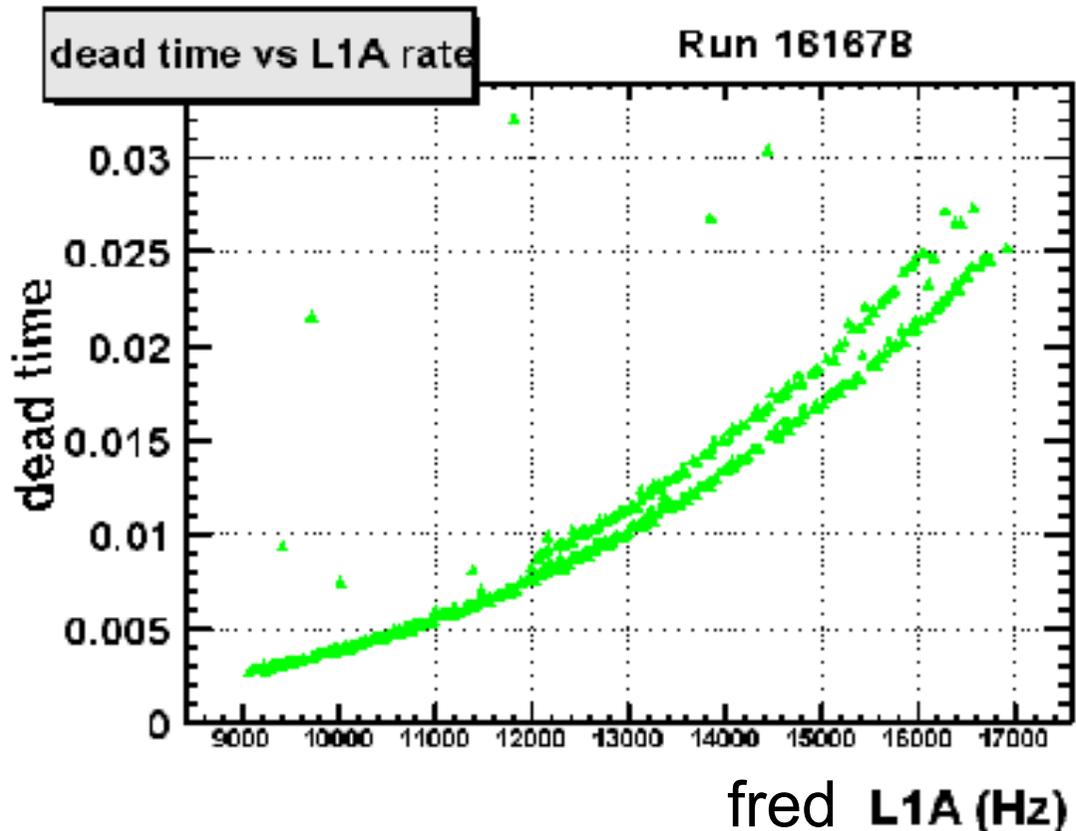


Trigger Bandwidth Planning meeting

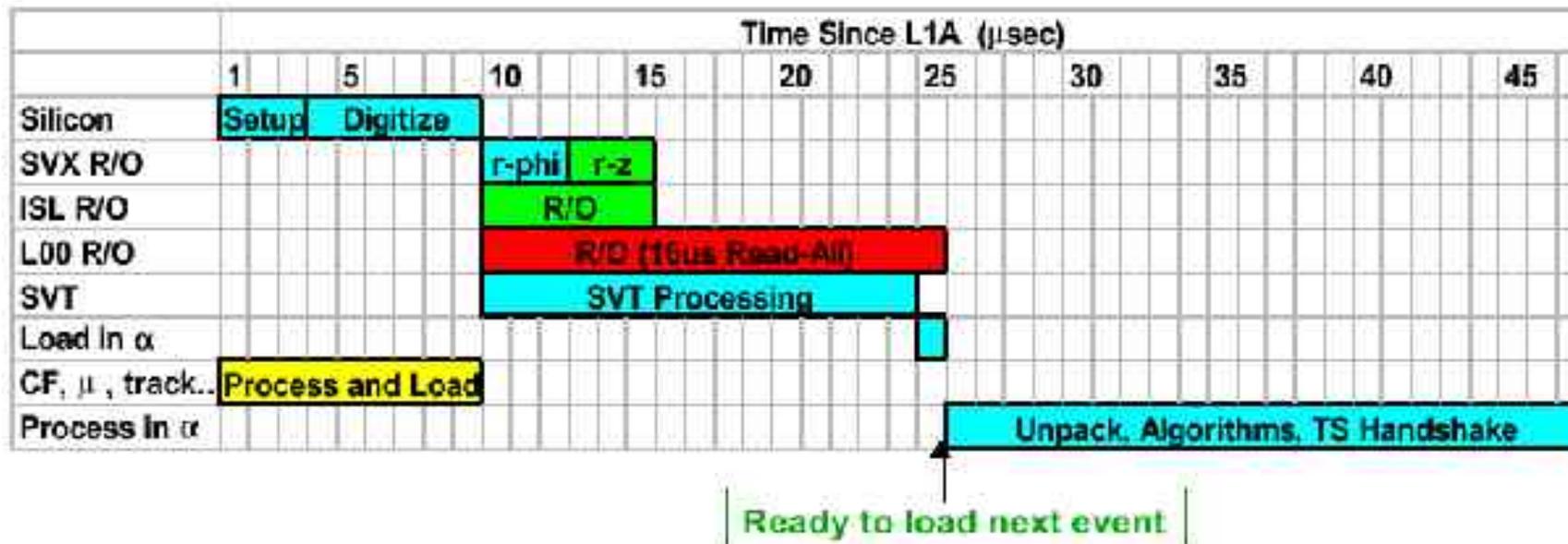


- What are the issues?
 - Review current performance – already see ~2.5% dead time @16kHz
 - Where does deadtime come from?
 - What can we hope to change?
- What amount of dead time is acceptable?

How can we get dead time?

- Dead time occurs when the TS sends a L1R when FRED says L1A because none of the four L2 buffers are free.
- We have 5 (7) causes of dead time (ignore WAIT/BUSY, INHIBIT here)
 - See CDF 4480 for full info.
- L1DONE
 - L2 decision held off by L1DONE from SRC
- L2
 - All full, waiting for L2 decision
- READOUT
 - All either pending or busy
- L2_or_READOUT
 - Can't decide btw L2 & READOUT
- TS
 - Due to deadtime book-keeping

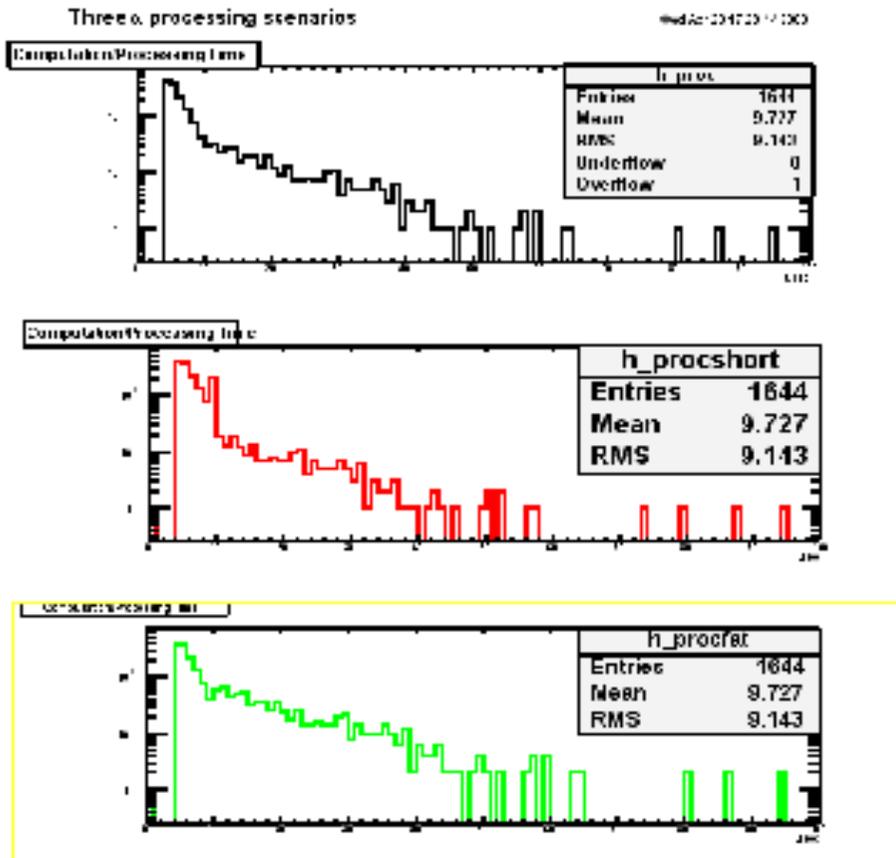
Current performance



- Peter Wilson's cartoon shows the basic data flow
 - Some #'s have changed, but generally correct
- Complete timing flow with interconnects on web
 - L2 processing can be thought of as having two pipelined components:
 - Data arrival in alpha
 - Data processing in alpha

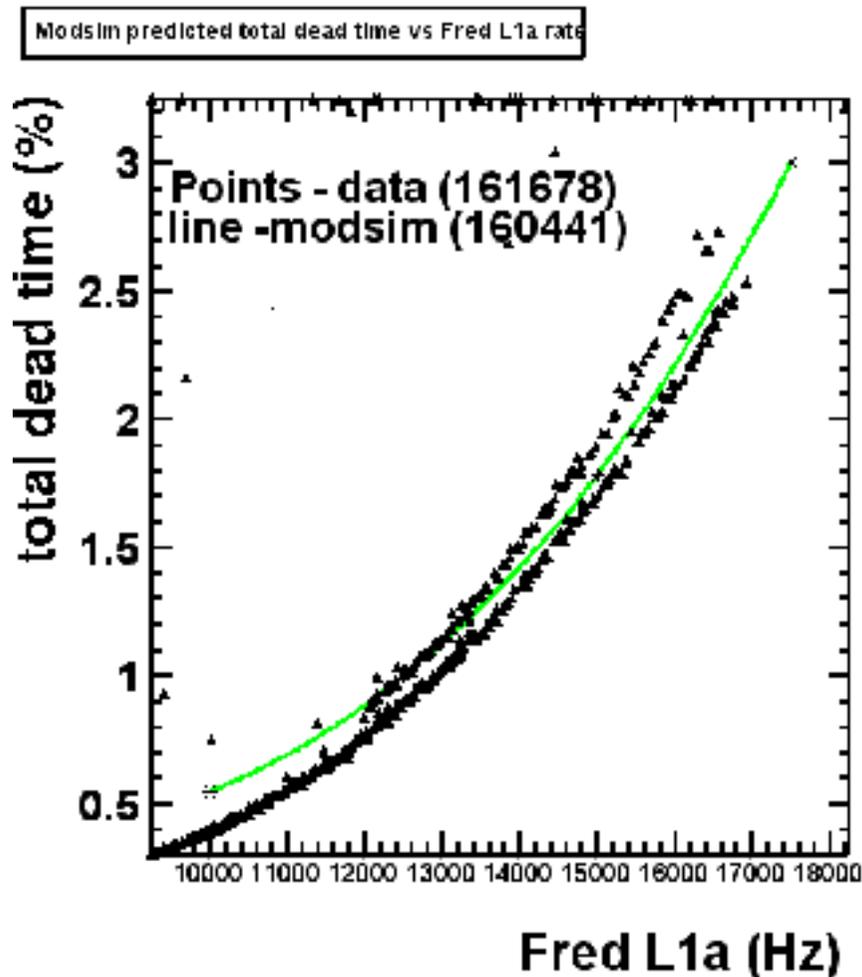
– See L2 review 8/2002
 Trigger Bandwidth Planning meeting

Where can we gain?



- Two SRC's
 - Allow next event into SVT sooner
- SVX readout speed-up
 - 7 vs 8 bit digitization & other super-secret things.
- L2 speedup
 - Tails of algorithm time
 - Remove DMA reads
- SVT speedups (?)
- Your bright idea here...

Tools at our disposal



- The real system
 - With Si now allowing high L1A, we are probing real dead time
- ModSim
 - Michael's talk, with input from many of you
- L2 Torture ???
 - Tortured mainly trigger experts – real system too complicated for test stand
 - Sparky, wedgy, ...

Goals

- Given the list of possible changes, what is most important from trigger bandwidth point-of-view?
 - Want a prioritized list of tasks for system experts to attack to improve bandwidth.
 - Modsim tells us this
- What is timeline for these tasks?
 - Input from experts
- What do we do in the meantime?

How much dead time is acceptable?

- TDR and ancient runes say: 5%
 - Random sample in control room gives answers between 0-10%
- Probably wrong question to ask
 - It's easy to make trigger have 0% dead time
- How do we best maximize our physics to tape for all physics groups?