Technical Meeting COMPASS DCS / EN-ICE

Date: 23rd June 2010 from 10:00 to 11:30
Place: Building 892, 1-B09
This meeting was attended by:
Brice Copy (EN ICE) (BC)
Ana Sofia Nunes (COMPASS DCS) (ASN)
Christophe Pires (COMPASS DCS) (CP)
Excused : Piotr Golonka (EN ICE) (PG)

Note: Some items from the previous meeting have been integrated *in italics*.

Content:

General news:
ASN indicates that COMPASS data taking is going smoothly this year.

PVSS / General:

- Support case CT674919 - PVSS Trend Blocking Bug when interrupting a query – A 2nd patch release is expected from ETM.
- PVSS Slow Oracle query performance for few data points – Contacted David Wojcik in order to provide better partitioning. Data is currently duplicated to a separate offline database, so as not to penalize data update performance. BC asks whether a Real Application Cluster (RAC) solution could be used, dedicating some nodes to online inserts, and others to read data.
- Support CT689074 Schneider OPC – under investigation by Geraldine Thomas.

PG explained that the RDB API (mapping tool) will not be available soon.
Action COMPASS: Schedule a meeting with PG to discuss the best way to deal with this issue.
ASN reminds that EN-ICE was working on a PVSS tool to keep track of multiple channels and that a prototype was promised back in March 2010.
Action BC: Ask an update from PG.

Wiener:

ASN indicated that tests are still needed and that all the Wiener VME crates of type 5021 of one CAN bus should have EEPROMs upgraded for testing, at the end of the COMPASS 2010 run, by the end of November.

Action BC : Ask about the EEPROM flashing procedure.

CAEN:

Support case CT657478 - SLiC/CAENet – when more than one command needs to be sent to a SY527, a delay must be used – this prevents the usage of recipes – FwConfigDB should support this.

CAEN OPC – ASN asks whether OPC server updates will be made available for SY527, SY403 and SY127, perhaps also OPC-UA connectors. BC explains that this is quite unlikely, as CAEN explained that they would not produce OPC servers for devices out of maintenance cycle.

Action BC : Inquire about CAEN OPC server roadmap.

CAENet:

- BC indicated that FESA v3 was under study and that interest inside EN-ICE for this technology could be a cheap way for COMPASS to explore FESA capabilities.
- BC underlines how FESA can replace existing SLiC code :
  - FESA provides a reference Linux SLC platform, with real-time kernel patches to deal with accurate timing constraints (also supports PowerPC and LynxOS).
  - FESA provides out-of-the-box CMW communication. CMW is a CERN alternative to DIM which already benefits from an extremely reliable and performant PVSS driver (allowing PVSS driver level data filtering, such as smoothing, deadband etc...) for subscription and publication.
  - FESA is the foundation technology for all real-time LHC equipment, guaranteeing its development and maintenance for the next 15 to 20 years.

ASN explains that COMPASS DCS group is not yet convinced by FESA, and would consider a freeze, or code takeover of SLiC. BC explains that this is quite possible, as COMPASS is the last SLiC user at CERN, but this implies maintaining a reference Linux platform for SLiC.

SLiC:

The SLiC patch to reject invalid CAEN frames (ENS-960) has not yet been tested.

Action COMPASS: Provide feedback on SLiC patch provided by BC. Tests are foreseen for the next Machine Development, on July 19th.

DIM :

- ASN and CP explain that COMPASS subsystems (Polarized Targets, Calorimeters, Scalers) use MySQL databases to store data. These databases are effectively data islands, they are completely disconnected from each other and must be maintained individually. These subsystems recommend that their MySQL database be queried instead of using DIM for data exchanges. BC explains that writing a DIM server to expose subsystem data would be quite easy, using widely available documentation, but that MySQL expertise is lacking at CERN.
- CP explains that the PVSS control script used to query MySQL data and feed it to PVSS sometimes causes database deadlocks.
  - BC indicates that MySQL databases can use different engines, including high-performance commercial ones that can provide features comparable to Oracle Databases. Oracle databases provide row-level locking that are designed to prevent this type of problematic situations.
  - ASN asked whether a timeout mechanism can be used, either on the Server or the Client. BC indicates that timeouts are a good simple solution, provided a number of successive retries can be made – but it all depends on the MySQL database configuration and whether the existing programs reading and writing to the database can be configured for timeout (they may have to be updated / recompiled / redeployed, this type of setting is typically done at the database client library level).

ACTION BC : Ask F. Varela whether other experiments at CERN use MySQL database, whether they can come for advice.

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