

# SpaceWire networking Protocol

## Working Group Meeting 2

### Objectives and Agenda

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## Introduction, recall of objectives

- Mandate of the WG is to define a Networking Protocol for SpaceWire links, nodes and routers (SpW-SnP) in order to foster inter-Agencies compatibility and ease Users implementation task.
- SnP-RMAP (SpaceWire Remote Memory Access Portocol) is an answer to the need to define standardized 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 must be 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 services and corresponding packet structures.
- Working Group composition – Agencies members federate national Industries and intra-agencies activities

## Protocol Ids, recall of Meeting 1 outputs

- Protocol Ids considered as useful
- Allocation scheme still open – application should (shall) be based on a protocol description reviewed by the WG
- Leading Byte of the cargo (as received by a SpW Node) is a Logical Address or a fixed value (254, TBC)
- Protocol ID length (1 byte or 3 bytes if the first byte is 0, TBC)

## Objectives Meeting 2

On the basis of conclusions drawn from the first WG meeting, the second meeting focuses on the two specific topics:

- I) Review of proposals for the SpaceWire SnP-RMAP protocol
  - Cargo Leading byte value definition
  - Protocol ID structure
  - Presentation/discussion on SpW-RMAP proposals
  
- II) Review of proposals for the Time code utilisation and potential extensions

# Agenda Meeting 2

**Wednesday 10<sup>th</sup> of November: SpaceWire Exhibition** in Fresnel 2 from 14:30 to 17:30

**Thursday 11<sup>th</sup> of November: Plenary session**, room Fresnel 2, from 9:00 to 17:30

9:00 Introduction and Objectives ESA

## **Part1: Specific meeting 2 topics**

9:30 Presentations/discussions on:  
 SpW-SnP Protocol Identifiers All  
 SpW-SnP-RMAP All

13:00 Lunch Break

14:00 Presentations/discussions on:  
 Usage of Time codes and potential extensions All

16:00 Wrap-Up Part 1

## **Part 2: Preparation of meeting 3 and further actions**

16:30 Introduction to Standardised Programming support E. Verhulst  
 17:00 Presentation of Jaxa Developments T. Takahashi  
 17:20 Conclusions and preparation of next meeting  
 17:30 End of meeting

**Friday the 12<sup>th</sup> of November: Inter-Agencies meeting**, room Dj224y, from 9:00 to 12:00

## SpaceWire Working Group Meeting 2: Technical Documents

The following documents have been submitted by WG members, for review/discussion during SpW-SnP-WG-Mtg2:

1) SpaceWire Protocol ID by S. Parkes

2) SpaceWire RMAP Protocol by S. Parkes

Note: Documents 1) and 2) have to be viewed as drafts. Their format is preliminary and the reference indicated on the top of the pages should be ignored. It is foreseen to introduce the RMAP protocol as ECSS-E50-12 Part 2 rather than ECSS-E50-12B.

3) SpaceWire Interrupt Codes by Y. Sheynin and S. Gorbachev

The following document is provided for information for Mtg2. Reviewing and discussions are differed to a coming meeting.

4) SpaceComRTOS by E. Verhulst