



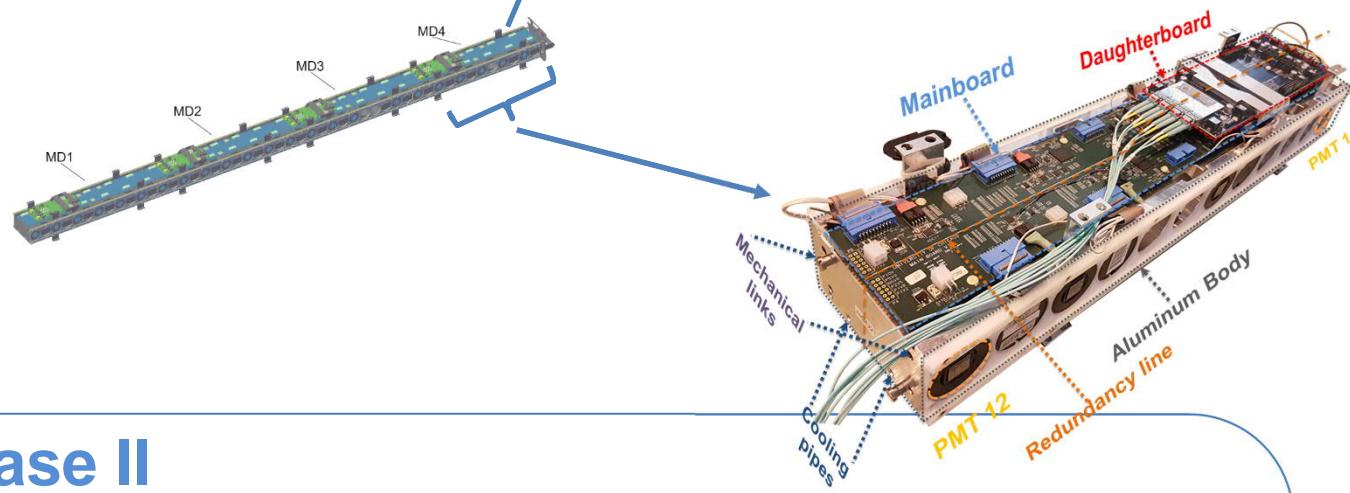
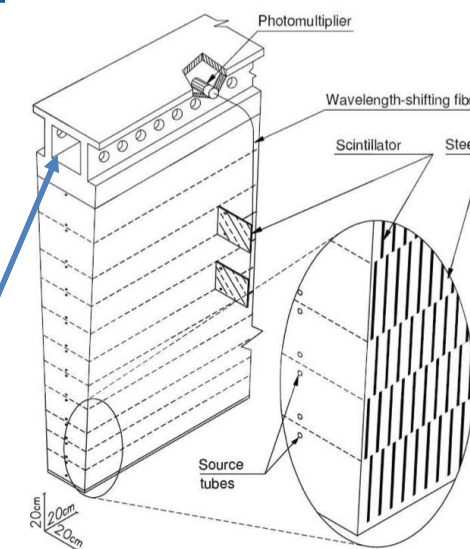
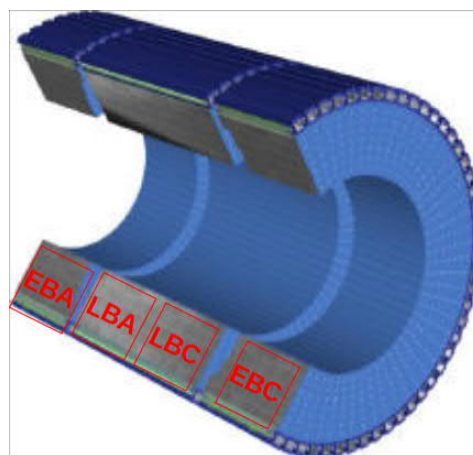
Detector Control System for TileCal Phase II

Filipe Martins, on behalf of TileCal DCS group



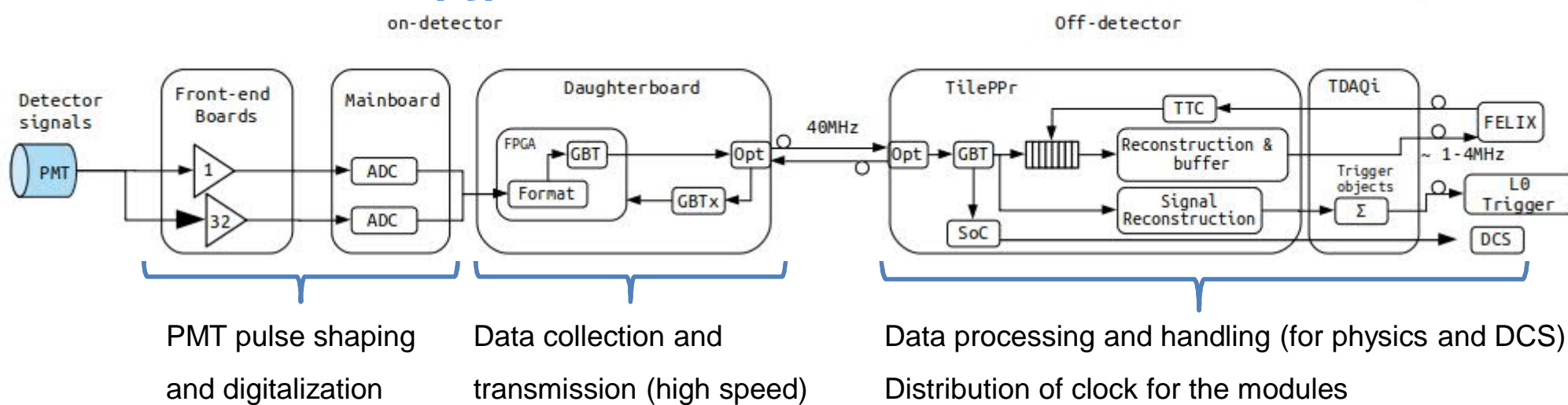
Tile Calorimeter

- Uses steel plates as passive absorber and scintillating tiles as active material read by WLS optical fibers
- 10 000 Photomultiplier tubes (PMTs)
- Composed of 3 cylindrical sections
- Each partition is divided in 64 modules



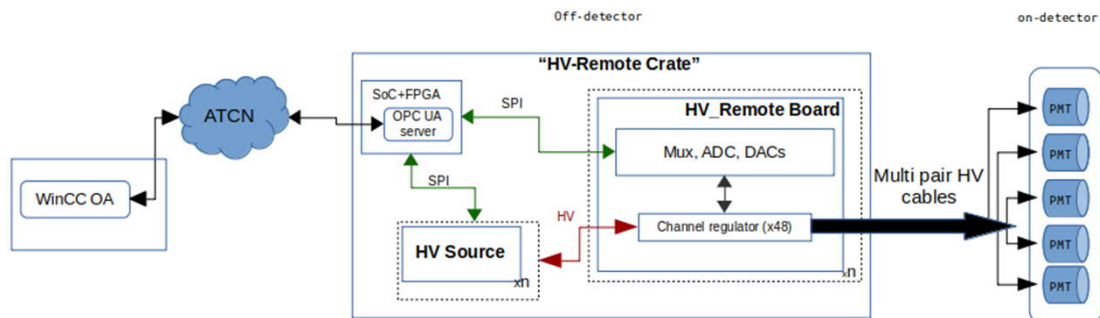
The DCS is responsible for the coherent and safe operation of the detector electronics

TileCal Electronics Upgrade for Phase II



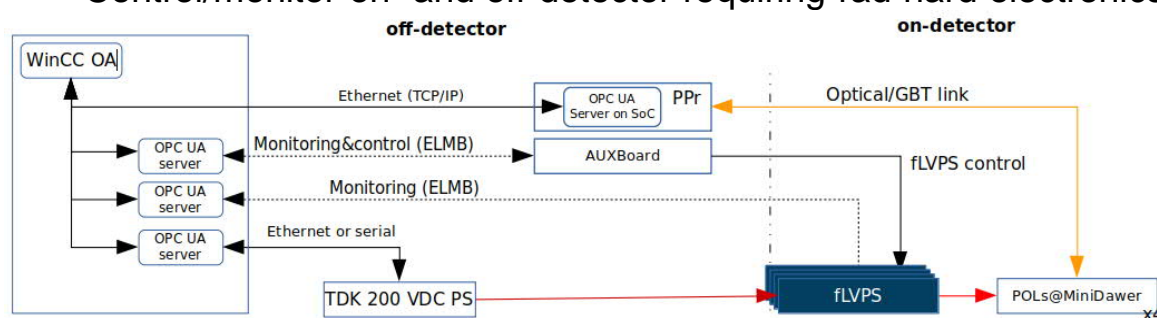
High Voltage System - baseline

- 2-stage system located in the off-detector area
- HV regulation and monitoring individual PMT (~10000 in total)
- Voltage delivered via 100m long cables
- The whole control is located off-detector



Low Voltage System

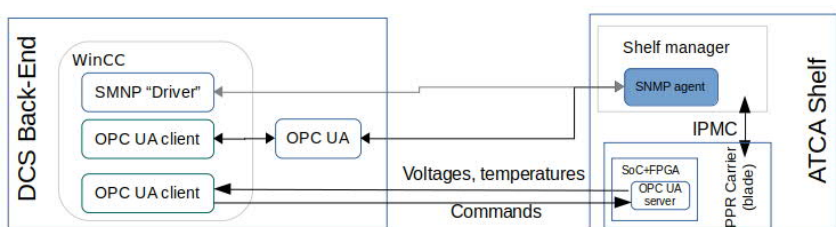
- LV power for the on-detector electronics
- 3-stage system (200VDC , fLVPS and POL regulators)
- Individual control of LV power for each Mini-Drawer
- Control/monitor on- and off-detector requiring rad-hard electronics



TileCal DCS

ATCA shelf and blades

- Housing of the PPr and TDAQi boards
- Monitoring via shelf manager for shelf health
- Embedded OPC UA for ATCA blade monitoring and on-detector monitoring



Other TileCal systems

- Cooling system
- Laser calibration system
- Cs¹³⁷ calibration system

DCS back-end

- SCADA distributed system
- Data handling (alarms, archive)
- Automation of procedures
- Notifications services (SMS, emails)

