**CMC Draft Minutes**

**Spring 2018 Meetings**

**Beijing, China**

**14-17 May 2018**

1. **Call to Order – Welcome/Opening Remarks**

James Afarin, CCSDS Management Council (CMC) Chair, called the meeting to order at 0845h and welcomed everyone to the spring 2018 CMC meetings hosted by the Chinese National Space Agency (CNSA) in Beijing, China. J. Afarin then yielded the floor to Ms. Qi Yu, Deputy Director for International Relations. Q. Yu welcomed everyone to the National Space Science Center, Chinese Academy of Sciences (CAS/NSSC) (the organization hosting the meetings) and provided a welcoming address to the CCSDS Management Council. Q. Yu noted that CNSA, in accordance with the United Nations Office for Outer Space Affairs (UNOOSA), is actively participating in many activities to increase the space development capacity of the UN Fifty Plus members, including CNSA. She noted that China has many space projects and activities and that all of these activities provide good opportunities for practicing standards. Further, she noted that CNSA has opened a space information corridor to aid developing countries in their capacity to develop projects in space, providing further avenues for standards development along this corridor, thus allowing China to share in the future of space exploration and the success of CCSDS. Q.Yu then passed the floor back to James Afarin, who thanked her for the warm welcome, and added that the CCSDS and the cooperation of the many different space agencies throughout the globe are important to meeting the goals and challenges for the next generation of space exploration. J. Afarin added that he has noted that CNSA has noticeably increased its participation in the CCSDS organization over the past several years and expressed his gratitude for the increased commitment CNSA has provided to CCSDS, as well as their willingness to host the spring 2018 CCSDS Management Council (CMC) meetings.

1. **Roll Call of Delegates**

Introductions followed. CMC Attendees were:

1. ESA – Margherita di Giulio, Nestor Peccia

2. DLR – Osvaldo Peinado

3. JAXA – Tsutomu Shigeta

4. NASA - Wallace Tai, Dr. James Afarin

5. INPE – Not Present

6. UKSA – Not Present

7. CNES – Jean-Marc Soula

8. CSA – Siamak Tafazoli

9. ASI – Not Present

10. CNSA –Qi Yu, Rusheng Zhang, Yonghui Huang, Yuxia Zhou, Xiongwen He

11. ROSCOSMOS – Dmitry Barannikov, Vladimir Yanik, Ivan Guliaev

12. Secretariat - David Ross

1. **Agenda Review and Approval** (May 2018 CMC Agenda)

The CMC agenda was reviewed and approved with no additional changes to the content.

1. **CESG Chair Report** (CESG Report to CMC)
   1. **CESG Chair Introduction and Overview** [[CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) (slides 3-4)]

M. di Giulio provided an overview of the updated organizational charts and an overview of the number of missions utilizing CCSDS standards. M. di Giulio noted that the SANA has been updated with all of the contact information linked to the CCSDS public website and that there would be a further update on the SANA registries and related actions from the SANA Steering Group (SSG) during the Systems Engineering Area (SEA) discussion. Following the introduction, M. di Giulio went directly to the Spacecraft Onboard Interface Systems Area (SOIS) presentation.

**4.7 Spacecraft Onboard Interface Services Area (SOIS)** [CESG Report to CMC (slides 6-18)]

J. Wilmot provided the overview of the SOIS Area beginning with the participation of the WG during the spring 2018 meetings, before moving on to discuss the executive summary of the area. J. Wilmot noted that the Sub-networking (SUBNET) working group (WG) is currently going through the five- year review of a number of their specifications, and that they have also reached consensus on how the second draft of their packet services specification will reach into the service access point architecture that the WG is also currently developing. J. Wilmot continued with an overview of the Wireless WG, noting that the WG is producing one orange book currently, and have identified a new activity for DLR and JAXA to develop a wireless bus for avionics, noting that this is within the goals of the SOIS area overall. In the SOIS Applications Services WG (APP), J. Wilmot stated that the WG has reached consensus on its layering diagram and also discussed several similar technologies for SOIS EDS implementation. During the spring meetings the WG demonstrated some of the tools they developed to auto-generate flight software out of the data sheets as well. Further development of the SOIS EDS import/export functions in the NASA JSC tool is also ongoing within the WG, with the potential for flight software and ground systems to use the EDS import/export functions for the Lunar Orbiting Platform-Gateway (the Gateway). Regarding problems and issues, J. Wilmot noted that the APP WG still has no committed resources for FY 19, but that for FY 18 book editing resources have been identified. After reviewing the upcoming resolutions from the SOIS APP WG, J. Afarin asked a question about the development of the SOIS core Flight Software (cFS) as a reference architecture publication being developed, asking if the document is a Goddard Spaceflight Center (GSFC) publication, and whether or not it includes Delay/Disruption Tolerant Networking within the core architecture. J. Wilmot responded that DTN is an application that is a part of the cFS and that it is being developed for an AES project as a deliverable. J. Afarin asked if this would be referenced as a part of the publication; J. Wilmot noted that he did not currently plan to but noted that it made sense to include this within the specification, or to have another orange book discussing DTN within the cFS architecture. J. Afarin responded that this is a good idea and should be coordinated with M. di Giulio, W. Tai, and David Israel.

Following the exchange J. Wilmot provided an overview of the SOIS Wireless Working Group (WWG). The presentation notes that the focus of this WG is on NASA projects currently due to lower participation in the WG, and that it is likely that work in this area will increase with the maturation of the Gateway project. Regarding participation in the WG, Dr. J. Afarin asked the CSA representative if a key WWG member would be able to provide support to the WG, as he was identified as key personnel no longer participating in the group. The CSA representative noted that while they cannot commit to providing the support of this individual (as he is a University Professor, and not directly funded by the CSA), they recognize his key importance and the role he has played participating in the WWG’s ongoing efforts.

J. Wilmot then reviewed the SOIS SUBNET WG, indicating that the Packet Service specification is expected to be out for agency review during the week ending 21 May 2018. He added that the group is now focused on its access point view project, and that the WG will be starting its Memory Access book review and reconfirmation within the next six months as well. The WG, he noted, is focused primarily on how different architectures can exchange data in a machine-readable format in order to remove the paper interfaces that are primarily used on projects at this time, and which are prone to problems due to the interpretation/misinterpretation of the specifications as written documents.

*Questions for SOIS*

T. Shigeta asked if this publication is the same project as the “high data rate communications” project identified in the CWE, but with a different title. J. Wilmot responded affirmatively that these publications are the same.

**AI-CMC-A-2018-05-01: The CMC requests that SOIS Area Director, J. Wilmot, correct the title of the High Data Rate Wireless Communications specification on the CWE to match the Proximity Wireless Communications title in the CESG presentation to the CMC. Due Date: 31 May 2018**

**4.3 Cross Support Services Area (CSS)** ([CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) [slides 19-30)]

E. Barkley provided an overview of the CSS WG meeting statistics and reviewed the executive summary of the CSS working groups during the spring 2018 technical meetings. During a thorough overview of the executive summary, E. Barkley mentioned that the Cross Support Transfer Services (CSTS) WG made good progress on its Transfer Data CSTS publication, completing the dispositioning of comments and adding that prototyping for the specification is nearly completed as well. E. Barkley continued by adding that the Forward Frame blue book is moving rapidly, and will allow multiplexing of multiple sets of frames to a spacecraft, providing a stepping stone to DTN that will enable a set of DTN bundles to be uploaded to a spacecraft along with the Command Link Telemetry Units (CLTUs). The white book of this specification is about 90% complete at this time. J. Afarin announced at this time that NASA is heavily invested in the infusion of DTN by 2021 per the direction of the United States’ National Space Council to the National Aeronautics and Space Administration (NASA). E. Barkley continued with his review, noting that the CSTS Concept book has been submitted to the area director of CSS for review, and once approved, will move forward to CESG poll.

In the Cross Support Service Management (CSSM) WG, E. Barkley discussed the standards currently under way to address service management interoperability. He noted that the Simple Schedule Format (SSF) publication has recently gone through CESG polling with only one minor condition that will be dependent upon the Chief Technical Editor to quickly work around minor corrections. Following the corrections, the publication will go to CMC polling for publication. E. Barkley noted that ESA ESTRACK and NASA DSN are both working to implement the specification and that the publication provides a good success story for the WG and CCSDS. On the Planning Information Format publication, it was discussed that the WG is looking at communications geometry so when one agency wants to use the facilities of another operational facility, it will be able to tell when/how the asset of the other agency will be available. The project is moving well. The Service Management Utilization Requests Format (SMURF) project is also moving well at this time, as prototyping has started between DLR and ESA. The Terrestrial Generic File Transfer (TGFT) specification has also started prototyping between CNES and CNSA. E. Barkley also added that one new project, the Service Package Results project, which provides all the details once you make a request for service on how to execute the service, has completed the first draft of its white book by the WG at this time, and that the publication is now being circulated to the WG for review.

After discussing coordination efforts, E. Barkley went on to provide further details of the CSTS WG, noting that in addition to the above information, the WG’s biggest delays have been working through some firewall issues with their prototyping efforts. Also of concern to the CSTS WG is knowledge transfer/resource dissipation. E. Barkley noted that it is a concern of the WG that after they have completed all of their publications and revisions, that knowledge retention may be problematic if resources are not maintained.

Regarding the developing of the Forward Frame specification, E. Barkley discussed concerns from the CSS area that the specification does not specifically address forward uplink of AOS frames. He noted that the specification hints at how to do this, but there is no discussion of the implementation of AOS on the forward carrier/uplink. The ability to uplink two or more sets of frames from multiple sources makes for some interesting modifications that need to be addressed in the framework itself. He added that the WG will be doing prototyping for the Forward Frame CSTS publication and the CSTS Framework publication at the same time, such that they can do two prototypes for the price of one without requiring a substantial change in resources.

At the completion of the CSTS detailed information, E. Barkley continued with a discussion of the CSSM details. The detailed presentation elaborated on forthcoming resolutions and problems/issues of the WG, noting that the WG determined at this meeting to create two new projects, the Abstract Event Definition project, and the Common Data Entities project. The WG currently has five approved projects. M. di Giulio asked E. Barkley for a reminder on who will perform the two prototypes for the Forward Frame specification. E. Barkley responded that it is from two NASA centers. M. di Giulio asked if the prototyping efforts have already begun, and E. Barkley responded that the JPL efforts have started and so have the GSFC efforts, however, at GSFC due to a new member being brought in for prototyping they are currently working on getting up to speed on the effort. Regarding issues, E. Barkley noted that the SANA registries currently have a restriction on the sites and apertures registry, which is called out by the Simple Schedule Format publication for public use. He added that the CESG has produced a resolution requesting that the sites and apertures registry be open to the public and no longer require a login/password for read access. He added though that there are no current agency representatives actively populating the content of the registry, and that the functional resource model to be published in SANA will require resources from the agencies to continually update and maintain their information. Another item of concern for the WG is the growing set of coding schemes emerging, and the affect they will have on the configuration profile specification in the CSS area. To combat excess revisions to the specification, the area plans to release the specification in a manner that is consistent with what is produced by the Space Link Services (SLS) area’s Radio Frequency and Modulation (RF&Mod) specification; which allows portions of the publication to be updated more rapidly and frequently.

*Questions for CSS*

None.

**4.4 Systems Engineering Area (SEA)** [[CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) (slides 31-48)]

P. Shames provided an overview of the SEA area demographics and reviewed the executive summary of the area’s accomplishments from the spring 2018 meetings. P. Shames noted that they’ve lost some key individuals from the United Kingdom Space Agency (UKSA) and NASA in its Security WG, but that the Systems Architecture WG (SAWG) has made good progress on its Application and Support Architecture green book despite the absence of two of their key members. One of the items the area identified as a problem/issue is the need for a new implementation view featuring MOIMS and SOIS, which will provide an understanding of the features of the work of these two groups and would also assist in developing flight/ground software. P. Shames continued by discussing the SANA Steering Groups (SSG) work, noting that the SSG identified some issues between the SANA website and the CCSDS website (discussed in more detail below). Peter also noted that the Delta Differential One-way Ranging (D-DOR) WG has lost its chairperson and is requesting assistance from the CMC on identifying a replacement.

For the Security WG, P. Shames noted that the WG has started a new credentials document and that all of its other publications are making good progress. The WG is cross cutting to CCSDS publications and played a key role in the Space Data Link Security WG’s meeting during the spring 2018 meetings. The Security WG also held valuable working sessions with the DTN WG. He added that it is a concern of the WG that there are very few references to security in the IOAG service catalogue. J. Afarin asked P. Shames what the approach is for addressing security in the service catalogue. N. Peccia added that this was already brought forward to the IOAG and that the IOAG did not agree that any changes to further address security were required. J.M. Soula added to this point that this was the opinion of the IOAG because security is already resident to the systems via the governing policies and regulations local to the participating agencies.

J. Afarin asked what the Architecture Support is architecting specifically that is not already covered by the Space Communications Cross Support document. P. Shames responded that the document attempts to describe the higher-level functions used in SOIS and MOIMs, which ride above the space link and cross support layers covering space link protocols, coding, etc…

P. Shames continued his presentation by discussing the SOIS Electronic Data Sheets (EDS) and MOIMS Message Abstraction Layer (MAL) specifications, noting that when combined, these two publications will allow you to translate various ideas into real world implementations, which is an interesting unintended feature of the two specifications. The SEA Area would like to create an implementation viewpoint publication that will provide an overview of these suites of software and how they can be used to translate various ideas into real world implementations.

In the SAWG WG, P. Shames noted that the WG had some resource issues due to extended absences of key NASA and ESA personnel, but that otherwise good progress has been made. The WG will publish a draft of its Architecture Review Document by November 2018.

P. Shames quickly noted that the D-DOR WG did not meet but reminded the CMC that the WG needs a chair, and reiterated the need for assistance in identifying that chairperson due to the small size of the WG (only three individuals).

Regarding the SSG, P. Shames noted that there are a number of resolutions in CMC poll that require CMC attention. He added that the SANA operator needs all of its Head of Delegation information, observer agency, liaisons, associates, etc., updated for importing into SANA. After the import is complete, he requests that the CMC review all of the information to ensure that it is accurate and up to date. P. Shames also discussed the need for the agency representatives to review approximately 107 Spacecraft IDs that were brought into SANA from the CCSDS Public Website, but which were not resident in the SANA prior to the linking of information between the CCSDS public website and the SANA website.

After reviewing a summary of all of the individual working groups information, P. Shames yielded the floor to questions.

*Questions for SEA*

J.M. Soula commented that, in regards to a request from the SEA AD for a chairman for the Time Transfer Birds of a Feather (BoF), this is not a requirement for starting a BoF. He notes that it is the responsibility of the CESG for a BoF, and if there is no chair/no progress from the CESG then there can be no issue.

M. di Giulio noted that timing in service catalogue 2 is identified as a priority but does not have agency participation in CCSDS. J.M. Soula responded that these should be removed from the service catalogue in IOAG if there is no interest. The CMC then continued to discuss whether or not these projects should remain in the ICPA, and M. di Giulio noted that this would come up again during the ICPA presentation (see below).

Y. Huang asked why everything in the SANA glossary is currently provisional, and if it would be updated. P. Shames responded that this is one of the actions currently making its way through polling to confirm everything in the glossary.

Regarding the D-DOR WG Chair position, T. Shigeta noted that the current JAXA participant of the D-DOR WG is unable to act as the WG chair due to other priorities in support of the Hyabusa-2 mission.

The CMC also held a long discussion on the increasing size/use case scenarios of the SANA registries. J. Afarin noted that the registries are continually growing, and that all of what is being requested to go into the registries does not make it clear that the information is required to be in the SANA as a necessity. As such, J. Afarin noted that the CMC should look deeper into understanding whether or not CCSDS requires the SANA registries for everything that is being requested. After further discussion, the CMC agreed to return to the topic during a special session during the CESG Extra Items presentation.

* 1. **Space Internetworking Services Area (SIS)** [[CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) (slides 49-66)]

M. di Giulio provided an overview of the SIS area demographics and reviewed the executive summary of the individual WG accomplishments from the spring 2018 meetings.

M. di Giulio started by noting that only two working groups met during the spring 2018 meetings in SIS, those WGs were the DTN WG and the CFDP WG.

M. di Giulio started with the CFDP working group, noting that the WG is currently completing the drafting of its CFDP revised specification, but that there is still no clear commitment from any other agencies to complete the second prototype. M. di Giulio noted however that there is the possibility that the prototype may be completed by the Korean space agency (KARI), or possibly by CNSA whom is implementing the revised version of CFDP and may be able to complete interoperability testing as a part of its implementation. M. di Giulio added also that ESA would like to contribute to the testing, and that the Agency does not see any major impediments in doing so within the next year or so.

In the SIS DTN WG, M. di Giulio noted that the first draft of the new Real-Time Protocol over DTN was distributed within the WG in February, and that the WG hopes to conduct its first prototype testing by the fall of 2018. The WG will be meeting in Houston at the end of May to discuss its green book comments and added that the green book will be distributed to the WG in the fall. M. di Giulio also noted that the WG is discussing whether or not they should develop a best practices specification for using DTN. She continued by adding that the group is also discussing the First Hop/Last Hop services, known as the CCSDS Delivery Agent within the ICPA. CMC members then discussed the need for first hop/last hop services, and J.M. Soula added that this specification is likely to be reduced to a priority 3 project by the IOAG for 2022.

M. di Giulio also stated that the SIS DTN WG has started work on its Network Management green and blue book and updated their strategic plan during the spring 2018 meetings.

*Questions for SIS*

CNSA inquired who would be able to provide the CFDP prototype. M. di Giulio responded that she could take an action to find out who could possibly provide the prototype for CNSA. Y. Huang ultimately found out himself over the course of the meetings and confirmed that CNSA will likely be able to complete the prototype effort as a part of its implementation on the CNSA space station.

* 1. **Space Link Services Area (SLS)** [[CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) (slides 67-91)]

M. di Giulio provided an overview of the SLS area demographics and reviewed the executive summary of the WG accomplishments from the spring 2018 meetings. M. di Giulio noted that the Radio Frequency and Modulation (RF&Mod) WG made a number of achievements, including an agency review of the RF&Mod specification, and that a reconfirmation of the CDMA green book was also approved during the spring 2018 meetings. In the coding and synchronization (C&S) WG, the WG reviewed a draft of its variable coding and modulation (VCM) specification, and the draft orange book for its introduction to DVB-S2X. SLP is poised to submit a resolution to publish its Universal Space Link Protocol (USLP) blue book following the completion of its interoperability test report. M. di Giulio noted that the Space Data Link Security (SDLS) WG has completed approximately sixty percent of its Extended Procedures green book at this time, and the Multispectral Hyperspectral Data Compression (MHDC) WG is working to complete their review item discrepancy (RID) resolutions for its low complexity and near-lossless multispectral and hyperspectral image compression specification. In the optical communications WG, she added that the WG held lively discussions on their Optical On-Off Keying (O3K) specification, and then she continued to review the details of each individual WG.

During M. di Giulio’s review of the RF&Mod WG, she noted that the WG moved forward, and the CESG, during their spring 2018 meeting, reconfirmed the CDMA specification as is, which will allow polling to move forward to re-confirm the specification for an additional five years.

M. di Giulio noted that the C&S WG anticipates that it will be releasing resolutions from the WG to publish its Telemetry (TM) green book, and the WG’s TM Channel Coding for Serially Concatenated Channel Coding (SCCC) in the near future. M. di Giulio added that that the WG has a number of upcoming new work items, including working on the definition of a coding subset for the AOS uplink as a blue book specification. She added that this specification will be a pre-cursor for other items to follow such as scenarios, profiles, etc. The CMC briefly discussed the necessity for the WG to make a magenta book first for the definitions of the coding subsets allowed for the AOS uplink, instead of just going straight to a blue book. M. di Giulio noted that the creation of the magenta book will be very fast and that the specification should be prepared for agency review by the fall meetings. Once through Agency Review, this will provide a strong foundation for transition to a blue book specification, since the book will have already been through both agency review and the CCSDS Chief Technical Editor (CTE) before moving to a blue book, which should reduce the time it takes for creating the blue book specification.

M. di Giulio then moved on to discuss the details of the Space Link Protocol (SLP) WG, noting that the WG has reached consensus on its USLP blue book, issue 1, and reiterated that the WG is only awaiting its interoperability test plan completion. She added that the WG has also made several updates to its link layer documents in preparation for their five-year review. M. di Giulio then provided the WGs forthcoming resolutions.

In the SDLS WG, M. di Giulio discussed the progress that has been made by the WG working with the SEA, reiterated that the WG has finalized its Extended Procedures green book and added that the WG is waiting on the CTE to provide its feedback on the SDLS core protocol green book before the specification can be moved on to publication. She noted that the WG has no planned resolutions within the next six months then moved on to briefly review the high-level accomplishments of the MHDC WG.

Following the overview of the MHDC WG, M. di Giulio reviewed the optical communications WG accomplishments. She noted that the optical communications WG completed RID dispositions for their physical layer specifications and reviewed the High Photon Efficiency (HPE) red book for re-submission to the SLS Area Director. The WG also proposed contents and a schedule for the atmospheric characterization and forecasting for the optical link operations magenta book that the WG is producing based on the green book of the same title. M. di Giulio noted that the WG did not reach consensus on the way that the three wavelengths were proposed for the O3K specification, and that they will be working to resolve this issue during the fall 2018 meetings in Berlin, Germany.

*Questions for SLS*

No questions regarding the SLS area.

* 1. **Mission Operations and Information Management Services (MOIMS)** [[CESG Report to CMC](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d03-CESG-Report-to-CMC%20Fall%202017.pptx) (slides 92-121)]

M. di Giulio provided an overview of the MOIMS area demographics and reviewed the executive summary of the WG accomplishments from the spring 2018 meetings. She noted that the Mission Planning and Scheduling (MP&S) WG was unable to meet on site at NIST and noted that this was an issue for the MP&S WG that should be rectified in planning future meetings. She stated that the WG is looking at proposing a set of standards for the Lunar Orbiting Platform – Gateway (the Gateway) and added that all the WGs in MOIMS feel that their work is relevant to the Gateway standards currently under development.

M. di Giulio then reviewed the detailed slides of the Data Archive Ingestion (DAI) WG, noting that the WG resolved 199 of 212 RIDS against its Open Archival Information System specification, and that the WG is making good progress in revising this specification.

On the MP&S WG, M. di Giulio added to her prior statements that the WG has focused their work on the development of their Mission Planning Information Model that is being developed using a UML syntax, while the group’s Mission Planning and Scheduling green book remains in the CTE queue for review at this time. S. Tafazoli asked why the book has taken so long to make it out of the CTE queue, and M. di Giulio responded that the book has actually since completed CTE review and was now with the CESG for polling. M. di Giulio continued reviewing the MP&S project, noting that there are no additional issues or forthcoming resolutions within the next six months.

M. di Giulio continued with a review of the Navigation (Nav) WG, noting that the WG does not assume that there is a need for unique standards just for the Gateway, but that they can use/adapt existing standards for use on the Gateway and the WG can fill any identified gaps on an as needed basis. M. di Giulio then reviewed the progress of the Nav WG.

In the SM&C WG, M. di Giulio discussed that the SM&C WG held a fruitful discussion with the NASA JSC Deputy PM for Avionics and Software for AES and the lead for AES architectures on how SM&C may be used to fill some of the gaps identified in the deep space interoperability standards. She noted that the WG will be submitting a white paper to the International Deep Space Standards group regarding the capabilities that can be provided, then provided a summary of the expected resolutions to be provided in the next six months, which includes the creation of 7 new projects and four regularly occurring 5-year revision projects.

Following the discussion of the overview of resolutions and issues for the MOIMS area overall, Margherita briefly touched on the overlap between the Satellite Command and Control Message Specification (C2MS) and MO Services. The C2MS standard uses GMSEC as opposed to MO Services and the broader capabilities supplied by MO Services’ underlying framework. M. di Giulio noted that NASA representatives do not see an overlap between GMSEC and MO services, however, members from DLR, ESA, and CNES did see an overlap in a number of aspects of the services and have thus expressed their concern in the development of the OMG standard. As a result, they have tasked the MOIMS Area Director, as the OMG liaison, to identify the areas of overlap and to provide a technical note to the OMG on this overlap. M. di Giulio then reviewed the CCSDS-OMG liaison report, noting the current ongoing work of the OMG and the potential for collaboration between OMG and CCSDS.

*Questions for MOIMS*

No questions for M. di Giulio regarding the MOIMS presentation.

* 1. **Summary Meeting Statistics** [[CESG Report to CMC](https://cwe.ccsds.org/cesg/docs/CWE%20Private/Meetings/2017%20Spring%20Meeting,%20SwRI,%20San%20Antonio,%20Texas/CESG%20Report%20to%20CMC%20-%20June%202017/d03-CESG-Report-to-CMC%20Spring%202017.pptx) (slides 124-128)]

M. di Giulio provided a discussion of the CCSDS Technical Plenary meeting summary statistics. M. di Giulio noted that the meeting statistics were nominal for a US meeting.

1. **Agency Reports on other activities**
   1. **ASI**

Not Present.

* 1. **CNES (**[**CNES Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CNES%20report%20to%20the%20CMC%20_%20Beijing_May%202018.pdf)**)**

J.M. Soula provided the CNES agency report to the CMC.

* 1. **CNSA (**[**CNSA Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CNSA%20Report%20-%20CMC%20Spring%202018.pdf)**)**

R. Zhang provided the CNSA agency report to the CMC.

* 1. **CSA (**[**CSA Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CMC%20CSA%20Report_Spring%202018.pptx)**)**

S. Tafazoli provided the CSA agency report to the CMC.

* 1. **DLR (**[**DLR Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CMC%20DLR%20Report-june2018.pdf)**)**

O. Peinado provided the DLR agency report to the CMC.

* 1. **ESA (**[**ESA Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/2018-5-14%20ESA%20Briefing%20-%20CCSDS%20CMC_2.pptx)**)**

M. di Giulio provided the ESA agency report to the CMC.

* 1. **ROSCOSMOS (**[**ROSCOSMOS Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/ROSCOSMOS%20CMC%20Report%20Beijing%20May2018.pptx)**)**

Russian side provided the ROSCOSMOS agency report to the CMC. D. Barannikov also noted that it would be useful for the TC 20 SC 13 Program of Work to be distributed via an excel file. The CCSDS Secretariat agreed to comply with this request. Also he asked CESG to find a “home” of some SC14 standards (ISO 22639 “Space systems – Design guidelines of multi-GEO satellites collocation”; ISO 26872 “Space systems – Disposal of satellites operating at geosynchronous altitude”; ISO 14950 “Space systems – Unmanned spacecraft operability”) with the purpose to interfere in the development of these standards if it’s necessary.

* 1. **INPE (**[**INPE Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/INPE-Report.to.CCSDS-CMC.Meet-Beijing.China.14.May.18-V.9.5.18.ppt.pdf)**)**

Not Present.

* 1. **JAXA (**[**JAXA Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/JAXA%20input%20to%20Beijing%20CMC%20May%202018.pdf)**)**

T. Shigeta provided the JAXA agency report to the CMC.

* 1. **NASA (**[**NASA Agency Report**](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/NASA%20News%20-%20CMC%202018%20spring.pptx)**)**

J. Afarin provided the NASA agency report to the CMC.

* 1. **UKSA (UKSA Agency Report)**

Not Present.

1. **CESG Report on Other Topics** ([CESG Report to CMC Extra Items](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d02-CESG-Report-to-CMC-Fall%2017%20Extra%20Items.pptx) [slides 19-20)]

N. Peccia provided the overview of projects with disproportionate delays. N. Peccia noted that many of these projects are in the CWE due to a period of time when books were allowed to be added as projects without having had started yet. No questions were asked.

* 1. **CESG Resolutions from the SEA on SANA** [[CESG Report to CMC Extra Items](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2017%20Fall%20-%20Darmstadt/d02-CESG-Report-to-CMC-Fall%2017%20Extra%20Items.pptx) (slide 25)]

M. di Giulio provided a discussion on the SEA resolutions regarding the SANA registry and the value of importing information from the CWE to the SANA registry. She also communicated that CMC members should appoint Agency Representatives to ensure that the information in the SANA registries is up to date and accurate. O. Peinado noted that there is an issue with the SANA registries being identified as “provisional” even after having had been approved or entered by the CMC members or their appointed agency representatives. J.M. Soula also added that the SANA registries website is difficult to navigate and asked if there would be a standalone reporting system that would supplement the functionality of the SANA registries.

After a long deliberation and discussion on the resolutions from the SEA on the SANA, J. Afarin responded that it seems that although the initial structure of the SANA registries and the Registry Management Plan had been approved by the CMC, the scope of the SANA registries was not clear. Since then, the product has matured and now includes many registries and levels of information that are no longer known by the CMC, which now accounts for a significant amount of resources utilized by CCSDS member agencies. J. Afarin stated this will need to be addressed before further development of the registries is authorized. Russian side agreed with J. Afarin, adding that in many situations with a database such as this, if the scope of the system is not contained the resource impact may be difficult to manage. M. di Giulio responded that the remaining tasks are really just to clean up the data and to provide a unique way to represent it and added that the original information was derived from an IOAG request to formalize the information in a standard way. J. Afarin responded that the SEA and SANA Steering Group (SSG) should come back in several months explaining the necessity of the SANA registry so that the CMC will understand the structure, the benefits, and to determine whether or not the SANA registry should continue in its current structure. The CMC members all agreed that this would be the best path forward.

**AI-CMC-A-2018-05-01: The CMC requests that the SEA Area Director, Peter Shames, provide a one hour presentation to the CMC on the value of the SANA registries to the CCSDS community and to include in this presentation the following:**

* **The overall objective of the SANA registry and the criteria for setting up a new registry**
* **a description of the purpose of the current format of the SANA registries**
* **the expected use cases for the SANA registries**
* **the intended scope of the SANA registries**
* **the remaining development and maintenance efforts required to get the SANA registry into a usable format for the end user**
* **the driving requirements for the level of detail being requested throughout the registries. For example, individual roles of contacts on the CWE**
* **define the benefit of the SANA registry vs. the following resource requirements:**
  + **Dollar costs to maintain and update the SANA registries**
  + **Short- and long-term data input and management requirements by the SANA registries**
  + **Short- and long-term data input and management requirements by participating agencies**
  1. **Strategic Plan Updates** [CESG Report to CMC Extra Items (slides 3-6)]

M. di Giulio provided to the CMC a summary of updates to the CCSDS area strategic plans per the request of the CMC at the last face to face meeting. W. Tai asked a question whether RTP is required for streamlining voice and video over DTN, to which O. Peinado responded that RTP is required for streamlining voice and video over DTN and that testing of the specification has already begun in DLR. M. di Giulio added that the Time BoF should be resurrected, however, based on updates to the IOAG service catalogue, the necessity to resurrect the BoF can be revisited. J.M. Soula added that while the IOAG is currently a bit late in updating the ICPA priorities they will be provided very soon.

* 1. **CMC/CESG Poll Statistics** [CESG Report to CMC Extra Items (slides 8-9)]

M. di Giulio provided a summary of the CMC poll statistics since November 2017. J. Afarin asked if this was the normal rate of polls for a six-month period. M. di Giulio responded that with an average of approximately 15 new specifications to be published throughout the course of the year the number of polls is accurate. M. di Giulio then continued by reviewing the CMC poll statistics and discussed the CMC polls currently ongoing to publish the DEDSL specification, the Simple Schedule Format specification, the reconfirmation of the PN Ranging for 2 Ghz CDMA, and the orange book on Enhanced Forward CLTU.

* 1. **CESG report on resource status (projects with issues)** [CESG Report to CMC Extra Items (slides 10-16)]

M. di Giulio provided an overview of projects with missing resources, noting that the CCSDS File Delivery Protocol revision is the only project without a second prototype at this time. Y. Huang added that BITTT will be doing the prototype and the whole product for implementation. W. Tai asked when CNSA will decide who is in charge of executing the prototype. Y. Huang noted that he is not sure but added that the work should be completed during the current year. M. di Giulio added that ESA is also planning to provide a prototype and that their confirmation of the work will be concluded by the mid-term teleconference.

* 1. **New Work Items within 6 months** [CESG Report to CMC Extra Items (slides 17-18)]

M. di Giulio reviewed all of the new work items in the next six months (combined from the Area Director presentations on day 1). No questions or comments arose.

1. **Documents with due date for R/U/S** [CESG Report to CMC Extra Items (slide 21)]

M. di Giulio provided an overview of all CCSDS documents that are currently due for reconfirmation, updating, or silverization (R/U/S). During the review, Margherita noted the total number of resources required to update the identified publications and added that the reconfirmation of the Data Transmission and PN Ranging for 2 GHz CDMA specification has been completed at this time. This specification was reconfirmed during the spring 2018 meetings. Regarding some of the older documents that must be updated, M. di Giulio noted that some of these projects did not have resources available to complete the updates to the specification, causing a delay in the documents update progress.

1. **Report on Projects with Disproportionate Delays** [Reports on project with disproportionate delays: [Report 1](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/Project%20Report%202018-05-09%20by%20Biggest%20Change.pdf); [Report 2 (by WG)](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/Project%20Report%202018-05-09%20by%20WG.pdf))]

M. di Giulio reviewed the projects with disproportionate delays based on the reports generated by B. Oliver. She noted that there is nothing major to report regarding the reports.

1. **IOAG/ICPA Update** (CESG Report to CMC Extra Items [slides 22-24)]

M. di Giulio noted that the IOAG has updated Service Catalogue 1 and 2 at this time, and that the IOAG has checked the status of projects in the ICPA. She added that the priorities still must be updated in the ICPA at this time though. J.M. Soula confirmed that the IOAG has not yet updated the priorities in the ICPA but plans to in the near future. M. di Giulio stated that Service Catalogue 3 is currently being developed and the final document may have implications on the priorities and projects in the ICPA. M. di Giulio then continued with her review of projects that are in the service catalogues (1 and 2) but which are not in the ICPA. M. di Giulio noted that some of these projects are existing projects in CCSDS, including many in the Service Management WG, but others are not yet listed in the ICPA. J.M. Soula noted that this is indeed the case and that there are some projects with IOAG high priority that do not yet have CCSDS specification projects yet. The CMC then briefly discussed the necessity of putting long-range projects from the IOAG into the ICPA if there is no description of what the project should be. N. Peccia noted that for long term projects without descriptions, the number of additions would be minimal (maybe 10 new projects in the ICPA). J.M. Soula noted that the projects should be added to the ICPA so that they can be discussed with CCSDS in the near-term in order to provide input on the priorities review that will occur in the near future. J. Afarin noted that what needs to be understood is which of the IOAG’s priorities must be added to the framework that are not already there, and for which there is no plan in CCSDS currently (meaning draft projects) for these projects to be executed. J.M. Soula responded that the ICPA is to be used as the tool for reviewing projects of high priority in the IOAG and their corollary standards in CCSDS. The discussion then continued amongst CMC members to discuss who should be responsible for entering new specifications into the ICPA, the IOAG or the CESG. N. Peccia noted that half the table is updated by the IOAG and the other half is updated by the CESG, and what needs to be agreed is whether to put all projects as draft (including those that are undefined) in the ICPA, or to leave them off until they are better formalized and understood. As an example, the Time BoF was noted, as this was identified as a priority in the IOAG, but for which none of the IOAG agencies have submitted resources for the creation of the BoF. The response from J.M. Soula was that the priority of the Time Transfer projects identified in the Service Catalogue would be revisited when the IOAG revises its priorities.

1. **Lunar Orbiting Platform-Gateway** [CESG Report to CMC Extra Items (slides 27-29)]

M. di Giulio discussed the Gateway review by various members of the CESG and noted that the gateway is a complex setup requiring many different standards to be adopted and utilized by the spacecraft/missions that will construct the Gateway. M. di Giulio also added that the group also reviewed the new deep space interoperability standards and will be providing comments to the deep space interoperability standards team by the end of May.

1. **RID Template Status**

M. di Giulio provided an overview of the CESG’s response to the proposed RID Template to replace the current ASCII text form and the online system used by NASA RID submitters. M. di Giulio noted that while some of the Areas reviewing the template provided some comments for improving the usability of the excel template, the CESG was not able to reach consensus on the adoption of the RID template.

1. **RID Template Discussion**

The CMC discussed the RID template and changing the RID template to an excel format. N. Peccia noted that this would be better because this would provide others the opportunity to better filter and review RIDs submitted by section. The RID template will be submitted to the CESG for comments and feedback and then will be discussed further.

1. **Next CMC mid-term telecom and Agenda**

The CMC discussed the date for the next CMC mid-term teleconference and agreed to hold the next mid-term teleconference on 22 August 2018, at 0800 Eastern.

1. **Meeting Planning**
   1. **Fall 2018 Technical Plenary & CMC (DLR)** ([Information Sheet – Berlin](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/Information%20sheet_Berlin.pdf))

O. Peinado presented the meeting information sheet for the Berlin meetings. He noted that lunch would be paid for by DLR in the first week. During the second week, there will be two rooms, one for CESG and one for the CMC.

* 1. **Spring 2019 Technical Plenary & CMC (USA/CSA)** ([CMC 2019 Meeting Organization at CSA](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CMC%202019%20meeting%20organization-%20CSA.pptx))

J. Afarin provided a discussion of the Spring 2019 technical meetings, noting that NASA was having issues with the venue due to cost and the need to classify the meeting as a conference. He noted that the meeting time and place was being finalized though and that a final date for the meetings would be set no later than the end of May 2018. The meeting dates are scheduled now for 6-10 May 2019 at Ames Research Center in California, USA.

S. Tafazoli provided an overview of the CSA meetings. He noted that any individuals requiring a visa to get into Canada should get in contact with him as soon as possible and he will work to get the paperwork started to ensure there is plenty of time to complete the visa application process.

* 1. **Fall 2019 Technical Plenary & CMC (ESA-ESOC)**

M. di Giulio provided an overview of the fall 2019 technical meetings and CMC to be held at ESA-ESOC in Darmstadt, Germany. She noted that the facilities are already booked to host a 4-day technical meeting from 21 October through 24 October 2019. The CESG meeting will be hosted at ESOC on 25 October 2019, with the CMC meetings beginning on 28 October 2019 and ending on the 30th.

* 1. **Spring 2020 Technical Plenary & CMC (USA/JAXA)**

J. Afarin noted that NASA is currently reviewing dates and possible locations for the spring 2020 meetings, including possibly hosting the meetings in Houston, TX at one of the local universities.

T. Shigeta facilitated an open discussion on the CMC meeting to be hosted by JAXA in the spring of 2020. Per the discussion, T. Shigeta recommended holding the meetings sometime in May 2020, preferably before June due to local weather. CMC members recommended a number of locations to host the meeting, and T. Shigeta indicated he will look into the locations for planning purposes.

* 1. **Fall 2020 Technical Plenary & CMC (CNES)**

J.M. Soula led a brief discussion about future planning for the fall 2020 technical meetings, to be hosted by CNES. He asked if anyone had any suggestions for the meeting location. Several CMC member suggested Paris or Bordeaux, France. Meeting planning is ongoing at this time.

1. **CCSDS Standards for NASA’s Future Lunar Exploration Missions** ([NASA Lunar Communications Standards](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/NASA%20lunar%20communication%20standards%20-%20CMC%205-2018.pptx))

W. Tai provided a presentation on CCSDS standards for NASA’s future lunar exploration missions. He first provided the purpose statement for why NASA has looked into CCSDS standards to be used for the Gateway and possibly other Lunar missions. He noted that the window of relevance is 2022 through the 2030’s. Wallace continued by providing the factors taken into account during the selection of CCSDS standards for NASA’s future lunar exploration missions, noting that there was a down selection from the number of various standards that included factors such as interoperability, cost, and spectral limitations. T. Shigeta pointed out that the mission, though being discussed as a ‘NASA’ mission is largely international. W. Tai agreed but noted that the backbone of the mission will be NASA and will have significant cooperation from ESA and JAXA. In response, T. Shigeta asked if communications is considered part of the backbone of the mission, to which W. Tai replied that it was, as communications will be a part of the Power and Propulsion Element (PPE) currently being developed at NASA. W. Tai responded that it would be a number of people. D. Ross asked if commercial lunar communications vehicles will be considered as a part of the trade’s analysis and W. Tai responded that these will be considered as a part of the future architecture. W. Tai then continued to explain to the CMC the proposed Lunar Surface Network and the Lunar Relay Network that would be used to communicate between ground elements and the PPE and back to Earth. T. Shigeta asked if there would be a planned direct link to Earth, and W. Ta responded yes there will be. D. Ross asked how detailed the WG was in Lunar Surface communications, for example, are they taking into account surface modulation and coding schemes yet? W. Tai responded that their biggest imposed constraint was the frequency bands at this time. He then continued by explaining the review and selection of frequency bands and O. Peinado asked why all of the bands exclude Ku-band. W. Tai responded that TDRS and other planned systems at NASA expect to move away from Ku to Ka-band only in the future. W. Tai then reviewed the coding schemes and noted that the LDPC family/code rates would be used except for RF low rate emergency coding, which will use BCH coding. S. Tafazoli asked why we are using LDPC now versus why it has not been used in the past based on the large gain in margin from the coding scheme. W. Tai responded that this is because it is only recently that spacecraft onboard processing has become strong enough to handle the overhead processing required to process LDPC coding in real-time. W. Tai then continued to note that the mission will use USLP as the space data link protocol with AOS and added that the prox-1 protocol needed to be updated to accommodate high rate proximity communications, such as go-back N retransmission and the field for frame sequence number, due to it being limited to only one octet unlike 3 octets in AOS. W. Tai then concluded by briefly reviewing the list of standards that were quoted in the presentation.

1. **IOP Topics**

J. Afarin opened up the floor to the CMC to discuss any topics that needed to be addressed at IOP 4. One item the CMC noted was optical communications standards, and the progress of optical communications since IOP 3. The CMC also discussed the need to generally update the IOP on the progress made against IOP 3 topics as a whole. Achievements of the IOP-3 request included:

1) Optical Communications

2) Mission Planning

3) Space Internetworking – DTN

4) Development of standards in support of the IOAG Lunar Communications Architecture WG

a) The standards that are available vs. those that are not due to the blue book not being available.

b) Gateway standards selections.

5) A discussion of what CCSDS is working on apart from the IOAG priorities.

1. **DTN Discussion**

J. Afarin provided an overview of this NASA project that is a study on the infusion of DTN on all three networks. He noted that he has submitted a budget decision package to HEOMD and is awaiting a decision on whether or not the Directorate will support a full implementation on all of the networks, or if the support would be for only a few missions to start and then ramp up to full implementation later. O. Peinado noted that for voice and video specifications they were able to implement the technical specification before the completion of the publication based on the maturity of the technical specification.

1. **ISO Topic**

J. Afarin introduced an issue that is currently ongoing within NASA regarding ANSI and the need for NASA to have to go through a procurement in order to retain support with ANSI and the ISO Secretariat. He discussed that if any other agency was interested in maintaining the Secretariat for ISO in order to process CCSDS specifications as ISO publications, then they should please check with their agencies and inform him if this is a possibility that should be pursued.

1. **Netherlands Space Office (NSO) as an Observer Agency** ([NSO Observer Request Form](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CCSDS_Observer_Request_Form_NSO.docx))

J. Afarin, noting a prior email distributed to the CMC containing the NSO observer agency request form, inquired if anyone had any objections to the confirmation of NSO as an observer agency in CCSDS. All agency members agreed that NSO should be admitted to CCSDS as an observer agency.

***Resolution 2018-05-01:***

***The CMC resolves to approve the Netherlands Space Office as a CCSDS Observer Agency.***

1. **Secretariat Report**
   1. **Action Item Status (only open items)**

D. Ross led a discussion of all current open Action Items and the closure of completed action items. The following completed action items were agreed to be closed by the CMC:

* CMC-A-2016-10-11
* CMC-A-2017-11-01;
* CMC-A-2017-11-02;
* CMC-A-2017-06-09 (OBE);
* CMC-A-2017-11-03.
  1. **Document Status Report/Poll Overview:** ([CCSDS Document Status](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/CCSDS%20Document%20Status.pdf))

D. Ross displayed the CCSDS Chief Technical Editor’s queue and CMC Polls document. No questions were asked.

* 1. **IT Status Update**

D. Ross provided a verbal update on the IT project status, indicating that per the conclusion of the RID system development, the technical support team would be moving on to the development of the polling system after they have completed updates to the CCSDS website to include publication metadata.

1. **Action Items and Resolutions Review** ([Action Items and Resolutions](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/Action%20Items%20and%20Resolutions.pptx))

D. Ross provided an overview of the Action Items and Resolutions from the two-day CMC meetings.

1. **Space Assigned Numbering Authority (SANA) overview** ([SANA Overview](https://cwe.ccsds.org/cmc/Private/CMC%20Meeting%20Minutes%20and%20Presentations/2018%20Spring%20-%20Beijing/20180517_sana_cmc.pdf))

M. Blanchet provided a presentation on the SANA SCID assignments and activities of the SANA registries. M. Blanchet noted that the RMP work has been completed (reconfiguring the SANA registry) and that the SANA operator has now completed contact synchronization with the CCSDS website. Consequently, when an AR is added to the CCSDS website, the Secretariat gets a new OID from SANA that enables the sites to be automatically synced with the correct information. N. Peccia asked if the SANA operator was planning any additional updates, to which M. Blanchet responded that the API is essentially done at this time and there will be additional usability updates to the registries in the future, but those will not require major updates on the scale of implementing the new RMP. W. Tai asked for more information about the special SCID assignments that are submitted to the SANA operator per the presentation. M. Blanchet responded that one such example they have is a spacecraft whom has data requested that their data not to be shown in the registry; and that they want the same SCID values for different bands for different versions and want the same 8 bits in the right most byte for both versions of assigned SCIDs. Also, for example, they received a request from CNES for a specific bit pattern based on a specific algorithm. M. Blanchet noted that some of these requests could be more automated with more software development, but there is always the question about unique requests and weighing their frequency against the necessity to automate special request items. O. Peinado asked if there were any instances where SANA had to deny a SCID request. M. Blanchet responded that this is not typical, but when it does happen it is usually when an agency requests a specific SCID because it appears to be open, but it is actually not open and private, so in these rare occasions they cannot honor that specific SCID request, but that they do still provide a SCID. There are not necessarily outright denials of SCID requests though.

1. **Any Other Business**

T. Shigeta asked J. Afarin if he would be distributing his IOAG meeting presentation for the IOP prior to the discussion with the IOAG. J. Afarin responded that he would provide it to everyone for their review prior to the meeting.

The CMC discussed the Agency reports and whether or not Agency reports would be provided at the next face to face CMC meeting in Berlin, Germany. It was agreed amongst the CMC members that they would not provide Agency reports, and that these reports would move with ISO reports during formal vs. informal meetings of the ISO. Thus, they will only be provided at the spring meetings of the CCSDS Management Council.

The CMC discussed holding the CMC meeting on the same day as the CESG meeting on Monday in Berlin. It was agreed it should be held after the CESG meeting and will begin on Tuesday after the Fall 2018 technical meetings.