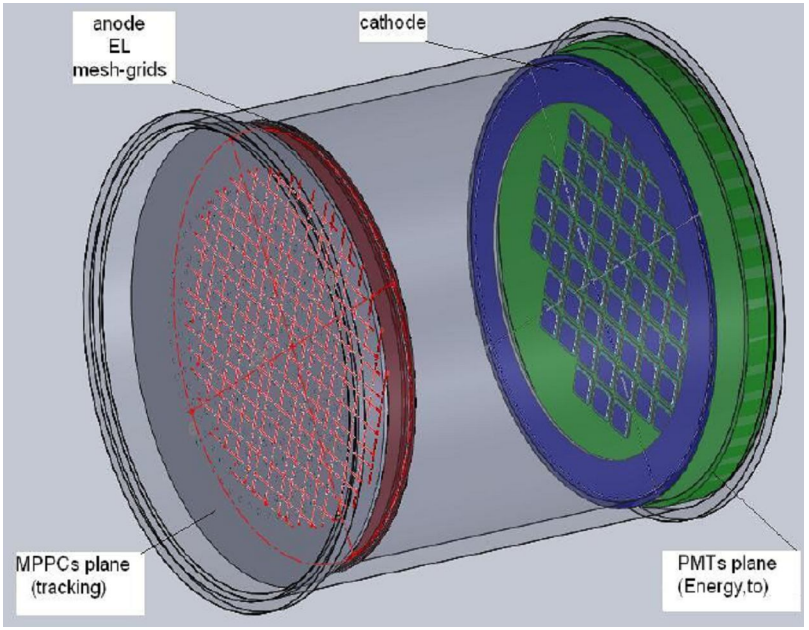
DATE status for the next experiment

L. Serra on behalf of the NEXT collaboration

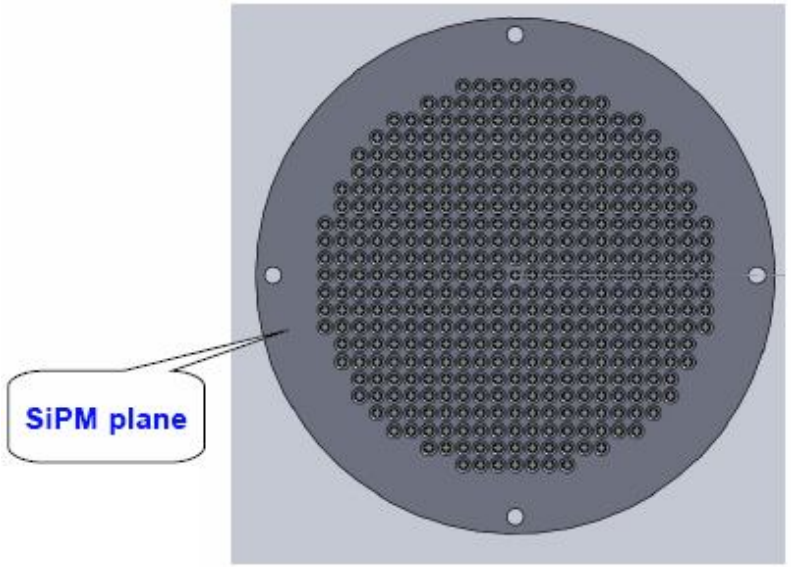
Quick overview of NEXT experiment

- **Search for the ββ0ν decay**
- **First measurement of ββ2ν in ^{136}Xe**
- **High pressure Xe gas TPC**
  - 100 Kg of enriched Xe gas
  - SOFT TPC concept
  - EL TPC
  - Good energy resolution ~ 1%
  - Full 3D tracking



Separated-Optimized for Tracking

- **Readout plane optimized for tracking**
  - Topology of the events
  - High background rejection
  - SiPM, MM, APDs



- **Readout plane for t_0 and Energy measurements**
  - PMT plane behind the cathode

- **Experiment to be placed at LSC (Canfranc Underground Laboratory)**

DATE for the NEXT experiment

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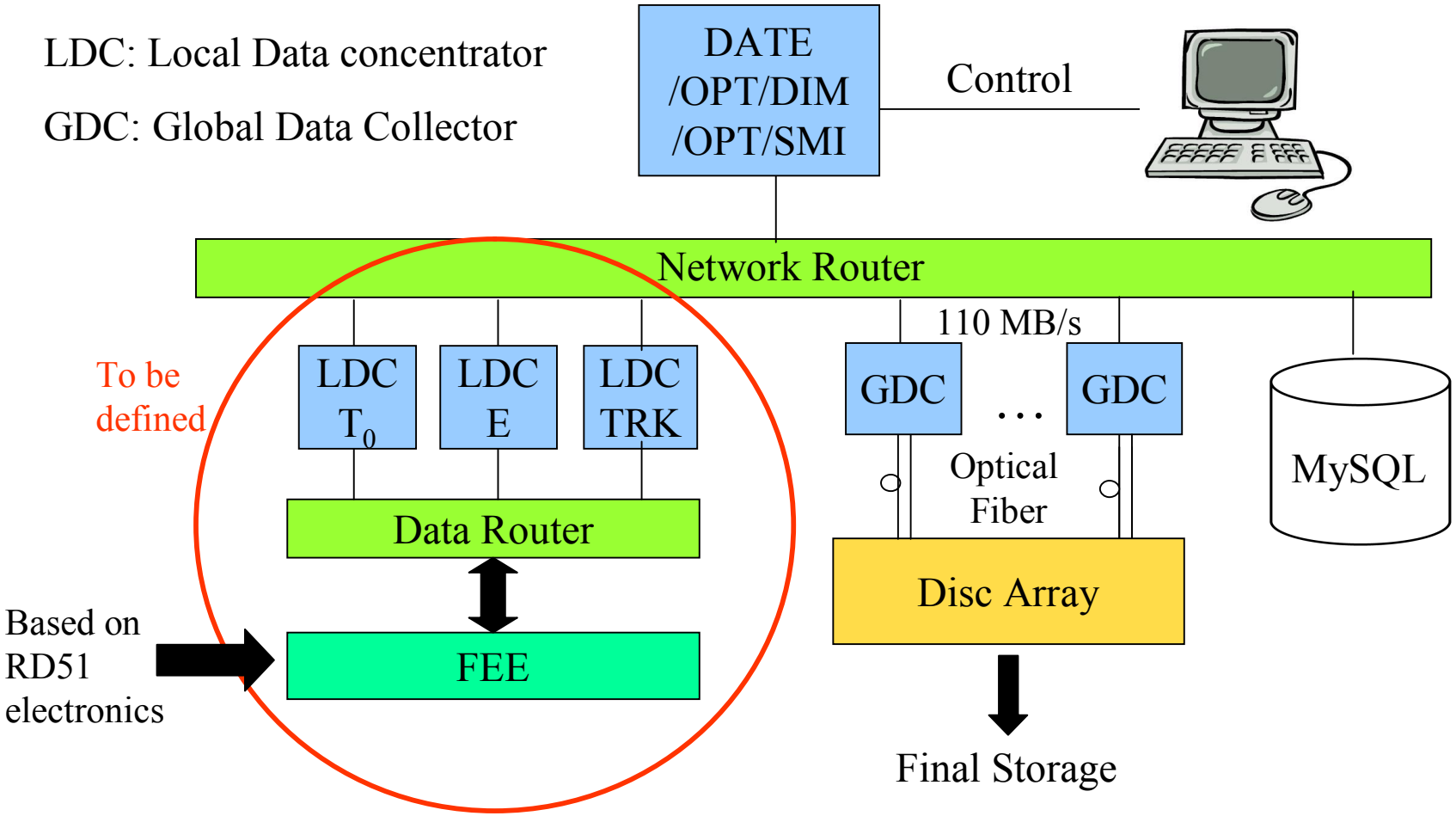
First scheme of NEXT online system

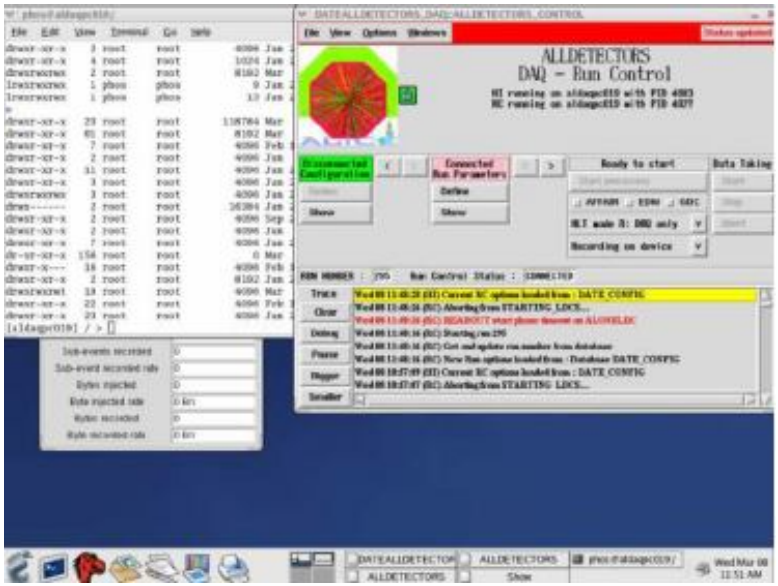
LDC: Local Data concentrator

GDC: Global Data Collector



First scheme of NEXT online system

- **DAQ system using ALICE DATE software**
- **First release of the software ready to be installed in one machine in Spain**
  - Setup running at CERN using first prototype of RD51 readout board with a throughput around 120 MB/s (using 1Gbit link)
- **DAQ system of first prototype of NEXT experiment will include all DATE features in the same machine**



First scheme of NEXT online system

Unknown parameters about NEXT experiment DAQ:

- **Data throughput**
- **Size of the packets**
  - 1500 bytes
  - 9000 bytes
  - More?
- **Number of LDCs**
- **Number of GDCs**

Features of DATE software:

- **Scalability**
- **Stability**
- **Support Gigabit Ethernet**
- **Slow control work in progress with GBE**
  - Preliminary tests working

Conclusion

- NEXT DAQ will use ALICE DATE software
- Responsible to Install and maintain DATE software at IFIC, Valencia.
- First configuration working and ready to be installed in one machine
- Some tests of slow control over GBE with DATE going on at the moment
- Scheme of DAQ system for NEXT experiment being discussed
- Scalability of DATE let us work at the moment without defining the final features of the NEXT experiment
- DATE link: http://ph-dep-aid.web.cern.ch/ph-dep-aid/

THANK YOU!