USLP Telecon #1 - 2016

Jan 20, 2016

Topic: USLP Draft White Book Chapter 4 PDU Formats – dated Jan 7 2016

Attendance: Greg Kazz(NASA), Ed Greenberg (NASA), Marco Rovatti (ESA), Stefan Veit (DLR), Gian-Paolo Calzolari (ESA), Victor Sank (NASA)

In general, I got the impression from several WG members that the current USLP Draft White book dated Jan 7, 2016 is much improved from the previous versions. It clearly reads more like a true blue book in format and content.

1. Victor Sank said add text up front in Section 4.1.1.1 explaining the exceptional case where the TF Primary Header is constrained to 4 octets i.e., only when the End of Transfer Frame Primary Header Flag is set to “1”. Otherwise, the TF Primary header does indeed range from 7 – 14 octets as previously stated. This text will be fixed. A short note will be added and alert the user to read the USLP GB for details on the motivation for the 4 octet TF Primary Header. In addition, text will be added to the USLP GB to describe the motivation for the 4 octet header (emergency H/W command).
2. Consensus reached so far is to continue to include the FECF within the transfer frame. In a perfect world, it would make sense to put the FECF outside of the frame. However there are legacy issues with missions to deal with. Missions sometimes want to access the CRC and this can only happen if it is defined in the protocol sublayer. Also there are the uncoded and Convolutional Encoded cases which make it mandatory to be defined in the protocol sublayer. NASA GSFC also voiced that it would be better to keep the FECF within the frame.
3. Insert Zone – consensus so far is to keep Insert Zone similar to AOS definition i.e., fixed length. USLP limits the IZ size to 256 octets. However, question is whether or not to continue to make the Insert Zone a signaled service. By including the Insert Zone Included flag, the IZ could be contained on a frame-by-frame basis, providing a low latency way to include data. The inclusion of the insert zone as per AOS required it to be in every frame on a physical channel even if that channel was carrying multiple Master Channels. This feature was included to support a single audio channel for emergency voice communications. This feature was never utilized for this function, rather it has be incorporated in the Arianne Launch vehicle to deliver low latency data. USLP is envisioned to support both variable and fixed length frames. The ability to include low latency data in select frames when needed is a capability that can be included in USLP. There is no reason why a mission cannot do the same thing as Arianne by having an insert zone in each frame produced, but it is just one option for its application. By allowing the insertion of low latency data to be driven by an instantaneous need there is less overhead and much more flexibility. Our past experience with low latency data for reporting on anomalous behavior has been to have the monitoring application create a report about the incident that can vary in size. Status reports could be provided at periodic times but these need not be in every frame and these reports are normally short. Anomaly reports are different but create a simple picture of the incident so that responders could quickly respond. Incident analysis reports, that contain a grand picture of the incident, hopefully will follow providing much greater visibility into the incident including its response to the corrective measures employed either automatically or by operator commands. There is a question of when the Insert Zone is included into the frame. This data must be added before the FECF is added and before the frame header is completed. But it can be added well after the frame data field is created.
4. COP Management Service – does not belong in the USLP BB. The formalization of the management function is already defined in the SLE books such as SLE Forward Space Packet, etc. Action is to remove the COP Management Service.
5. Location of Content of Report Definitions as USLP PDUs– PLCW (Proximity-1 and COP-P), CLCW (TC and COP-1), and future CLSR (SDLS Security Report). These report PDUs are already defined in their respective specifications, so USLP BB should only reference them but not define them.
6. After the meeting, a suggestion from Gian-Paolo was offered: You may also consider moving the CRC-16/32 encoding and decoding procedures to a Normative Annex.

Next telecon will continue with the protocol functions on the sending and receiving side defined in Sections 4.3 and 4.4.