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Space sustainability - Planetary protection

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD
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English version

Space sustainability - Planetary protection

Durabilité des activités spatiales - Protection planétaire

Nachhaltigkeit im Weltraum - Planetarer Schutz

This European Standard was approved by CEN on 25 November 2019.

CEN and CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN and CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Foreword

This document (EN 16604-20:2020) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN (Germany).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document (EN 16604-20:2020) originates from ECSS-U-ST-20C.

This document has been developed to cover specifically space systems and will therefore have precedence over any EN covering the same scope but with a wider domain of applicability (e.g. : aerospace).

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Sustainability in the context of space activities is a concept that becomes more relevant. Planetary protection regulations have applied this concept at the international scale already for over half a century.

The legal basis for planetary protection was established in Article IX of the United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (Outer Space Treaty).

The Committee on Space Research (COSPAR) provides a forum for international consultation and has formulated a planetary protection policy with associated requirements as an international standard to guide compliance with Article IX of the Outer Space Treaty.

COSPAR's planetary protection policy and associated requirements are based on two rationales:

1. *The Earth must be protected from the potential hazard posed by extraterrestrial matter carried by a spacecraft returning from an interplanetary mission (backward planetary protection).*
2. *The conduct of scientific investigations of possible extraterrestrial life forms, precursors, and remnants must not be jeopardized (forward planetary protection).*

This standard describes the planetary protection requirements for spaceflight missions based on the COSPAR planetary protection policy and requirements. The content of this document has been coordinated with the already existing ESA and NASA standards to ensure that requirements, documentation and reviews cover the needs and obligations of international partners for joint missions or contributions to a third party mission.

1 Scope

This standard contains planetary protection requirements, including:

- Planetary protection management requirements;
- Technical planetary protection requirements for robotic and human missions (forward and backward contamination);
- Planetary protection requirements related to procedures;
- Document Requirements Descriptions (DRD) and their relation to the respective reviews.

This standard may be tailored for the specific characteristic and constraints of a space project in conformance with ECSS-S-ST-00.

2
Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this ECSS Standard. For dated references, subsequent amendments to, or revision of any of these publications do not apply. However, parties to agreements based on this ECSS Standard are encouraged to investigate the possibility of applying the more recent editions of the normative documents indicated below. For undated references, the latest edition of the publication referred to applies.

EN reference	Reference in text	Title
EN 16601-00-01	ECSS-S-ST-00-01	ECSS System – Glossary of terms
EN 16602-10-09	ECSS-Q-ST-10-09	Space product assurance – Nonconformance control system
EN 16602-40	ECSS-Q-ST-40	Space product assurance - Safety
EN 16602-70-01	ECSS-Q-ST-70-01	Space product assurance – Cleanliness and contamination control
EN 16602-70-53	ECSS-Q-ST-70-53	Space product assurance – Materials and hardware compatibility tests for sterilization processes
EN 16602-70-55	ECSS-Q-ST-70-55	Space product assurance – Microbial examination of flight hardware and cleanrooms
EN 16602-70-56	ECSS-Q-ST-70-56	Space product assurance – Vapour phase bioburden reduction of flight hardware
EN 16602-70-57	ECSS-Q-ST-70-57	Space product assurance – Dry heat bioburden reduction of flight hardware
EN 16602-70-58	ECSS-Q-ST-70-58	Space product assurance – Bioburden control of cleanrooms
	IADC-WD-00-03	Interagency Debris Committee Protection Manual