

# Agenda

- Summary of meeting on FMM
- Hardware status of FRL (Dominique)
- Discussion on preseries production  
(Dominique and all)

## Summary of FMM discussion (held 12-06-2003)

- Summary of FMM Status
- Issues for final production
- sTTS add-on board
- Time lines
- FMM in context of DAQ system
- Issues for FRL in stand-alone local DAQ mode

- State of FMM Firmware

- Completed Items

- ✓ Interface to TINY
    - ✓ SDRAM controller
    - ✓ Logging of input state transitions to SDRAM

- To be done

- × Logging of relative signal activity (in % of time)  
(FPGA resources might be tight)

- State of FMM software

in preparation

- C-Library for communication with TINY (Dirk)

To be done

- × XDAQ application to control FMM
- × Algorithms to search the FMM tree
- × Algorithms to monitor deadtime of channels

# Summary of FMM status

## Technical status of current FMM hardware

All components are fully functional:

- TINY based web interface (board control and readout)
- IO ports for sTTS (2 outputs; 32 inputs)
- SDRAM (to store state transitions of inputs)

## Issues for final design

- Performance of Control Interface (TINY)
  - Limited to 20 kB/sec  
was designed for slow “post mortem” analysis  
forbids fast analysis of FMM tree

### Alternatives

USB	Compact PCI
+ easy hw implementation	+ in house experience
- another technology in DAQ system	+ high performance (higher than USB)
- no experience	+ no new software layer
- new software to maintain	+ low latency

- Capacity of FPGA
  - Logging of relative signal activities needs a lot of resources
  - Need experience to judge

## sTTS GIII add-on board

- Purpose of the board
  - Full test of FMM (stimulate inputs)
  - “Mini-FMM” functionality for test-beam
  - aTTS input/output interface
- Hardware interface requirements
  - At least 16 sTTS I/O (programmable)
  - Multi purpose Lemo I/Os (18 for TDRDemo)
  - No TTCrx needed



## Time lines

until end of september:

- FMM
  - Have a fully functional FMM with hardware software and firmware (including signal activity monitoring) available.
  - Have a fully functional GIII add on boards
- GIII sTTS add-on
  - Have a fully functional GIII add on boards
  - **To be decided:** Quantity of add-on board production

## Discussion: FMM in context of DAQ system

- **Front end emulators : to be clarified**
  - Emulator merge FMM tree with own state
  - Unclear: monitoring capability of Emulators  
(especially: relative signal activity)
- **FED status in event format**
  - FED should put the 4 sTTS bits in trailer of each event
  - In particular out of synch events must be correctly tagged with this method
  - BUSY and other signals do not have a one to one relation with particular event

## FRL and stand-alone local DAQ mode

- FRL crate needs LVL1A input for GTL emulator
- FRL crate should be able to create sTTS status
  - sTTS status reflect OR of FRL-crate
  - Technical solution has to be worked out
    - Make use of user defined pins on PCI backplane
    - Develop simple backplane for these pins
    - Develop one sTTS driver board interfacing to backplane and sTTS system