SUBJECT: Minutes of the Consultative Committee for Space Data Systems (CCSDS) Management Council (CMC) Meeting

LOCATION: Izmailovo Hotel – Beta, Moscow, Russian Federation

DATE: 26-28 September 2006

ATTENDANCE

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<th>Organization</th>
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<td>ASI</td>
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</table>
| ESA          | Nestor Peccia  
|              | Jean-François Kaufler |
| FSA          | Alexey Mutafian  
|              | Georgy Tkachenko |
|              | Vladimir Grishin |
|              | Vladimir Starostin |
|              | Anatoly Shilov |
| INPE         | Eduardo Bergamini |
| NASA         | Mike Kearney  
|              | Adrian Hooke  
|              | Neil Dissinger |
I. INTRODUCTION

Mr. Michael Kearney convened the 2006 Fall meeting and welcomed the members of the CCSDS Management Council (CMC). Mr. Kearney acted as chairman for the meeting in the absence of Dr. John Kelley. The delegates from each Agency were introduced.

I. WELCOMING REMARKS

Mr. Anatoly Shilov, head of the Department of Space Complexes Management and Control Systems, welcomed the CCSDS delegates to Moscow.

II. AGENDA REVIEW AND APPROVAL

The agenda was approved and is shown in Attachment 01.

III. REVIEW OF CMC MINUTES FROM ATHENS, GREECE

The minutes of the 2005 Fall CMC meeting in Reston, USA were reviewed and accepted.

IV. SECRETARIAT REPORT

Mr. Neil Dissinger reviewed the current status of the CMC Open Action Items (Attachment 02), CCSDS Document Status report (Attachment 03) and E-poll resolutions (Attachment 04).

Action Items that were discussed are as follows:

CMC-A-0510-1 – The Reference Architecture for Space Data Systems (RASDS) Draft Recommended Practice document was submitted for CESG review on 31 March 2006. The document was approved with conditions. The closure of the Poll Item Dispositions from the CESG review is still pending. This Action Item was closed and a new Action Item was issued for the CESG to provide a schedule for the Agency review and publication of the RASDS document (Resolution and Action Item 2006-09-01).

CMC-A-0510-2 – A Memorandum of Understanding concerning a liaison was submitted by the European Cooperation on Space Standardization (ECSS) to the CMC for approval. Mr. Jean-François Kaufler stated that the MOU was not officially approved by the ECSS and that the submittal was premature. An Action Item was issued to request a status of the MOU from the ECSS (Resolution and Action Item 2006-09-02).

CMC-A-0510-12 – Dr. Peter Allan and Mr. Jean-Marc Soula previously distributed to the CMC proposed metrics to monitor the progress of draft CCSDS standards (Attachment 05). It was determined that the Secretariat should incorporate these metrics when defining a new process and system that reports the progress of Working Group deliverables. This Action Item from the previous meeting was closed.
CMC-A-0510-19 – A memorandum was drafted to request that the appropriate Chinese space agency consider joining CCSDS as a full member. Currently the Chinese Academy of Space Technology (CAST) participates as an Observer Agency in CCSDS. It was uncertain if the request should be submitted to CAST. Mr. Shilov stated that the Chinese National Space Agency was the governing organization of all the Chinese space agencies and should be contacted about participation. This Action Item will remain open.

IOAG/CMC-A-0510-1 – A MOU is being drafted by ESA and NASA to address International Traffic in Arms Regulation (ITAR) issues. This MOU establishes rules for the interchange of information between NASA and ESA and will allow the development and publication of CCSDS Delta DOR and SM&C standards. Mr. Nestor Peccia stated that the MOU should be signed by March 2007. Mr. Adrian Hooke stated he is drafting NASA guidelines for participation in the development of international standards with the International Relations Office at NASA. The guidelines will allow NASA to participate in the development of CCSDS standards without violating ITAR.

V. CESG REPORT

Mr. Hooke presented the CESG report (Attachment 06). The 2006 Spring CCSDS WG meetings in Rome, Italy had 15 separate meetings and 134 attendees. The number of attendees and room requirements makes it difficult for Agencies to provide facilities that can accommodate the meetings. It was recommended that meeting sites should be selected and preparations should be made far in advance of the scheduled meeting.

The Systems Engineering Area was tasked to develop an end to end space / ground cross support architecture and services catalog in response to an IOAG resolution. The Space-Ground Interoperability Architecture (SGIA) Birds of a Feather (BOF) met in Rome. However, a charter has not been developed because no additional resources were provided from CCSDS and the IOAG. Determining the scope of the architecture and identifying the services for interoperability was also an issue. Dr. Leo Hartman recommended that the WG should first determine how services are specified, accessed and managed before establishing standards for a particular service. Mr. Hooke suggested that the SGIA should first develop a concept for a generic service interface mechanism that would request a service, get confirmation, achieve the service and then report performance. Once this framework is constructed, the Agencies should provide a catalog of services.

The IOAG has requested a priority on the development of the Service Management Recommended Standard. The second Agency draft review is scheduled for January 2007 but both NASA and ESA resources are inadequate. The CESG was issued an Action Item to develop a strategy to expedite the review and publication of Service Management (Resolution and Action Item 2006-09-3).

The need to improve the relationship between IOAG and CCSDS was discussed. Mr. Soula stated that IOAG did not receive sufficient feedback concerning the status of their proposed resolutions to the CCSDS at the 2005 Fall CMC meeting. Mr. Hooke stated that CESG Chair (or
representative) would serve as a liaison and attend IOAG meetings to provide technical feedback from the CCSDS Working Groups. An Action Item was issued to create a technical liaison with the IOAG (Resolution and Action Item 2006-09-4).

There is a concern that the XTCE document, which is being jointly developed by CCSDS and the Object Management Group (OMG), has not received sufficient testing. The OMG policy is to publish standards and then have the initial implementations provide beta testing. The OMG plans to publish the document in October. The CESG has recommended that the document be published with provisions that state that the document contains a warning that the standard has not been thoroughly tested and that a user group be formed to address any problems. Mr. Hooke noted that there is a risk that OMG standards that are under development might conflict with CCSDS standards. New OMG projects are being announced on a closed mailing list; previously they agreed to announce using a joint mailing list. The OMG and CCSDS have drafted an MOU between the organizations but it has not been officially approved. It was agreed to review the MOU and seek formal approval from the OMG at the next CMC meeting (Resolution and Action Item 2006-09-5).

The CESG reaffirmed the need for Experimental (Orange) books, but Mr. Kaufler expressed concern that Agencies plan to publish different Experimental standards for high performance channel coding. The Space Link Coding and Synchronization WG could not come to a consensus and planned to publish two versions of LDPC. NASA decided to merge the two versions that would use different codes for near-earth and deep-space missions. CNES and ESA plan to publish their own experimental documents for high performance channel coding. The intent is to document opinions as “Experimental” and let users decide which method is best.

The Spacecraft Monitor and Control (SM&C) Working Group issues were discussed. NASA’s previous position was not to participate in the development and implementation of the standard. At that time, NASA experts in this area were not available to properly review the draft document because of commitments to the Constellation program. Now that the initial requirements for the Constellation program are complete, NASA will begin discussions and provide comments on the draft standard by November.

VI. AGENCY REPORTS

ASI – See Attachment 07.

BNSC – See Attachment 08.

CNES – See Attachment 09. Mr. Jean-Marc Soula cited that there is no reporting of progress of documents after the approval of the WG charter and before the submittal of a draft document for Agency review. A document tracking system is needed to report the progress of White Books to the CMC. Mr. Hooke stated that AIAA, the new Secretariat support contractor, has been tasked
to study the implementation of project management tools to track the progress of standards development with the Working Groups (Resolution and Action Item 2006-09-6).

CSA – See Attachment 10.

DLR – See Attachment 11. Mr. Martin Pilgram proposed a more formal method for processing Review Item Dispositions. Feedback from the WG concerning receipt, resolution, and statistics should be provided to the originators. A Resolution and Action Item to create a RID status reporting system was issued by the CMC (Resolution and Action Item 2006-09-7).

Instead of the CESG chair providing a CESG report to the CMC, Mr. Pilgram requested that the Area Directors provide their reports directly to the CMC at a joint CESG/CMC meeting. Following the Area reports, the CMC and CESG could discuss strategic planning for future work. A joint CMC/CESG meeting will be scheduled for the 2007 Winter CCSDS meetings.

The reporting of liaison activities was also discussed. A Resolution and Action Item was issued to the Secretariat to improve the reporting of CCSDS-related liaison activities to the CMC (Resolution and Action Item 2006-09-8).

ESA – See Attachment 12.

FSA – See Attachment 13. The CMC requested that FSA provide a list of missions that are CCSDS-compliant and the specific Recommended Standards that they utilize. (Resolution and Action Item 2006-09-9).

INPE – See Attachment 14.

JAXA – See Attachment 15.

NASA – See Attachment 16. Mr. Hooke announced that Dr. John Kelley has been assigned other duties at NASA and will no longer serve as General Secretary to CCSDS. His replacement has not been appointed. To acknowledge Mr. Kelley’s many years of service to CCSDS, the CMC will draft a letter of commendation and invite Dr. Kelley to attend the next CMC meeting in Colorado Springs, USA. (Resolution and Action Item 2006-09-17).

VI. LIAISON REPORTS

No Liaison reports were provided.

VI. NEW BUSINESS

Review and confirmation of AD and WG chairs – The list of Working Group Chairman and Area Directors was presented (Attachment 17). Procedures dictate that Working Group Chairs are approved by the CESG and Area Directors are approved by the CMC. Resolutions and Action Items were issued to approve the SOIS Deputy Area
Director (Resolution and Action Item 2006-09-10) and MOIMS Navigation and SOIS Subnetwork WG chairs (Resolution and Action Item 2006-09-11). Mr. Gerard Lapaian has announced his retirement for January 2007 and will no longer serve as the CSS Area Director. The CMC will be requested for nominations via an e-poll before the next CMC meeting (Resolution and Action Item 2006-09-16).

CCSDS Work Approval and Management – The CMC discussed WG charter content, resource management and CESG reporting. A standardized WG reporting template was proposed. WGs only provide progress reports at the CESG meeting and the information provided is not consistent. The report should contain a five-year program of work that shows all deliverables, schedule, and progress. The metrics proposed by BNSC and CNES should also be considered for inclusion in the report (Attachment 04). The new reporting template and metrics will be presented and discussed at the next CMC meeting.

The CMC determined that resource estimates for each WG was an essential item for the management of the WGs, but this information should not be published in the WG Charters. The resource estimates would be provided as an attachment that would be available to the CMC when a new charter is proposed for approval (Resolution and Action Item 2006-09-12). Also, the content of WG charters needs to be consistent. The CMC agreed to create a charter template on CCSDS.org and that nominal schedules should be established that would set clear time limits on the progress of standards documents (Resolution and Action Item 2006-09-13). Mr. Soula stated that the process of determining resource commitments from the Agencies for a new Working Group is not clear. He proposed to review the procedures for the creation and chartering of a WG and propose changes to the process (Resolution and Action Item 2006-09-14).

CCSDS Workflow Procedure (resolution and polling process) – The CESG proposed to discontinue formal CESG polling before a document was submitted for draft Agency review. CESG voting is currently optional during the CMC poll for approval of a draft document for Agency review. The CMC agreed that a technical review of the Area Directors was necessary because a draft standard may conflict or affect standards in another Area. These conflicts could then be resolved before a draft standard was submitted to Agency review. A resolution and Action Item was issued to the CESG to develop an internal process that ensures a technical review from appropriate ADs was performed prior to CMC approval of draft documents for Agency review and publication (Resolution and Action Item 2006-09-15).

VII. FUTURE CCSDS MEETINGS

The following schedule was proposed for future CCSDS meetings:

15 Jan: (Offsite wireless workshop)
16-20 Jan: CCSDS Area and WG meetings
23 Jan: CESG meeting (AM)
23 Jan: CMC/CESG + Secretariat workshop: new management and reporting tools (PM)
24 Jan: Joint CESG + CMC meeting
25-26 Jan: CMC meeting
26 Jan: ISO meeting (late PM)

2007 September – ESOCC Darmstadt, Germany (ESA will confirm arrangements for the 2007 Fall meetings – Resolution and Action Item 2006-09-18.)
2008 April – NASA (US)
2008 Fall – BNSC or DLR
2009 Spring – NASA USA
2009 October – ESTEC Netherlands
2010 May – NASA USA
2010 October – BNSC or DLR

VIII. RESOLUTION AND ACTION ITEMS

The CMC Resolution and Action Items are listed in Attachment 18.

IX. ADJOURNMENT

Mr. Kearney thanked FSA for hosting and the members of the CMC for their attendance and adjourned the meeting (Resolution and Action Item 2006-09-19).