DAQ session 9
Slow Control

Ch. THEISEN

Goal of the SC

- Define which electronic boards are present in the system
- Initialize the different boards with the correct values (write registers, execute initialization procedures ...).
- Save (onto disk) all the setup parameters of the whole electronics or a part of the electronics.
- Restore a previously saved setup.
- Monitor the hardware and more generally the whole system (data quality)
- Handle error/alarm events and pass them to the Run Control.
- Accept some simple commands (setup, go, stop, get state ...) to control all the active components.
- Global configuration of the experiment and the whole system
- Provide Graphical User Interface

Slow controlled elements

- Digitizers
- GTS Trigger Processor
- ATCA carrier boards
- GTS mezzanines
- Core & Segment mezzanines
- (Ancillary electronics)

- Different SC levels (or layers)
  - VDHL Virtex
  - PPC Virtex
  - Global config of a subsystem (carrier card, crystal, …) with interdependences
  - Global config of the array (also with interdependences)

- … Some part very close to the hardware, some other closer to DAQ (services, RC, GUIs, network, …)

- Ideally, SC done by peoples very close to the hardware, therefore manpower issues.

- Coordination between FEE, RC, GUIs, …

ToDo as discussed Feb 18, 2009

1. Vic's WSDL implementation
2. Definition of new WSDL messages
3. Synchronization of subsystems – sequences of actions. Document list of actions. Coordination of SC technologies
4. Definition and implementation of the systems topology

5a Save/Restore

5b Global configuration of Agata from the RC.

In parallel :

- Monitoring
- Diagnostic : replace chipscope
- GUIs

SC meeting yesterday

- WSDL
  - Vic's services and its extensions
- Global configuration and topology
  - scalability
  - Sequence of actions; errors management
  - Full configuration of the array and part of it
  - Solutions to manage global SC and connections to RC
  - Responsibilities
  - Dream to have a self-describing system
- Chipscope-like and traces analysis
  - Automatic traces scan at init
  - Consequences on SC
  - Sent traces from mezzanines to DAQ
  - How to display / analyse traces … and who
- Internal diagnostic (report status)
- Quality monitor
  - Still issue

Today's agenda

- **Ch. Theisen**, Overview and goals
- **M. Gulmini**, Run Control-Slow Control integration
- **V. Pucknell**, Digitizer
- **N. Dosme and N. Karkour**, Core and Segment mezzanines SC