

SpaceWire Working Group meeting #18, April 2012

Organisation Team

Philippe Armbruster ESTEC, Noordwijk 23/04/2011

SpaceWire in 2011-2012



2011

- February: ESA Bulletin: Well Connected The SpW on-board data handling network
- March: SpaceWire Working Group meeting #16, March 2011
- October: ESA SpW Brochure published
- November: SpaceWire International Conference San Antonio
- November: SpW User Group seminar in Japan Leaflet SpaceWire Activities in Japan
- December: SpaceWire Working Group meeting #17

2012

- April: SpaceWire Working Group meeting #18
- October 2-4/10 ESA-HQ Paris (F) TBC : SpaceWire Working Group meeting #19



SpaceWire WG Web site





SpaceWire WG meeting #18 - Scope



The meeting will focus on the following topics:

- SpW Networks for C&C (SpW-D) (Conveners Ph. Armbruster, ESA/ESTEC & S. Parkes, UoDundee)
- SpW Evolutions (Convener D. Jameux, ESA/ESTEC), including ECSS-ST-50-12C
 Rev.1 and SpW 2
- SpW Backplanes (Conveners A. Senior, SEA & M. Nomachi, UoOsaka)
- SpW System and Mission Requirements (Convener D. Jameux, ESA/ESTEC)
- SpW Test, Verification and "Certification" (Convener Y. Sheynin, UoStPetersburg)
- SpW Network Management (Conveners G. Rakow, NASA/GSFC, P. Mendham, Bright Ascension)
- SpW Deployment and Handbook (Convener B. Cook, 4Links)
- SpW International SpaceWire Conferences and Working Group meetings (Convener M. Suess, ESA/ESTEC)

SpaceWire Evolutions



Backwards compatible with existing SpW devices (or introduced as an option)

- Links (SpW Codec)
- Routers
- Controllers
- Remote Controllers

Support for additional protocols like SpW-CC&HTDT:

- SpW-RT
- RMAP based (Jaxa)
- SpW-D
- Time Synchronisation
- SpW-VC (4Links)
- SpW-PnP

SpaceFibre

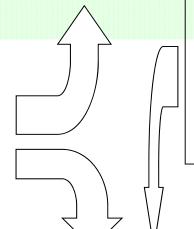
- Encoding (HSSL)
- VC

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SpaceWire (1)

SpaceWire 2 /SpaceFibre

SpW-D



Standard Revision

ECSS-E-ST-50-12C Rev 1

e.g. :

- Cable specification
- Removal of ambiguities
- Connectors
- Distributed interrupts
- Features leading to compatibility issues

New Generation of devices (e.g. on DSM)

- Links (Codec)
- Routers
- Controllers
- Remote Controllers

European Space Agency

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2012 Objectives



- SpW ECSS-E-ST-50-12C Rev 1 finalized
- SpW-RTC Supported as a standard product in a good cooperation spirit between
 ATMEL UoD Gaisler Aeroflex and RUAG
- SpW-D and related time synchronization protocols ready for standardization
- SpW PnP demonstrated
- SpW Backplanes defined and Demonstrated by MARC and other similar activities MARC-2 approved
- SpaceFibre technically finalized
- SpW Handbook draft available
- SpW International Conference organized for 2013
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Agenda (1/5)



Day 1: Monday 23rd April (PM) - Room Newton 2

- **14:00 Welcome and Introduction** (Philippe Armbruster, ESA/ESTEC)
- **14:10** Session 1: SpW2 and SpaceFibre (D. Jameux, Martin Suess)
- 16:00 Coffee break
 - SpaceFibre Specification
 - Status of SpaceFibre link module development, Taisto Tuominen, Patria Aviation Oy Systems, 20 min
 - Feedback of the SpW community on the SpaceFibre specification, 60 min
 - Non-blocking multi router system, M. Nomachi, UoOsaka, 20 min

18:10 End of Day 1

Support document: SpaceFibre ECSS Draft D v.1.14

Agenda (2/5)



Day 2: Tuesday 24th April (AM) - Room Newton 2

O9:00 Session 2: SpW Evolutions – part II: ECSS-ST-E-50-12C Rev.1 (Convener D. Jameux, ESA/ESTEC)

- ECSS-ST-50-12C Rev.1 scope and ECSS standardisation agenda, D.Jameux, ESA/ESTEC
- Early results of the SpaceWire Evolutions TRP activity
- SpW Deployment and Handbook, B. Cook, 4Links, 10 min

10:45 Coffee break

12:00 Lunch break

Support documents:

- SpW Evolutions Distributed Interrupts Teletel
- Distributed Interrupts Improvements Teletel
- SpW Evolutions Simplex & Half-Duplex SpW Teletel
- TELETEL_AT_HalfDuplex_TradeOffs Teletel

Agenda (3/5)



Day 2: Tuesday 24th April (PM) - Room Newton 2

- 13:30 Session 3: SpW Test, Verification and Certification (Convener Y. Sheynin, UoStPetersburg) 14:00 Session 4: SpW Backplanes (Conveners A. Senior, SEA & M. Nomachi, UoOsaka) 14:30 **Session 5: System and mission requirements** (Convener D. Jameux, ESA/ESTEC) Coffee break 15:30 16:00 Session 6: SpaceWire Network Management and Protocol Stacks (Conveners G. Rakow, NASA/GSFC, P. Mendham, Bright Ascension) **Support document:** SpaceWire Plug-and-Play Protocol Requirements 17:30 Session 7: SpW for C&C (Conveners Ph. Armbruster, ESA/ESTEC and S. Parkes, UoDundee)
- **18:30** End of Day 2
- 19:00 Dinner in Noordwijk "de Zeemeuw"

Dinner 24/04/2012 from 19.30







When? Tuesday from 19.30
Where? Noordwijk, Paviljoen de Zeemeeuw
What? Barbeque arrangement- fish & meat +
vegetarian
Why? Great company and great food
Costs: € 48/person





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Agenda (4/5)



Day 3: Wednesday 25th April (AM) - Room Einstein

O9:00 Session 8: SpW component developments (Convener Jørgen Ilstad, ESA/ESTEC)

- ECI initiative to develop and qualify European LVDS components:
- Update on the "SpaceWire Router ASIC development"
- 32-bit microprocessor with SpaceWire routing switch for space applications

10:35 Coffee break

- Update on RTC development equipment and software development environment
- A few slides on the AT7913E, Bernard Bancelin, ATMEL, 15 min

11:45 Session 9: Next SpW events (Conveners Ph. Armbruster and M. Suess, ESA/ESTEC)

- Next SpW conference, Sandi Habinc, Aeroflex Gaisler, 20 min
- Next WG meeting, Philippe Armbruster, 10 min

12:15 Meeting close-out (Philippe Armbruster, ESA/ESTEC)

12:30 End of SpW WG meeting #18

Agenda (5/5)



Day 3: Wednesday 25th April (PM) - Room Ba024

14:00 SpW WG Steering Committee MeetingRestricted to SpW WG Steering Committee members

17:00 End of SpW WG Steering Committee meeting