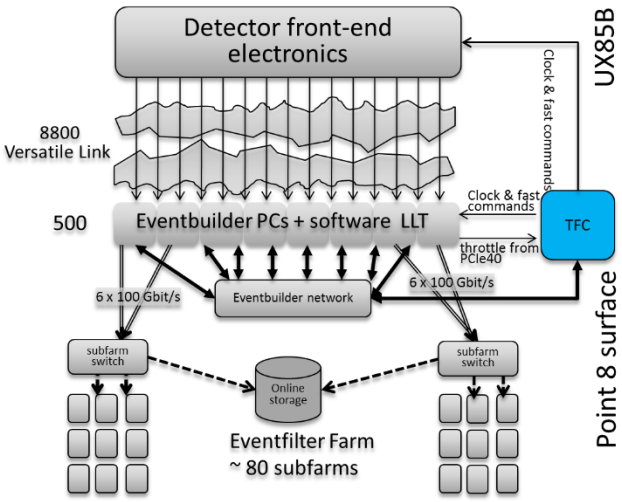
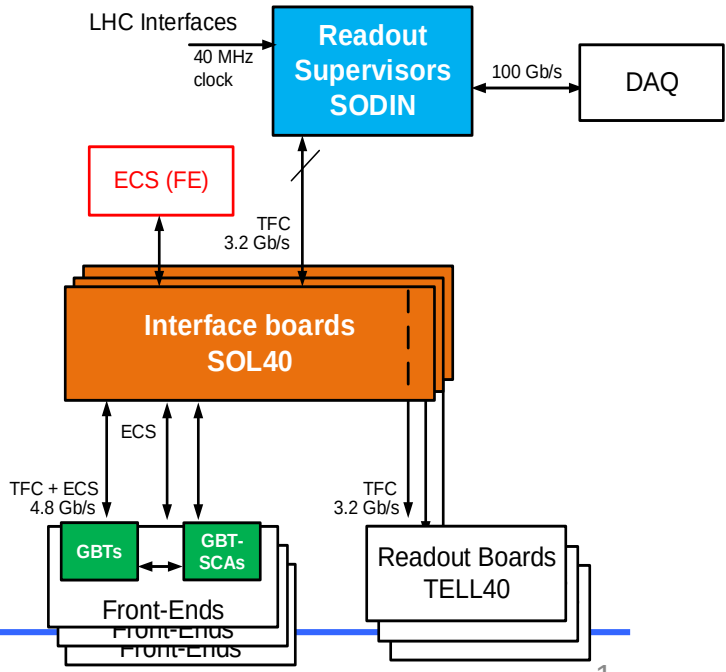
The Readout Supervisor firmware for controlling the upgraded LHCb detector and readout system



Complex upgrade of the LHCb detector in 2019-2020

- replace all Front-End and Back-End electronics
- replace >90% of the detector channels
- trigger-less data taking at full LHC frequency
- run at x10 more instantaneous luminosity for the next 10 years
- ~40 Tbps data acquisition system

→ The upgraded LHCb readout system will be centrally controlled by a single Readout Supervisor



Centralized supervision in a single VHDL firmware:

- · coverage of all specifications
- · generic code
- · high level of programmability
- · real-time monitoring and control
- · fixed latency with respect to the passage of the beam
- · generation of an event description (data bank) for each "*non-rejected*" event

Come to see the poster if you are interested in knowing how this has been done!