**CCSDS 2012 Spring MEETING**

**Final SLS-SLP Space Link Protocols Working Group**

**Minutes of the Meeting – April 17, 2012**

**1. New Action item list**

* 1. Action on British Space Agency (Mathew Cosby) to supply lessons learned section in Prox-1 GB based upon Prox-1 interoperability testing between ESA and NASA missions. Due date: by at least 24 Sept 2012
  2. Action on British Space Agency (Mathew Cosby) to provide updated PICS Proforma based upon work already completed by NASA/ESA Mars 2016/Exomars teams. Attempt will be to provide Physical Layer, C&S sublayer, and data link layer PICS proforma. Due Date: by at least 17 Sept 2012

**2. Topics Covered**

2.1 Greg Kazz (NASA/JPL) – Discussion of preliminary RID resolution of 5-year review of Prox-1 Space Data Link Protocol

1. Consensus reached during the meeting on the resolutions of the RIDs submitted by Keith Scott (SIS-AD).
2. Agency review continues on this document until June 1 – thereafter a WG telecon towards the end of June is planned to dispose of any remaining RIDs submitted

2.2 Greg Kazz (NASA/JPL) – Determine impact of 5-year review on Proximity-1 Green book

1. See Action Item 1.1 – Specific missions were MSL Electra lite/Melecom as well as CE-505/Melecom transceivers. Issues of: Old vs new idle sequence used, Viterbi encoding/decoding, low SNR lock up problem on the CE-505, how to set the carrier loss timer, PLCW timer setting, expand the Prox-1 time tagging service by defining what the limits are.
2. See Action Item 1.2 – Note: If PICS Proforma can be easily supplied for all Prox-1 books, then introducing them into the specifications may be feasible. The PICs exchange according to Mathew Cosby has been enormously helpful between NASA and ESA. Craig Biggerstaff has a PICS Proforma template used on the SDLS protocol that could be of use. Gian Paolo Calzolari stated that each WG will decide on whether or not a PICS Proforma should be added to their respective Prox-1 books.
3. Review of updated Prox-1 GB to be held at Fall 2012 meeting in Cleveland

2.3 Greg Kazz (NASA/JPL) – Pending AOS/TM approved pink sheets and their 5-year review

1. Note that there already exist approved CESG/CMC AOS & TM 2008 pink sheets concerning the OID frame term, VCP service consistency, etc
2. There is a new need identified at this meeting to introduce a short section of text in the AOS, TM, TC Space Data Link Protocols mandating the use and referencing the emerging SDLS protocol (when needed). In particular, the interpretation of the frame length field in TC needs to be clearly defined.

2.4 Ed Greenberg/Greg Kazz (NASA/JPL) – NASA proposal for a singular all encompassing CCSDS Link Layer protocol.

Continue to solidify concepts associated with a single unified link layer protocol as spoken to by Ed Greenberg. Further information on this topic will be sent out to the WG within the next month.

**3. SLP Projects in the CCSDS Framework**

The current projects defined for SLS-SLP WG are:

1. Update to the Prox-1 Green book Issue 2
2. 5-year Review of the CCSDS Prox-1 Space Data Link Protocol
3. Space Data Link Protocols Green book Issue 2
4. New SLP Project: 5-year Review of AOS Space Data Link Protocol + SDSL Rqmt – added after the Darmstadt meeting
5. New SLP Project: 5-year Review of TM Space Data Link Protocol + SDSL Rqmt - Rqmt – added after the Darmstadt meeting

Note: Need to issue a Pink sheet to TC Space Data Link Protocol to add rqmt to use SDLS protocol (optional) and clarify frame length field when SDLS used. Last update to TC Space Data Link Protocol was 2010. Therefore there is some sensitivity to proposing a new project for this update unlike the AOS (2006) and TM (2003) current versions.

**4. Resolutions**

There were no resolutions passed at this meeting by the SLP WG

**5. Planning**

The next SLP WG meeting is planned for Tuesday during the week of Oct. 15 – Oct. 18, 2012 in Cleveland, Ohio USA at the Renaissance Hotel.

**Annex 1 - Action Item Tracking List (Table form of Item 1 – summary)**

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| --- | --- | --- | --- |
| **AI #** | **AI description** | **Actionee** | **Due date** |
| AI\_Fall-2012-01 | Action to supply lessons learned section in Prox-1 GB based upon Prox-1 interoperability testing between ESA and NASA missions. | Mathew Cosby (British Space Agency) | By at least 24 Sept 2012 |
| AI\_Fall-2012-02 | Action to provide updated PICS Proforma based upon work already completed by NASA/ESA Mars 2016/Exomars teams. Attempt will be to provide Physical Layer, C&S sublayer, and data link layer PICS proforma. | Mathew Cosby (British Space Agency) | By at least 17 Sept. 2012 |

**Annex 2 - List of Participants-Space Link Protocols (SLP)**

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| **Name** | **Affiliation** |
| Greg Kazz (chairman SLP) | NASA/JPL |
| Gilles Moury | CNES |
| Gian Paolo Calzolari | ESA/ESOC |
| Ed Greenberg | NASA/JPL |
| Stephan Bury | ESA |
| Mathew Cosby (telecon) | British Space Agency |

**Annex 3 - List of SLP Presentations/Attachments**

See SLS-SLP CWE under the following URL for these presentations: **http://tinyurl.com/7qk38rl**

1. Ed Greenberg/Greg Kazz (NASA/JPL) - NASA proposal for a singular all encompassing CCSDS Link Layer protocol. Filename: Eds\_General\_CCSDS\_Link\_Layer\_Protocol\_May\_2012

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**Annex 4 – SLP WG Chairman’s report to SLS area director – given April 20, 2012 to CESG**





