
**Space systems — Assessment of
survivability of unmanned spacecraft
against space debris and meteoroid
impacts to ensure successful post-
mission disposal**

*Systèmes spatiaux — Évaluation de la capacité de survie des véhicules
spatiaux non habités face aux débris spatiaux et aux impacts de
météoroides pour garantir une élimination efficace d'après-mission*





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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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The committee responsible for this document is ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

Space systems — Assessment of survivability of unmanned spacecraft against space debris and meteoroid impacts to ensure successful post-mission disposal

1 Scope

This International Standard defines requirements and a procedure for assessing the survivability of an unmanned spacecraft against space debris and meteoroid impacts to ensure the survival of critical components required to perform post-mission disposal. This International Standard also describes two impact risk analysis procedures that can be used to satisfy the requirements. The procedures are consistent with those defined in References [1] and [2].

This International Standard is part of a set of International Standards that collectively aim to reduce the growth of space debris by ensuring that spacecraft are designed, operated, and disposed of in a manner that prevents them from generating debris throughout their orbital lifetime. All of the primary debris mitigation requirements are contained in a top-level International Standard.[3] The remaining International Standards, of which this is one, provide methods and processes to enable compliance with the primary requirements.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10795:2011, *Space systems — Programme management and quality — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10795:2011 and the following apply.

3.1

at-risk area

area of those parts of a surface on a component that are most vulnerable to impacts from space debris or meteoroids

Note 1 to entry: See [A.1](#) for a more detailed explanation of at-risk area.

3.2

ballistic limit

impact-induced threshold of failure of a structure

Note 1 to entry: A common failure threshold is the critical size of an impacting particle at which perforation occurs. However, depending on the characteristics of the item being hit, failure modes other than perforation are also possible.

3.3

catastrophic collision

collision leading to the destruction by fragmentation of a spacecraft