Murrough Landon – 23 September 2003

http://www.hep.ph.qmul.ac.uk/~landon/talks

Contents

- Recent activities (more testing, less software development)
- Next steps

Overview

- Multiple readout slices in the simulation (Steve)
- L1A generation now in general use (Steve)
- Proposals for simplifying test vector generation (Steve)
- Database and IGUI changes to support these (Murrough)
- JEM tests under run control (Cano) and with ROD/DSS at RAL
- Development and testing of/with jemSim package (Juergen)
- Continuing CMM module services and simulation updates (Norman)
- Event dump (Dave Kant) has been used a little

TTC setup: broadcast commands

- TTCvi module services updated to send arbitrary TTC commands at run state transitions
- Lists of commands defined in the database (by run type)
- NB these commands have arbitrary latency between them and arbitrary phase compared to LHC clock and orbit

TTC setup: B-Go configuration

- Lists of prepared B-Go commands can be synchronised with clock and orbit signals and (with suitable setup) may have a fixed latency between then
- TTCvi module services can now configure B-Go 0 with BCreset command (NB problems with the DSS – see later)

RODs and slices

- Up to now the number of DAQ readout slices was a parameter set per module (for generality)
- Knowledge of this was required in module services and simulation for each module as well as in test vector generation description files
- Changes needed in several places together. Development of run types helped a little. But still too much expertise is required in setting things up
- Propose to reorganise control of test vector generation and let one module (source or sink?) determine the number of slices used by the whole readout chain. This should be easier for non-experts to configure in the IGUI
- Alternately, even easier, there could just be a single global numSlices parameter applied to all modules but is that too limiting?

L1A "bursty" generation

• Proposals for L1A bursty mode discussion at recent software meeting (see Steves talk). Database and IGUI changes required for this have now been done

IGUI Help

- First attempt at providing some online help in the IGUI for L1Calo specific setup. Trying to make the system a little easier for non-experts
- More documentation and developments for "ease of use" are surely required

The problem

- TTC software note proposed sets of six bit TTC commands: three bit module type and three bit command type. (Two of the 8 broadcast bits are reserved for BCReset and ECReset)
- Unfortunately the DSS motherboard only tracks two of the six available bits.
 This means it cannot ignore commands not intended for it
- Present use of the two tracked bits is also not ideal. All TTC commands (ie for other modules) have to assert bit 6 to keep the DSS in playback mode
- To reclaim the possibility of giving commands specific to other module types we need to change the DSS firmware
- The DSS hardware limitation means the proposed commands for other modules will also need changing

A proposal (from Bruce)

- Mostly we want a global start playback (or reset of playback counters to zero) and perhaps a stop playback. These are useful in all modules and would normally be used together
- The six available bits could be used as follows:
 - 00xxxx: 16 module type specific commands (ignored by the DSS)
 - 01xxxx: global playback start
 - 10xxxx: global playback stop
 - 11xxxx: global reset playback counters to zero
- This needs more discussions between module/firmware designers and software developers (meeting and/or firmware mailing list?!)

Still some significant developments required...

- As the RAL slice (and other test setups) grow, the need for automated timing calibration and setup procedures becomes more urgent
- Related to this, we want multistep runs to iterate over parameters settings and sets of test vector files
- With five working RODs and setups involving data sent from CPM/JEM to CMM, the need for combined readout (eg via the ROS)
- Also more analysis and monitoring of data (apart from comparison with simulation), presentation of analysis etc will be desirable