

SpaceWire Working Group Meeting 14

Agenda

Ph. Armbruster TEC-ED

Head of Data Systems Division

Technical and Quality Management Directorate

SpW WG : ESA JAXA NASA ROSCOSMOS INDUSTRY

The SpaceWire Working Group is a forum aiming at promoting the usage of SpaceWire links, routers, nodes and networks. It has the additional mandate to steer new developments of devices, tools and protocols.

Mandate of the WG is manifold:

- To share information related to the implementation of on-board networks based on the SpaceWire standard
- To prepare for the SpaceWire standard maintenance and evolution
- To review and discuss services supported by networks on-board spacecraft (e.g. SpW-RT)
- To define or register (via PID allocations) a set of Protocols (e.g RMAP, CPTP) for SpaceWire links, nodes and routers
- Information is exchanged openly in a collaborative spirit in full respect of intellectual property rights (responsibility of each participant).

SpW WG : *ESA JAXA NASA ROSCOSMOS INDUSTRY*

Working Group composition

- WG Mtg participants and people expressing interest in SpW Technology
- Fully open to Industry (worldwide)
- Agency members act as focal points for national industrial and intra-agencies activities
- Agency members and Convenors participate in the SpW WG Steering committee (InterAgency meeting)

Tools and websites:

- <http://spacewire.esa.int>
- **NEW** [http:// spacewire.esa.int/WG/spacewire](http://spacewire.esa.int/WG/spacewire)
 - Registration to the SpaceWire WG Mailing List can be done easily via: <http://spacewire.esa.int/contact.php>. By registering to the mailing list, you will be informed on WG events.
 - Registration to SpW WG meetings can be done via: <http://spacewire.esa.int/swirewg/> (Userid: SpWlink Password SpW4space).

Scope

The meeting will cover the following topics:

- SpaceWire networks used for C&C and High Throughput Data Transfers (Conveners Ph. Armbruster & S. Parkes)
- SpaceWire-PnP (Convenor G.Rakow, NASA/GSFC)
- SpaceFibre (Convenor, M.Suess, ESTEC)
- SpW Deployment and Handbook (Convenor, B. Cook, 4Links)
- SpW Test, Verification and “Certification” (Convenor Y. Sheynin, UoStPg)
- SpW Backplanes (Convenors A. Senior SEA and M.Nomachi, UoO)
- SpaceWire International Conference 2010 – St Petersburg RU – W25 June 2010 - (Pr. Sheynin)

Day 1: Monday 22nd of February PM – Room: Einstein

14:00: Welcome and Introduction, ESA

- SpaceWire Roadmaps: debrief from SpW WG#13 Steering Committee Meeting
- Newly published standards, ESA/L. Balestra : **ECSS-E-ST-50-51/52/53**

15:00: **Session 1**: SpaceWire networks used for C&C and High Throughput Data Transfers (Conveners Ph. Armbruster & S. Parkes)

- Networks and Determinism: concepts, ESA-UoD/Albert Ferrer Florit
- Requirements for higher-layer protocols over SpaceWire to support spacecraft operations, Jaxa/T.Yamada

16:00 *Coffee Break*

Day 1: Monday 22nd of February PM – Room: Einstein

16:15 Session 1 cont'd

- SpW-RT & SpW-T: overview, UoD/S. Parkes
- SpW-D: Overview, UoD/S. Parkes

18:00 *End Session 1*

Day 2: Tuesday 23rd of February AM – Room: Einstein

9:15 **Session 2a:** SpaceWire networks used for C&C and High Throughput Data Transfers – cont'd

- SpW-(R)T Implementations and return of experience:
 - o PVS Phase 1: Feed-back on SpW-(R)T, implementation and experimentation: Teletel/A. Tavoularis & V. Kollias – Astrium/C. Honvault
 - o SpW-RT as SW on the SpW-Remote Terminal Controller – Demonstration ESA-UoD/A. Ferrer Florit
- SOIS Synchronisation Service and SpW-RT, ESA/C. Taylor
- Wrap up

Coffee Break

Day 2: Tuesday 23rd of February – Room: Einstein

11:00 **Session 2b: SpaceWire Evolutions**

- Next release of the SpaceWire standard - some requests for change (UoStPg/Y. Sheynin)
- Low mass SpaceWire
- New devices and/or IP Cores for SpaceWire Networks
 - Optronic transceivers – Fibre Optics for SpW signals, DAS Photonics/S. de la Rosa, S. Pantoja, J.Blasco Herreiz

13:00 – 14:00 *Lunch*

- SpW Backplanes (Convenors A. Senior SEA & M.Nomachi, UoO)
 - SpaceWire backplanes, SEA/A. Senior
 - SpW Backplane, Mitsubish Electric/Minoru Nakamura
 - SpaceWire Avionics Backplane Proposal: Generic Avionics Backplane using Quadaxial Insert Connectors, NASA/A.Kisin & G.Rakow

15:45 *Coffee break*

Day 2: Tuesday 23rd of February PM – Room: Einstein

16:00 **Session 2c:** Other Topics

- TAI's Introduction & Satellite System Projects TAI/F. Boran
- Topnet 2nd Generation, ESA/R. Vitulli
- SpW Test, Verification and “Certification” (Convenor Y. Sheynin, UoStPg)
 - o “TraffiController” technical presentation, SKYLAB/S.Davy

17:30-18:00 *End Session 2*

Day 3: Wednesday 24th of February AM – Room: Einstein

9: 15 **Session 3: Other Topics – cont'd**

- SpaceWire-PnP (Convenor G.Rakow, NASA/GSFC)
 - o SpaceWire-PnP: An Overview of Concepts and Directions, SciSys/Peter Mendham Support Document : SpW-PnP Protocol Definition - v2.1
 - o Plug and play over SpaceWire in RASTA systems, Aeroflex Gaisler/Marko Isomaki
 - o Memory Map for pre-defined data readout scheme, UoO/M. nomachi
- SpaceFibre (Convenor, M.Suess, ESTEC)
 - o High Speed Serial Links on STM-DSM, ESA/L.Hili
- SpaceWire International Conference 2010 – St Petersburg RU – W25 June 2010, UoStPg/Pr. Sheynin, UoD/S. Parkes and ESA/M. Suess.

11:00 Wrap up

12:00 *End SpW WG Meeting#14*

Day 3: Wednesday 24th of February PM – Room: Bf003

SpW WG Steering Committee Meeting

14:00 – 17:00 Restricted to SpW WG Steering Committee members

Support Documents

- SpW-PnP Protocol Definition - v2.1
- ECSS-E-ST-50-12C Change Request template
- SpaceWire Active Backplane Specification (SEA/10/TN/9080)