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Systèmes spatiaux — Management de programme — Matériaux, éléments mécaniques et procédés

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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).

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For an explanation on 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 the following URL: 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 edition of ISO 10794:2018 cancels and replaces the edition ISO 10794:2011, which has been technically revised and includes the following changes:

— bacterial and fungus growth has been added;

— Hydrogen embrittlement has been added; and

— manned environment has been added.

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Introduction

This document is intended for application by the management in space programmes and applications.

The formation of this document takes into account the existing International Standards prepared by ISO/TC 176, notably ISO 9000, ISO 9001 and ISO 9004, and the content of ISO 14300-1 and ISO 14300-2.

This document specifies the requirements and statements applicable to materials, mechanical parts and processes to satisfy the mission performance requirements.

This document also specifies the documentation requirements and the procedures relevant to obtaining approval for the use of materials, mechanical parts and processes in the fabrication of space systems and associated equipment.

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Space systems — Programme management — Material, mechanical parts and processes

1 Scope

This document defines the programme management requirements for material, mechanical parts and processes for projects covering mission definition, design, development, production and operations of space systems, including disposal.

This document covers the following:

— management, including organization, reviews, acceptance status and documentation control;

— selection criteria and rules;

— evaluation, validation and qualification, or verification testing;

— procurement and receiving inspection; and

— utilization criteria and rules.

This document applies to all space deliverable products and all programme phases.

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

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

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

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 terminological databases for use in standardization at the following addresses:

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

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

3.1
critical material
material that is new to an individual company or non-validated for the particular application and environment, or that has caused problems during previous use that remain unresolved

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3.2
critical mechanical part
mechanical part that requires specific attention or control due to fracture mechanics aspects and limited-life aspects, or with which the contractor has no previous experience of using the mechanical part in the specific application and environment or are new or non-qualified, or that has caused problems during previous use that remain unsolved

3.3
critical process
process new to an individual company or non-verified for the application in question or has caused problems during previous use that remain unresolved

3.4
mechanical part
piece of hardware that is not electrical, electronic or electromechanical and that performs a simple elementary function or part of a function in such a way that it can be evaluated as a whole against expected requirements of performance and cannot be disassembled without destroying this capability

3.5
process
set of interrelated or interacting activities that transforms inputs into outputs

Note 1 to entry: See ISO 9000.

Note 2 to entry: In this document, "process" means the manufacturing process of product, i.e. set of interrelated resources and activities which transforms a material or semi-finished product into a semi-finished product or final product.

3.6
request for approval
document by which the supplier or user asks the competent body for permission to use a critical material, part or process

3.7
special process
process where quality cannot be completely ensured by inspection of the end article only

4 Abbreviated terms

The following abbreviated terms are defined and used within this document.

AA Aluminium Association

AOCS attitude and orbit control system

ATOX atomic oxygen

AISI American Iron and Steel Institute

CDA Copper Development Association

CDR critical design review

CFRP carbon fibre reinforced polymer

CI configuration item number (as per project definition)

DML declared materials list

DMPL declared mechanical parts list

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