinated with Training, Logistics, and the other HSI disciplines
 - Included appropriately in documentation and deliverable data items
- Ensuring that Habitability requirements are applied to all personnel environments, including operators, maintainers, trainers, and support personnel.
- Identifying and pursuing opportunities to reduce Habitability costs.
- Ensuring that Habitability considerations are addressed in analyses, design decisions, trade-offs, and design changes (e.g., Engineering Change Proposals (ECP)).
- Conducting Habitability analysis activities and supporting human factors analyses (e.g., workload analysis) and other HSI domain analyses to provide evidence to support design decisions and trade-offs and to coordinate shared data.
- Ensuring that Habitability analyses, results and recommendations are timely, technically competent/complete, and included in design decisions, tradeoffs, and changes.
- Ensuring that environments experienced by subjects in experiments, simulations, tests, evaluations, and demonstrations are consistent with the customer's Habitability requirements and meet the U.S. Government and DoD policies for protection of human subjects.
- Ensuring that Habitability issues discovered in test, evaluation, demonstration, Operational Test and Evaluation (OT&E), and operations are resolved in a technically competent/complete and timely manner.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the contract. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations or contracts unless a specific exemption has been obtained.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

EIA-632	Processes for Engineering a System
EIA-649C	Configuration Management Standard
EIA-649-1	Configuration Management Requirements for Defense Contracts
GEIA-STD-0007C	Logistics Product Data
GEIA-STD-0010A	Standard Best Practices for System Safety Program Development and Execution
SAE J1777	General Environmental Considerations for Marine Vehicles
SAE J1782	Ship Systems and Equipment - Hydraulic Systems - Noise Control
SAE1001	Integrated Project Processes for Engineering a System
SAE6906	Standard Practice for Human Systems Integration
TA-STD-0017	Product Support Analysis

2.1.2 Code of Federal Regulations (CFR) Publications

Available from the United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-1800, www.gpo.gov.

45 CFR 46	Protection of Human Subjects
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2.1.3 Military Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

CJCSI 5123.01H	Charter of the Joint Requirements Oversight Council (JROC) and Implementation of the Joint Capabilities and Development System (JCIDS)
MIL-HDBK-502	DoD Handbook: Product Support Analysis (PSA)
MIL-STD-882E	DoD Standard Practice: System Safety
MIL-STD-1472H	DoD Design Criteria Standard, Human Engineering
MIL-STD-46855A	DoD Standard Practice: Human Engineering Requirements for Military Systems, Equipment and Facilities

Handbook of Human Systems Integration, published by John Wiley & Sons, Hal Booher (editor), 2003, [Handbook of Human Systems Integration | Wiley Online Books](#).

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

ARP292 Environmental Control Systems for Rotorcraft

2.2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities

ASTM F1337-10 Standard Practice for Human Systems Integration Program for Ships and Marine Systems, Equipment, and Facilities

2.2.3 IEEE Publications

Available from IEEE Operations Center, 445 and 501 Hoes Lane, Piscataway, NJ 08854-4141, Tel: 732-981-0060, www.ieee.org.

IEEE 15288.1 IEEE Standard for Application of Systems Engineering on Defense Programs

IEEE 15288.2 IEEE Standard for Technical Reviews and Audits on Defense Programs

ISO/IEC/IEEE 15288 Systems and software engineering - System life cycle processes

ISO/IEC/IEEE 29148 System and Software Engineering - Life Cycle Processes - Requirements Management

2.2.4 NASA Publications

NASA Technical Services, NASA STI Program STI Support Services, Mail Stop 148, NASA Langley Research Center, Hampton, VA 23681-2199, 757-864-9658, Fax: 757-864-6500, <http://ntrs.nasa.gov/>.

NASA Report 4010 Space Station Group Activities Habitability Module Study

2.2.5 AIAA Publications

Available from American Institute of Aeronautics and Astronautics, 1801 Alexander Bell Drive, Suite 500, Reston, VA 20191-4344, Tel: 703-264-7500, www.aiaa.org.

The Fundamentals of Aircraft Combat Survivability Analysis and Design, Second Edition, by Robert E. Ball, © AIAA Education Series, 2003, [The Fundamentals of Aircraft Combat Survivability: Analysis and Design, 2nd Edition | AIAA Education Series](#).

2.2.6 Military Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

DI-HFAC-80743B Notice 1 Human Engineering Test Plan (HETP)

DI-HFAC-80744B Notice 1 Human Engineering Test Report (HETR)

DI-HFAC-80745C Human Engineering Systems Analysis Report (HESAR)

DI-HFAC-80746C Human Engineering Design Approach Document - Operator (HEDAD-O)

DI-HFAC-80747C Human Engineering Design Approach Document - Maintainer (HEDAD-M)

DI-HFAC-81743A Human Systems Integration Program Plan (HSIPP)

DoD Directive 5000.01 The Defense Acquisition System

DoD Instruction 5000.02T Operation of the Defense Acquisition System

Department of Defense, Defense Acquisition Guidebook, 2020, [Defense Acquisition Guidebook \(dau.edu\)](https://dau.edu), Defense Acquisition University, 9820 Belvoir Road, Fort Belvoir, VA 22060.

Department of Defense, DODAF Architecture Framework Version 2.02, August 2010, <https://dodcio.defense.gov/Library/DoD-Architecture-Framework>.

Department of the Navy, Commander U.S. Fleet Forces Command (2017), Joint Fleet Maintenance Manual. (COMUSFLTFORCOMINST 4790.3 Rev D, Norfolk, VA. Author. Volume 6, Chapter 16 Habitability. (Accessed via <https://www.coursehero.com/file/77278165/JFMM-47903-REV-Dpdf/> on 06/18/21) .

Department of the Navy, Naval Sea Systems Command (2012). NAVSEA Design Criteria and Practices Manual for Submarine General Arrangements Design (T05U3-085). Washington, DC: Miles, T.

Department of the Navy, Naval Sea Systems Command (2016). Shipboard Habitability Design Criteria and Practices Manual (Surface Ships) for New Ship Designs and Modernization (T9640-AC-DSP-010/HAB Rev 1). Washington, DC: Battisti, A. Accessed via [MIL-STD Template \(habitability.net\)](https://www.mil-std-template.com/habitability.net) on 06/18/21.

Department of the Navy, Office of the Chief of Naval Operations (2012). Shipboard Habitability Program (OPNAV INSTRUCTION 9640.1B). Accessed via: [OPNAVINST-9640-1B.pdf \(navy.mil\)](https://www.opnavinst-9640-1b.pdf) on 06/18/21.

DoD Risk, Issue, and Opportunity Management Guide for Defense Acquisition Programs, January 2017, accessed via: [DoD Risk, Issue, and Opportunity Management Guide \(dau.edu\)](https://dau.edu) on 06/18/21.

Navy Actions Needed to Optimize Ship Crew Size and Reduce Total Ownership Costs. GAO-03-520. Published: Jun 9, 2003. Publicly Released: Jun 9, 2003, [GAO-03-520 Military Personnel: Navy Actions Needed to Optimize Ship Crew Size and Reduce Total Ownership Costs](https://www.gao.gov/products/GAO-03-520).

Office of the Deputy Assistant Secretary of Defense (ODASD) - Systems Engineering. Best Practices for Using Systems Engineering Standards on Contracts for Department of Defense Acquisition Programs. April 2017, [OSD-Guide-to-Best-Practices-Using-Engineering-Standards-2017.pdf \(acqnotes.com\)](https://www.acqnotes.com).

U.S. Air Force Human Systems Integration Office. Human Systems Integration in Acquisition (Management Guide). Report number ADA519018. August 2009, [ADA519018 \(1\).pdf \(af.mil\)](https://www.af.mil).

U.S. Army Regulation 602-2 Human Systems Integration in the System Acquisition Process, created by United States Department of the Army, 27 January 2015, [untitled \(army.mil\)](https://www.army.mil).

U.S. Army Regulation 70-75 Survivability of Army Personnel and Materiel, created by United States Department of the Army, 02 May 2005, [ARN7772_AR70-75_FINAL.pdf \(army.mil\)](https://www.army.mil).

2.2.7 Other Publications

American Bureau of Shipping, Guide for Crew Habitability on Mobile Offshore Installations (2016), [Guide to Crew Habitability on Offshore Installations 2016 \(eagle.org\)](https://www.eagle.org), 1701 City Plaza Drive, Spring, TX 77389 USA.

American Bureau of Shipping, Guide for Crew Habitability on Ships, (2016), [Guide for Crew Habitability on Ships \(eagle.org\)](https://www.eagle.org), TX: Author, 2016, 1701 City Plaza Drive, Spring, TX 77389 USA.

American Bureau of Shipping. MLC-ACCOM Notation. Retrieved from [Microsoft PowerPoint - ABS MLC-ACCOM Notation .pptx \(eagle.org\)](#), Guide for Compliance with the ILO Maritime Labour Convention, 2006, Title 3 Requirements, May 2009(Accessed on 6/18/21), 1701 City Plaza Drive, Spring, TX 77389 USA.

Architectural Graphic Standards, 12th Edition, American Institute of Architects, 2016. <https://store.aia.org/products/architectural-graphic-standards-12th-edition?variant=16398864513>.

INCOSE Systems Engineering Handbook: A Guide for System Life Cycle Processes and Activities, 4th Edition, July 2015, <https://www.incose.org/products-and-publications/se-handbook>.

USAAVSCOM TR 89-D-22E, Vol.5 Aircraft Crash Survival Design Guide, Volume V: Aircraft Post-crash Survival, December 1990, accessed via: [TR 89-D-22 A VOL-5 DEC1990 USAAVSCOM AIRCRAFT POSTCRASH \(everyspec.com\)](#) on 061821.

2.3 Acronyms and Definitions

2.3.1 Acronyms

AOA	Analysis of Alternatives
ASAP	Aircrew Systems Advisory Panel
ASTM	American Society for Testing and Materials
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive
CDD	Capability Development Document
CDR	Critical Design Review
CDRL	Contract Data Requirement List
CONEMP	Concept of Employment
CONOPS	Concept of Operations
COTS	Commercial Off-The-Shelf
CSWG	Crew Systems Working Group
DAG	Defense Acquisition Guidebook, or Design Advisory Group
DHS	Department of Homeland Security
DID	Data Item Description
DoD	Department of Defense
DODAF	Department of Defense Architecture Framework
DODI	Department of Defense Instruction
ECP	Engineering Change Proposal
EMD	Engineering, Manufacturing, and Development
FOC	Full Operational Capability
FPS	Force Protection-Survivability

GAO	Government Accountability Office
GEIA	Government Electronic Industries Association
GFE	Government Furnished Equipment
GFP	Government Furnished Property
GFI	Government Furnished Information
HDBK	Handbook
HEDAD-M	Human Engineering Design Approach Document-Maintainer
HEDAD-O	Human Engineering Design Approach Document-Operator
HESAR	Human Engineering Systems Analysis Report
HFAC	Human Factors (standardization)
HFE	Human Factors Engineering
HSI	Human Systems Integration
HSIPP	Human Systems Integration Program Plan
HSIR	Human Systems Integration Report
IAW	In Accordance With
IEEE	Institute of Electrical and Electronics Engineers
ILA	Independent Logistics Assessment
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
INCOSE	International Council on Systems Engineering
IOC	Initial Operational Capability
IPS	Integrated Product Support
IPT	Integrated Product Team
ISO	International Organization for Standardization
JCIDS	Joint Capabilities Integration and Development System
KPP	Key Performance Parameter
KSA	Key System Attribute
LCMP	Life Cycle Management Plan
LCSP	Life Cycle Sustainment Plan
MAP	Maintainer Advisory Panel

NASA	National Aeronautics and Space Administration
OBS	Organizational Breakdown structure
ODASD	Office of the Deputy Assistant Secretary of Defense
PDR	Preliminary Design Review
PESHE	Programmatic Environmental Safety and Health Evaluation
PSA	Product Support Analysis
PSE	Product Support Element
RFP	Request for Proposal
SDD	System Design and Development (acquisition phase)
SDRL	Subcontract Data Requirements List
SME	Subject Matter Expert
SOW	Statement of Work
SOH	Safety/Occupational Health
STD	Standard
SE	Systems Engineering
SEMP	Systems Engineering Master Plan (Contractor)
T&E	Test and Evaluation
WBS	Work Breakdown Structure
WG	Working Group

2.3.2 Definitions

CAPABILITY REQUIREMENTS: A capability which is needed to meet an organization's roles, functions, and missions in current or future operations. To the greatest extent possible, capability requirements are described in relation to tasks, standards, and conditions IAW the Universal Joint Task List or equivalent DoD Component Task List. (Source: CJCSI 5123.01) Capability requirements serve as the basis for system and specification requirements.

CONTRACTOR: This term refers to the company or organization responsible for fulfilling the system acquisition contract requirements. An alternative term could be "solution provider."

CONTRACTOR HABITABILITY PRACTITIONER: Personnel responsible for planning, coordinating, and executing the Habitability program; serves as the contractor's Habitability single point-of-contact.

CONTRACTOR HABITABILITY TEAM: Refers to the contractor (typically a Prime contractor) practitioners responsible for performing Habitability activities under a systems acquisition contract. The Habitability team may also include associate contractors, subcontractors, and selected supplier personnel.

CUSTOMER HABITABILITY TEAM: Refers to the U.S. Government Habitability team in the organization(s) responsible to the procuring agency for providing Habitability support. The team may be in the procuring agency or distributed between the procuring agency and one or more other organizations.

HABITABILITY: The living and working conditions that are necessary to sustain the well being, morale, safety, occupational health, comfort, and performance of the end-user population. Habitability considerations include all aspects of the physical environment that people inhabit, for work, rest, or other purpose. It includes adequate space and environmental/temperature controls and, if appropriate, requirements for personnel services (e.g., medical, dental and mess) and living conditions (e.g., berthing and personal hygiene) that have a direct impact on meeting or sustaining system performance/effectiveness or that have such an adverse impact on safety (e.g., GEIA-STD-0010, MIL-STD-882), health, comfort, quality of life, and morale that recruitment or retention is degraded. Many Habitability design criteria are contained in DoD Design Criteria Standard-Human Engineering (MIL-STD-1472). System design and operational performance requirements may also impact personnel Habitability.

HABITABILITY DOMAIN SYSTEM REQUIREMENTS: Physical and environmental requirements (operator/user, maintainer, trainer, and/or supporter) associated with the system, to the extent that human performance, mission effectiveness, safety, comfort, well-being, or morale may be affected. Content areas include characteristics such as space claims, noise, vibration, temperature, sanitation, and ergonomics.

HABITABILITY RISK: A physical or environmental condition with potentially adverse impact on humans. Habitability risks can be technical as well as programmatic.

HABITABILITY TASK: Any task performed by the Habitability practitioner and Habitability team that contributes to achieving goals of improving Habitability integration, improving human performance, or reducing Habitability-driven ownership costs.

HSI LEAD: Contractor person responsible for planning, coordinating and executing the HSI program; serves as the contractor's HSI single point-of-contact.

HSI PROGRAM: All the planning, analysis, risk/issue management, design support, test and evaluation, coordination, and documentation activities undertaken in response to HSI programmatic requirements contained in the system acquisition contract Statement of Work (SOW).

HSI WORKING GROUP: Typically, a chartered organization charged with carrying out all the HSI activities associated with a system acquisition program. The HSI Working Group (or may be called an Integrated Product Team [IPT] depending on the program or Service) is typically co-chaired by customer and prime contractor HSI leads. Membership usually includes HSI and HSI domain representatives from the Prime contractor and customer. The HSI Working Group may also include HSI and domain representation from major subcontractors, associate contractors, and major suppliers.

HSI PROGRAMMATIC REQUIREMENTS: Statement of Work (SOW) requirements for Human Systems Integration tasks for the contractor HSI team to execute. Focus of these requirements is on HSI program planning, coordination, execution, documentation, and reporting.

HUMAN SYSTEMS INTEGRATION (HSI): HSI is a comprehensive management and technical approach applied to systems development and integration as part of wider Systems Engineering and Integrated Product Support processes to ensure that human performance is optimized to increase total system performance and minimize total systems ownership costs. The HSI discipline focuses on addressing human considerations within system engineering and integrated product support processes to optimize total system performance. HSI efforts accomplish this by ensuring that the human is fully and continuously considered as part of the total system in the development and acquisition of all systems. Consistent with DODI 5000.02, HSI considerations comprise Human Factors Engineering (HFE), Safety and Occupational Health (SOH), Habitability, Force Protection and Survivability (FPS), Manpower, Personnel, and Training.

HUMAN PERFORMANCE: A measure of performance of human tasks in a specified environment, reflecting the ability of users (e.g., operators, trainers, supporters and maintainers) to meet system performance standards, including reliability and maintainability, under the conditions in which the system will be employed (adapted from MIL-HDBK-1908).

MANAGEMENT: Contractor senior managers and/or program manager. Since this standard applies only to contractors, the term "management" does not apply to the procuring agency program manager or other customer managers.

PROCURING AGENCY: The procuring agency is the organization responsible for system acquisition and as such can be considered the "customer" (e.g., Naval Air Systems Command).

SENIOR MANAGER OR PROGRAM MANAGER: Refers to the contractor's Senior Manager or Program Manager.

“SHALL”: Indicates requirements for which compliance with the specific statement is required.

“SHOULD”: Used for informative and guidance statements, wherever optional compliance with the recommendation is permissible.

STANDARD PRACTICE (OR BEST PRACTICE): The recommended process to be followed in implementing and executing work for a program (i.e., HSI efforts for a program) against which other practices are measured. Habitability best practices are determined by a broad-based group of DoD and contractor Subject Matter Experts (SME), who are experienced in the practice and application of Habitability on a variety of acquisition programs.

USER: Personnel, who operate, maintain, train, and support the equipment, system, or facility.

3. HABITABILITY DESCRIPTION AND OBJECTIVES

3.1 Habitability Overview

3.1.1 Introduction

Habitability factors are living and working conditions that affect the morale, safety, health, quality of life, performance, quality of work, well-being and comfort of the target population. Habitability contributes to personnel effectiveness and mission accomplishment, and often precludes recruitment and retention problems. Habitability consists of those characteristics of systems, facilities (temporary and permanent), and services necessary to satisfy personnel needs.

Habitability factors include the physical environment (e.g., adequate light, space, ventilation, sanitation, temperature and noise control), cultural environment (e.g., beliefs, practices, customs, behaviors), social environment (e.g., intentionally developed relationships, interactions, and support networks), personal services (e.g., religious, medical, and mess), working environment (e.g., freedom from physical or cognitive stressors) and living conditions (e.g., berthing and personal hygiene). The full range of Habitability considerations are most commonly applicable to systems such as ships, spacecraft, aircraft, land and amphibious vehicles, mobile systems, and permanent land facilities that support sustained, environmentally contained and/or protected operations.

The following Habitability areas are potentially applicable in the system design process:

Environmental Control

- Air conditioning, heating, and ventilation adequacy, contamination and quality control
- Temperature, humidity and other environmental ranges and controls
- Environmental conditions that potentially risk human safety or health
- Noise environment
- Vibration and Motion Environment
- Lighting adequacy to support human task performance

Habitability Facilities

- Living and working conditions necessary to sustain the morale, safety, health, comfort, and job effectiveness of the user populations
- Adequate space and arrangement for work, living, personal stowage, and rest
- Material selection (e.g., flammability, toxicity)
- Accommodations for users, passengers, and visitors, including those with special needs (e.g., Very Important Person (VIP), Americans with Disabilities Act (ADA) compliance, medical needs)