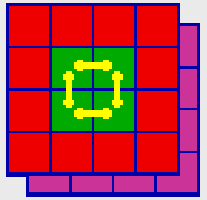
ATLAS Level-1 Calorimeter Trigger

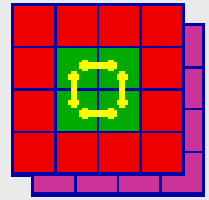


CP/JEP Rod Update

The Horse and the Cart

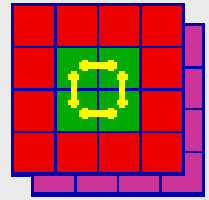
Bruce M. Barnett

Overview



- Software Status (2)
- Firmware Status (2)
- Module Acceptance
- Plans

Software Status (1/2)



- CPRod/Dss test system acts as a s/w test bed:
  - Much progress has been made towards “real” slice-test environment and software:
    - System:
      - CERN VME bus driver now in use. (V2 - soon to move to V3)
    - “Looper”: canonical test code.
      - Now use CpRod, Ttcvi and Dss classes from the module services package(s).
      - Looper restructured to use module-service “DaqInterface” which these classes support.
      - “Kicker” isolated from Looper for launch from run control.

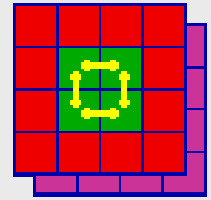
Software Status (2/2)

- To Do:
  - New s/w required for:
    - control of Dss firmware in wrap-around mode:
      - allows
        - » continuous generation of trigger
        - » use of busy to halt triggers
    - control of new Dss firmware in “level-1” mode

Firmware Status (1/2)

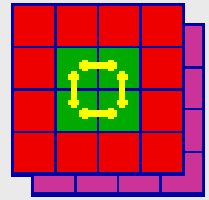
- Dss:
  - New Firmware exists:
    - Provides arbitrary wrap-around from DSS Source.
      - Allows continuous tests without s/w intervention.
    - Provides L1A functionality, with orbit generation simulating LHC operation. This allows generation of arbitrary but repeated patterns.
  - In use now in “compatibility-mode”.
  - Needs more extensive use to validate.

Firmware Status (2/2)



- Rod:
  - Is the system still stable with new Dss firmware?
  - Still need long soak tests with varied vectors.
  - Old (non critical) problems re-identified:
    - Steve tumbled over a stuck bit which I had long ago noted and allowed for … but feedback to James had been delayed by more dynamic/urgent problems. Need to re-evaluate.
  - Other Problems:
    - transient failures (loose interposer boards?)

Module Acceptance



- 6 New Rods Await Testing
  - Need to set up a prescribed sequence of tests:
    - Some simple HDMC type tests (like the ID test plan tests)
    - Looper type tests, with a specific variety of vectors
      - ROI, 1-slice, 2-slice, 5-slice …
    - Controlled by a script with log files
  - S/W needs: exit after n iterations: must be coded.
  - Progress:
    - Basic script now exists.
    - Selection of specific vectors must be done and things placed in a specific location.
    - Code isolated (thanks to CMT).
    - Instructions must be put in place.

Plans

- S/W:
  - Address priority items:
    - Incorporation with run-control (almost complete.)
    - Modifications for module-acceptance tests.
    - Dss s/w to accompany new firmware.
- Firmware:
  - Rod:
    - Re-evaluate status and test plan.
      - Multi-slice operation, RoI operation.
      - Drown-tests.
    - New Variants (CMM Rod?)