Deutsches Zentrum
für Luft- und Raumfahrt e.V.

German
Aerospace Center

DLR

German report for the 36th meeting of the ISO/Technical Committee 20/Subcommittee 13

The following new Standards went through a positive German voting in the reported period:

- ISO/DIS 13526 "Space data and information transfer systems - Tracking data message"
- ISO/DIS 13527 "Space data and information transfer systems - XML formatted data unit (XFDU) structure and construction rules".
- ISO/DIS 13537 "Space data and information transfer systems - Reference architecture for space data systems"
- ISO/DIS 13541 "Space data and information transfer systems - Attitude data messages"

There are the following standards (5) under development in the ISO publications, which we haven't voted for up to now:

- ISO/DIS 10537, Space data and information transfer systems -- Encapsulation service
- ISO/DIS 15893, Space data and information transfer systems -- Protocol specification for space communications -- Transport protocol
- ISO/CD 17355, Space data and information transfer systems -- CCSDS file delivery protocol
- ISO/DIS 22647, Space data and information transfer systems -- Space link identifiers
- ISO 22671:2007/CD Cor 1

Standards for systematic review

For the following documents a systematic review by ISO was initiated and a positive answer was provided by DLR:

- ISO 20652 Space data and information transfer systems — Producer–archive interface — Methodology abstract standard (11.5.: will be kept without changes)
- ISO 22672 - Space data and information transfer systems — Space link extension (SLE) — Forward space packet (22.7.: will be kept with changes)
- ISO 14721:2003 Space data and information transfer systems - Open archival information system - Reference model (8.6.: will be kept with changes)
- ISO 21459:2006, CCSDS 211.2-B-1 Proximity-1 Space Link Protocol—Coding and Synchronization Sublayer (5.8.: will be kept with changes)

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There was no real feedback on CCSDS what about the following standards

- ISO 13764:1996, CCSDS 630.0-B-1, Standard Formatted Data Units — Control Authority Procedures
- ISO 12175:1994, CCSDS 620.0-B-2, Standard Formatted Data Units — Structure and Construction Rules
- ISO 14962:1997, CCSDS 643.0-B-1, ASCII Encoded English (CCSD0002)

DIN publication

The following standard was included during the reporting period according the German Standardization Institute (DIN, NA 131-06-01 AA):

- **ISO 15887 Technical Corrigendum 1** 2009-05 Norm Raumfahrt-Daten- und Informationsübertragungssysteme - Datensysteme - Verlustlose Datenkomprimierung; Korrektur 1
- **ISO/DIS 13526** 2009-08 Norm-Entwurf Space data and information transfer systems - Tracking data message weiter
- **ISO/DIS 13527** 2009-08 Norm-Entwurf Space data and information transfer systems - XML formatted data unit (XFDU) structure and construction rules weite
- **ISO/DIS 13537** 2009-08 Norm-Entwurf Space data and information transfer systems - Reference architecture for space data systems weiter
- **ISO/DIS 13541** 2009-08 Norm-Entwurf Space data and information transfer systems - Attitude data messages weiter

Use of standards within DLR projects

All DLR space projects are forced to make use of the standards defined by CCSDS and ECSS, especially those standards, which are relevant for ground systems as coding and frequency standards, packet TM/TC, SLE services and Navigation Standards.

For Enmap the XTCE will be implemented on the basis of an ESA prototype to interact with the SCOS M&C system.

For the proof of the S/C M&C standard DLR is supporting a prototype activity with JSC. This prototype activity should end up in an implementation of the M&C standards for the interactions with DLRs M&C systems.

There are no news coming up in the cooperation with other organizations. As DLR is a small organization it is hard to drive customers to use standards. As covered last time the military mission SATCOMBw is still not using the ideas of packetized TM. And there are still projects from other CCSDS member agencies, which force us to bypass current standards like LRO.

Innovation with Norms and Standards

For the German initiative “Innovation with Norms and Standards” we offered three CCSDS work items as supportable

- Voice,
- Space Data Link Security (SDLS),
- Optical Communication.

In the mean time SDLS was approved and will be supported by money from this initiative.

Standardization work with for Ukraine

Within an EU-project Germany and Ukraine

- will clarify the adaptation of Ukrainian requirements to the European norms,
- will approximate of Ukrainian norms with European ones.

As another step Germany is training Ukrainians on norms in order to increase qualifications and skills. The CCSDS session foreseen for July was delayed due to organizational problems to the 3rd week of December. So we will here more about that and the possibilities to get Ukrainians involved in CCSDS in the next meeting.

Martin Pilgram
Oberpfaffenhofen, 3.11.2009