

NOvA Experiment Status

All Experimenter's Meeting

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Feb 1, 2016

Operations – Summary



❑ BEAM:

- Getting 430 kW with 6+4 slip stacking.
- 3 days beam shutdown: scheduled maintenance and DAQ tests.

❑ NearDet:

- Running well. Had a NuMI trigger issue with two competitive application running on the same TDU machine.

❑ FarDet: running in high gain mode (150)

- The DAQ significant improvement after replacing the master.
- The DAQ App Manager crashes less frequent but need to be solved, the SCD has a plan and will test during 3 day beam off.
- Seen the TCR (Time calibration reference) Monitoring issue.

❑ Control Room(s): During the collaboration week an effort how to improve stability of VNC connections from the ROCs.

Far detector



❑ After master machine replacement stability:

- The DAQ was pretty stable since the master machine at Ash River was replaced with new one (Jan 20), The DAQ was down only 4 hours of 280 since that time.

❑ DAQ Application Manager (DAM) crashes:

- Even if after the master replacement a number of DAM crashes is rare (twice since) it became the main DAQ worry.
- There is a plan by our friendly SCD to update and test some DAQ software (DAM application, Qt library update) to stabilize the DAM itself and hopefully gain from the full AshRiver computer capability (more than 100 buffer nodes are quiet).

❑ DataLogger issue:

- We saw one DataLogger incident but not same as we had suffered before (till end of the last year). Probably this was a problematic Data Driven trigger (DDEnergy) whose size caused inability to write data on disk and did not close subrun files.

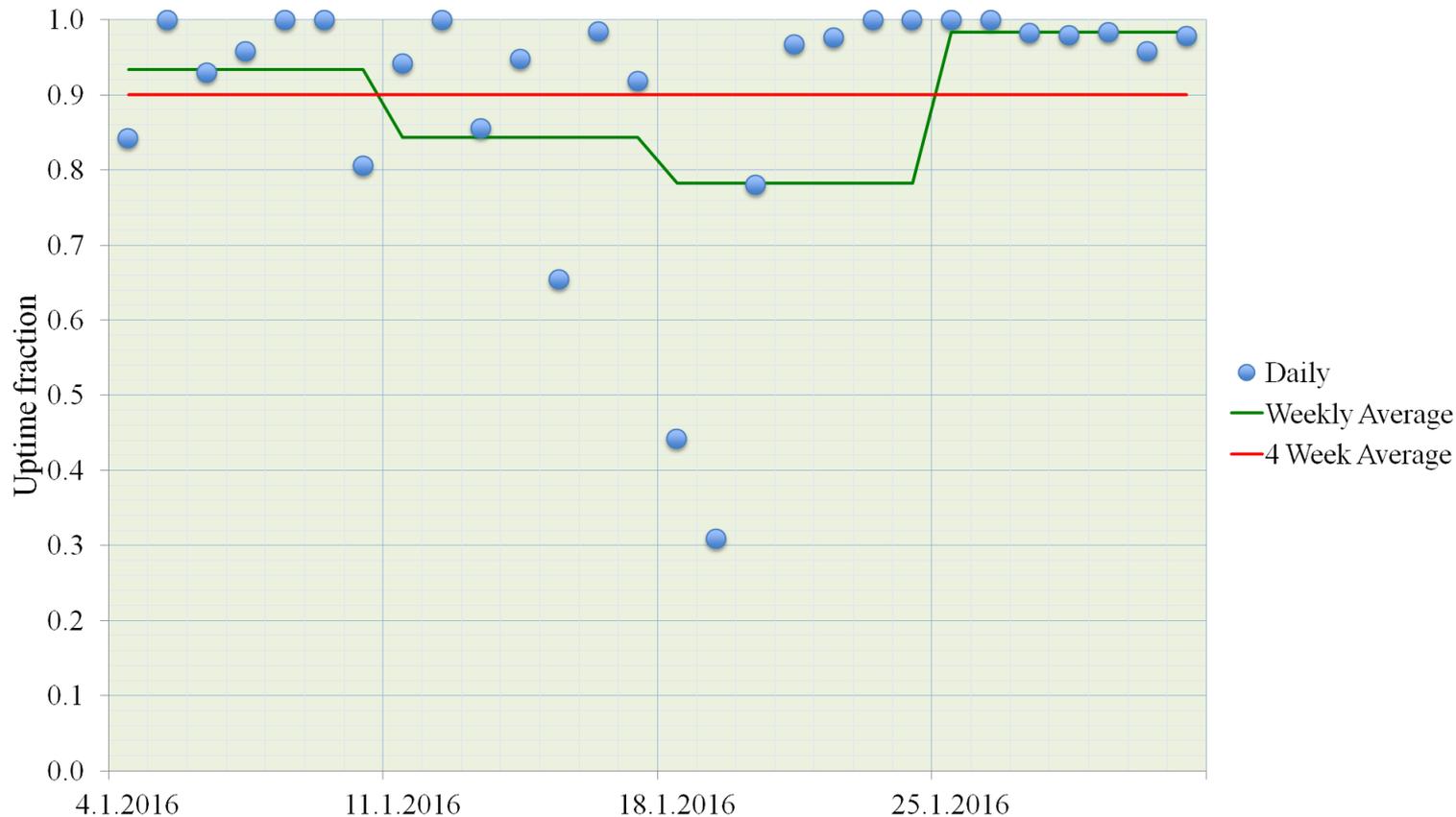
Near detector



□ TCR versus TDU issue:

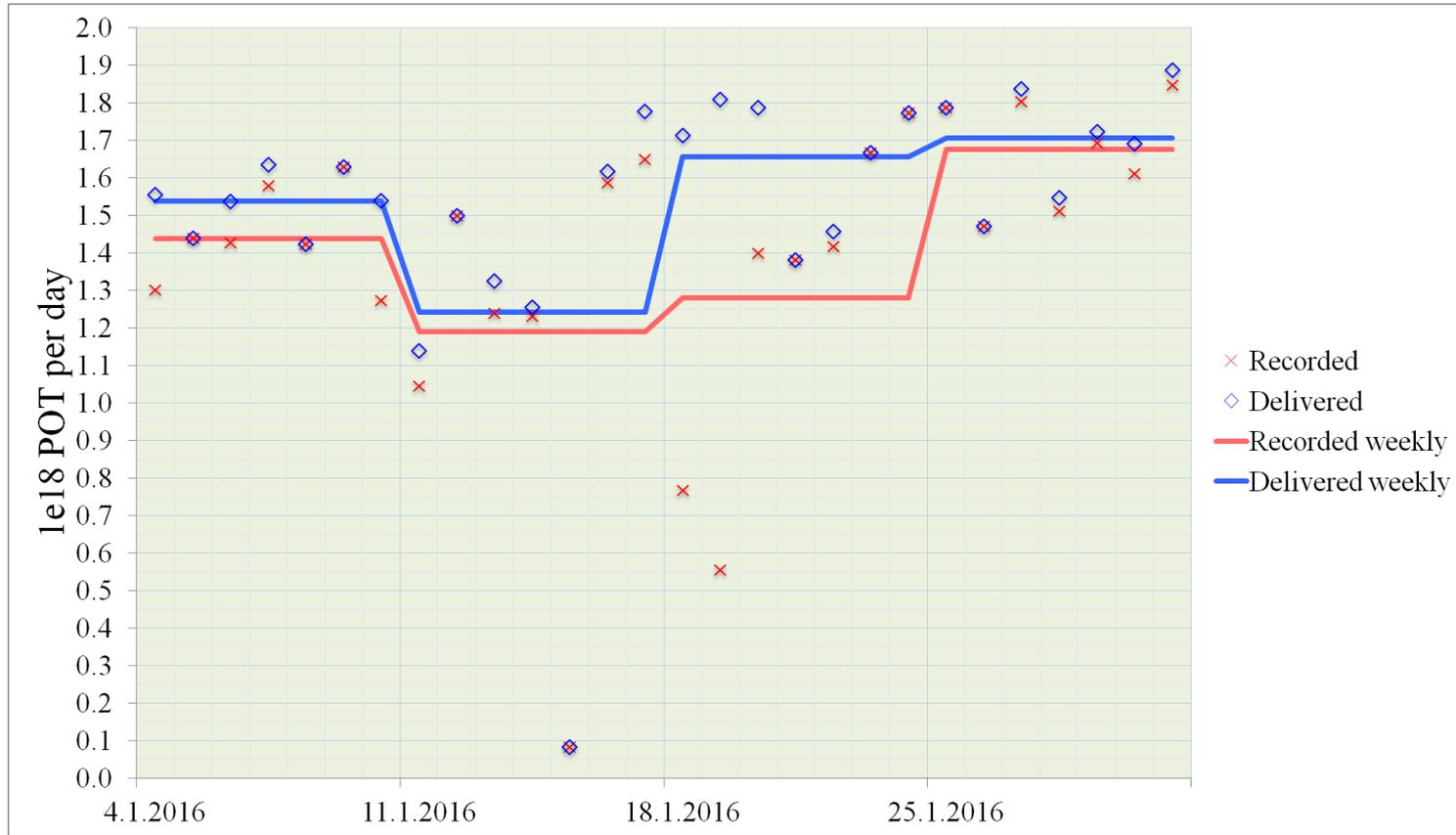
- We have the redundant monitoring system – Timing calibration reference (TCR, web based application) which checks difference between GPS and the detector timing system (TDUs).
- On Tue early morning the shifter reported big timing shift differences seen on the TCR (wrongly pointed to the NearDet).
- Timing slews were persistent even all (3) NearDet TDUs were scrubbed and the GPS clock reset. Even the Far TDU master-03 was scrubbed (not affected data) the issue did not disappeared.
- It happened spontaneously after some time when the Near Detector was recovered.
- The experts think the TCR GPS alignment failed, while our TDUs never varied. Some outside GPS issue was reported.
- The resetting and restarting whole timing system on the NearDet affected functionality of the Spill Server (sending beam triggers). TCR and TDU applications are competitive (when running on same TDU).
- **We are working on the Spill Sever and/or TCR script secure updates not to allow running both on the same TDU (Near TDU-01).**

FD: Data taking Uptime



- We had very good last week – 98.3% uptime, in total only 2h47 hours down.
- A couple of short DAQ down times occurred.
- Due to TCR/TDU issue we missed some (not all) beam spills during a 3 hours period.

FD: POTs delivered/recorded



- Past week efficiency at high 98.2%, (11.73 of 11.95 e18 POTs), this year the week record in both delivered and especially recorded POTs.
- 4 days of the last week with 100% efficiency (speaking in the local time).
- This year statistics suffers from one before last week, when the main DAQ machine was replaced due to its dying disk.

FD: Accumulated POTs – all years



➤ 2013/14: 280/326 e18 POTs (86%) + 2014/15: 298.5/312.5* e18 POTs (95.5%) [253days]

➤ 2015/16: 114.7/123.1 e18 POTs (93.1%) [119 days]

**) Including 20.8e18 POTs horn-off data and 2.6e18 non-nominal horn current data.*