

SpaceWire Standardisation Planning

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ESTEC
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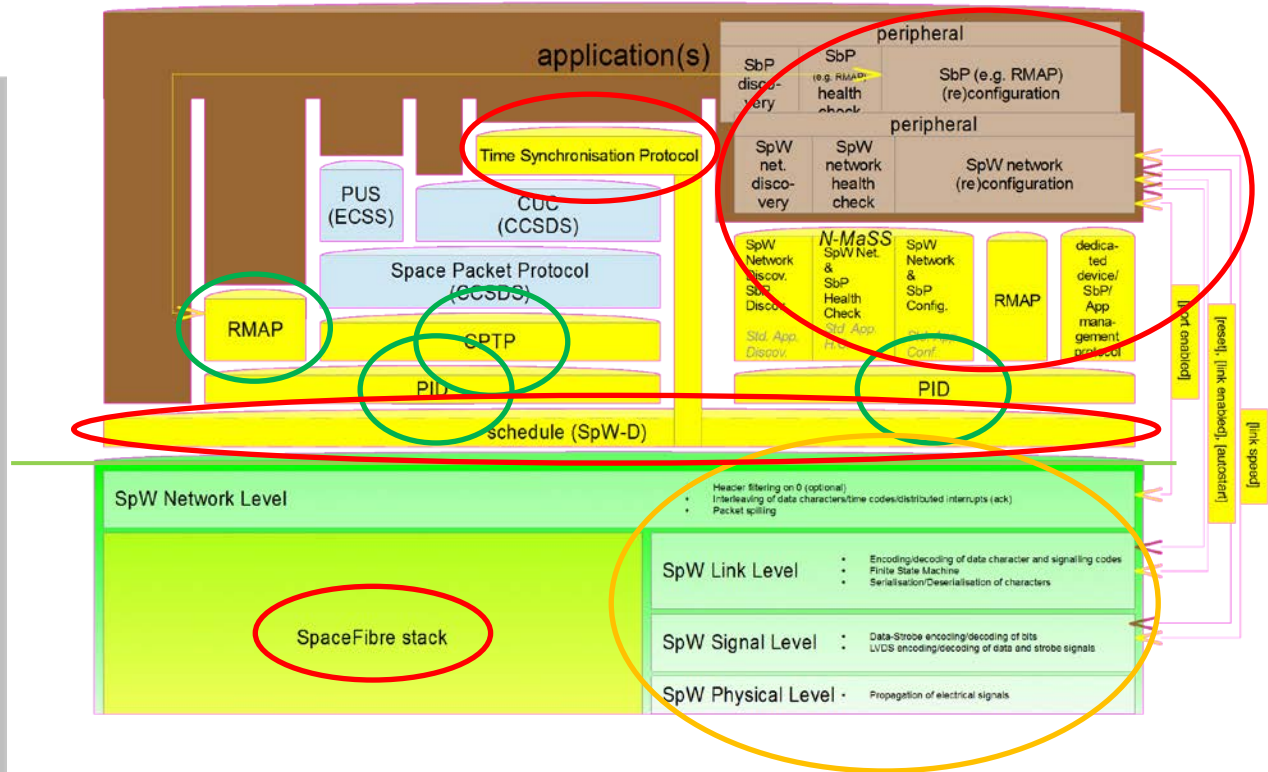
ECSS-E-50-12A
24 January 2003

EUROPEAN COOPERATION
FOR SPACE STANDARDIZATION

Space engineering

SpaceWire – Links, nodes, routers and networks

ECSS Secretariat
ESA-ESTEC
Requirements & Standards Division
Noordwijk, The Netherlands



1. Revision of the SpaceWire standard ECSS-E-ST-50-12C
 - a. Technical preparation through SpW WG meetings: 2009-2012
 - b. ECSS WG process: 2012-2013
 - c. ECSS public review: 2013-2014
 - d. ECSS-E-ST-50-12C Rev.1: 2014

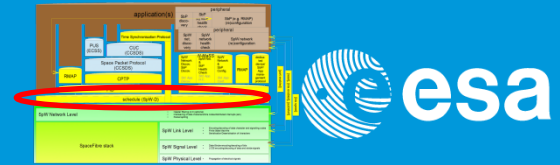


1. SpaceFibre (SpFi)

- a. Technical preparation through SpW WG meetings: 2011-2013
 - Early work 2006-2010
- b. ESA study with University of Dundee
- c. ECSS WG process: 2014-2015
- d. ECSS public review: 2015
- e. ECSS-E-ST-50-5x: 2015



Scheduling (SpW-D)

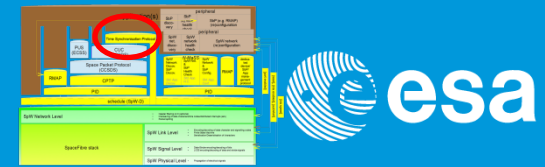


1. Scheduling constraints for SpaceWire packets

- a. Technical preparation through SpW WG meetings: 2010-2014
 - Early work on SpW-RT since 2008
- b. ESA study with University of Dundee
- c. ECSS WG process: 2015-2016
- d. ECSS public review: 2016
- e. ECSS-E-ST-50-5x: 2016



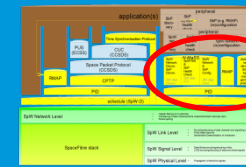
Time Synchronisation Protocol



1. Standardise distribution of time via CCSDS/CUC and SpW time-codes
 - a. Technical preparation through SpW WG meetings: 2011-2014
 - b. ESA study with Aeroflex Gaisler
 - c. ECSS WG process: 2015-2016
 - d. ECSS public review: 2016
 - e. ECSS-E-ST-50-5x: 2016



SpaceWire N-MaSS (SpW network Discovery, Configuration, and FDIR)



1. SpaceWire Network Management Service Suite (N-MaSS) – “PnP”
 - a. SpW Network discovery (switches, end-points, nodes, units)
 - b. SpW network (re)configuration (switches, end-points)
 - c. Technical preparation through SpW WG meetings: 2010-2014
 - Early works 2007-2009
 - d. ESA study with SciSys
2. SpaceWire Network Management Service Suite (N-MaSS) - FDIR
 - a. SpW Network FDIR (switches, end-points, *nodes, units*)
 - b. Technical preparation through SpW WG meetings: 2013-2015
 - c. ESA study with Astrium Ltd.
3. SpaceWire Network Management Service Suite (N-MaSS)
 - a. ECSS WG process: 2016-2017
 - b. ECSS public review: 2017
 - c. ECSS-E-ST-50-5x: 2017



SpaceWire RMAP (Remote Memory Access Protocol)



1. Features to be improved

- a. Have been reported informally
- b. Should be discussed openly in SpW WG meetings
 - Propose presentations to Convener D.Jameux for mtg#21

2. Revision 1 of SpaceWire RMAP

- a. Technical preparation through SpW WG meetings: 2013-2015
- b. ECSS WG process: 2016-2017
- c. ECSS public review: 2017
- d. ECSS-E-ST-50-52C Rev1: 2017



3. *In line with ECSS standards life-cycle*

- a. *Was issued in 2010*
- b. *ECSS revision cycle is 5 years*

1. SpaceWire 2 (SpW-2)

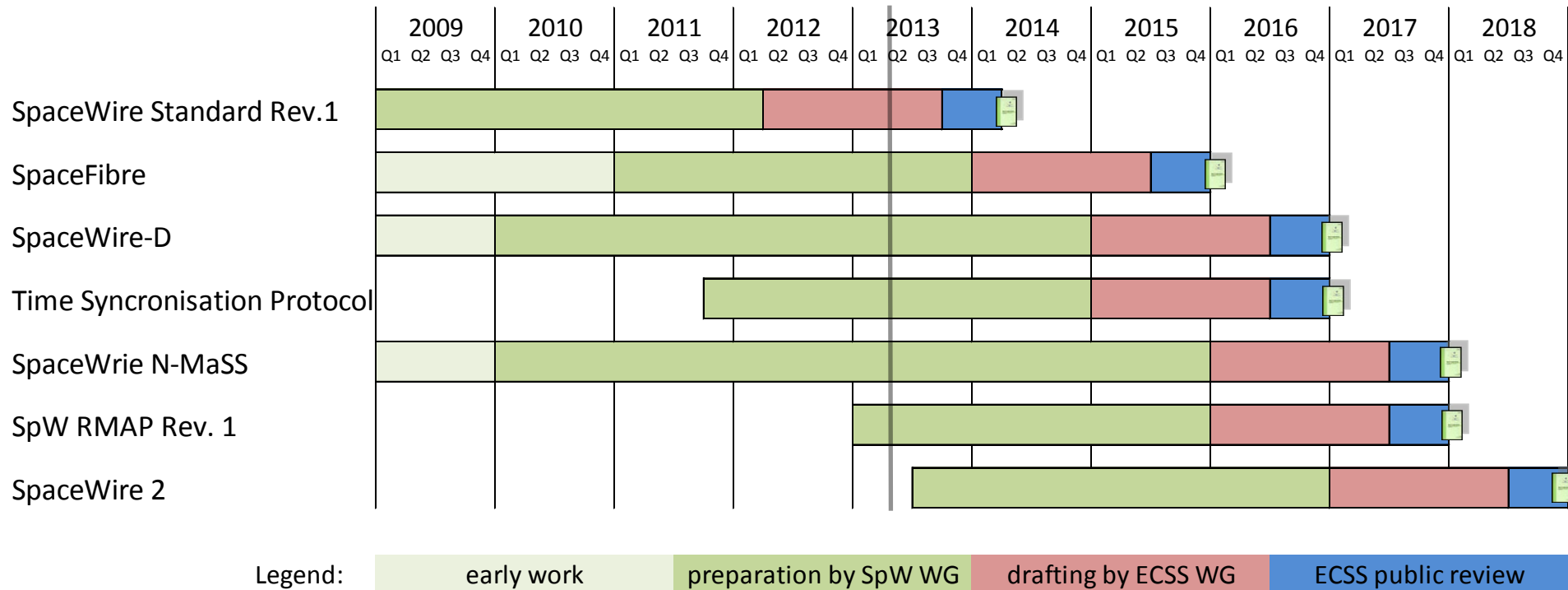
- a. Will include the feature which have not been included in Rev. 1
- b. Changes in the character layer
- c. Virtual channels and virtual networks
- d. Changes to physical level allowing galvanic isolation and Gbps

2. Technical definition

- a. Technical preparation through SpW WG meetings: 2013-2015
 - Taking into account discussions since 2010
- b. ECSS WG process: 2017-2018
- c. ECSS public review: 2018
- d. ECSS-E-ST-50-5x: 2018



SpaceWire Standardisation Planning



1. A significant number of protocols have been developed and discussed by the SpaceWire WG over the past years
2. The preparatory work is also supported by ESA study contracts
3. The schedule for the generation of formal standards and updates is mainly driven by the limited capacity of ECSS
4. It also reflects current maturity together with importance and urgency as seen by ESA
5. The implementation of the SpaceWire standardisation planning depends on the quality of the draft standards prepared by the SpW WG as input to the ECSS WG process.
6. The planning will be update before every working group meeting
7. These updates will take into account progress, maturity and importance as this may evolve over time