

A control room with multiple computer monitors displaying data and charts. The room is dimly lit, with the primary light source being the screens. The monitors are arranged in two rows. The top row has three large monitors, and the bottom row has several smaller monitors. The text is overlaid in the center of the image.

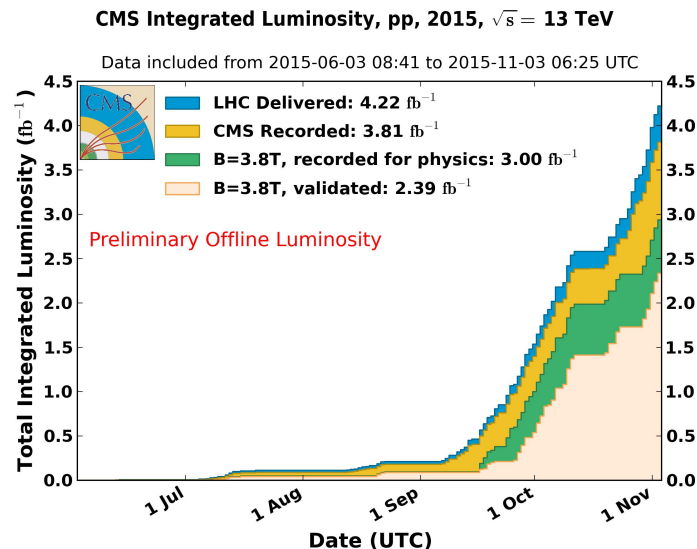
CMS Data Certification Tool

# Run Registry

Faculty of Mathematics and Informatics  
Vilnius University

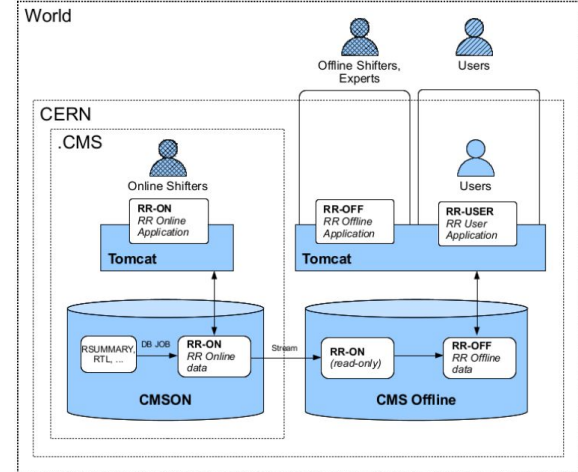
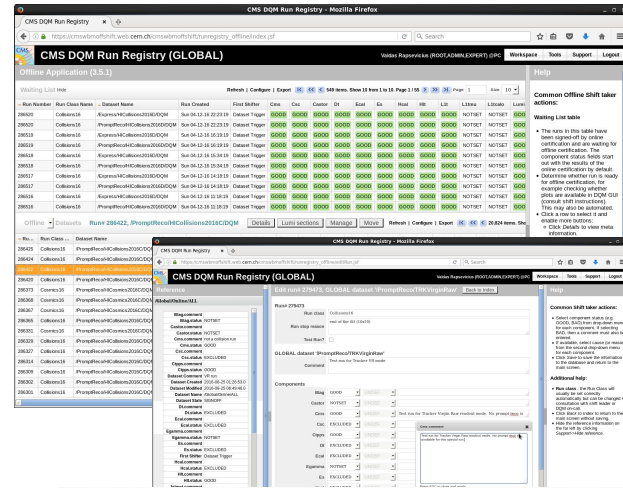
# CMS Data Certification

- Physics Performance and Dataset (PPD) project
  - Data Quality Monitoring Data Certification (DQM-DC) group
- Online DQM
- Offline DQM
  - Express stream (~1h latency)
  - Prompt reco (~48h latency)
  - Reprocessing (\*)
- Levels
  - DPG - status and behavior of each subsystem up to the local reconstruction
  - POG - quality of the reconstructed physics objects (muons, jets, electrons,...)
  - PAG - higher level quantities, correlation between different physics
- Types
  - Automatic (algorithmic) certification
  - Manual certification by shifters

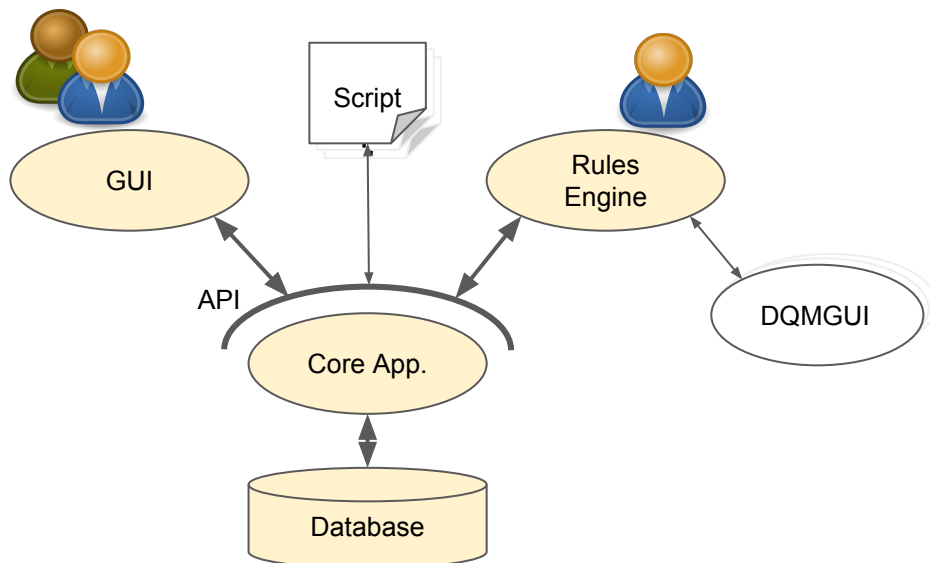


# CMS DQM Run Registry

- Since 2008, current version 3.5.1
- Main CMS Manual Data Certification tool
  - Certification data bookkeeping and workflow management
- Application Suite
  - Online - immediate online dataset certification on site
  - Offline - full statistics different datasets certification
  - User - versioned de-normalized data for querying and analysis
- Used by
  - DQM-DC team (Experts)
  - Online DQM Shifters on site (Shifters)
  - Offline Shifters worldwide (detector Shifters and Experts)



# Upgrade Motivation



- Refine workflow
- Improve Performance
  - Data workflow
  - GUI
- Modularity
  - Core Functionality
  - Generic Rules Engine
  - GUI
- Maintainability
- Refactor Database
  - Optimize Queries
  - Improve Caching
- Dropping not used features
  - Online workspaces
  - Automation features
- API flexibility and stability



# The Roadmap

- 2017 Q1-Q2
  - Requirements
  - High-Level Design
  - Planning
- 2017 Q3-Q4
  - Architecture & Design
  - Planning
  - Resources
- 2018
  - Development
- LS2
  - Deployment and Transition
- Run3
  - Production