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ISO TC 20 / SC 13 Status Report

FOREWORD: This report is being submitted to the coming 46th ISO TC20 Committee on Aircraft and Space Vehicles Plenary Meeting to be held in Washington D.C., U.S.A., November 27-29, 2012.

1 Title and Scope

Title: Space data and information transfer systems

Scope: Space data systems

2 Chairman and secretary

Chairman:

Name (tenure): Eduardo Whitaker Bergamini
Organization/Country: National Institute for Space Research-INPE (Brazil)
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Secretary:

Name (tenure): Mike W. Kearney
Organization/Country: National Aeronautics and Space Administration-NASA
Address: NASA MSFC EO-01, Huntsville, AL, U.S.A.
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Secretariat (Optional)

Name (tenure): Nick Tongson (ANSI/U.S.A.)
 Organization/Country: American Institute of Aeronautics and Astronautics - AIAA
 Address: 1801 Alexander Bell Drive, Suite 500, Reston, VA 20191, U.S.A.
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 E-mail: nickt@aiaa.org

3 Meetings Held Since Last Report (SC and WG)

Meetings held

No.	Date	Place
39	2011-05-24	Berlin, GERMANY
40	2011-11-16	Moscow, RUSSIA
41	2012-04-24	Darmstadt, Germany

Schedule of future meetings

42	2012-12-11	Kennedy Space Center, FA, U.S.A.
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4 Participation and liaisons

4.1 P-member bodies

No.	Country	Member Body
1	U.S.A. (Secretariat)	ANSI
2	BRAZIL (Chairman)	ABNT
3	CHINA	SAC
4	FRANCE	AFNOR
5	GERMANY	DIN
6	INDIA	BIS
7	ISRAEL	SII
8	ITALY	UNI
9	JAPAN	JISC
10	KAZAKHSTAN	KAZMEMST
11	RUSSIAN FEDERATION	GOST R
12	UKRAINE	DSSU
13	UNITED KINGDOM	BSI

OBS. Canada was discontinued as a P-Member in Nov. 23, 2011. To this point in time, no manifest was received from Canada in respect to a possible renewal of its Membership status, be it P or O.

4.2 O-member bodies

No.	Country	Member Body
1	Argentina	IRAM
2	Korea, Republic of	KATS
3	Poland	PKN
4	Romania	ASRO
5	Sweden	SIS

Total (Secretariat + P + O) = 1 + 12 + 5 = 18 Member bodies

4.3 Liaisons (Contact)

Liaisons of ISO TC20/SC13 Subcommittee are being maintained in close parity with those of the Consultative Committee for Space data Systems – CCSDS and are currently under verification for actual confirmation by CCSDS-ISO TC20/SC13 secretariats.

(*) Liaisons under verification for possible confirmation.

TC/SC	Organization	Category	Person	Contact E-mail
n/a	CCSDS	A	N. Tongson	NickT@aiaa.org
n/a	ESA	A	Juan Miró	Juan.Miro@esa.int
n/a	ECSS	A	Gilles Moury	Gilles.Moury@cnes.fr
20/14	ISO	B	L. Schultz	larry.l.schultz@nasa.gov
20/14/WG3	ISO	B	Fred Slane	freds@spacestandards.org
ISOCS	ISO-TPM	B	Andrew Dry.	dryden@iso.org
46/4 (*)	ISO	B	K.Heiskanen	kati.heiskanen@sfs.fi
46/11 (*)	ISO	B	H. Hofman	hans.hofman@nationaalarchief.nl & agnes.simai@standards.org.au
211 (*)	ISO	B	B. Saeteroy	bjs@standard.no
JTC1/SC2(*)	ISO/IEC	B	t.b.d.	t.b.d.

JTC1/SC29(*)	ISO/IEC	B	t.b.d.	t.b.d.
JTC1/SC29/ WG1(*)	ISO/IEC	B	t.b.d.	t.b.d.
JTC1/SC32(*)	ISO/IEC	B	t.b.d.	t.b.d.

NAMES OF LIAISON BODIES:

- CCSDS: Consultative Committee for Space Data Systems
- ESA: European Space Agency
- ECSS: European Corporation for Space Standardization
- ISO TC20/SC14: Subcommittee on space systems and operations
- ISO TC20/SC14 WG3: Working Group on operations and ground support
- ISO JTC1/SC2: Subcommittee on coded character sets
- ISO JTC1/SC29: Subcommittee on coding audio, picture, multimedia and hypermedia information
- ISO JTC1/SC29/WG1: Working Group on coding of still pictures
- ISO JTC1/SC32: Subcommittee on data management and interchange
- ISO TC 211: Technical Committee on geographic information/geomatics
- ISO TC46/SC11: Subcommittee on archives/records management
- ISO TC46/SC4: Subcommittee on technical interoperability

4.4 Changes since last plenary meeting of ISO/TC 20

Liaisons which have their verification and confirmation pending are marked up with sign (*).

4.5 Inactive P-member bodies

In recent meetings of the Subcommittee justifications of absence have not been received from: India, Israel, Kazakhstan and Ukraine.

5 Constitution

5.1 Working Groups

ISO TC20/SC13 Subcommittee, by nature and conception effectively performs its functions under the structure and processes of the Consultative Committee for space Data Systems – CCSDS. The production of documents which are standardized in the ISO domain by means of the ISO TC20/SC13 Subcommittee are, in principle, regularly originated from the many CCSDS technical Working Groups - WGs. CCSDS WGs are, by nature, “ad-hoc” or temporary topic oriented technical groups which, under a pre-approved program of work, generate products which are named: Recommendations for Standards (Blue Books), Recommended Practices (Magenta Books) and Supporting technical (Green Books) documents. An overall space data systems architecture serves as an important reference model to all WGs of CCSDS in order to, whenever applicable and possible, guarantee the interoperability and cross-support among the products which they generate.

Current CCSDS Technical Organization can be found at <http://cwe.ccsds.org/default.aspx>, which covers six (6) different Areas of specialization. The associated six Areas are currently comprised of: 23 WGs, 4 BoFs (Birds-of-a-Feather that may form future WGs) and 1 Special Interest Groups, or SIGs.

CCSDS produced Blue and Magenta Books are the products which are regularly submitted for processing in ISO domain at DIS stage, by means of ISO TC20/SC13 Subcommittee, under a Cover Sheet process, for approval as ISO Standards.

5.2 Changes since last plenary meeting of ISO/TC 20

In order to instrument more efficiently the CCSDS process of submission of projects to the ISO TC20/SC13 Subcommittee domain it was found to be very convenient and, therefore, important to provide CCSDS CESC six (6) Area Directors (ADs) with direct access to the ISO TC20/SC13 administrative process. It was found by the Subcommittee secretariat that the simplest and best way of instrumenting the mentioned provisioning of direct access, for the exclusive, mentioned purpose, was by means of creating a strictly corresponding set of six (6) Working Groups (WGs) in the ISO TC20/SC13 Subcommittee. Resulting from specific request placed by the Subcommittee secretariat with ISO, the instrumentation of the mentioned provisioning of the (6) WGs was issued in 27 August 2012, by means of a corresponding ISO Event Notification. The Secretary and the Chairman of ISO TC20/SC13 Subcommittee inform that this is a purely administrative measure which was taken by the secretariat of the Subcommittee. Therefore, it is not necessary or desired to have any other related administrative

changes in the administrative dynamics of the Subcommittee. The current CCSDS Area Directors will continue to manage the CCSDS Areas, also known as the ISO TC20/SC13 Working Groups, using CCSDS processes, as they have in the past. It is noted that as a result of this administrative measure, the “virtual” Working Groups of ISO TC20/SC13 are not at the same level as the Working Groups of CCSDS. The SC13 Technical Working Groups are the equivalent of CCSDS Technical Areas, and the CCSDS Technical Working Groups are subordinate to that same level.

6 Any other matters of importance to ISO/TC 20

The complete package of documents (Minutes, Resolutions, Action Items, Member Reports and other items) associated to the last, 41st. Plenary meeting of ISO TC20/SC13 Subcommittee, held in Darmstadt, Germany, last April 24, can be obtained with the use of any of the two following public URL addresses:

1. In the ISO-LiveLink Website:

<http://isotc.iso.org/livelink/livelink?func=ll&objId=11659509&objAction=browse&viewType=1>

2. In the CWE-CCSDS Website:

<http://cwe.ccsds.org/cmc/docs/Forms/AllItems.aspx?RootFolder=%2fcmc%2fdocs%2fISO%20TC20%2dSC13%20Subcommittee%2f04%2e%20ISO%20TC20%2dSC13%20Subcommittee%20Meeting%20Packs&FolderCTID=&View=%7bD5DD30F7%2d53FC%2d45B9%2d8B93%2d709B280A475B%7d>

This report was prepared under the responsibility of the ISO TC20/SC13 Subcommittee Chairman and Secretary, as undersigned.

EDUARDO W. BERGAMINI
Chairman, ISO TC20/SC13
Subcommittee

MICHAEL W. KEARNEY
Secretary, ISO TC20/SC13
Subcommittee

October, 2012

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7 Programme of work

The contents of this **Program of Work** incorporate the **complete** contents which are found in the **ISO Project Portal** (<http://isotc.iso.org/pp/search/default.action>) **associated to ISO TC20/SC13 Subcommittee** and also, take into consideration corresponding CCSDS (www.ccsds.org) originated information and also, strictly, the ISO International harmonized stage codes table, which is also included in this context. As a result, from now on, this Program of Work is intended to regularly provide, with maximum possible completeness, a view of the past standards, of the current standards and of the current working items of ISO TC20/SC13 Subcommittee. The regular updating inputs received from Mr. Nick Tongson, in charge of the secretariat support to the ISO TC20/SC13 Subcommittee, have been of fundamental importance in the, regular, monthly preparation of this Program of Work which is maintained by the Subcommittee. The Chairman of ISO TC20/SC13 Subcommittee wishes also to acknowledge the invaluable work being provided by Ms. Helen Joyce A. F. Leite in the regular maintenance of the regular, monthly issues of the Program of Work and, in particular for her dedicated work that permitted the build-up of this specific **presentation** of the Subcommittee Program of Work which derived, in this case, directly from the regular **SEPTEMBER 2012 Program of Work issue**.

a. Published standards: 60 (Publication Stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Published on	Remarks
45990	ISO 10537:2010 Space data and information transfer systems -- Encapsulation service		60.60		2010-09-10	CCSDS 133.1-B-1 <i>Encapsulation Service</i> . Silver Book. Issue 1. June 2006.
59415	ISO 11104:2011 Space data and information transfer systems -- Time code formats		60.60		5/12/2011	CCSDS 301.0-B-4 Time Code Formats . Blue Book. Issue 4. November 2010.
53985	ISO 13527:2010 Space data and information transfer systems -- XML formatted data unit (XFDU) structure and construction rules		60.60		2010-09-10	CCSDS 661.0-B-1 <i>XML de dados formatados Unidade Estrutura (XFDU) e regras de construção</i> . Blue Book. Edição 1. Setembro de 2008.
53986	ISO 13537:2010 Space data and information transfer systems -- Reference architecture for space data systems		60.60		2010-09-29	CCSDS 311.0-M-1 <i>Arquitetura de Referência para Sistemas Espaciais de Dados</i> . Livro Magenta. Edição 1. Setembro de 2008.
53987	ISO 13541:2010 Space data and information transfer systems -- Attitude data messages		60.60		2010-09-10	CCSDS 504.0-B-1 <i>Attitude Data Messages Attitude Data Messages</i> . Blue Book. Issue 1. May 2008.. Blue Book. Issue 1. May 2008.
	ISO 14721:2012 Space data and information transfer systems -- Reference Model for an Open Archival Information System (OAIS)		60.60		21/8/2012	CCSDS 650.0-M-2:2012 <i>Reference Model for an Open Archival Information System (OAIS)</i> . Magenta Book. Issue 2. June 2012.
52985	ISO 15887:2000/Cor 1:2009 Space data and information transfer systems -- Data systems -- Lossless data compression -- Technical Corrigendum 1		60.60		2009-05-15	

57320	ISO 15889:2011 Space data and information transfer systems -- Data description language -- EAST specification		60.60		14/10/2011	CCSDS 644.0-B-3 <i>The Data Description Language EAST Specification (CCSD0010)</i> . Blue Book. Issue 3. June 2010.
45986	ISO 15893:2010 Space data and information transfer systems -- Space communications protocol specification (SCPS) -- Transport protocol (SCPS-TP)		60.60		2010-09-10	CCSDS 714.0-B-2 <i>Space Communications Protocol Specification (SCPS)—Transport Protocol</i> . Blue Book. Issue 2. October 2006.
56510	ISO 16363:2012 Space data and information transfer systems - Audit and certification of trustworthy digital repositories		60.60		14/2/2012	CCSDS 652.0-R-1
59155	ISO 17107:2011 Space data and information transfer systems -- XML specification for navigation data messages		60.60		8/11/2011	
59416	ISO 17214:2011 Space data and information transfer systems -- Spacecraft onboard interface services -- Time access service		60.60		15/12/2011	CCSDS 872.0-M-1 <i>Spacecraft Onboard Interface Services--RFID-Based Inventory Management Systems</i> . Magenta Book. Issue 1. May 2012.
60590	ISO 22641:2012 Space data and information transfer systems -- TM (telemetry) synchronization and channel coding		60.60		13/7/2012	CCSDS 131.1-B-2
50342	ISO 22642:2005/Cor 1:2007 Space data and information transfer systems -- TC (telecommand) synchronization and channel coding -- Technical Corrigendum 1		60.60		2007-10-03	
45987	ISO 22647:2010 Space data and information transfer systems -- Space link identifiers		60.60		2010-09-10	CCSDS 135.0-B-3 <i>Space Link Identifiers</i> . Silver Book. Issue 3. October 2006.
58052	ISO 22671:2011 Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service		60.60		8/11/2011	
58052	ISO 22672:2011 Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet service specification		60.60		8/11/2011	CCSDS 912.3-B-2 <i>Space Link Extension—Forward Space Packet Service Specification</i> . Blue Book. Issue 2. July 2010.
43849	ISO 26868:2009 Space data and information transfer systems -- Image data compression		60.60		2009-01-29	CCSDS 122.0-B-1 <i>Image Data Compression</i> . Blue Book. Issue 1. November 2005.

b. Registered Work items: number including number revision

Approval stage: 50 (Approval stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
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Enquiry stage: 40 (Enquiry stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
	ISO/DIS 18201 Space data and information transfer systems -- Missions operations reference model		40.00	n/a		
	ISO/DIS 18202 Space data and information transfer systems -- Mission operations message abstraction layer		40.00	n/a		
62447	ISO/DIS 18423 Pseudo-Noise (PN) Ranging Systems		40.00	n/a	24/07/2012	CCSDS 414.1-B-1 <i>Pseudo-Noise (PN) Ranging Systems</i> . Blue Book. Issue 1. March 2009.
62448	ISO/DIS 18424 XML Telemetric and Command Exchange (XTCE)		40.00	n/a	24/07/2012	CCSDS 660.0-B-1 <i>XML Telemetric and Command Exchange (XTCE)</i> . Blue Book. Issue 1. October 2007.
62449	ISO/DIS 18425 Spacecraft Onboard Interface Services -- Subnetwork Packet Service		40.00	n/a	24/07/2012	CCSDS 851.0-M-1 <i>Spacecraft Onboard Interface Services--Subnetwork Packet Service</i> . Magenta Book. Issue 1. December 2009.
62450	ISO/DIS 18426 Spacecraft Onboard Interface Services -- Subnetwork Memory Access Service		40.00	n/a	24/07/2012	CCSDS 852.0-M-1 <i>Spacecraft Onboard Interface Services--Subnetwork Memory Access Service</i> .Magenta Book. Issue 1. December 2009.
62451	ISO/DIS 18427 Spacecraft Onboard Interface Services -- Subnetwork Synchronization Service		40.00	n/a	24/07/2012	CCSDS 852.0-M-1 <i>Spacecraft Onboard Interface Services--Subnetwork Memory Access Service</i> .Magenta Book. Issue 1. December 2009.
62452	ISO/DIS 18428 Spacecraft Onboard Interface Services -- Subnetwork Device Discovery Service		40.00	n/a	24/07/2012	CCSDS 854.0-M-1 <i>Spacecraft Onboard Interface Services--Subnetwork Device Discovery Service</i> .Magenta Book. Issue 1. December 2009.
62453	ISO/DIS 18438 Spacecraft Onboard Interface Services -- Subnetwork Test Service		40.00	n/a	24/07/2012	CCSDS 855.0-M-1 <i>Spacecraft Onboard Interface Services--Subnetwork Test Service</i> . Magenta Book. Issue 1. December 2009.
62454	ISO/DIS 18439 Space Communication Cross Support -- Service Management -- Service Specification		40.00	n/a	24/07/2012	CCSDS 910.11-M-1
62455	ISO/DIS 18440 Space Link Extension -- Internet Protocol for Transfer Services		40.00	n/a	24/07/2012	CCSDS 913.1-B-1 <i>Space Link Extension-- Internet Protocol for Transfer Services</i> . Blue Book. Issue 1. September 2008.
62456	ISO/DIS 18441 Space Link Extension -- Application Program Interface for Transfer Services -- Core		40.00	n/a	25/07/2012	CCSDS 914.0-M-1 <i>Space Link Extension-- Application Program Interface for Transfer</i>

	Specification					<i>Services—Core Specification</i> . Magenta Book. Issue 1. October 2008.
62457	ISO/DIS 18442 Space Link Extension -- Application Program Interface for Return All Frames Service		40.00	n/a	25/07/2012	CCSDS 915.1-M-1 <i>Space Link Extension—Application Program Interface for Return All Frames Service</i> . Magenta Book. Issue 1. October 2008.
62458	ISO/DIS 18443 Space Link Extension -- Application Program Interface for Return Channel Frames Service		40.00		25/7/2012	CCSDS 915.2-M-1 <i>Space Link Extension—Application Program Interface for Return Channel Frames Service</i> . Magenta Book. Issue 1. October 2008.
62459	ISO/DIS 18444 Space Link Extension -- Application Program Interface for Return Operational Control Fields Service		40.00		25/7/2012	CCSDS 915.5-M-1 <i>Space Link Extension—Application Program Interface for Return Operational Control Fields</i> . Magenta Book. Issue 1. October 2008.
62460	ISO/DIS 18445 Space Link Extension -- Application Program Interface for the Forward CLTU Service		40.00		25/7/2012	CCSDS 916.1-M-1 <i>Space Link Extension—Application Program Interface for the Forward CLTU Service</i> .Magenta Book. Issue 1. October 2008.
62461	ISO/DIS 18446 Space Link Extension -- Application Program Interface for the Forward Space Packet Service		40.00		25/7/2012	CCSDS 916.3-M-1 <i>Space Link Extension—Application Program Interface for the Forward Space Packet Service</i> . Magenta Book. Issue 1. October 2008.
	ISO/DIS 15887 Space data and information transfer systems -- Data systems -- Lossless data compression		40.20		2012-07-02	
61746	ISO/NP 22664 Space data and information transfer systems -- TC (telecommand) space data link protocol		40.20		8/6/2012	CCSDS 232.0-B-2 <i>TC Space Data Link Protocol</i> . Blue Book. Issue 2. September 2010.
61747	ISO/NP 22667 Space data and information transfer systems -- Communication operations Procedure-1		40.20		8/6/2012	CCSDS 232.1-B-2 <i>Communications Operation Procedure-1</i> . Blue Book. Issue 2. September 2010.
61743	ISO/NP 22669 Space data and information transfer systems -- Space link extension (SLE) -- Return-all-frames service		40.20		8/6/2012	CCSDS 911.1-B-3 <i>Space Link Extension—Return All Frames Service Specification</i> . Blue Book. Issue 3. January 2010.
61744	ISO/NP 22670 Space data and information transfer systems -- Space link extension (SLE) -- Return-channel-frames service		40.20		8/6/2012	CCSDS 911.2-B-2 <i>Space Link Extension—Return Channel Frames Service Specification</i> . Blue Book. Issue 2. January 2010.
61745	ISO/NP 26143 Space data and information transfer systems -- Space link extension (SLE) -- Return operational control fields service		40.20		8/6/2012	CCSDS 911.5-B-2 <i>Space Link Extension—Return Operational Control Fields Service Specification</i> . Blue Book. Issue 2. January 2010.
	NP 17854 Flexible Advance Coding and Modulation Scheme for High Rate Telemetry Applications		40.20		2/7/2012	CCSDS 131.2-B-1 (Mar 2012) <i>Flexible Advanced Coding and Modulation Scheme for High Rate Telemetry Applications</i> . Blue Book. Issue 1. March 2012.
	ISO/DIS 18381 Space data and information transfer systems -- Lossless multispectral and hyperspectral image compression		40.20		2/7/2012	
	ISO/DIS 18382 Space data and information transfer systems -- Spacecraft onboard interface services -- RFID-based inventory management systems		40.20		2/7/2012	

38562	ISO/DIS 11754 Space data and information transfer systems -- Telemetry channel coding		40.98		2005-10-24	CCSDS 101.0-B-6:2002 <i>Telemetry Channel Coding</i> . Silver Book. Issue 6. October 2002.
36450	ISO/DIS 13420 Space data and information transfer systems -- Advanced orbiting systems, networks and data links -- Architectural specification		40.98		2004-11-03	CCSDS 701.0-B-3:2001 <i>Advanced Orbiting Systems, Networks and Data Links: Architectural Specification</i> . Silver Book. Issue 3. June 2001.
29443	ISO/DIS 15890 Space data and information transfer systems -- Advanced orbiting systems, networks and data links -- Audio, video and still-image communications services		40.98		2001-09-04	CCSDS 704.0-B-1-S:1994 <i>Advanced Orbiting Systems, Networks and Data Links: Audio, Video and Still-Image Communications Services</i> . Silver Book. Issue 1. May 1994.
57284	ISO/DIS 14721 Space data and information transfer systems -- Open archival information system (OAIS) -- Reference model		40.99		18/2/2011	CCSDS 650.0-P-1.1
57950	ISO/DIS 16919 Requirements for bodies providing audit and certification of candidate trustworthy digital repositories		40.99		23/11/2011	CCSDS 652.1-R.1
60592	ISO/DIS 17807 Space data and information transfer systems -- Telemetry (TM) channel coding profiles		40.99		4/5/2012	CCSDS 735.1-B-1 <i>Asynchronous Message Service</i> . Blue Book. Issue 1. September 2011.
60593	ISO/DIS 17808 Space data and information transfer systems -- Telemetry (TM) channel coding profiles		40.99		4/5/2012	CCSDS 131.4-M-1 <i>TM Channel Coding Profiles</i> . Magenta Book. Issue 1. July 2011.
60594	ISO/DIS 17809 Space data and information transfer systems - Delta-Differential One Way Ranging (Delta-DOR) Operations		40.99		4/5/2012	CCSDS 506.0-M-1 <i>Delta-Differential One Way Ranging (Delta-DOR) Operations</i> . Magenta Book. Issue 1. April 2011.
60595	ISO/DIS 17810 Space data and information transfer systems - Data Transmission and PN Ranging for 2 GHz CDMA Link via Data Relay Satellite		40.99		4/5/2012	CCSDS 415.1-B-1 <i>Data Transmission and PN Ranging for 2 GHz CDMA Link via Data Relay Satellite</i> . Blue Book. Issue 1. September 2011.
60590	ISO/DIS 22641 Space data and information transfer systems -- TM (telemetry) synchronization and channel coding		40.99		11/4/2012	CCSDS 131-B-2

Committee Stage: 30 (Committee stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
35681	ISO 13419:1997/CD Amd 1 Space data and information transfer systems -- Packet telemetry -- Amendment 1		30.98	n/a	2001-10-12	
46185	ISO 15887:2000/CD Cor 2 Space data and information transfer systems -- Data systems -- Lossless data compression -- Technical Corrigendum 2		30.98	n/a	2008-11-26	
35682	ISO 15889:2000/CD Amd 1 Space data and information transfer systems -- Data description language -- EAST specification -- Amendment 1		30.98	n/a	2001-10-12	
50246	ISO/CD 17355 Space data and information transfer systems -- CCSDS file delivery protocol		30.98	n/a	2010-03-05	CCSDS 727.0-B-4: 2007 <i>CCSDS File Delivery Protocol (CFDP)</i> . Blue Book. Issue 4. January 2007.
36379	ISO/CD 22644 Space data and information transfer		30.98	n/a	03/11/2004	

	systems -- Orbit data messages					
60519	ISO/CD 22666 Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol		30.98	n/a	18/10/2011	
50583	ISO 22671:2007/CD Cor 1 Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service -- Technical Corrigendum 1		30.98	n/a	17/01/2011	
36397	ISO/CD 22672 Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet service		30.98	n/a	04/05/2004	
62470	ISO/CD 12175 Space data and information transfer systems -- Standard formatted data units -- Structure and construction rules		30.99	n/a	03/07/2012	CCSDS 620.0-B-2 <i>Standard Formatted Data Units — Structure and Construction Rules</i> . Blue Book. Issue 2. May 1992.
62472	ISO/CD 13526 Space data and information transfer systems -- Tracking data message		30.99	n/a	03/07/2012	CCSDS 503.0-B-1 <i>Tracking Data Message</i> . Blue Book. Issue 1. November 2007.
62471	ISO/CD 22646 Space data and information transfer systems -- Space packet protocol		30.99	n/a	03/07/2012	
60964	ISO 26868:2009/CD Cor 1 Space data and information transfer systems -- Image data compression -- Technical Corrigendum 1		30.99	n/a	27/05/2012	

Preparatory Stage: 20 (Preparatory stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
24682	ISO/WD 14712 Space systems -- Mission operations functions		20.98	n/a	1995-07-13	
36393	ISO/WD 22668 Space data and information transfer systems -- Space link extension (SLE) -- Service management specification		20.98	n/a	2003-11-07	

c. Possible new work items: number including number revisions

Proposal Stage: 10 (Proposal stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks
62446	ISO/NP 22642 Space data and information transfer systems -- TC (telecommand) synchronization and channel coding	10.99	n/a	

Preliminary Stage: 00 (Preliminary stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks
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d. Work Programme Reallocation: 90 (Review stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks
44866	ISO 22666:2007 Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol	90.60		CCSDS 732.0-B-2 AOS Space Data Link Protocol . Blue Book. Issue 2. July 2006.
21118	ISO 12175:1994 Space data and information transfer systems -- Standard formatted data units -- Structure and construction rules	90.92		CCSDS 620.0-B-2:1992 Standard Formatted Data Units — Structure and Construction Rules . Blue Book. Issue 2. May 1992.
53984	ISO 13526:2010 Space data and information transfer systems -- Tracking data message	90.92		CCSDS 503.0-B-1 Tracking Data Message . Blue Book. Issue 1. November 2007.
29440	ISO 15887:2000 Space data and information transfer systems -- Data systems -- Lossless data compression	90.92		CCSDS 121.0-B-1:1997 Lossless Data Compression. Silver Book. Issue 1. May 1997.
29441	ISO 15888:2000 Space data and information transfer systems -- Standard formatted data units -- Referencing environment	90.92		CCSDS 622.0-B-1:1997 Standard Formatted Data Units — Referencing Environment . Blue Book. Issue 1. May 1997.
43829	ISO 17355:2007 Space data and information transfer systems -- CCSDS file delivery protocol	90.92		CCSDS 727.0-B-3 S: 2005 CCSDS File Delivery Protocol (CFDP). Silver Book. Issue 3. June 2005.
36376	ISO 22642:2005 Space data and information transfer systems -- TC (telecommand) synchronization and channel coding	90.92		CCSDS 231.0-B-1:2003 TC Synchronization and Channel Coding. Silver Book. Issue 1. September 2003.
36381	ISO 22646:2005 Space data and information transfer systems -- Space packet protocol	90.92		CCSDS 133.0-B-1:2003 Space Packet Protocol . Blue Book. Issue 1. September 2003.
36389	ISO 22664:2005 Space data and information transfer systems -- TC (telecommand) space data link protocol	90.92		CCSDS 232.0-B-1:2003 TC Space Data Link Protocol. Silver Book. Issue 1. September 2003.
36392	ISO 22667:2005 Space data and information transfer systems -- Communication operations Procedure-1	90.92		CCSDS 232.1-B-1:2003 Communications Operation Procedure-1. Silver Book. Issue 1. September 2003.
43442	ISO 22669:2007 Space data and information transfer systems -- Space link extension (SLE) -- Return-all-frames service	90.92		CCSDS 911.1-B-2 Space Link Extension – Return All Frames Service Specification. Silver Book. Issue 2. November 2004.
36395	ISO 22670:2006 Space data and information transfer systems -- Space link extension (SLE) -- Return-channel-frames service	90.92		CCSDS 911.2-B-1:2004 Space Link Extension – Return Channel Frames Service Specification. Silver Book. Issue 1. November 2004.
43394	ISO 26143:2007 Space data and information transfer systems -- Space link extension (SLE) -- Return operational control fields service	90.92		CCSDS 911.5-B-1 Space Link Extension – Return Operational Control Fields Service Specification. Silver Book. Issue 1. November 2004.
22845	ISO 13764:1996 Space data and information transfer systems -- Standard formatted data units -- Control authority procedures	90.93		CCSDS 630.0-B-1:1993 Standard Formatted Data Units — Control Authority Procedures . Blue Book. Issue 1. June 1993.
34701	ISO 14961:2002 Space data and information transfer systems -- Parameter value language specification	90.93		CCSDS 641.0-B-2:2000 Parameter Value Language Specification (CCSD0006 and CCSD0008). . Blue Book. Issue 2. June 2000.
26096	ISO 14962:1997 Space data and information transfer systems -- ASCII encoded English	90.93		CCSDS 643.0-B-1:1992 ASCII Encoded English (CCSD0002) . Blue Book. Issue 1. November 1992.
27534	ISO 15395:1998 Space data and information transfer systems -- Standard formatted data units -- Control authority data structures	90.93		CCSDS 632.0-B-1:1994 Standard Formatted Data Units — Control Authority Data Structures . Blue Book.

				Issue 1. November 1994.
43828	ISO 15396:2007 Space data and information transfer systems -- Cross support reference model -- Space link extension services	90.93		CCSDS 910.4-B-2:2005 Cross Support Reference Model—Part 1: Space Link Extension Services . Blue Book. Issue 2. October 2005.
39577	ISO 20652:2006 Space data and information transfer systems -- Producer-archive interface -- Methodology abstract standard	90.93		CCSDS 651.0-M-1:2004 Producer-Archive Interface Methodology Abstract Standard . Magenta Book. Issue 1. May 2004.
40247	ISO 21459:2006 Space data and information transfer systems -- Proximity-1 space link protocol -- Coding and synchronization sublayer	90.93		CCSDS 211.2-B-1:2003 Proximity-1 Space Link Protocol—Coding and Synchronization Sublayer . Blue Book. Issue 1. April 2003.
36036	ISO 21961:2003 Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- Abstract syntax	90.93		CCSDS 647.1-B-1:2001 Data Entity Dictionary Specification Language (DEDSL)—Abstract Syntax (CCSD0011) . Blue Book. Issue 1. June 2001.
36037	ISO 21962:2003 Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- PVL syntax	90.93		CCSDS 647.2-B-1:2001 Data Entity Dictionary Specification Language (DEDSL)—PVL Syntax (CCSD0012) .Blue Book. Issue 1. June 2001.
36377	ISO 22643:2003 Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- XML/DTD Syntax	90.93		CCSDS 647.3-B-1:2002 Data Entity Dictionary Specification Language (DEDSL)—XML/DTD Syntax (CCSD0013) . Blue Book. Issue 1. January 2002.
36380	ISO 22645:2005 Space data and information transfer systems -- TM (telemetry) space data link protocol	90.93		CCSDS 132.0-B-1:2003 Lossless Multispectral & Hyperspectral Image Compression . Blue Book. Issue 1. May 2012.
44999	ISO 21460:2007 Space data and information transfer systems -- Proximity-1 space link protocol -- Physical layer	90.93		CCSDS 211.1-B-3:2006 Proximity-1 Space Link Protocol—Physical Layer . Blue Book. Issue 3. March 2006.
45000	ISO 22663:2007 Space data and information transfer systems -- Proximity-1 space link protocol -- Data link layer	90.93		CCSDS 211.0-B-4 Proximity-1 Space Link Protocol—Data Link Layer . Blue Book. Issue 4. July 2006.

e. Standards withdrawn: 95 (Withdrawal stage)

Internal No.	Designate No. and Title	Remarks
19092	ISO 11103:1991 Space data and information transfer systems -- Radio metric and orbit data	CCSDS 501.0-B-1:1987 <i>Radio Metric and Orbit Data</i> . Silver Book. Issue 1. January 1987.
19093	ISO 11104:1991 Space data and information transfer systems -- Time code formats	CCSDS 301.0-B-2:1990 <i>Time Code Formats</i> . Silver Book. Issue 2. April 1990.
38141	ISO 11104:2003 Space data and information transfer systems -- Time code formats	CCSDS 301.0-B-3:2002 <i>Time Code Formats</i> . Silver Book. Issue 3. January 2002.
19675	ISO 11754:1994 Space data and information transfer systems -- Telemetry channel coding	CCSDS 101.0-B-3:1992 <i>Telemetry Channel Coding</i> . Silver Book. Issue 3. May 1992.
33004	ISO 11754:2003 Space data and information transfer systems -- Telemetry channel coding	CCSDS 101.0-B-5:2001 <i>Telemetry Channel Coding</i> . Silver Book. Issue 5. June 2001.
21114	ISO 12171:1998 Space data and information transfer systems -- Telecommand -- Channel service -- Architectural specification	CCSDS 201.0-B-2:1995 <i>Telecommand Part 1—Channel Service</i> . Silver Book. Issue 2. November 1995.
34711	ISO 12171:2002 Space data and information transfer systems -- Telecommand -- Channel service	CCSDS 201.0-B-3:2000 <i>Telecommand Part 2—Data Routing Service</i> . Silver Book. Issue 3. June 2001.
21115	ISO 12172:1998 Space data and information transfer systems -- Telecommand -- Data routing service	CCSDS 202.0-B-2:1992

36591	ISO 12172:2003 Space data and information transfer systems -- Telecommand -- Data routing service	CCSDS 202.0-B-3:2001 <i>Telecommand Part 2—Data Routing Service</i> . Silver Book. Issue 3. June 2001.
21116	ISO 12173:1998 Space data and information transfer systems -- Telecommand -- Command operation procedures	CCSDS 202.1-B-1:1991 <i>Telecommand Part 2.1—Command Operation Procedures</i> . Silver Book. Issue 1. October 1991.
36447	ISO 12173:2003 Space data and information transfer systems -- Telecommand -- Command operation procedures	CCSDS 202.1-B-2:2001 <i>Telecommand Part 2.1—Command Operation Procedures</i> . Silver Book. Issue 2. June 2001.
21117	ISO 12174:1998 Space data and information transfer systems -- Telecommand -- Data management service -- Architectural specification	CCSDS 203.0-B-1:1987 <i>Telecommand Part 3—Data Management Service</i> . Silver Book. Issue 1. January 1987.
36446	ISO 12174:2003 Space data and information transfer systems -- Telecommand -- Architectural specification for the data management service	CCSDS 203.0-B-2:2001 <i>Telecommand Part 3—Data Management Service</i> . Silver Book. Issue 2. June 2001.
21968	ISO 13419:1997 Space data and information transfer systems -- Packet telemetry	CCSDS 102.0-B-4:1995 <i>Packet Telemetry</i> . Silver Book. Issue 4. November 1995.
36479	ISO 13419:2003 Space data and information transfer systems -- Packet telemetry	CCSDS 102.0-B-5:2000 <i>Packet Telemetry</i> . Silver Book. Issue 5. November 2000.
21969	ISO 13420:1997 Space data and information transfer systems -- Advanced orbiting systems -- Networks and data links -- Architectural specification	CCSDS 701.0-B-2:1992 <i>Advanced Orbiting Systems, Networks and Data Links: Architectural Specification</i> . Silver Book. Issue 2. November 1992.
24683	ISO 14721:2003 Space data and information transfer systems -- Open archival information system -- Reference model	CCSDS 650.0-B-1:2002 <i>Reference Model for an Open Archival Information System (OAIS)</i> . Silver Book. Issue 1. January 2002.
26095	ISO 14961:1997 Space data and information transfer systems -- Parameter value language specification	CCSDS 641.0-B-1:1992 <i>Parameter Value Language Specification (CCSD0006)</i> . Silver Book. Issue 1. May 1992.
27535	ISO 15396:1998 Space data and information transfer systems -- Cross support reference model -- Space link extension services	CCSDS 910.4-B-1-S:1996 <i>Cross Support Reference Model—Part 1: Space Link Extension Services</i> . Silver Book. Issue 1. May 1996.
29442	ISO 15889:2000 Space data and information transfer systems -- Data description language -- EAST specification	CCSDS 644.0-B-1-S:1997 <i>The Data Description Language EAST Specification (CCSD0010)</i> . Silver Book. Issue 1. May 1997.
36451	ISO 15889:2003 Space data and information transfer systems -- Data description language -- EAST specification	CCSDS 644.0-B-2-S:2000 <i>The Data Description Language EAST Specification (CCSD0010)</i> . Silver Book. Issue 2. November 2000.
29444	ISO 15891:2000 Space data and information transfer systems -- Protocol specification for space communications -- Network protocol	CCSDS 713.0-B-1:1999 <i>Space Communications Protocol Specification (SCPS)—Network Protocol (SCPS-NP)</i> . Silver Book. Issue 1. May 1999.
29445	ISO 15892:2000 Space data and information transfer systems -- Protocol specification for space communications -- Security protocol	CCSDS 713.5-B-1:1999 <i>Space Communications Protocol Specification (SCPS)—Security Protocol (SCPS-SP)</i> . Silver Book. Issue 1. May 1999.
29446	ISO 15893:2000 Space data and information transfer systems -- Protocol specification for space communications -- Transport protocol	CCSDS 714.0-B-1:1999 <i>Space Communications Protocol Specification (SCPS)—Transport Protocol (SCPS-TP)</i> . Silver Book. Issue 1. May 1999.
33005	ISO 17355:2003 Space data and information transfer systems -- CCSDS file delivery protocol	CCSDS 727.0-B-1 S:2002 <i>CCSDS File Delivery Protocol (CFDP)</i> . Silver Book. Issue 1. January 2002.
38593	ISO 17355:2004 Space data and information transfer systems -- CCSDS file delivery protocol	
28460	ISO 17433:2001 Space data and information transfer systems -- Packet telemetry services	CCSDS 103.0-B-1 S:1996 <i>Packet Telemetry Services</i> . Silver Book. Issue 1. May 1996.
36448	ISO 17433:2003 Space data and information transfer systems -- Packet telemetry services	CCSDS 103.0-B-2 S:2001 <i>Packet Telemetry Service Specification</i> . Silver Book. Issue 2. June 2001.
40248	ISO 21460:2006 Space data and information transfer systems -- Proximity-1 space link protocol -- Physical layer	CCSDS 211.1-B-1 <i>Proximity-1 Space Link Protocol—Physical Layer</i> . Silver Book. Issue 1. April 2003.
36375	ISO 22641:2005 Space data and information transfer systems -- TM (telemetry) synchronization and channel coding	CCSDS 131.0-B-1:2003 <i>TM Synchronization and Channel Coding</i> . Silver Book. Issue 1. September 2003.
42722	ISO 22644:2006 Space data and information transfer systems -- Orbit data messages	CCSDS 502.0-B-1 <i>Orbit Data Messages</i> . Silver Book. Issue 1. September 2004.
36383	ISO 22647:2006 Space data and information transfer systems -- Space link identifiers	CCSDS 135.0-B-1:2002 <i>Space Link Identifiers</i> . Silver Book. Issue 1. January 2002.
36386	ISO 22663:2006 Space data and information transfer systems -- Proximity-1	CCSDS 211.0-B-3:2004 <i>Proximity-1 Space Link Protocol—Data Link Layer</i> . Silver

	space link protocol -- Data link layer	Book. Issue 3. May 2004.
36391	ISO 22666:2005 Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol	CCSDS 732.0-B-1:2003 <i>AOS Space Data Link Protocol</i> . Silver Book. Issue 1. September 2003.
36394	ISO 22669:2003 Space data and information transfer systems -- Space link extension (SLE) -- Return-all-frames service	CCSDS 911.1-B-1:2002 <i>Space Link Extension – Return All Frames Service Specification</i> . Silver Book. Issue 1. April 2002.
	ISO 22671:2005 Space data and information transfer systems -- Space link extension (SLE) -- Forward command link transmission unit (CLTU)	CCSDS 912.1-B-1:2002 <i>Space Link Extension – Forward CLTU Service Specification</i> . Silver Book. Issue 1. April 2002.
43443	ISO 22671:2007 Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service	CCSDS 912.1-B-2 <i>Space Link Extension – Forward CLTU Service Specification</i> . Silver Book. Issue 2. November 2004.
42721	ISO 22672:2006 Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet	CCSDS 912.3-B-1 <i>Space Link Extension – Forward Space Packet Service Specification</i> . Silver Book. Issue 1. November 2004.
29447	ISO 15894:2000 Space data and information transfer systems -- Protocol specification for space communications -- File protocol	CCSDS 717.0-B-1:1999 <i>Space Communications Protocol Specification (SCPS)—File Protocol (SCPS-FP)</i> . Silver Book. Issue 1. May 1999.
	Rationale, Scenarios, and Requirements for DTN in Space	CCSDS 734.0-G-1 (Aug 2010) <i>Rationale, Scenarios, and Requirements for DTN in Space</i> . Green Book. Issue 1. August 2010.
	Mission Operations Reference Model	CCSDS 520.1-M-1 (Jul 2010) <i>Mission Operations Reference Model</i> . Magenta Book. Issue 1. July 2010.
	Mission Operations Message Abstraction Layer	CCSDS 520.0-B-1 (Sep 2010)

International harmonized stage codes

STAGE	SUBSTAGE						
				90 Decision Substages			
	00 Registration	20 Start of main action	60 Completion of main action	92 Repeat an earlier phase	93 Repeat current phase	98 Abandon	99 Proceed
00 Preliminary stage	00.00 Proposal for new project received	00.20 Proposal for new project under review	00.60 Close of review			00.98 Proposal for new project abandoned	00.99 Approval to ballot proposal for new project
10 Proposal stage	10.00 Proposal for new project registered	10.20 New project ballot initiated	10.60 Close of voting	10.92 Proposal returned to submitter for further definition		10.98 New project rejected	10.99 New project approved
20 Preparatory stage	20.00 New project registered in TC/SC work programme	20.20 Working draft (WD) study initiated	20.60 Close of comment period			20.98 Project deleted	20.99 WD approved for registration as CD
30 Committee stage	30.00 Committee draft (CD) registered	30.20 CD study/ballot initiated	30.60 Close of voting/ comment period	30.92 CD referred back to Working Group		30.98 Project deleted	30.99 CD approved for registration as DIS
40 Enquiry stage	40.00 DIS registered	40.20 DIS ballot initiated: 5 <i>months</i>	40.60 Close of voting	40.92 Full report circulated: DIS referred back to TC or SC	40.93 Full report circulated: decision for new DIS ballot	40.98 Project deleted	40.99 Full report circulated: DIS approved for registration as FDIS
50 Approval stage	50.00 FDIS registered for formal approval	50.20 FDIS ballot initiated: 2 <i>months</i> . Proof sent to secretariat	50.60 Close of voting. Proof returned by secretariat	50.92 FDIS referred back to TC or SC		50.98 Project deleted	50.99 FDIS approved for publication
60 Publication stage	60.00 International Standard under publication		60.60 International Standard published				
90 Review stage		90.20 International Standard under periodical review	90.60 Close of review	90.92 International Standard to be revised	90.93 International Standard confirmed		90.99 Withdrawal of International Standard proposed by TC or SC
95 Withdrawal stage		95.20 Withdrawal ballot initiated	95.60 Close of voting	95.92 Decision not to withdraw International Standard			95.99 Withdrawal of International Standard