



SUBJECT: Minutes of the 50th International Organization for Standardization (ISO) Technical Committee (TC) 20 Subcommittee (SC) 13 on Space data and information transfer systems (Formal) Meeting.

LOCATION: Hosted by ROSCOSMOS and promoted by GOST/R, St. Petersburg, Russia

DATE: 14 June 2017 (Wednesday, 10:00 – 11:40 h)

ATTENDANCE (HoDs, Delegates, Liaisons and Observers)

P-Member countries and attendance

SECRETARY: James Afarin (ANSI/U.S.A.)

CHAIRMAN: Eduardo W. Bergamini (ABNT/BRAZIL)

BRAZIL (ABNT)	Eduardo Bergamini, HoD
FRANCE (AFNOR)	Jean-Marc Soula, HoD
UNITED STATES (ANSI)	James Afarin, HoD (USTAG13) David Ross, Delegate (USTAG13)
INDIA (BIS)	
UNITED KINGDOM (BSI)	Chris Perry, HoD
GERMANY (DIN)	Oswaldo Peinado, HoD
UKRAINE (DSTU)	
RUSSIAN FEDERATION (GOST R)	Vladimir Yanik (TsNIIMash) Dmitry Barannikov (TsNIIMash)
JAPAN (JISC)	Tsutomu Shigeta, HoD
KHAZAKHSTAN (KASMEMST)	
CHINA (SAC)	Zhang Rusheng, HoD (CNSA/CMC-CCSDS)
ITALY (UNI)	

Legend: HoD-Head of Delegation

O-Member countries and attendance

ROMANIA (ASRO)
ARGENTINA (IRAM)
IRAN, ISLAMIC REPUBLIC OF (ISIRI)
KOREA, REPUBLIC OF (KATS)
POLAND (PKN)
FINLAND (SBS)
SWEDEN (SIS)

CZECH REPUBLIC (UNMZ)

Liaisons

ESA-ISO TC20/SC13 Liaison

Juan Mirò (ESOC/ESA)

NOTE:

ISO Official list of ISO TC20/SC13 PARTICIPATING COUNTRIES, as of 30 May 2017, see **Attachment 01**.

1. Opening of the meeting

Dr. J. Afarin opened the 50th meeting and thanked ROSCOSMOS for hosting the meeting. Then, Dr. Afarin requested the ISO TC 20 / SC 13 Chair, Dr. Eduardo Bergamini, to conduct the meeting. Dr. Bergamini also thanked ROSCOSMOS for hosting the meeting.

2. Roll call of delegates

The LIST OF ATTENDANCE to the Subcommittee meeting is reproduced in **Attachment 02** of the minutes.

3. Appointment of the Drafting Committee

As an active member of the Subcommittee Secretariat, Mr. David Ross, also a delegate of ANSI, was invited and approved by Dr. James Afarin to act as the drafting committee for the meeting. Mr. D. Ross accepted the invitation.

4. Approval of the 50th Meeting Agenda (N1601)

Dr. J. Afarin moved to approve the proposed Agenda (N1601) and Dr. E. Bergamini seconded the approval. Then, it was also approved by the other attendees to the meeting. The Agenda of the meeting is reproduced in **Attachment 03**, and observes the following items:

1. (10:00) - *Opening of the meeting.*
2. (10:00-10:05) - *Roll call of delegates.*
3. (10:05-10:10) - *Appointment of the drafting committee.*
4. (10:10-10:15) - *Approval of the 50th meeting Agenda (N1601).*
5. (10:15-10:20) - *Approval of the previous, 49th Meeting Package (See [*], Minutes - Ref. N15698).*
6. (10:20- 10:45) - *Presentation of Member Report by Delegates.*
7. (10:45-10:55) - *Update on CCSDS-ISO TC20/SC13 and ISO TC20/SC14 Liaison activities*
8. (10:55-11:05) - *Potential Liaisons with ISO TC20 SC16 (Unma. A/C Sys.) and SC17(Airp. Infrastr.).*
9. (11:05-11:25) - *Candidacy for new Chairmanship of the Subcommittee in 2018.*
10. (11:25-11:35) - *Review and update of the Resolutions and Action Items.*
11. (11:35-11:40) - *Other Business and Planning for the (Formal) 51st meeting.*
12. (11:40) - *Adjourn*

NOTE: Criteria for presentation of written REPORTS by P-Members: 1) Expected, in a FORMAL meeting; 2) Optional, in an INFORMAL meeting.

5. Approval of the previous, 49th Meeting Package (Minutes – Ref. N1598)

The Meeting Package of the 49th Subcommittee meeting, headed by the MINUTES (N1598), is presented in **Attachment 04**. The meeting package comprises a set of Attachments that, among other items, contains the RESOLUTIONS (N1600) and the ACTION ITEMS (N1599) of that meeting. The COMPLETE package (Minutes plus Attachments) can be consulted directly in one of the following

two Web (clickable) URLs: 1) [That of the Subcommittee in ISO Livelihood Website](#), and; 2) [In the ISO TC20/SC13 Subcommittee Web page of the CWE CCSDS Website](#).

6. Presentation of Member Report by Delegates

As an FORMAL Subcommittee Meeting, in principle, reports were expected from the P-Members. The reports that were presented are available in the corresponding attachments of these minutes and are briefly commented in the following lines of this same section.

6.1 - Brazil/ABNT

ABNT/Brazil report was presented by Eduardo Bergamini. The report is reproduced in **Attachment 05**. Account was given of all the reviews-polls done by ABNT for ISO since the previous Subcommittee meeting. Concerning the recent, new editorial practice of ABNT, E. Bergamini stated that ABNT is now considered to adopt the document as it is presented in ISO domain. Which means in terms of CCSDS documents, the cover sheet version, is now being translated to the Portuguese and observing the same ISO format. This new ABNT practice implies in quite a change from the ABNT practice observed till recently, which implied in taking the document as it is from CCSDS, translate it, then, map it to a format proper of ABNT. At the same time, E. Bergamini stated that it has been recently submitted to ABNT, a preliminary request for their possible, opportune, consideration that would imply in observing their new practice, when departing from ISO TC20/SC13 standards but, permitting that the main content of the document, that is, related to the CCSDS core content, that it may be preserved as in its original, in English. The main justification for this new proposal to ABNT is intended to speed up the production of Standards by ABNT, in view of the very limited capacity of production of standards under the procedure being adopted, which implies in the too lengthy work of translation to the Portuguese of the original standard, written in English. Dr. E. Bergamini called attention to the fact of the association of CCSDS DAI WG work with that being done by other ISO related standardization groups as well, including also work being done by ISO TC20/SC 13 corresponding technical group CE:08.010.70 of ABNT/Brazil.

6.2 - France/AFNOR

France/AFNOR report was presented by Jean-M. Soula. The report is reproduced in **Attachment 06**. J.M. Soula provided the Agency report for AFNOR. J.M. Soula noted that apart from the report on activities there is no report on translation. J.M. Soula indicated that all documents are used in their original version. J.M. Soula noted that they would also like to thank NASA and ROSCOSMOS for hosting this series of CCSDS meetings.

6.3 – U.S.A./ANSI

U.S.A./ANSI report was presented by Dr. James Afarin. The report is reproduced in **Attachment 07**. Dr. Afarin reviewed the documents currently under review and those that were reviewed by ANSI since the past ISO TC 20 SC 13 meeting.

6.4 – U.K./BSI

U.K./BSI report was presented by Christopher (Chris) Perry. The report is reproduced in **Attachment 08**. Christopher Perry presented the BSI program of work since the last ISO TC 20 SC 13 meeting.

- C. Perry added that there's a separate committee ACE/68 sub-group 7 of this committee that deals with ISO standards from TC 20 SC 14. The Default position of the committee is to vote to adopt standards from SC 20 / SC 13.

- C. Perry noted that there were questions about whether CCSDS standards would continue to disseminate through the ISO system. There were conversations through E. Bergamini and the ISO and confirmed that standards will continue to filter through this path.
- Another question in context of ACE 68 was in relation to ISO standards that are also adopted in the context of the European CEN standards. This is because the national standards agencies are required to adopt CEN standards, therefore we have a situation in a small number of standards where there are ISO standards and revised CEN standards. So the question is to other European groups is if they have encountered this and how to synchronize standards between ISO and CEN?
- DIN recommended following the ISO standards, instead of the CEN standards.
- Discussion on the standards and mismatches between ISO SC 13 documents and CCSDS documents occurred amongst the group. The ISO SC 13 secretariat noted that there were efforts under way to identify mismatches in documentation and provide updates. An open question remained as to if silvered documents (historical status) in the CCSDS should be updated right away/await their review cycle in ISO before retiring.

6.5 - Germany/DIN

Germany/DIN report was presented by Osvaldo Peinado. The report is reproduced in **Attachment 09**. O. Peinado presented the DIN program of work since the last ISO TC 20 SC 13 meeting. O. Peinado noted that DIN gets frequent comments on text of the documents from outside of CCSDS. Sometimes this is straightforward, other times it is a bit more complicated. After ISO, CCSDS/SC 13 standards are converted to DIN standards. At this point the title only is converted to German, but the remainder of the document remains in its English version.

- The group discussed meeting of NA 131-06-01 and added that a lot of industry and a lot of members from France attended the meetings in Cologne.
- Use of Standards within DLR projects was described by DIN.
- All DLR space projects are forced to make use of the standards defined by CCSDS and ECSS (CEN).
- O. Peinado noted that CEN/CLC/TC5 5 space group met in Brussels in their 11th meeting January 2017. The next meeting will be in June in Berlin.

6.6 - Russia/GOST R

Russia/GOST R report was presented by Dmitry Barannikov, of TsNIIMash (ROSCOSMOS). The report is reproduced in **Attachment 10**.

- D. Barannikov reviewed the activities of GOST R in the last six months since the prior ISO TC 20 SC 13 meeting. He added that the standardization process of ROSCOSMOOS is under a new management process and that the new process is translating the main parts of a standard into Russian from English. After the translation step is completed, the document is distributed to the various organizations of Rocket Space Industry. These organizations then provide comments, we collect them, then we form the position of the ROSCOSMOS and agree to approve the standards are applicable and necessary and vote for the approval of the systematic review without changes.
- D. Barannikov added that the current standards in work by the department (currently translating) OAIS and space data and information transfer systems.

- Regarding the use of international standards, D. Barannikov stated that ROSCOSMOS uses the international standards in international projects. For internal missions, earth remote sensing missions or GLONASS missions, they use their own internal standards from GOST-R. The standards are fully translated into Russian, but if it is too close (not enough time to make a technical change before the review is submitted) then ROSCOSMOS only translates the main parts of the standards, as is pragmatic. The timeline also depends on the volume of the text. If the standards are 50, 80, 90 pages it is okay to translate the whole text, however, if the standards are larger than that, it is very difficult to translate.

6.7 - Japan/JISC

Japan/JISC report was presented by Tsutomu Shigeta. The report is reproduced in **Attachment 11**. T. Shigeta presented a demonstration of the new Japanese CCSDS/ISO standards website. T. Shigeta then provided an overview of the voting for JISC since the prior ISO TC 20 SC 13 meeting.

7. Update on CCSDS-ISO TC20/SC13 and ISO TC20/SC14 Liaison Activities

E. Bergamini informed the subcommittee that he recently checked with both sides that Daniel Oltrogge was named ISO TC20/SC 14 WG3 technical liaison with ISO TC20/SC13 - CCSDS, which has been effectively represented by David Berry, Chairman of CCSDS MOIMS-NAV Navigation Working Group. N. Peccia proposed that ISO TC20/SC 13 liaisons should match those identified in the CCSDS. E. Bergamini notes that, strictly, this is and cannot be true. That is, yes, technical liaisons between ISO TC20/SC13 and other ISO groups, since the beginning, have been technically justified by corresponding technical liaisons drawn from CCSDS CEG ADs and or from CEG/Ads and WGs. However, there are solidly justified reasons for liaisons with ISO Organizations that naturally involve the Chairman and Secretary of ISO TC20/SC13 Subcommittee, only, in spite of their natural involvement with CCSDS, as well. The table provided at the end of this section reflects the status of the existing (CCSDS -) ISO TC20/SC13 Subcommittee Liaisons with ISO Organizations.

J. Afarin approved the liaison list for SC 13 and that of CCSDS, as provided by N. Peccia.

As per the request from N. Peccia, it is being requested that only Nestor Peccia and Wallace Tai, may be maintained in the e-mail list for distribution of ISO TC20/SC13 Secretariat released items, in this case, that may also be of interest of CCSDS Technical Areas. In turn, N. Peccia mentioned that, in their roles as the CCSDS CEG Chair and Deputy Chair, they will care for internal distribution of those items in the realm of CEG/CCSDS.

Liaisons with ISO organizations	
Organization	Name
External Liaison - ISO CS Technical Program Manager External Liaison - ISO TC20 External Liaison - ISO TC20 Internal Liaison - ISO/TC20/SC13 Internal Liaison - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)
External Liaison - ISO/TC46/SC 4 External Liaison - ISO/TC46/SC 4 Internal Liaison - CCSDS MOIMS DAI - ISO/TC20/SC13 Internal Liaison - CCSDS MOIMS DAI - ISO/TC20/SC13	Hakala, Juha (Chairperson) Heiskanen, Kati (Secretary) Giaretta, David Garrett, J.
Chairperson - ISO/TC 211 Secretary - ISO/TC 211 Chairperson - ISO/TC 211 (Associate) Internal Liaison - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ostensen, Olaf Allansson, Christine Ostensen, Olaf (Chairperson) Giaretta, David (Chairperson, MOIMS DAI WG)
Chairperson - ISO/TC46/SC11 (Associate) Secretary - ISO/TC46/SC11 (Associate) Internal Liaison - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ellis, Judith (Chairperson) Hobern, Clare (Secretary) Giaretta, David (Chairperson MOIMS DAI WG)
External Liaison - CCSDS-ISO/TC20/SC14 Technical Liaison Internal Liaison - CCSDS- ISO/TC20/SC13 Technical Liaison Chairperson - ISO/TC20/SC14 Chairperson - ISO/TC20/SC13 Secretary - ISO/TC20/SC14 Secretary - ISO/TC20/SC13	Slane, Frederick Shames, Peter (CCSDS CESG SEA AD) Gill, Paul (Chairperson) Bergamini, Eduardo (Chairperson) Tongson, Nick (Secretary) Afarin, James (CCSDS & ISO TC20/SC13 Secretary)
External Liaison - ISO/TC20/SC14/WG3 Internal Liaison - ISO/TC20/SC13	Oltrogge, Dan (ISO TC20/SC14 WG3 & WG4) Berry, David S. (CCSDS MOIMS NAV WG Chair)
External Liaison - ISO IEC JTC 1 / SC29 Internal Liaison - ISO/TC20/SC13	t.b.d Grubbs, Rodney
External Liaison - ISO CS Technical Program Manager External Liaison - ISO TC20 External Liaison - ISO TC20 Internal Liaison - ISO/TC20/SC13 Internal Liaison - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)

8. Potential Liaisons with ISO TC20/SC16 (Unmann. A/C Sys.) and SC17 (Airport Infrastruct.)

The Chairman of the Subcommittee, Eduardo Bergamini, reminded the attendees of this meeting that there may be an eventual opportunity for CCSDS-ISO TC20/SC13 to liaise with ISO TC20/SC 16 and SC 17. However, E. Bergamini also noted that it was recently found that the Programs of Work of each of the two mentioned, new Subcommittees of ISO/TC20 seem to be not sufficiently stable, yet. That is, an analysis and review of their programs of work is recommended to be postponed for future consideration, as found to be applicable. E. Bergamini justified this initiative, for example, reminding that spaceports might be in the context of ISO TC20/SC17 (Airport Infrastructure) and, should this be the case, space data systems, the central theme of CCSDS-ISO TC20/SC13, may eventually be related (communication and data transport protocols, etc.) to that context. Similar consideration might eventually justify liaise of the Subcommittee with ISO TC20/SC16 (Unmanned Aircraft Systems) Subcommittee, as well.

9. Candidacy for new Chairmanship of the Subcommittee in 2018

Eduardo Bergamini pointed out that ISO TC20/SC13 Subcommittee is expected to have a new Chairman that will replace him, beginning in 2018. Therefore, it was noted that the decision for a new Chairman of the Subcommittee must be made during the next, 51st ISO TC20/SC13 formal meeting, expected to take place in November (2017), to identify and elect the new Chairman of the Subcommittee, while observing the 2017 deadline. The Secretariat understands that this is a point for discussion during the mid-term CMC teleconference, in a way that it may lead to a conclusion on whom the new chairperson should be. In any case, this topic will be discussed in the coming Subcommittee meeting to be held in Darmstadt, in November 2017.

10. Review and update of the Resolutions and Action Items

Derived from the RESOLUTIONS and ACTION ITEMS which resulted from the 49th meeting, the resulting 50th meeting RESOLUTIONS (Ref. **N1608**), are available in **Attachment 12**, and the ACTION ITEMS (Ref. **N1607**), are available in **Attachment 13**.

Letter to SCC: Action Items:

- The committee agreed to **CLOSE** Action Item **SC13-A-2015-11-1** on sending the letter to SCC, based upon discussions with Siamak Tafazoli, CSA delegate to CMC/CCSDS;
- The committee agreed to **CLOSE** Action Item **SC13-A-2016-04-1**, for an eventual revisiting of the proposal, in the future, as commented in section 8 of these minutes;
- The committee agreed to **CLOSE** Action Item **SC13-A-2016-04-3**, after comments received from Nestor Peccia;
- The committee agreed to **CLOSE** Action Item **SC13-A-2016-04-4**, after updates received from Peter Shames and David Berry;
- A new Action Item, **SC13-A-2017-6-1** was created with the intention to nominate a new Chairman for the Subcommittee for a new term, in 2018;
- Another new Action Item **SC13-A-2017-6-2** was created for sending a letter of thanks to ROSCOSMOS (GOST-R) for the excellent facilities and organization that supported this meeting of ISO TC20/SC13 Subcommittee. Destination address for the letter will be provided by Dmitry Barannikov.

Review of the discrepancies between ISO and CCSDS standards: Led by Dr. E. Bergamini, the group briefly discussed the need to reconcile discrepancies between CCSDS standards and ISO standards. N. Peccia, Director of CCSDS Engineering Steering Group (CESG) noted that there are discrepancies between ISO and CCSDS documents based on their point, or status, in their review lifecycle. The group then discussed the best option for removing silvered CCSDS books from the ISO publications. O. Peinado pointed out that some silver books still are used as standards, so they should not be deleted as an ISO book, and thus DIN would prefer to let them be resolved through the regular ISO lifecycle. It was also noted that eventual differences in status between the two organizations, CCSDS and ISO TC20/SC13, is also due to the non-synchronicity of the timing in the processing of new items and of reviews in the domain of each of them. The decision has been made to leave the documents and standards follow their normal process in ISO domain. Therefore, in some cases, asynchronicity of processing of documents and standards between CCSDS and ISO TC20/SC13 is expected to continue. A request was made to also add this note to the current CCSDS CMC Meeting minutes, as well.

11. Other Business and Planning for the (Formal) 51st meeting

E. Bergamini mentioned that the ISO TC20/SC13 Subcommittee Annual Report (**N1620**) to ISO/TC20 Committee would have to be cared for, hopefully, in time for their 51st Plenary Meeting, scheduled to be held in Arlington, VA, U.S.A., 21-22 September 2017. In fact, this annual report of the Subcommittee could be submitted to ISO/TC20 Secretariat only in October 2017, as found in **Attachment 14**. At the discretion of ISO/TC20 Committee Secretariat, it is possible that the mentioned report will be associated as a subsequent addendum to the minutes of the 51th Plenary Meeting of ISO TC20.

Dr. E. Bergamini reminded all that the subsequent, 51st ISO TC20/SC13 Subcommittee meeting will be a formal one, as usual, scheduled to be held jointly with CCSDS CMC management meeting, in the Fall of 2017, in ESOC/ESA, in Darmstadt, Germany.

12. Adjourn

The meeting was adjourned at approximately 11:45, after covering all the items of the Agenda.

ATTACHMENTS

The listing of all the **ATTACHMENTS** to the Minutes of this meeting is provided in the final page of this document. The name of each corresponding file to each of the attachments is also provided.

ACKNOWLEDGEMENT

The Chairman of the Subcommittee, Eduardo Bergamini expresses his gratitude to Mr. David Ross, ANSI (NASA) member and associate to the Secretariat of the Subcommittee, for acting as the Rapporteur of the 50th Formal ISO TC20/SC13 Subcommittee meeting and, therefore, for providing important notes that were of fundamental value for the benefit of the Minutes and of its Attachments that are grouped in the corresponding Meeting Package, after the overall writing and compiling performed by the Chairman of the Subcommittee.

OBSERVATION

The complete 50th ISO TC20/SC13 Formal MEETING PACKAGE, composed by the MINUTES and by the associated ATTACHMENTS, prepared by E. Bergamini, counted on the certainly valuable review by the Secretary of the Subcommittee, Dr. James Afarin and by the members of the associated Secretariat, Mr. David Ross, and Mr. Michael Blackwood.

JAMES AFARIN

Secretary, ISO TC20/SC13

EDUARDO W. BERGAMINI

Chairman, ISO TC20/SC13

LIST OF ATTACHMENTS TO THE MINUTES (by file names)

- Att. 01 <01.Att.01.ISO_TC20-SC13.PARTICIPATING.COUNTRIES.as.of.30.May.17>**
- Att. 02 <02.Att.02.ATTENDANCE.LIST.F.Meet.50th.SC13.14.Jun.17.St.Petersburg.Ru>**
- Att. 03 <03.Att.03.AGENDA.N1601.50th.SC13.F.Meet.14.Jun.17.St.Petersburg.Ru.14.Jun.17>**
- Att. 04 <04.Att.04.MINUTES.N1598.to.49th.SC13.I.Meet.24.Oct.2016.Rome.It.V.1.Mar.17>**
- Att. 05 <05.Att.05.BRAZIL-ABNT.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.V.29.May.17>**
- Att. 06 <06.Att.06.FRANCE-AFNOR.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 07 <07.Att.07.U.S.A.-ANSI.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 08 <08.Att.08.U.K.-BSI.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 09 <09.Att.09.GERMANY-DIN.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 10 <10.Att.10.RUSSIA-GOST R.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 11 <11.Att.11.JAPAN-JISC.Rep.to.50th.SC13.F.Meet.St.Petersburg.RU.Jun.17>**
- Att. 12 <12..Att.12.RESOLUTIONS.N1608.50th.SC13.F.Meet.14.Jun.17.St.Petersburg.Ru>**
- Att. 13 <13.Att.13.ACTION.ITEMS.N1607.50th.SC13.F.Meet.14.Jun.17.St.Petersburg.Ru>**
- Att. 14 <14.Att.14.ISO.TC20-SC13.N1620.Annual. Report.to.ISO-TC20.Tech.Committee.Oct.2017>**