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**BUREAU OF INDIAN STANDARDS**

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*भारतीय मानक मसौदा*

**अंतरिक्ष प्रणाली — संभाव्य जोखिम आकलन (पीआरए)**

*Draft Indian Standard*

**SPACE SYSTEMS — PROBABILISTIC RISK ASSESSMENT (PRA)**

ICS: 49.140

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**Air and Space Vehicles Sectional Committee,  
TED 14**

**Last date for receipt of comments is  
XX/XX/XXXX**

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NEW DELHI 110002

Air and Space Vehicles Sectional Committee, TED 14

## NATIONAL FOREWORD

*(Formal clauses to be added later)*

This draft Indian Standard which is identical with ISO 11231: 2019 ‘Space Systems — Probabilistic Risk Assessment (PRA)’ issued by International Organization for Standardization (ISO), will be adopted by the Bureau of Indian Standards on the recommendations of Air and Space Vehicles Sectional Committee and approval of the Transport Engineering Division Council.

ISO 11231 was prepared by Technical Committee ISO/TC 20, Aircraft and space vehicles, Subcommittee SC 14, Space systems and operations.

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.

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

<i>International Standard</i>	<i>Title</i>
ISO 17666: 2016	Space systems — Risk management

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.

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 supports and complements the implementation of the risk management process defined in ISO 17666 in situations when the application of a quantitative risk assessment is deemed necessary.

This document defines the principles, process, implementation and requirements for conducting a quantitative risk assessment and explains the details of probabilistic risk assessment (PRA) as applied to safety. While PRA can be applied to project risk management involving cost and schedule, this application is outside the scope of this document.

This document provides the basic requirements and procedures for the use of PRA techniques to assess safety or mission risk and success in space programmes and projects. This document is applicable to all international space projects involving:

- The design of space vehicles for the transportation of personnel in space;
- The design of space and non-terrestrial planetary stations inhabited by human beings;
- The design of space and launch vehicles powered by, or carrying, nuclear materials;
- Other projects as directed by the authorities or clients.

These types of projects generally involve scenarios, chains of events or activities that could result in the death of, or serious injury to, members of the public, astronauts or pilots, or the workforce, or the loss of critical or high-value equipment and property. For other types of projects, it is intended that PRA be performed at the discretion of the project management.

**FOR COMPLETE TEXT OF THE DOCUMENT KINDLY REFFR ISO 11231 : 2019 or CONTACT:**

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