

**SUBJECT:** Minutes of the 51st International Organization for Standardization (ISO) Technical Committee (TC) 20 Subcommittee (SC) 13 on Space data and information transfer systems (Formal) Meeting.

**LOCATION:** Hosted by ESOC/ESA and promoted by DIN, Darmstadt, Germany

**DATE:** 14 November 2017 (Tuesday, 09:00 – 11:00 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
CHINA (SAC)	Yuxia Zhou, HoD (CASI) Lei Xu (CASI) Yonghui Huang (CNSA)
FRANCE (AFNOR)	Jean-Marc Soula, HoD (CNES)
GERMANY (DIN)	Oswaldo Peinado, HoD (DLR) Martin Pilgram (DLR)
INDIA (BIS)	
ITALY (UNI)	
JAPAN (JISC)	Tsutomu Shigeta, HoD
KHAZAKHSTAN (KASMEMST)	
RUSSIAN FEDERATION (GOST R)	Dmitry Barannikov (TsNIIMash) Vladimir Yanik (TsNIIMash)
UKRAINE (DSTU)	
UNITED KINGDOM (BSI)	
UNITED STATES (ANSI)	James Afarin, HoD (USTAG13) David Ross, Delegate (USTAG13) Wallace Tai (NASA)

*Legend:* HoD-Head of Delegation

**O-Member countries and attendance**

ARGENTINA (IRAM)  
BELGIUM (NBN)  
CZECH REPUBLIC (UNMZ)

FINLAND (SFS)

IRAN, ISLAMIC REPUBLIC OF (ISIRI)

KOREA, REPUBLIC OF (KATS)

POLAND (PKN)

ROMANIA (ASRO)

SWEDEN (SIS)

### **Liaisons**

ESA-ISO TC20/SC13 Liaison

Michael McKay (ESOC/ESA)

### **NOTE:**

ISO (Livelink) Official list of ISO TC20/SC13 PARTICIPATING COUNTRIES, as of 17 October 2017, see **Attachment 01**.

## **1. Opening of the meeting**

Dr. J. Afarin opened the 51st meeting and also invited the CASI individuals from SAC(China) to introduce themselves. Then, Dr. James Afarin thanked Dr. Eduardo Bergamini for his many years of hard work, adding that all the work of the ISO community and of the CCSDS would not have been possible without Eduardo's dedication and assistance over the past years. In sequence, Dr. Afarin requested the ISO TC 20 / SC 13 Chair, Dr. Bergamini to conduct the meeting. Dr. Bergamini, at the opening of the meeting, also thanked ESOC/ESA for hosting and DIN for promoting the meeting.

## **2. Roll call of delegates**

Eduardo Bergamini, announced to the attendants to the meeting that the LIST OF ATTENDANCE was being passed for signature. The signed-up List of Attendance of the 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, accepted, and was appointed to act as the drafting committee of the meeting.

## **4. Approval of the 51st Meeting Agenda (N1621)**

Eduardo Bergamini motioned for the approval of the proposed Agenda (N1621). The Plenary approved the proposed Agenda that is reproduced in **Attachment 03**, of the minutes of the meeting. The Agenda observes the following content:

1. (09:00) - **Opening of the meeting.**
2. (09:00-09:05) - **Roll call of delegates.**
3. (09:05-09:10) - **Appointment of the drafting committee.**
4. (09:10-09:15) - **Approval of the 51<sup>th</sup> meeting Agenda (N1621).**
5. (09:15-09:20) - **Approval of the previous, 50<sup>th</sup> Meeting Package (See [\*, Minutes - Ref. N1606).**

6. (09:20-09:50) - **Presentation of Member Report by Delegates.**
7. (09:50-10:10) - **Update on CCSDS-ISO TC20/SC13 Liaison activities.**
8. (10:00-10:25) - **Planning for new Chairmanship of the Subcommittee in 2018.**
9. (10:25-10:40) - **Review and update of the Resolutions and Action Items.**
10. (10:40-11:00) - **Other Business and Planning for the (formal) 52nd meeting.**
11. (11:00) - **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, 50th Meeting Package (Minutes – Ref. N1606)**

The 50th Subcommittee Meeting Package, headed by the MINUTES (**N1606**) which is presented in **Attachment 04**, and that also comprises a set of Attachments that, among other items, contains the RESOLUTIONS (**N1608**) and the ACTION ITEMS (**N1607**) of that meeting, as well, was unanimously approved by the Subcommittee plenary of the 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 Livelink Website, and; 2) In the ISO TC20/SC13 Subcommittee Web page of the CWE CCSDS Website.

## **6. Presentation of Member Report by Delegates**

The P-Members presented reports, in principle, considering that this was a FORMAL Subcommittee meeting. The reports are attached to these minutes as part of the Meeting Package. Some comments related to the reports that were presented are made in the following lines of this section of the minutes.

### **6.1 - Brazil/ABNT**

ABNT report was presented by E. Bergamini to the Subcommittee. E. Bergamini indicated that there are currently three standards under the final approval process, by ABNT. The presented report is reproduced in **Attachment 05**.

E. Bergamini commented that the editorial style of ABNT has significantly changed and is being gradually adopted by the TC20/SC13 correspondent technical group. Indeed, for all the CCSDS Recommendations for Standards or for Best Practices that are transformed to ISO Standards and that are of interest of ABNT to be adopted as a Brazilian Standard (or NBR), the new editorial practice of ABNT prescribes that the ISO Standard must be translated to the Portuguese as it is, and added by an ABNT cover-sheet.

### **6.2 – CHINA/SAC**

On behalf of SAC/China, Ms./Mrs. Yuxia Zhou (CASI) presented a report to the Meeting Plenary. The report is reproduced in **Attachment 06**. Osvaldo Peinado (DIN) asked if SAC have their standards translated to Chinese language. The delegate Yuxia Zhou (CASI) responded that in their centers, China practices the use Standards which are translated to the Chinese language.

### 6.3 - FRANCE/AFNOR

Mr. Jean-Marc Soula presented AFNOR/France. The report is available in **Attachment 07** of these minutes.

J.M. Soula noted that the group has reviewed the same list of standards as just reported by ABNT. They also have three standards that are under review now. J.M. Soula added that there are some CCSDS standards that are upcoming that are not yet approved in ISO.

J.M. Soula added that the best situation would be that whenever CCSDS may have a new version of a Recommendation, that this new version should be submitted to ISO TC20/SC13, be it by means of a periodical review, or not.

The TC20/SC13 Subcommittee discussed and agreed to update any CCSDS originated documents by the time they are published in CCSDS domain. Therefore, the Subcommittee agreed that it would be best to start-up the review of documents in ISO domain just after each of them have been updated and be ready for publishing in CCSDS domain.

### 6.4 - Germany/DIN

Oswaldo Peinado provided the DIN report. The report is reproduced in **Attachment 08**. O. Peinado noted that there are no big changes in the procedures being practiced by DIN, although there are still undergoing discussions on how to implement CCSDS Recommendations in the context of European Standards.

### 6.5 - Japan/JISC

Report on JISC activities was presented by Tsutomu Shigeta. The report is reproduced in **Attachment 09**. T. Shigeta noted that JISC Website that was presented to the Subcommittee, has been updated on a regular basis and that it is providing an overview of the latest Standards written in Japanese language that have been made available for use. It was also reported that CCSDS Green Books are also in being made available by JISC's Website. The process of addition of CCSDS Green books in the Website of JISC is expected to be completed by March 2018. As part of JISC's report, Tsutomu Shigeta also presented the activities that were executed since the previous meeting of the Subcommittee.

### 6.6 - Russia/GOST R

On behalf of GOST R/Russia, a report was presented by Dmitry Barannikov (TsNIIMash/ROSCOSMOS). The report is reproduced in **Attachment 10** of these minutes. D. Barannikov discussed the new methodology of work which is in practice by GOST-R for review and approval of ISO standards. D. Barannikov added that CCSDS originated documents are going under the process of being, case-by-case, fully or partially translated for distribution among the corresponding Subject Matter Experts of Russian organizations. D. Barannikov presented the standards that are currently under review by GOST-R. Among the current standards which are under review by GOST-R, it was explicitly mentioned that the OAIS and the TM Synchronization and Channel Coding, are among them. D. Barannikov noted that the mentioned publications are under voting, as part of the ISO Systematic Review stage and that they are currently waiting for the voting by ROSCOSMOS. D. Barannikov proposed that the Subcommittee status of documents, or Program of Work, as presented in an Excel format be sent to them, monthly. The Subcommittee agreed and, now, considers providing the Program of Work status to them, monthly.

## 6.7 – U.S.A./ANSI

Dr. James Afarin presented ANSI/U.S.A. report. The report is reproduced in **Attachment 11**. Dr. Afarin presented the list of documents which are under review and, also, those that were reviewed by ANSI since the previous ISO TC 20 SC 13 meeting.

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

The status of the integrated CCSDS-ISO TC20/SC13 liaisons was commented by Eduardo Bergamini and can be verified as presented in the following list, which is part of the list of Members, Liaisons and Associates of the Subcommittee which is updated in the Subcommittee Websites, monthly. The current list of Liaisons, is

<b>Liaisons with ISO organizations</b>		
<b>Organization</b>	<b>Name</b>	<b>E-Mail</b>
<b>External Liaison</b> - ISO CS Technical Program Manager <b>External Liaison</b> - ISO TC20 <b>External Liaison</b> - ISO TC20 <b>Internal Liaison</b> - ISO/TC20/SC13 <b>Internal Liaison</b> - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)	<a href="mailto:dryden@iso.org">dryden@iso.org</a> <a href="mailto:chris.carnahan@aiaa-aerospace.org">chris.carnahan@aiaa-aerospace.org</a> <a href="mailto:rusty.rentsch@aiaa-aerospace.org">rusty.rentsch@aiaa-aerospace.org</a> <a href="mailto:james.afarin@nasa.gov">james.afarin@nasa.gov</a> <a href="mailto:e.w.bergamini@uol.com.br">e.w.bergamini@uol.com.br</a>
<b>External Liaison</b> - ISO/TC46/SC 4 <b>External Liaison</b> - ISO/TC46/SC 4 <b>Internal Liaison</b> - CCSDS MOIMS DAI - ISO/TC20/SC13 <b>Internal Liaison</b> - CCSDS MOIMS DAI - ISO/TC20/SC13	Hakala, Juha (Chairperson) Heiskanen, Kati (Secretary) Giaretta, David Garrett, J.	<a href="mailto:juha.hakala@helsinki.fi">juha.hakala@helsinki.fi</a> <a href="mailto:kati.heiskanen@sfs.fi">kati.heiskanen@sfs.fi</a> <a href="mailto:david@giaretta.org">david@giaretta.org</a> <a href="mailto:garrett@his.com">garrett@his.com</a>
<b>Chairperson</b> - ISO/TC 211 <b>Secretary</b> - ISO/TC 211 <b>Chairperson</b> - ISO/TC 211 (Associate) <b>Internal Liaison</b> - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ostensen, Olaf Allansson, Christine Ostensen, Olaf (Chairperson) Giaretta, David (Chairperson, MOIMS DAI WG)	<a href="mailto:olaf.ostensen@kartverket.no">olaf.ostensen@kartverket.no</a> <a href="mailto:christine.allansson@sis.se">christine.allansson@sis.se</a> <a href="mailto:olaf.ostensen@kartverket.no">olaf.ostensen@kartverket.no</a> <a href="mailto:david@giaretta.org">david@giaretta.org</a>
<b>Chairperson</b> - ISO/TC46/SC11 (Associate) <b>Secretary</b> - ISO/TC46/SC11 (Associate) <b>Chairperson</b> - ISO/TC46/SC11 (Associate) <b>Internal Liaison</b> - CCSDS MOIMS DAI WG - ISO TC20/SC13	Ellis, Judith (Chairperson) Hobern, Clare (Secretary) McIntosh, Andrea (Chairperson) Giaretta, David (Chairperson MOIMS DAI WG)	<a href="mailto:judithellis@enterpriseknowledge.com.au">judithellis@enterpriseknowledge.com.au</a> <a href="mailto:Clare.Hobern@standards.org.au">Clare.Hobern@standards.org.au</a> <a href="mailto:amcintosh@wdc.govt.nz">amcintosh@wdc.govt.nz</a> <a href="mailto:david@giaretta.org">david@giaretta.org</a>
<b>External Liaison</b> - CCSDS-ISO/TC20/SC14 Technical Liaison <b>Internal Liaison</b> - CCSDS- ISO/TC20/SC13 Technical Liaison <b>Chairperson</b> - ISO/TC20/SC14 <b>Chairperson</b> - ISO/TC20/SC13 <b>Secretary</b> - ISO/TC20/SC14 <b>Secretary</b> - 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)	<a href="mailto:freds@spacestandards.org">freds@spacestandards.org</a> <a href="mailto:Peter.M.Shames@jpl.nasa.gov">Peter.M.Shames@jpl.nasa.gov</a> <a href="mailto:paul.gill@nasa.gov">paul.gill@nasa.gov</a> <a href="mailto:e.w.bergamini@uol.com.br">e.w.bergamini@uol.com.br</a> <a href="mailto:NickT@aiaa.org">NickT@aiaa.org</a> <a href="mailto:james.afarin@nasa.gov">james.afarin@nasa.gov</a>
<b>External Liaison</b> - ISO/TC20/SC14/WG3 <b>Internal Liaison</b> - ISO/TC20/SC13	Oltrogge, Dan (ISO TC20/SC14 WG3 & WG4) Berry, David S. (CCSDS MOIMS NAV WG Chair)	<a href="mailto:doltrogge@agi.com">doltrogge@agi.com</a> <a href="mailto:david.s.berry@jpl.nasa.gov">david.s.berry@jpl.nasa.gov</a>
<b>External Liaison</b> - ISO IEC JTC 1 / SC29 <b>Internal Liaison</b> - ISO/TC20/SC13	<b>t.b.d</b> Grubbs, Rodney	<b>t.b.d</b> <a href="mailto:Rodney.grubbs@nasa.gov">Rodney.grubbs@nasa.gov</a>
<b>External Liaison</b> - ISO CS Technical Program Manager <b>External Liaison</b> - ISO TC20 <b>External Liaison</b> - ISO TC20 <b>Internal Liaison</b> - ISO/TC20/SC13 <b>Internal Liaison</b> - ISO/TC20/SC13	Dryden, Andrew ("Andy") Carnahan, Christopher ("Chris") - Secretary Rentsch, James ("Rusty") - Chairman Afarin, James (Secretary) Bergamini, Eduardo (Chairperson)	<a href="mailto:dryden@iso.org">dryden@iso.org</a> <a href="mailto:chris.carnahan@aiaa-aerospace.org">chris.carnahan@aiaa-aerospace.org</a> <a href="mailto:rusty.rentsch@aiaa-aerospace.org">rusty.rentsch@aiaa-aerospace.org</a> <a href="mailto:james.afarin@nasa.gov">james.afarin@nasa.gov</a> <a href="mailto:e.w.bergamini@uol.com.br">e.w.bergamini@uol.com.br</a>
<b>Liaisons with Non-ISO organizations</b>		
<b>Organization</b>	<b>Name</b>	<b>E-Mail</b>
<b>External Liaison</b> - CCSDS <b>Internal Liaison</b> - ISO/TC20/SC13	Afarin, James (Secr. & CMC Chairman) Bergamini, Eduardo (Chairman)	<a href="mailto:james.afarin@nasa.gov">james.afarin@nasa.gov</a> <a href="mailto:e.w.bergamini@uol.com.br">e.w.bergamini@uol.com.br</a>
<b>External Liaison</b> - ESA <b>Internal Liaison</b> - ISO/TC20/SC13	Miró, Juan Miró, Juan	<a href="mailto:juan.miro@esa.int">juan.miro@esa.int</a> <a href="mailto:juan.miro@esa.int">juan.miro@esa.int</a>
<b>External Liaison</b> - ECSS <b>Internal Liaison</b> - ISO/TC20/SC13	Moury, Gilles Moury, Gilles	<a href="mailto:gilles.moury@cnes.fr">gilles.moury@cnes.fr</a> <a href="mailto:gilles.moury@cnes.fr">gilles.moury@cnes.fr</a>
<b>External (Informal) Liaison</b> - CEN/CLC/TC5 <b>Internal (Informal) Liaison</b> - ISO/TC20/SC13	Peinado, Osvaldo Peinado, Osvaldo	<a href="mailto:osvaldo.peinado@dlr.de">osvaldo.peinado@dlr.de</a> <a href="mailto:osvaldo.peinado@dlr.de">osvaldo.peinado@dlr.de</a>

## **8. Planning for the new Chairmanship of the Subcommittee in 2018**

This topic was discussed at the meeting Plenary and the three following conclusions resulted from the discussions:

- a) **Resolution** was taken to try to instrument the election of a new ISO TC20/SC13 Subcommittee Chairperson before the New Year begins. At the time of the meeting, none of the national representatives had a specific candidate to propose;
- b) The committee members noted that the Chairperson does not necessarily have to attend each ISO formal meeting in person, although it is expected that their leadership help to maintain and run the organization along each year;
- c) The following formal **Action Item** resulted from the discussions: To the P-Members to provide a candidate for the ISO chairperson by the end of November.

## **9. Review and update of the Resolutions and Action Items**

The review of the RESOLUTIONS and ACTION ITEMS, departing from those which resulted from the 50th meeting plus those brought up along this meeting were discussed and led to the new RESOLUTIONS (Ref. N1624) that are available in **Attachment 12**, and to the new ACTION ITEMS (Ref. N1623), that are available in **Attachment 13**, now, in association to this 51<sup>st</sup> Subcommittee meeting.

## **10. Other Business and Planning for the (Formal) 52nd meeting**

- a) The next, 52<sup>nd</sup> Subcommittee meeting was scheduled to be held Beijing, China. It will be a FORMAL meeting.
- b) **Formal Action Item:** Eduardo Bergamini, after providing the Plenary of the meeting with some introductory information, took up for himself the formal task to inform the attendees of the Plenary on the correspondence that was exchanged with and the information that was received from Mr. Nick Tongson, Secretary of ISO TC20/SC14, related to the UN COPUOS Forum. The result of the execution of the task associated to this Action Item can be found in **Attachment 14** to these minutes.
- c) **Formal Action Item:** As the result of the information and associated correspondence exchanged with Mr. Nick Tongson, ISO TC20/SC13 is yet expected to respond to the Secretary of ISO TC20/SC14 on the participation of ISO in the UN COPUOS Forum.

## **11. Adjourn**

The adjournment of the meeting occurred approximately at 11:00, after the covering of the Agenda.

## **ATTACHMENTS**

A listing of all the **ATTACHMENTS** to the Minutes of this meeting is provided in the final page of this document, including the names of all the associated files.

## **ACKNOWLEDGEMENT**

Eduardo Bergamini, in his role as the Chairman of the Subcommittee expresses his gratitude to Mr. David Ross, ANSI (NASA) member and associate to the Secretariat of the Subcommittee, for his work as the Rapporteur of the 51st Formal ISO TC20/SC13 Subcommittee meeting. The notes provided by the Rapporteur were of fundamental value for the Chairman of the Subcommittee who elaborated the Minutes and compiled the Attachments that resulted in the corresponding Meeting Package.

## **OBSERVATION**

The complete MEETING PACKAGE of 51st ISO TC20/SC13 Formal meeting, was prepared by Eduardo Bergamini and his secretariat who, in turn wishes to thanks to the Secretary of the Subcommittee, Dr. James Afarin and the members of the associated Secretariat, Mr. David Ross, and Mr. Michael Blackwood for their review and other administrative support which are part of the process.

**JAMES AFARIN**

Secretary, ISO TC20/SC13

**EDUARDO W. BERGAMINI**

Chairman, ISO TC20/SC13

## **LIST OF ATTACHMENTS TO THE MINUTES (by <file names>)**

- 01- <Att.01.ISO\_TC20-SC13.PART.COUNTRIES.as.in.ISO.Livlink.in.17.Oct.17>
- 02- <Att.02.L.OF.ATTENDANCE.to.ISO.TC20-SC13.51st.F.M.Darmstadt.DE.14.Nov.17>
- 03- <Att.03.AGENDA.N1621.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 04- <Att.04.MINUTES.N1606.of.50th.SC13.F.Meet.14.Jun.2017.St.Petersburg.Ru>
- 05- <Att.05.BRAZIL-ABNT.Rep.to.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 06- <Att.06.CHINA-CAS.Rep.to.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 07- <Att.07.FRANCE-AFNOR.Rep.to.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 08- <Att.08.GERMAN-DLR-DIN.Rep.to.51st.SC13.F.Meet.Darmsatadt.DE.14.Nov.17>
- 09- <Att.09.JAPAN-JISC.Rep.to.51st.SC13.F.Meet.Darmsatadt.DE.14.Nov.17>
- 10- <Att.10.RUSSIA.-ROSC.GOST-R.Rep.to.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 11- <Att.11.USA-ANSI.Rep.to.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 12- <Att.12.RESOLUTIONS.N1624.51st.SC13.F.Meet.Darmstadt.DE.14.Nov.17>
- 13- <Att.13.ACTION.ITEMS.N1623.51st.SC13.F.Meet.Darmstadt.14.Nov.17>
- 14- <Att.14.ACTION-I.SC13-A-2017-11-3.from.51st.SC13.Meet.Darmstadt.DE.14. Nov.17>