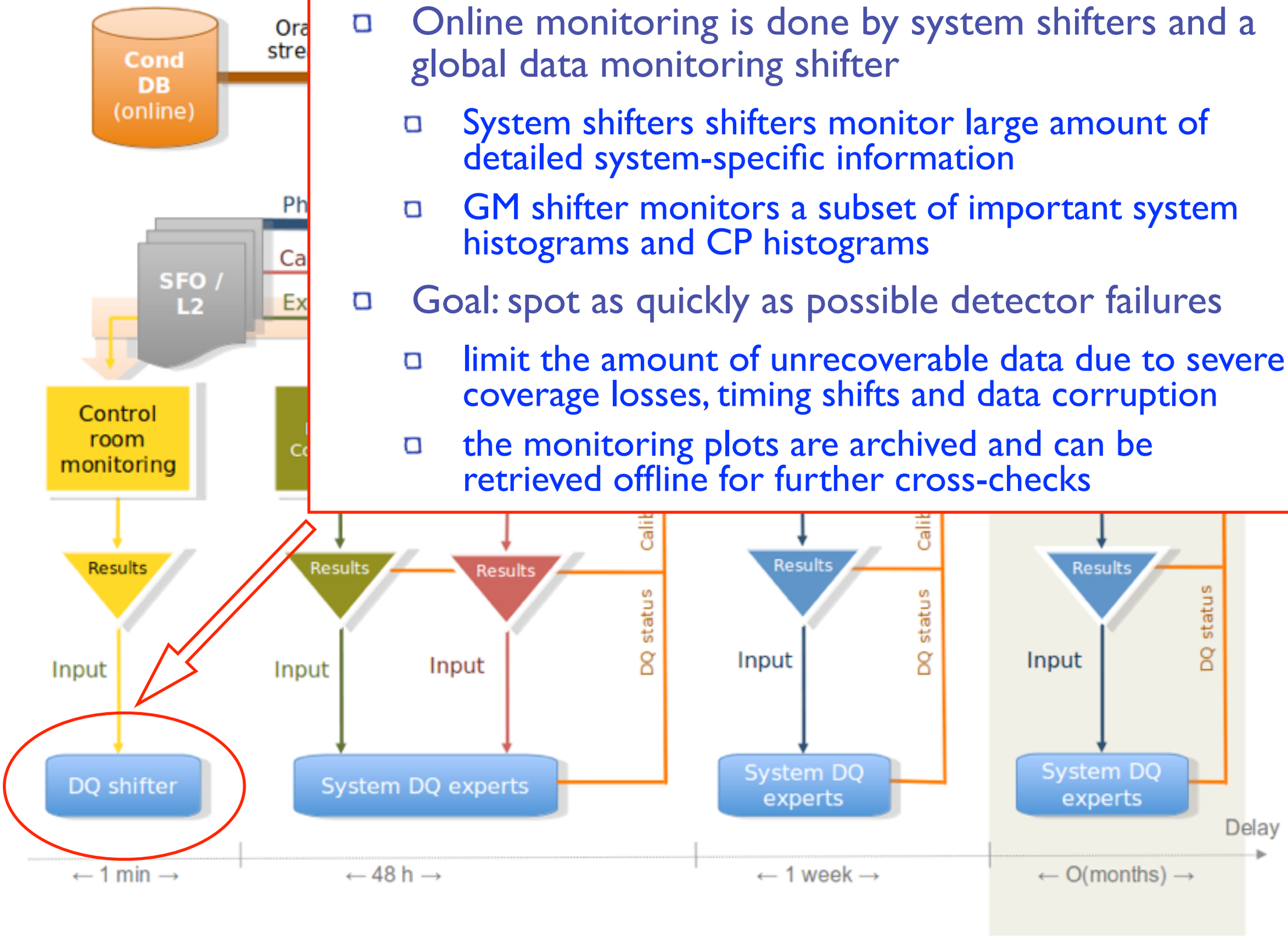
DQ monitoring shifter training

Elizaveta Shabalina
II. Physikalisches Institut, Universität Göttingen

Data quality operation scheme in run I

- Online monitoring is done by system shifters and a global data monitoring shifter
  - System shifters shifters monitor large amount of detailed system-specific information
  - GM shifter monitors a subset of important system histograms and CP histograms
- Goal: spot as quickly as possible detector failures
  - limit the amount of unrecoverable data due to severe coverage losses, timing shifts and data corruption
  - the monitoring plots are archived and can be retrieved offline for further cross-checks



Atlas DQ page

- http://atlasdqm.web.cern.ch/atlasdqm/

ATLAS Data Quality Monitoring

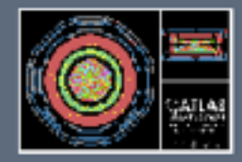
DQ Conveners

Sarah Demers
Anyes Taffard
Elizaveta Shabalina
James Frost

DQ Tools

Yuriy Ilchenko
Peter Onyisi

Latest Atlantis events



Runs to be considered for DQ checks

Wed Apr 29 2015 13:31:02 GMT+0200 (CEST)

for offline DQ shifter

Run	Tag & Period	Start/End	Evts	Tier0 Reco Status	Missing Sign-Off	Sign-Off Day	End of Calib Loop
263123	data15_cos data period C8	2015-04-25 17:47 CEST 2015-04-26 10:02 CEST	12048120	ES1: G G BLK: G G U G	TRIG PIXEL CALO ALFA LAR ID EGAMMA LUMI MBTS TAU ZDC LCD MCP BTAG SCT	2015-04-27	2015-04-28 10:06

News & Documentation

General Information
- DQ TWiki (people, shifts, links & tasks)
- DQ Meeting Agendas - Wedn 4-6pm
- ATLAS Run Meetings - Daily 9:30am
- Weekly Run Meetings - Weekly Tue 9:30am
- General Announcements Mailing list

Troubleshooting
- DQ Frequently Asked Questions
- DQ Help e-group
- DQ Developers e-group

Documentation
- RC Guidelines to Stop a Run
- Useful DQ Links

Shifts & OTP

DQ Shifts
- How to become DQ shifter in ACR
- How to become DQ shifter OFFLINE
- OTP Shift Booking

DQ Shifters Tools
- Online DQ Shift Instructions
- Online DQ Shift Instructions (P1)
- Offline DQ Shift Instructions
- DQ Crew Phonebook
- DQ Experts Phonebook

DQ Reports
- DQ Checks Morning Email
- DQ Signoff & Logbook
- DQ Offline Shifter Twiki

DQ shifter instructions

Data Quality Tools

DQ Web Displays
- Tier-0 Histograms
- Archived Histograms (MDA & CoCa)
- Web interface to Online Information Service
- DQ History Plots

DQ Jira Bugs
- DQ Infrastructure
- Central Services Operations
- Reconstruction
- ID & Tracking
- Jet/Etmiss

Archived histograms

Web interface to IS

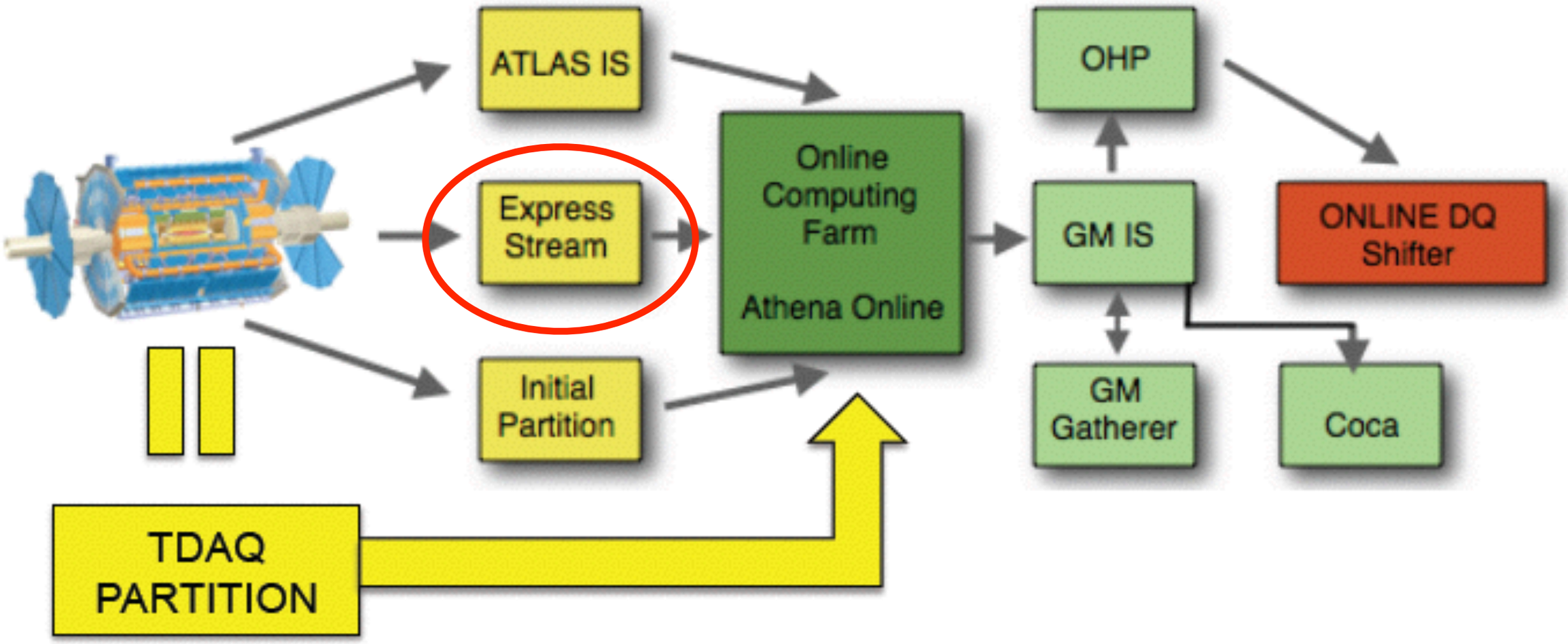
Main tasks of DQ desk

- Watch the correct running of the (online) Data Quality infrastructure at Point 1
- Check the most relevant histograms of the systems and Combined Performance Groups and report any problems
- Operate the Event Displays on the projectors in the ACR
- Watch the DQMD (Data Quality Monitoring Display) showing the automatically assigned DQ status flags of all systems
- Watch the luminosity and beam conditions plots in the LHC FSM, and the corresponding DCS alarm panel
- Monitor offline computing (Tier0) (new task in Run 2)
- Check archiving of online histograms
- Document temporary issues, e.g. "application XYZ is frequently crashing and needs to be watched and restarted, bug fix underway" in the Data Quality White Board and log book

Global monitoring

- ATLAS Global Monitoring runs full Athena reconstruction
  - processes a fraction of the events from Express Stream
    - 48 cores process events in parallel and allow for a ~5 Hz processing rate
  - displays the histogram produced by monitoring applications
    - Detector, CP, and the monitoring applications called GlobalMonitoring
- Shifter looks at output of monitoring distributions in real time
- Allows for earliest possible data quality assessment based on full offline-like event reconstruction

Global Monitoring Flow chart



Express stream purpose

It will contain a subset of the physics data corresponding to ~10 Hz. The express stream contains full events (unlike the calibration stream that contain only partial events). Every event in the express stream will also be available in the physics streams.

The data will be reconstructed quasi-real time and looked at promptly. The aim is to obtain results before the main reconstruction starts, in the context of the 'calibration loop'.

The stream is used to check the data quality, monitor the status of the detector, monitor alignment and calibration, etc. The data of the express stream may also be useful to calculate the calibration and alignment constants.

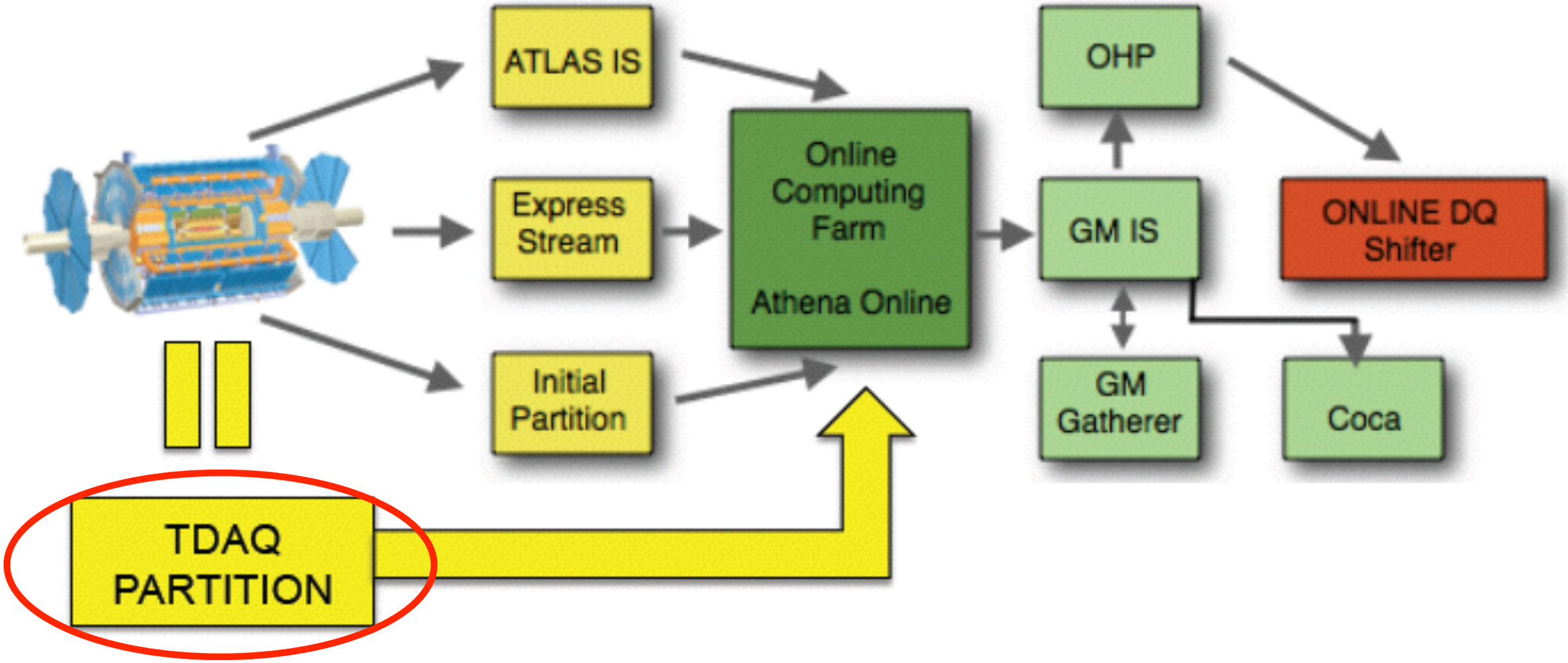
The express stream is not used for physics analysis. All physics results will be based on the analysis of the full physics samples

Monitoring of the presence of Express stream in Trigger menu is one of the responsibilities of DQ shifter

Express stream composition

- https://twiki.cern.ch/twiki/bin/view/AtlasExpressStream#Run_2_Physics_Physics_pp_v5_menu
  - Express Stream composition in Run 1 :
    - 2 Hz for egamma triggers
    - 2 Hz muon triggers
    - 2 Hz for tau triggers
    - 2 Hz for jet triggers
    - 0.25 Hz for XE TE triggers
    - 0.25 Hz minimum bias triggers
    - 1.5 Hz for random triggers
  - The monitoring consumers can decide the relative contributions of the different HLT chains within the allocated bandwidth

Global Monitoring Flow chart

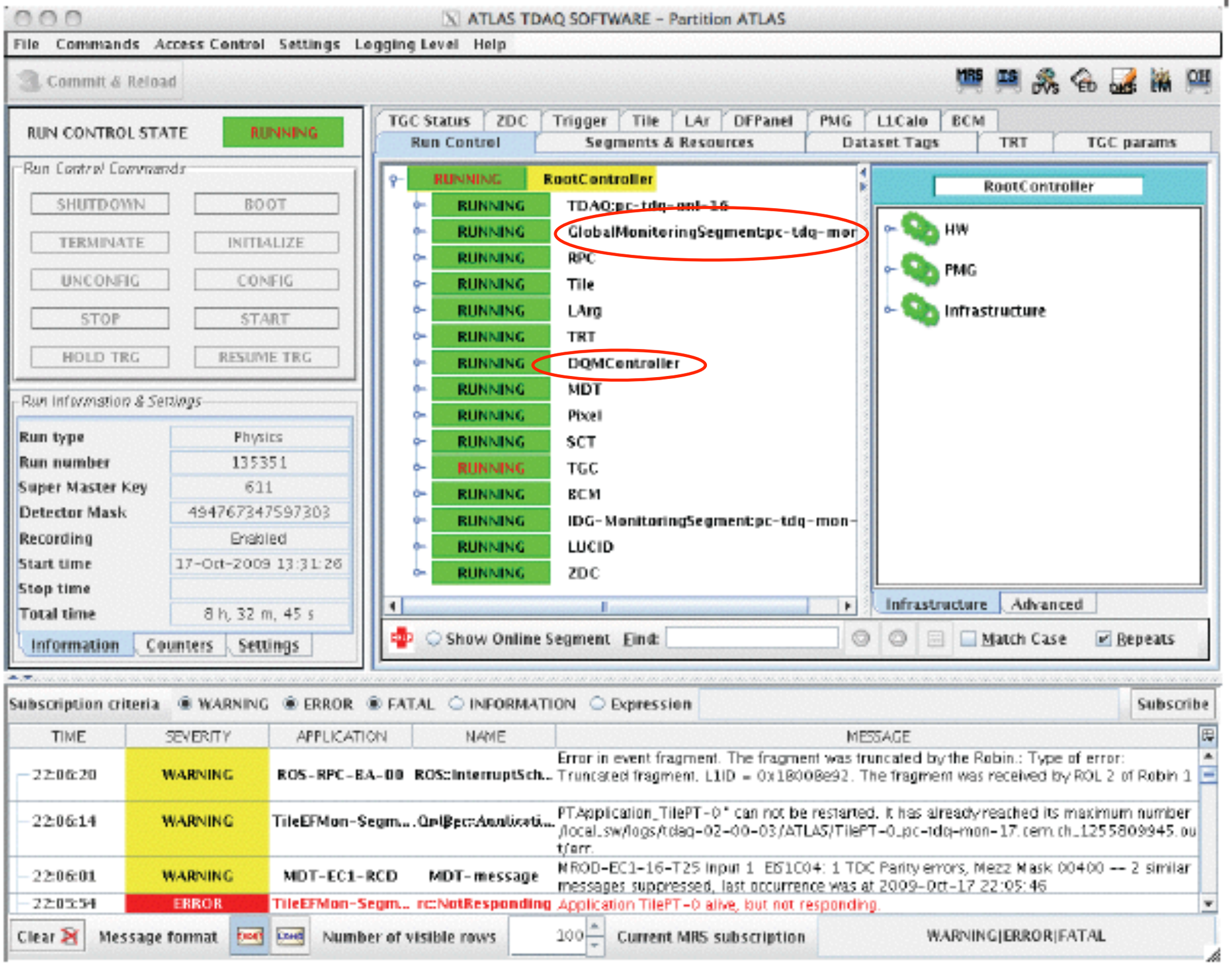


Global monitoring segments

GlobalMonitoring segment

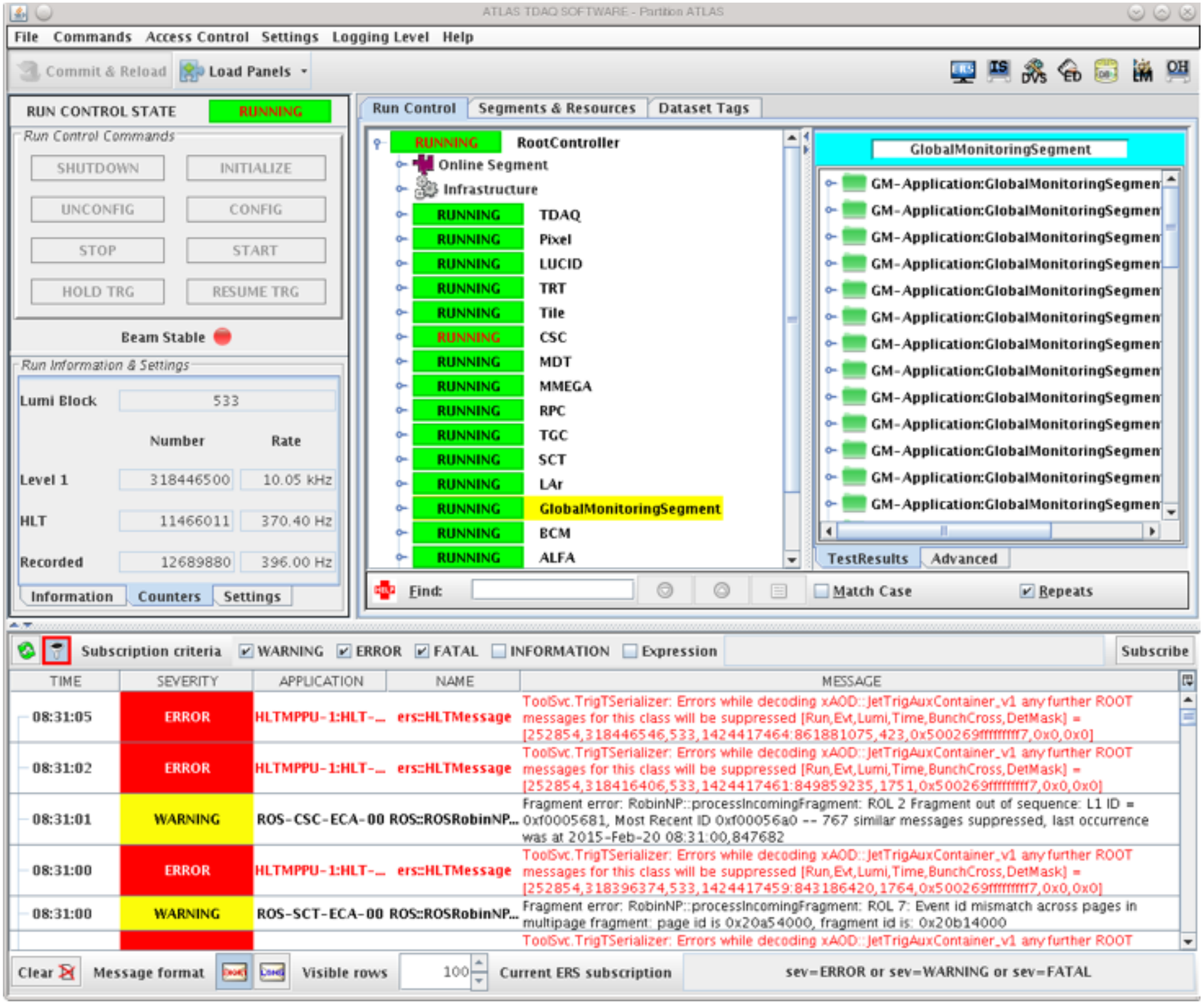
- GlobalMonitoring is a segment of the ATLAS TDAQ partition
- It is controlled from the ATLAS Run Control desk and has to respond to all ATLAS TDAQ transitions
  - BOOT→INITIALIZE→CONFIG→START
  - ATLAS does not stop data taking if GM stops
- Configuration is done using XML stored in OKS database
- It defines our system and specifies the physical machine on which the tasks are executed
  - 48 GlobalMonitoring ATHENA jobs + required environmental variables
  - GlobalMonitoring Histogramming server at IS
  - GlobalMonitoring Gatherer (input and output)
  - GlobalMonitoring Coca and MDA Server
  - GlobalMonitoring DQAgent

GlobalMonitoring Segment



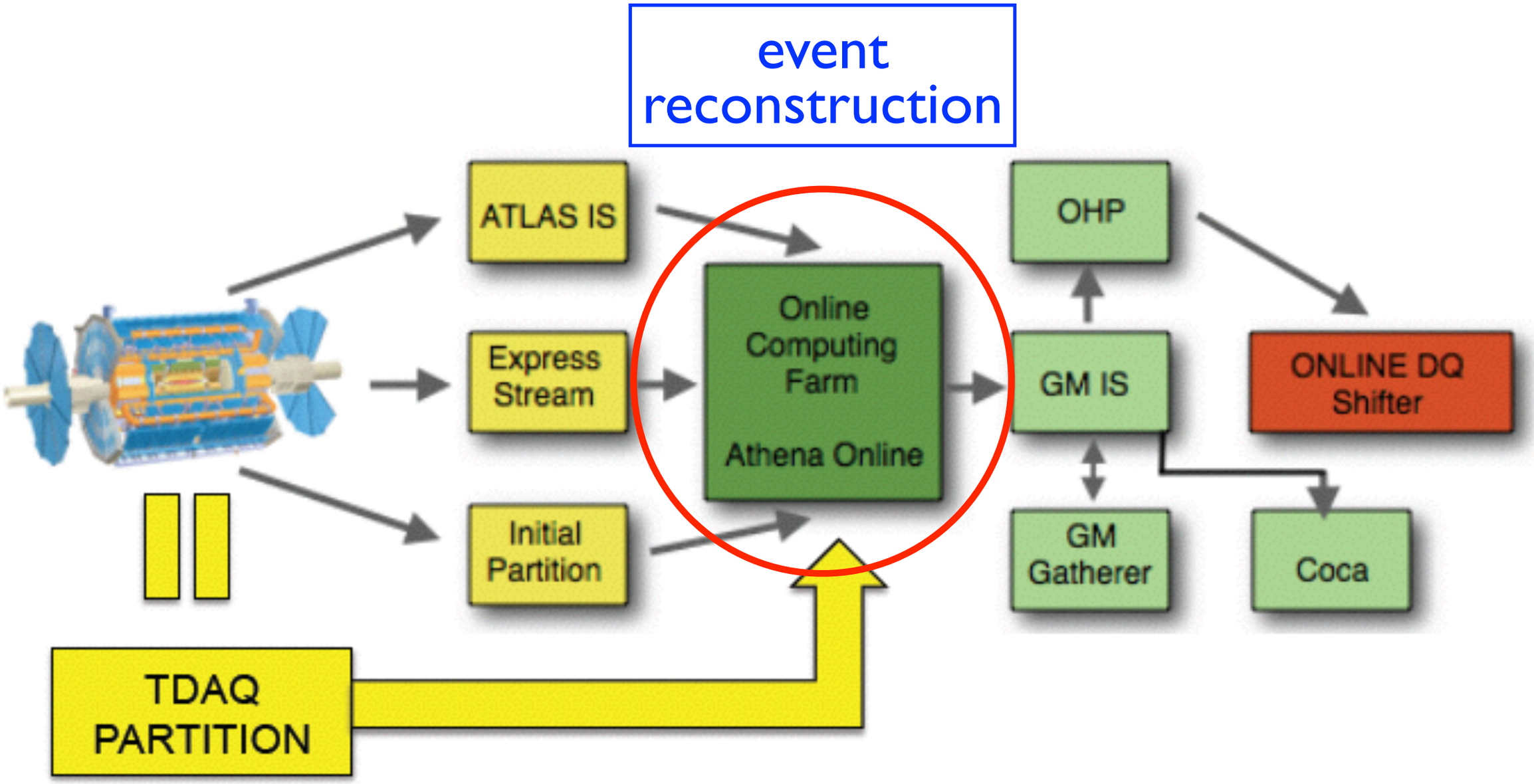
GlobalMonitoring segment

- DQ applications run automatically in ATLAS partition

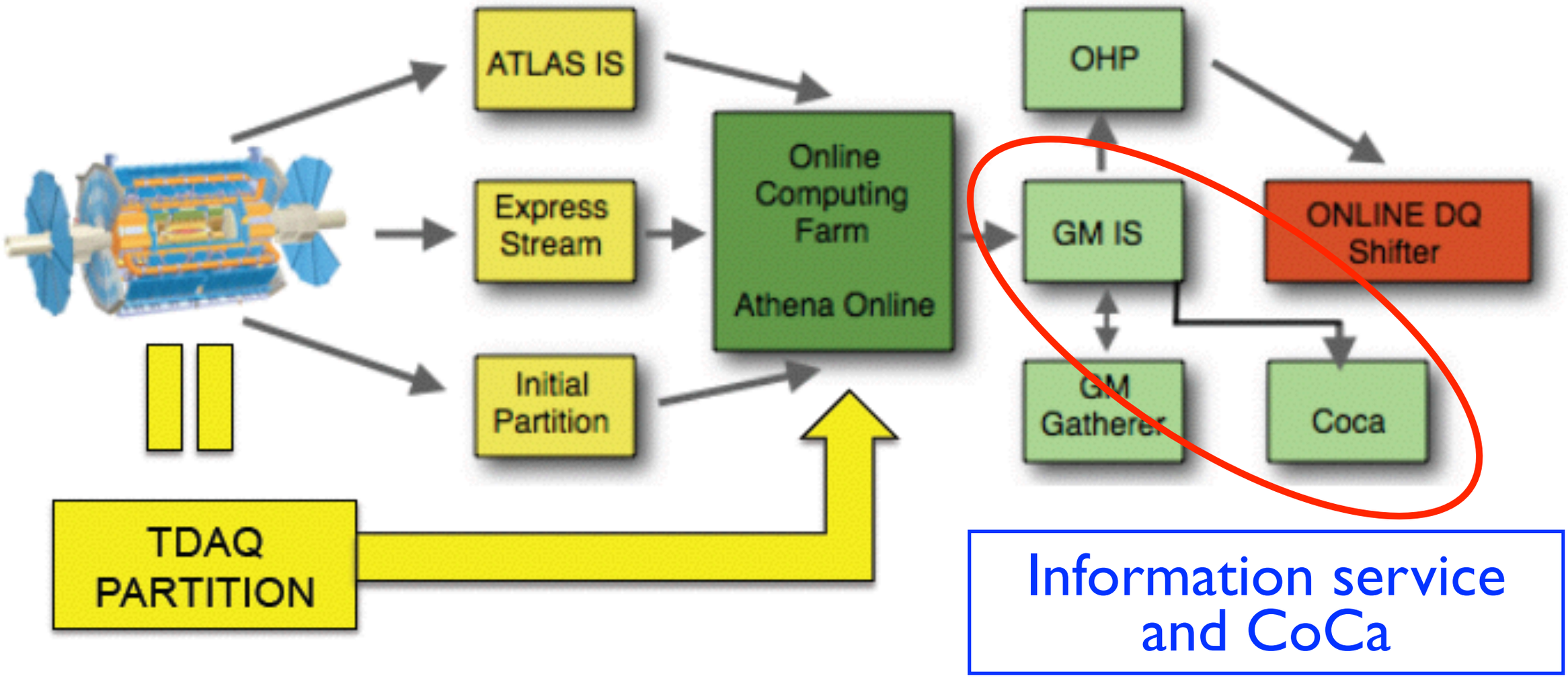


One segment per PC

Global Monitoring Flow chart



Global Monitoring Flow chart



- Histograms are continuously copied to an Information Service (IS) called Global-ISS server
- For LB sections and at the end of the run, copied as Coca ROOT files
- LB duration is 1 or 2 minutes

Information service and CoCa

- Service designed to share information (variables, histograms) between applications
- Repository implemented by several processes (servers) accessible to the user information receiver through a unique identifier
- AGM server is the Histogramming-Global-iss and stores the histograms produced by the athena reconstruction jobs
- The histograms are published with a configurable frequency
- Histograms, packed into ROOT files, are available on a local cache (Collection and Cache service, or CoCa) for fast access to recent runs
- Preserved for long term storage through the monitoring data archiving (MDA) system
  - MDA application runs within the GlobalMonitoring segment

https://atlasdaq.cern.ch/info/mda

Histogram archiving

Online histograms are archived in CoCa: https://atlasdaq.cern.ch/info/mda/coca

https://atlasdaq.cern.ch/info/mda

Access to MDA histograms
Access to CoCa datasets and files
Display statistics for MDA and CoCa

Not user friendly!

CoCa Datasets

Dataset name Search

BCM-Lumi
CSCGnam
DQM-Archive
Gatherer
HLT-BeamSpot
Histogramming-DQM
Histogramming-HLT
L1CT
L1Calo
Lucid-Lumi
MDA-GlobalMonitoring
MDA-ID
MDA-LAr-All
MDA-LAr-Cosmic
MDA-LAr-PT-1
MDA-Pixel
MDA-RPC
MDA-SCT
MDA-TRT
MDA-ZDC
MDAStressTest
MDATest
MDTCalibGnam
MDTGnam
MonaIsa
TGCGnam
TRP-Rates
Tile-MDAMon

CoCa files for dataset "Histogramming-DQM"

[Datasets]

File name Search	Size, MB	Archive, relative to /eos/atlas/atlascerngroupdisk/tdaq-mon/coca/
r0000246047_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000246047_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root
r0000246036_l0006_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000246036_l0006_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root
r0000246027_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000246027_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root
r0000245998_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000245998_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root
r0000245993_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000245993_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root
r0000245978_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root	9	2014/Histogramming-DQM/r0000245978_lEoR_ATLAS_MDA-Histogramming-DQM_Histogramming-DQM.root

Histogram archiving

Online histograms are archived in MDA: https://atlasdaq.cern.ch/info/mda/db/ATLAS

Runs in MDA for partition "ATLAS"

Not user friendly!

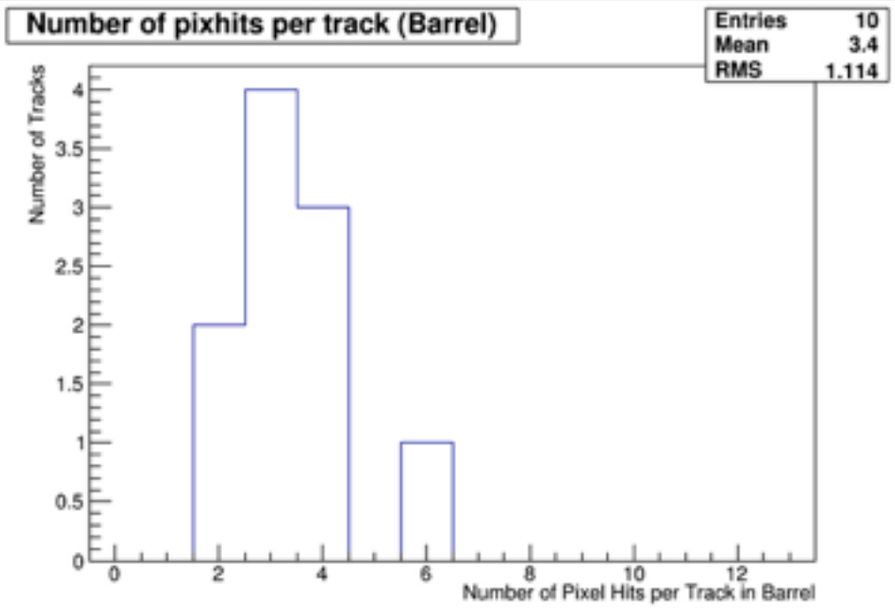
[Partitions]

Run number (Search)	Type	Archived time
253446	Physics	2015-02-26 11:18:27
253395	Physics	2015-02-26 09:59:47
253377	Physics	2015-02-25 23:12:39
253369	Physics	2015-02-25 21:26:53
253363		8
253307		6
253304		8
253295		8
253271		8
253270		8
253247		2
253230		9
253209		1
253208		8
253206		7
253205		1
253202		1
253197		4
253195		9
253190		0
253184		6
253181		7
253147		4
253124		4
253115		1
253084		9
253083		7
253066		8
253063		1
253058		4

Histogram files for histogram "/IDAlignMon/Tracks_NoTriggerSelection/GenericTracks/Npixhits_per_track_barrel" run 253010

[Partitions] [Runs] [Providers] [Histograms]

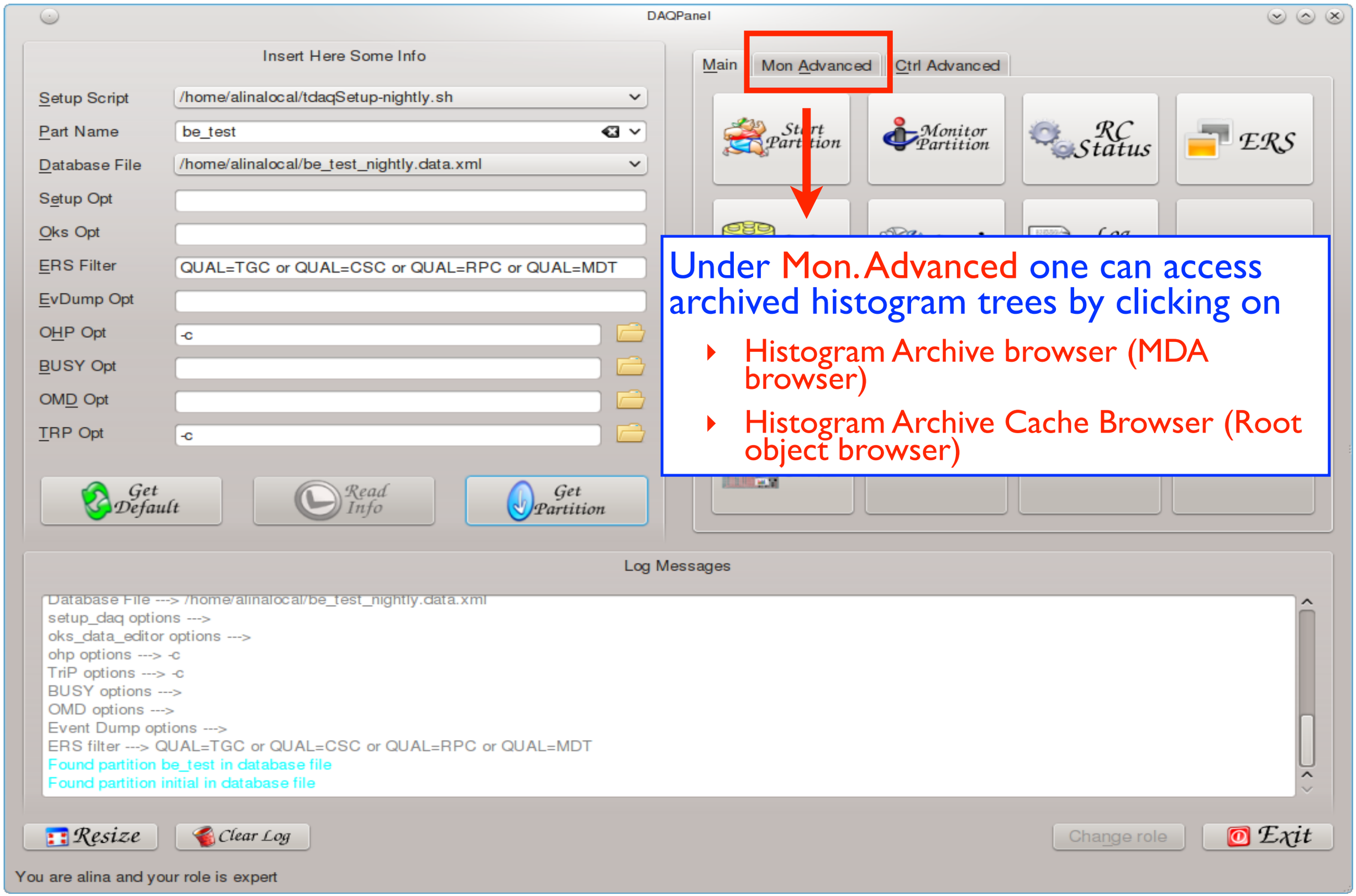
LB number	Dataset	File	Histo path
EoR (+)	MDA-ID	r0000253010_lEoR_ATLAS_ID-MDA_Histogramming-ID.root	/Histogramming-CombinedInDet-1-iss/ID_PT_Noise/IDAlignMon/Tracks_NoTriggerSelection/GenericTracks/Npixhits_per_track_barrel



[Previous run 253009] [Next run 253014]

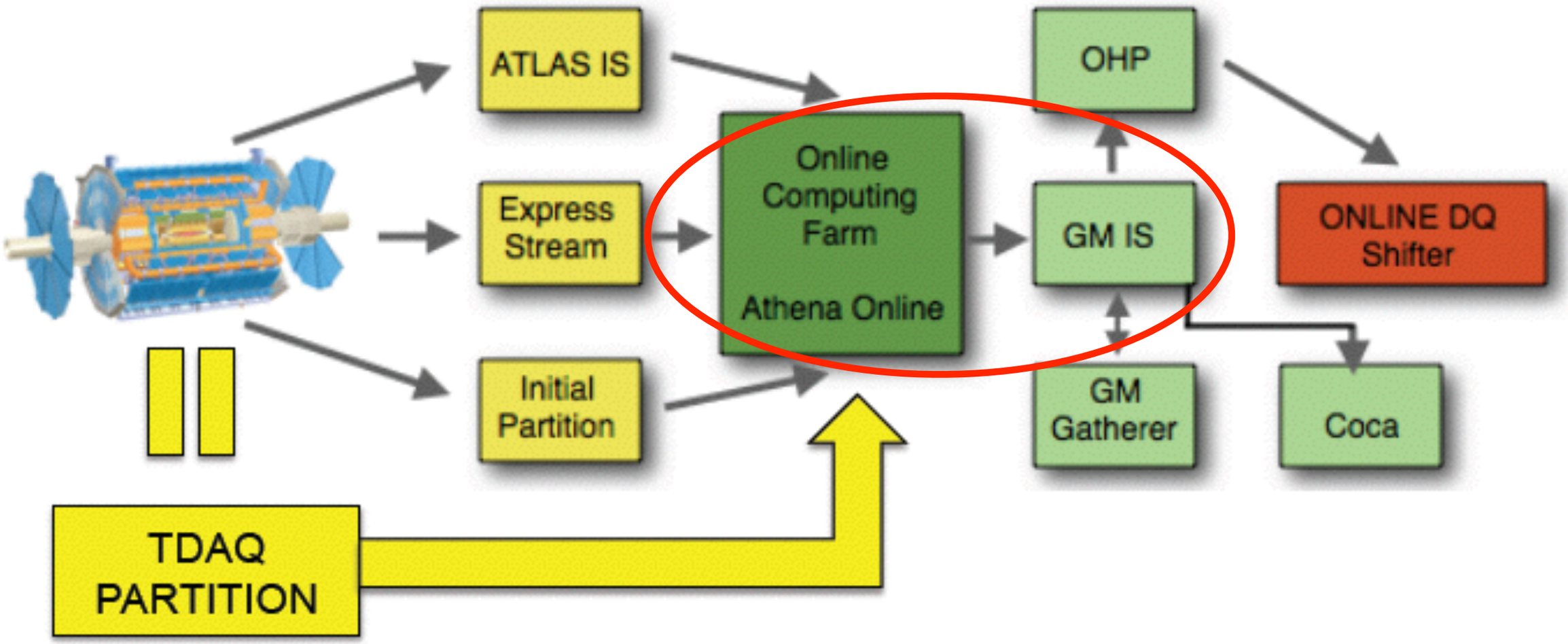
One can look at the same histogram for different runs

Access in ACR

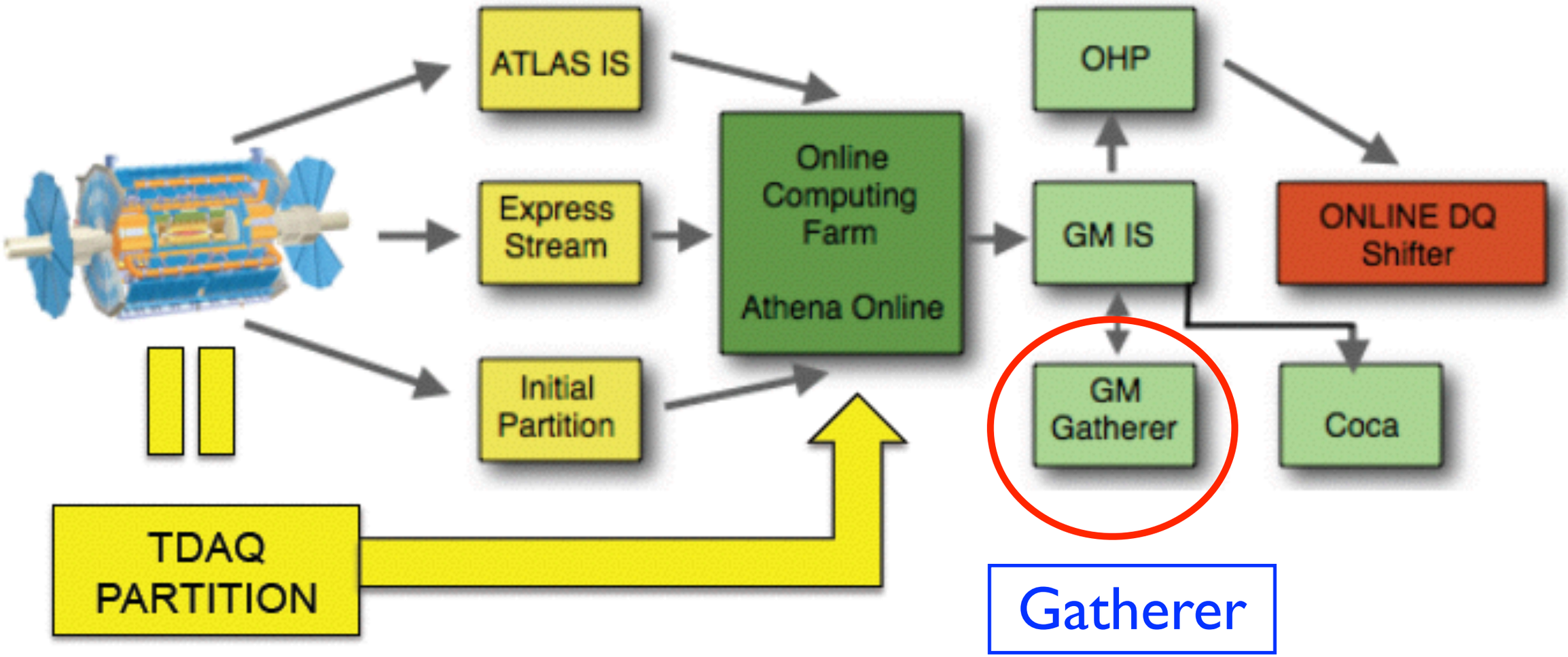


Global Monitoring Flow chart

histograms are published on Information Server



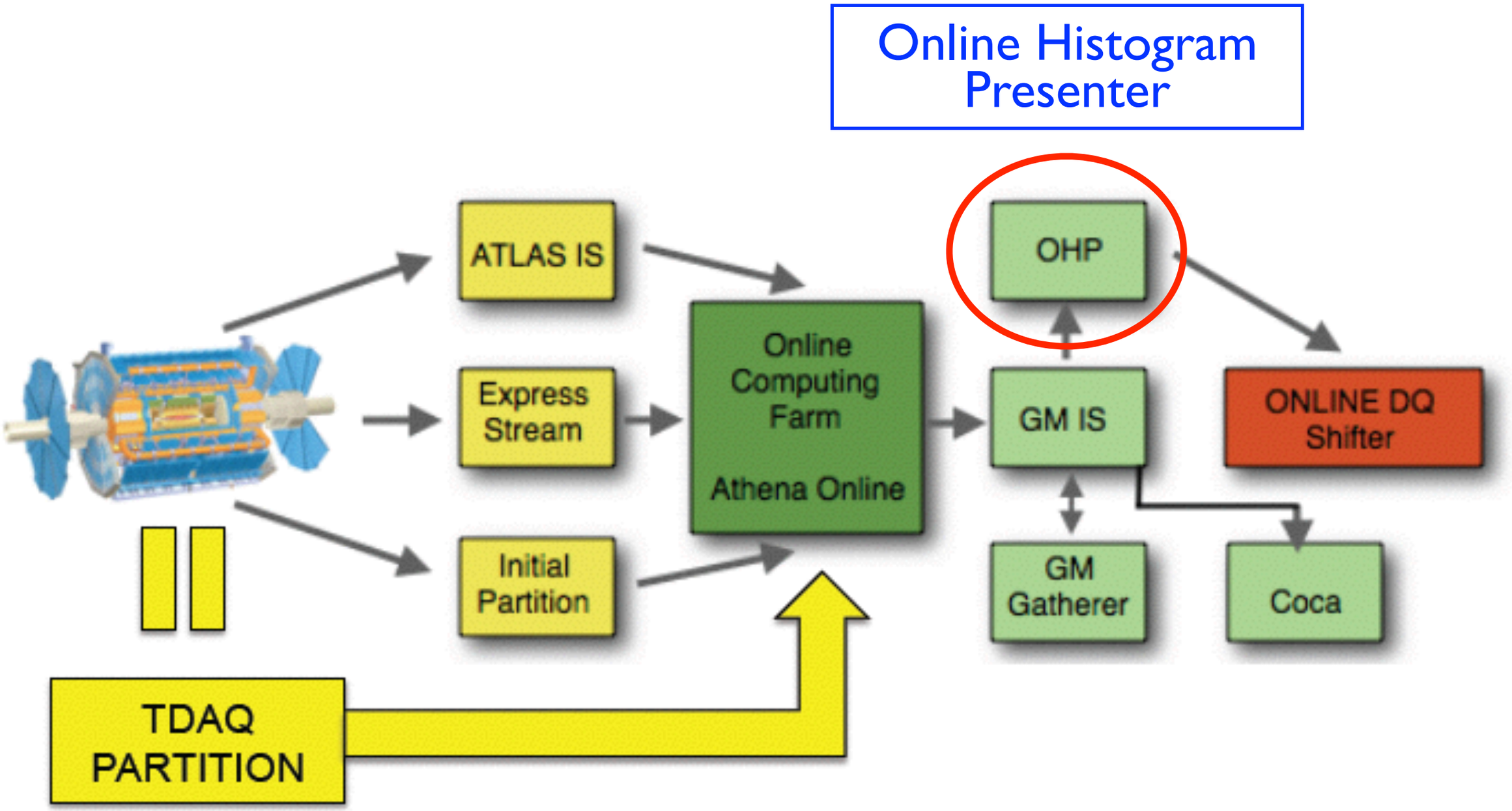
Global Monitoring Flow chart



Gatherer

- The Gatherer merges histograms from multiple monitoring providers (=GlobalMonitoring Athena jobs publishing to IS in our case)
- All input histograms with the same name (but from different providers) will be merged into a single output histogram
- The merged histograms are published back to the Information Service (IS)
- The Gatherer can handle many different histograms at the same time and traverse entire directory structures

Global Monitoring Flow chart

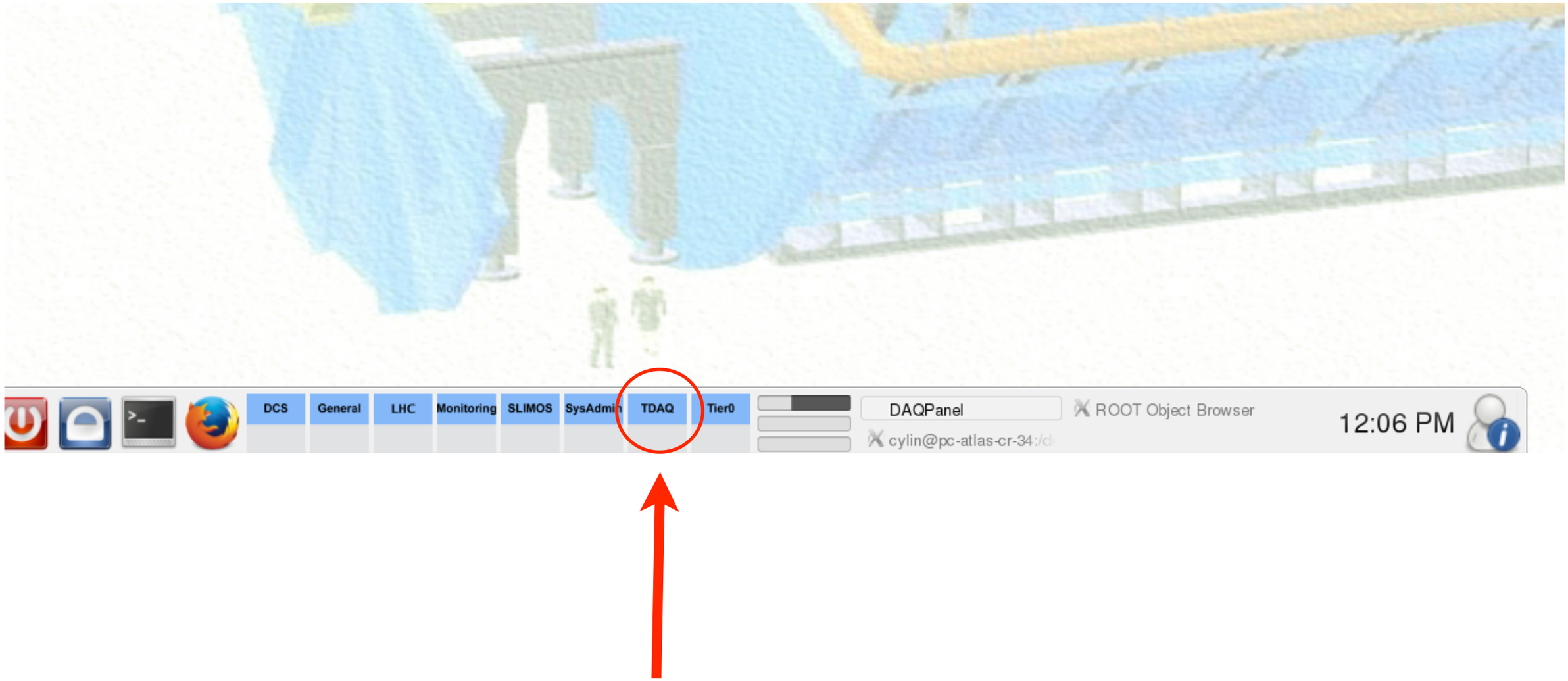


DQM tools: OHP

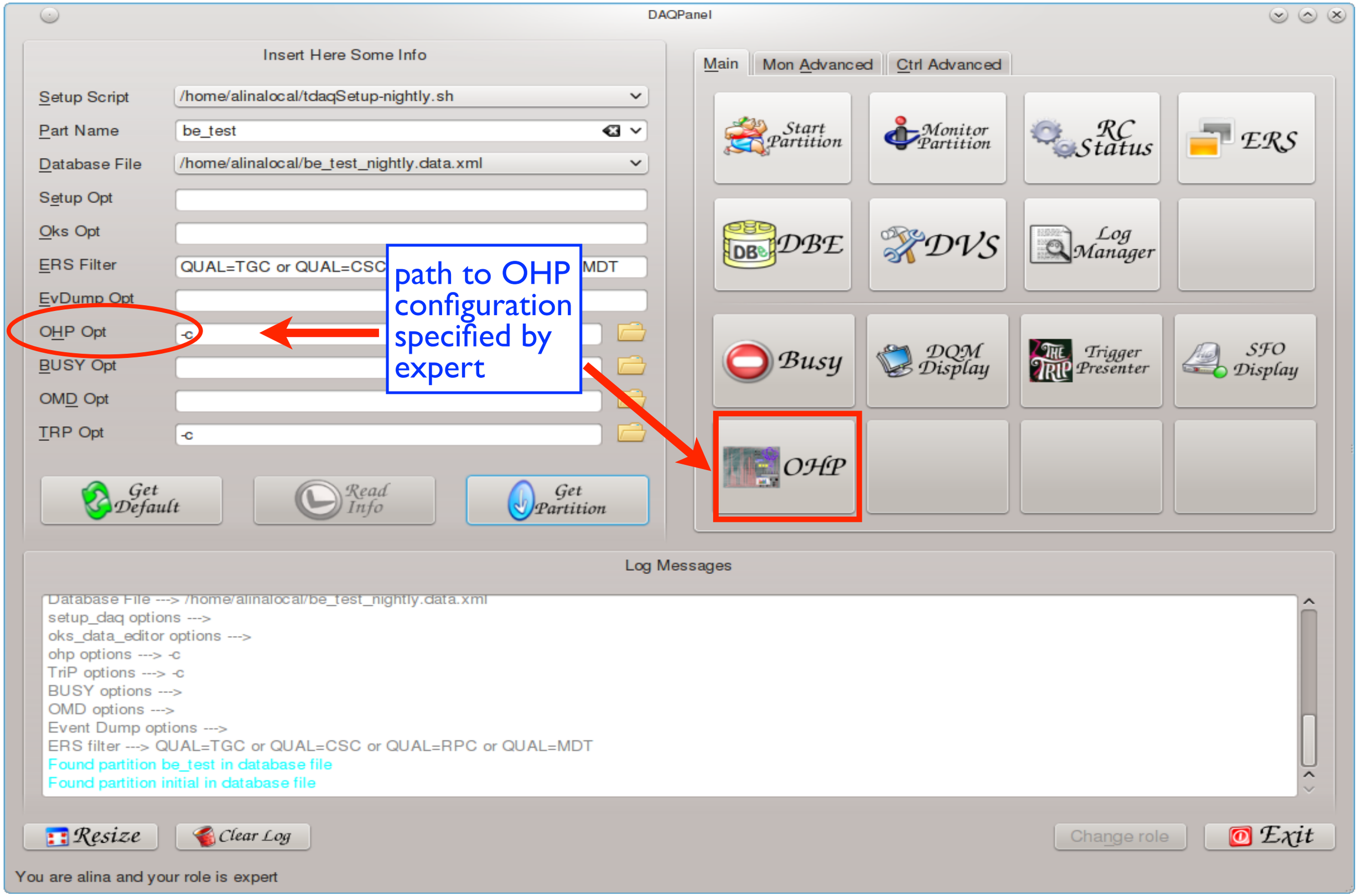
- Online Histogram Presenter
  - displays several most relevant histograms from each system and CP group
  - shows accumulating histograms from Gatherer output stored on Global ISS server
  - histograms are checked by eye by a shifter
- Configuration is written in xml
  - file resides on online machines at:
    - /atlas/moncfg/tdaq-05-05-00/combined/ohp/ohp_Global_Nexus_ATLAS.xml
- Functionality
  - allows to specify a reference (is overlaid online)
  - can also display color flags from algorithms running in online DQMF agent
    - currently not used in GM but used by subsystems

DQM applications

- DQM applications can be opened from DAQ panel: TDAQ→DAQ panel



DQM tools: OHP



Information in xml: server

- A source of the histograms has to be specified
  - systems publish histograms on different servers
  - if server name or provider is wrong histograms will not be seen
  - sometimes subsystems forget to inform DQM about name change

```
<general>
  <partition name="ATLAS"/>
  <subscription server="LArHistogramming" provider="LArMon-MinBias" histogram=".*"/>
  <subscription server="LArHistogramming" provider="CaloMon-MinBias" histogram=".*"/>
  <subscription server="Histogramming-Global-iss" provider="GlobalCombinedHistograms"
histogram=".*"/>
  <subscription server="HistogrammingHLT" provider="Top-SFI-SFO" histogram=".*"/>
   <subscription server="Histogramming" provider="TileGATH-EF" histogram=".*"/>
  <subscription server="Histogramming-LCD" provider="LUCID_LUMAT" histogram=".*"/>
  <subscription server="Histogramming-CombinedInDet-1-iss"
provider="CombinedInDet_Merged" histogram=".*"/>
  <subscription server="Histogramming-CombinedInDet-1-iss" provider="ID_PT_Noise"
histogram=".*"/>
</general>
```

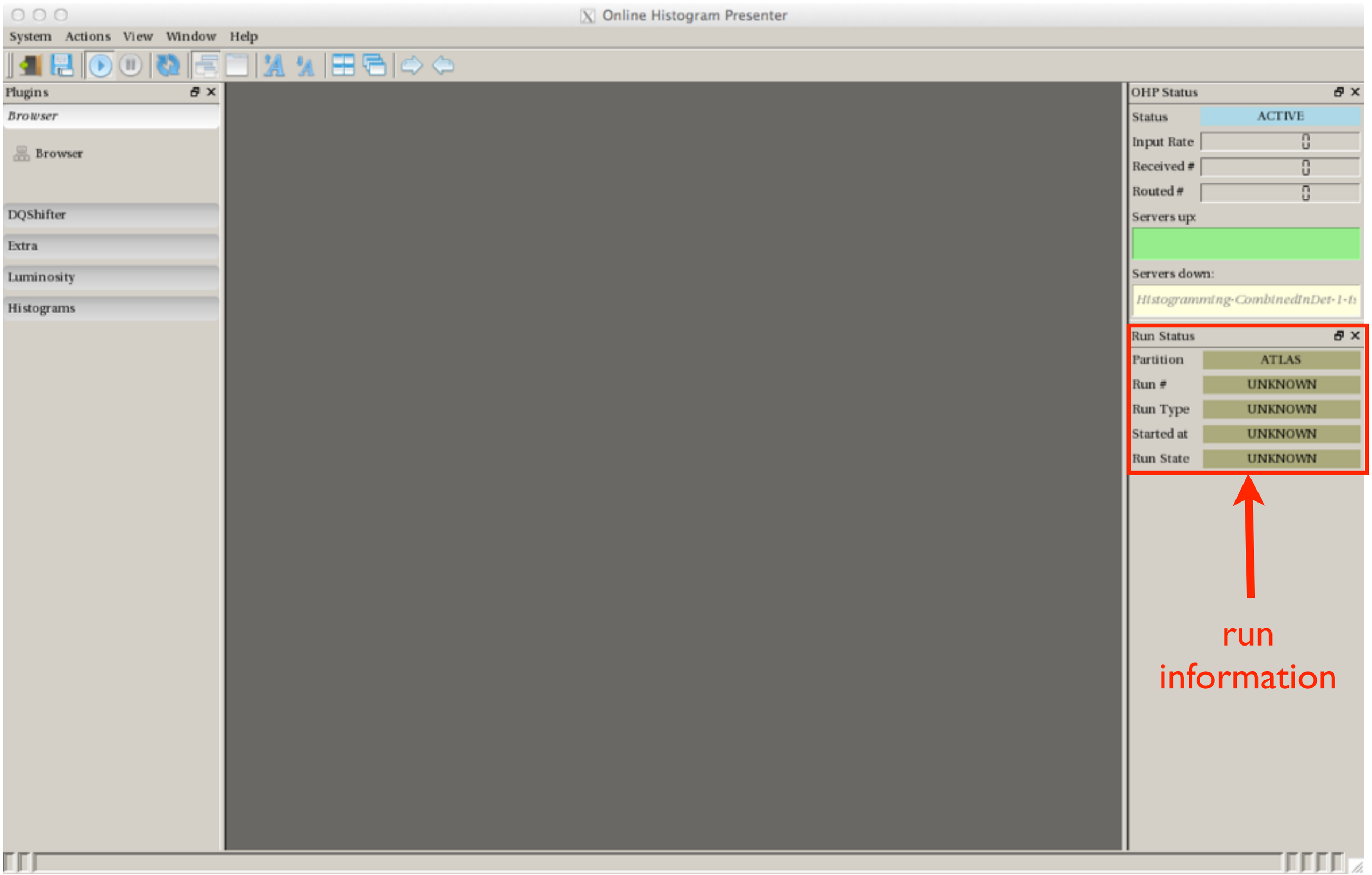
xml: layout and name

- Histogram name should correspond to the one in OH
- Layout has to be specified

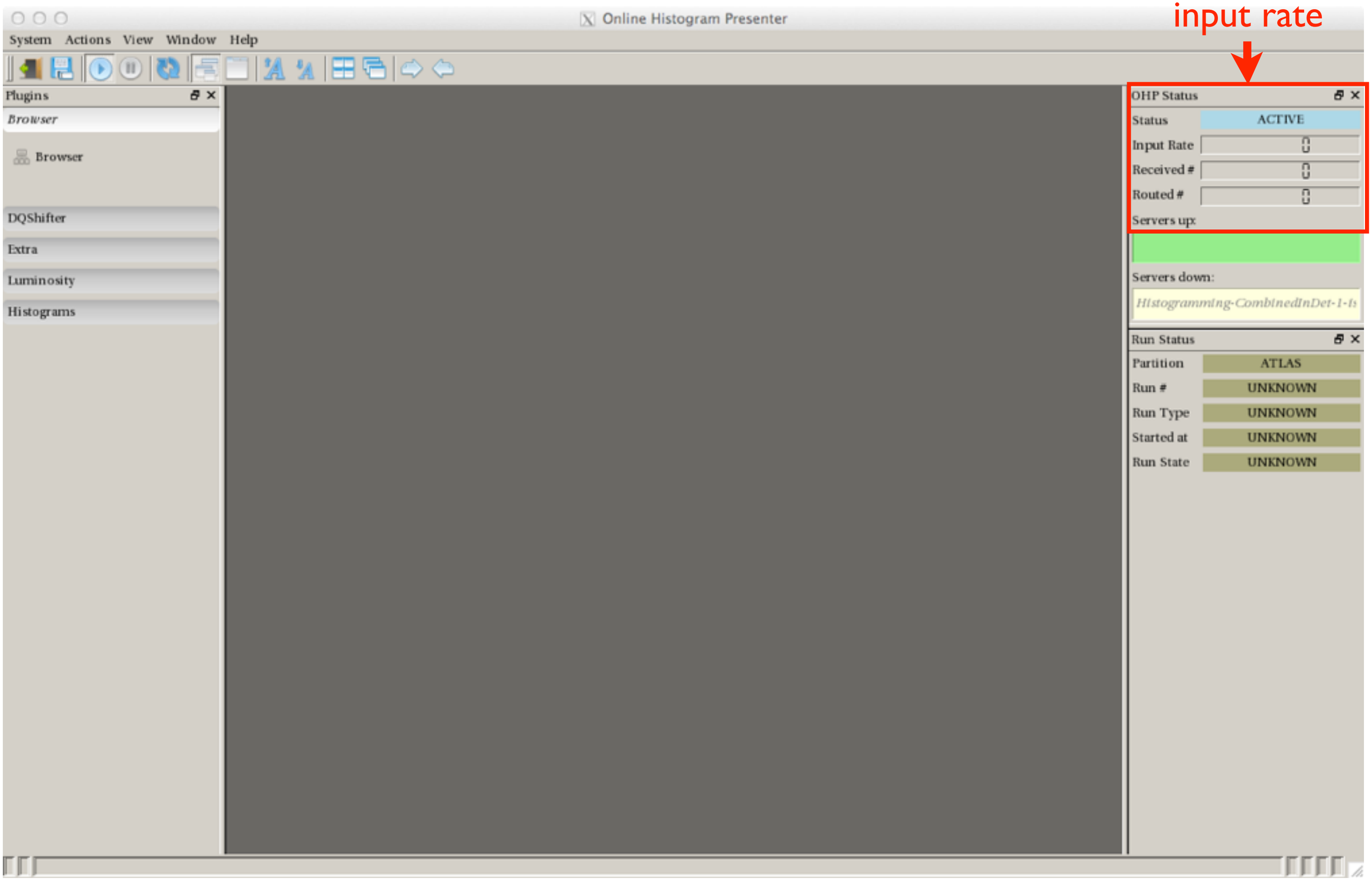
```
<tabs is-multi-value="yes">"PIXELS TRT-Timing TRT-Hits TRT-Tracking"</tabs>
  <PIXELS>
   <ndivx>4</ndivx>
   <ndivy>3</ndivy>
    <histos is-multi-value="yes" token=",">
      Histogramming-CombinedInDet-1-iss/CombinedInDet_Merged/Pixel/
ClustersOnPixelTrack/num_clusters_PIX,
      Histogramming-CombinedInDet-1-iss/CombinedInDet_Merged/Pixel/
ClustersOnPixelTrack/num_clusters_IBL,
      Histogramming-CombinedInDet-1-iss/CombinedInDet_Merged/Pixel/
ClustersOnPixelTrack/Cluster_LVL1A_PIX,
          Histogramming-CombinedInDet-1-iss/CombinedInDet_Merged/
Pixel/Status/DisabledModules_per_lumi_PIX
    </histos>
  </PIXELS>
```

Layout

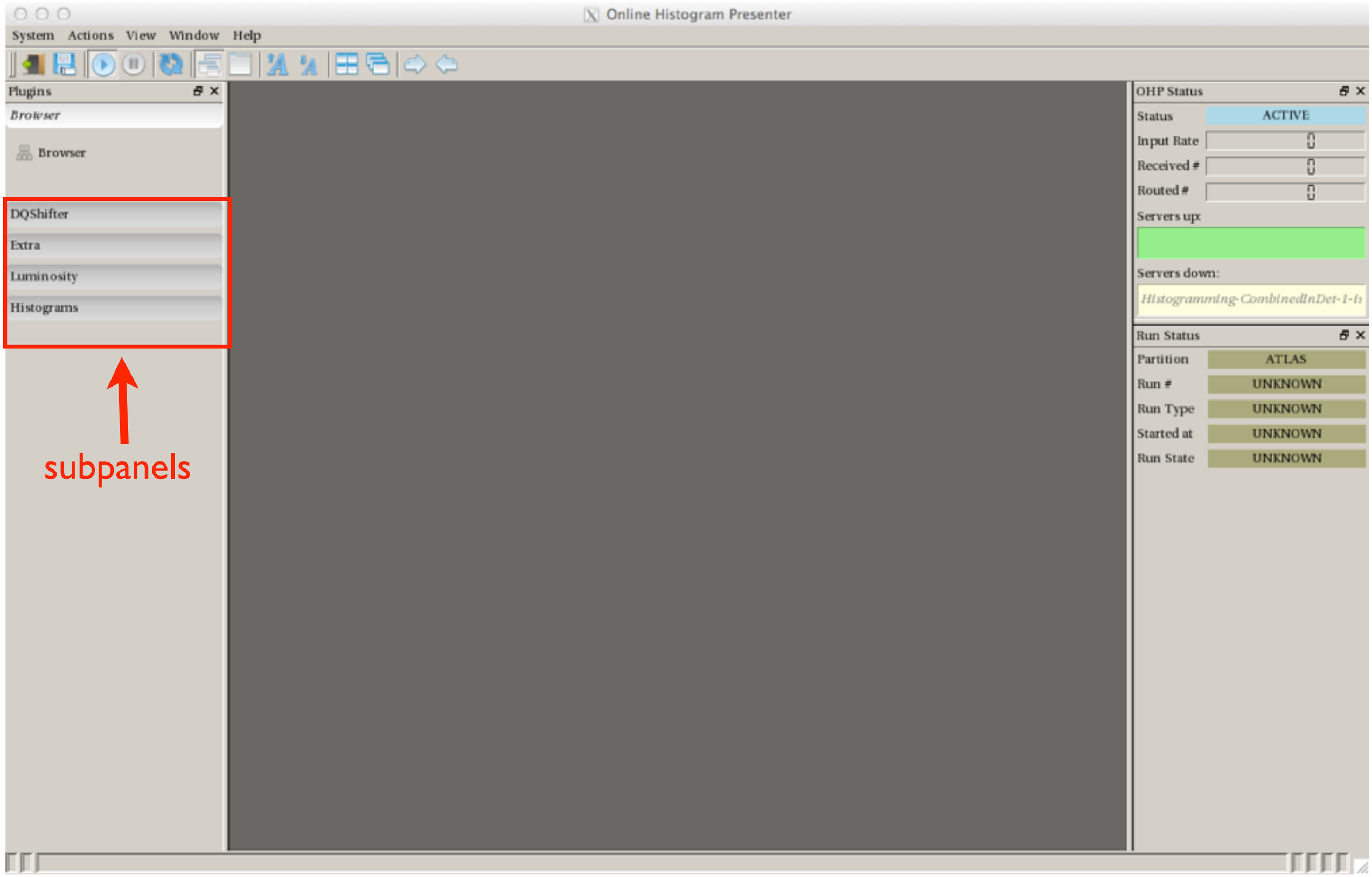
OHP main panel



OHP main panel

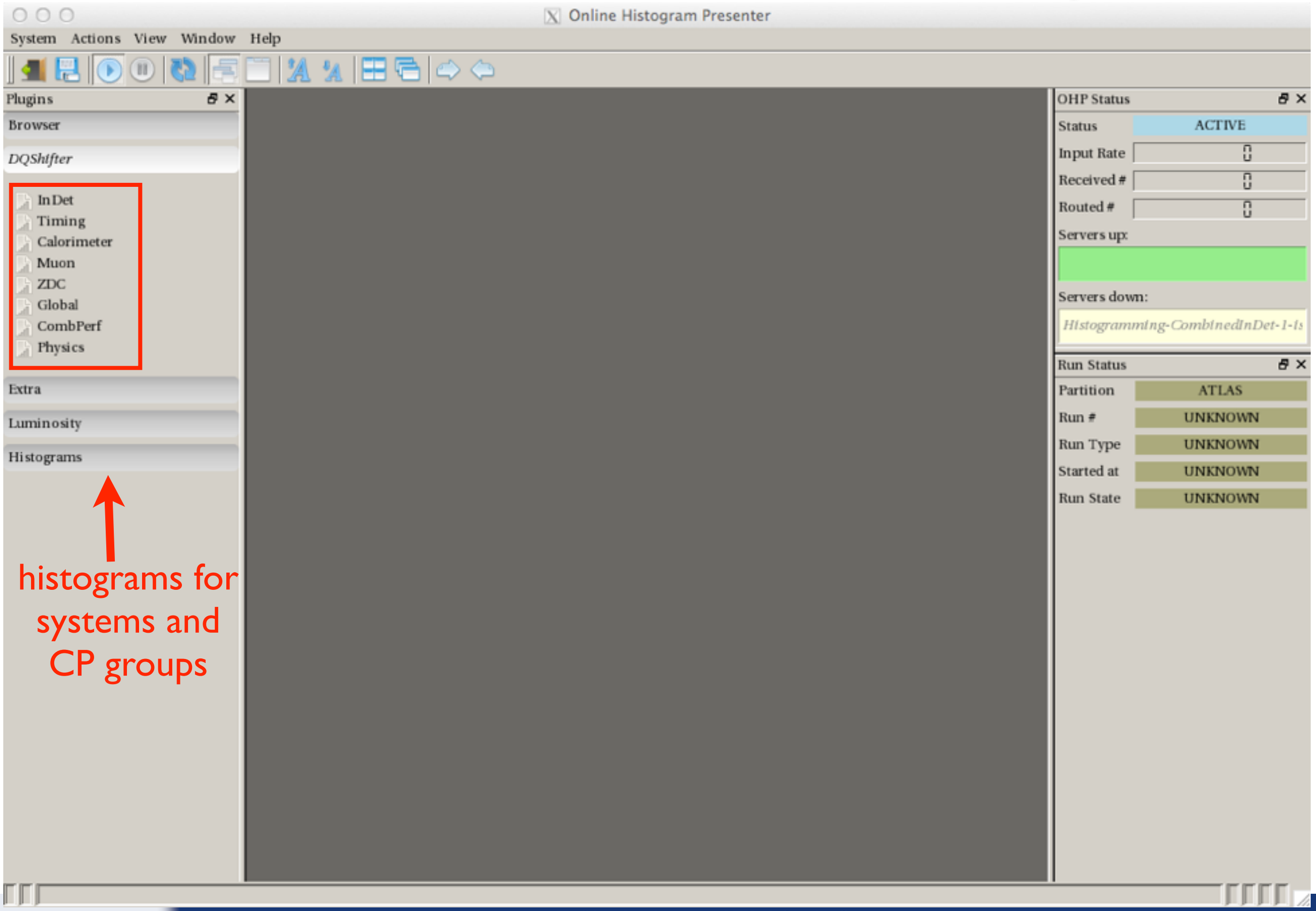


OHP main panel



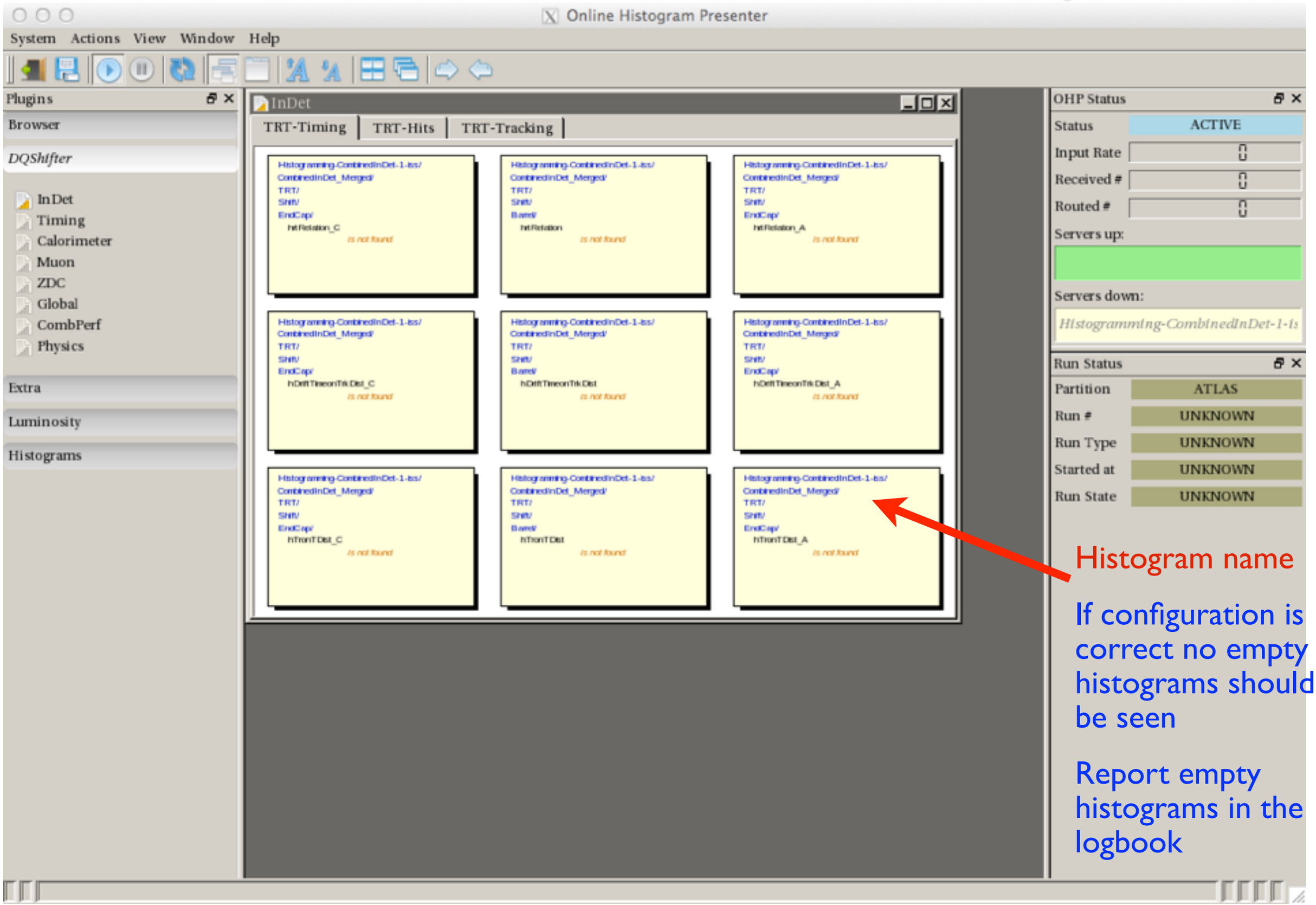
subpanels

OHP DQ shifter panel



histograms for systems and CP groups

OHP DQ shifter panel



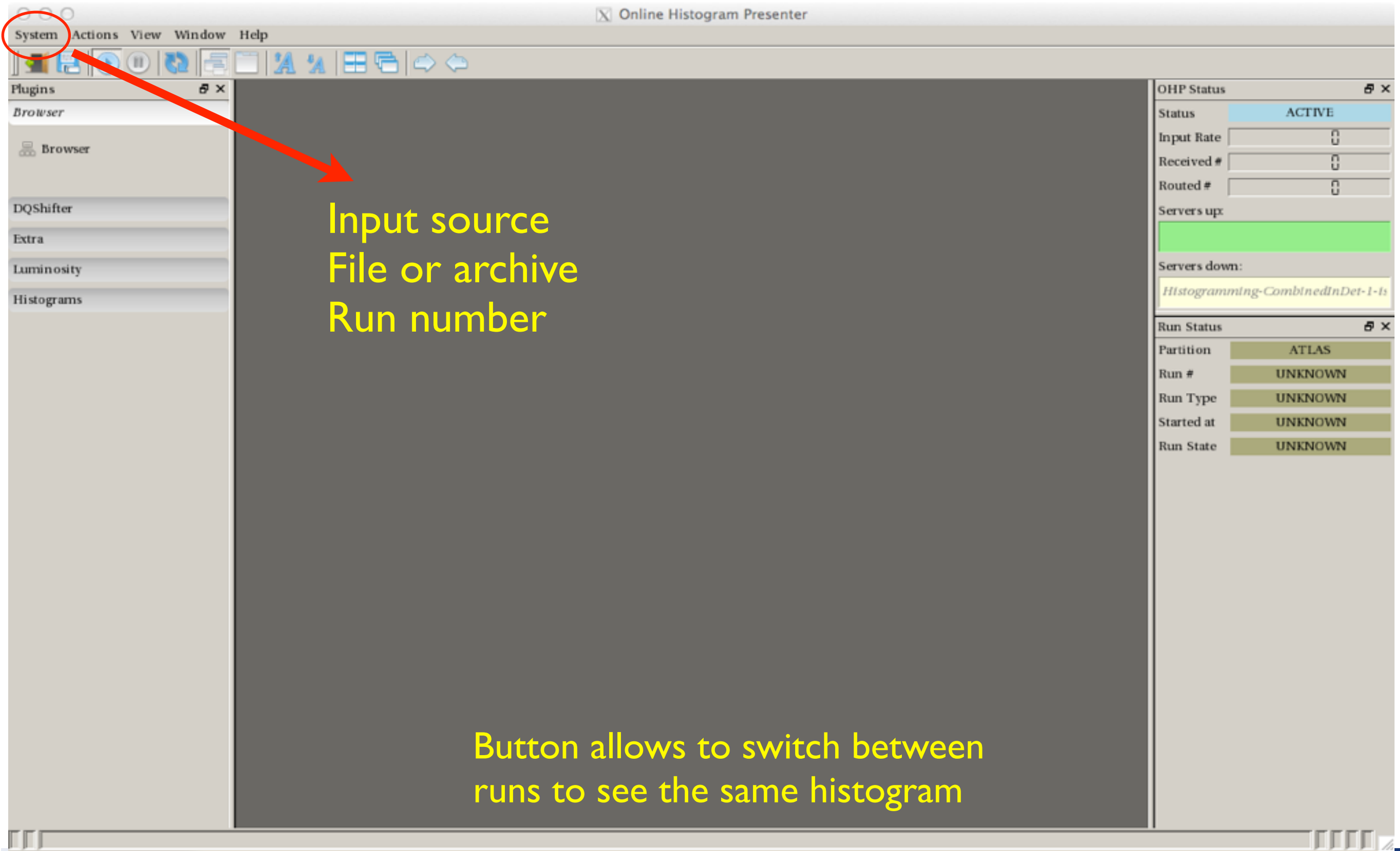
Histogram name

If configuration is correct no empty histograms should be seen

Report empty histograms in the logbook

OHP main panel

It is possible to look at the run information from the previous run



OHP status

https://atlasop.cern.ch/twiki/bin/view/Main/ATLASGlobalHistograms

	Histrograms	References online	References web	Descriptions
Detectors				
Pixel/IBL	yes	no	yes	no
SCT	yes	yes	yes	incomplete
TRT	yes	yes	yes	yes
Tile	yes	no	no	no
LAr	yes	no	yes	yes
TGC	yes (gnam)	no	no	no
CSC	no	no	no	no
MDT	yes (gnam)	no	no	no
RPC	yes (gnam)	no	no	no
Lucid/BCM	no	no	no	no
HLT	yes	no	no	no
Global				
inner detector	yes	no	no	no
Jets/ETmiss	yes	no	no	no
e/gamma	yes	no	no	no
tau	yes	no	no	no
muon	no	no	no	no

DQM tools: OH display

- Online Histogram display
  - expert rather than shifter tool
  - useful for trouble shooting
    - for example, if histograms don't appear in OHP

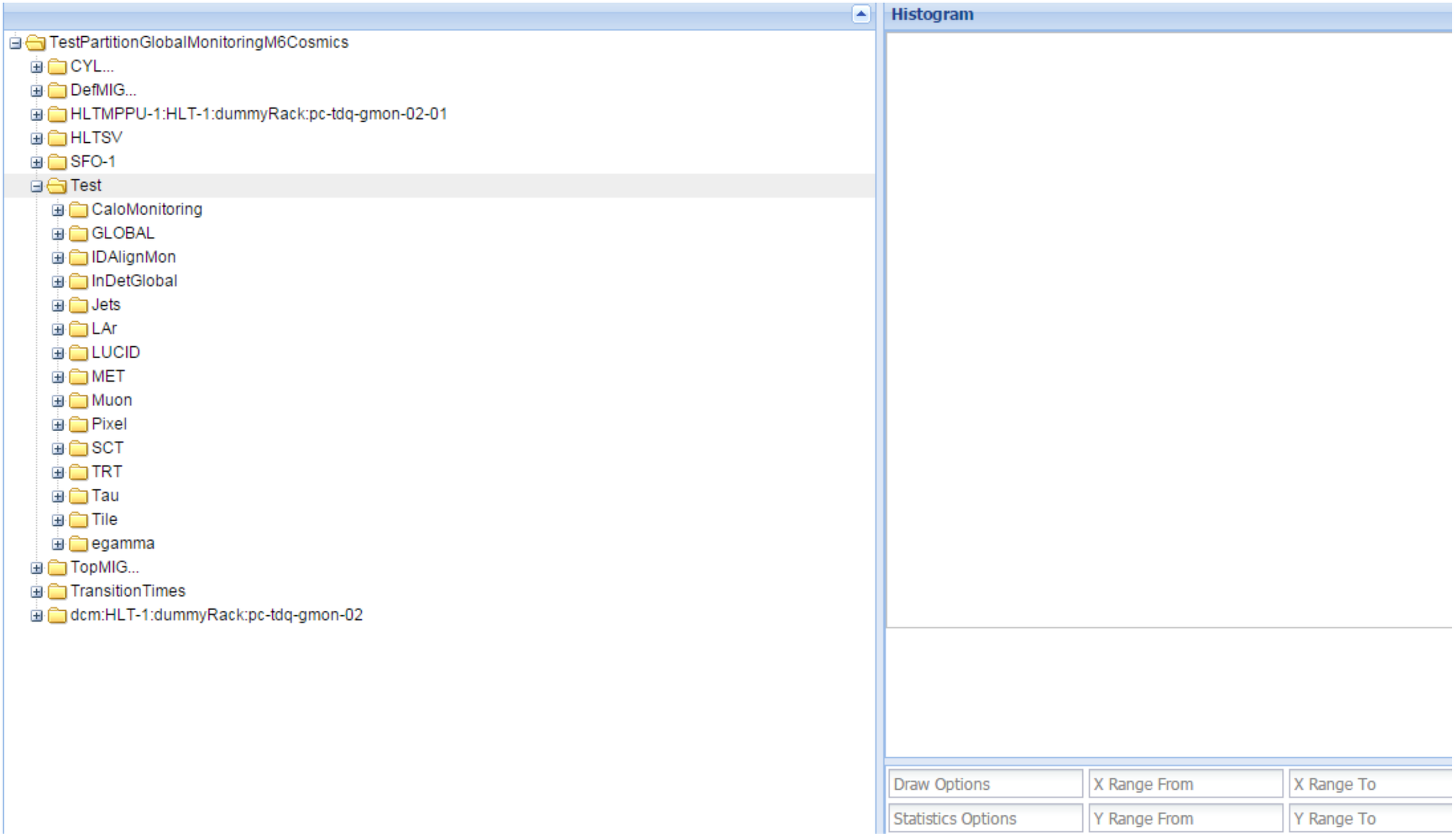
https://atlasop.cern.ch/tdaq/web_is/daq/runstatus.html

Atlas Partition Status

Partition	Services	Run Number	Run Type	State	Recording	Start	End	Time
part_ID_ytakubo	IS OH OKS PMG	246043	Physics	RUNNING	0	18/11/14 17:10:57	1/1/70 01:00:00	59892
part_TGC_FillTest	IS OH OKS PMG	246085	Emulated	NONE	0	18/11/14 20:02:44	18/11/14 20:09:17	392
initialL1CT	IS OH OKS PMG	243103	Physics	CONNECTED	0	20/10/14 13:07:46	20/10/14 15:14:45	7619
part_RPC	IS OH OKS PMG	242969	Physics	NONE	0	17/10/14 15:51:13	17/10/14 16:11:25	1212
part_MDT_all	IS OH OKS PMG	244768	Noise	???	0	6/11/14 19:23:43	6/11/14 19:24:19	35
part_TGC	IS OH OKS PMG	0	Emulated	NONE	0	1/1/70 01:00:00	1/1/70 01:00:00	???
PixelInfr	IS OH OKS PMG	246076	Physics	RUNNING	0	18/11/14 19:24:24	1/1/70 01:00:00	51882
part_ID_dev	IS OH OKS PMG	245968	Physics	RUNNING	0	18/11/14 12:04:14	1/1/70 01:00:00	78292
part_ID	IS OH OKS PMG	246093	Physics	RUNNING	0	19/11/14 09:28:23	1/1/70 01:00:00	1250
TDAQ-Tommaso	IS OH OKS PMG	245897	Physics	RUNNING	0	17/11/14 18:30:13	1/1/70 01:00:00	141536
PixelInfr_IBL	IS OH OKS PMG	246057	Physics	RUNNING	0	18/11/14 18:14:39	1/1/70 01:00:00	56072
TestPartitionGlobalMonitoringM6Cosmics	IS OH OKS PMG	245980	Physics	RUNNING	0	18/11/14 14:40:46	1/1/70 01:00:00	68902
ATLAS	IS OH OKS PMG	246060	Physics	RUNNING	1	18/11/14 18:20:14	1/1/70 01:00:00	55733
TRTMonitoringTest2	IS OH OKS PMG	245984	Physics	RUNNING	0	18/11/14 14:55:13	1/1/70 01:00:00	68032
part_MDT_Ba	IS OH OKS PMG	246095	Noise	RUNNING	0	19/11/14 09:48:51	1/1/70 01:00:00	20
TDAQROS	IS OH OKS PMG	245322	Physics	NONE	0	13/11/14 12:59:36	13/11/14 13:59:52	3616
part_MDT_DQM	IS OH OKS PMG	246002	Noise	RUNNING	0	18/11/14 15:38:22	1/1/70 01:00:00	65452
initial	IS OH OKS PMG	244954	Physics	???	0	10/11/14 12:09:32	1/1/70 01:00:00	769183

DQM tools: OH display

- Contains all monitoring histograms
  - appear under ATLAS partition for data taking
- Not user friendly but good for troubleshooting



DQM tools: OH display

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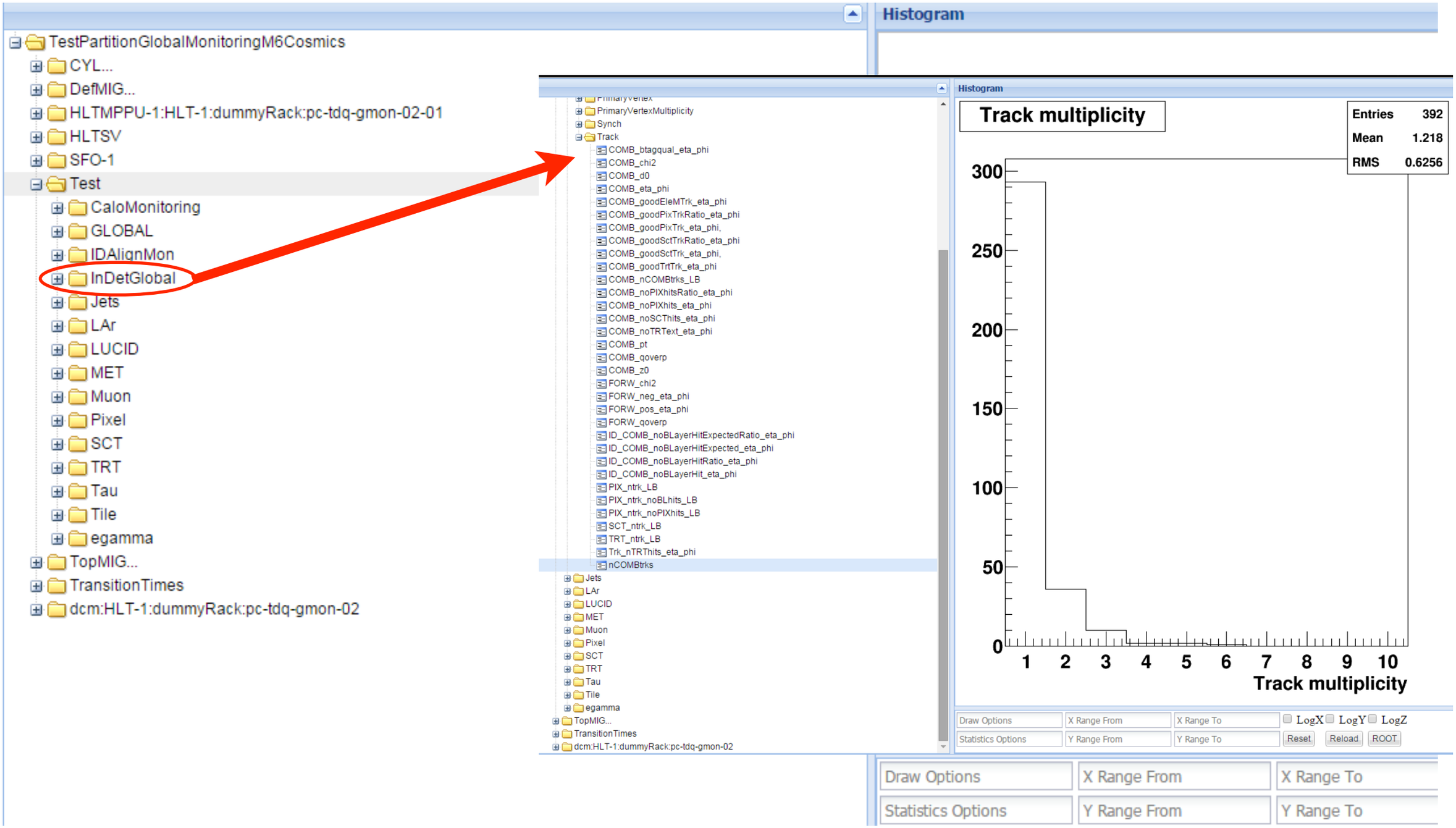
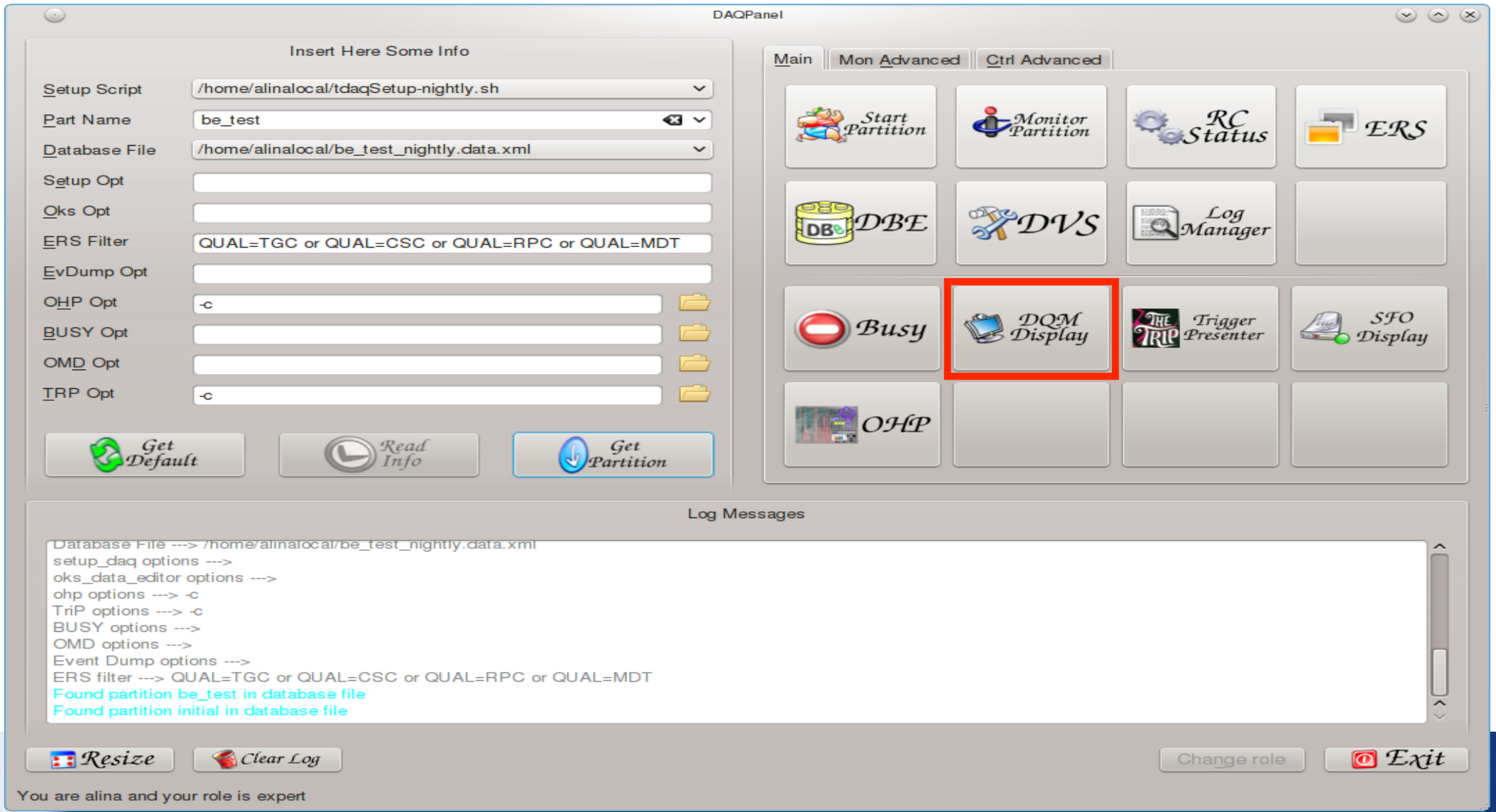
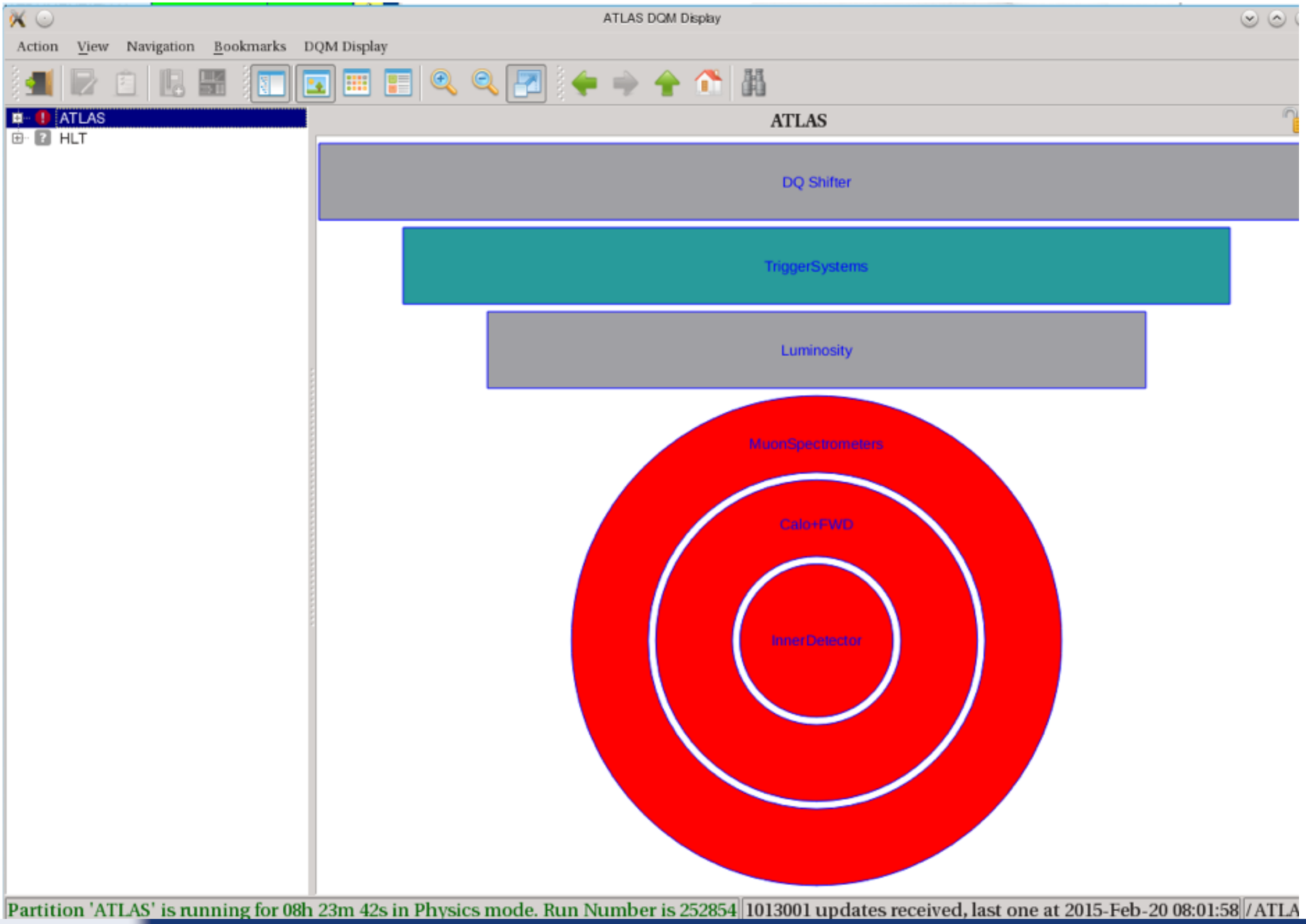


DQM tools: DQMF

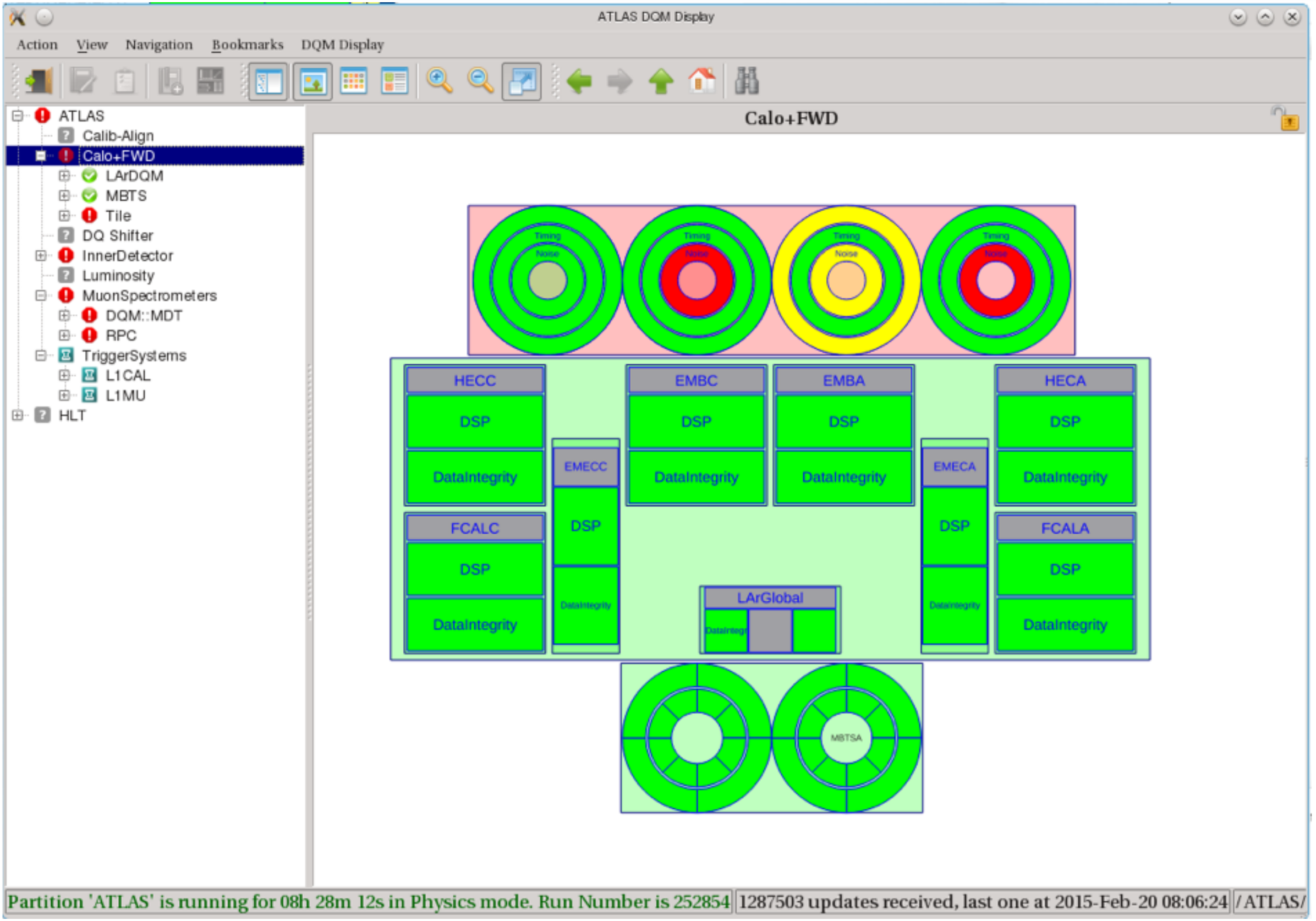
- Data Quality Monitoring Framework
  - 50'000 histograms are checked every few minutes
  - automatic DQ assessment is made per histogram (DQ result)
  - DQ result can be GREEN (all ok), YELLOW (flawed), RED (bad), GREY (unknown), BLUE (not enough statistics) or BLACK (detector/part not in run)
- To give meaningful results requires careful tuning of the algorithms



DQMD: general view



DQMD: calorimeter



DQMD: pixel

ATLAS DQM Display

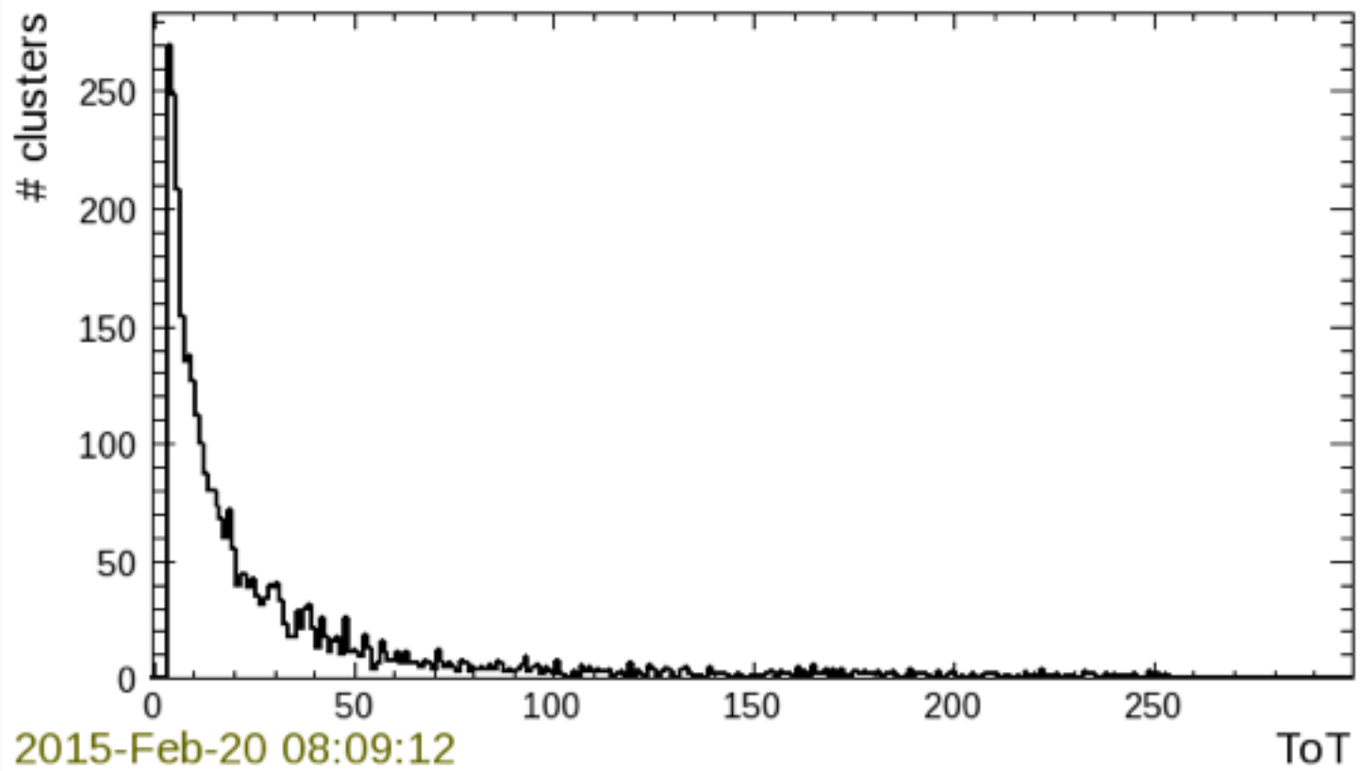
Action View Navigation Bookmarks DQM Display

- InnerDetector
  - PIXEL
    - AthenaPT
    - GNAM
    - OHP
      - ClusterOccupancySummary_GNAM
      - ClusterOccupancy_Athena
        - *PixelPT_Cluster_Occupancy_A*
        - *PixelPT_Cluster_Occupancy_B0*
        - *PixelPT_Cluster_Occupancy_B1*
        - *PixelPT_Cluster_Occupancy_B2*
        - *PixelPT_Cluster_Occupancy_C*
        - *PixelPT_Cluster_Occupancy_IBL2D*
        - *PixelPT_Cluster_Occupancy_IBL3D*
      - ClusterOccupancy_GNAM
      - Cluster_ToT_Athena
        - *PixelPT_Cluster_ToT_A*
        - *PixelPT_Cluster_ToT_B0*
        - *PixelPT_Cluster_ToT_B1*
        - *PixelPT_Cluster_ToT_B2*
        - *PixelPT_Cluster_ToT_C*
        - *PixelPT_Cluster_ToT_IBL2D*
        - *PixelPT_Cluster_ToT_IBL3D*
      - Cluster_groupsize_Athena
      - DisabledModule_GNAM
      - Errors
      - HitOccupancy_Athena
      - Hit_ToT_Athena
      - ModuleStatus_Athena
      - PixelTracks
      - Timing
  - SCT
    - SCT-Clusters
    - SCT-Disabled
      - SCT-Disabled-Summary
        - *SCT-Disabled-Summary-Histo*
        - *SCT-Masked-Summary-Histo*
      - SCT-Disabled-Tree
        - SCT-Disabled-B

PixelPT_Cluster_ToT_B2

Cluster ToT: barrel layer 2 (Run 252854)

Entries	3503
Mean	33.15
RMS	44.84
Underflow	0
Overflow	2



Result	Configuration	Description	Troubleshooting
2015-Feb-20 08:09:12 NBins=221	**PixelPT_Cluster_ToT_B2** Histogram(s): Histogramming-CombinedInDet-1-iss.CombinedInDet_Merged./ Pixel/ Clusters/ Cluster_ToT_B2 Weight: 1 Algorithm: Bins_GreaterThan_Threshold Parameters: BinThreshold=0 Thresholds: 0<NBins<1000;		

Partition 'ATLAS' is running for 08h 35m 22s in Physics mode. Run Number is 252854 | 1761988 updates received, last one at 2015-Feb-20 08:13:40 | /ATLAS/

While on shift…

- If you see empty or suspicious histograms in OHP or RED histograms in DQMD for some detector go talk to the corresponding system shifter
- Be specific: histograms system shifter is looking at might be different from the ones on DQ desk
- Make sure to compare high level histograms rather than low level (GNAM)
- Make a detailed log book entry including actions taken

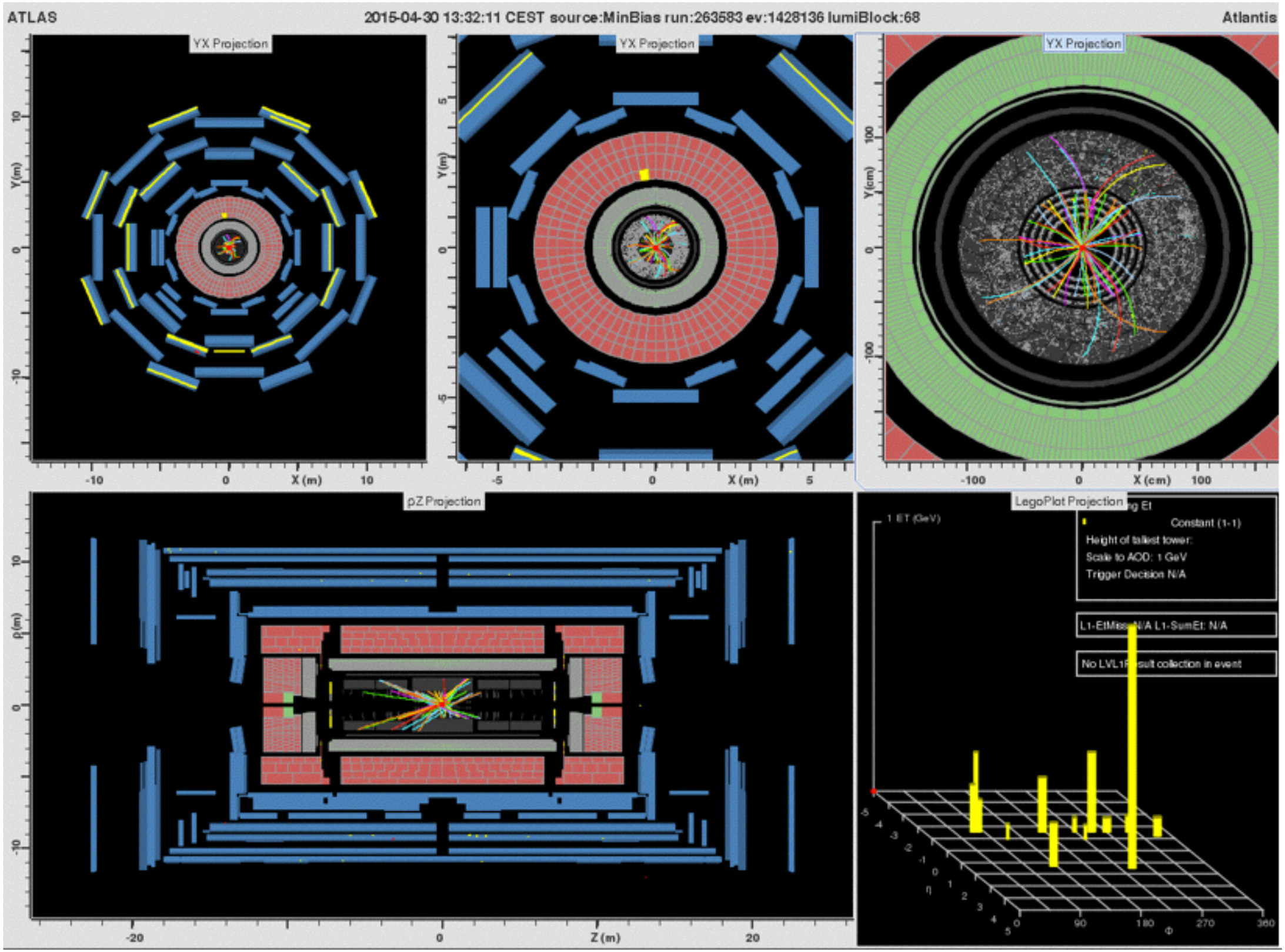
DQM tools: Trigger Presenter

- Monitoring the trigger performance in the control room is vital to make sure that ATLAS is maximising the data taken and it is a first opportunity to catch any problems
  - watch LVL1 and HLT trigger rates
  - notify Shift Leader about the jumps in trigger rate

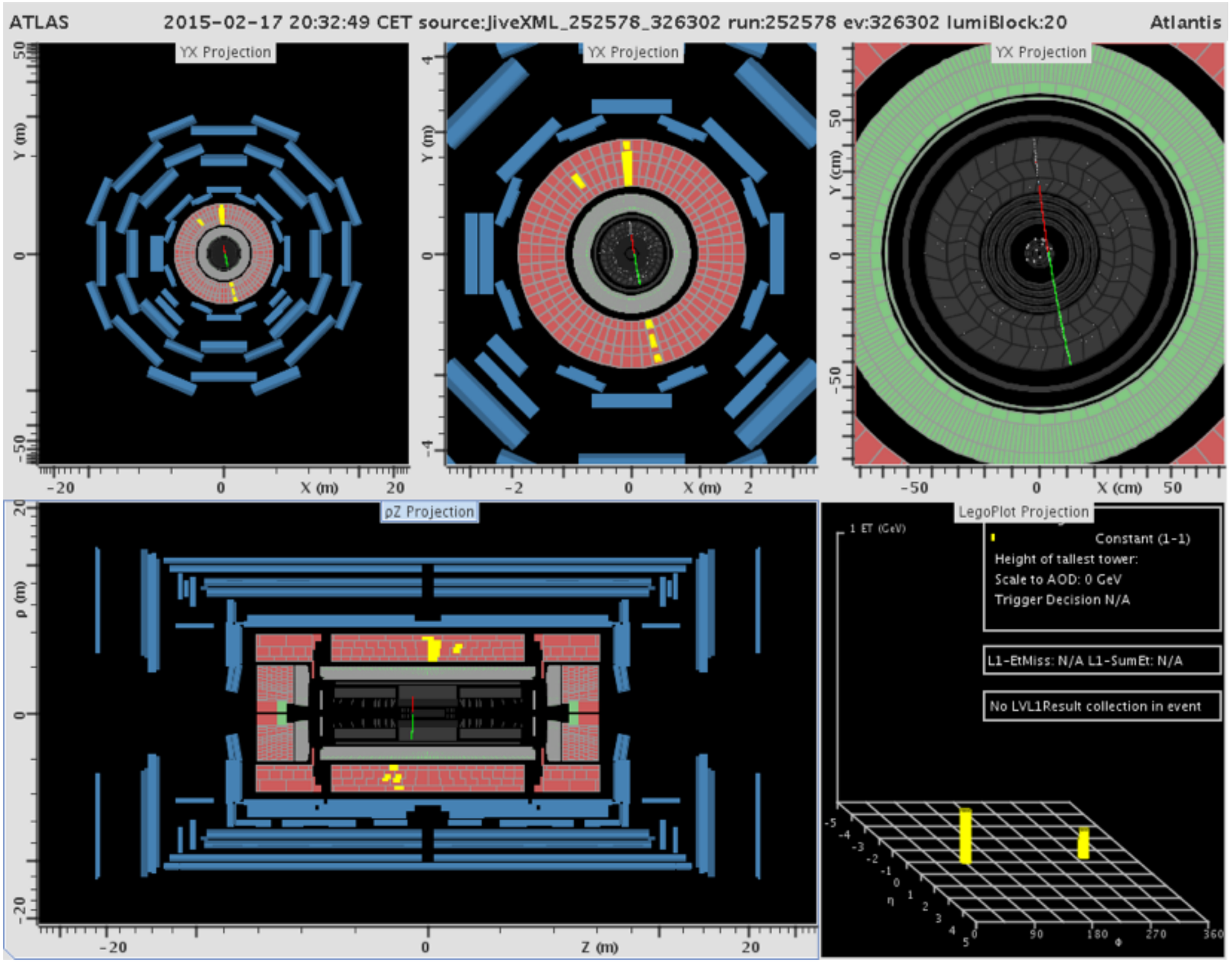
DQM tools: event displays

- Atlantis
  - 2D event display
- VP1
  - 3D event display
  - had problems in M7
  - not yet used routinely in ACR
- Both allow a selection of trigger mask and event stream
- Useful tool to see hits in the detectors participating in the run

Event display: Atlantis

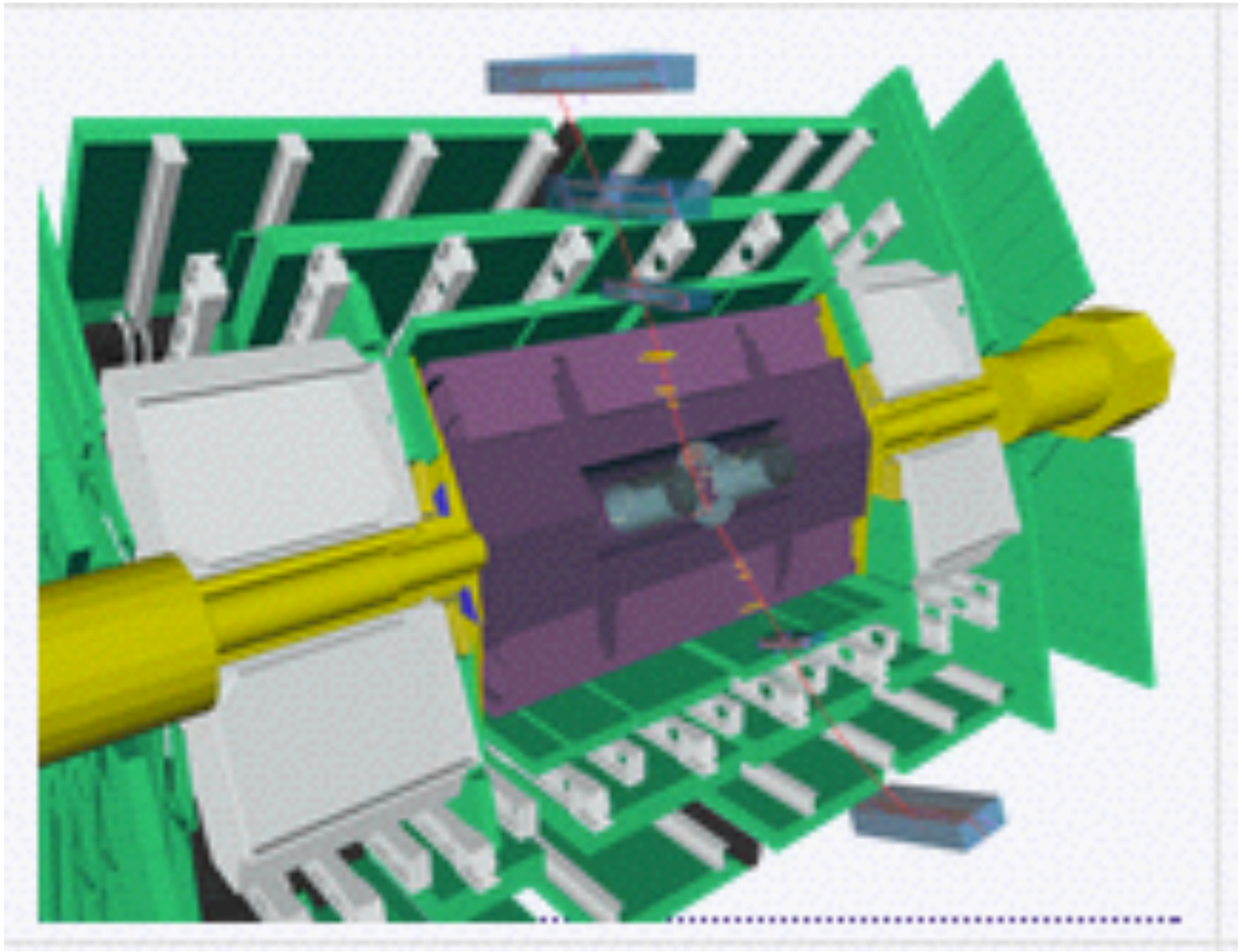


Example: event in Atlantis



Cosmic event in 3D

VP1



During your shift…

- Follow instructions - still work in progress
  - https://atlasop.cern.ch/twiki/bin/view/Main/DQManualShifter

Online Data Quality Shift Instructions

At start of your shift

- Read plan of the day
  - https://atlasop.cern.ch/twiki/bin/view/Main/PlanOfTheDay

Thu 26th - Milestone 8

(Milestone Week #8: Feb. 9th -- open ended)

Program:

- Run as much as possible with the combined partition.
- The Priority is to take data with TRT-Fast OR combined with all of the inner detector (IBL, PIX, SCT, TRT)
- Available components for overnight combined running: ALL -LUCID, ALFA
- trigger configuration as available. project tag data15_cos

Information about the systems excluded from the run

Thursday 26 February

- **11:00 to 13:00** HLT test including L1Calo , LAr, Tile, SCT, Pixel, RPC, MDT, TGC. L1Calo and Tile will join at 12:00 --- ongoing
- **14:00 to 15:00** MDT+CTP --- not started
- **17:00 to 18:00** L1Calo /Topo + CTP --- not started

Run and OPM Meetings

- **Wednesday Run Meeting 9am (due to shift training at 9:30)**

Other Days:

- **Run Meeting: 9:30 am daily**
- **OPM (P1 Operation): Mondays Morning 11 am**
- **Weekly Run Meeting: on Tuesdays after the daily part (9:30 am; slides from all sub-systems expected)**

On call phones

- **All on call phones should be operative. Please report missing or wrong numbers to Run Coordination.**
- **On call phones available under --> ATLAS --> Detector Operation --> On call Phones**

During your shift…

- Follow instructions (similar to Run 1)
  - https://atlasop.cern.ch/twiki/bin/view/Main/DQManualShifter

Online Data Quality Shift Instructions

Data Quality Whiteboard

Welcome to Run 2!

Configuration for M8:

- Setup Script ---> /det/tdaq/scripts/setup_TDAQ_tdaq-05-05-00.sh
- Partition --- > ATLAS
- Database File ---> /atlas/oks/tdaq-05-05-00/combined/partitions/ATLAS.data.xml
- ERS filter ---> QUAL=TDAQ or QUAL=LVL1
- ohp options ---> -c /atlas/moncfg/tdaq-05-05-00/combined/ohp/ohp_Global_Nexus_ATLAS.xml
- TriP options ---> -c /atlas/moncfg/tdaq-05-05-00/trigger/trp/gui/trp_gui_conf.M8.xml

Important information from the systems is available through the Shifter Assistant Web Alerts.

Known problems

- **MUON and TRIGGER** monitoring is disabled due to crashes. No histograms are expected.

Special information about current Atlantis event displays

DQ shifter should note that

- BeamSplashConfig01: high prescale -> will **not** update "regularly".
- BeamSplashConfig02: low prescale -> will update "regularly".

- read DQ White Board
- document problems and useful information
  - tools configuration information

During your shift…

Online Data Quality Shift Instructions

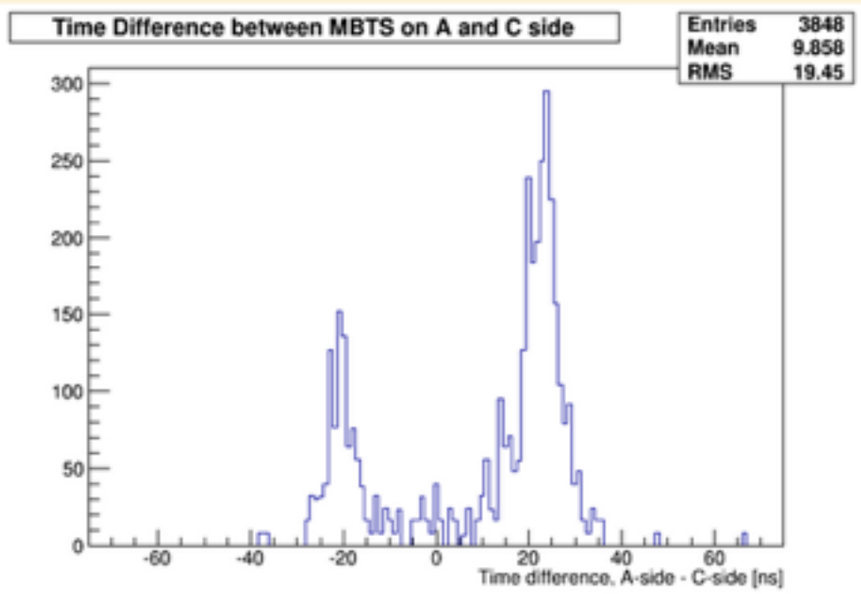
Shifter

- Overview
- Data Quality White Board
- Trouble Shooting (Review these items before contacting experts)
- READ at the beginning of the shift: Quest for catching beam collisions
- Contacts in case of
- Main Shift Tasks (s
- At the beginning of
- During your shift
  - DQ Checklist
  - Offline Compu
  - Operate the E
  - Online Histog
  - Online Histog
  - Luminosity an
  - Offline Compu
    - Mo
    - Up
    - Tra
    - Jo
  - Reporting obs
- At the end of your s
- Tips and Tricks

HowToCatchBeamColisions

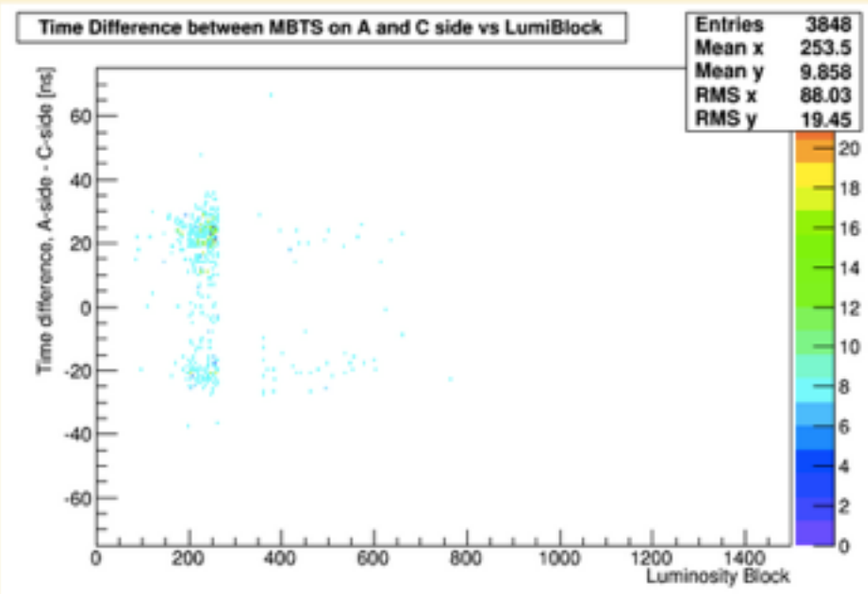
Data preparation would like to find any possible collisions which may come during the beam commissioning period in the next 1-2 months. According to LHC schedule two beams can be in LHC towards this weekend! We would like online DQ shifter to hunt for those events which can be later found offline. For the efficient hunting you have 4 histograms under "Timing" tab in OHP. Please check these histograms for possible collisions any time there are two beams circulating in the machine. If you observe peak at zero (i.e. no time difference between A and C side of both Tile and LAr check immediately with the trigger shifter if there are two beams in the machine. If this is the case recond LB block number and call DQ run coordinator 161039 if this happened between 8:00 and 23:00, make e-log entry and send a message to atlas-dataquality-conveners@NOSPAMcern.ch. Shifter who catches the first collision will get a bottle of wine from ATLAS data preparation-data quality team.

Tile: Time difference between A and C side



The plot shows time difference distribution between A and C side of Tile calorimeter without any beam collisions which is typical for the currect data taking. For a collision one have to see peak at zero. Small peak at zero most likely is due to random coinsidence. It has to be confirmed by the LAr plots below.

Tile: Time difference between A and C side vs LB



The plot shows time difference distribution between A and C side of the Tile calorimeter without any beam collisions which is typical for the currect data taking. For a collision one have to see point at zero in some LB.

During your shift

- Follow instructions (similar to Run 1)
  - https://atlasop.cern.ch/twiki/bin/view/Main/DQManualShifter
  - read DQ White Board
  - report what is missing
  - instructions will be updated based on your feedback
  - there are no reference plots for cosmics, only histogram names
  - reference plots for collisions are available from Run 1
    - https://atlasop.cern.ch/twiki/bin/view/Main ATLASGlobalHistogramsCollisions
- Document your shift in the log book (ELisA):
  - https://atlasop.cern.ch/elisa/display?logbook=ATLAS
  - open the editor using *Kwrite* item in the *General* menu
    - You can use the editor to take notes for the end-of-shift summary
- Talk to your fellow subsystem and trigger shifters
- Remember that we are in "work in progress" regime and we need your help to do better

Backup

Run 2 express stream

- https://twiki.cern.ch/twiki/bin/view/AtlasExpressStream#Run_2_Physics_Physics_pp_v5_menu

- information about streams for comics
  - express
  - IDcalo
  - IDcosmic
- proposal for collision
  - different composition for low and high luminosity run
  - affects DQ histograms
  - requires different references and thresholds for DQMD

LOW LUMI Egamma		
e24_medium_L1EM18VH	0.2	Primary, no isolation
e24_lhmedium_L1EM18VH	0.2	Primary, no isolation
2e12_loose	0.2	Primary dielectron trigger
2e12_lhloose	0.2	Primary dielectron trigger
e24_lhtight_L1EM20VH_e15_etcut_Zee	0.4	Z T&P
e5_lhtight_e4_etcut_Jpsiee	0.1	J/psi T&P
e24_(lh)medium_idperf_L1EM20VH	0.5	Tracking validation
g35_loose_g25_loose	0.4	Primary di-photon
HIGH LUMI Egamma		
e24_tight_L1EM20VH	0.2	Primary, no isolation
e24_lhtight_L1EM20VH	0.2	Primary, no isolation
2e15_loose	0.2	Primary dielectron trigger
2e15_lhloose	0.2	Primary dielectron trigger
e24_lhtight_L1EM20VH_e15_etcut_Zee	0.4	Z T&P
e5_lhtight_e4_etcut_Jpsiee	0.1	J/psi T&P
e24_(lh)medium_idperf_L1EM20VH	0.5	Tracking validation
g35_medium_g25_medium	0.4	Primary di-photon