

# L2 Online

Reinhard Schwienhorst

DAQ shifters meeting, 03/12/02

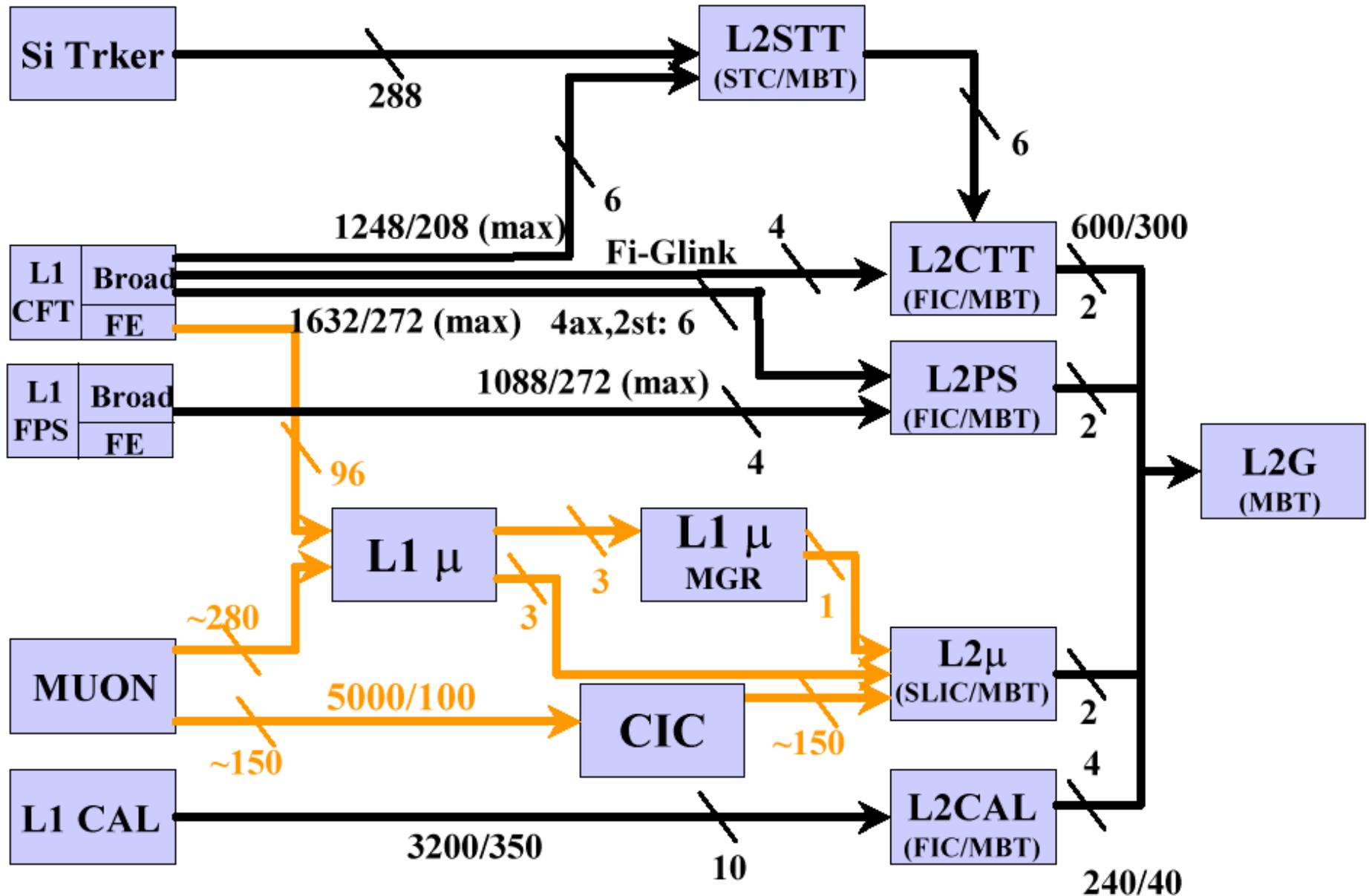


# Introduction

- L2 online crates:
  - Currently reading out l2muc, l2muf, l2cal, l2gbl
  - L2 is not making any decisions yet
  - Mark (and pass)
- L2 is in stable online running
  - Included in most global runs
  - L2 experts on-call rather than on shift
  - Code development/testing in parallel



# L2 Connections





# Current L2 Inputs

- Central muon, 12muc, 0x21:
  - All front-end muon channels available
    - > 100 channels
  - Inputs from L1 muon not used yet
- Forward muon, 12muf, 0x22:
  - Most front-end muon channels available
    - >40 channels
    - Typically one problematic channel
  - Inputs from L1 muon not used yet
- CAL, 12cal, 0x23:
  - 2 out of 10 fibers from L1 Cal
  - Relatively stable



# Other L2 inputs

- All L2 crates get SCL
- Global, l2gbl, 0x20
  - Inputs from L2 pre-processors
  - Gets L1 decision bits (128-bit mask) from TRGFR
    - Currently disables
    - Important restriction:  
TRGFR sends bits for every L1 accept
    - Means L2 needs to be in every run, pdaq and sdaq
- PS, l2ps, 0x24 and CTT, l2ctt, 0x25
  - Some time this spring/summer

CRATER

File View **SMT Monitoring** Help

L1 **L2** MUON CAL CFT SMT

- X20 I2glb Level 2 Global
- X21 I2muc Level 2 Muon Central
- X22 I2muf Level 2 Muon Forward
- X23 I2cal Level 2 Calorimeter
- X24 I2ps Level 2 Preshower
- X25 I2ctt Level 2 Central Tracker Trigger

L2 crate X20 (I2glb) receives input from L2 crates X21 to X25  
 L2 crate X21 (I2muc) receives input from Forward Muon crates X30 to X33  
 L2 crate X22 (I2muf) receives input from Central Muon crates X34 to X3B  
 L2 crate X23 (I2cal) receives input from L1 crate X10  
 L2 crate X24 (I2ps) receives future input from L1CFT and L1FPS  
 L2 crate X25 (I2ctt) receives future input from L1CFT and STT

Status: RED=IN GRAY=OUT Activated L2



# Current L2 input list

- Inputs to L2 crate global (l2gbl, 0x20)
  - Configured L2 pre-processors 0x21 – 0x23
- Inputs to L2 crate central muon (l2muc, 0x21)
  - Muon readout crates 0x34 – 0x3B
- Inputs to L2 crate forward muon (l2muf, 0x22)
  - Muon readout crates 0x30 – 0x33
- Inputs to L2 crate calorimeter (l2cal, 0x23)
  - L1 Cal 0x10



# L2 experts

- 9 people who know how to debug L2
- Expert on-call carries a pager
  - (630) 266-0744
  - Give them a few minutes to call back
  - Be available when they call back
- Also have a secondary pager
  - In case the expert on-call is away from a phone
- Check L2 contacts web page or control room call list



# Typical L2 problems

- L2 crate X is shown missing in every event!
  - Check if all its inputs are in the run
  - Talk to the muon shifter if it's 0x21 or 0x22
    - Usually a front-end muon channel has gone bad
  - Send a few SCL inits
  - Contact the DAQ expert on-call
  - Contact the L2 expert on-call
  - Take the crate out of the run
    - For now
    - Also send an email to [d0l2experts@fnal.gov](mailto:d0l2experts@fnal.gov)



# Other L2 problems

- Rack M324 tripped
  - Happened twice last week and twice in January
  - Symptoms:
    - VRC3d not responding
    - RMI Alarm
  - Check which RMI light is off
    - Rick Hance wants to know
    - Also check if blower is still on
  - Turn the rack back on
    - Instructions are on the back of every L2 rack
  - Contact L2 expert
    - Needs to reboot Linux and start L2 program



# Outlook

- L2 will be making decisions in  $N$  weeks
- Will have L2 monitoring displays
  - Shows which input channel is missing
- Extended COOR functionality
  - L2 crate configuration and global scripts
  - Switch L2 decisions on/off
  - Make sure all required inputs are in the run
    - Less thinking required