



SLOVENSKI STANDARD
SIST EN 16603-50-04:2015
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Vesoljska tehnika - Vesoljske podatkovne povezave - Protokoli za daljinsko vodenje, sinhronizacijo in kodiranje kanalov

Space engineering - Space data links - Telecommand protocols, synchronization and channel coding

Raumfahrttechnik - Telekommando-Protokolle, -synchronisation und -kanalkodierung

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Ingénierie spatiale - Liaisons de données spatiales - Protocoles, synchronisation et codage canal des liaisons télécommande

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ICS:

33.040.40	Podatkovna komunikacijska omrežja	Data communication networks
49.090	Oprema in instrumenti v zračnih in vesoljskih plovilih	On-board equipment and instruments

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Space engineering - Space data links - Telecommand protocols, synchronization and channel coding

Ingénierie spatiale - Liaisons de données spatiales -
Protocoles, synchronisation et codage canal des liaisons
télécommande

Raumfahrttechnik - Telekommando-Protokolle, -
synchronisation und -kanalkodierung

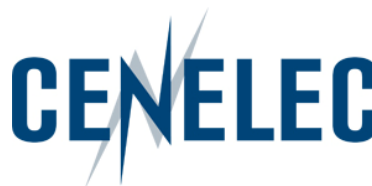
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Table of contents

Foreword	10
1 Scope	11
2 Normative references	12
3 Terms, definitions and abbreviated terms	13
3.1 Terms from other standards.....	13
3.2 Terms specific to the present standard	13
3.3 Abbreviated terms.....	14
3.4 Conventions.....	15
3.4.1 Bit 0, bit 1, bit N-1.....	15
3.4.2 Most significant bit.....	15
3.4.3 Use of capitals for the names of data structures and fields.....	15
4 Overview	16
4.1 Presentation	16
4.2 Protocol profiles.....	16
4.3 Segmentation sublayer	17
4.4 Transfer sublayer.....	18
4.5 Synchronization and channel coding sublayer	18
4.6 Physical layer	18
4.7 Virtual channels	19
5 Segmentation sublayer	20
5.1 Overview	20
5.2 TC Segment	21
5.2.1 General.....	21
5.2.2 Segment Header.....	22
5.2.3 Segment Data Field	23
5.3 Transfer notification	23
5.3.1 Overview.....	23
5.3.2 Requirements.....	24
5.4 Blocking of packets.....	25

5.4.1	Overview	25
5.4.2	Virtual channels where TC Segments are used.....	25
5.4.3	Virtual channels where TC Segments are not used.....	26
5.4.4	Packet properties	26
5.4.5	Blocking function	27
5.4.6	Deblocking function.....	27
5.5	Segmentation	27
5.5.1	Overview.....	27
5.5.2	Segmenting function	28
5.5.3	Reassembly function.....	28
5.5.4	Packet assembly controller	29
5.6	MAP multiplexing	32
6	Transfer sublayer	33
6.1	Overview	33
6.1.1	Data structures in the transfer sublayer.....	33
6.1.2	Procedures in the transfer sublayer.....	33
6.2	TC Transfer Frame definition.....	35
6.2.1	General.....	35
6.2.2	Transfer Frame Primary Header.....	36
6.2.3	Transfer Frame Data Field.....	40
6.2.4	Frame Error Control Field.....	41
6.3	CLCW definition.....	43
6.3.1	General.....	43
6.3.2	Control Word Type.....	45
6.3.3	CLCW Version Number.....	45
6.3.4	Status Field.....	45
6.3.5	COP in Effect	45
6.3.6	Virtual Channel Identification.....	45
6.3.7	Reserved Spare	46
6.3.8	No RF Available Flag	46
6.3.9	No Bit Lock Flag.....	47
6.3.10	Lockout Flag	47
6.3.11	Wait Flag.....	48
6.3.12	Retransmit Flag.....	48
6.3.13	FARM-B Counter	48
6.3.14	Reserved Spare	48
6.3.15	Report Value	49

EN 16603-50-04:2014 (E)

6.4	Frame header procedure	49
6.5	Frame error control procedure at the sending end	49
6.6	Frame delimiting and fill removal procedure.....	49
6.6.1	Overview.....	49
6.6.2	Actions	50
6.7	Frame error control procedure at the receiving end	50
6.8	Frame header validation procedure	50
6.8.1	Overview.....	50
6.8.2	Actions	51
6.9	Virtual channel multiplexing	51
6.9.1	Overview.....	51
6.9.2	Multiplexing mechanism.....	52
6.9.3	Demultiplexing	52
7	COP-1.....	53
7.1	Overview	53
7.1.1	Scope.....	53
7.1.2	Interfaces.....	53
7.1.3	Retransmission protocol.....	53
7.1.4	Frames.....	54
7.1.5	Services.....	54
7.1.6	Protocol machine.....	56
7.2	Internal variables	56
7.2.1	Overview.....	56
7.2.2	FOP-1 Variables	57
7.2.3	FARM-1 variables	64
7.3	Features of COP-1 interfaces	69
7.3.1	Overview.....	69
7.3.2	Parameters	70
7.4	Upper interface of COP-1 at the sending end	70
7.4.1	Overview.....	70
7.4.2	Sequence-controlled service management interface	71
7.4.3	Sequence-controlled service data transfer interface.....	77
7.4.4	Expedited service data transfer interface	80
7.5	Upper interface of COP-1 at the receiving end.....	82
7.5.1	Overview.....	82
7.5.2	Buffer management mechanism.....	82
7.5.3	The wait system	82

7.5.4	Single back-end buffer	83
7.5.5	FDU Arrived Indication	84
7.6	Lower interface of COP-1 at the sending end	84
7.6.1	Overview	84
7.6.2	Transmit Request for Frame signal	85
7.6.3	Abort request signal	85
7.6.4	Response signal	86
7.7	Lower interface of COP-1 at the receiving end.....	86
7.7.1	Overview.....	86
7.7.2	Valid Frame Arrived Indication	87
7.8	Format of COP-1 control commands	87
7.8.1	Overview.....	87
7.8.2	General.....	87
7.8.3	Unlock.....	87
7.8.4	Set V(R).....	88
7.9	Actions.....	88
7.9.1	Format of the state tables.....	88
7.9.2	FOP-1	89
7.9.3	FARM-1	96
8	Synchronization and channel coding sublayer.....	111
8.1	Overview	111
8.2	BCH codeblock.....	111
8.2.1	General.....	111
8.2.2	Information.....	112
8.2.3	Error Control	112
8.3	Communications link transmission unit (CLTU).....	113
8.3.1	General.....	113
8.3.2	Start Sequence	113
8.3.3	Encoded Data	114
8.3.4	Tail Sequence.....	114
8.4	Randomization procedure.....	115
8.4.1	Overview.....	115
8.4.2	General.....	115
8.4.3	Random sequence.....	115
8.4.4	Application of the randomizer	116
8.5	BCH codeblock encoding procedure.....	116
8.6	Fill bits	117

EN 16603-50-04:2014 (E)

8.6.1	Overview.....	117
8.6.2	General.....	117
8.7	Channel logic at the receiving end.....	118
8.8	BCH codeblock decoding procedures.....	119
8.8.1	Overview.....	119
8.8.2	General.....	120
9	Physical layer.....	121
9.1	Overview.....	121
9.2	Physical layer data structures.....	121
9.2.1	Acquisition sequence.....	121
9.2.2	CLTU.....	122
9.2.3	Idle sequence.....	122
9.3	Physical layer procedures.....	122
9.3.1	Overview.....	122
9.3.2	Carrier modulation modes.....	122
9.3.3	Telecommand session.....	124
9.3.4	Physical layer operation procedure (PLOP).....	124
Annex A	(informative) Frame error control.....	127
A.1	Overview.....	127
A.2	Encoding.....	127
A.3	Decoding.....	128
Annex B	(informative) Changes from ESA-PSS-04-107.....	129
B.1	Overview.....	129
B.2	Technical changes.....	129
Annex C	(informative) Differences from CCSDS recommendations.....	132
C.1	Overview.....	132
C.2	Differences.....	132
Annex D	(informative) Performance issues.....	135
D.1	Introduction.....	135
D.2	Performance components.....	136
D.3	Factors affecting frame rejection rate.....	136
D.3.1	Bit synchronization factor.....	136
D.3.2	CLTU Start Sequence factors.....	137
D.3.3	BCH Codeblock Factor.....	138
D.3.4	Tail Sequence factor.....	140

D.3.5	Frames and CLTUs.....	141
D.4	Factors affecting frame undetected error rate	143
Annex E (informative)	Mission configuration parameters	147
E.1	Introduction.....	147
E.2	Parameters of a physical channel	147
E.2.1	Overview.....	147
E.2.2	Fixed parameters	147
E.2.3	Length of the acquisition sequence	147
E.2.4	Physical layer operation procedure	148
E.2.5	Transfer Frame Version Number.....	148
E.2.6	Maximum length of a TC Transfer Frame.....	148
E.2.7	Virtual channels	148
E.2.8	Use of the expedited service	148
E.2.9	Multiplexing parameters	148
E.3	Parameters of a virtual channel	149
E.3.1	Overview.....	149
E.3.2	Spacecraft Identifier and Virtual Channel Identifier.....	149
E.3.3	Maximum length of a TC Transfer Frame.....	149
E.3.4	FOP-1 parameters	149
E.3.5	CLCW reporting rate	149
E.3.6	Status Field of CLCW.....	149
E.3.7	Fixed parameters	149
E.3.8	FARM-1 sliding window parameters.....	150
E.3.9	Use of TC Segments.....	150
E.3.10	Parameters of a virtual channel with TC Segments	150
E.3.11	Parameters of a virtual channel without TC Segments	150
E.4	Parameters of a MAP	151
E.4.1	Overview.....	151
E.4.2	MAP Identifier	151
E.4.3	Use of the blocking function	151
E.4.4	Segmentation function	151
E.5	Parameters for packet types	152
E.5.1	Overview.....	152
E.5.2	Valid packet version numbers	152
Bibliography.....		153

EN 16603-50-04:2014 (E)**Figures**

Figure 3-1: numbering convention	15
Figure 4-1: Layers and sublayers specified in this Standard	17
Figure 5-1: TC Segment	21
Figure 5-2: Example of blocking of packets	25
Figure 5-3: Example of segmentation of a user data unit	28
Figure 6-1: TC Transfer Frame format	36
Figure 6-2: Format of a CLCW	44
Figure 7-1: COP-1 sequence variables	55
Figure 7-2: FARM sliding window concept	67
Figure 7-3: State table format	89
Figure 7-4: Actions for look for directive	94
Figure 7-5: Actions for look for FDU	95
Figure 7-6: FOP-1 state transitions for main protocol	105
Figure 7-7: FOP-1 state transitions for initialisation protocol	106
Figure 7-8: FOP-1 state transitions	107
Figure 7-9: FARM-1 state transitions	110
Figure 8-1: BCH codeblock format	112
Figure 8-2: Format of a CLTU	113
Figure 8-3: Bit pattern of the Start Sequence	113
Figure 8-4: Bit transition generator logic diagram	116
Figure 8-5: (63,56) Modified BCH code generator	117
Figure 8-6: State diagram for the channel (receiving end)	119
Figure 9-1: Sequence of CMMs comprising PLOP-2	125
Figure 9-2: Sequence of CMMs comprising PLOP-1	126
Figure A-1 : Encoder	127
Figure A-2 : Decoder	128
Figure D-1 : Frame rejection probability, P_{FY} , in SEC mode using PLOP-2	143
Figure D-2 : Probability of undetected error in a frame in SEC mode	146

Tables

Table 6-1: Sending-end procedures in the transfer sublayer	34
Table 6-2: Receiving-end procedures in the transfer sublayer	35
Table 6-3: Combined Bypass Flag and Control Command Flag	38
Table 6-4: Fields in a CLCW	43
Table 7-1: COP-1 interfaces	70

Table 7-2: Signals for management interface	71
Table 7-3: FOP-1 directive types and qualifiers	73
Table 7-4: Reasons for an Alert notification	75
Table 7-5: Signals for sequence-controlled service data transfer interface	78
Table 7-6: Signals for expedited service data transfer interface.....	80
Table 7-7: Signals for the interface of FOP-1 to the lower procedures.....	84
Table 7-8: FOP-1 state table	98
Table 7-9: FARM-1 state table.....	108
Table 8-1: Channel states (receiving end)	118
Table 8-2: Channel events (receiving end)	119
Table 9-1: Carrier modulation modes	123
Table B-1 : Field name differences from ESA-PSS-04-107	131
Table B-2 : Names with “Communications” or “Command”	131
Table C-1 : Name differences from CCSDS recommendations	134
Table D-1 : Probability of not recognizing the Start Sequence	138
Table D-2 : Meaning of decoding values	138
Table D-3 : Decoding cases in SEC mode.....	138
Table D-4 : Probability of codeblock rejection for a CLTU during decoding in SEC mode... 140	
Table D-5 : Parity and Syndrome when Tail Sequence has errors.....	141
Table D-6 : Probability of missing the Tail Sequence.....	141
Table D-7 : Frame rejection probability, P_{FY} (PLOP-2).....	142
Table D-8 : Sources of undetected errors (SEC mode).....	143
Table D-9 : Probability of n errors occurring in a codeblock.....	144
Table D-10 : Error detection performance when decoding a codeblock in SEC mode	144
Table D-11 : Probability of undetected error in a frame, SEC mode, with CRC	145

Foreword

This document (EN 16603-50-04:2014) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16603-50-04:2014) originates from ECSS-E-ST-50-04C.

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 March 2015, and conflicting national standards shall be withdrawn at the latest by March 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.

1 Scope

This Standard specifies the data structures and protocols for a telecommand space data link and the procedure for physical layer operation.

Usually, the source of data on a telecommand space data link is located on the ground and the receiver is located in space. However, the Standard may also be used for space-to-space telecommand data links.

Further provisions and guidance on the application of this standard can be found, respectively, in the following documents:

- The higher level standard ECSS-E-ST-50 “Communications”, which defines the principle characteristics of communication protocols and related services for all communication layers relevant for space communication (physical- to application-layer), and their basic relationship to each other.
- The handbook ECSS-E-HB-50 “Communications guidelines”, which provides information about specific implementation characteristics of these protocols in order to support the choice of a certain communications profile for the specific requirements of a space mission.

Users of this present standard are invited to consult these documents before taking decisions on the implementation of the present one.

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
	CCSDS 135.0-B-3 Issue 3, October 2006	Space Link Identifiers – Blue Book

[SIST EN 16603-50-04:2015](https://standards.iteh.ai/catalog/standards/sist/143d9869-bf53-496e-b79d-7725ffc8b04/sist-en-16603-50-04-2015)

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Terms, definitions and abbreviated terms

3.1 Terms from other standards

For the purpose of this Standard, the terms and definitions from ECSS-S-ST-00-01 apply.

3.2 Terms specific to the present standard

3.2.1 mission phase

period of a mission during which specified telecommand characteristics are fixed

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NOTE The transition between two consecutive mission phases can cause an interruption of the telecommand data link services.

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3.2.2 octet

group of eight bits

NOTE 1 The numbering for octets within a data structure starts with 0.

NOTE 2 Refer to 3.4 for the convention for the numbering of bits.

3.2.3 packet

variable-length data structure consisting of higher layer user data encapsulated within standard header information

3.2.4 static

unchanged within a specific virtual channel

NOTE 1 This Standard contains requirements on the invariability, throughout one or all mission phases, of certain characteristics of the data structures specified in it.

NOTE 2 For virtual channel refer to 4.7.

3.2.5 physical layer operation procedure

procedure in the physical layer to activate and deactivate the physical communications channel by invoking RF carrier and modulation techniques