



SLOVENSKI STANDARD SIST EN 16603-50-22:2022

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Nadomešča:

SIST EN 16603-50-03:2015

Vesoljska tehnika - Sprejem obvestila CCSDS 132.0-B-2, protokol vesoljske podatkovne povezave TM

Space engineering - Adoption Notice of CCSDS 132.0-B-2, TM Space Data Link Protocol

Raumfahrttechnik - Adaption CCSDS 132.0-B-2, Telemetrie-Weltraum-Datenübertragungsprotokoll

Ingénierie spatiale - Notice d'adoption de la CCSDS 132.0-B-2, TM Space Data Link Protocol

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ICS:

49.140 Vesoljski sistemi in operacije Space systems and operations

SIST EN 16603-50-22:2022

en,fr,de

EUROPEAN STANDARD

EN 16603-50-22

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ICS 49.140

Supersedes EN 16603-50-03:2014

English version

Space engineering - Adoption Notice of CCSDS 132.0-B-2, TM Space Data Link Protocol

Ingénierie spatiale - Notice d'adoption de la CCSDS
132.0-B-2, TM Space Data Link Protocol

Raumfahrttechnik - Adaption CCSDS 132.0-B-2,
Telemetrie-Weltraum-Datenübertragungsprotokoll

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

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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 16603-50-22:2022) has been prepared by Technical Committee CEN-CENELEC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16603-50-22:2022) originates from ECSS-E-AS-50-22C.

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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.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 16603-50-22 and EN 16603-50-23 will together supersede EN 16603-50-03:2014.

The main changes with respect to EN 16603-50-03:2014 are listed below:

- Replacement of document by two 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.

1 Scope

This document identifies the clauses and requirements modified with respect to the standard CCSDS 132.0-B-2, *TM Space Data Link Protocol*, Issue 2, September 2015, for application in ECSS.

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Context information

In the standard CCSDS 132.0-B-2, *TM Space Data Link Protocol*, CCSDS specifies a data link layer protocol for the efficient transfer of space application data of various types and characteristics over space links.

This Adoption Notice adopts and applies CCSDS 132.0-B-2 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.

The TM Transfer Frame specified in CCSDS 132.0-B-2 is similar to the TM Transfer Frame specified in the EN 16603-50-03:2014 (ECSS-E-ST-50-03), that is superseded by the following two Adoption Notices: EN 16603-50-22 (ECSS-E-AS-50-22) and EN 16603-50-23 (ECSS-E-AS-50-23).

Differences between these two 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) |

Abbreviated terms

| | |
|------|---------------------------|
| AOS | Advanced Orbiting Systems |
| SDLS | Space Data Link Security |

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Application requirements

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- a. CCSDS 132.0-B-2, TM Space Data Link Protocol, Issue 2, September 2015 shall apply with the following modifications listed in Table 4-1.

Table 4-1: Applicability table for CCSDS 132.0-B-2

| Clause or requirement number | Applicability | Applicable text (the new/added text is underlined) | Comments | Text as in the original document (deleted text with strikethrough) |
|------------------------------|-----------------|---|---|---|
| 4.1.3.1.7 | New requirement | The Transfer Frame Secondary Header may be used to provide an extended virtual channel frame count as specified in 4.1.3.4. | New requirement added: the extended virtual channel frame count added | |
| 4.1.3.4 | New section | Extended virtual channel frame count | New section added | |
| 4.1.3.4.1 | New section | General The following requirements apply if the Transfer Frame Secondary Header is used to provide an extended virtual channel frame count, see 4.1.3.1.7. | | |
| 4.1.3.4.2 | New section | Using the extended virtual channel frame count | | |

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| Clause or requirement number | Applicability | Applicable text (the new/added text is underlined) | Comments | Text as in the original document (deleted text with strikethrough) |
|------------------------------|-----------------|--|----------|---|
| 4.1.3.4.2.1 | New requirement | <p>The length of the Transfer Frame Secondary Header shall be 32 bits.</p> <p>NOTE The Transfer Frame Secondary Header has a length of 4 octets, so the Transfer Frame Secondary Header Length contains the value 3.</p> | | |
| 4.1.3.4.2.2 | New requirement | <p>The Transfer Frame Secondary Header Data Field shall contain the 24-bit extension to the virtual channel frame count.</p> | | |
| 4.1.3.4.2.3 | New requirement | <p>The extension to the virtual channel frame count shall be a binary count of the roll-overs of the 8-bit value contained in the Virtual Channel Frame Count in the Transfer Frame Primary Header.</p> <p>NOTE This provides a 32-bit count, with the most significant 24 bits in the Transfer Frame Secondary Header Data Field and the least significant 8 bits in the Virtual Channel Frame Count.</p> | | |