
**Space systems — Detailed space
debris mitigation requirements for
launch vehicle orbital stages**

*Systèmes spatiaux — Exigences détaillées pour la limitation des
débris spatiaux relatifs aux étages orbitaux des lanceurs*



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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.

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This document was prepared by Technical Committee ISO/TC 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.

Introduction

This document was developed to support the implementation of the high-level space debris mitigation requirements in ISO 24113.

This document contains a detailed and practical set of requirements and recommendations to assist the space industry in conforming to the requirements in ISO 24113 which relate to launch vehicle orbital stages.

Space systems — Detailed space debris mitigation requirements for launch vehicle orbital stages

1 Scope

This document defines detailed space debris mitigation requirements and recommendations for the design and operation of launch vehicle orbital stages in Earth orbit.

The requirements defined in this document are applicable for:

- avoiding the release of space debris;
- disposing of a launch vehicle orbital stage after the end of its mission so as to avoid a break-up in orbit;
- disposing of a launch vehicle orbital stage after the end of its mission so as to minimize interference with the protected regions;
- safely re-entering a launch vehicle orbital stage.

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, *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

decay orbit

orbit that will result in the re-entry of a launch vehicle orbital stage

3.2

disposal orbit

orbit in which launch vehicle orbital stage resides following the completion of its disposal maneuvers

4 Avoiding the intentional release of space debris into Earth orbit during normal operations

4.1 ISO 24113 specifies a limit for the total number of launch vehicle orbital stages and space debris objects that a launch vehicle may leave in Earth orbit during normal operations.

NOTE The space debris objects related to the launch include, but are not limited to, protective shrouds, inter-stage elements, clamp bands, jettisonable tanks, jettisonable attitude control or propellant settling systems.