

Space engineering - Adoption Notice of CCSDS
231.0-B-3, TC Synchronization and Channel Coding



EESTI STANDARDI EESSÕNA

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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English version

Space engineering - Adoption Notice of CCSDS 231.0-B-3,
TC Synchronization and Channel Coding

Ingénierie spatiale - Notice d'adoption de la CCSDS
231.0-B-3, TC Synchronization and Channel Coding

Raumfahrttechnik - Adaption CCSDS 231.0-B-3,
Telekommando-Synchronisation und -Kanalkodierung

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CEN-CENELEC Management Centre:
Rue de la Science 23, B-1040 Brussels

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European Foreword

This document (EN 16603-50-24:2022) has been prepared by Technical Committee CEN-CENELEC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16603-50-24:2022) originates from ECSS-E-AS-50-24C.

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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.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 shall not be held responsible for identifying any or all such patent rights.

EN 16603-50-24, EN 16603-50-25 and EN 16603-50-26 together supersede EN 16603-50-04:2014.

The main changes with respect to EN 16603-50-04:2014 are listed below:

- Replacement of document by three Adoption Notices.

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.

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Scope

This document identifies the clauses and requirements modified with respect to the standard CCSDS 231.0-B-3, *TC Synchronization and Channel Coding*, Issue 3, September 2017 for application in ECSS.

2**Context information**

In the standard CCSDS 231.0-B-3, *TC Synchronization and Channel Coding*, CCSDS specifies synchronization and channel coding schemes, and the Physical Layer Operations Procedures, for use with EN 16603-50-25 (ECSS-E-AS-50-25) *TC Space Data Link Protocol*.

This Adoption Notice adopts and applies CCSDS 231.0-B-3 with a minimum set of modifications, identified in the present document, to allow for reference and for a consistent integration in the ECSS system of standards.

CCSDS 231.0-B-3 is similar to clauses 8 (Synchronization and coding sublayer) and 9 (Physical layer) of the EN 16603-50-04:2014 (ECSS-E-ST-50-04C) *Space data links – Telecommand protocols synchronization and channel coding*.

EN 16603-50-04:2014 (ECSS-E-ST-50-04) that is superseded by the following three Adoption Notices: EN 16603-50-24 (ECSS-E-ST-50-24), EN 16603-50-25 (ECSS-E-AS-50-25) and EN 16603-50-26 (ECSS-E-AS-50-26).

Differences between these standards that are not covered by the normative modifications in clause 4 are described in the informative Annex A.

Overview of superseded EN 16603-50-xx Standards

Superseded EN	New EN	Based on CCSDS
EN 16603-50-01:2014	EN 16603-50-21	CCSDS 131.0-B-3 (Sept. 2017)
EN 16603-50-03:2014	EN 16603-50-22	CCSDS 132.0-B-2 (Sept. 2015)
	EN 16603-50-23	CCSDS 732.0-B-3 (Sept. 2015)
EN 16603-50-04:2014	EN 16603-50-24	CCSDS 231.0-B-3 (Sept. 2017)
	EN 16603-50-25	CCSDS 232.0-B-3 (Sept. 2015)
	EN 16603-50-26	CCSDS 232.1-B-2 (Sept. 2010)

3**Abbreviated terms**

Abbreviation	Meaning
BCH	Bose-Chaudhuri-Hocquenghem
CLTU	Communications Link Transmission Unit
LDPC	Low-density Parity-check
PLOP	Physical Layer Operations Procedure
SEC	Single Error Correction