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## Space systems — Requirements for small spacecraft

*Systèmes spatiaux — Exigences relatives aux petits engins spatiaux*



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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)).

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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](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*.

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).

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## Introduction

Since 2013, the number of small spacecraft built and launched has shown explosive growth. These small spacecraft are often built by universities, or by newcomers to the space sector, employing untraditional development philosophy.

One particularity of small spacecraft is their need to be launched either with a main payload or in a grapple, which implies specific requirements.

Besides requirements regarding mission success or other goals, which are beyond the scope of this document, there are minimum requirements every small spacecraft complies with regardless of its size, mission, value, capability or any other nature. The purpose of this document is to clearly state those minimum requirements.

This document provides references to existing standards and documents that elaborate on those requirements, especially for the benefit of those who are entering the space sector through small spacecraft development and utilization.

The document was originally proposed as an International Standard. Although the committee draft for voting obtained enough support from P-member countries to proceed to the draft international standard stage, a unanimous agreement was not obtained about the need of publishing the document that referenced the existing standards and documents as an International Standard. Considering the need of having a normative document describing the requirements for small spacecraft, however, the document was resubmitted as a Technical Specification. By the time of review in three years from now, other small spacecraft related standards may be proposed and definition of small spacecraft may advance further. Depending on the situation surrounding small spacecraft then, the decision will be made on whether the document will be upgraded to an International Standard or not.