# The new ALICE DQM client:
a web access to ROOT-based objects

ALICE

ALICE (A Large Ion Collider Experiment) is the LHC experiment dedicated to the study of heavy-ion collisions at CERN. It focuses on the study of the quark-gluon plasma, but it is also able to measure proton-proton interactions. The experiment consists of several detectors and is designed to cope with very high particle multiplicities.
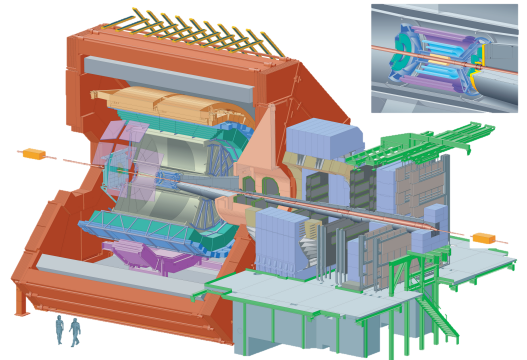
*The ALICE detector*

Data Quality Monitoring (DQM)

- Online feedback to ensure that only high quality data is taken and recorded → use the data taking time and the bandwidth in an optimal way and identify and solve problems early
- AMORE
  - C++ framework for DQM in ALICE
  - Online generation of monitoring objects (= ROOT objects), quality assessment, live display, storage in DB for later reference

DQM Web Client

- Offer a worldwide access to monitoring results (ROOT objects)
- Allow interactions such as zooming or changing the drawing options
- Use JSRootIO and THttpServer to display and manipulate ROOT objects
- Uses existing AMORE REST API to retrieve other information (e.g. available agents and objects or display layouts)

Software quality assurance

- Continuous integration with Jenkins
- Static code analysis with
  - PHP Mess Detector
  - RIPS (PHP)
  - JSHint (Javascript)
- Functional tests with Selenium
- Performance evaluation with Firebug and YSlow
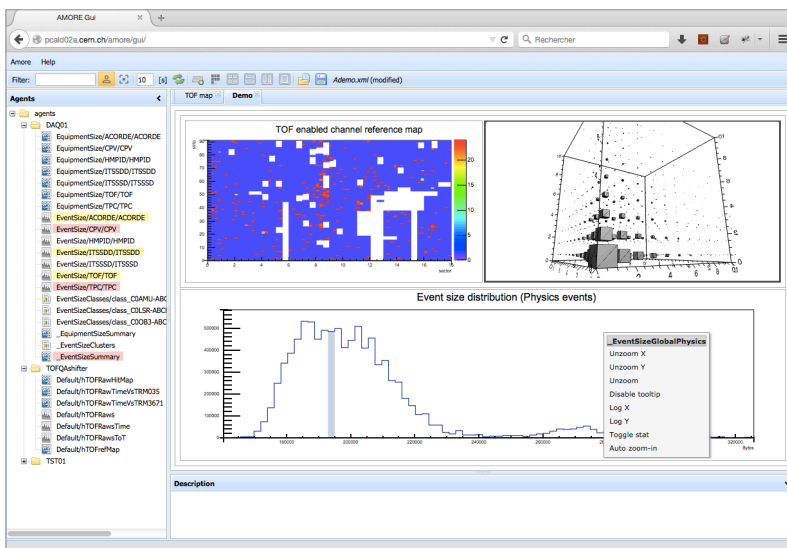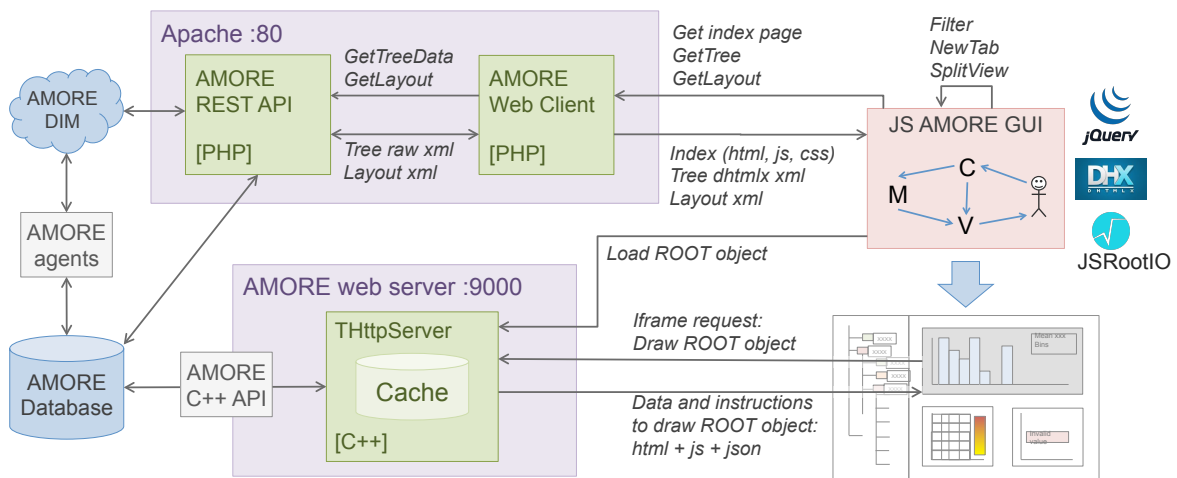
Future work

- FastCGI
  - All connections go through Apache, single entry point for authentication and authorization, cross-domain AJAX is avoided
- Deployment in production
- Stop using iframes, use directly the ROOT js library
- Allow more complex commands on ROOT objects
- Add a simple command line

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