STATUS Report
Standard Onboard Interface Services (SOIS) Electronic Data Sheets

ADCSS October 2014

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SAVOIR SAIF
space avionics open interface architecture

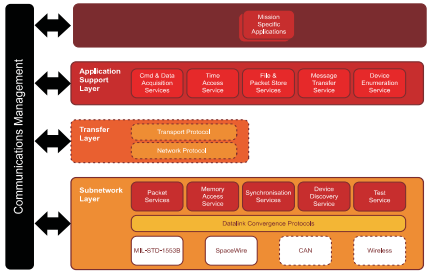
SOIS – CCSDS activities

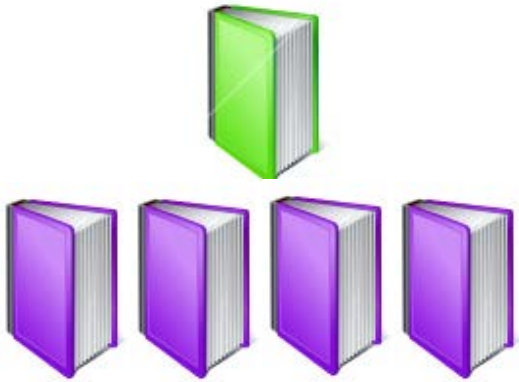
- The SOIS WG operates within an area of the CCSDS dedicated to standardizing onboard interfaces
- The SOIS layered architecture and commutation services are used as the basis for the Savoir communication architecture
- Since the last ADCSS the remaining SOIS books related to onboard services have been published (Hurrah)
- The more recent work on the use of Electronic data sheets is also making solid progress

SOIS – Development process

International CCSDS SOIS Working group

Architecture



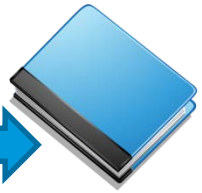


CCSDS Recommendations

TRP and GSTP activities
CORDET
SAFI
IMA
....

Adopted ESA standards under ECSS

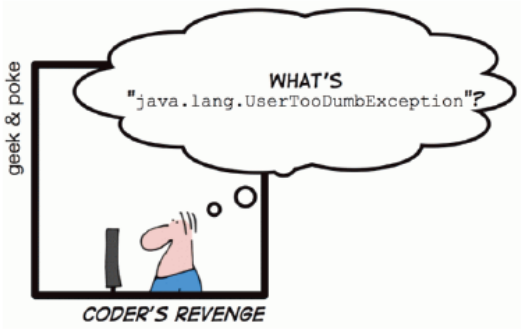
Driving inputs for ECSS Subnet and PUS standards



PUS
CAN
Milbus
SpaceWire

SOIS EDS

- An electronic data sheet is essentially a translation of a paper ICD into a machine readable format
- Once in electronic format it may used in a number of ways:
  - As an unambiguous and complete specification of the device
  - To directly export to other databases
  - As a source to generate software (drivers, simulators…)
  - As a way of harmonising an interface to similar devices
- There are two main issues to resolve
  - What formats should be used to capture the ICD information
  - How to translate “English” to “Softwareese” and Vice versa



SOIS – EDS Information capture

- The CCSDS WG has just released two draft standards:
  - XML Specification for Electronic Data Sheets
  - Specification for Dictionary of Terms for Electronic Data Sheets for Onboard Components

- These are so called " CCSDS RED BOOKS" which must go through two Agency level reviews and interoperability testing before becoming a "BLUE BOOK" standard

- Anyone interested in reviewing these books or participating in further development should contact
  - Stuart Fowell – SOIS WG lead stuart.fowell@scisys.co.uk
  - Chris Taylor – Area lead chris.taylor@esa.int

- All CCSDS standards are available online at www.ccsds.org

SOIS – Tool sets

- In Europe two prototype tools sets have been developed
  - By SciSys under TRP (Chris Taylor)
  - Internally by the ESA software Division (Felice Torelli)

- In the USA both GSFC (flight executive) and JSC (S/W defined Radios) FPGA) are developing their own tool-sets

- The capability of the tools vary according to the target
  - SciSys (ICD capture, XML viewer and Auto code to SOIS layers)
  - ESA SW (conversion to “taste” environment)

- Two further contracts are already in the ESA TRP Program

SOIS – Ongoing

- Deploying Plug and Play (TEC-ED)
  - This activity concentrates on specifying the ICD capture and validation processes
  - Work will be performed in association with Prime/suppliers of equipment (Suppliers may not know XML)

- SpaceWire test-bed (TEC-EC)
  - As part of this activity EDS will be developed for one or more SpaceWire compliant devices
  - Implementation of drivers and end to end testing will be performed and comparison made with auto and hand coded drivers

- *Further activities may be expected as take-up and Avionics standardization improves*

SOIS EDS – End

Thank you for your attention