

SpaceWire Evolution and Standard Revision

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SpaceWire standard revision - **ECSS-E-ST-50-12D**:

- NWI has been submitted to ECSS secretariat and discussed in ESB
- The dispositions for a consolidated list of change requests for ECSS-E-ST-50-12C needs to be agreed by the SpaceWire WG
- A first discussion of CR was done during the last SpW WG meeting #15
- The list of CR dispositions is required as input for the ECSS WG in charge of drafting the revised standard
- The revised version of the standard should go to public review in summer 2012 and published before the end of that year

1. SpW users (mainly the Working Group) have detected a number of ambiguities or errors in the ECSS-E-ST-50-12C Standard e.g.:
 - a. Ambiguous formulations
 - b. Mix of normative clauses and descriptive text
 - c. Obvious errors in e.g. figures

2. SpW users (mainly the Working Group) have proposed a number of new features to be introduced in SpaceWire e.g.:
 - a. Configuration port 0 in nodes
 - b. Signalling codes to carry interrupts across the network
 - c. Half-duplex and/or simplex links
 - d. Link level virtual channels

- The standard revision shall not invalidate the investments made in devices and systems following the current standard
- The objective of the revision shall improve the standard but still allow current devices to claim compliance
 - a. New requirements may be introduced if they are compatible with the current standard
 - b. May be introduced as optional requirements as long as a compatibility mode with current systems is maintained
 - c. Need verification by breadboarding before standardisation

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

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

SpaceWire (1)

Support for additional protocols like SpW-CC&HTDT:

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

SpaceFibre

- Encoding (8B10B)
- VC

Standard Revision

ECSS-E-ST-50-12D

- Cable specification
- Removal of ambiguities
- Connectors
- New features e.g.
 - Signalling codes
 - Configuration port 0 in nodes
- Features leading to compatibility issues

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

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

SpaceWire 2

All change requests shall be disposed in one of the following 4 classes

- a. Inclusion in the revised standard ECSS-E-ST-50-12D
- b. To be covered by a chapter in the SpaceWire Handbook
- c. To be reconsidered for standardisation as part of SpaceWire-2
- d. Issue not to be considered for standardisation

Disposed change requests shall be marked with one of the following labels

- a. Consolidated disposition by SpW WG
- b. Preliminary disposition (pending further definition and verification)
- c. No disposition could be agreed

1. Items which have been raised as CR are presented in the following session
2. Based on the discussion during the last WG meeting some CR dispositions are shall be endorsed by the WG
3. For CR where no agreement has been reached during the last WG meeting a proposed disposition shall be discussed
4. The result of the WG discussion and the disposition will be recorded
5. All dispositions shall serve as input for the ECSS WG in charge of drafting the revised standard

1. The drafting of the revision of the SpaceWire standard will be performed in two steps
2. The current standard will be rewritten in line with the current ECSS drafting rules, errors corrected and ambiguities removed
3. This document will be available for review by the SpW WG to confirm the technical equivalence with the current standard
4. In a second step the new features will be included in the document
5. Clear tractability of changes and clarifications between ECSS-E-ST-50-12C and 50-12D will be provided
6. The detailed revision work will be implemented by ECSS working group and reviewed first by the SpaceWire Working group
7. Out of the SpW WG a SpW standard revision review committee will be established which is tasked to closely follow the rewriting process between WG meetings