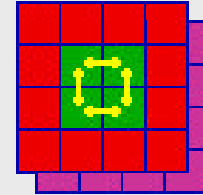# ATLAS Level-1 Calorimeter Trigger
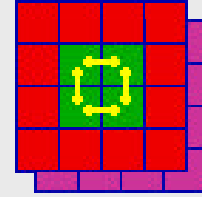
CP/JEP Rod Prototype Tests

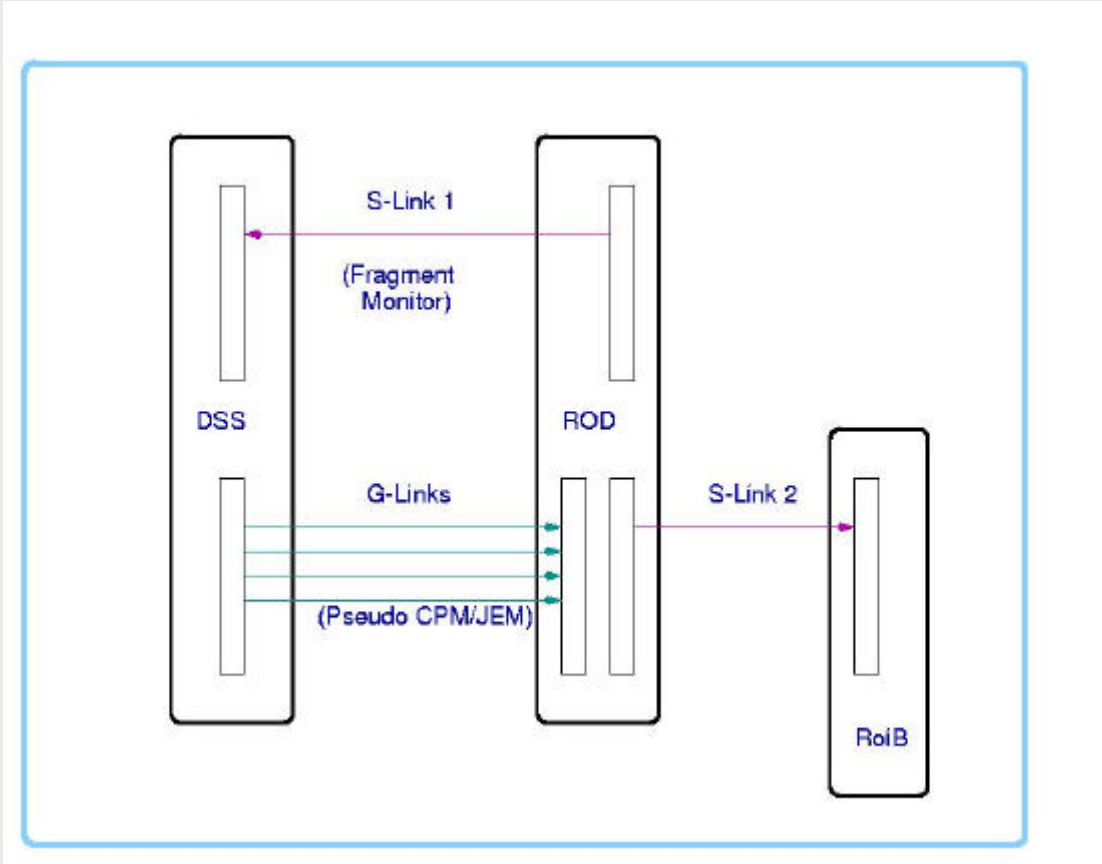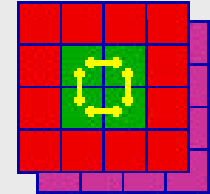*"From the lone Sheiling of the misty island…"*

Bruce M. Barnett

Overview

- Dss/Rod Test Bed
- Slink Think
- And Other Things
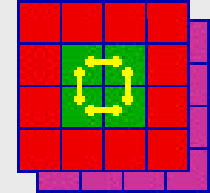- Tutorials from Friends
- Integrated Looper
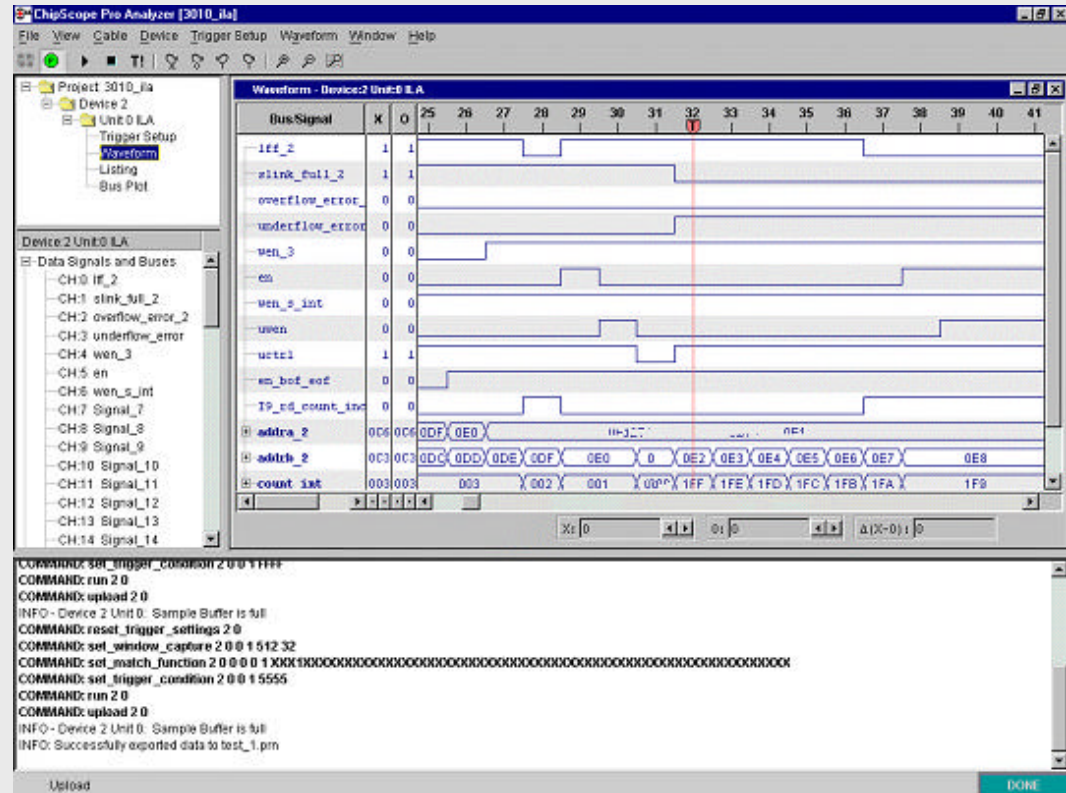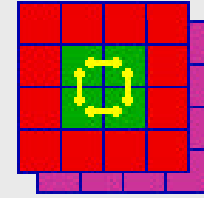- Plans

Dss/Rod Test bed

Slink Think

- **Flow control issues resolved:**

  - *"I disabled the comparator that tells me when a packet is finished when I suspend data transmission due to the LFF. If this happens when there is one word to go, due to a latency of 1 cycle, the comparator is still disabled... Regards James"*

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.
  – **CP-Slice-16**: Bit 23 set in hit data words. (awaiting test)
  – **CP-Slice-17**: Incorrect Treatment of PP->CPM status Bits (S-ink trailer and hit words). (to be discussed.)

– Design complements:
  – The S-Link FIFO condition "EMPTY" should be indicated by (a) status bit(s). (We have link-full to date…)
 – Zero suppression should be applied to the *hit* words

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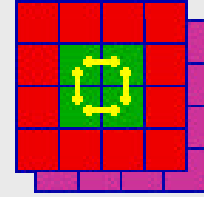
- **Tutorial from James.**
  - Very clear, instructive. Illustrated well some of the complexities of his design.
  - But after a morning, we had only scraped the surface.
  - Serialiser/Cp-Chip sessions possible.

- **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.

Integrated Looper
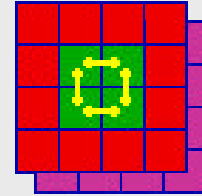
- ## Looper
  - started life as a stand alone code to drive the testbed.
  - Looper functionality is now integrated with l1calo daq environment and is the usual Rod test tool:
    - run control accesses moduleServices to prepare modules
    - kicker drives dss frame generation, reads out and compares
    - integrated hdmc provides interaction/display in parallel.
    - integrated with online db, provides statistics to IS server (with M.L. help) and MRS (potentially fatal errors.), as well as the runcontrol and simulation (thanks gurus!)
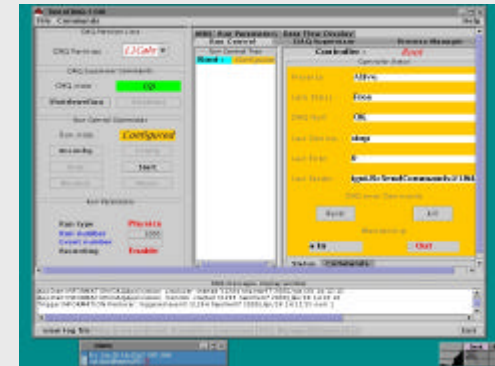
Plans
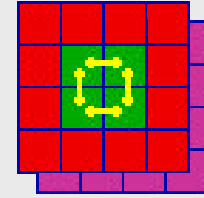
- ## What Next?
  - Check zero suppress (slice) still ok. (CP).
  - Confirm RoI firmware still ok. (CP)
  - Other firmware variants ready (cmm, jem)
    - Software (l1calo) capable of handling it!
    - Simulation now available (Thanks, Steve!)
    - So just to get on to it...
  - Other Rod Modules:
    - Thanks to Adam … Checked for
      - » mechanical completeness, basic++ functionality.
      - » Ready to be vector processed!