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**Space systems — Disposal of satellites  
operating at geosynchronous altitude**

*Systèmes spatiaux — Élimination des satellites opérant à une altitude  
géostionnaire*



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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 26872:2010), which has been technically revised. The main changes compared to the previous edition are as follows:

- to be consistent with ISO 24113, the word “satellite” has been replaced by “spacecraft”;
- ISO 24113 has been incorporated by reference, such that its normative content serves as requirements in this document as well;
- to be consistent with ISO 24113, Post-Mission Disposal is no longer defined as a conditional probability.

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

This document prescribes requirements for planning and executing manoeuvres and operations to remove an operating spacecraft from the geosynchronous orbit at the end of its mission and place it in an orbit for final disposal where it will not pose a future hazard to spacecraft operating in the geosynchronous ring.

This document includes requirements related to the following:

- when the disposal action needs to be initiated,
- selecting the final disposal orbit,
- executing the disposal action successfully, and
- depleting all energy sources to prevent explosions after disposal.

End-of-mission disposal of an Earth-orbiting spacecraft broadly means the following:

- a) removing the spacecraft from the region of space where other spacecrafts are operating, so as not to interfere or collide with these other users of space in the future, and
- b) ensuring that the disposed object is left in an inert state and is incapable of generating an explosive event that could release debris which might threaten the operating spacecraft, see ISO 16127.

For a spacecraft operating in the geosynchronous belt, the most effective means of disposal is first to re-orbit the spacecraft to a super-synchronous orbit above the region of the operating spacecraft and the manoeuvre corridor used for relocating the operating spacecraft to new longitudinal slots, and then to discharge batteries and vent propellants and take other actions to preclude a debris-producing event.



# Space systems — Disposal of satellites operating at geosynchronous altitude

**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 requirements for the following:

- planning for disposal of a spacecraft operating at geosynchronous altitude to ensure that final disposal is sufficiently characterized and that adequate propellant will be reserved for the manoeuvre;
- selecting final disposal orbits where the spacecraft will not re-enter the operational region within the next 100 years;
- executing the disposal manoeuvre successfully;
- depleting all energy sources on board the vehicle before the end of its life to minimize the possibility of an event that can produce debris.

This document provides techniques for planning and executing the disposal of space hardware that reflect current internationally accepted guidelines and consider current operational procedures and best practices.

## 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 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

#### **inclination excursion region**

region in space occupied either by a non-operational geostationary *spacecraft* (3.4) or by an operational geosynchronous spacecraft without inclination station-keeping

### 3.2

#### **re-orbit manoeuvre**

action of moving a *spacecraft* (3.4) to a new orbit