Doc: TED 14 (22967) W
ISO/TS 20991 : 2018

For Comments Only

BUREAU OF INDIAN STANDARDS

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भारतीय मानक ***मसौदा***

अंतरिक्ष पद्धतियाँ — लघु अंतरिक्ष यान की अपेक्षाएं

Draft *Indian Standard*

SPACE SYSTEMS — REQUIREMENTS FOR SMALL SPACECRAFT

Air and Space Vehicles Sectional Committee, TED 14	**Last date for receipt of comments is XX/XX/XXXX**

ICS: 49.140

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B U R E A U O F I N D I A N S T A N D A R D S
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NEW DELHI 110002

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Air and Space Vehicles Sectional Committee, TED 14

NATIONAL FOREWORD

(Formal Clause to be added later)

The text of ISO standard is proposed for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 17770 Space systems — Cube satellites (CubeSats)	Doc (22955) / ISO 17770 : 2017 Space systems — Cube satellites (CubeSats) (*under development*)	Identical under dual numbering
ISO 19683 Design qualification and acceptance tests of small spacecraft and units	Doc (22961) / ISO 19683 : 2017 Space systems — Design qualification and acceptance tests of small spacecraft and units (*under development*)	Identical under dual numbering
ISO 14620-1 Space Systems — Safety Requirements — Part 1: System Safety	Doc (22331) / ISO 14620-1 : 2018 Space systems — Safety requirements — Part 1: System safety (*under development*)	Identical under dual numbering

The technical committee has reviewed the provisions of following International Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO 24113	Space systems — Space debris mitigation requirements

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. The Bureau of Indian Standards shall not be held responsible for identifying any or all such patent rights.

This Standard also makes a reference to the BIS Certification Marking of the Product. Details of which is given in National Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

SCOPE

This document describes minimum requirements for small spacecraft.

Small spacecraft may employ untraditional spacecraft development and management philosophy. These spacecraft projects are usually budget-limited or mass-limited, which makes a single (exclusive) launch unaffordable.

The scope of this document encompasses different categories of small spacecraft — so-called mini-, micro-, nano-, pico- and femto-, as well as CubeSat, spacecraft. Therefore, for the sake of convenience, the term "small spacecraft" is used throughout this document as a generic term.

Regardless of the development philosophy, there are minimum requirements every spacecraft complies with. This document explicitly states those requirements and also refers to existing applicable standards. In that sense, this document serves as the top document to cover the minimum requirements for various stages of small spacecraft system life-cycle — with emphasis on design, launch, deployment, operation, and disposal phases. In this way, (1) safety, (2) harmlessness to co-passengers and launcher, and (3) debris mitigation, are all assured.

This document is addressed to small spacecraft developers, as well as dispenser providers and/or the launch operators.

FOR COMPLETE TEXT OF THE DOCUMENT KINDLY REFER ISO/TS 20991 : 2018 or CONTACT:

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NATIONAL ANNEX A
(*National Foreword*)

A-1 BIS CERTIFICATION MARKING

A-1.1 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark