

# SpaceWire networking Protocol

## Working Group Meeting 4

### Introduction and Agenda

Ph. Armbruster TEC-ED

## Introduction and objectives

- Mandate of the WG is to define a set of Networking Protocols for SpaceWire links, nodes and routers (SpW-SnP) in order to foster inter-Agencies compatibility and open the door for on-board state of the art networking services.
- SnP-RMAP (SpaceWire Remote Memory Access Protocol) is an answer to the need to define standardized, secure and flexible primitives to read/write registers (32-bit), exchange memory blocks (including DMA), or push/pull data from FIFOs (sequential I/O) via SpW links.
- Cooperation is framed if required by Inter-Agencies agreements – (c.f. BepiColombo, JWST), in the spirit of the CCSDS charter.
- The objective at ESA level is to complement the existing ECSS-E50-12A standard with the ECSS-E50-12A (Part2) extension specifying RMAP primitives and corresponding packet structures.
- Working Group composition – Agencies members shall act as focal points for national Industries and intra-agencies activities.

# SpaceWire networking Protocol Working Group Meeting 4

## Tuesday 19<sup>th</sup> of July, room Einstein

### Agenda

14:00 Welcome address and Status, Ph. Armbruster, ESA/ESTEC

- Application for PID 239 for legacy device: SMCS116SpW, P. Rastetter, Astrium GmbH
- CRC implementation variants, T. Hult, Saab Ericsson Space
- Overview and review of ECSS-E50-12A Part 2 (RMAP)

17:00 Wrap-Up

## Introduction and objectives

First SpaceWire Working Group Meeting, 15<sup>th</sup> and 16<sup>th</sup> (AM) of September 2004

Second SpaceWire Working Group Meeting, 10<sup>th</sup> PM, 11<sup>th</sup> , 12<sup>th</sup> (AM) of November 2004 ⇒ RMAP Draft B

Third SpaceWire Working Group Meeting, 15<sup>th</sup> , 16<sup>th</sup> , 17<sup>th</sup> (AM) of February 2005 ⇒ RMAP Draft C

Fourth SpaceWire Working Group Meeting, 19<sup>th</sup> (PM), 20<sup>th</sup> and 21<sup>st</sup> (AM) of July 2005 ⇒ RMAP Draft D

The objective this afternoon is to freeze the technical baseline as described in Draft C and updated following technical comments expressed during the meeting. The Draft D is an input to the ECSS editorial phase.

# SpaceWire networking Protocol Working Group Meeting 4

## Wednesday 20<sup>th</sup> of July AM, room Einstein

09:00 Introduction, Ph. Armbruster, ESA/ESTEC (15 mn)

09:15 First feedback from RMAP implementations

- SpW router ASIC development, G. Kempf, AAE (25 mn)
- RTC ASIC, T. Hult, Saab Ericsson (25mn)
- Video Processing Chain with SpW Interface, F. Lachaud, Sodern (25 mn)

10:30 Break

10:45 SpW Networking

- TopNet - IP tunnel, R. Vitulli Estec, S. Mills UoD (25 mn)
- SpW as seen by prime companies - system issues, O. Notebaert, Astrium (25 mn)
- CCSDS SOIS and SpW, S. Parkes, UoD (30 mn - 45 mn)

13:00 Lunch

# SpaceWire networking Protocol Working Group Meeting 4

## Wednesday 20<sup>th</sup> of July PM, room Einstein

### 14:00 Applications of SpW networks in on-going missions

- NASA SpW Activities G. Rakow, NASA (25 mn)
- SpW App. to missions: BepiColombo&NeXT, Y.Kasaba, JAXA/ISAS (25mn)
- SpW Development activities, M. Nomachi, Osaka University (25mn)

### 15:15 Very high speed serial links

- SpaceFibre development status, M.Suess & Iain Mckenzie, Estec (25mn)

### 15:40 SpW Products

- Galvanically Isol. SpaceWire EGSE Building Blocks, P. Walker, 4links (15 mn)
- Development tools and Support Equipment, S.Parkes, Star Dundee (15 mn)
- Status of the SMCS332SpW validation and the SMCS116WpW development, P. Rastetter, Astrium GmbH (15 mn)

16:30 Wrap Up and next issues, Ph. Armbruster, Estec

17:15 Meeting close

## Application to a PID

Possible if the legacy protocol:

- Has been developed and defined before 2005
- And is used on a commercially available device
- Or is used by at least two different entities

Other conditions:

- The protocol is described by an open technical note (public), provided to the SpW WG
- And can be used as a basis for further SpW standardization
- Has to be “PID” compatible

Proposal

- PID from 239 downwards

# SpaceWire networking Protocol Working Group Meeting 4

## Thursday 21<sup>th</sup> of July AM, room Df304

09:30 Interagency Meeting with ESA JAXA and NASA Representatives

### Issues:

- Endorsement of PID 239 application
- IP Cores
- RMAP standardization via ECSS
- Other protocols
- Date and location of next meeting

12:00 Meeting close