



NASA-STD-3000 Man-Systems Integration Standards

Volume I, Section 2

2 GENERAL REQUIREMENTS

{A}

This section contains the following topics:

- 2.1 [Introduction](#)
- 2.2 [General Design Considerations](#)
- 2.3 [General Design Requirements](#)

2.1 INTRODUCTION

{A}

This section includes the general human-system design considerations and design requirements related to simplicity and standardization

2.2 GENERAL DESIGN CONSIDERATIONS

{A}

2.2.1 Simplicity Design Considerations

{A}

An uncomplicated, simple design is generally more reliable and easier to operate and maintain. When comparing alternative designs from the human engineering point of view, the simplest design will be the one that is easiest to operate and maintain because it will require less crew training, less crew workload, and will have the least potential for human error.

2.2.2 Standardization Design Considerations

{A}

Crew-use hardware (e.g., fasteners, electrical and fluid connectors switches, circuit breakers, and screws), markings, coding, labeling, and equipment panel arrangements should be standardized as much as practical. This will simplify operational and maintenance procedures, reduce the number of tools required, crew errors, crew training requirements, and maintenance skill requirements. Each common usage also reduces total sparring levels and design documentation. This standardization need not be a complex or involved process. If practical, off-the-shelf equipment should be used.

2.3 GENERAL DESIGN REQUIREMENTS

{A}

It shall be demonstrated that performance requirements and safety critical physical requirements given in this document are for the crew-operated spacecraft design via appropriate testing of the parameters and characteristics.

2.3.1 Simplicity Design Requirements

{A}

The design shall be as simple as possible consistent with the functions desired and the expected service conditions.

2.3.2 Standardization Design Requirements

{A}

The system shall be designed to adhere to the following standardization requirements:

- a.** Hardware Operation Standardization - The operation of crew-use equipment shall be standardized so that similar applications use the similar types of hardware.
- b.** Computer Procedures Standardization - The operating procedures shall be standardized so that similar applications use similar user/computer procedures.