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ISO TC 20 / SC 13 Status Report

FOREWORD: This report is being submitted to the coming 45th ISO TC20 Committee on Aircraft and Space Vehicles Plenary Meeting to be held in London, UK, November 28-30, 2011.

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:

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Secretariat (Optional)

Name (tenure): Nick Tongson (ANSI/U.S.A.)
Organization/Country: American Institute of Aeronautics and Astronautics - AIAA
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3 Meetings Held Since Last Report (SC and WG)

Meetings held

No.	Date	Place
38	2010-11-05	London, UK
39	2011-05-24	Berlin, GERMANY
40	2011-11-16	Moscow, RUSSIA

Schedule of future meetings

41	2012-04-24	Darmstadt, GERMANY
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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 by the time this Report was being closed (Nov. 23, 2011). It is possible that Canada may be changing to O-Member status but, at the closing of this Report, this possibility could not yet be confirmed.

4.2 O-member bodies

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

Total (Secretariat + P + O) = 19 Member bodies

4.3 Liaisons (Contact)

Liaisons of ISO TC20/SC13 Subcommittee are maintained in close compatibility with those of the Consultative Committee for Space data Systems – CCSDS.

(*) Liaisons under verification, for possible confirmation

TC/SC	Organization	Category	Person	Contact E-mail
n/a	CCSDS	A	Nick 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	Larry Schultz	larry.l.schultz@nasa.gov
20/14/WG3	ISO	B	David Finkleman	dfinkleman@agi.com
ISOCS	ISO-TPM	B	Andrew Dryden	dryden@iso.org
211 (*)	ISO	B	Bjornhild Saeteroy	bis@standard.no
46/4 (*)	ISO	B	Stuart Ng	stuart.ng@standards.co.nz

46/11 (*)	ISO	B	Hans Hofman & Agnes Simai	hans.hofman@nationaalarchief.nl & agnes.simai@standards.org.au
JTC1/SC32(*)	ISO	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 Gr. on Operations and Ground Support
- 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

Some of the above listed liaisons marked with (*), are being analyzed for possible formalization.

4.5 Inactive P-member bodies

Justifications of absence to the last, 40th meeting (Nov. 2011) of the Subcommittee were not received from: China, India, Israel, Italy, Kazakhstan and Ukraine. In fact, in recent meetings of the Subcommittee: India, Israel, Kazakhstan and Ukraine also did not express any justification for their absences.

5 Constitution

5.1 Working Groups

ISO TC20/SC13 Subcommittee, by nature and conception has and maintain a close tie with 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 technical groups which, under a pre-approved program of work, typically generate topic oriented set of Recommendations for standards (Blue Books), Practices associated to recommendation for standards (Magenta Books) and Supporting technical (Green Books) documents, under an overall architecture that provides interoperability and cross-support among them, in general.

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 3 Special Interest Groups, or SIGs.

CCSDS produced Blue and Magenta Books regularly flow to ISO domain by means of ISO TC20/SC13 Subcommittee activity, to become, under a Cover Sheet process, ISO Standards.

5.2 Changes since last plenary meeting of ISO/TC 20

A total of 27 CCSDS WGs were mentioned in the previous Report of the Subcommittee to ISO TC20, in November 2010.

6 Any other matters of importance to ISO/TC 20

Last 40th Plenary ISO TC20/SC13 Subcommittee meeting was informal and was held in Moscow, Russia, on November 16, 2011. At that meeting, the Program of Work which is maintained and updated on a monthly basis was discussed in detail. In fact, it is reproduced under the specific format of this current Report as presented in its last, Section 7, below.

It deserves special mention the realization of a Joint ISO TC20/SC13-SC14 Subcommittees meeting, held in 23 May, 2011, held at DIN, in Berlin, Germany, which adopted the following Agenda:

**Joint Subcommittees Meeting
ISO/TC 20/SC 13 and ISO/TC 20/SC 14
Hosted by DIN
Berlin, DE
23 May 2011, Monday (08:45-12:00)**

AGENDA

1. (08:45-08:50) Opening of the meeting by joint Chairs and Secretaries.
2. (08:50-09:00) Roll call of delegates.
3. (09:00-09:05) Adoption of the Joint Meeting Agenda.
4. (09:05-09:10) Appointment of the drafting committee.
5. (09:10-09:55) Brief introduction (5') by SC13 Chair and Secretary followed by CCSDS-CESG Director presentation.
6. (09:55-10:15) Coffee Break.
7. (10:15-11:00) Brief introduction (5') by SC14 Chair and Secretary followed by SC14 WG Chairs presentations.
8. (11:00-11:40) Common verification of topics with possible overlaps and of those that may present a complementary nature for ongoing or for possible work items. Drawing of conclusions and, if the case, define possible action items, derived from the common verification of topics.
9. (11:40-12:00) Closing remarks by joint Chairs and Secretaries.
10. (12:00) Adjournment of the meeting.

The above Agenda was effectively observed. The result of that Joint meeting was considered to be most beneficial for both Subcommittees, under the perspective of the ISO TC20/SC13 Subcommittee, to say the least, the Joint meeting enabled a better, overall mutual acquaintance among the many technical WGs of both Subcommittees, therefore, with the direct involvement of all CCSDS WGs, as well, considering that they effectively are the executive technical arm of the ISO TC20/SC13 Subcommittee.

It must also be noticed that the Joint ISO TC20/SC13-SC14 meeting presented an unique occasion to clarify and further consolidate the principles of technical - complementary- nature that govern and characterize the activities of each of the two Subcommittees, before each other. As a result, since then, it became a regular, monthly practice, to methodically release for mutual acquaintance, the contents of the Program of Work of each of the two Subcommittees, to each other. An expected result of the mentioned joint meeting is that given a better acquaintance between both Subcommittees, that the potential of complementary initiatives for technical standardization of space systems may become more easily identifiable for both sides, should any new standard be jointly pursued, by both sides.

EDUARDO W. BERGAMINI
Chairman, ISO TC20/SC13
Subcommittee

MICHAEL W. KEARNEY
Secretary, ISO TC20/SC13
Subcommittee

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 working items of ISO TC20/SC13 Subcommittee. The contribution of Mr. Nick Tongson, in charge of the secretariat support to the ISO TC20/SC13 Subcommittee, has been important in the preparation of the contents of this original version. The Chairman of ISO TC20/SC13 Subcommittee wishes also to acknowledge the invaluable work being provided by Ms. Helen Joyce Aparecida in the build up and maintenance of this Program of Work, as being presented and to be maintained on a regular, monthly basis. The current, **version** of this Program of Work was prepared in: **October, 2011 (original version)**.

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	n/a	2006-11-04	CCSDS 133.1-B-1 Technical Corrigendum 1 to CCSDS 133.1-B-1, Issued June 2006. Silver Book. Issue . October 2006.
19092	ISO 11103:1991 Space data and information transfer systems -- Radio metric and orbit data		60.61	n/a	1990-09-01	CCSDS 501.0-B-1:1987 Radio Metric and Orbit Data. Silver Book. Issue 1. January 1987.
59415	ISO/DIS 11104 Space data and information transfer systems -- Time code formats		60.64	n/a	17/02/2011	CCSDS 301.0-B-4 Time Code Formats . Blue Book. Issue 4. November 2010
19093	ISO 11104:1991 Space data and information transfer systems -- Time code formats		60.62	n/a	1990-09-01	CCSDS 301.0-B-2:1990 Time Code Formats. Silver Book. Issue 2. April 1990.
38141	ISO 11104:2003 Space data and information transfer systems -- Time code formats		60.63	n/a	2002-10-15	CCSDS 301.0-B-3:2002 Time Code Formats. Silver Book. Issue 3. January 2002.
19675	ISO 11754:1994 Space data and information transfer systems -- Telemetry channel coding		60.65	n/a	1991-10-01	CCSDS 101.0-B-3:1992 Telemetry Channel Coding. Silver Book. Issue 3. May 1992.
53984	ISO 13526:2010 Space data and information transfer systems -- Tracking data message		60.60	n/a	2009-02-26	CCSDS 503.0-B-1 Technical Corrigendum 1 to CCSDS 503.0-B-1, Issued November 2007 . Blue Book. Issue 1 Cor. 1. September 2010.
53985	ISO 13527:2010 Space data and information transfer systems -- XML formatted data unit (XFDU) structure and construction rules		60.60	n/a	2009-03-05	CCSDS 661.0-B-1 XML Formatted Data Unit (XFDU) Structure and Construction Rules . Blue Book. Issue 1. September 2008.

53986	ISO 13537:2010 Space data and information transfer systems -- Reference architecture for space data systems		60.60	n/a	2009-03-05	CCSDS 311.0-M-1 Reference Architecture for Space Data Systems . Magenta Book. Issue 1. September 2008.
53987	ISO 13541:2010 Space data and information transfer systems -- Attitude data messages		60.60	n/a	2009-03-05	CCSDS 504.0-B-1 Attitude Data Messages . Blue Book. Issue 1. May 2008.
52985	ISO 15887:2000/Cor 1:2009 Space data and information transfer systems -- Data systems -- Lossless data compression -- Technical Corrigendum 1		60.60	n/a	2008-11-05	
57320	ISO 15889 Space data and information transfer systems -- Data description language -- EAST specification		60.00	n/a	30/08/2010	CCSDS 644.0-B-3 The Data Description Language EAST Specification (CCSD0010) . 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	n/a	2007-03-06	CCSDS 714.0-B-2 Space Communications Protocol Specification (SCPS)—Transport Protocol . Blue Book. Issue 2. October 2006.
50342	ISO 22642:2005/Cor 1:2007 Space data and information transfer systems -- TC (telecommand) synchronization and channel coding -- Technical Corrigendum 1		60.60	n/a	2007-08-21	
45987	ISO 22647:2010 Space data and information transfer systems -- Space link identifiers		60.60	n/a	2007-03-14	CCSDS 135.0-B-3 Technical Corrigendum 1 to CCSDS 135.0-B-3, Issued October 2006. Silver Book. Issue 3 Cor. 1. March 2008.
43849	ISO 26868:2009 Space data and information transfer systems -- Image data compression		60.60	n/a	2005-12-02	CCSDS 122.0-B-1 Technical Corrigendum 3 to CCSDS 122.0-B-1, Issued November 2005. Blue Book. Issue 1 Cor. 3. September 2011.
59155	ISO 17107 Space data and information transfer systems -- XML specification for navigation data messages		60.60	n/a	20/01/2011	
58052	ISO 22671:2011 Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service		60.60	n/a	22/12/2010	
58052	ISO 22672:2011 Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet service specification		60.60	n/a	22/12/2010	CCSDS 911.5-B-1 Space Link Extension – Return Operational Control Fields Service Specification. Silver Book. Issue 1. November 2004.

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
59155	ISO/PRF 17107 Space data and information transfer systems -- XML specification for navigation data messages		50.20	n/a	20/1/2011	
59416	ISO/DIS 17214 Space data and information transfer systems -- Spacecraft onboard interface services -- Time access service		50.00	n/a	17/2/2011	CCSDS 872.0-M-1 Spacecraft Onboard Interface Services—Time Access Service . Magenta Book. Issue 1. January 2011.
58052	ISO/PRF 22671 Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service		50.20	n/a	22/12/2010	
58052	ISO/PRF 22672 Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet service specification		50.20	n/a	22/12/2010	CCSDS 911.5-B-1 Space Link Extension – Return Operational Control Fields Service Specification. Silver Book. Issue 1. November 2004.
59415	ISO/PRF 11104 Space data and information transfer systems -- Time code formats		50.00	n/a	17/02/2011	CCSDS 301.0-B-4 Time Code Formats . Blue Book. Issue 4. November 2010.
56510	ISO/PRF 16363 Space data and information transfer systems - Audit and certification of trustworthy digital repositories		50.00	n/a	2010-04-08	CCSDS 652.0-R-1
59416	ISO/PRF17214 Space data and information transfer systems -- Spacecraft onboard interface services -- Time access service		50.00	n/a	17/02/2011	CCSDS 872.0-M-1 Spacecraft Onboard Interface Services—Time Access Service . Magenta Book. Issue 1. January 2011.

Enquiry stage: 40 (Enquiry stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
38562	ISO/DIS 11754 Space data and information transfer systems -- Telemetry channel coding		40.98	n/a	2002-10-15	CCSDS 101.0-B-6:2002 Telemetry Channel Coding. 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	n/a	2001-10-19	CCSDS 701.0-B-3:2001 Advanced Orbiting Systems, Networks and Data Links: Architectural Specification. Silver Book. Issue 3. June 2001.
57284	ISO/DIS 14721 Space data and information transfer systems -- Open archival information system (OAIS) -- Reference model		40.99	n/a	2010-08-19	CCSDSS 650.0-P-1.1
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	n/a	1997-05-15	CCSDS 704.0-B-1-S:1994 Advanced Orbiting Systems, Networks and Data Links: Audio, Video and Still-Image Communications Services. Silver Book. Issue 1. May 1994.

57950	ISO/CD 16919 Requirements for bodies providing audit and certification of candidate trustworthy digital repositories		40.60	n/a	2010-12-07	CCSDS 652.1-R.1
60590	ISO/DIS 22641 Space data and information transfer systems -- TM (telemetry) synchronization and channel coding		40.20	n/a	11/10/2011	

Committee Stage: 30 (Committee stage)

Internal No.	Designate No. and Title	IMO-link-NR	Stage	WG	Targets	Remarks
35681	ISO 13419:1997/CD Amd 1Space data and information transfer systems -- Packet telemetry -- Amendment 1		30.98	n/a	2000-11-30	
46185	ISO 15887:2000/CD Cor 2Space data and information transfer systems -- Data systems -- Lossless data compression -- Technical Corrigendum 2		30.98	n/a	2007-04-20	
35682	ISO 15889:2000/CD Amd 1Space data and information transfer systems -- Data description language -- EAST specification -- Amendment 1		30.98	n/a	2000-11-30	
50246	ISO/CD 17355Space data and information transfer systems -- CCSDS file delivery protocol		30.98	n/a	2007-08-10	CCSDS 727.0-B-4: 2007 CCSDS File Delivery Protocol (CFDP) . Blue Book. Issue 4. January 2007.
36379	ISO/CD 22644Space data and information transfer systems -- Orbit data messages		30.98	n/a	12/10/2001	
50583	ISO 22671:2007/CD Cor 1Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service -- Technical Corrigendum 1		30.98	n/a	2007-10-01	
36397	ISO/CD 22672Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet service		30.98	n/a	12/10/2001	
60519	ISO/CD 22666Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol		30.99	n/a	22/9/2011	
60964	ISO 26868:2009/CD Cor 1		30.99		09/05/2012	

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	1994-11-10	
36393	ISO/WD 22668 Space data and information transfer systems -- Space link extension (SLE) -- Service management specification		20.98	n/a	2001-10-12	

c. Possible new work items: number including number revisions

Proposal Stage: 10 (Proposal stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks
60592	ISO/NP 17807 Space data and information transfer systems -- Telemetry (TM) channel coding profiles	10.99	n/a	CCSDS 735.1-B-1 Asynchronous Message Service . Blue Book. Issue 1. September 2011.
60593	ISO/NP 17808 Space data and information transfer systems -- Telemetry (TM) channel coding profiles	10.99	n/a	CCSDS 131.4-M-1 TM Channel Coding Profiles . Magenta Book. Issue 1. July 2011.
60594	ISO/NP 17809 Space data and information transfer systems - Delta-Differential One Way Ranging (Delta-DOR) Operations	10.99	n/a	CCSDS 506.0-M-1 Delta-Differential One Way Ranging (Delta-DOR) Operations . Magenta Book. Issue 1. April 2011.
60595	ISO/NP 17810 Space data and information transfer systems - Data Transmission and PN Ranging for 2 GHz CDMA Link via Data Relay Satellite	10.99	n/a	CCSDS 415.1-B-1 Data Transmission and PN Ranging for 2 GHz CDMA Link via Data Relay Satellite . Blue Book. Issue 1. September 2011

Preliminary Stage: 00 (Preliminary stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks

d. Work Programme Reallocation: 90 (Review stage)

Internal No.	Designate No. and Title	Stage	WG	Remarks
21118	ISO 12175:1994 Space data and information transfer systems -- Standard formatted data units -- Structure and construction rules	90.93	n/a	CCSDS 620.0-B-2:1992 Standard Formatted Data Units — Structure and Construction Rules . Blue Book. Issue 2. May 1992.
22845	ISO 13764:1996Space data and information transfer systems -- Standard formatted data units -- Control authority procedures	90.93	n/a	CCSDS 630.0-B-1:1993 Standard Formatted Data Units — Control Authority Procedures . Blue Book. Issue 1. June 1993.
34701	ISO 14961:2002Space data and information transfer systems -- Parameter value language specification	90.93	n/a	CCSDS 641.0-B-2:2000 Parameter Value Language Specification (CCSD0006 and CCSD0008) . . Blue Book. Issue 2. June 2000.
26096	ISO 14962:1997Space data and information transfer systems -- ASCII encoded English	90.93	n/a	CCSDS 643.0-B-1:1992 ASCII Encoded English (CCSD0002) . Blue Book. Issue 1. November 1992.
27534	ISO 15395:1998Space data and information transfer systems -- Standard formatted data units -- Control authority data structures	90.93	n/a	CCSDS 632.0-B-1:1994 Standard Formatted Data Units — Control Authority Data Structures . Blue Book. Issue 1. November 1994.
43828	ISO 15396:2007Space data and information transfer systems -- Cross support reference model -- Space link extension services	90.93	n/a	CCSDS 910.4-B-2:2005 Cross Support Reference Model—Part 1: Space Link Extension Services . Blue Book. Issue 2. October 2005.
29440	ISO 15887:2000Space data and information transfer systems -- Data systems --	90.93		CCSDS 121.0-B-1:1997 Technical Corrigendum 2 to

	Lossless data compression		n/a	CCSDS 121.0-B-1, Issued May 1997 . Blue Book. Issue 1 Cor. 2. September 2007.
29441	ISO 15888:2000Space data and information transfer systems -- Standard formatted data units -- Referencing environment	90.93	n/a	CCSDS 622.0-B-1:1997 Standard Formatted Data Units — Referencing Environment . Blue Book. Issue 1. May 1997.
36451	ISO 15889:2003Space data and information transfer systems -- Data description language -- EAST specification	90.92	n/a	CCSDS 644.0-B-2-S:2000 The Data Description Language EAST Specification (CCSD0010). Silver Book. Issue 2. November 2000.
43829	ISO 17355:2007Space data and information transfer systems -- CCSDS file delivery protocol	90.92	n/a	CCSDS 727.0-B-3 S: 2005 CCSDS File Delivery Protocol (CFDP). Silver Book. Issue 3. June 2005.
39577	ISO 20652:2006Space data and information transfer systems -- Producer-archive interface -- Methodology abstract standard	90.93	n/a	CCSDS 651.0-M-1:2004 Producer-Archive Interface Methodology Abstract Standard . Magenta Book. Issue 1. May 2004.
40247	ISO 21459:2006Space data and information transfer systems -- Proximity-1 space link protocol -- Coding and synchronization sublayer	90.93	n/a	CCSDS 211.2-B-1:2003 Proximity-1 Space Link Protocol—Coding and Synchronization Sublayer . Blue Book. Issue 1. April 2003.
44999	ISO 21460:2007Space data and information transfer systems -- Proximity-1 space link protocol -- Physical layer	90.93	n/a	CCSDS 211.1-B-3 Proximity-1 Space Link Protocol—Physical Layer . Blue Book. Issue 3. March 2006.
36036	ISO 21961:2003Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- Abstract syntax	90.93	n/a	CCSDS 647.1-B-1:2001 Data Entity Dictionary Specification Language (DEDSL)—Abstract Syntax (CCSD0011) . Blue Book. Issue 1. June 2001.
36037	ISO 21962:2003Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- PVL syntax	90.93	n/a	CCSDS 647.2-B-1:2001 Data Entity Dictionary Specification Language (DEDSL)—PVL Syntax (CCSD0012) . Blue Book. Issue 1. June 2001.
43394	ISO 26143:2007Space data and information transfer systems -- Space link extension (SLE) -- Return operational control fields service	90.93	n/a	CCSDS 911.5-B-1 Space Link Extension – Return Operational Control Fields Service Specification. Silver Book. Issue 1. November 2004.
36375	ISO 22641:2005Space data and information transfer systems -- TM (telemetry) synchronization and channel coding	90.93	n/a	CCSDS 131.0-B-1:2003 TM Synchronization and Channel Coding. Silver Book. Issue 1. September 2003.
36376	ISO 22642:2005Space data and information transfer systems -- TC (telecommand) synchronization and channel coding	90.93	n/a	CCSDS 231.0-B-1:2003 Technical Corrigendum 1 to CCSDS 231.0-B-1, Issued September 2003. Silver Book. Issue 1. June 2006.
36377	ISO 22643:2003Space data and information transfer systems -- Data entity dictionary specification language (DEDSL) -- XML/DTD Syntax	90.93	n/a	CCSDS 647.3-B-1:2002 Data Entity Dictionary Specification Language (DEDSL)—XML/DTD Syntax (CCSD0013) . Blue Book. Issue 1. January 2002.
	ISO 22644:2006Space data and information transfer systems -- Orbit data messages	90.92	n/a	
36380	ISO 22645:2005Space data and information transfer systems -- TM (telemetry) space data link protocol	90.93	n/a	CCSDS 132.0-B-1:2003 TM Space Data Link Protocol . Blue Book. Issue 1. September 2003.
36381	ISO 22646:2005Space data and information transfer systems -- Space packet protocol	90.93	n/a	CCSDS 133.0-B-1:2003 Technical Corrigendum 1 to CCSDS 133.0-B-1, Issued September 2003 . Blue Book. Issue 1 Cor. 1. September 2010.
45000	ISO 22663:2007Space data and information transfer systems -- Proximity-1 space link protocol -- Data link layer	90.93	n/a	CCSDS 211.0-B-4 Proximity-1 Space Link Protocol—Data Link Layer . Blue Book. Issue 4. July 2006.
36389	ISO 22664:2005Space data and information transfer systems -- TC (telecommand) space data link protocol	90.93	n/a	CCSDS 232.0-B-1:2003 TC Space Data Link Protocol. Silver Book. Issue 1. September 2003.
44866	ISO 22666:2007Space data and information transfer systems -- AOS (advanced	90.92		CCSDS 732.0-B-2 AOS Space Data Link Protocol .

	orbiting systems) space data link protocol		n/a	Blue Book. Issue 2. July 2006.
36392	ISO 22667:2005Space data and information transfer systems -- Communication operations Procedure-1	90.93	n/a	CCSDS 232.1-B-1:2003 Communications Operation Procedure-1. Silver Book. Issue 1. September 2003.
43442	ISO 22669:2007Space data and information transfer systems -- Space link extension (SLE) -- Return-all-frames service	90.93	n/a	CCSDS 911.1-B-2 Space Link Extension – Return All Frames Service Specification. Silver Book. Issue 2. November 2004.
36395	ISO 22670:2006Space data and information transfer systems -- Space link extension (SLE) -- Return-channel-frames service	90.93	n/a	CCSDS 911.2-B-1:2004 Space Link Extension – Return Channel Frames Service Specification. Silver Book. Issue 1. November 2004.
43443	ISO 22671:2007Space data and information transfer systems -- Space link extension (SLE) -- Forward communications link transmission unit (CLTU) service	90.92	n/a	CCSDS 912.1-B-2 Technical Corrigendum 1 to CCSDS 912.1-B-2, Issued November 2004. Silver Book. Issue 1. May 2007.
42721	ISO 22672:2006Space data and information transfer systems -- Space link extension (SLE) -- Forward space packet	90.92	n/a	CCSDS 912.3-B-1 Space Link Extension – Forward Space Packet Service Specification. Silver Book. Issue 1. November 2004.

e. Standards withdrawn: 95 (Withdrawal stage)

Internal No.	Designate No. and Title	Remarks
33004	ISO 11754:2003Space data and information transfer systems -- Telemetry channel coding	CCSDS 101.0-B-5:2001 Telemetry Channel Coding. Silver Book. Issue 5. June 2001.
21114	ISO 12171:1998Space data and information transfer systems -- Telecommand -- Channel service -- Architectural specification	CCSDS 201.0-B-2:1995 Telecommand Part 1—Channel Service. Silver Book. Issue 2. November 1995.
34711	ISO 12171:2002Space data and information transfer systems -- Telecommand -- Channel service	CCSDS 201.0-B-3:2000 Telecommand Part 1—Channel Service. Silver Book. Issue 3. June 2000.
21115	ISO 12172:1998Space data and information transfer systems -- Telecommand -- Data routing service	CCSDS 202.0-B-2:1992 Telecommand Part 2—Data Routing Service. Silver Book. Issue 2. November 1992.
36591	ISO 12172:2003Space data and information transfer systems -- Telecommand -- Data routing service	CCSDS 202.0-B-3:2001 Telecommand Part 2—Data Routing Service. Silver Book. Issue 3. June 2001.
21116	ISO 12173:1998Space data and information transfer systems -- Telecommand -- Command operation procedures	CCSDS 202.1-B-1:1991 Telecommand Part 2.1—Command Operation Procedures. Silver Book. Issue 1. October 1991.
36447	ISO 12173:2003Space data and information transfer systems -- Telecommand -- Command operation procedures	CCSDS 202.1-B-2:2001 Telecommand Part 2.1—Command Operation Procedures. Silver Book. Issue 2. June 2001.
21117	ISO 12174:1998Space data and information transfer systems -- Telecommand -- Data management service -- Architectural specification	CCSDS 203.0-B-1:1987 Telecommand Part 3—Data Management Service. Silver Book. Issue 1. January 1987.
36446	ISO 12174:2003Space data and information transfer systems -- Telecommand -- Architectural specification for the data management service	CCSDS 203.0-B-2:2001 Telecommand Part 3—Data Management Service. Silver Book. Issue 2. June 2001.
21968	ISO 13419:1997Space data and information transfer systems -- Packet telemetry	CCSDS 102.0-B-4:1995 Packet Telemetry. Silver Book. Issue 4. November 1995.
36479	ISO 13419:2003Space data and information transfer systems -- Packet telemetry	CCSDS 102.0-B-5:2000 Packet Telemetry. Silver Book. Issue 5. November 2000.
21969	ISO 13420:1997Space data and information transfer systems -- Advanced orbiting systems -- Networks and data links -- Architectural specification	CCSDS 701.0-B-2:1992 Advanced Orbiting Systems, Networks and Data Links: Architectural Specification. Silver Book. Issue 2. November 1992.
26095	ISO 14961:1997Space data and information transfer systems -- Parameter value language specification	CCSDS 641.0-B-1:1992 Parameter Value Language Specification (CCSD0006). Silver Book. Issue 1. May 1992.
27535	ISO 15396:1998Space data and information transfer systems -- Cross support reference model -- Space link extension services	CCSDS 910.4-B-1-S:1996 Cross Support Reference Model—Part 1: Space Link Extension Services. Silver Book. Issue 1. May 1996.

29442	ISO 15889:2000Space data and information transfer systems -- Data description language -- EAST specification	CCSDS 644.0-B-1-S:1997 The Data Description Language EAST Specification (CCSD0010). Silver Book. Issue 1. May 1997.
29444	ISO 15891:2000Space data and information transfer systems -- Protocol specification for space communications -- Network protocol	CCSDS 713.0-B-1:1999 Space Communications Protocol Specification (SCPS)—Network Protocol (SCPS-NP). Silver Book. Issue 1. May 1999.
29445	ISO 15892:2000Space data and information transfer systems -- Protocol specification for space communications -- Security protocol	CCSDS 713.5-B-1:1999 Space Communications Protocol Specification (SCPS)—Security Protocol (SCPS-SP). Silver Book. Issue 1. May 1999.
29446	ISO 15893:2000Space data and information transfer systems -- Protocol specification for space communications -- Transport protocol	CCSDS 714.0-B-1:1999 Technical Corrigendum 1 to CCSDS 714.0-B-1-S, Issued May 1999. Silver Book. Issue 1. November 2005.
33005	ISO 17355:2003Space data and information transfer systems -- CCSDS file delivery protocol	CCSDS 727.0-B-1 S:2002 CCSDS File Delivery Protocol (CFDP). Silver Book. Issue 1. January 2002.
38593	ISO 17355:2004 Space data and information transfer systems -- CCSDS file delivery protocol	
28460	ISO 17433:2001Space data and information transfer systems -- Packet telemetry services	CCSDS 103.0-B-1 S:1996 Packet Telemetry Services. Silver Book. Issue 1. May 1996.
36448	ISO 17433:2003Space data and information transfer systems -- Packet telemetry services	CCSDS 103.0-B-2 S:2001 Packet Telemetry Service Specification. Silver Book. Issue 2. June 2001.
40248	ISO 21460:2006Space data and information transfer systems -- Proximity-1 space link protocol -- Physical layer	CCSDS 211.1-B-1 Proximity-1 Space Link Protocol—Physical Layer. Silver Book. Issue 1. April 2003.
36383	ISO 22647:2006Space data and information transfer systems -- Space link identifiers	CCSDS 135.0-B-1:2002 Space Link Identifiers. Silver Book. Issue 1. January 2002.
36386	ISO 22663:2006Space data and information transfer systems -- Proximity-1 space link protocol -- Data link layer	CCSDS 211.0-B-3:2004 Proximity-1 Space Link Protocol—Data Link Layer. Silver Book. Issue 3. May 2004.
36391	ISO 22666:2005Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol	CCSDS 732.0-B-1:2003 AOS Space Data Link Protocol. Silver Book. Issue 1. September 2003.
36394	ISO 22669:2003Space data and information transfer systems -- Space link extension (SLE) -- Return-all-frames service	CCSDS 911.1-B-1:2002 Space Link Extension – Return All Frames Service Specification. Silver Book. Issue 1. April 2002.
36396	ISO 22671:2005Space data and information transfer systems -- Space link extension (SLE) -- Forward command link transmission unit (CLTU)	CCSDS 912.1-B-1:2002 Space Link Extension – Forward CLTU Service Specification. Silver Book. Issue 1. April 2002.
29447	ISO 15894:2000Space data and information transfer systems -- Protocol specification for space communications -- File protocol	CCSDS 717.0-B-1:1999 Space Communications Protocol Specification (SCPS)—File Protocol (SCPS-FP). Silver Book. Issue 1. May 1999.
36451	ISO 15889:2003 Space data and information transfer systems -- Data description language -- EAST specification	CCSDS 644.0-B-2-S:2000 The Data Description Language EAST Specification (CCSD0010). Silver Book. Issue 2. November 2000.
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 Space Link Extension – Forward CLTU Service Specification. 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 Space Link Extension – Forward Space Packet Service Specification. Silver Book. Issue 1. November 2004.

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 months	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 months. 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