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Space engineering - Space segment operability

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

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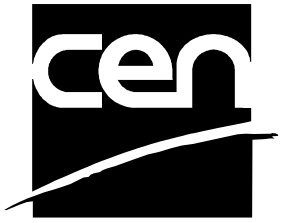
English version

Space engineering - Space segment operability

Ingénierie spatiale - Opérabilité du segment spatial

Raumfahrttechnik - Raumsegment-Bedienbarkeit

This European Standard was approved by CEN on 24 November 2014.



CEN-CENELEC Management Centre:
Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 16603-70-11:2015) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-70-11:2015) originates from ECSS-E-ST-70-11C.

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of an identical text or by endorsement, at the latest by July 2015, and conflicting national standards shall be withdrawn at the latest by July 2015.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document has been developed to cover specifically space systems and has therefore 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 organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The operability of the space segment has an impact on total life cycle cost inasmuch as increased operability can increase development costs, but certainly decreases operations and maintenance costs. Therefore, the adoption of specific operability goals for a given mission is decided by careful balancing of costs, risks, and schedules for both the development and the operations and maintenance phases.

The objective of this standard is to define operability requirements that:

- ensure that the space segment can be operated in a safe and cost-effective manner;
- facilitate the tasks of preparation for, and execution and evaluation of, space segment check-out and mission operations activities;
- facilitate the tasks of space segment suppliers when preparing a proposal in response to a request for proposal (RFP).

1
Scope

This Standard contains provisions for the design of on-board functions for unmanned space segments in order to ensure that the space segment can be operated in-flight in any nominal or predefined contingency situation.

The requirements in this Standard are grouped in two clauses, containing general operability requirements and detailed operability requirements, respectively. The general operability requirements can be applied to all missions, whilst the detailed operability requirements are only applicable if the corresponding on-board function is implemented.

The operability of the space segment to meet mission-specific requirements is outside the scope of this standard.

To support the users of this Standard in tailoring the requirements to the needs of their particular mission, Annex B contains a table that indicates, for each requirement, the potential impact of its omission.

This standard may be tailored for the specific characteristics 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 revisions 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 most 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 16603-50-03	ECSS-E-ST-50-03	Space engineering – Space data links – Telemetry transfer frame protocol
EN 16603-50-04	ECSS-E-ST-50-04	Space engineering – Space data links – Telecommand protocols, synchronization and channel coding
EN 16603-70-41	ECSS-E-ST-70-41	Space engineering – Telemetry and telecommand packet utilization