

# **22nd SpaceWire Working Group Meeting**

**Tuesday, 9 December 2014 - Thursday, 11 December 2014**

**ESA/ESTEC**

## **Scope & Topics**

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

The SpaceWire Working Group meet in average twice a year and address the following main topics:

## **SpW Simulation, Test, and Verification**

SpW Simulation, Test, and Verification

SpaceWire simulators accompany the usage of links and the implementation of networks throughout the mission lifetime. Being for architectural design trade-offs up to final validations; simulators, testers and verification Lab units are needed. The SpaceWire working group addresses these aspects under this topic.

## **SpW Components**

Availability of components is one of the key elements enabling the usage of SpaceWire links and networks. This topic gathers and reports on the development status of components, from simple LVDS interfaces up to systems on a chip embedding SpaceWire interfaces.

This session will be dedicated to SpaceWire component development activities.

"SpW Backplane" TRP activity Final Presentation (in Newton 2, co-located with the TEC-SW&ED Final Presentation Days)

## **SpW Network Management**

This session will be dedicated to SpaceWire network management features and protocols such as network discovery and configuration, Electronic Data Sheets, FDIR, and SpaceWire related protocol stacks.

"Network Discovery Protocols" TRP activity Final Presentation (in Newton 2, co-located with the TEC-SW&ED Final Presentation Days)

## **SpW Evolutions including ECSS-ST-50-12C Rev.1, SpW Handbook, SpaceFibre and SpW 2**

SpaceWire is a living standard that undergoes evolutions driven by technology improvements, the need of additional functions, of new services and protocols. This topic focuses on these evaluations and their eventual standardisation. Under this topic are addressed all issues related to the evolutions of the SpaceWire standard. Discussions are generally divided in three streams:

- Revision of ECSS-E-ST-50-12C: A number of Change Requests were filed at the ECSS Secretariat regarding the current version of the SpaceWire standard. This led the SpaceWire Working Group to revisit this standard in 2010-2011 and then to a formal ECSS process of standard revision on which this stream regularly reports progress.
- SpaceFibre: The need for galvanic isolation and for higher data rates led to the development of a variation of SpaceWire called SpaceFibre, which includes not only a new (multi gigabit per second and galvanically isolated) Signal Level for SpaceWire but also additional features related to Quality-Of-Service. This stream reports regularly on the progress in the development of SpaceFibre
- SpW2: This stream is dedicated to medium term disruptive evolutions of the SpaceWire

technology in preparation for the development of the SpaceWire 2 standard.  
The ECSS-E-ST-50-12C-Rev1 Draft D v0.3 Support Documents:  
<http://spacewire.esa.int/WG/SpaceWire/SpW-WG-Mtg22-SupportDocuments/>

## **SpW Networks for C&C**

Although SpaceWire links and networks are intrinsically asynchronous, many applications have a dual need, i.e. to be able to transfer high amounts of data at high speed together with the transmission of control commands. The latter ones are subject to real time constraints. This topics addresses these complementary aspects.

## **SpW Evolutions II – SpaceFibre**

This session will be dedicated to various aspects of the development of the SpaceFibre protocol.

The SpaceFibre ECSS Draft F3 Specification can be found under Support Documents:

<http://spacewire.esa.int/WG/SpaceWire/SpW-WG-Mtg22-SupportDocuments/>

## **SpW International SpaceWire Conference**

Last but not least, the SpaceWire International conference makes the inter-Agency and across-Industry SpaceWire technology shine bright ! The organisation of such recurring events is tackled under this topic, addressed traditionally at the end of SpaceWire Working Group meetings for the great pleasure of the audience.