DCS meeting Oct. 8th

1. Radiation tests 2002	Jim Cook
2. CAN branch with *Kvaser* PCI/CAN card	Fernando Varela
3. Readout chain ELMB-OPC-PVSS	Helfried B.
4. Pixel Plans	M. Imhäuser
5. Status CAN OPC server	Slava F.
6. DCS backend hierarchy	Fernando V.
7. Status DDC (DCS ←→ DAQ)	Slava K.
8. Organisational issues	Helfried B.

http://documents.cern.ch/AGE/current/fullAgenda.php?ida=a021483#s7

Radiation tests 2002 — Jim Cook

New microcontroller ATmega128L irradiated:

- Total ionising dose: 25% improvement
- Functional errors: factor 2 improvement
- Memory errors: factor 5 improvement

Old co-processor not sufficiently rad-hard

→ New ELMB carries ATmega128L and **no** co-processor.

New ELMB firmware will not require any co-processor

→ firmware should be more easily re-usable for our applications.

CAN branch with *Kvaser* PCI/CAN card Fernando

New CAN card is selected : ***Kvaser***

- Higher performance, lower cost
- 6 buses, 32 ELMBs each (12288 channels) read out in 30 s
- CAN card is not considered a bottleneck any more
- Recommendations:
  - do not use more than 32 nodes per CAN bus
  - all ATLAS use Kvaser card
  - some recommendations on cables, power supplies...

Readout chain ELMB-OPC-PVSS Helfried B.

ELMB firmware	default settings, calibration readout (periodic, conditional on change,...)
OPC server	conversion to physical units (temperatures...) conditional transmission data quality flagged
PVSS	fine calibration alarms, automatic actions visualisation, archiving interface to DAQ (DDC)

Some issues: handling of invalid data and SEE, suppression of constant data in OPC server

Status CAN OPC server — Slava F.

New version (2.5?)

- New Kvaser CAN card supported now
  2-port and 4-port card
- Server supports Kvaser / NICAN concurrently
- OpenHost and CanHost utilities support both cards (programs to send and receive CANopen messages)
- Some bug fixes
- Future work: conversion to physical units via configuration file, describe ELMB nodes in c.f., some improvements on error handling and message formats (byte arrays)

DCS backend hierarchy Fernando V.

The DCS backend will comprise of the order of 100 PCs

Not a single PVSS-II distributed application but different distributed applications

- 3 levels Back-End hierarchy:
  - Global operation (Windows)
  - Subdetector Control Station (SCS)
  - Subsystem Control Stations (Win or Linux)

(detailed description of services…)

- Subdetector description either geographical or functional
- DCS interfaces to external systems by a dedicated Information Service based on the Data Interchange Protocol (DIP) to be provided by JCOP
- Data and messages between DCS and DAQ may be exchanged at any level of the DCS hierarchy
- Commands will only be sent to the SCS level
- DCS states will be synchronized with the LHC machine states for Physics data taking
- Calibrations required the synchronization between DCS and DAQ
- DAQ will be informed of DCS states in real-time via the DDC (see next slide)

Status DDC (DCS ←→ DAQ) Slava K.

Transfer of data ←→, messages →, commands ← between DCS and DAQ

- Successfully operated in 2002 test beams
- Development going on

Claim to support subdetector activities:

Do **we** see any need for data exchange with DAQ ?

(as yet we see our DCS subsystem as a protection of our own valuable hardware only...)

Organisational Helfried

Kvaser cards being purchased, (4-channel, 500€) 2 → Mainz

Subdetectors meet Helfried before Xmas to discuss requirements and subdetector DCS structure → TDAQ TDR

DCS workshop near CERN, spring 2003