Data Monitoring Tool Status

John G. Zweizig
LIGO, Caltech

LSC Collaboration Meeting
Hanford, August 15, 2000

LIGO-G000256-00-E

Engineering Data Run

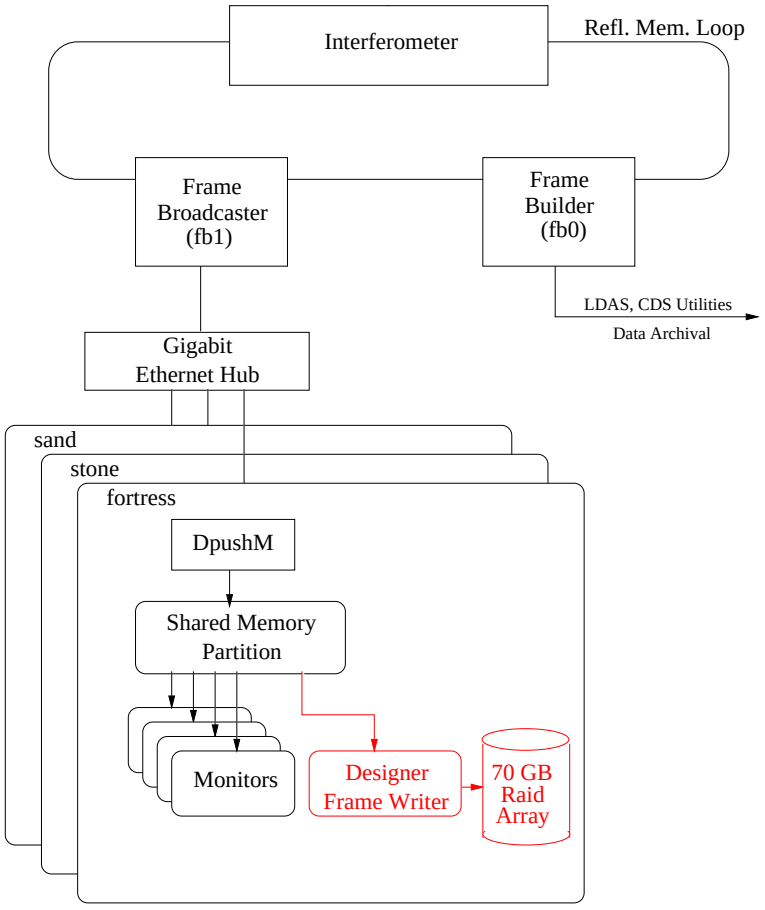
Engineering run was held on April 3-4, 2000

- Single arm run from 14:54 4/3/00 - 12:48 4/4/00.
- 42 Locked (40 Unlocked) periods averaged 1667 (37) s.

DAQ and DMT performance

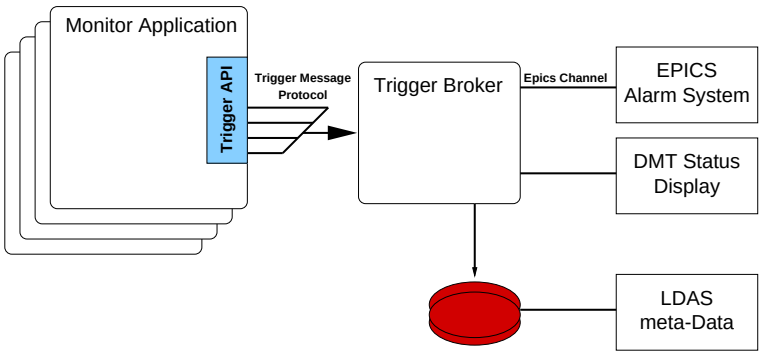
- 174 Channels selected, written by FrWrite.
- ~50GB frame data written to RAID array.
- All data currently online at LHO and at CACR.
- 18 frames were lost due to fb1 timing error.
- 1.5 hr. lost when fortress hung (~21:23 on 4/3).
- DMT software online included:
  - Channel monitor
  - Prototype TrigMgr and lock state monitor.
- Glitch prevented XML trigger ingestion.

First Engineering Run - Configuration



DMT configuration used to record engineering run data.

Trigger Generation Run

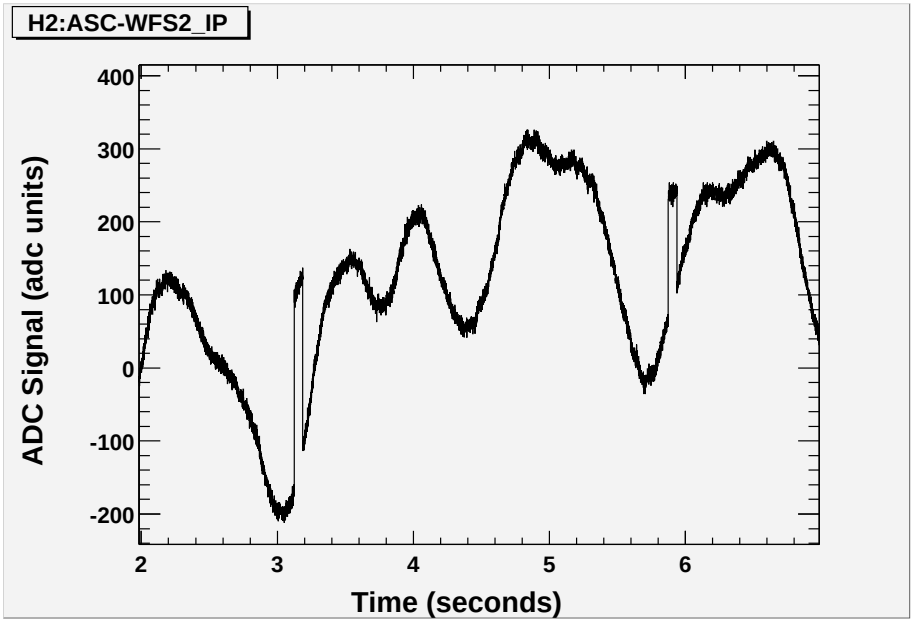


Trigger generation run on April 28, 2000 and May 1, 2000

- Recorded data were played back through fortress shared memory.
- Two monitors were run:
  - DaqSlice: Look for discontinuities between 1/16th sec slices.
  - ResTrend: Record power in resonance peaks in trend frames
- Triggers generated in real-time, logged by LDAS in LHO Data Base.

Trigger Generation Run

Sample DAQ slice drop-outs



Trigger performance

Trigger	Generated
AcquiredLock	42
LostLock	42
ChannelSaturated	2808
Jump16	4191

Conclusions from trigger run:

- Test runs are very useful - lots of bugs fixed.
- Guild is great - need more flexible trigger analysis.

Version 1.2 Software Release

New Version 1.2 software was introduces as pro version on DMT machines as of July 14, 2000.

- Many changes (see $/export/home/dmt/pro/Changes$)
- New Functionality
  - Reworked trigger generation API, prototype trigger manager.
  - Monitor data APIs and utilities.
  - Improved DMT operation infrastructure
  - Existing classes extended
- Contributed software
  - Multitaper line finder/tracker (A. Ottewill).
  - Operational State Condition class (K. Riles)
  - Time frequency plotting (PSU)
- Bugs Fixed
- Other Packages updated
- See Release notes for incompatibilities

Patch release 1.2.1

- Will be released soon
- Bug Fixes (iFFT, FSeries, FSpectrum)
- New functionality
  - DMT data distribution status (dmtstatus)
  - Add count field to FSpectrum.
  - Add FSeries::getData(inx, len, vect)
  - Add int and double DVector types (for trends).
  - Reworking of trend accumulation class.
- More contributions
  - Wavelet based line removal (S. Klimenko)
  - Coherent line removal (A. Sintes Olives)