Dear Mario:

Thank you for forwarding the ECSS analysis. Some elements of the analysis expose CCSDS document characteristics that are probably not amenable to change. For example, the wording of the Statement of Intent page and the presence of options in CCSDS Recommended Standards are elements that could be regarded as essential to the consensus process for a diverse group of international space agencies.

Other comments in the analysis concerning editorial aspects of CCSDS documents demonstrate some overlap between CCSDS and ECSS requirements, but I believe there may be some instances where CCSDS and ECSS requirements for normative statements would not agree. For example, in 2a) of the analysis, the author of the analysis interprets the statement "the use of those terms in this Recommendation shall be understood in a generic sense" as an interpretation guide to the reader. While it is clearly not an implementation requirement, it is a requirement upon the reader concerning interpretation of terms, and stating it in any way other than as a requirement (e.g., using "should" rather than "shall") would signal to the reader something unintended: terms defined in section 1 of CCSDS Recommended Standards are normative.

Similarly in 2b) the author of the analysis takes issue with the statement that the ASM "is not" rather than "shall not be" part of the encoded data. In this case, the offending statement occurs in a context in which it is not intended to be a requirement. The requirement for the location of the ASM is in the preceding subsection, and in the context in which it appears the statement is factual. I note that in 2d) the discussion of apparent inconsistencies in coding-related statements continues, but without revisiting the rationale for the phrasing of the particular statements, I am unprepared to comment on them individually. Nevertheless, it
occurs to me that there may be areas in which reasonable individuals could arrive at different interpretations of what constitutes a requirement or a statement of fact or an informative statement, and since the developers of the CCSDS Recommended Standards had considerably more time to determine what they intended to say than the author of the analysis had to interpret it, there may well be fewer real issues than are proffered in the analysis.

In 2c), the author of the analysis comments on "abuse" of words other than "shall" and "must" to specify requirements, citing instances of phrases like "it is mandatory" to specify a requirement. That may in fact be a valid criticism, but in my mind phrases like "it is mandatory" are unambiguous and do not constitute any sort of abuse. The CCSDS boilerplate statement in section 1 concerning words that imply binding requirements does not preclude other unambiguous expressions of requirements.

Other parts of the analysis appropriately identify problems with documents, such as CCSDS 401.0-B-17, that were produced or began production in the early days of the CCSDS before CCSDS had anything like a Publications Manual. Unfortunately, there is little that can be done to ameliorate those problems, since scarce agency resources are committed to other things. Still other parts of the analysis identify possible editorial lapses in CCSDS Recommended Standards--there are many instances of such things, but they are corrected when they are discovered.

In summary, I think the analysis provides valuable insight into the ECSS mindset, and it identifies a number of areas where CCSDS Recommended Standards could be made to appear more suitable for as-is adoption by ECSS. Nevertheless, significant problems would remain with elements like the CCSDS Statement of Intent page and the inclusion of options in Recommended Standards. In the case of options, there are many instances in the history of CCSDS when the inclusion of options in a Recommended Standard was necessary to gain consensus.

One thing that could make CCSDS Recommended Standards containing options easier to adopt would be inclusion of a Protocol Implementation Conformance Statement (PICS) Proforma in all Recommended Standards. Unfortunately, the last time an attempt was made to require PICS Proformae in CCSDS Recommended Standards, the proposed requirement was rejected by the CCSDS Management Council.

Finally, in my opinion, an analysis of a broad spectrum of CCSDS documents produced by different organizations over a period spanning more than 20 years is perhaps less valuable than a comparison of CCSDS Publication Manual requirements to equivalent requirements of the ECSS. Such an analysis would more clearly identify areas where CCSDS and ECSS could move toward compatibility.

Best regards,
Tom
At 06:35 AM 4/5/2007, Mario.Merri@esa.int wrote:

Dear Tom,

in a recent meeting we had at JPL with Adrian, Peter, Erik, Nestor and myself, we presented an analysis that was run by the ECSS Secretariat of a selected number of CCSDS documents. The fundamental goal of this analysis was to see whether CCSDS documents could be directly used in business agreement with minimal tailoring.

It was agreed that it would be interesting for you to see the outcome of this analysis which might either not be applicable to the CCSDS model or maybe could provide ideas for improvement.

Please let us have your comments.

Best regards,

__Mario

(See attached file: E-50 APPLICATION OF CCSDS 22-3-07.doc)

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