Summary from the ETD/Online and Machine Control Session

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SuperB Computing R&D Workshop

Ferrara, July 2011

"Oddball" Session

- Not so much about computing R&D planning, but a first meet and greet of the Machine Control System R&D and Detector ETD/Online R&D efforts
- 4 talks
  - Accelerator control computing infrastructure (Giovanni Mazzitelli, LNF)
  - Accelerator control system status (Luciano Catani, ROMA2)
  - Detector ETD/Online system status & plans (Steffen Luitz, SLAC)
  - Non-Relational databases (Luca Tomassetti, FE)

Summaries

- Accelerator Computing Infrastructure & Controls R&D Introduction
  - The SuperB Accelerator complex requires a large amount of computing tools mainly dedicated to three different purpose: implementation and maintenance of documentation and project management; beam simulation and controls; data monitors, presentation and correlation with the experiment. In the mean time those tools require identification, security, accessibility for large and international community. This is an opportunity to develop new concepts in accelerators controls and realize a new computing infrastructure. Requirements, preliminary ideas and structure design will be presented.
- The SuperB Accelerator Control System - Plans and R&D Status
  - CHAOS is a new project under development at INFN aimed at the design and validation of a new paradigm of control system for particle accelerators that goes beyond the so called standard model. The key points of the new development are the high level of abstraction of services and components, the implementation of high-performance software technologies for the continuous distribution and storage of data, a new topology allowing high scalability of services and performance, an intrinsic redundancy of components avoiding any point of failure. The talk will present the !CHAOS design concept, the preliminary results, the future research program and the plans in the perspective of SuperB project.
- ETD/Online for the SuperB Detector - Plans and R&D Status
  - This talk will give an overview of the proposed Electronics, Trigger, Data Acquisition and Online (ETD/Online) system for the SuperB detector and the associated R&D activities. The current baseline design will allow up to 150 kTriggers/s and 75kByte event size with negligible dead time (<=1%). It builds upon lessons learned in the BaBar and LH
- Non-Relational Databases
  - Overview of SuperB R&D in such databases

Action Items

- Continue the discussion between Accelerator Computing / Control Systems and SuperB Online
  - Determine overlap / common R&D topics
  - Find ways to collaborate
- Ideas for follow-up workshops
  - Accelerator control workshop (October? Frascati?)
  - We are already planning to have an ETD/Online workshop for TDR writing (November? CERN?). Add a "Control Systems Day"