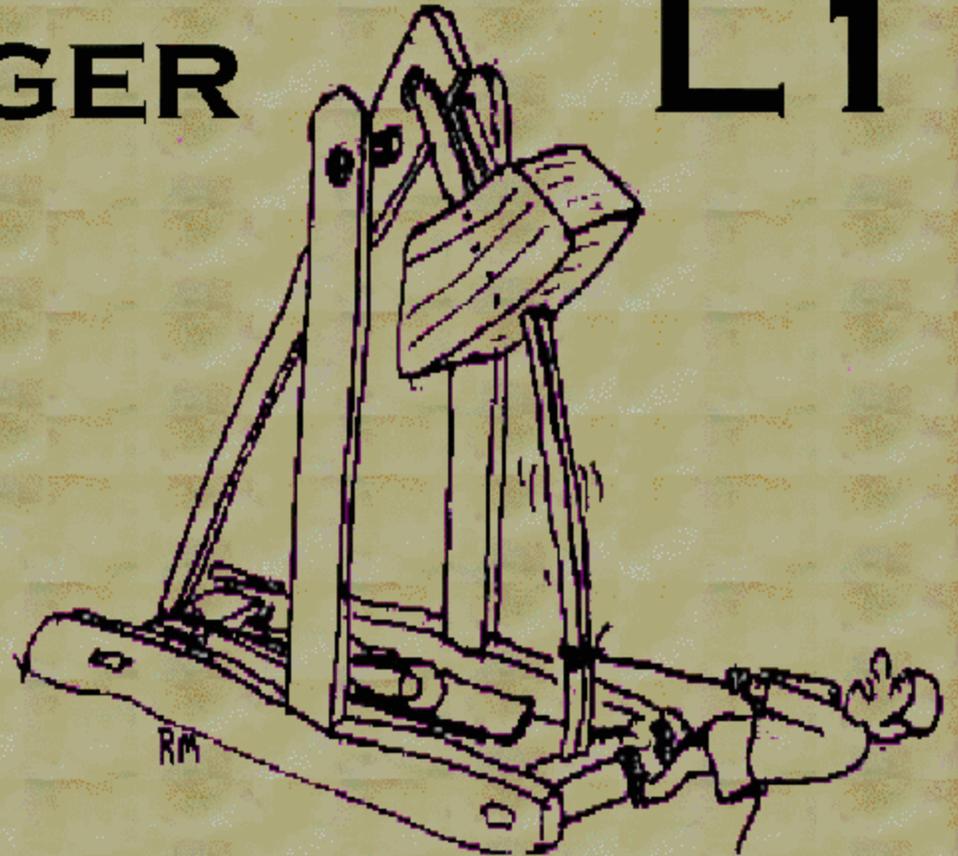
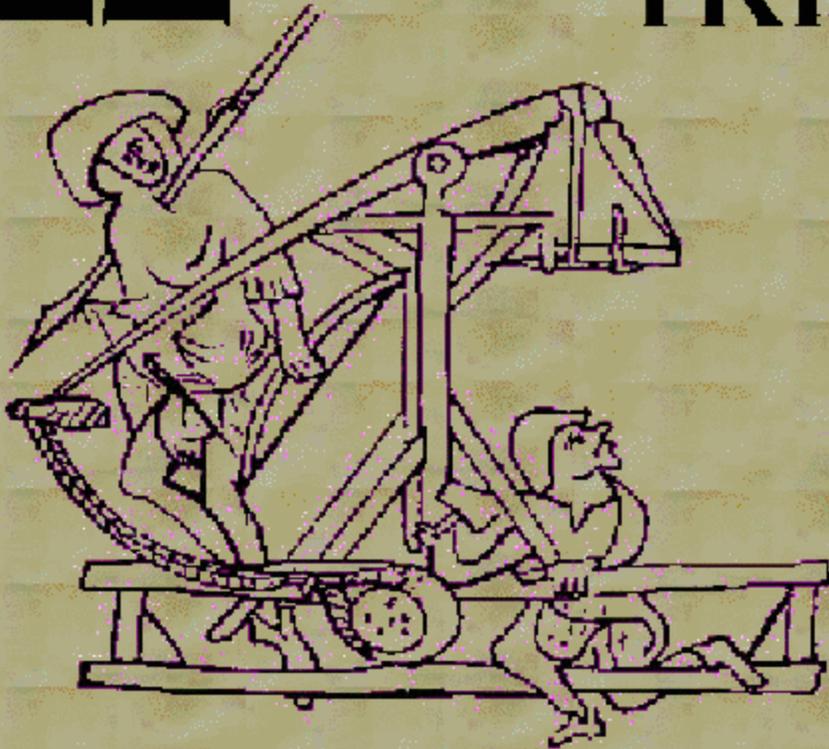




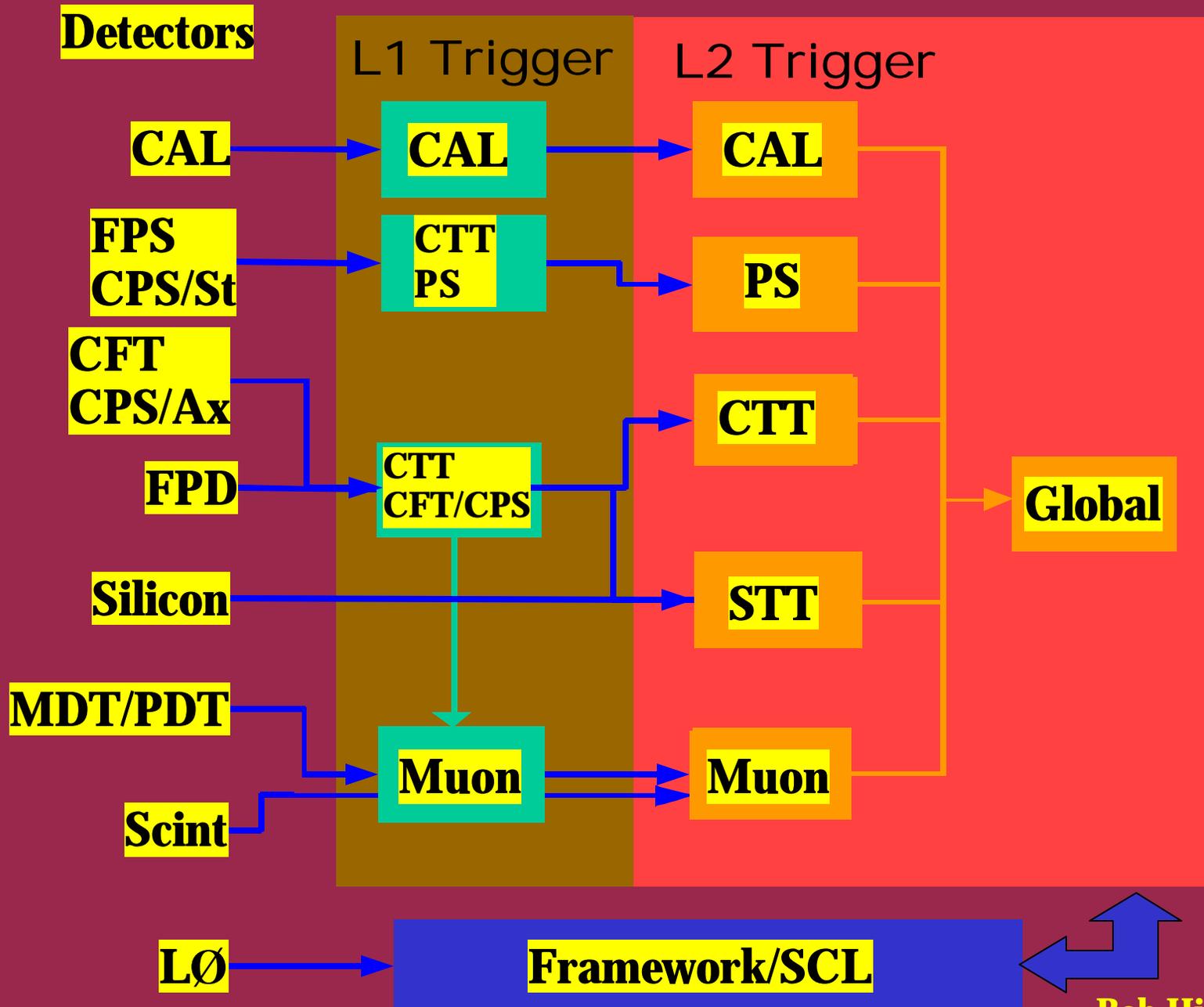
**L2**

**TRIGGER**

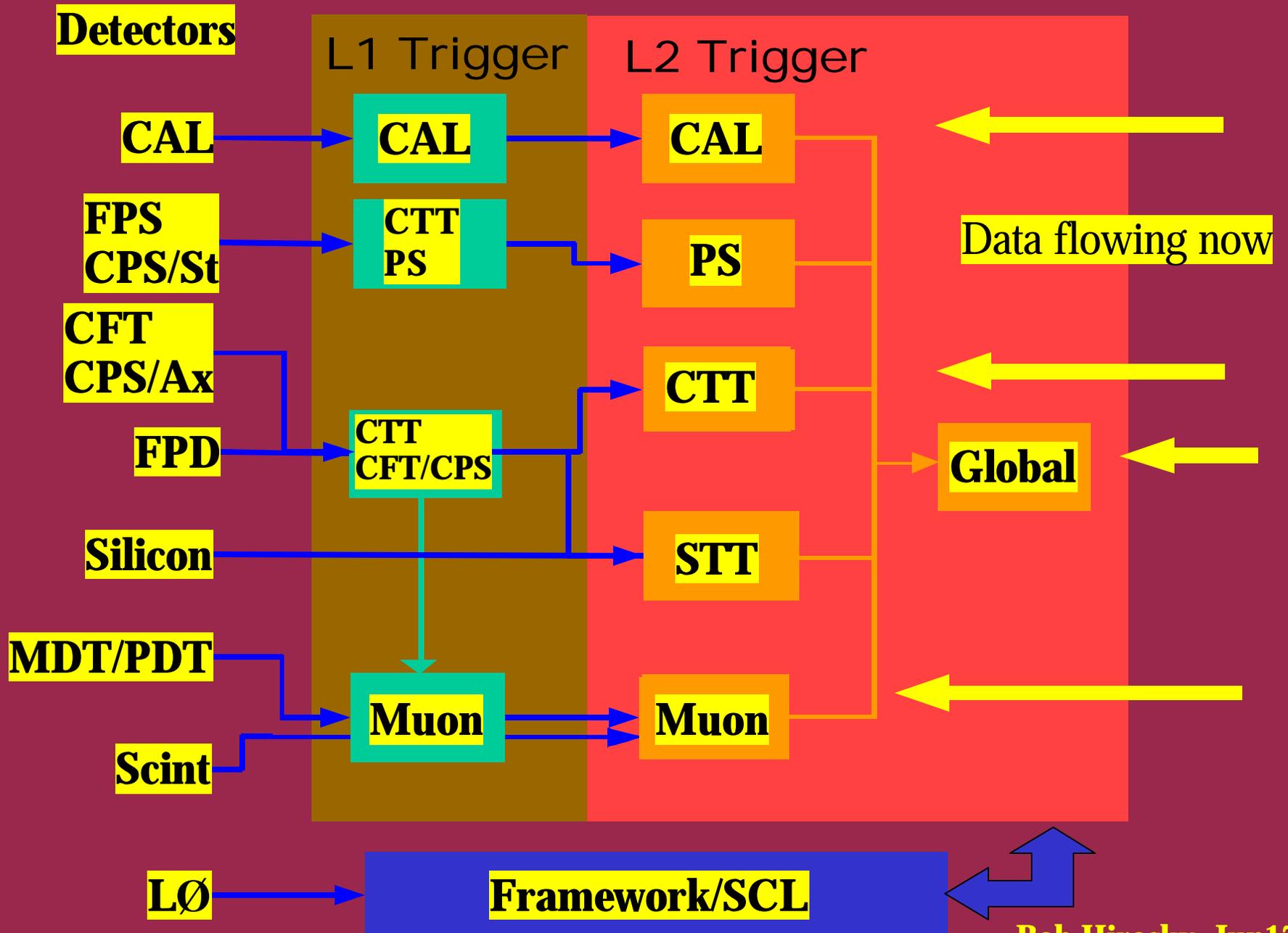
**L1**



# L1/L2 Trigger Organization



# L1/L2 Trigger Organization







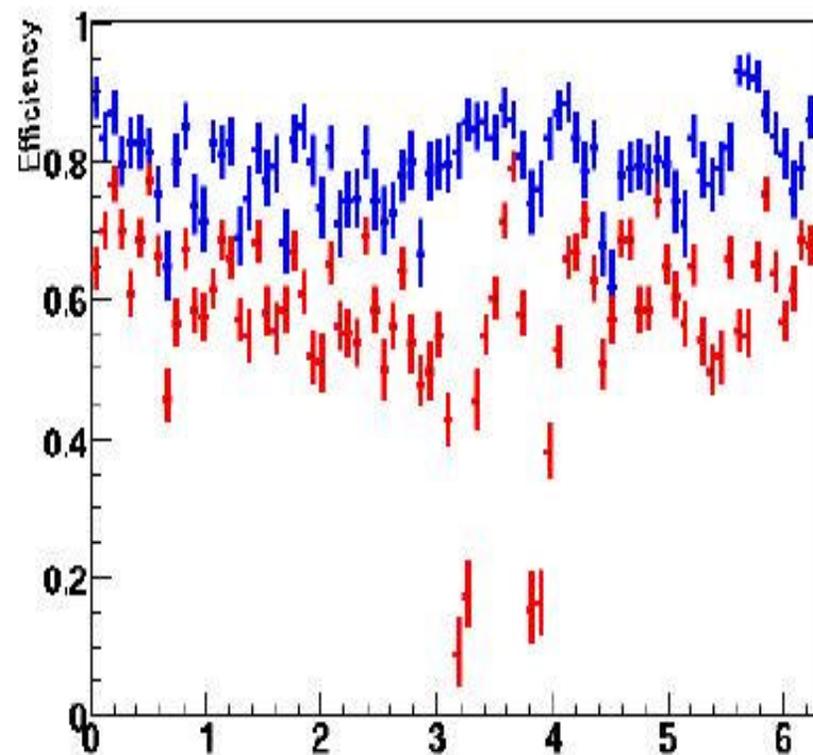


# Hot off the press!

(Makoto Tomoto)

## L1 track + CPS efficiency (with respect to offline tracks + CPS cluster)

- run 176880 (13 May 2003)  
dummy CPS mapping
- run 177679 (2 June 2003)  
with proper CPS axial mapping



# General Status for STT

- **Much progress since inputs available for testing ~ April**
- **Ongoing test of data flow. FW stability allows running ~10 mins-hour time range**
- **Full readout chain up to L3 has been tested**
- **Offline verification of FW/DSP code performance in trig. simulator**
- **Remaining work: FW stability, updated geometry tables, FW to generate sector overlap information (STOV).**
- **Commissioning running should start post shutdown!**

Running!

# MUON

L1

robust performance

numerous QC tools routinely running:

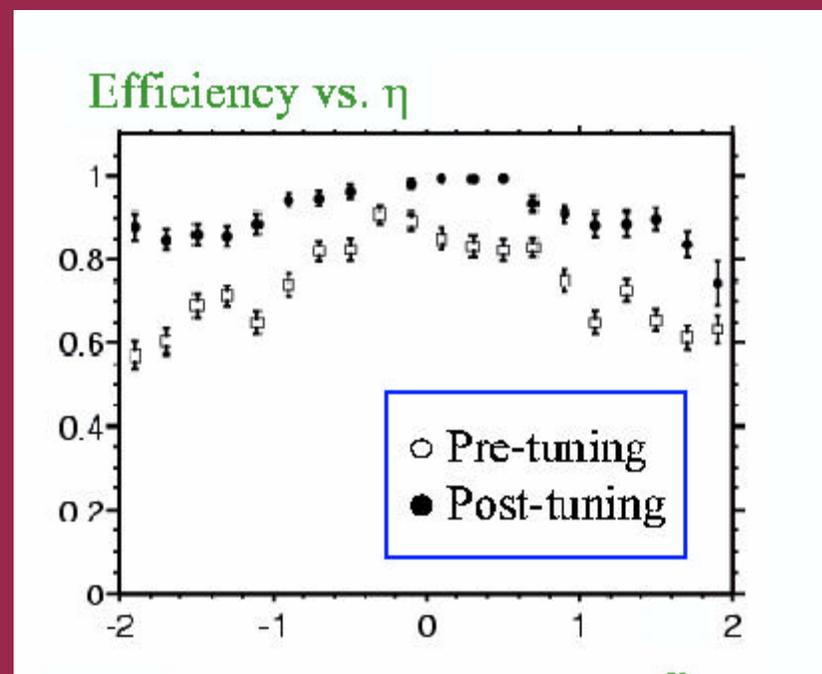
- GM examines
- rate monitoring
- continuous HW sim-data comparisons

CTT-MUO triggers under study

See talk by S. Anderson

L2

- 1<sup>st</sup> preprocessor to turn on – May 02
- SLIC FW stable since Sept 02
- L2 PP algorithms tuneup / LUTs Mar 02  
see talk by C. Leonidopoulos



Bob Hrosky, Jun17 03

Running!

# CAL

Current coverage extended to  $|\eta| < 3.2$  (March 27 '03) ~80% of Cal towers available to L1/L2

Rates / noise reasonable for L1/L2 data (some malfunctioning towers require work)

Course gain adjustments, final calibrations being determined

near-term: optimize performance for  $|\eta| < 3.2$  + ICR towers, then add larger coverage coverage

L1 MET – electronics in place

L2 running since June 02 – algorithms stable

see talk by M. Abolins

**Bob Hrosky, Jun17 03**

# TFW

Implementation of L1 Pseudo terms durring shutdown

Collect Status for L2 implemented (reduces dead time by synchronizing monitoring readout)

Reduced monitoring FEBs from  $\sim 0.5\%$ ->  $\sim 0\%$

Some work required in L2 code (sumer timescale).

# How fast can we go?

- Status as of March
  - ? Typical dead time/event  $\sim 35 \text{ ?s}$
  - ? Fixed dead fraction  $\sim 1.2 \%$
  - ? L1 accept rate  $< 1100$  (1085) hertz
- Current Improvements as of 22-May
  - ? L2 monitoring from 2- $\rightarrow$ 1 FDF  $\sim 0.5\%$
  - ? Removed bad HDIs dead time/event  $\sim 26 \text{ ?s}$
  - ? L1 accept rate now at 1400 hertz
  - ? expect to reach  $\sim 2\text{KHz}$  over next couple of months

Max. rate calculation for FEB  $\leq 5\%$  of L1 accept rate  
$$r = (0.05 - \text{fixed dead fraction}) / (\text{dead time per event})$$

# Longer Term Gains ~ year time scale

L2 – monitoring ~ 0

CFT – remove VSVX readout, go to 53 MHz readout, trim sequencer timings, remove unused channel readout

SMT – trim sequencer timings, install 300 hit cutoff

	Overhead			Optimal
	current	optimal	#hits	L1 Rate
CFT	1.7E-05	9.3E-06	225	2662
SMT	1.5E-05	9.3E-06	280	2551

# Alpha Status / Beta Update

Preliminary timing comparison	L2CAL CRATE, Zero Bias Run		
	Beta (max opt)	Beta (debug)	Alpha (max opt)
Unpacking	14	133	58
Algorithm	9	19	48
Packing	3	14	20

Completing FW/SW tests at LAL, FNAL, Uva.  
Running in shadow mode ~3 weeks in Test Stand!

Next week complete retrofit of various required pull-up resistors,  
Ready to install in 2 weeks.

Multiple worker code – project to start over summer

# Data Monitoring Tools

All subsystems have various levels of data examines, but uniformity in analysis of examine data is lacking

Also uniformity if procedures for run quality tracking is lacking

Commissioning of systems is a factor here

L2 – Global examine seeks to deliver GM plots for all subsystems

Bit-2-Bit comparisons in tsim under construction to go live as soon as ready

see talks by Reinhard/Miroslav

# Parallel Sessions

## **Parallel Session I : Trigger Status (11:00-12:30)**

Status reports for subsystems

## **Parallel Session II : Discussion (Wed 14:00-16:00)**

Discussions/plans

Common tools

FW version tracking in data