Data Monitoring Tool Status

John G. Zweizig

*LIGO, Caltech*

LSC Collaboration Meeting
Hanford, August 15, 2000
**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 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

![Graph showing ADC Signal vs Time](image)

Trigger performance

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>AcquiredLock</td>
<td>42</td>
</tr>
<tr>
<td>LostLock</td>
<td>42</td>
</tr>
<tr>
<td>ChannelSaturated</td>
<td>2808</td>
</tr>
<tr>
<td>Jump16</td>
<td>4191</td>
</tr>
</tbody>
</table>

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 introduced as a 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)