**CCSDS Engineering Steering Group (CESG)**

**(Virtual) Fall Meeting, 16th and 17th November 2020**

**Attendees: MdG, WT, MM, BB, PS, SB, TDC, JW, XH, GPC, JM, EB, CH, TG**

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| **Note: The Fall 2020 Technical Meetings have been held remotely, due to the pandemic crisis. The CESG Meeting takes place as well via teleconferencing.** **The work product outcome of the technical meetings is in some cases of lower quantity than in normal face-to-face meetings, due to the inherent difficulty to hold remote WGs meetings.****This Minute of Meeting contains information that was addressed/discussed in addition to the Presentations of the individual Areas.****Those presentations are available at** :**CESG--> CWE Private--> Meetings--> 2020 Fall Meeting (virtual).****General** Demographic data were compiled by ADs and delivered to Secretariat. The Demographic tables from Secretariat , however , were not yet available at the time of writing the Reports. Some ADs have compiled their own table . **CESG Discussion on SOIS Area Issues from the past week(s)**Following the discussion at Spring Meeting about establishing relations with Wi-Fi Alliance (WFA), the SOIS Area decided to establish this relationship via a “Liaison Agreement”. To this end, A CMC Poll has been issued – and approved. At this Fall Meeting, the SOIS Wireless WG discussed the CCSDS/Wi-Fi Alliance (WFA) Liaison aspects.**A.I. JW** : The SOIS Area shall nominate a person to be the CCSDS Liaison point of contact. CESG Chair: The AD/DAD shall provide the Liaison Report together with the Area Report at each CESG Meeting.Action outstanding since Spring Meeting:**A.I. JW** : Check poll conditions to “*Proximity Wireless Network Communications”* and provide answers accordingly. Poll results were communicated with e-mail on 17th April 2020. **CESG Discussion on SLS Area Issues** **from the past week(s)**Question by SLS AD : are Silverized Books supposed to be part of the Strategic Plan ?CESG : no, they do not belong to the Strategic Plan ( in that they are not strategic)SLS Area presented an issue related to Orange Books:* SLS-OPT WG has (almost) completed their internal work for publishing the Orange Book, “Optical High Data Rate (HDR) Communication –1550 nm”.
* SLS AD & DAD raised the following points:
1. The (draft) Orange Book introduces a second input to accommodate provision of non-CCSDS Service Data Units to the Optical Coding & Synchronisation Sub Layer.
2. Being the Orange Book a *CCSDS Experimental Specification (*unlike a CCSDS Recommended Standard*) part of a research or development effort based on prospective requirements that may or may not materialize in future*, in case of WG consensus, SLS AD and DAD have no problem to issue the related SLS Resolution for publication.
3. However, two SLS Orange Books have been blocked at CESG Poll because not in line with current published CCSDS Standards.
4. Going ahead with resolution to publish this Optical Orange Book would suffer of a similar misalignment with respect to published standards.

The SLS Area has then formulated the following question: *Shall Orange Books be fully in line with published CCSDS standards?**CESG : no, therefore no need to change the scope of Orange books.*The aim of SLS Area is to ascertain that all Orange Books in similar conditions have equal treatment. CESG Chair: To discuss this topic, a Task Force will be established with participation by the Working Group members, and by experts of involved Agencies. SLS AD and DAD, SEA AD and CESG Chair and Deputy will also be part of the Task Force. CESG Chair will issue the nomination of the Task Force and will schedule the meeting.It is also noted that during the discussion other proposals (that did not reached consensus) were made; e.g. SLS proposed to assign an action to SEA AD to participate to the next SLS-C&S WG Meeting to better coordinate with his NASA colleagues, etc.SLS Area also requested CESG opinion with respect to existence of any CESG rule/agreement about the following questions:1. Shall PIDs be solved without involving the WG?
2. Can PIDs address issues that do not require WG involvement?
3. Can AD/DAD & WG Chairs ask WG consensus to solve PIDs?

SLS Area opinion with respect to the questions above is : 1. PIDs can be solved without involving all WG Members when the discussion among AD, DAD, WG Chair/WG Deputy determines that the PID can be answered by this limited forum. When this is not the case, the WG Chair/Deputy shall consult the WG Members as appropriate (e.g. e-mail, etc.) before responding to the PID.
2. PIDs can address items not needing WG involvement as well as items needing WG involvement
3. AD/DAD & WG Chairs shall ask WG consensus to solve PIDs whenever the limited forum consisting of AD, DAD, WG Chair, and WG Deputy Chair is not in the position of providing a proper consensus reply to the PID.

It is opinion of SLS Area that deferring PIDs to Agency Review is an option when the originator of the PID does agree with this approach – in order to e.g. to speed up the poll process, because of the minor severity of the PID, etc. CESG : agreedIt is also opinion of SLS Area that the need of further discussion among all WG Member is not a valid argument to defer a PID to Agency Review.SLS AD/DAD : Can PIDs be rejected ?CESG: PIDs can be rejected, but an agreement with the originator has to be sought according to the CCCSD consensus process. **CESG Discussion on SIS Area Issues from the past week(s)** Yellow Book by MIA WG : has testing over the web ( cloud , security aspects, etc), according to CCSDS A13.1-Y-1 (CCSDS Recommended Procedures for Cloud-Based Interoperability Testing) been foreseen ? There may be issues related to accessing IT systems of another Agency. SB will check with the WG.CESG Chair : in principle, also w.r.t. IETF a Liaison relation shall be established.**CESG Discussion on CSS Area Issues from the past week(s)** The Area Report raised again the issue of the maintenance approach of databases in SANA.The following has been agreed: it is first required to assess the actual maintenance needs for different kinds of SANA registries, and characterize the different maintenance effort.**A.I** The CSS Area , with support from the SSG and any involved CESG members, will make an assessment and shall propose an approach by the CESG spring 2021 meeting.The CSS Area is working on characterization of the Functional Resources model.  **CESG Discussion on MOIMS Area Issues from the past week(s)** The MOIMS AD reported that the on-going discussion in the SM&C WG on simplifying the MO services might induce a schedule risk in the development of the MP&S BB. However, this risk is mitigated by the fact that the conclusion of the MO refactoring exercise will be soon (by Q2/2012 latest) and by several members following closely both the SM&C and MP&S WGs. The SEA AD raised again the issue of having the MPS WG standards to include both an info model and a service model in the same document. The MOIMS AD recalled that the same identical matter had been brought to the attention of the CMC a few years ago and that the CMC clearly decided for having both format and service in a single book.  **CESG Discussion on SEA Area Issues from the past week** Related to the CCSDS – ISO TC20/SC14 liaison work, particularly on common terminology, the SEA proposes to now formally instantiate the Terminology Expert Group already defined in the CCSDS Registry Management Policy (RMP), 313.1-Y-2.**A.I.** SEA AD: propose to CESG extensions to the existing SANA terminology registry to accommodate ISO TC20 SC14 shared use of this registry.**A.I.** SEA AD : request from CESG candidates for the TEG.**CESG all Areas:** **Strategic Plan and Charters**: All Area Directors shall check the Strategic Plan and update it as needed. Also, they shall coordinate with the WG Chairs in case changes to the Charters are required.  **GitHub:** CESG Chair reported that during the last CMC Mid-term telecom, a request for a common GitHub repository had been raised.The following has been recorded:  “The Secretariat was directed by the CMC to investigate the feasibility of a CCSDS repository.M. Blackwood reported that such a repository should be possible technically, whether hosted by a private organization or by GitHub. Some CCSDS Working Groups already use GitHub, either NASA or ESA’s implementations. M. Blackwood noted that depending on the approach selected, the cost of a repository could be charged for each individual user. This could introduce some difficulty for the Secretariat in providing funding. M. di Giulio suggested the Secretariat confer with Area Directors and Working Group Chairs to determine the potential demand for a GitHub repository and any foreseen difficulties with a centralized approach. M. di Giulio also recommended that any concerns over funding or hosting approach be resolved after Area Directors and Working Group Chairs had been consulted”SEA AD suggested that this cost could also be borne by some other agency than NASA.**Reports to CMC**:All ADs will be available for providing their presentation to CMC Meeting on 1st December. The CMC agenda will be distributed by Secretariat . The presentations will be given in the following order:* MOIMS
* SLS
* SOIS
* CSS
* SIS
* SEA

thus mitigating the issues due to the different time zones. | **AI/F20-1** **JW****AI/S20-2** **JW****AI/F20-2****MdG****AI/F20-3****EB, CH, PS****AI/F20-4****AI/F20-5** |
| **Status of actions since previous meetings**:**AI/F19-4 JW**: to call a Telecon involving SOIS, SIS, CSS to assess data representation aspects (e.g. MIB) in different CCSDS domains, and brainstorm about commonalities. Outcome to be presented at CESG Mid-term Telecon.**Status Spring 2020**: on going. An e-mail from Holger Dreihahn on 12th Feb 2020 re. harmonization of information models provided a preliminary proposal about the work to be done jointly. Activity will be resumed at next face-to-face meeting.**Status Fall 2020**: So far, only the commonality of data structures between SOIS and SIS has been assessed. CSS and SOIS have scheduled an introductory session.  | **AI/F19-4 JW** |
| **AI/S19-8 MM/JW**: Develop one example of mapping/interfacing of one MO service to one on-board service. JW to propose one on-board SOIS service ( e.g one instrument on a subnet, described by EDS’s) , MOIMS and SOIS to develop the relevant mapping example.Status: during joint MOIMS/SOIS session examples to demonstrate mappings/interfacing were agreed . Also, the mapping/interfacing of MO service(s) to the on-board RT service(s), according to the three architectural scenarios identified at Spring Meeting, were outlined via diagrams. A demonstrator will be developed, to proof the mapping of MO services to on-board architectures, and potentially how the different CCSDS Areas could be connected via tooling.* **Status Spring 2020**: Action is on-going . Some progress done by MOIMS/SOIS, resources available and assigned to this task. Work in progress.
* **Status Fall 2020**: Following the establishment of a concept paper, three approaches have been defined for the MO/SOIS integration. The Demo focuses on two of the three:
* Interfacing the on-board device and provisioning of its capabilities to the ground through MO M&C Services.
* Wrapping the on-board functionality and providing it as an application level service to the ground.

Status of demonstrator :* For this demo the iADCS device of OPSSAT has been used.
* The EDS has been retroactively generated from the device ICD.
* The resulting EDS has been used to auto-generate code
* From the equivalent MO ADCS service specification (XML), an MO service code has been generated.
* The integration of MO with EDS is on-going.
* For now, approach (1) is being taken. A set of actions and a set of parameters were already defined and will be glued to the corresponding EDS auto-generated code methods. An early prototype is intended to be running soon on the FlatSat to discover potential problems. This early prototype makes simple calls to the driver and just logs them.
* The gluing is done manually.

Summary: all steps are completed. The integration and testing are not performed yet.  | **AI/S19-8 MM/JW** |
| **RID Template** **AI/F19- 5 CH**  : CH to distribute the link to the RID tool package.**Status Spring 2020:** on going.**Status Fall 2020:** no progress.**AI/F19-6 CESG All**: all Areas Directors to assess the suitability of the tool. By Mid-term Telecon**Status Fall 2020 :** no progress, linked to **AI/F19-5** | **AI/F19- 5 CH** **AI/F19-6 CESG All** |
| **UN registry of "objects in space" : “proposal to suggest adoption of the SANA registries by UNOOSA and Artemis Program".** CESG agrees that this makes sense and to present this proposal to CMC as a strategic activity. PS will then establish the working relations with Artemis Program, UN and UNOOSA. |  **AI/S20-5** **PS** |