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**Space systems — Explosive systems  
and devices**

*Systèmes spatiaux — Dispositifs et équipements explosifs*

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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 documents 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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

This second edition cancels and replaces the first edition (ISO 26871:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

- simplification for some requirements;
- updating terminology;
- introduction of a paragraph about debris issues.

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](http://www.iso.org/members.html).

## Introduction

### 0.1 Background

The evolution of this document is motivated by changes inputted by the last issue of 2 main mother documents<sup>[1],[2]</sup>.

### 0.2 Tailoring

This document may be tailored, by the contractor, in consultation with the procuring authority, for the specific characteristics and constraints of a space project.

Tailoring is a process by which individual requirements or specifications, standards, and related documents are evaluated and made applicable to a specific program or project by selection, and in some cases, modification and addition (e.g., for manned spaceflight) of requirements in the standards.

However, the tailored requirements may achieve a level of verification equivalent to the baseline described herein. Rationale for each tailored requirement may be established. If the requirements in this document are not tailored by a contract, they stand as written.

This document will be updated and revised periodically, each five years as appropriate to incorporate technological advances and innovations as well as lessons learned.

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# Space systems — Explosive systems and devices

**IMPORTANT** — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

## 1 Scope

This document specifies criteria and requirements for the use of explosive systems and explosive devices commonly used on spacecraft and other space products, including launch vehicles and space vehicle systems. It addresses the aspects of design, analysis, verification, manufacturing, operations and safety.

To the greatest extent possible, requirements from past and existing standards have been analyzed, selected and tailored to be incorporated herein. In addition, the requirements herein include those generated as a result of lessons learned from launch and space vehicle programs.

NOTE Specific requirements for man-rating are not addressed.

## 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 14300-1, *Space systems — Programme management — Part 1: Structuring of a project*

ISO 24113, *Space systems — Space debris mitigation requirements*

ISO 26871:2020

## 3 Terms, definitions, abbreviated terms and symbols

### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1.1

##### **actuator**

*component* (3.1.10) that performs the moving function of a mechanism

Note 1 to entry: An actuator can be either an electric motor, or any other mechanical (e.g. spring) or electric component or part providing the torque or force for the motion of the mechanism.

#### 3.1.2

##### **all-fire level**

lowest level of the fire stimulus (including rise time, shape, duration), which results in initiation of a *first element (initiator)* (3.1.36) within a specific reliability and confidence level as determined by test and analysis

Note 1 to entry: The stimulus duration shall be compliant with the system.