Welcome

- Thank you for attending today's Muon Shifter Training
  - Training organised by topic (Detector, DCS, DAQ, Monitoring)
- Aim for current Muon Shifts (i.e. before beam)
  - Beginning of routine shift operation
  - Still working on the detector/software, not everything will be smooth
  - Get the detector into a stable state with all remaining problems fixed
- Interaction with Experts
  - Expect many expert interventions
  - You are supposed to keep the overview
    - i.e. experts should inform you before starting an intervention
    - If you see unexpected things happening in the system, not caused by you → call expert

Topics covered in this talk

- Shift training
- Prerequisites for taking muon shifts
- Documentation
- The ATLAS control room
- The muon shifter desk
- How to get help

Shift Training

- Run-2 Training Requirements
  - Training is compulsory
  - First shift not later than 2 month after training
  - At least 3 shadow shifts done before first shift
  - If more than 2 months without shifts, another shadow shift is required
  - Please, don't start with a night shift

Before your first Shift

- Safety Courses required
  - CERN Safety Introduction
    - The standard any CERN user must follow
  - ATLAS safety course 4A – follow it on the web at http://sir.cern.ch
- Access Rights
  - Your CERN card gets you into Point1
    - After 19h00 you need to open the gate as well
  - You'll need the access right ATL_CR for entering the control room
    - Request ATL_CR access via http://edh.cern.ch → Access Request
- Accounts
  - You need a CERN NICE account
    - Any CERN user has that
- Shift Booking
  - Authorisation inside Point1 is handled by roles, you will have the **MUON:shifter** role enabled automatically via OTP http://atlas-otp.cern.ch
    - Thus it's important, that the correct shifter is registered in OTP, don't swap shifts, without changing in OTP
- Note: ... do this well in advance before your shift

Documentation

- There are several places with info to prepare for a shift or refresh your knowledge
  - Slides from this shift training

    https://indico.cern.ch/event/374218/

  - The shift manual

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

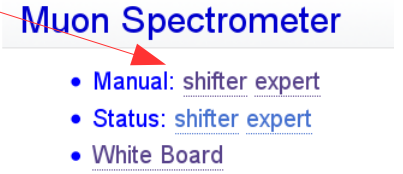
    or via https://atlasop.cern.ch/twiki/bin/view/Main/AtlasOperation

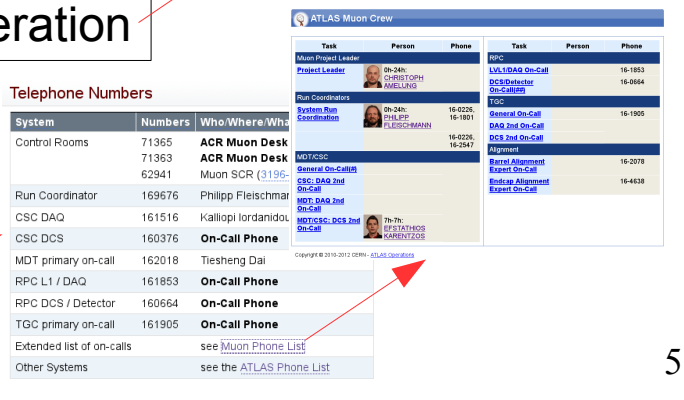
    - Please report incomplete and/or incorrect information
  - The muon whiteboard

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

    or via https://atlasop.cern.ch/twiki/bin/view/Main/AtlasOperation

    - Find here latest news on detector conditions, temporarily not working parts, …
    - Contains the current list of experts on-call

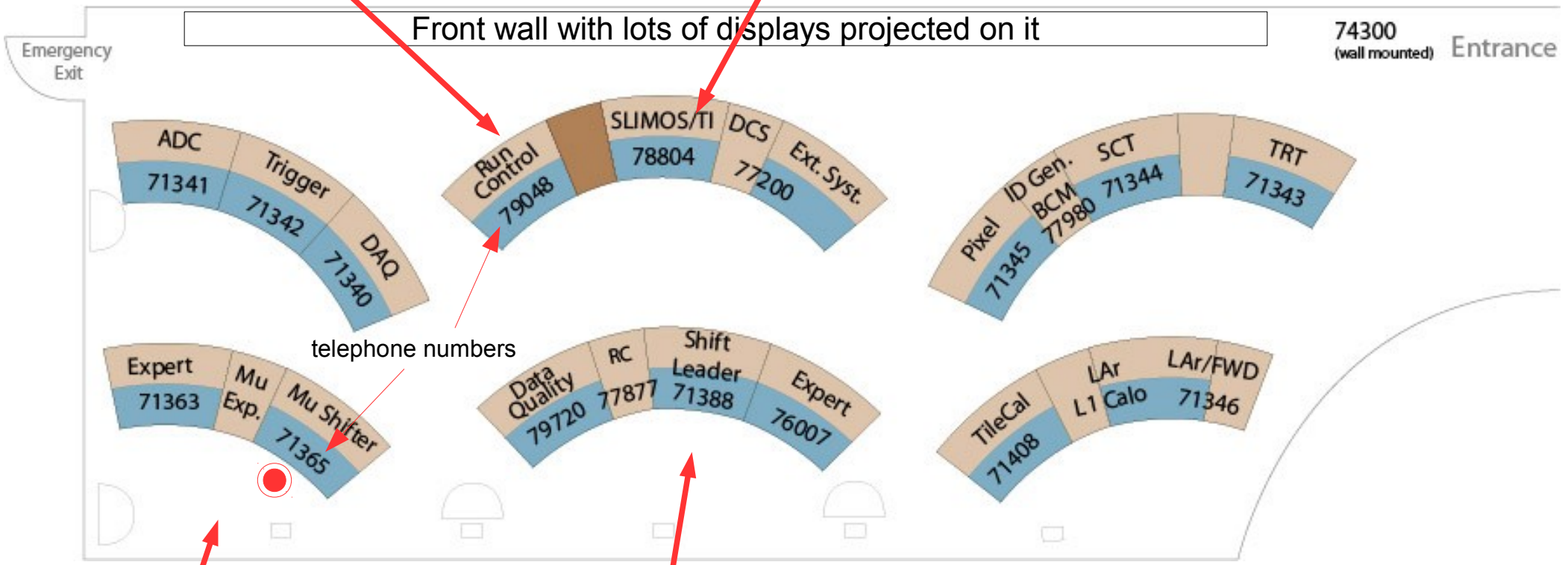




The ATLAS Control Room

Run Control: The ATLAS partition is run from here. Check with him/her if you see ununderstood errors from the DAQ.

The **SLIMOS** monitors the ATLAS technical infrastructure and safety systems. Check with him/her if there are alarms concerning racks, cooling, ...



Muon Corner

You are here

The **Shift Leader** in absence of the run Coordinator has the say what is done.

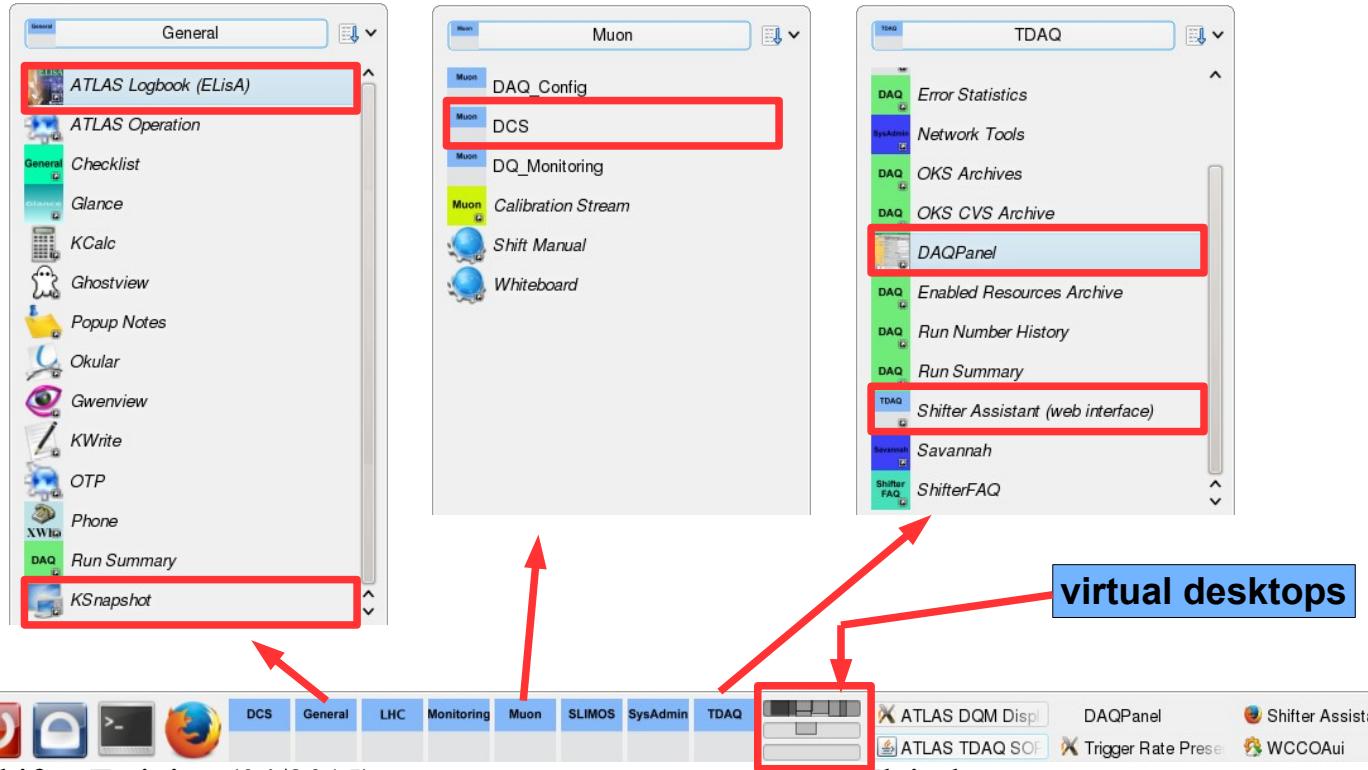
Inform him/her of any (larger) problem
Ask him/her for help with any problems with the control room infrastructure

When arriving for your shift

- Please arrive for your shift 10-15 minutes early
  - i.e. never come late (or phone the previous shifter if delayed)
- Do a thorough handover with the previous shifter
  - check detector and run status, any problems, pending actions, …
- Check the recent entries in the electronic logbook
- Read the information on the muon white board
  - Do this before every shift, since you'll find latest info on current problems here
- Check the windows and applications open on your desk's screens
  - Close unneeded applications or those open multiple times
- Log in with your NICE user name to
  - DCS FSM and alarm screen
  - ATLAS electronic logbook
- If there is any login problem, please ask the shift leader for advice

The Muon Desk

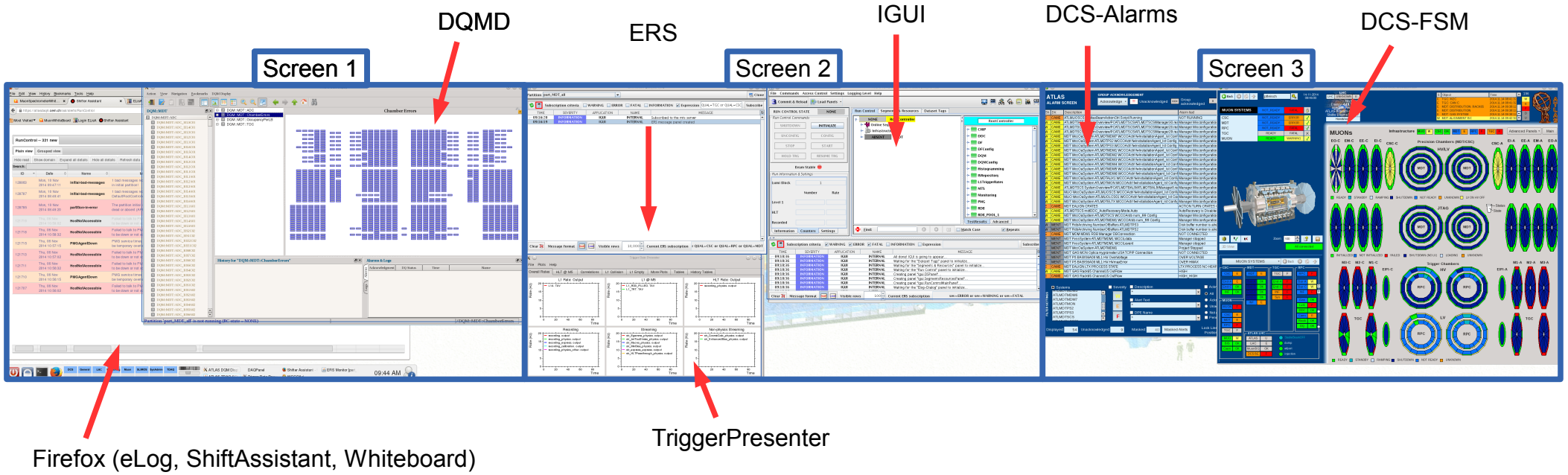
- You have 3 screens at your disposal
  - And on each 3 virtual desktops
- Please regularly close unused applications
  - You can get lost or run out of memory otherwise
- Most applications needed are started from the menu bar



The Muon Desk

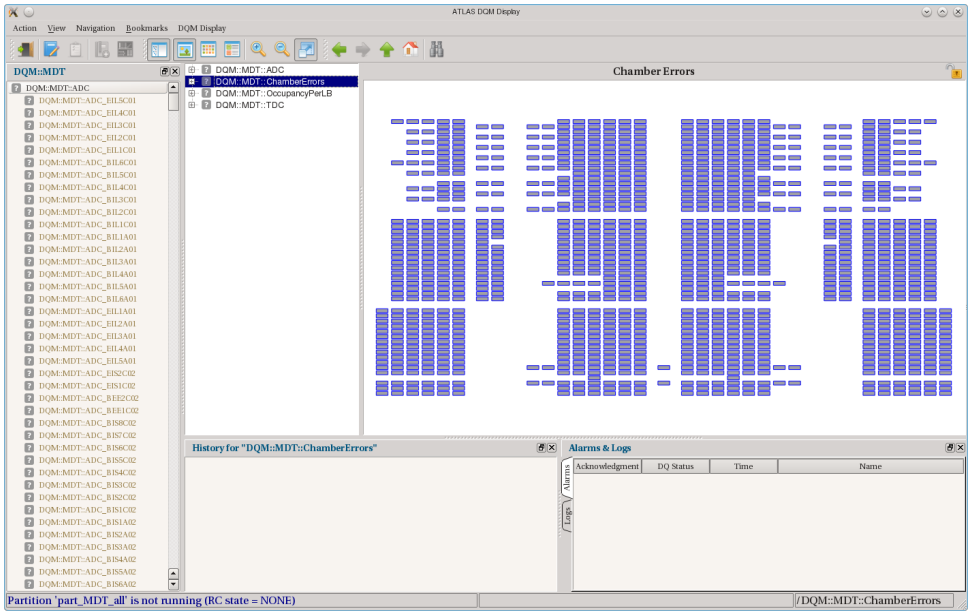
- Troubleshooting
  - Menu bar does not show expected content
    - Log out and back in again
  - Log in to the Muon Desk
    - User: crmuon – no password – Muon:Shifter profile
      - i.e. don't use your own user name
    - If middle screen does not display correctly, log out and in again
  - Screen/Desk frozen
    - Attempt to restart X-server via Ctrl+Alt+Backspace
  - Screen + keyboard frozen
    - Ask the run control shifter or shift leader for help
  - Single non-responsive application
    - Use 'xkill' from a terminal command line

The Muon Desk Setup

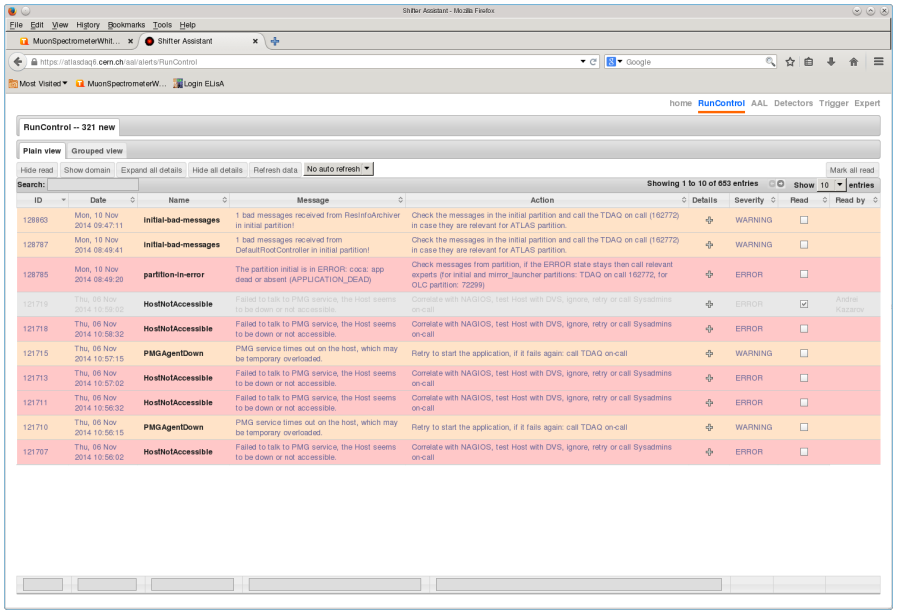


- There is a list of applications you should always have open
  - Screen1: monitoring related
    - DQMD, ShiftAssistant, eLog, WhiteBoard
  - Screen2: DAQ related
    - IGUI, ERS, DAQPanel, (if needed LogManager, TriggerPresenter)
  - Screen3: DCS related
    - DCS FSM, DCS alarms
- Note
  - You can fix an application to all virtual desktops by clicking on the round button in the top left corner of the window decoration frame (this way you can also move a window to another virtual desktop)

Monitoring Applications



- Data Quality Monitoring Display (DQMD)
  - Central monitoring tool
  - Started via DAQPanel



- ShiftAssistant
  - Started from bookmark in Firefox or from TDAQ-menu
  - Still to be deployed by muon experts, more in future training sessions

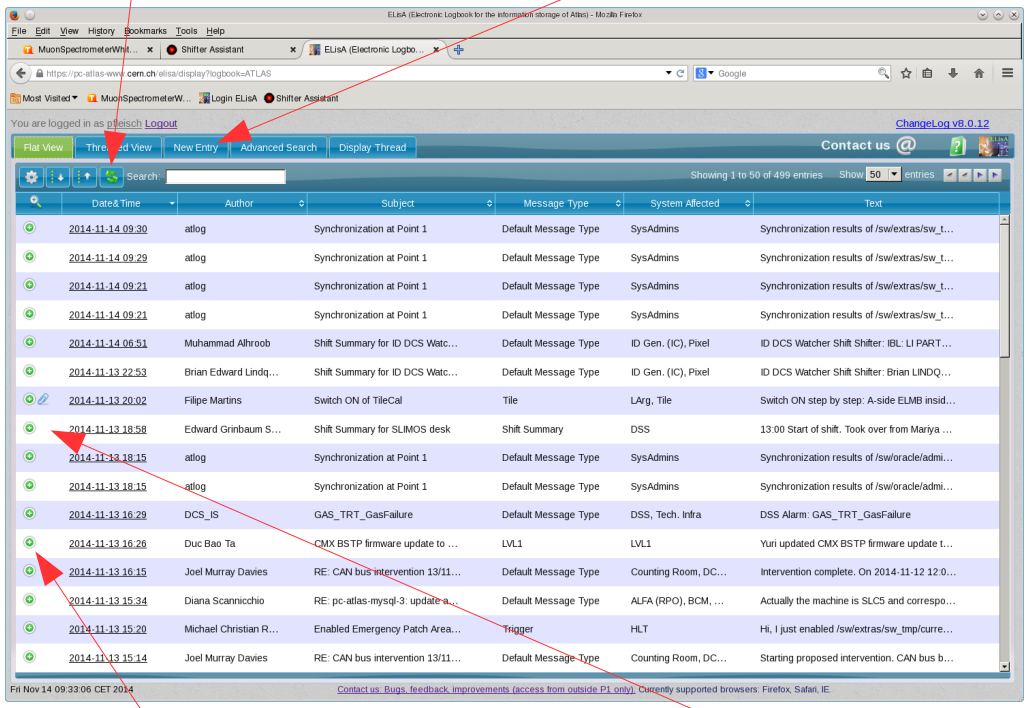
ATLAS Electronic Logbook (eLog/ELisA)

https://atlasop.cern.ch/elisa/display

- LogBook
  - Web application
  - Start from Firefox bookmark or from General-menu
  - Login with NICE account

Press to update list of entries

Click on 'New Entry' to write a new message

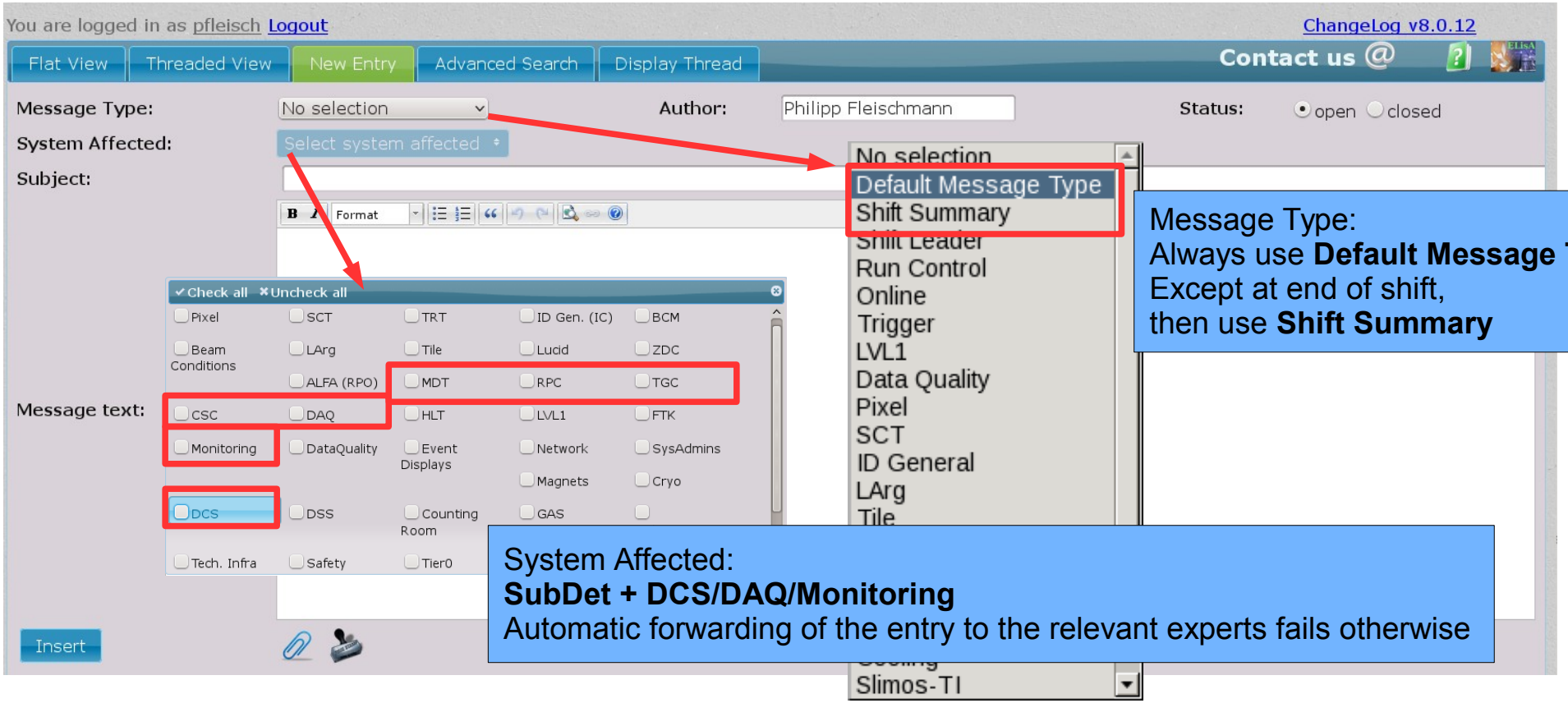


Click on **+** to see more details

Reply to an entry by clicking on it, then selecting reply

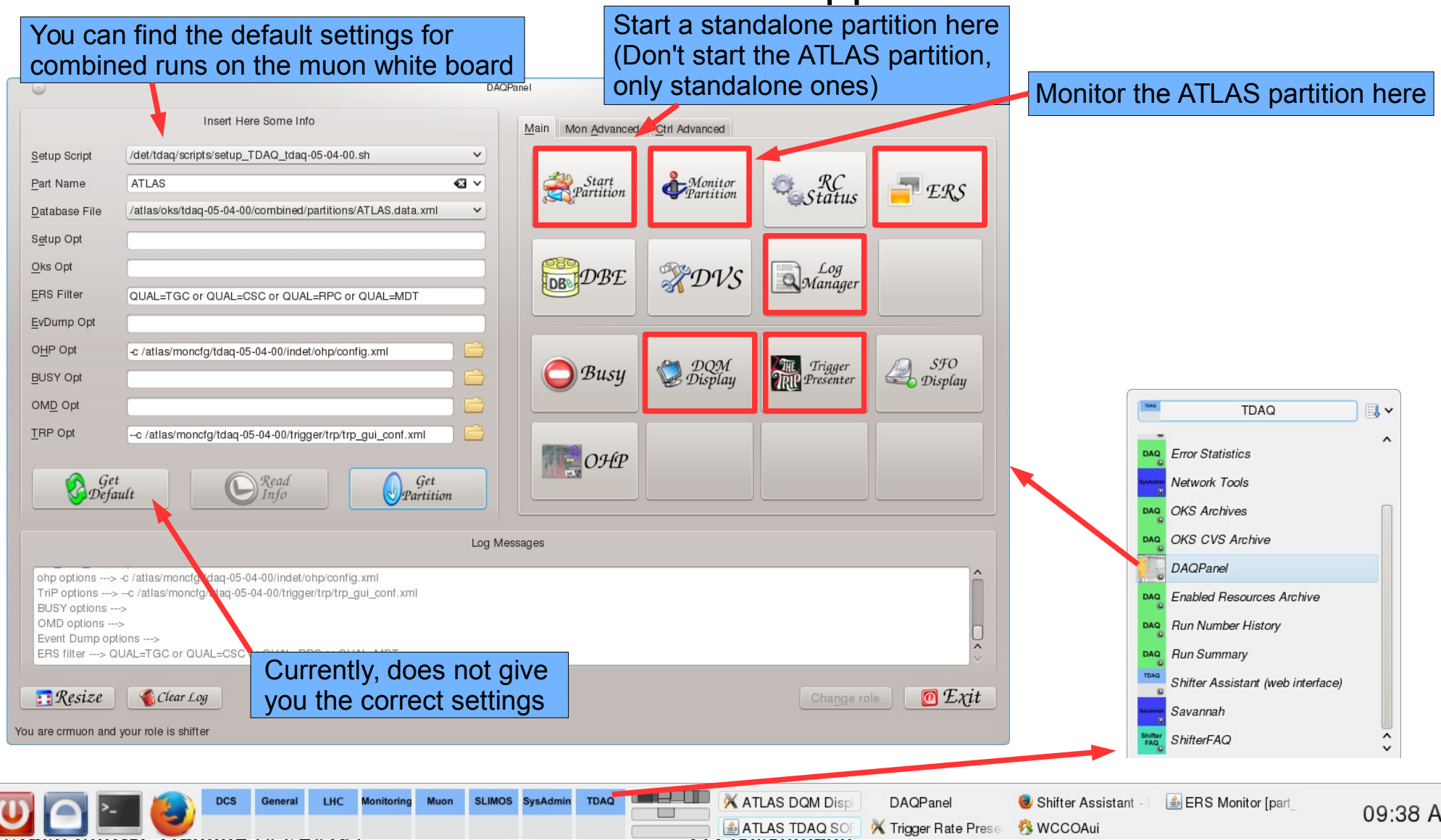
Writing eLog Entries

- When and what to write?
  - Whenever something out of the usual happens
  - Whenever you change a configuration (include a chamber, switch off HV, …)
  - For all new DCS alarms of your systems
  - At the end of your shift
    - https://atlasop.cern.ch/twiki/pub/Main/MuonOperationManualShifter/MuonShiftSummaryTemplate.txt
    - https://atlasop.cern.ch/twiki/pub/Main/MuonOperationManualShifter/MuonShiftSummaryExample.txt
  - In case an expert has asked you to do something, always include his/her name in eLog

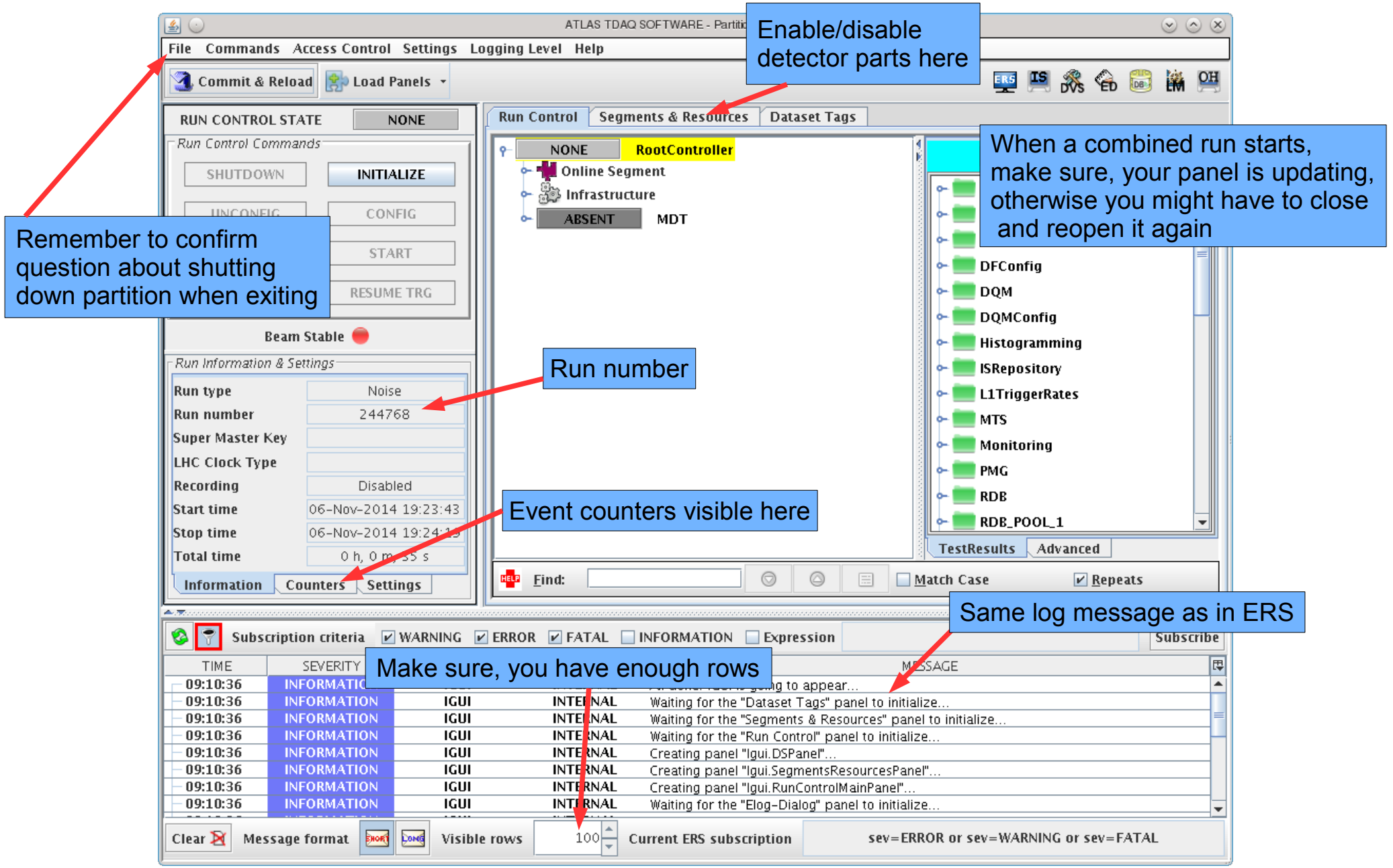


DAQPanel

- Central DAQ panel to set up and start partitions
  - You also start most of the DAQ applications from here

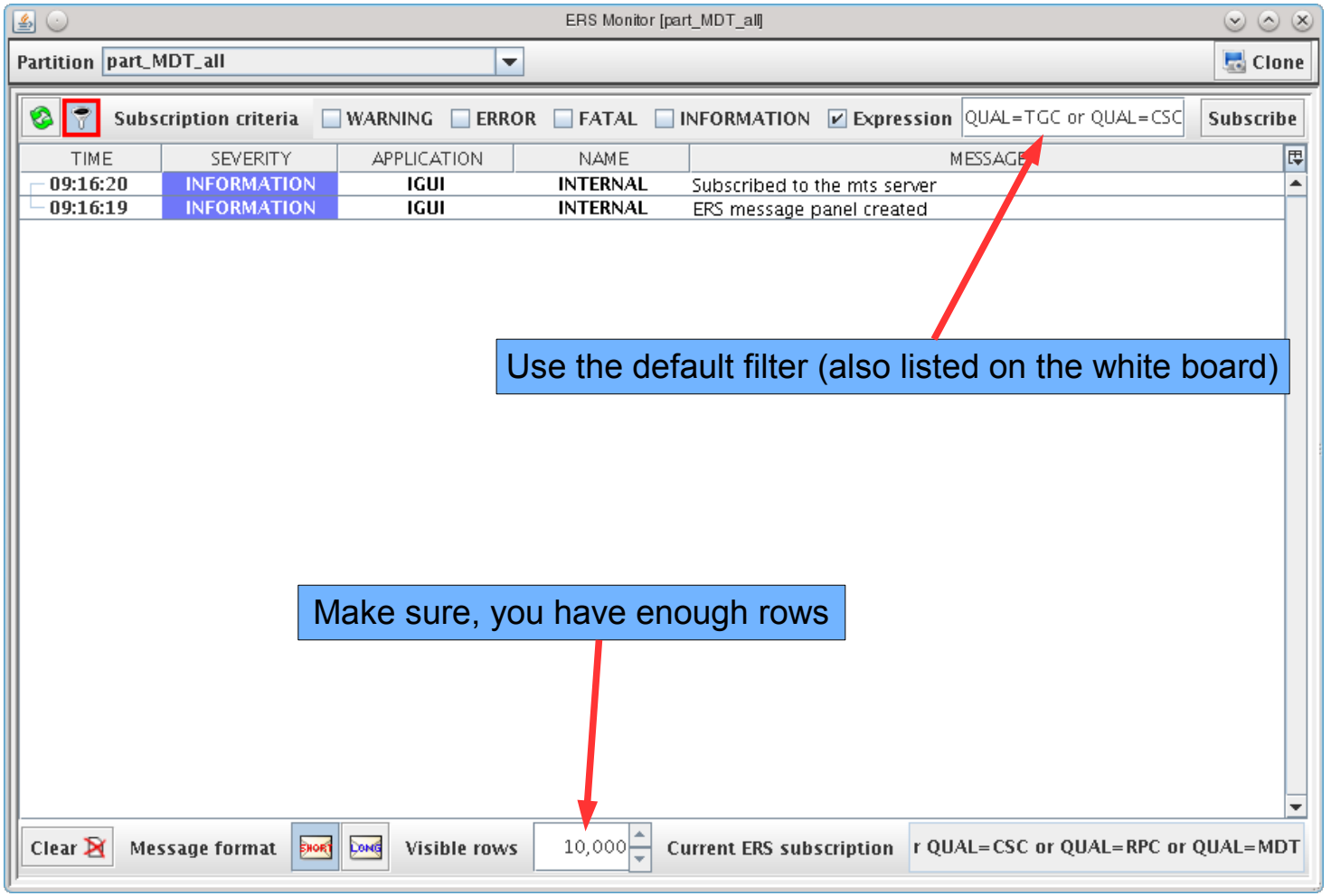


DAQ - IGUI


Enable/disable detector parts here
When a combined run starts, make sure, your panel is updating, otherwise you might have to close and reopen it again
Remember to confirm question about shutting down partition when exiting
Run number
Event counters visible here
Same log message as in ERS
Make sure, you have enough rows
ATLAS TDAQ SOFTWARE - Partiti
File Commands Access Control Settings Logging Level Help
Commit & Reload
Load Panels
RUN CONTROL STATE
NONE
Run Control Commands
SHUTDOWN
INITIALIZE
CONFIG
START
RESUME TRG
Beam Stable
Run Information & Settings
Run type
Noise
Run number
244768
Super Master Key
LHC Clock Type
Recording
Disabled
Start time
06-Nov-2014 19:23:43
Stop time
06-Nov-2014 19:24:15
Total time
0 h, 0 m, 35 s
Information
Counters
Settings
Run Control
Segments & Resources
Dataset Tags
NONE
RootController
Online Segment
Infrastructure
ABSENT
MDT
DFConfig
DQM
DQMConfig
Histogramming
ISRepository
L1TriggerRates
MTS
Monitoring
PMG
RDB
RDB_POOL_1
TestResults
Advanced
Find:
Match Case
Repeats
Subscription criteria
WARNING
ERROR
FATAL
INFORMATION
Expression
Subscribe
TIME
SEVERITY
MESSAGE
09:10:36 INFORMATION IGUI INTERNAL Waiting for the "Dataset Tags" panel to initialize...
09:10:36 INFORMATION IGUI INTERNAL Waiting for the "Segments & Resources" panel to initialize...
09:10:36 INFORMATION IGUI INTERNAL Waiting for the "Run Control" panel to initialize...
09:10:36 INFORMATION IGUI INTERNAL Creating panel "Igui.DSPanel"...
09:10:36 INFORMATION IGUI INTERNAL Creating panel "Igui.SegmentsResourcesPanel"...
09:10:36 INFORMATION IGUI INTERNAL Creating panel "Igui.RunControlMainPanel"...
09:10:36 INFORMATION IGUI INTERNAL Waiting for the "Elog-Dialog" panel to initialize...
Clear
Message format
Visible rows
100
Current ERS subscription
sev=ERROR or sev=WARNING or sev=FATAL

DAQ - ErrorReportingSystem (ERS)

- Log messages from DAQ
  - Same as visible in the IGUI
  - Only limited number of rows visible
  - Only current on-going run visible

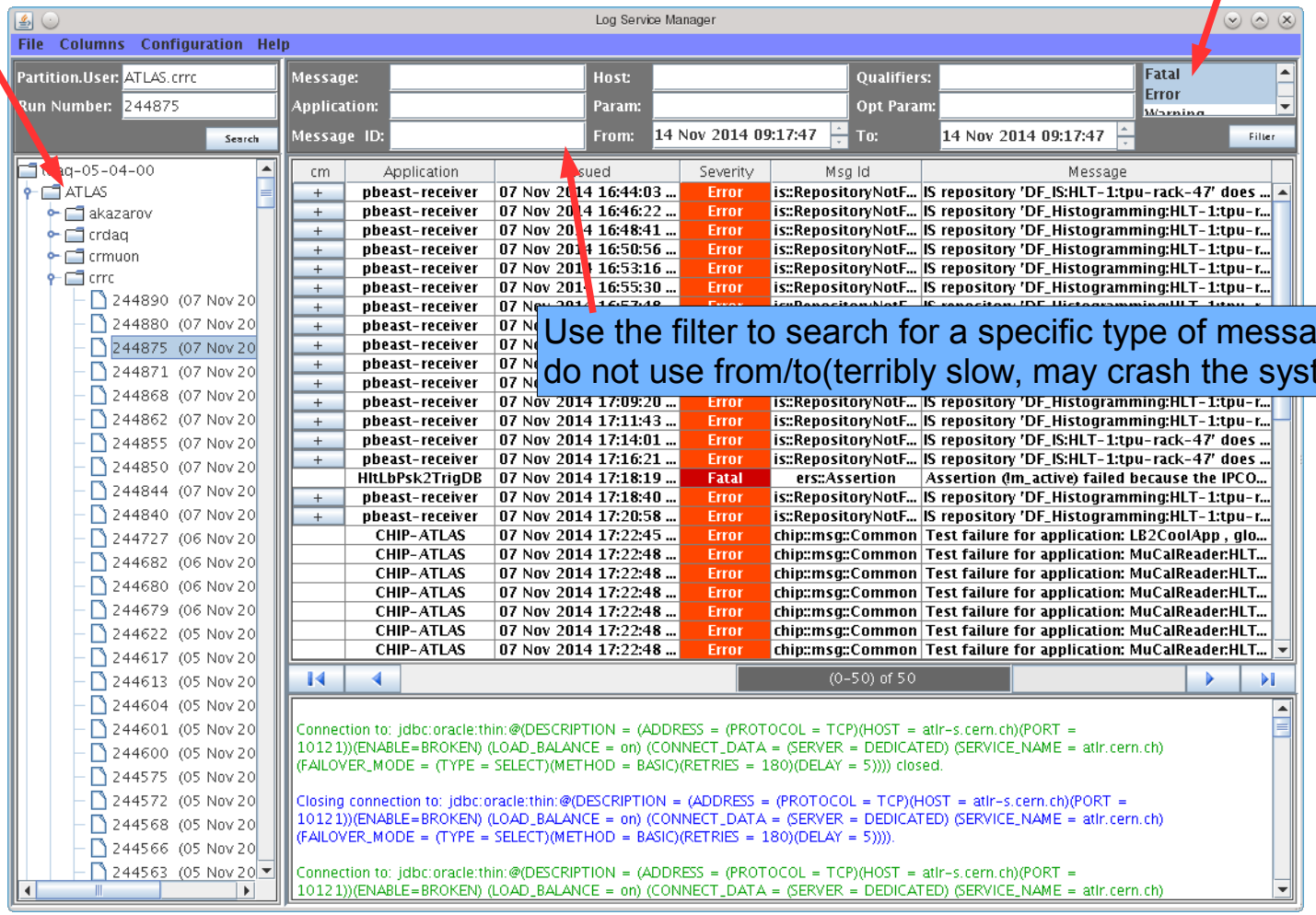


DAQ - LogManager

- Log messages from DAQ for past runs
  - Same as visible in the IGUI or ERS, but also for past runs

Select partition and 'owner' of the partition, (for ATLAS: crrc), then select the run number

You can easily filter on the severity



Use the filter to search for a specific type of message; do not use from/to(terribly slow, may crash the system)

How to Get Help

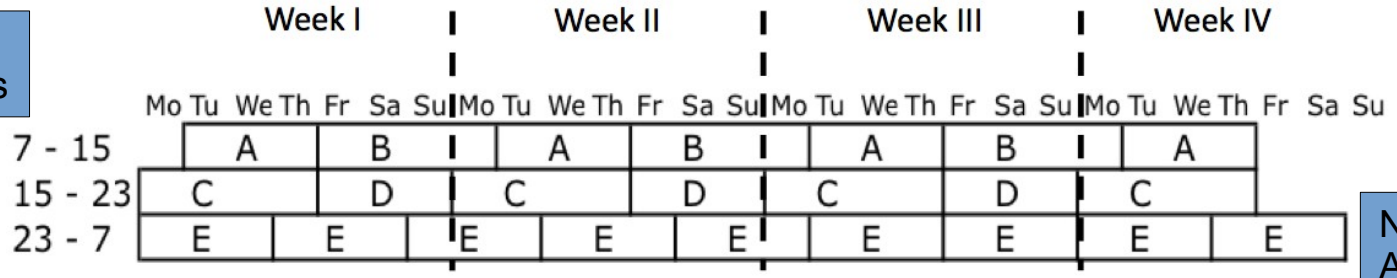
- Muon experts
  - You find the phone numbers of the experts on-call on the Muon Whiteboard
  - In particular outside normal working hours stick to this list
  - During daylight don't hesitate to bother experts also for simple questions
- Non-Muon experts
  - Any CERN piquet for technical infrastructure (e.g. gas) should be called by the SLIMOS
  - Before calling sys-admins on-call for a computer problem, please check with the shift leader and run control shifter, who might be able to help
- Muon Run Coordinator
  - For questions concerning the work plan during the shift
  - If there are larger problems on one or more muon sub-systems
  - In case of infrastructure problems or DSS alarms

Backup

Shift Organisation

- The shift times
  - Morning shift: 7h00 – 15h00
  - Evening shift: 15h00 – 23h00
  - Night shift: 23h00 – 7h00
- The shift block scheme

Day shift blocks:
Alternating 3 or 4 shifts



Night shift blocks:
Always 3 shifts

- CERN work and safety regulations https://atlasop.cern.ch/shift.html
  - After 6 consecutive days of shifts, minimum of 36h rest
  - Within 24h period,no more than 1 shift can be done
- Block scheme and restrictions is taken care of by booking system

The ATLAS Control Room