CSS Cloud BOF Meeting Notes

19 January 2023

# Attendees

E. Barkley, A. Crowson, H. Dreihahn, W. Eddy, J. Liao, C. Radulescu, M. Schwinger

# Action item check

1. One action item closed
2. One action item deferred
3. Three action items added
4. Four open action items
5. See spreadsheet for details (<https://cwe.ccsds.org/css/docs/CSS-CLOUD/CWE%20Private/Action%20Items> CWE log in required)

# Recap of current standards shaping

1. See PowerPoint presentation slide in CWE (<https://cwe.ccsds.org/css/docs/CSS-CLOUD/CWE%20Private/BOF%20Meetings/230119%20Meeting> CWE login required)
2. Re always delivering the complete set of telemetry frames, A. Crowson noted that we may wish to defer to the implementation as to where selection for selected frames (i.e., virtual channels) is done – TT&C provider or mission user
   1. Regardless as to where processing for selecting frames for virtual channels occurs the same data delivery format would be utilized

# Encoding discussion

1. Agreed that in general we do not want to mandate use of ASN.1 and hence the expense of an ASN.1 compiler
2. Noted that we may want to use different types of encoding based on the type of data being delivered
   1. E.g., Telemetry frames may be a binary encoding due to volume of data and desire for low-latency processing
      1. This could still leverage the SLE PDU concept of supplying earth receive time, signal quality at time of reception, etc., but avoid the ASN.1 “complications” re variable length offsets by providing fixed offset to quickly access the “raw” telemetry frame
   2. E.g., TDM may already has an XML encoding, so perhaps this can be leveraged as is
   3. Recognized that XML Schema is a “stronger” normative approach than use of JSON schema, but at the same time recognized that JSON is popular with regard to cloud computing APIs etc.
   4. agreed that a potential consideration for the eventual standard or standards is to have an annex that provides the normative XML schema to JSON schema mapping
      1. to addresses interoperability concern noted by H. Dreihahn
   5. J. Liao noted that we could consider multiple encoding schemes that could be selected by various implementations
      1. There is potential merit as perhaps an implementation may want to use the ANS.1 encoding extant in the various CCSDS standards leveraged for cloud data delivery standards

# Goals for next teleconference

1. E. Barkley to generate a table for the different data types envisioned for cloud data delivery service identifying current “native” (to the recommendation) encoding scheme and potential conceptual PDU encoding
2. Based on the standards shaping chart/diagram consider how this is represented in CCSDS standard or standards document
   1. There seems to be a preliminary consensus that one normative book is to be preferred over multiple normative books

# AOB (no formal topics, but following points came up during meeting)

1. Noted that command is not being addressed
2. So far, where cloud computing is already being adopted for missions noted that commanding is intended to be done via current/legacy means and not via cloud data delivery
   1. Data points here are with NASA’ NSN and its missions and ESA’s ESTRACK and Roman Space Telescope

# Next telecon

The next teleconference is on February 16, 2023