TPC calibration – infrastructure

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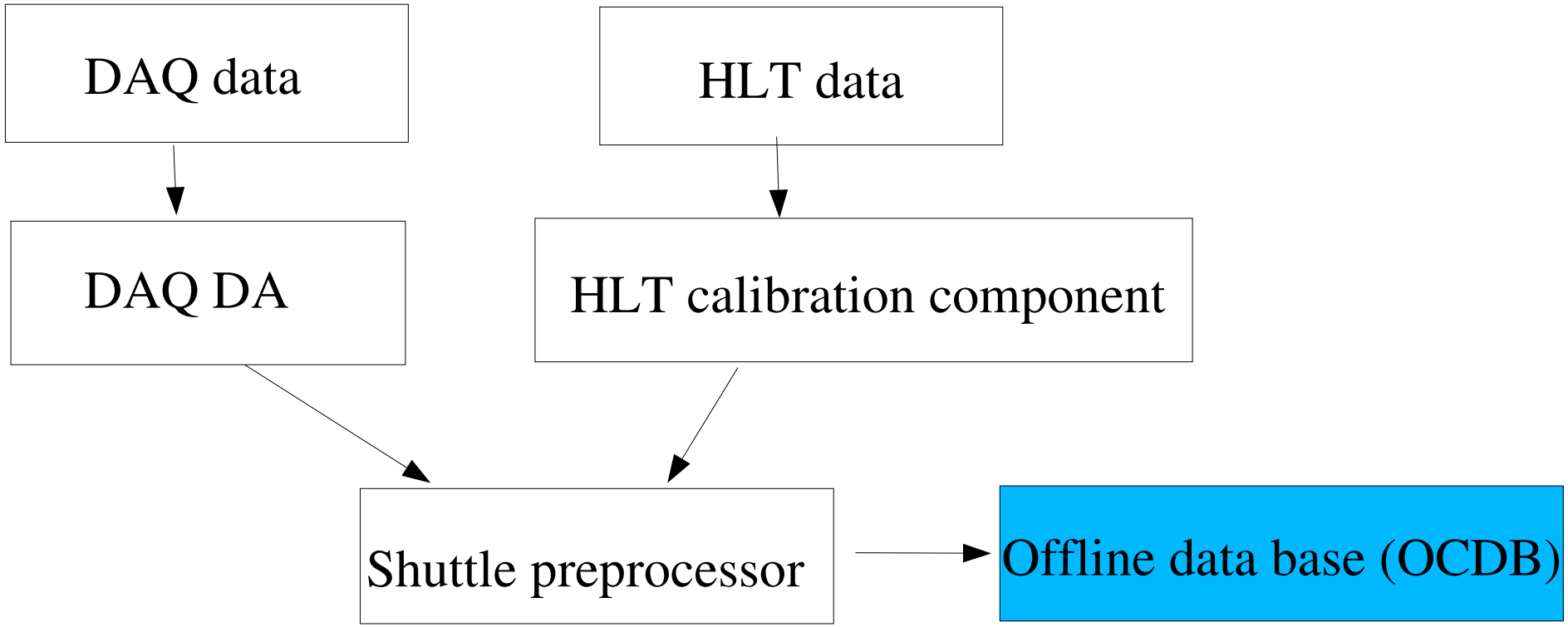
Calibration infrastructure



Calibration algorithms

- Calibration algorithms carried out by calibration classes
  - (written by Jens Wiechula, Marian Ivanov and others at GSI)
- DA -> Generate calibration data
- Preprocessor -> store calibration data in OCDB object
- Algorithms handled this far:
  - Pedestals – AliTPCCalibPedestal
  - Pulser data – AliTPCCalibPulser

Calibration algorithms

- Pedestals/noise obtained from special runs
  - PEDESTAL_RUN, need to define identifier for DAQ DA
- Similar approach for pulser calibration
  - PULSER_RUN, to be taken in connection to PEDESTAL_RUN
- Laser triggers to be taken during physics runs
  - Need to define LASER_EVENT

DAQ DA

- TPCPEDESTALda.cxx
  - example put together by Sylvain Chapeland
- TPCPULSERda.cxx
  - similar processing of PULSER_RUNs
- TPCCEda.cxx
  - need to select laser events
    - `eventTypeType eventT;`
    - `...`
    - `if ( eventT == LASER_EVENT ) ..`
  - who defines LASER_EVENT string??

HLT calibration components

- Use standard TPC calibration classes
- Pedestal calibration component implemented and tested
- Other calibration components to be done – PULSER soon!

TPC Shuttle Preprocessor

- Pedestal/noise entries included in Shuttle simulations
  - Pedestals: TPC/Calib/Pedestal, Noise: TPC/Calib/PadNoise
- Pulser data to be grouped into one OCDB entry:
  - TPC/Calib/Pulser -> containing TObjArray
  - components: PulserTmean, PulserTrms, PulserQmean
- Pulser + Central Electrode preprocessor code written
- Central Electrode OCDB entry also grouped -TPC/Calib/CE

Pulser simulations

- Current Shuttle tests based on AliRoot simulations
  - “Standard” pedestal entry submitted (based on 2006 Commissioning data)
  - No change from one run to another
- Similar approach for Pulser data
  - being set up for the moment

Laser Calibration Issue

- How to decide if “enough” laser events are recorded?
- If not – what to do?
  - keep calibration from last run?
  - keep data to merge calibration with next run?
  - or forget these data and start new calibration?
- How to signal non-sufficient data?
  - should probably produce “invalid” file in DA

Conclusions

- Calibration class/DA/Preprocesseor/OCDB setup being implemented (according to Alice standards)
- Need definition of DAQ identifiers (event types etc.)
- Use fixed set of experimental input data for Shuttle simulations
- How to identify bad calibrations – and how to proceed?