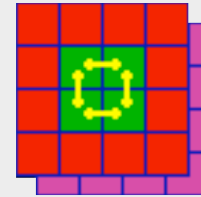# ATLAS Level-1 Calorimeter Trigger
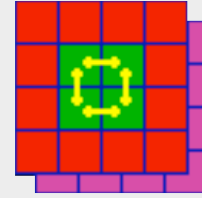
CP/JEP Rod Update

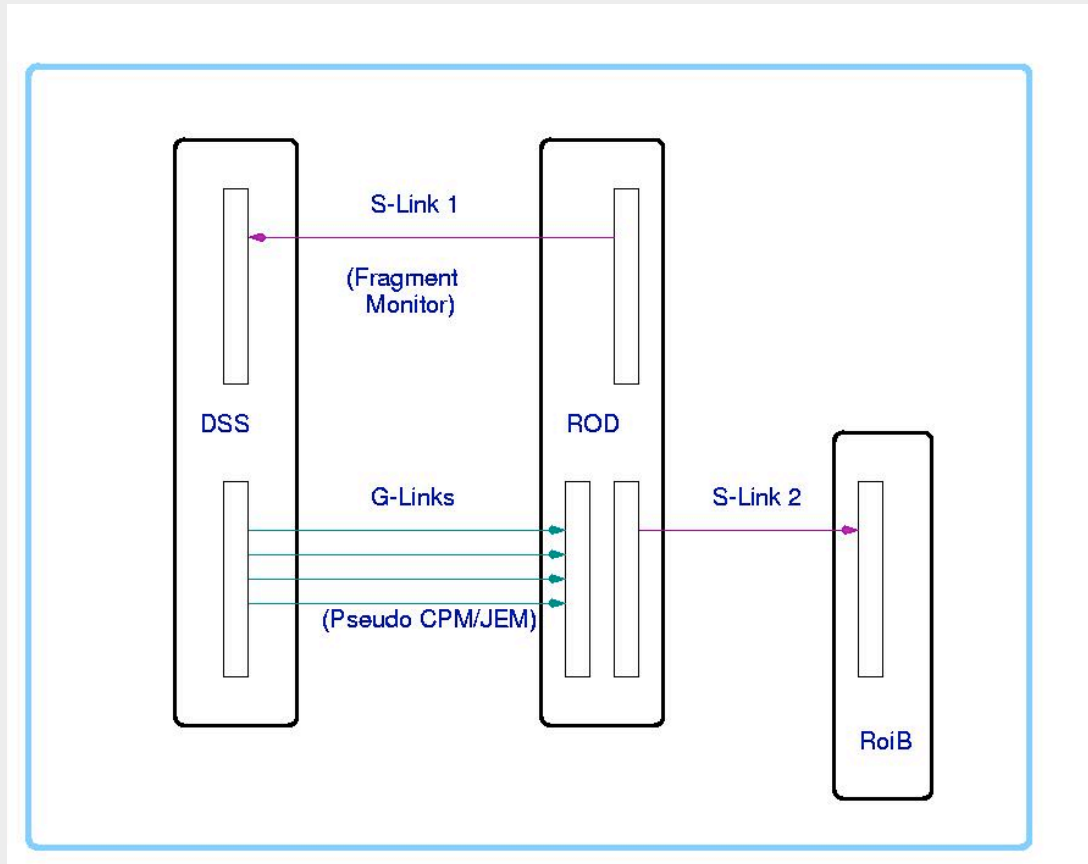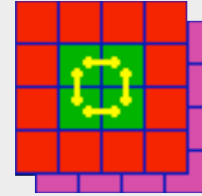The Shortest Way Home.

Bruce M. Barnett

Overview

- Dss/Rod Test Bed
- Slink Think
- And Other Things
- Tutorials from Friends
- Progress Tracking
- Integrated Looper
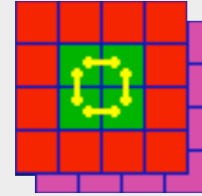- Module Acceptance
- Plans
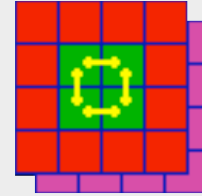
Dss/Rod Test bed

Slink Think

- Continued s-link flow control problems
  - problem report cp-slice-14
  - but it is a subtle problem.

  - new status registers providing direct s-link status (lff) and rod firmware buffering status (overflow, underflow, etc.)

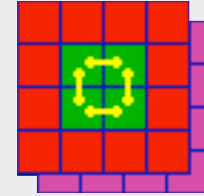 - sitting with James over a chipscope.

And other things

– transient problems.

- Rod Sometimes enters a 'funny' state ...
    - eg, after power glitch.
- glink problems....sometimes not all channels work on power-up.

– And design considerations ...

- Can't reset FPGAs if decoder (?) fpga is in a confused state! need CPLD based registers for certain critical functionality.

Tutorials from friends

- Tutorial from James.
  - Very clear, instructive. Illustrated well some of the complexities of his design.
  - But after a morning, we had only scraped the surface.
  - Serialiser/Cp-Chip sessions possible.

- Impressed with hdl_designer
  - also a very good documentation tool.
  - Access to code and a read-only version (or read-only access, by covenant) will help us understand/ document.

Progress Tracking
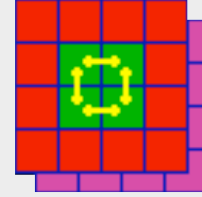
- Realisation that ideas problems /solutions need better tracking to ensure 'final' modules incorporate all those 'good' ideas, and hard earned solutions.
    - identified mechanism for tracking desirable firmware mods (rod after all will become a 9u variant oneday!)
    - "Request for Modification" word-template:
        - identifies urgent needs and "must not forget" needs.

Integrated Looper
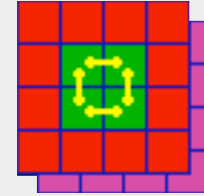
- ## Looper
  - started life as a stand alone code to drive the testbed.
  - Looper functionality is now integrated with l1calo daq environment:
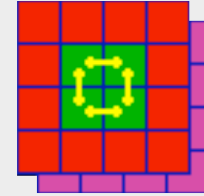   - run control accesses moduleServices to prepare modules
    - kicker drives dss frame generation, reads out and compares
      - integrated with online db, provides statistics to IS server (with M.L. help) and IS (potentially fatal errors.), as well as the runcontrol and simulation (thanks gurus!)
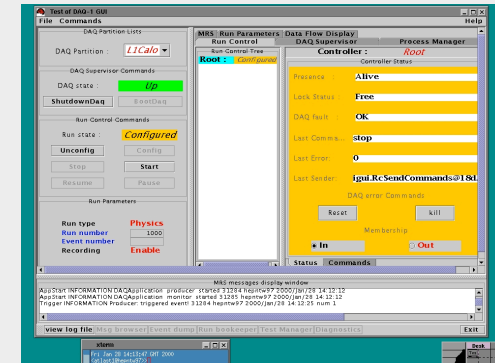
Module Acceptance

- Integrated s/w used for first time in anger! (ie, with James)
  - (Rod/Dss) module acceptance test bench should be almost there.
  - But meanwhile Adam is progressing in parallel:
    - so mechanics, firmware configuration, basic functionality will be well tested before hand, so the acceptance t/b can concentrate on a variety of detailed issues of functionality and sub-system concerns.
  - (which should make the job a whole lot easier.)

Plans
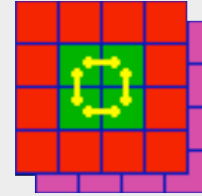
- ## What Next
  - ### back to real rod tests again.
    - more firmware problemReports.
    - ROS integration…
  - ### other firmware variants are no longer just around the corner (cmm, jem).
    - They are sitting on my table waiting for:
      - simulation
      - manpower
    - but … the s/w is capable of handling it (99% c.l.)