Space engineering - Communications

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16603-50:2022 sisaldab Euroopa standardi EN 16603-50:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 16603-50:2022 consists of the English text of the European standard EN 16603-50:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.07.2022.	Date of Availability of the European standard is 06.07.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD **EN 16603-50**

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Supersedes EN 16603-50:2014

English version

Space engineering - Communications

Ingénierie spatiale - Communications

Raumfahrttechnik - Kommunikation

This European Standard was approved by CEN on 13 March 2022.

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.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of 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 United Kingdom.

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European Foreword

This document (EN 16603-50:2022) has been prepared by Technical Committee CEN-CENELEC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-50:2022) originates from ECSS-E-ST-50C Rev.1 DIR1.

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 January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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 supersedes EN 16603-50:2014.

The main changes with respect to EN 16603-50:2014 are:

- Implementation of Change Requests
- Update w.r.t. of replacment of EN 16603-50-01:2014, EN 16603-50-03:2014 and EN 16603-50-04:2014 by EN 16603-50-21 to EN 16603-50-26
- Update of Terms, definitions and abbreviated terms in clause 3
- Term “space network” replaced by “on-board network”
- Update of Purpose and objective of Annex F “Communication system details design document (CSDDD) – DRD”
- Update of Purpose and objective of Annex F “Communication system profile document (CSPD) – DRD”
- Update of Annex I “Documentation summary”

This document has been prepared under a standardization request 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This standard specifies requirements for the development of the end-to-end data communication system for spacecraft. Implementation aspects are defined in ECSS-E-ST-50 Level 3 standards, ECSS Adoption Notices, and CCSDS standards.

The complete set of standards to define a complete communication link is project dependent and cannot be specified here. ECSS-E-HB-50 provides some guidance on this aspect, and gives some practical examples.

1
Scope

This Standard specifies the requirements for the development of the end-to-end data communications system for spacecraft.

Specifically, this standard specifies:

- The terminology to be used for space communication systems engineering.
- The activities to be performed as part of the space communication system engineering process, in accordance with the ECSS-E-ST-10 standard.
- Specific requirements on space communication systems in respect of functionality and performance.

The communications links covered by this Standard are the space-ground (i.e. space-to-ground and ground-to-space) and space-to-space links used during spacecraft operations, and the communications links to the spacecraft used during the assembly, integration and test, and operational phases.

Spacecraft end-to-end communication systems comprise components in three distinct domains, namely the ground network, the space link, and the space network. This Standard covers the components of the space link and space network in detail. However, this Standard only covers those aspects of the ground network that are necessary for the provision of the end-to-end communication services.

NOTE Other aspects of the ground network are covered in ECSS-E-ST-70.

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

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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