



**International
Standard**

ISO 14620-4

**Space systems — Safety
requirements —**

**Part 4:
Spacecraft assembly, integration
and test**

Systèmes spatiaux — Exigences de sécurité —

Partie 4: Assemblage, intégration et test d'engins spatiaux

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Space systems — Safety requirements —

Part 4: Spacecraft assembly, integration and test

1 Scope

This document provides requirements for the safety management and operation of assembly, integration and test (AIT) activities related to spacecraft projects and applications including the responsibilities of the organization involved in the AIT operations for spacecraft products.

This document provides a method to identify hazards, control and reduce safety risk to acceptable levels in the activities of spacecraft assembly, integration, testing, hoisting, logistics and handling.

This document is applicable to space test centres and entities providing operating infrastructure and facilities for spacecraft AIT. It can serve as a reference for the AIT of the spacecraft system, its subsystems and equipment.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10795, *Space systems — Programme management and quality — Vocabulary*

ISO 14620-1, *Space systems — Safety requirements — Part 1: System safety*

ISO 14620-2, *Space systems — Safety requirements — Part 2: Launch site operations*

ISO 14625, *Space systems — Ground support equipment for use at launch, landing or retrieval sites — General requirements*

ISO 17666, *Space systems — Risk management*

ISO 18322, *Space systems — General management requirements for space test centres*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10795 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 logistics

science and practice of interconnecting, and finding the best way of goal attainment, for bringing material objects or living beings in sufficient quantity to the right place in the right time.

[SOURCE: ISO 5127:2017, 3.1.2.26]

3.2

operator

governmental or non-governmental entities, international organization, or natural person carrying out a space operation independently and under its responsibility.

[SOURCE: ISO 14620-2:2019, 3.15]

3.3

risk

undesirable situation or circumstance that has both a likelihood of occurring and a potential negative consequence on a project

Note 1 to entry: Risks arise from uncertainty due to lack of predictability or control of events. Risks are inherent to any project and can arise at any time during the project life cycle; reducing these uncertainties reduces the risks.

[SOURCE: ISO 17666:2016, 3.1.12]

3.4

space test centre

complete entity including the organization which provides, maintains, develops and operates test facilities for space project and applications including accompanied services

[SOURCE: ISO 18322:2017, 3.7]

3.5

safety risk

measure of the potential consequences of a hazard considering the probability of the associated mishap, the harm caused to people and the damage caused to public and private property and the environment

Note 1 to entry: The safety risk is defined to be differentiated from political, financial, industrial, project, and other risks (3.3).

Note 2 to entry: An example of a safety risk is the expected number of casualties.

[SOURCE: ISO 14620-2:2019, 3.19]

3.6

safety representative

representative from the *space test centre* (3.4) management with designated responsibility for safety

[SOURCE: ISO 18322:2017, 3.5, modified — Note 1 to entry has been removed.]

4 Abbreviated terms

AIT assembly, integration and test

GSE ground support equipment

5 Safety organization

5.1 General

The safety organization shall be established to organize, inspect and implement safety activities in the AIT process.

5.2 Requirements for the safety organization

The following requirements apply to the safety organization.

- a) The safety organization shall be established in accordance with ISO 14620-1.