

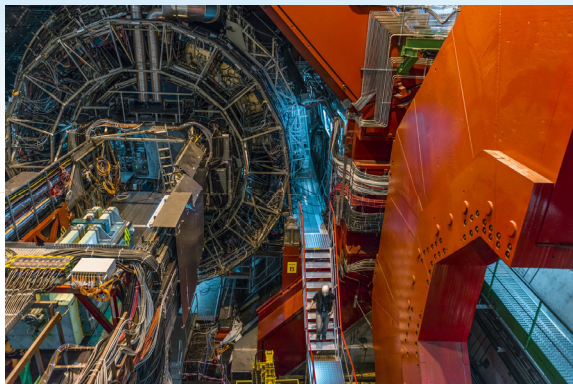
# CHALLENGES OF THE ALICE DETECTOR CONTROL SYSTEM FOR THE LHC RUN3

P.Chochula, A.Augustinus, P.M.Bond, A.Kurepin, J.L.Lang,  
M.A.Lechman, O.Pinazza

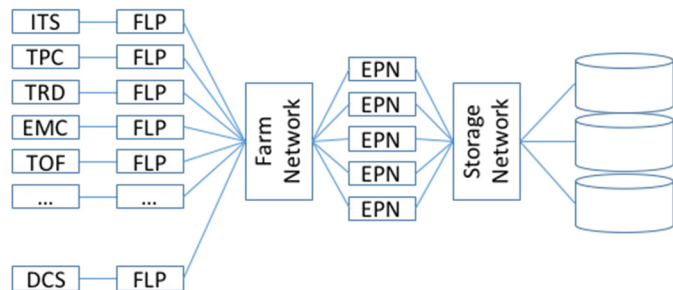
CERN

TUMPL09

# ALICE Upgrade for LHC RUN3

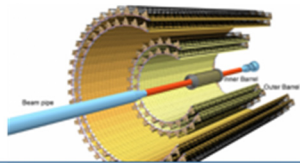


- LHC RUN3 brings by factor of 100 more heavy ion collision rates
- New detectors, readout and trigger installed in ALICE
- Combined Online-Offline computing system (O2):
  - 3.4TB/s data rate
  - 9000 optical data links controlled by 270 First Level Processing servers (FLP)
  - Farm of 1500 Event Processing nodes (EPN) reconstructs the events
  - 60 PB local storage

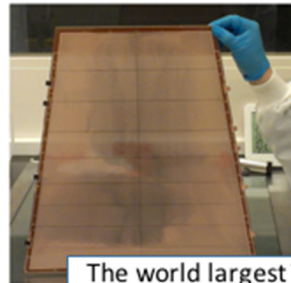


# New Detector Front-end Electronics Access

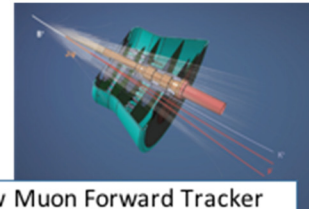
- New detectors and readout electronics will be installed in ALICE
- DCS information will be transferred over 9000 optical links shared between the DCS, trigger and DAQ
- A new schema for accessing the electronics has been developed



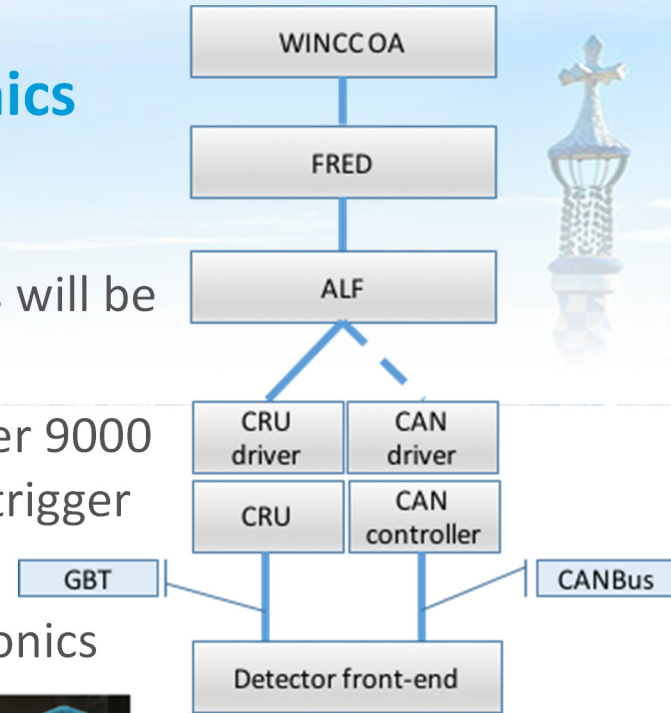
New inner tracker covers 10m<sup>2</sup> area and contains 12.5 Gpixels



The world largest TPC receives a new GEM readout



New Muon Forward Tracker based on ALPIDE chips



# Conditions Data

- 100 000 DCS conditions parameters provided to O2
  - Combined with the information from all FLPs to create one data block containing detector data
    - Covers 50 ms of data taking
    - not compatible with traditional DCS refresh rate
- Data buffering and streaming mechanism developed

