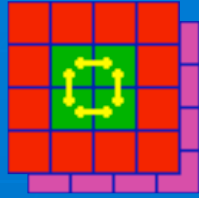


# ROS

## (L1Calo ROD Readout)

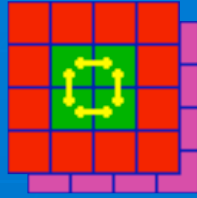
*Status*



# Overview



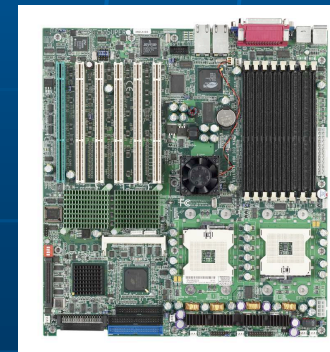
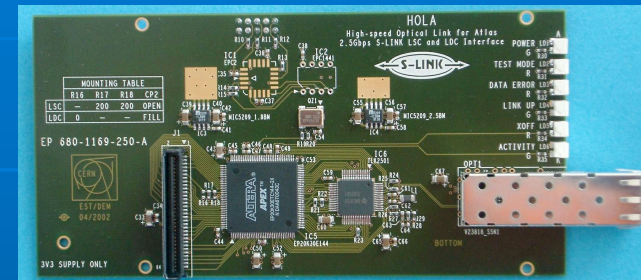
- ! Hardware Status
- ! ROS Software
- ! Analysis Software
- ! System Configuration
- ! Tests & Experience
- ! Next Steps
- ! Risks

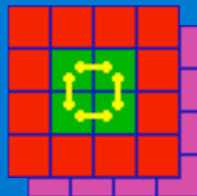


# Hardware Status



- Slink Interposers Delivered
  - ┆ 11 3.3V
  - ┆ 3 5V
- Slink:
  - ┆ 3 FILARs installed in Atlun03.
  - ┆ 12 HOLAs. 6 installed.
- TTCvi Mark II installed.
  - ┆ Necessary for broadcast of Trigger Type)
- Trigger scheme modified
  - ┆ Now based on GIO differential out, vetoed by ROD busy, then to TTCvi NIM in.
- New ROD Front Panels expected soon.

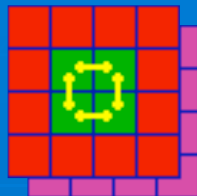




# ROS Software



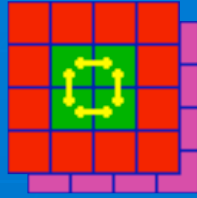
- ROS DF-00-07-00
  - ! Makes available standard monitoring stream.
  - ! Installed.
    - Configuration Database Done.
  - ! Minor Technical Issues:
    - proper path to DFConfiguration entries?



# Analysis Software



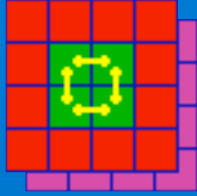
- ! EventSourceFactory:
  - Steers L1Calo::FragmentIterator and L1Calo::FragmentDescriptor based access to:
    - ! Dss Hardware, Dss .sim files
    - ! ROS file output, ROS Monitoring Stream, rosinterface simulation files.
  - RosChunk class
    - ! returns std::vector of Eformat::RODFragments.
    - ! Provides select mechanism (Orbit<<16 | bcid) to retrieve proper simulation event.
- ! New Kicker
  - runs on any atlun with access to simulation files and monitoring stream, or on an atlun with access to the DSS hardware.
  - makes extensive use of eformat. Scans all rod fragments, compares them to the simulation, and posts the requested one to the IS server which feeds the L1Calo-cpRodTests test panel.



# System Configuration



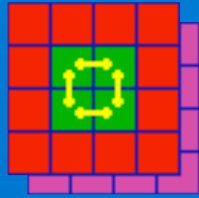
RODs	G-Links	Hola with Interposer	Fibres Placed	Connected to ROS	ReadOutTests
1 CPM-Data	1	Mounted 1/1	1/1	1	1
1 CPM-Rol	1	Mounted 1/2	1/2	1	1
1 CPM-CMM-Data	1	Mounted 1/1	1/1	1	
1 JEM-Data	1	Mounted 1/1	1/1		
1 JEM-Rol	1	Mounted 1/2	1/2		
1 JEM-CMM-Data	1	Mounted 0/1	1/1		
1 Jem-CMM-Rol	?	Mounted 0/2	0/2		
1 Preprocessor-Data	?	Mounted 0/1	0/1		



# Tests & Experience (1/2)



- ! First experience (2003) was with ODIN/SSPCI hardware:
  - Short runs with 3 Links (2003).
  - Runs were coupled with simultaneous DSS-Slink readout so rate didn't exceed ~1 Hz.
- ! Have now run with ROS exclusively in the most recent test session:
  - 1 Slink. with up to 8KHz rate.
  - 2 Slinks, 1KHz.
  - CMM feed not yet tested due to CMM problems.
- ! Experience:
  - ROS and/or ROD flow control breaks with small inter-trigger gap or high rate.
  - ROS L1ID reset strategy and L1Calo strategy have to agree: Otherwise, the ROS dies on startup when using data driven trigger.
  - Monitoring Stream. After Stop, kicker exits, breaking connection to the monitoring stream. A new connection is not possible without shutdown.



# Tests & Experience (2/2)



Online Software Graphical User Interface - Expert Control

File Commands Access Control Tools Settings Help

Partition **RaiRos** LONG SHORT FACT MRS IS OBK DVS ED HDMC

DAQ supervisor

DAQ SUPERVISOR STATE **RUNNING**

Shutdown Boot

Run control

RUN CONTROL STATE **RUNNING**

Unload Configure

Stop Start

Pause Continue

Checkpoint

Run Parameters

Run type **Physics**

Run number 1190

Event number 0

Event rate 0

Recording **Enable**

Run Start Time 16/04/04 16:36:46

Run Stop Time

Integrated active run time

DataFlow Monitor Segment & Resource L1Calo Infrastructure

Run Control Run Parameter MRS DAQ Supervisor PMG

L1Calo

- L1Calo\_sim
- L1Calo\_ra10
- L1Calo\_ra1
- L1Calo\_ra3
- L1Calo\_ra4
- ROS-atlun03
- IOMAN-atlun03

IOMAN-atlun03

- I2RequestsQueued 0
- ebRequestsQueued 4957
- releaseRequestsQueued 0
- requestsDequeued 4903
- level1RateHz 12
- popQueueEmptyPercent 3234408
- pushQueueEmptyPercent 0
- deltaTimeMs 10011

Monitoring Tasks

Statistics

- monacc/detector:ROS-atlun03/crate...
  - Max\_Size 1000
  - Ev\_Received 13295
  - Ev\_Accessed 13295
  - Active\_Clients 1
  - TotalClients 1
- montask1/detector:ROS-atlun03/cr...
  - Ev\_Received 13295
  - Active 1

16:36:48 INFORMATION CPRODTEST\_KICKER Test started at: 16:36:48 Fri 16 Apr 2004

16:36:47 INFORMATION PROCESS\_CREATION Process is created

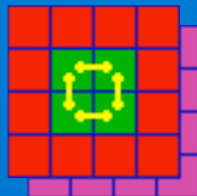
16:36:47 INFORMATION PROCESS\_CREATION Process is created

16:36:46 INFORMATION DSA\_SOR Starting SOR ...

16:36:46 INFORMATION RC\_START Start of Run

16:36:26 INFORMATION L1CALO\_RUNNING\_SIM Running the simulation: this may take some time

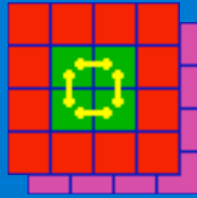




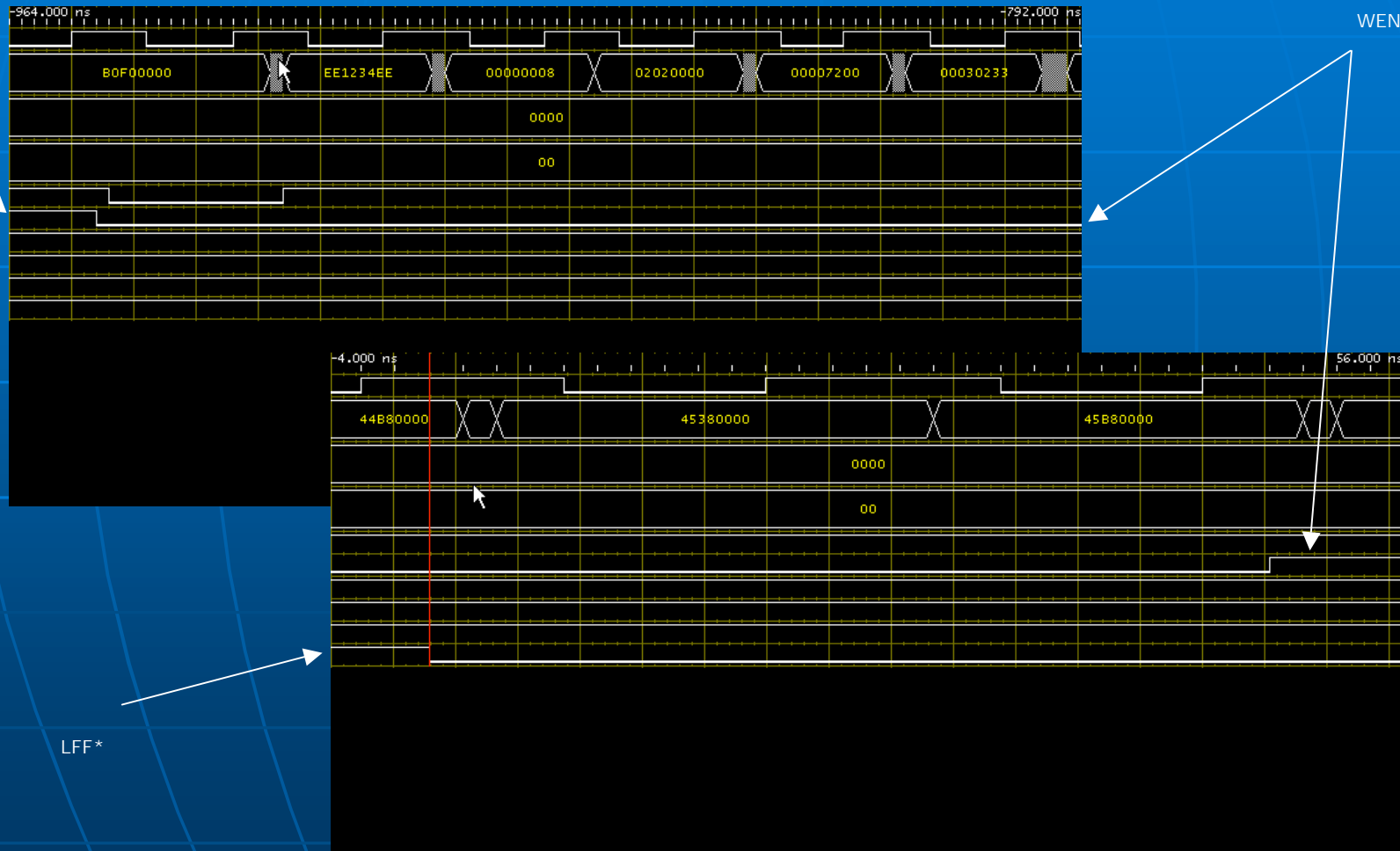
# Next Steps (1/2)



- ! Test CPM-CMM feed.
- ! Connect JEM feeds.
- ! L1Calo panel to display synopsis for ALL rods.
- ! Debug High failure at
  - High rate and/or
  - High instantaneous-rate.

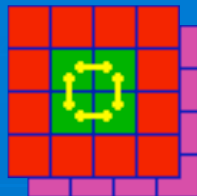


# Next Steps (2/2)



27 April, 2004

B.M. Barnett - RAL PPD ~ ATLAS Level-1  
Calorimeter Trigge UK



# Risks



- ! Flow control at the interface.
- ! Future Stability of Glinks.
  - Do we need an optical to electrical converter
  - or a full Optical CMC daughter card?

