

# DQM

**Progress since 02/08  
and Plans**

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Compact Muon Solenoid

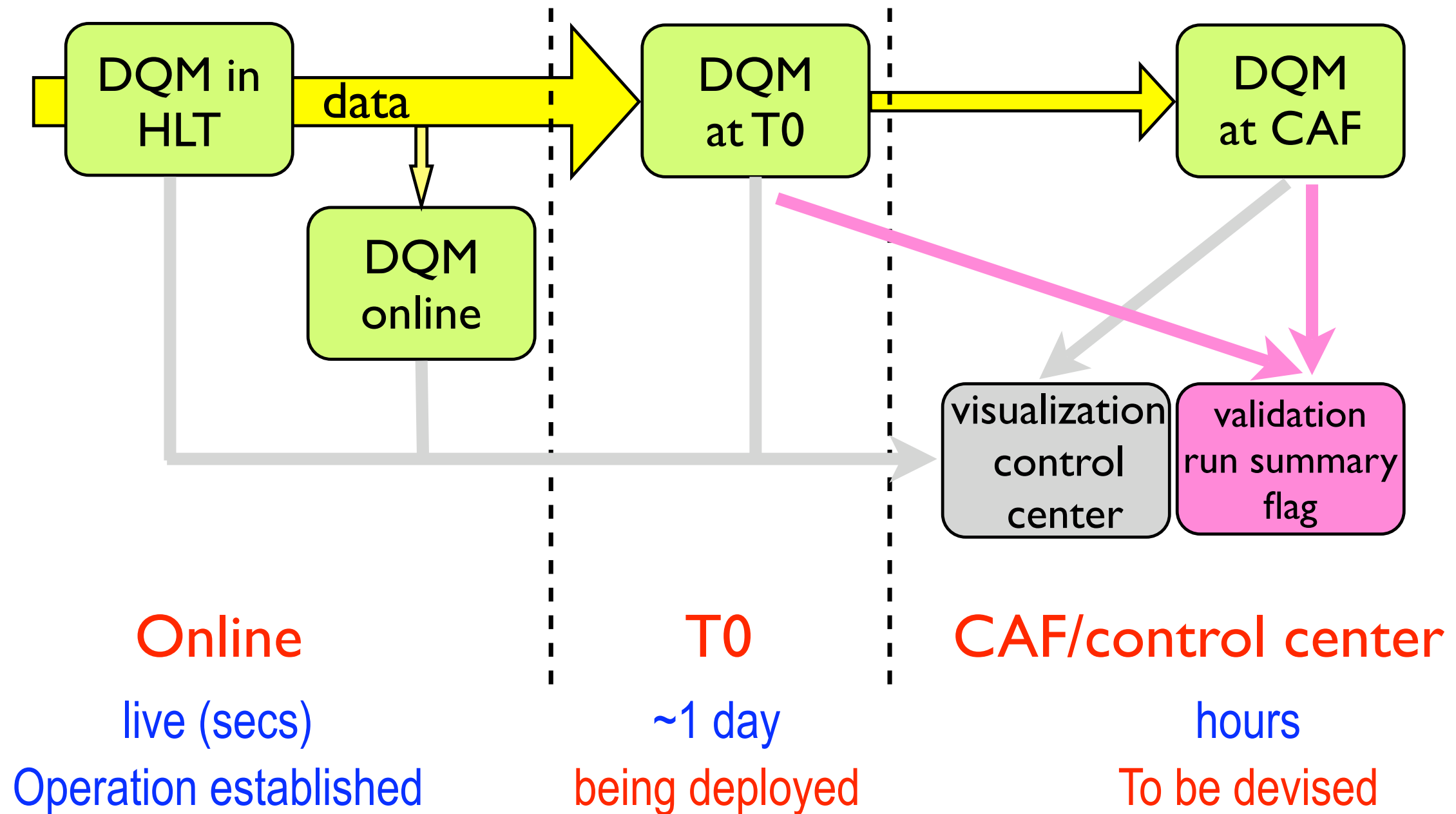
# DQM Central Operation



Detector & Operation Efficiency



Physics Data Certification



DQM project scope has been extended to include Tier-0 and CAF (Tier-1/2 soon to come)  
responsibility for end-to-end chain (monitoring to certification)

# DQM Visualization

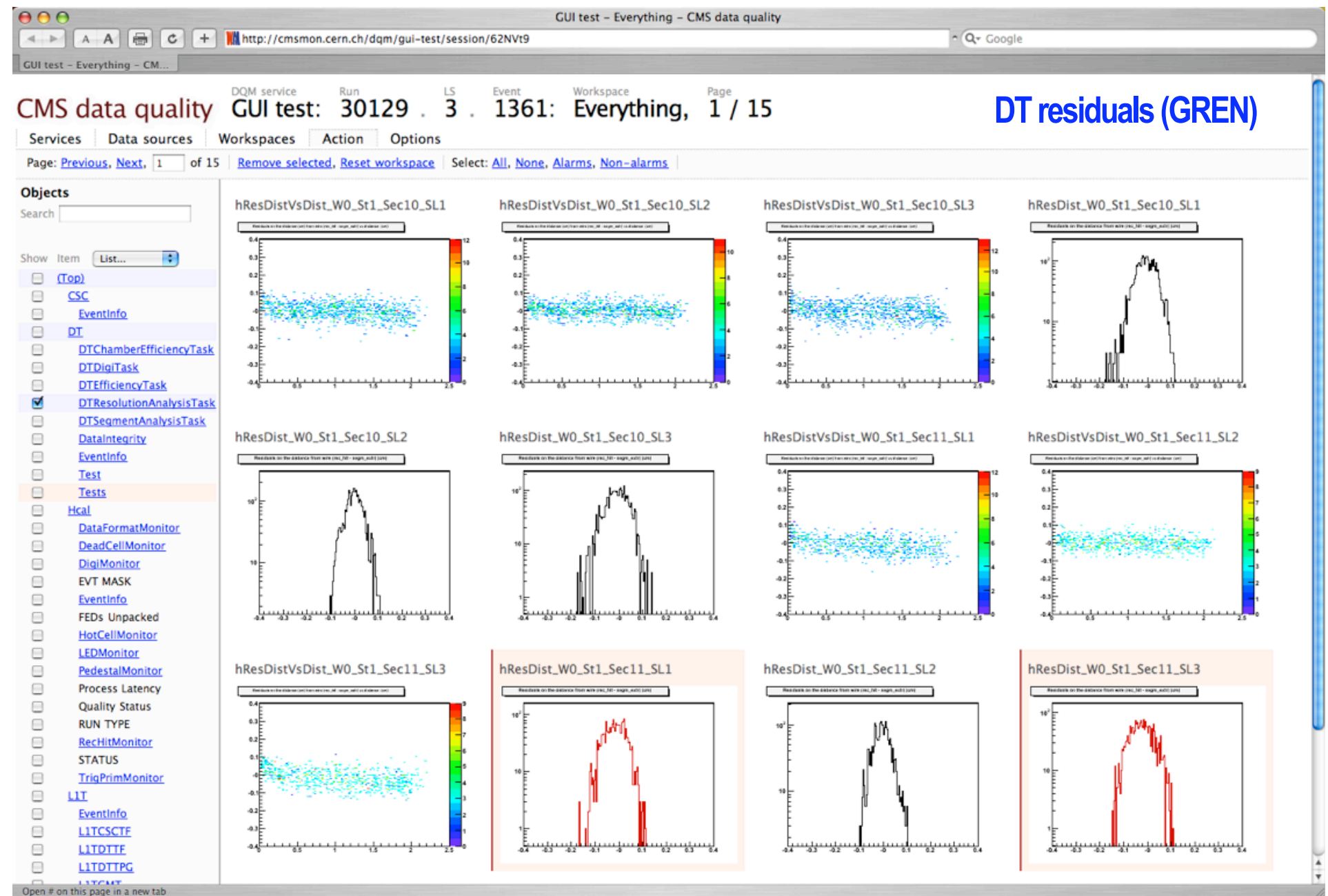
<http://cmsmon.cern.ch/dqm/online> live

<http://cmsmon.cern.ch/dqm/online-playback> playback



Lassi Tuura

- Web-based service
- no specific S/W installation on user side
- accessible from
  - P5, CERN
  - Remote
- access to histograms
  - Online (live)
  - Online (file-archive)
  - Offline Tier-0 (file-archive)
  - Offline CAF, Tier-X, ...



CMS web server based DQM GUI

presently being upgraded for access to histogram file archive (P5, Tier-0, CAF)

# DQM Status and Plan



- Progress since February:

- New upgraded code base (migration completed)
- Basic DQM framework functionality in place
- Online operation: Baseline system working
- Offline operation: Tier-0 web server set up

- Present Focus:

- Developing and deploying software for
  - histogram file transport at
    - Tier-0: Functionality and production testing
    - CAF: Define conventions, implement workflows
  - histogram file archival, retrieval and visualization
- Integrating online DQM applications in RunControl
- Implementing detector status and error summary views
- Improving DQM code for Qualitytests and Alarm generation
- Testing manual version of Data Certification procedure

- Near Future Plans

- Consolidation and operation of production systems (full automation, scaling and robustness)
- Development of full set of planned GUI navigation features: e.g. annotations, reference histograms, trends and history displays
- GUI support for DAQ monitoring and DB browsing

GRUMM

CR0T

Cosmic Run  
CRAFT

Feb
Mar
Apr
May
Jun
Jul

New DQM core code

Offline DQM @ Tier0  
Proof of Principle

S/w Release 2\_0

CSA08 (iCSA08)

S/w Release 2\_1  
Offline DQM @ Tier0  
Production

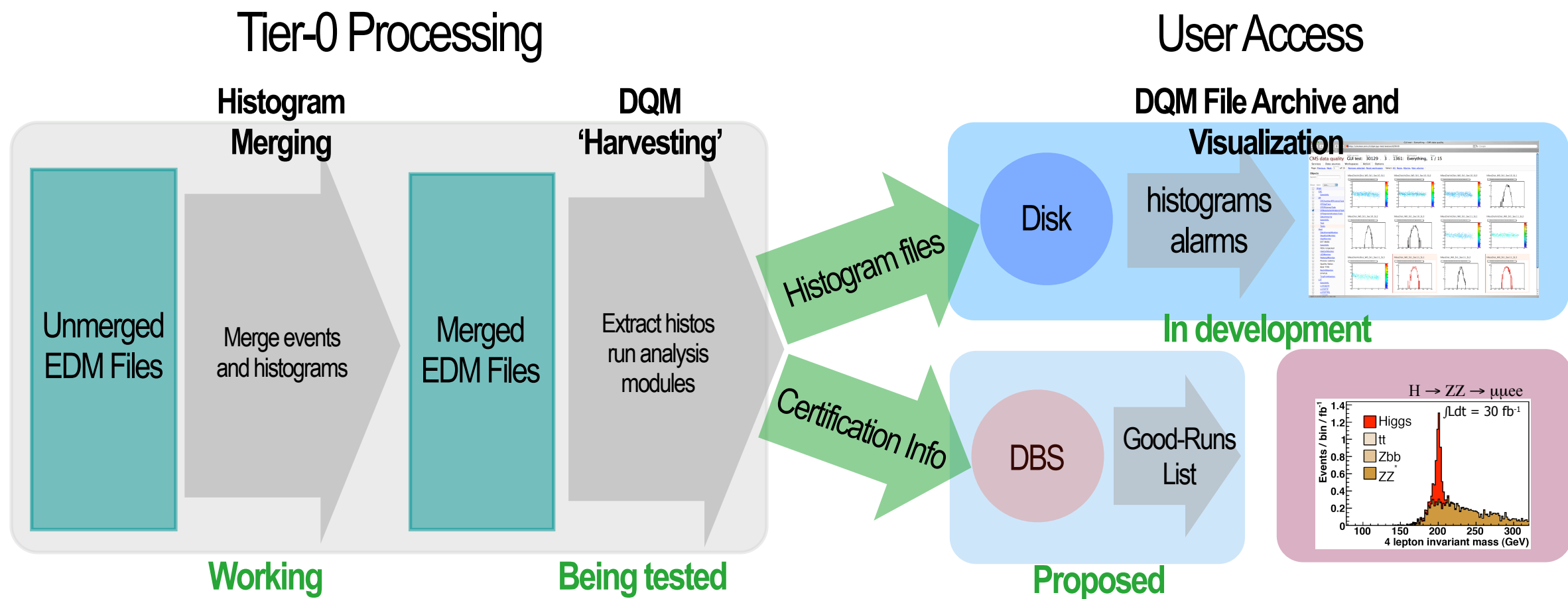
fCSA08 or Beam

# DQM @ Tier-0

## Validation / Physics Data Certification



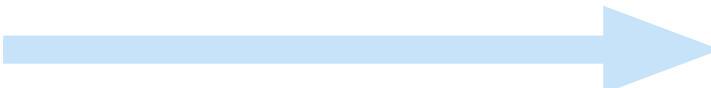
- DQM core software components in place
- Workflows being tested in context of CR0T and CSA08
- DQM GUI web server being developed
- Data Certification (input to Good-Runs-Lists) will be done during 'Harvesting'  
DBS schema agreed, work on certification algorithms to be started



Goals for CR0T and CSA08: Proof of concept and functionality

# DQM Group



Detector & Operation Efficiency  Physics Data Certification

- The newly established DQM group carries responsibility for the end-to-end chain DQM system:
  - CMS-wide standardization of the DQM code base and the data certification procedures
  - operation of the DQM systems at the various places in order to make quality information publically available at a short time scale
  - evaluation of the data quality, the certification of 'good runs' and the subsequent tagging of the events with certification information
- Priorities for summer 08:
  - Development, implementation and deployment of the complete code base for the end-to-end system
  - Establishing and consolidation of DQM system operation with minimal maintenance needs
- Prominently open issues / topics at present largely uncovered:
  - Online DQM detector status, alarm and summary logging to database (required for history and trend plotting)
  - Commissioning of online DQM in HLT / run control / synchronization with HLT configuration
  - Development of data certification framework code, i.e. read and combine DCS, DAQ and DQM info, write output to DBS and condDB
  - Maintenance, expert operation, 24/7 on-call coverage for the various DQM production systems (P5, Tier-0, CAF)