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**Space systems — Space experiments —  
General requirements**

*Systèmes spatiaux — Expériences spatiales — Exigences générales*



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# Contents

Page

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| Foreword .....                                                            | iv |
| Introduction .....                                                        | v  |
| 1 Scope .....                                                             | 1  |
| 2 Normative references .....                                              | 1  |
| 3 Terms and definitions .....                                             | 1  |
| 4 SE organizational requirements .....                                    | 2  |
| 4.1 Phases .....                                                          | 2  |
| 4.2 Participants .....                                                    | 2  |
| 4.3 Simultaneous operations .....                                         | 2  |
| 4.4 General modes .....                                                   | 2  |
| 5 Planning phase .....                                                    | 2  |
| 5.1 General .....                                                         | 2  |
| 5.2 Proposal .....                                                        | 3  |
| 5.3 Input data requirements .....                                         | 3  |
| 5.4 Technical assessment .....                                            | 3  |
| 6 Development of an SE .....                                              | 5  |
| 6.1 Objectives and work stages .....                                      | 5  |
| 6.2 Development of the programme and technical support .....              | 6  |
| 6.3 SE programme plan .....                                               | 6  |
| 6.4 SE procedure .....                                                    | 8  |
| 6.5 Equipment development .....                                           | 8  |
| 6.6 Integration of the SE into the flight programme .....                 | 8  |
| 7 Conduct of an SE .....                                                  | 9  |
| 7.1 General .....                                                         | 9  |
| 7.2 Progress report .....                                                 | 9  |
| 7.3 Summary report .....                                                  | 9  |
| Annex A (informative) Contents of a proposal for a space experiment ..... | 10 |

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 14619 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

## Introduction

This International Standard establishes the requirements for preparation of space experiments, execution of the experiment and processing of the collected data. Space systems have been used for solving various practical problems of humanity. The possibilities for expanding the use of these systems are far from being exhausted. At the same time, special studies are needed to identify these opportunities, and the results of these studies must be verified by space experiments. The space environment provides ideal conditions for certain scientific studies.

Expenditures for the experiments should be minimal for the initiator of the proposed practical applications of space systems. It often happens that an experiment is conducted on board a space system that is available and has already been in operation (i.e. the experiment becomes part of the operation of the space system itself). The space experiment is carried out using both hardware and software subsystems. This poses the problem of accomplishing two interrelated objectives:

- to ensure successful execution and performance of the experiment;
- to avoid interfering with an operational space system so as not to impair its functioning.

One method of solving this problem is to standardize the procedure for integrating (introducing) space experiments into the operational processes of the carrier space system. This International Standard specifies the procedures for the preparation on the ground for, the execution of, and the processing of the experimental results from space experiments carried out using a space system that is already operational.

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# Space systems — Space experiments — General requirements

## 1 Scope

This International Standard specifies the procedure for preparing and carrying out space experiments and processing the resulting data, and applies to both manned and unmanned space systems, excluding exploratory rockets with associated probes. It may be tailored to the specific needs of different kinds of experiments and their carrier space vehicles.

## 2 Normative references

The following referenced documents are indispensable for the application 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 14300-1, *Space systems — Programme management — Part 1: Structuring of a programme*

ISO 14300-2, *Space systems — Programme management — Part 2: Product assurance*

ISO 14620-1, *Space systems — Safety requirements — Part 1: System safety*

ISO 14620-2, *Space systems — Safety requirements — Part 2: Launch site operations*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **space experiment**

##### **SE**

system of operations, actions, and/or observations performed in space with the objective of obtaining information on the subject under study

### 3.2

#### **space experiment system**

set of equipment designed for the performance of the space experiment and specifically integrated into the space system and support facilities

### 3.3

#### **space experiment system designer**

person responsible for the development, delivery, and performance of the SE system

### 3.4

#### **space experiment project manager**

person responsible for overall management of the space experiment programme

### 3.5

#### **space experiment operations manager**

person responsible for managing operations through all stages of the space experiment and for organizing the operations during the execution of the space experiment

### 3.6

#### **space experiment scientific observation**

method of collecting information and data during the functioning of space experiment instrumentation