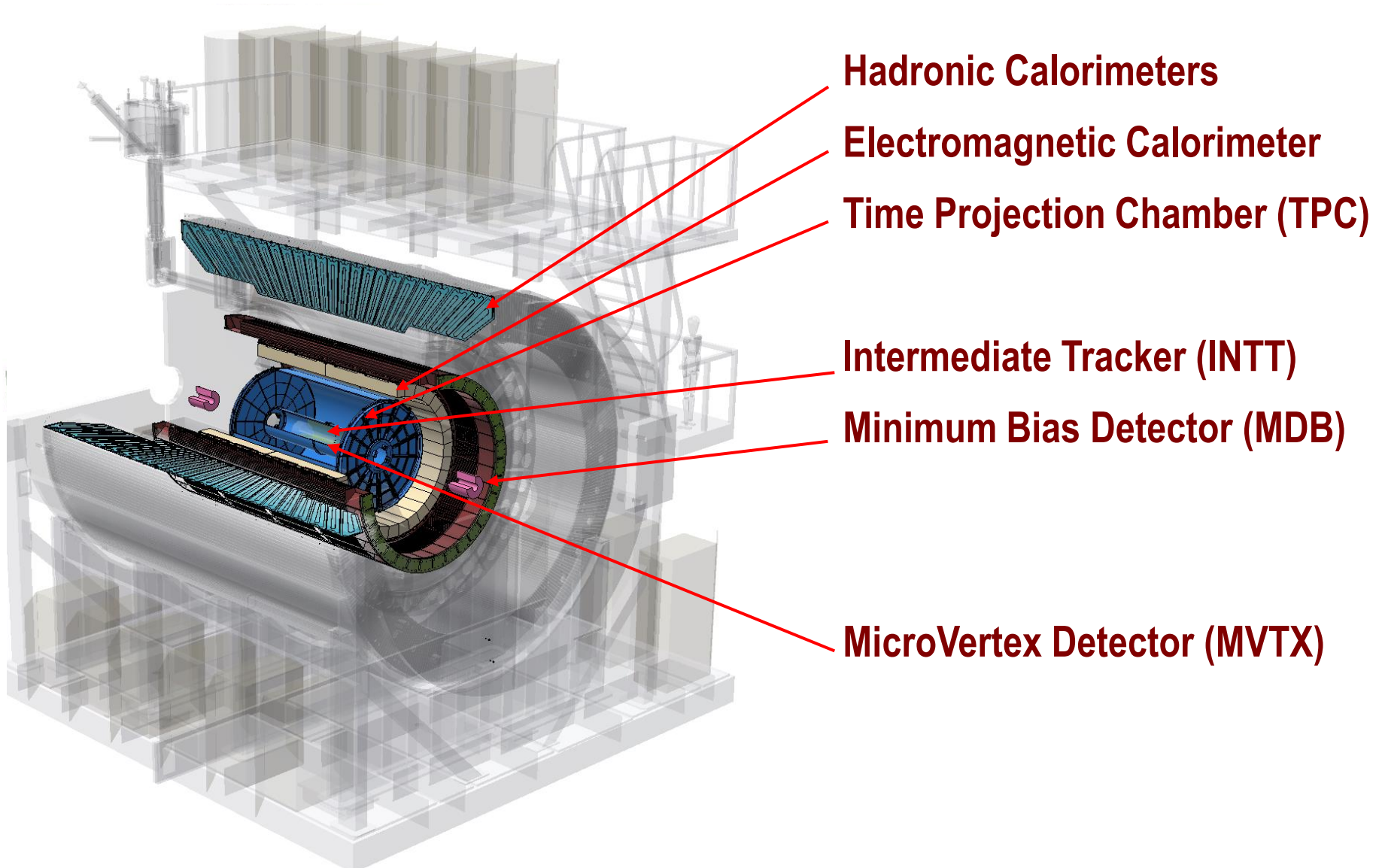
sPHENIX Conditions DB Thoughts



Standard Collider Detector

Prelude – Data rates

- 15kHz daq rate, but transfers to rcf are averaged
- Processing time budget ~25sec/evt, 3 passes (8sec/evt average)
- Job length 24hours give or take
- 10000 evts in 24 h (8secs/evt)
  - **Each job processes less than 1sec worth of data**
  - **Steady state 3 commits/sec, 3 reads/sec**
- Events are time ordered (no asynchronous event builder which scrambles the order) and each pass will process the same events
  - Tpc distortion correction from first pass will cover exactly the events from the second pass
  - But there is more to the distortion correction extraction
    - Laser illuminating Al strip pattern on central membrane
    - Digital currents

Easy Calibrations

- We give ourselves two weeks to create the needed initial calibrations
  - Calorimeter Tower by tower
  - Alignment
  - …
- Calorimeters
  - SiPM gain is temperature sensitive, not as stable as PMTs
    - But a 100ton calorimeter does not change temperature rapidly
    - Given that we cover 1s worth of data per job the timescale of change is largely irrelevant

Distortion calibrations

- ALICE uses 25ms granularity, might go to 10ms. We need to be able to handle this
  - The distortions depend on the history of events, no close relation between neighboring distortion corrections (but there is also a static component)
- Since events from 1st pass are identical to 2nd pass, 25ms (or shorter) calibrations can be aggregated before committing to conditions DB, effectively creating one calibration.
  - But 22weeks = 13,3M secs → 13,3M calibrations per yer