TECHNICAL REPORT

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# Space systems — Space launch complexes, integration sites and other facilities — General testing guidelines

*Systèmes spatiaux — Complexes de lancement spatial, sites d'intégration et autres installations — Lignes directrices pour les essais*

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# Contents

Page

**Foreword** ..... **iv**
**Introduction** ..... **v**
**1 Scope** ..... **1**
**2 Normative references** ..... **1**
**3 Terms and definitions** ..... **1**
**4 General characteristics** ..... **2**
**5 Testing and acceptance phases and goals for launch pad and integration site** ..... **5**
5.1 Testing phases ..... 5
5.2 Acceptance phases ..... 5
5.3 Facility testing and acceptance ..... 5
5.4 Main system factory testing ..... 5
5.5 Main system field testing ..... 6
5.6 Launch pad and integration site end-to-end testing ..... 6
**6 General characteristics for testing and acceptance** ..... **7**
6.1 General considerations ..... 7
6.2 Test and acceptance procedure ..... 7
6.3 Main system factory testing ..... 8
6.4 Main system field testing ..... 10
6.5 Acceptance of the main system and facility after field test ..... 13
6.6 Launch pad and integration site end-to-end testing ..... 15
6.7 Launch pad or integration site acceptance after end-to-end testing ..... 18
**7 Main system and facility modifications** ..... **20**
**Bibliography** ..... **23**

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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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

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

This second edition cancels and replaces the first edition (ISO/TR 17400:2003), which has been technically revised.

The main changes compared to the previous edition are as follows:

— in the document all recommendations (“should”) were replaced by other verbs (“is”, “are”), all permissions (“may”) were replaced by “can”;

— the term “main system” was updated;

— 3.1, 5.5, 6.3.3, 6.6.5, 6.6.8 were specified according to comments and proposals of the subcommittee experts.

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.

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# Introduction

The purpose of this document is describing the uniform practices for organizing the tests and promoting verification of all parameters and characteristics of various launch complexes. It is necessary to define the functions and to coordinate the activities of all the test participants, namely, the developers of complexes and systems, the manufacturers of systems and equipment, the organizers of tests, the customer, and others.

This document describes test activities and lists who will be responsible for the testing at launch pad and integration sites for launch vehicle and spacecraft.

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# Space systems — Space launch complexes, integration sites and other facilities — General testing guidelines

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## 1 Scope

This document is applicable to new projects and programs and to redesigned and upgraded launch pad and integration sites. This document describes the testing phases, goals, and general aspects for launch space complexes and complexes for assembly and tests of a vehicle and spacecraft and the associated equipment that, after successful testing, will be ready for launch vehicle processing and launch. This document can be applied to the creation of international launch pad and integration sites. At creation of new launching space complexes and complexes for assembly and tests of a vehicle and spacecraft (or at their modernization) within the framework of one country, the rules established by that country can be applied.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 9000, *Quality management systems — Fundamentals and vocabulary*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

**3.1**
**integration site**
equipment and facility designed for launch vehicle storage, assembly and testing, and launch vehicle (space rocket) and spacecraft/payload(s) integration, post-integration testing, and launch preparation, maintenance, servicing and preparation for transportation to the *launch pad* (3.3)

**3.2**
**international launch pad and integration sites**
land, ground/airborne/marine facilities, equipment, utilities, and infrastructure, created with the cooperation of several countries or the entities that belong to more than one country, necessary for the launch operations of launch vehicle and payload and for in-flight operations during the launch phase

**3.3**
**launch pad**
equipment and facility designed to provide for the pre-launch and launch operations of spacecraft

**3.4**
**end-to-end testing**
*launch pad* (3.3) or *integration site* (3.1) development phase including the testing and evaluation of its overall readiness to support a launch vehicle and a spacecraft

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