
**Space systems — Detailed space
debris mitigation requirements for
spacecraft**

*Systèmes spatiaux — exigences détaillées pour la diminution des
débris spatiaux relatifs aux satellites*



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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).

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).

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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.

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

This first edition cancels and replaces ISO 16127:2014, ISO 16164:2015, ISO 23339:2010 and ISO 26872:2019.

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.

Introduction

This document is developed to incorporate the content of ISO 16127, ISO 16164, ISO 23339, ISO 26872 and other detailed requirements relevant to spacecraft related debris mitigation, corresponding to ISO 24113. The purpose of this document is to enable conformance with those high-level space debris mitigation requirements in ISO 24113 that are relevant to spacecraft.

This document acts as one of the supporting technical standards for space debris mitigation, to provide implementation requirements and details for the top-level requirements in ISO 24113.

Space systems — Detailed space debris mitigation requirements for spacecraft

1 Scope

This document defines detailed space debris mitigation requirements and recommendations for the design and operation of unmanned spacecraft in Earth orbit.

This document defines detailed requirements that are applicable to:

- a) avoiding the intentional release of space debris into Earth orbit during normal operations;
- b) avoiding break-ups in Earth orbit;
- c) disposal of a spacecraft after the end of mission;
- d) estimating the mass of the remaining usable propellant;
- e) developing and maintaining the space debris mitigation plan.

NOTE This document does not cover nuclear power sources on spacecraft.

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 24113:2019, *Space systems — Space debris mitigation requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 24113 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

acquiring organization

organization that plans and manages the development and acquisition contracts for the space system

Note 1 to entry: The responsibilities of the acquiring organization include the engineering and technical aspects of the space system's design and operations.

3.2

book-keeping method

method for determining fluid consumption by monitoring flow rates and the duration of propellant expenditure periods

3.3

disposal orbit

orbit in which a spacecraft resides following the completion of its disposal actions