

TCDS - 2016, EYETS, AND 2017

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On behalf of the TCDS team

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- TCDS during 2016
- TCDS during the EYETS
- TCDS plans and intentions (EYETS and beyond)

TCDS DURING 2016

2016 TCDS performance

- Two 'important' downtimes, both related to incorrect manipulation of configurations by non-TCDS-experts.
- Hand-full of software crashes related to two known issues. Neither affected operations.
 - Race condition in application state history. Only exposed by too-fast succession of SOAP commands. Has been fixed in development version.
 - Hardware access fault upon Halting in CPMController BRILDAQ acquisition loop. Will be fixed.
- Two hardware failures. Neither affected operations.
 - Broken NAT power uTCA module. Has been replaced.
 - Broken (unseated?) AMC13 (2017, actually). Has been replaced.

Bottom line: nothing major to report

TCDS DURING THE EYETS

TCDS availability

- TCDS is available unless stated otherwise
- Will use the elog for smaller interventions
- Will use the TTC HyperNews (hn-cms-ttc@cern.ch) for larger interventions
- **Please note:** Scheduling does not always allow heads-up long in advance. Will try to fit in the overall schedule as best as we can.

TCDS PLANS AND INTENTIONS (EYETS AND BEYOND)

Intervention classification

1. Should be transparent for subsystems.
2. Should be mostly transparent for subsystems. (I.e., no disturbances expected apart from the occasional application restart etc.)
3. Will introduce system unavailability.
4. Will require work from subsystems to benefit.

- Cleanup and relabeling of all after-market modifications from 2015/2016. (1)
- Update firmware on various components in our uTCA system (power modules, MCHs, etc.). (2)
- Finish and commission a new FC7 MMC implementation. (3)
 - Based on the CERN-MMC framework.
 - Also important for the (FC7!) pixel FEDs and FECs.
 - Should fix long-standing problems with on-board sensor monitoring.
 - Switch to FAT (instead of custom) file system on the SD card (and abandon custom software).
- Adopt CMS-wide RARP configuration handling. (TCDS installed before central support was commissioned and is still using the 'sudo vi' management approach.) (2)
- Migrate control hosts and software to CC7 and XDAQ14. (3)

- Next step of commissioning the P4-P5 loopback/phase monitoring, including some maintenance etc. on the machine interface crate. (2)
- Finish fibering up the secondary system so software/XaaS commissioning can start. (4)

- Modify state machine model and application behavior to make TCDS (and not just its control applications) behave as a service.
 - Necessary to become ‘full-proof’ (sic) source of timestamp \leftrightarrow lumi section mapping for (a.o.) WBM.
 - Work on control applications and on TCDS FM.
 - Should (apart from bugs introduced) be transparent to subsystems.
- Implement and improve TTS monitoring at the level of individual PI inputs (i.e., FEDs or pseudo-FEDs). Needs significant firmware work. Pending availability of resources.

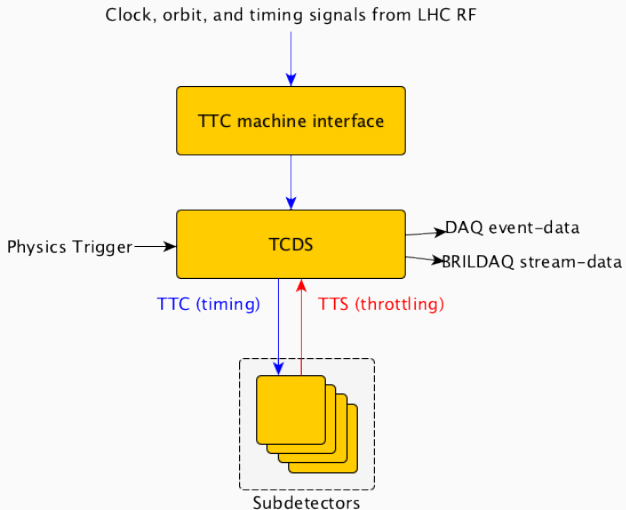
- Integrate new pixel partitions. (Hw done, XaaS in progress.)
 - Replace original FPIX and BPIX partitions by FPIXP/M and BPIXP/M partitions.
 - Retire PIXPILOT partition.
 - Relocate PIXCLEAN partition.
 - Add a new LPM to hold all pixel partitions. (I.e., separate pixel from tracker.)
- Commissioning of pixel ‘private Resync.’
 - Feature foreseen for these cases.
 - FW and SW written but never truly tested/commissioned.
- (Misc. small firmware/software work.)

Note: Firmware and software work done ‘in the context of the pixel upgrade’, but beneficial to all subsystems.

DONE

BACKUP

TCDS LAYOUT - SIMPLIFIED



TCDS LAYOUT - COMPLEXIFIED

