

Progress Report on the SpaceWire Handbook







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Introduction



The SpaceWire Handbook will become an ECSS Handbook, providing:






-  A comprehensive introduction to the technology of SpaceWire;
-  Guidance on how to implement SpaceWire well;
-  Warnings on how to avoid the mistakes of others;
-  Advice on how to ensure interoperability;
-  Awareness of forthcoming SpaceWire developments.
-  A Bibliography of recommended reading materials

We have primarily been targeting new users of SpaceWire, not members of the Working Group!

Topics









This list is still growing:

-  Background: Introduction to SpaceWire; Purpose; History; major milestones
-  The SpaceWire Protocols:
 -  ECSS-E-ST-50-12C SpaceWire;
 -  ECSS-E-ST-50-51C Protocol IDs;
 -  ECSS-E-ST-50-52 RMAP;
 -  ECSS-E-ST-50-53 CCSDS Packet Transfer.
-  Physical layer Interconnections:
LVDS Signals and Levels; Grounding; Backplanes; codecs

More Topics



Further topics include:






-  SpaceWire network architectures: Point-to-point links; Routers; Addressing; Blocking
-  Use of the RMAP Protocol
-  Engineering and implementation issues;
-  FDIR (Failure Detection, Isolation and Recovery)
-  SpaceWire Verification and Validation
-  Supporting Components and Test Equipment

Timetable



Drafting work is nearly complete.

Our goals this week are:

-  To circulate the current draft Handbook to members of the WG
-  To solicit responses. We need:
 -  Awareness of major omissions;
 -  Detailed criticisms and feedback;
 -  Discussion / supply of specialist subsections if you consider ours are too weak.

End April 2013:

-  Final Draft of the complete handbook to active reviewers






Next WG [Autumn 2013]:

-  Start the formal review process.

Challenges



The major challenges have been:

-  Different views / interests on some topics - e.g. LVDS circuitry;
-  Commercial concerns - e.g. SpaceWire codecs;
-  Very few contributions from the community;
-  Conflicts of interest - e.g. how to write the section on available components and test equipment;
-  Moving targets, such as the unpublished SpaceWire revision 1, draft Plug-and-Play standard, etc.;

There will be a maintenance requirement - some sections of the Handbook will become dated very quickly.

Contact Details



Please download the Draft Handbook and provide feedback to me:

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Thank-you!