

SpW WG Steering Committee Meeting #12

Thursday, 19th of February

At ESA / ESTEC



SpW Working Group Steering Committee Meeting 12 (SpW WG StCMtg#12)

Steering committee participants

ESA (Chair): Ph. Armbruster, M. Suess

JAXA/ISAS: T. Yamada, S. Fukuda

NASA: G. Rakow

ROSCOSMOS: D. Mikhaylyuk, A. Stepanov

Sub-WG Conveners:

- Standard Editor and SpW-RT: S. Parkes (UoD)
- SpW Handbook: B. Cook (4Links)
- SpW Validation and certification: Y. Sheynin (UoStPb)
- SpW Backplane: A. Senior (SEA)



Agenda

- Introduction of task forces
- Recent undertakings at ESA
- Aeroflex LVDS drivers
- Reports by the sub-working group conveners
- Next SpW Conference
- Next WG meeting



Recent undertakings by ESA

- ESA intends to establish a product catalogue with Building Blocks / Products
- Building Blocks can contain basic technology, components, modules, units, XXX, XXX
- ESA presents the Space Avionics Open Interface Architecture (SAVOIR), a reference architecture in which building blocks can be identified
- Presentation of data system related building blocks developed by ESA



Aeroflex LVDS drivers

- Aeroflex has announced that their LVDS drivers fall now under the ITAR rules.
- This is a concern from the SpW users about difficulties to access parts for space missions.



SpW-RT

- Draft protocol specification in version 2.1 was discussed during the WG
- There was no principle technical problem identified during the review and the discussion.
- There is a concern about the requirements on the actually quality of service needed for application on-board of spacecrafts
- The current QoS are taken from the SOIS definition
- There was a concern raised about the complexity in particular on the implementation of the CCSDS Guaranteed QoS using retries.
- The complexity of the implementation has to be assessed in detail.
- Not all devices are required to support all levels of QoS.
- The complexity of the implementation can be tailored to the QoS requirements
- SpW-RT should not be made mandatory to be used in the future for all SpW based systems.
- A specific system has to be decide where to use or not to use SpW-RT.
- Task force should be established to identify the required use cases:
 - S. Parkes, Y. Sheynin, G. Rakow, D. Mikhaylyu, T. Yamada, Cook, Senior,



ECSS-E-ST-50-11

- The ECSS-E-ST-50-11 draft 1.3 was submitted to public review
- 39 DDR have been received and are currently in the process of disposition
- Once this process is finished the SpaceWire Protocols standard will be published with the next batch by ECSS.



SpW Handbook

- There is a difficulty to obtain support from the WG members in writing the handbook and to get contributions.
- The current structure of the handbook will be revised.
- As the first step the work should be started on the overview section.

- *How should the handbook be published? In ECSS?*



SpaceFibre

- ESA continues the SpaceFibre related developments in a number of undertakings.
- SpaceFibre 2
 - Improvement of TRL level of Electro-Optical converters to reach EM / EQM status
 - Extended environmental testing
- QUATUOR – Serializer/Deserializer
 - Development of a European SerDes component 6.25 Gbps bi-directional data rate
- SpaceFibre Demonstrator Activity
 - Objective to demonstrate SpaceFibre with existing space qualifiable components using e.g. Actel FPGA and TLK2711-SP SERDES from Texas Instruments
 - Other expected results:
 - Revised SpFi CODEC IP core
 - Detailed SpFi specification as basis for standardisation
 - Demonstrator



SpaceWire Backplane

- There are two developments on backplanes
- One in Japan and one in Europe
- The two proposals shall be documented before the next meeting.
- The proposed solutions shall be discussed in order to come up with a unified solution which could be standardised in the future.
- There might be a different backplane connector solution for ground and for space flight applications.
- It would be interesting to have a simulation model of the back plane connector which could be used in signal integrity modelling.



SpW Test, Verification and Certification

- During the next meeting there will be a presentation on this topic.
- There is more and more interest in Russian space industry.
- Industry asks for certified solutions and how to verify a design.
- All parties active in this field should contribute to the presentations during the next WG meeting.



SpaceWire PnP

- A document on PnP has been written by Peter Mendham, UoD.
- In the US the original specification has been breadboarded and implemented in PnP sat
- XML description of devices has been produced by AFRL and will be discussed in SOIS in the frame of CCSDS after it has been declassified.
- It will be probably not be possible to use PnP on legacy devices.
- The PnP document will be distributed before the next WG meeting.



Update of the ECSS-E-50-12 Standard

- The discussion on the update to the SpaceWire standard has been started during this SpW WG Meeting
- A number of issues have been raised during the WG meeting concerning:
 1. Correction of errors in the present standard.
 2. Replacement of design specifications through performance specifications
 3. Introduction of features that are needed to support functions and higher level protocols which have been discussed in the WG in the past.
 4. Introduction of additional features that offer new functions which are of general interest and require standardisation in order to assure compatibility.
- Technical notes to describe changes to be discussed during the meeting must be sent in before the meeting
- Technical notes agreed by the SpW WG will be the basis for formal ECSS standardisation process.



3rd International SpW Conference

- At St. Petersburg
- May or June 2010
- Roscosmos will be the organising information
- The possibility of financial support by Roscosmos is still open.



Next SpW WG meeting #13

- Date: 14(PM)-15(all day)-16(AM) September 2009, +Steering Committee meeting on 17th (AM)
- Location: ESTEC