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Space engineering - Communications

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

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Space engineering - Communications

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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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EN 16603-50:2022 (E)

Table of contents

European Foreword	6
Introduction	7
1 Scope	8
2 Normative references	9
3 Terms, definitions and abbreviated terms	10
3.1 Terms defined in other standards	10
3.2 Terms specific to the present standard	10
3.3 Abbreviated terms.....	13
4 Space communications engineering principles	15
4.1 Context	15
4.2 Overall space communication	16
4.3 Space communication domains	21
4.3.1 Overview.....	21
4.3.2 Space network	21
4.3.3 Space link	22
4.3.4 Ground network	23
4.4 Communications engineering process	24
4.4.1 Introduction	24
4.4.2 Communication engineering activities	24
4.4.3 Process milestones	26
4.5 Relationship with other standards	26
4.6 <<deleted>>	27
4.7 Spacecraft control considerations	27
5 Requirements	28
5.1 Introduction.....	28
5.2 Space communication system engineering process.....	28
5.2.1 Requirements engineering	28
5.2.2 Analysis	29
5.2.3 Design and configuration.....	30

5.2.4	Implementation	31
5.2.5	Verification	32
5.2.6	Operations	33
5.3	Space communication system	33
5.3.1	Bandwidth allocation	33
5.3.2	Congestion.....	34
5.3.3	Cessation of emission	34
5.4	Telecommanding	34
5.4.1	Commandability at all attitudes and rates.....	34
5.4.2	Telecommand delivery service	34
5.4.3	Erroneous telecommand rejection.....	34
5.4.4	Essential telecommand distribution	34
5.4.5	Command authentication	35
5.4.6	Command encryption	35
5.4.7	Commanding-in-the-blind.....	35
5.4.8	Telecommand acknowledgement.....	35
5.4.9	Hot redundancy of on-board telecommand chains	35
5.4.10	Telecommand destination identification.....	36
5.5	Telemetry	36
5.5.1	Telemetry at all attitudes and rates	36
5.5.2	Essential telemetry acquisition	36
5.5.3	Telemetry source identification.....	37
5.5.4	Telemetry-in-the-blind	37
5.5.5	Telemetry data time stamping	37
5.5.6	Simultaneous support of differing source rates.....	37
5.5.7	Telemetry authentication and encryption.....	37
5.6	Space link.....	38
5.6.1	Introduction	38
5.6.2	Directionality	38
5.6.3	Short contact periods	38
5.6.4	Interoperability	39
5.6.5	Orbits	39
5.6.6	Noise sources	39
5.6.7	Mission phases	39
5.6.8	Link setup times	39
5.6.9	Mixed isochronous and asynchronous traffic.....	39
5.6.10	Mixed housekeeping and payload data	40

EN 16603-50:2022 (E)

5.6.11	Space link performance	40
5.6.12	Space link frequency	41
5.6.13	Space link protocol	42
5.6.14	Space link service	43
5.7	Space network	45
5.7.1	On-board network	45
5.7.2	On-board network services	46
5.7.3	Inter-spacecraft network	47
5.7.4	Inter-spacecraft network services	48
5.8	Ground network	48
5.8.1	Overview	48
5.8.2	Data labelling	49
5.8.3	Security	49
5.8.4	Error rates	49
5.8.5	Hot redundant operation of ground network nodes	49
5.8.6	Ground network availability	49
Annex A (normative) Communication system requirements document (CSR) - DRD		50
Annex B (normative) Communication system baseline definition (CSBD) - DRD		54
Annex C (normative) Communication system analysis document (CSAD) - DRD		59
Annex D (normative) Communication system verification plan (CSVP) - DRD		62
Annex E (normative) Communication system architectural design document (CSADD) - DRD		65
Annex F (normative) Communication system detailed design document (CSDDD) - DRD		68
Annex G (normative) Communication system profile document (CSPD) - DRD		70
Annex H (normative) Communication system operations manual (CSOM) - DRD		72
Annex I (informative) Documentation summary		75
Bibliography		78

Figures

Figure 4-1: Example configuration of a space communication system.....	16
Figure 4-2: CCSDS and Internet space link protocols.....	20

Tables

Table I-1 : ECSS-E-ST-50 DRD list	76
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EN 16603-50:2022 (E)

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.

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN