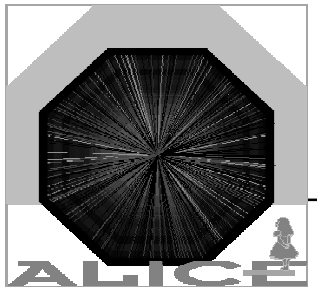
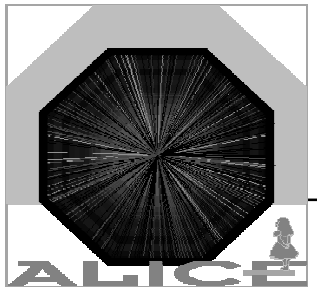


ALICE DAQ architecture

- Main requirements agreed upon and architectural model defined
- System decomposed into independent components with clear interfaces
- Components are functional building blocks (hardware or software)
- No final technology choices done now

- BUT: the architecture cannot be static and cannot be paperware only

- Requirements and needs are evolving
  - More refined ideas on the physics
  - New detectors added
- Technology is evolving even faster
- Architecture must be verified very early and refined continuously

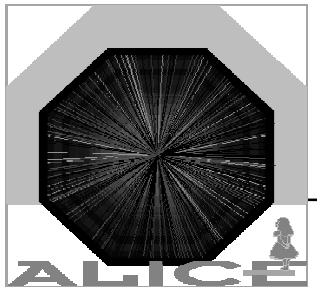


ALICE DAQ community

- Get the people involved and informed
  - Critical hardware and software interfaces defined with the detectors groups
  - Show the progress on paper and by prototyping
  - Get the feed-back from the collaboration

- The collaboration has also important needs today
  - Interface and test other subsystems
    (front-end electronics to Trigger or DAQ e.g.)
  - Test beams or current fixed target experiments

- Start the integration as soon as possible

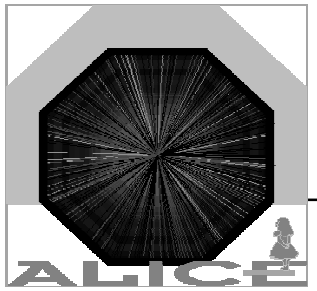


ALICE DAQ prototyping

- Components prototypes done or being done of each component
  - Detector Data Link (DDL) and Readout Receiver Card (RORC)
  - DATE (Data Acquisition and Test Environment)
  - Frameworks for DATE readout and monitoring programs
  - Online monitoring using ROOT
  - EBDS (Event Building and Distribution System)
  - Mass storage systems: HPSS, Castor, Eurostore,

- Components prototypes and technologies exposed to real applications
  - DDL and RORC used for TPC test beam
  - DATE used for most ALICE test beams, NA57 (ALICE ITS), NA58 (Compass)
  - HPSS used to store the raw data

- System prototyped by integration of components prototypes
  - In the lab and then dedicated simulated runs (ALICE Data Challenges)



Conclusions

- Good architecture is essential but it is not enough
- Current and future deliverables and milestones are very important as well
- Candidate technologies and components must be stress-tested on the field (links, memories, CPUs, OS, switching networks etc.)

- Most of the components have a working prototype now
- Used for DAQ developments and for detectors groups tests
- Feedback from the collaboration
- Establish reference points for future comparison

- Refine the architecture design and the components implementation by an iterative process