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Space systems — Programme management —

Part 2: Product assurance

Systèmes spatiaux — Management de programme —

Partie 2: Assurance produit

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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 document 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).

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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.

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

This third edition cancels and replaces the second edition (ISO 14300-2:2011), which has been technically revised.

The main changes are as follows:

— update of normative references, related references in the text and related terms and definitions;

— update of the Bibliography;

A list of all parts in the ISO 14300 series can be found on the ISO website.

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

This document is intended to be applied for the product assurance in space programmes/projects and applications.

Requirements in this document are defined in terms of what is intended to be accomplished, rather than in terms of how to organize and perform the necessary work. This allows existing organizational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

The formulation of this document considers the existing ISO 9000 family of standards and the content of ISO 14300-1.

NOTE The term "programme" is understood as a group of several projects. Both “programme” and “project” can be used in the same context throughout this document. They are defined in ISO 14300-1.

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Space systems — Programme management —

Part 2: Product assurance

1 Scope

This document defines the product assurance (PA) policy, objectives, principles, and requirements for the establishment and implementation of PA programmes for space programmes covering mission definition, design, development, production and operations of space products, including disposal.

The PA discipline covers: PA management, quality assurance, safety assurance, dependability (reliability, availability and maintainability), assurance of software and hardware products, as well as parts (including electrical, electromechanical and electronic components, and mechanical parts), materials and processes assurance.

This document defines their respective objectives, policies, and principles to achieve the stated overall PA objectives throughout the complete life cycle of the products.

This document applies to space products.

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*

ISO 10794, *Space systems — Programme management — Material, mechanical parts and processes*

ISO 10795, *Space systems — Programme management and quality — Vocabulary*

ISO 14300-1, *Space systems — Programme management — Part 1: Structuring of a project*

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

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

ISO 14620-3, *Space systems — Safety requirements — Part 3: Flight safety systems*

ISO 14621-1, *Space systems — Electrical, electronic and electromechanical (EEE) parts — Part 1: Parts management*

ISO 14621-2, *Space systems — Electrical, electronic and electromechanical (EEE) parts — Part 2: Control programme requirements*

ISO 17666, *Space systems — Risk management*

ISO 18238, *Space systems — Closed loop problem solving management*

ISO 22893, *Space systems — Software product assurance requirements*

ISO 23460, *Space projects — Programme management — Dependability assurance requirements*

ISO 23461, *Space systems — Programme management — Non-conformance control system*

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ISO 27025, *Space systems — Programme management — Quality assurance requirements*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000, ISO 10795, ISO 14300-1 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/

3.1.1
product assurance
discipline devoted to the study, planning and implementation of activities intended to ensure that the design, controls, methods and techniques in a programme result in a satisfactory level of quality in a product

3.2 Abbreviated terms

EEE electrical, electronic, electromechanical

PA product assurance

4 Objectives, policy and principles — General

4.1 Objectives

The prime objective of PA is to ensure that the space products accomplish their defined mission objectives and, more specifically, that they are safe, available and reliable.

An additional objective is to achieve more cost-effective space programmes by coordinating the development and implementation of appropriate PA methods and standards.

In support of programme risk management, PA ensures an adequate identification, appraisal, prevention and control of technical and programmatic risks within programme constraints.

4.2 Policy and principles

In order to meet these objectives, a PA policy is defined in this document, which requires a PA programme derived from a system based on preventive approach and includes:

a) protection of human life, space products, investment and environment;

b) definition and maintenance of a programme PA function, with appropriate autonomy with respect to other lines and programme level organizations;

c) integrated application of the PA disciplines and coordination with the associated functions of programme management and programme engineering;

d) tailoring of the PA requirements to the specific programme needs;

e) assignment of PA requirements and their control commensurate with the function criticality within the system;

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