**Report following the Review of the SOIS TCONS and OBL Working Group
Draft Documents**

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Introduction

This report is the outcome of a review of the documents provided by the SOIS
TCONS and OBL working groups at the conclusion of the April 2005 plenary
meeting in Athens. The review was called because of the apparent lack of forward
progress by these working groups and because of the unwillingness of both groups to
put forward red book material for wider review.

The apparent lack of progress and unwillingness to publish red books has caused a lot
of criticism to be levelled at the SOIS area, and by the start of the April 2005 plenary
it was clear that this criticism could not be ignored. It therefore became incumbent
upon the SOIS area as a whole to address these issues and to demonstrate concrete
progress in line with the working group charters. The decision to carry out a review of
the TCONS and OBL work in hand was taken when it became clear that these
working groups were not in a position to release any documentation by the end of the
plenary.

Aims and review criteria

The aim of the review was to examine all of the documents currently being developed
by the TCONS and OBL working groups and to make firm recommendations about
how those working groups should proceed. The documents were reviewed against the
following criteria:

1. Alignment of content with the working group charters.
   The charters define the goals of the working groups activity, the products that
   will be delivered, the schedule of work, and the resources required to complete
   the work. These charters are openly available to each member of the working
   group and the working group chairs are given the opportunity to request
   changes to their charter at each plenary.

2. The level of abstraction of the content material.
   The goal with all CCSDS standards is that they are abstract enough that they
   can be applied to a wide variety of real systems that may have significantly
   different characteristics. This is particularly true of the SOIS communication
   services where we are targeting a number of different onboard buses, and
   where we need to leave the implementer free to decide how to split the
   implementation between hardware and software, what programming language
   and software environment to use, and so on.

3. General conformity with the style of other CCSDS standards

CCSDS has a history of producing high quality standards with a consistent style, not only regarding editorial appearance but also concerning the type of information and the manner in which it is presented. This style bears a close resemblance to the ISO communication standards that are well understood and accepted throughout the world.

Inputs to the review

The documents that were reviewed were:

Onboard_bus_and_lan_rgs_4_15_05.doc
The Onboard Bus and LAN WG draft red book dated November 2004, version R-0.3

Steve_15April2005_Time_Critical_Onboard_Network_Services.doc
The Time Critical Onboard Network Services draft red book dated April 2005, version R-0.5

TCONS-GS Service.doc
Time Critical Onboard Network Services : Generic Subnetwork Service draft red book dated April 2005, version R-0.1

Also taken into account were the status presentation given by each working group during the plenary close-out session.

General remarks

Having examined the input documents closely, it is abundantly clear that a lot of effort has gone into their preparation, and they contain a great deal of detailed technical information. However, a lot of this material is not appropriate for red book content. In many instances the documentation addresses highly detailed technical issues that are specific to a particular implementation choice, such as a specific underlying bus, or a programming language. While this is very useful information to subsequent implementers, it does not address the immediate need of producing red books that can be implemented in a wide variety of ways and can be used by projects.

The alignment of the technical work with the aims of the two charters combined is good. However there is still a lack of clarity about where the TCONS role stops and OBL begins. This is surprising given that the two working groups have been working very closely together, and that there is a wealth of good technical documentation previously produced by ISO and other organisations addressing the network/data link layer interface.

The scheduling of the working group deliverables and the effort that has been expended on their preparation so far is not in line with the charters! At the current rate of progress the TCONS work in particular will require a great deal longer to complete than has been previously estimated. Furthermore, the lack of any published material from either of the working groups means that prototyping and interoperability testing cannot start, and has severely compromised the acceptance of the work outside of the SOIS area.

The style of the documents is varied. While an honest attempt to adopt the CCSDS red book outline has been made, the content is often not relevant to a red book. At around 100 pages, the TCONS red book draft is already dauntingly large, and with at least one more complete service to be added it will certainly get larger, which will not make it easy to deploy.

Recommendations

The recommendations following the review are:

1. The draft document TCONS-GS Service should become the OBL product. This document defines the service that is expected **by** the network layer. Furthermore the service documented provides an interface that supports protocol multiplexing which will allow, for example, SCPS NP or PUS protocols to be built directly onto this service
2. The definitions of the TCONS service interface should be extracted from the current TCONS red book draft and put into a new document to form a *TCONS Service Interface Specification* which can be published as a red book. During this process, the specification of the service interface needs to be edited to remove any implementation specific material.
3. The remaining material in the TCONS red book should be sorted into material suitable for a TCONS service specification red book, material for a TCONS green book, and material that is appropriate for an implementers guide. The TCONS WG chair should then propose a new schedule of red book deliverables for the TCONS working group.
4. The OBL WG chair should consider whether, given the adoption of the current TCONS-GS Service document as an OBL product, it is appropriate to issue other red books within the scope of the OBL charter. There is a strong interest to demonstrate interoperability at the bus level and it might well be considered appropriate to issue a red book specifying the means of implementing the generic data link service over a specific bus such as MIL-STD-1553B.

Actions following the review

1. The TCONS and OBL WG chairs should consider the recommendations and generate a response indicating whether they are in agreement with them by 10th May 2005.
2. The TCONS and OBL WG chairs must update their current charters to reflect their new planning, schedule of deliverables, and resource requirements by 10th May 2005.
3. The TCONS and OBL chairs should issue detailed plans for working group activities up to and including the September plenary meeting. These plans should address in particular the objective of starting prototyping and interoperability testing, as well as the urgent need to make red book material available for wider review.
4. Assuming acceptance of the recommendation that the TCONS Generic Service specification becomes an OBL product, this document should be revised and issued under OBL covers for SOIS internal review by 1st August 2005.

5. Assuming acceptance of the recommendation to issue a TCONS Service Interface specification, this document should be generated by and issued for SOIS internal review by 1st August 2005.