

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

Muon Spectrometer

- [Manual](#): shifter expert
- [Status](#): shifter expert
- [White Board](#)

Telephone Numbers

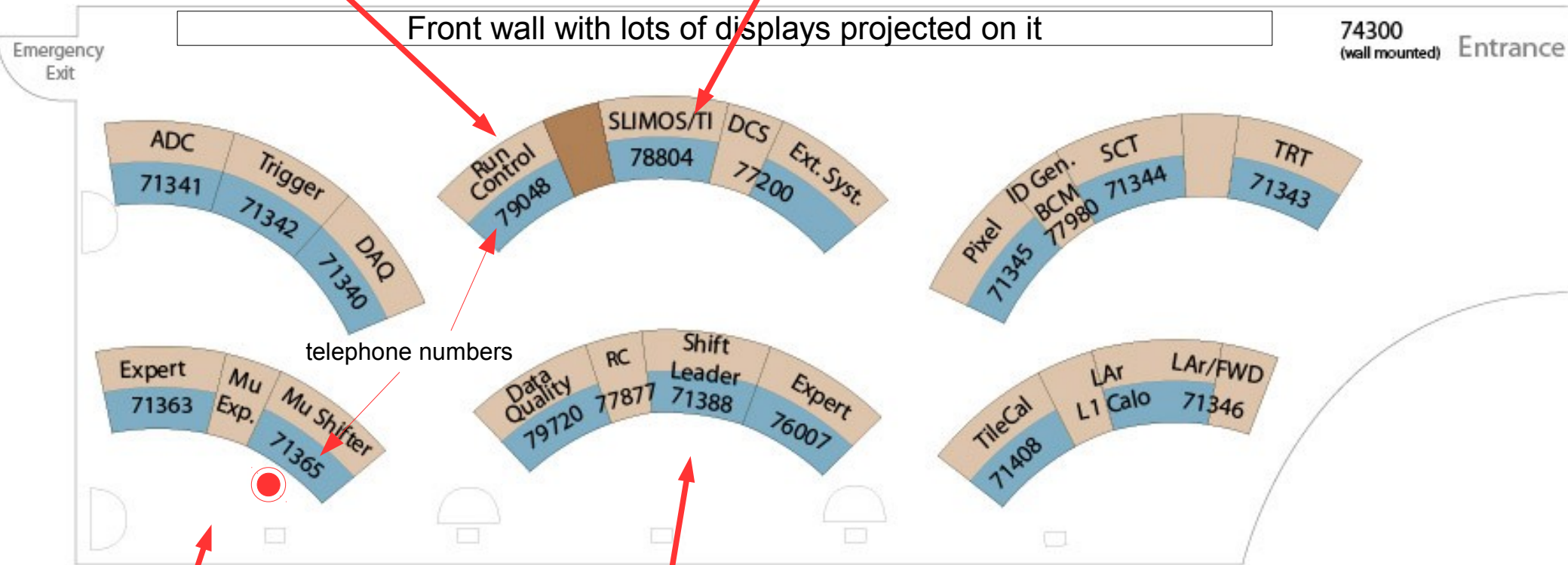
System	Numbers	Who/Where/When
Control Rooms	71365	ACR Muon Desk
	71363	ACR Muon Desk
	62941	Muon SCR (3196)
Run Coordinator	169676	Philipp Fleischmann
CSC DAQ	161516	Kalliopei Iordanidou
CSC DCS	160376	On-Call Phone
MDT primary on-call	162018	Tiesheng Dai
RPC L1 / DAQ	161853	On-Call Phone
RPC DCS / Detector	160664	On-Call Phone
TGC primary on-call	161905	On-Call Phone
Extended list of on-calls		see Muon Phone List
Other Systems		see the ATLAS Phone List

ATLAS Muon Crew					
Task	Person	Phone	Task	Person	Phone
Muon Project Leader			RPC		
Project Leader	On-24h: CHRISTOPH NIELSEN		LVL/DAQ On-Call		16-1853
Run Coordinator			On-Call Detector		16-2064
System Run Coordinator	On-24h: PHILIPP FLEISCHMANN	16-0226, 16-1801	On-Call		16-1905
MOT/DCS General On-Call			General On-Call		16-0226, 16-2047
DAQ, DCS 2nd On-Call			DCS 2nd On-Call		
On-Call			DCS 2nd On-Call		
MOT/DCS, DCS 2nd On-Call			Alignment		16-2078
On-Call	7h-7h: EFSTATHIOS KASPERIDIS		General Alignment Expert On-Call		16-4638
			End-of-Run Alignment Expert 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.

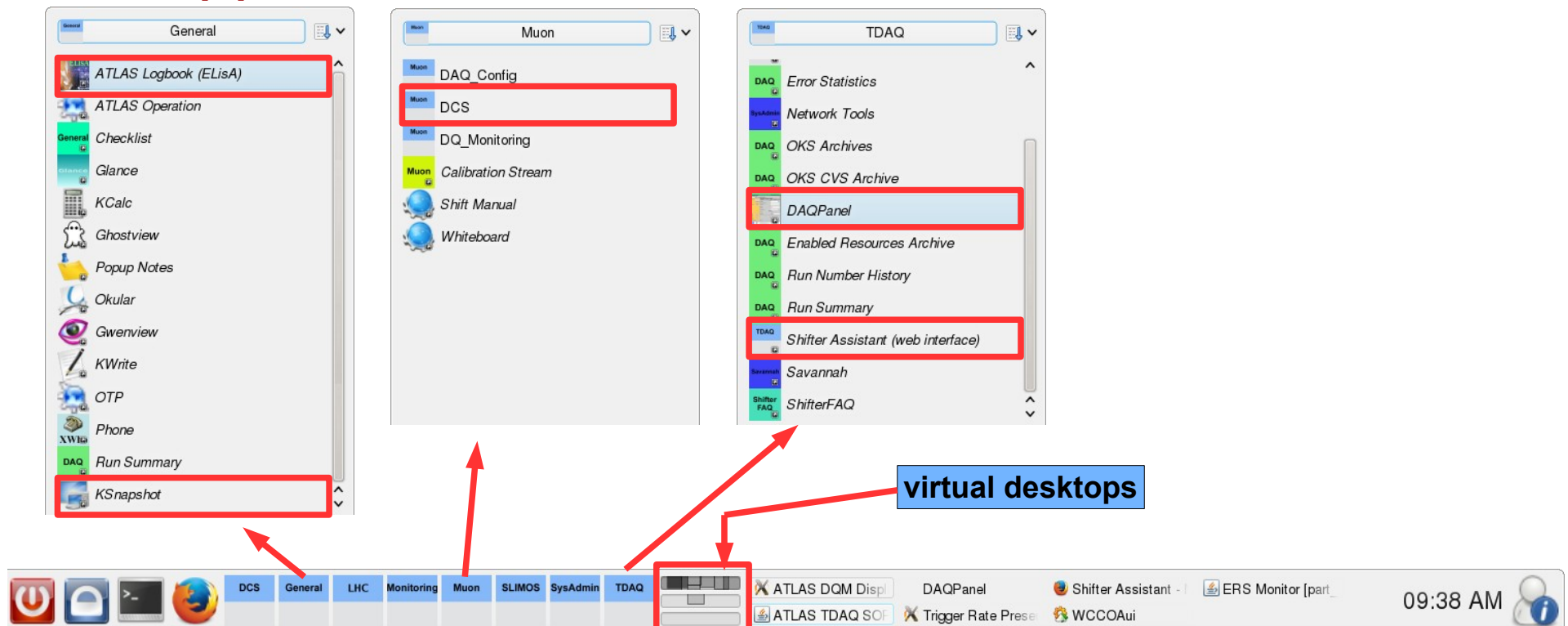
Inform him/her of any (larger) problem
Ask him/her for help with any problems with the control room infrastructure

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

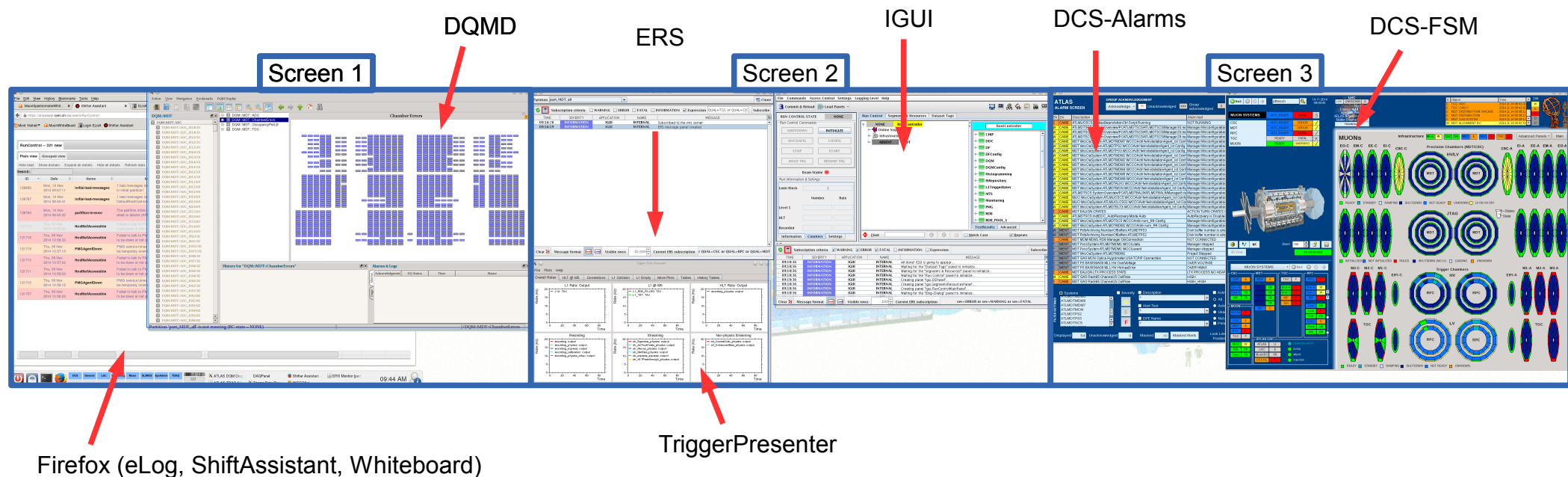
- You have 3 screens at your disposal
 - And on each 3 virtual desktops
- Please regularly close unused applications
 - You can get lost or run out of memory otherwise
- Most applications needed are started from the menu bar



The Muon Desk

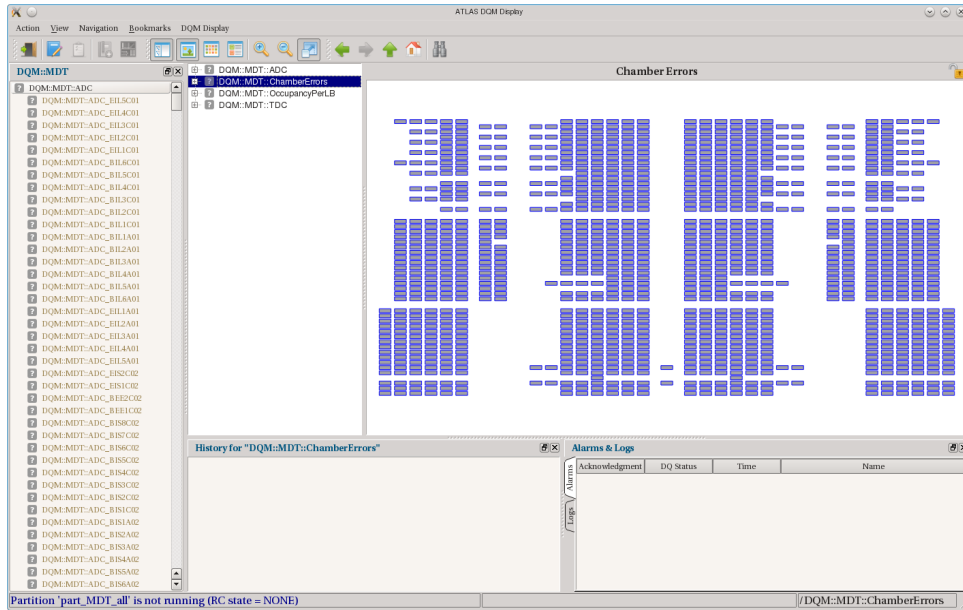
- Troubleshooting
 - Menu bar does not show expected content
 - Log out and back in again
 - Log in to the Muon Desk
 - User: crmuon – no password – Muon:Shifter profile
 - i.e. don't use your own user name
 - If middle screen does not display correctly, log out and in again
 - Screen/Desk frozen
 - 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



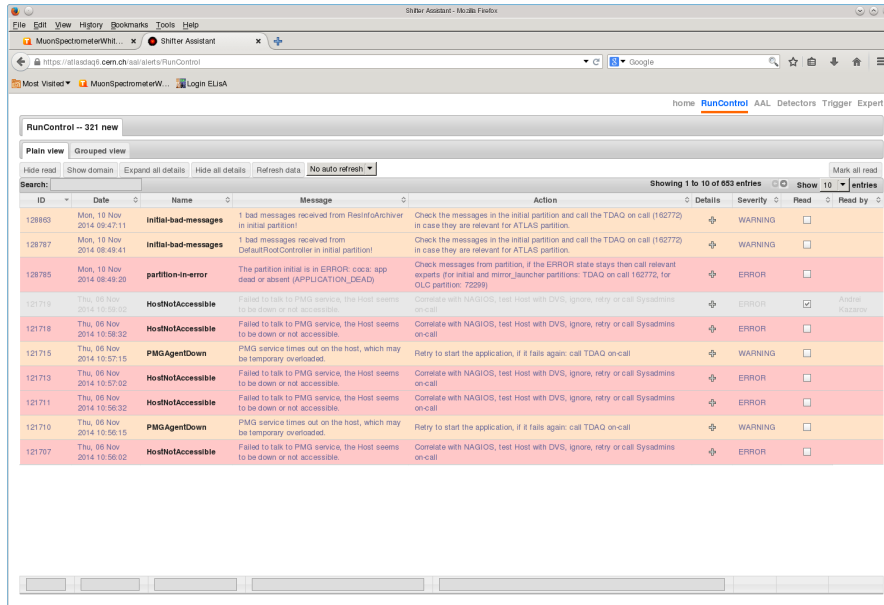
- There is a list of applications you should always have open
 - Screen1: monitoring related
 - DQMD, ShiftAssistant, eLog, WhiteBoard
 - Screen2: DAQ related
 - IGUI, ERS, DAQPanel, (if needed LogManager, TriggerPresenter)
 - Screen3: DCS related
 - DCS FSM, DCS alarms
- Note
 - You can fix an application 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

Date&Time	Author	Subject	Message Type	System Affected	Text
2014-11-14 09:30	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/extras/sw_t...
2014-11-14 09:29	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/extras/sw_t...
2014-11-14 09:21	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/extras/sw_t...
2014-11-14 09:21	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/extras/sw_t...
2014-11-14 06:51	Muhammad Althrob	Shift Summary for ID DCS Watc...	Default Message Type	ID Gen. (IC), Pixel	ID DCS Watcher Shift Shifter: IBL: LI PART...
2014-11-13 22:53	Brian Edward Lindq...	Shift Summary for ID DCS Watc...	Default Message Type	ID Gen. (IC), Pixel	ID DCS Watcher Shift Shifter: Brian LINDQ...
2014-11-13 20:02	Filipe Martins	Switch ON of TileCal	Tile	LArg, Tile	Switch ON step by step: A-side ELMB insid...
2014-11-13 18:58	Edward Grinbaum S...	Shift Summary for SLIMOS desk	Shift Summary	DSS	13:00 Start of shift. Took over from Mariya ...
2014-11-13 18:15	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/oracle/admi...
2014-11-13 18:15	atlog	Synchronization at Point 1	Default Message Type	SysAdmins	Synchronization results of /sw/oracle/admi...
2014-11-13 16:29	DCS_IS	GAS_TRT_GasFailure	Default Message Type	DSS, Tech, Infra	DSS Alarm: GAS_TRT_GasFailure
2014-11-13 16:26	Duc Bao Ta	CMX BSTP firmware update to ...	LVL1	LVL1	Yuri updated CMX BSTP firmware update t...
2014-11-13 16:15	Joel Murray Davies	RE: CAN bus intervention 13/11...	Default Message Type	Counting Room, DC...	Intervention complete. On 2014-11-12 12:0...
2014-11-13 15:34	Diana Scannicchio	RE: pc-atlas-mysql-3: update a...	Default Message Type	ALFA (RPO), BCM, ...	Actually the machine is SLC5 and correspo...
2014-11-13 15:20	Michael Christian R...	Enabled Emergency Patch Area...	Trigger	HLT	Hi, I just enabled /sw/extras/sw_mpl/curre...
2014-11-13 15:14	Joel Murray Davies	RE: CAN bus intervention 13/11...	Default Message Type	Counting Room, DC...	Starting proposed intervention. CAN bus b...

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

You are logged in as [pfleisch](#) [Logout](#) [ChangeLog v8.0.12](#)

Flat View | Threaded View | **New Entry** | Advanced Search | Display Thread Contact us @

Message Type: Author: Status: ☒ open ☐ closed

System Affected:

Subject:

Message text:

Message Type:
Always use **Default Message Type**
Except at end of shift,
then use **Shift Summary**

System Affected:
SubDet + DCS/DAQ/Monitoring
Automatic forwarding of the entry to the relevant experts fails otherwise

Message Type:
No selection
Default Message Type
Shift Summary
Shift Leader
Run Control
Online
Trigger
LVL1
Data Quality
Pixel
SCT
ID General
LArg
Tile

System Affected:
Pixel SCT TRT ID Gen. (IC) BCM
Beam Conditions LArg Tile Lucid ZDC
ALFA (RPO) MDT RPC TGC
CSC DAQ HLT LVL1 FTK
Monitoring DataQuality Event Displays Network SysAdmins
DCS DSS Counting Room Magnets Cryo
Tech. Infra Safety Tier0 GAS

DAQPanel

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

You can find the default settings for combined runs on the muon white board

Start a standalone partition here (Don't start the ATLAS partition, only standalone ones)

Monitor the ATLAS partition here

The DAQPanel interface is divided into several sections. On the left, there is a configuration panel with fields for Setup Script, Part Name (set to ATLAS), Database File, Setup Opt, Oks Opt, ERS Filter, EvDump Opt, OHP Opt, BUSY Opt, OMD Opt, and TRP Opt. Below these fields are buttons for 'Get Default', 'Read Info', and 'Get Partition'. The main area on the right contains a grid of application buttons: 'Start Partition', 'Monitor Partition', 'RC Status', 'ERS', 'DBE', 'DVS', 'Log Manager', 'Busy', 'DQM Display', 'Trigger Presenter', 'SFO Display', and 'OHP'. At the bottom, there is a 'Log Messages' section with a text area showing system logs and buttons for 'Resize' and 'Clear Log'. A status bar at the very bottom indicates 'You are crmuon and your role is shifter'.

Currently, does not give you the correct settings

The TDAQ menu is a vertical list of options. The 'DAQPanel' option is highlighted in blue. Other options include 'Error Statistics', 'Network Tools', 'OKS Archives', 'OKS CVS Archive', 'Enabled Resources Archive', 'Run Number History', 'Run Summary', 'Shifter Assistant (web interface)', 'Savannah', and 'ShifterFAQ'.

DAQ - IGUI

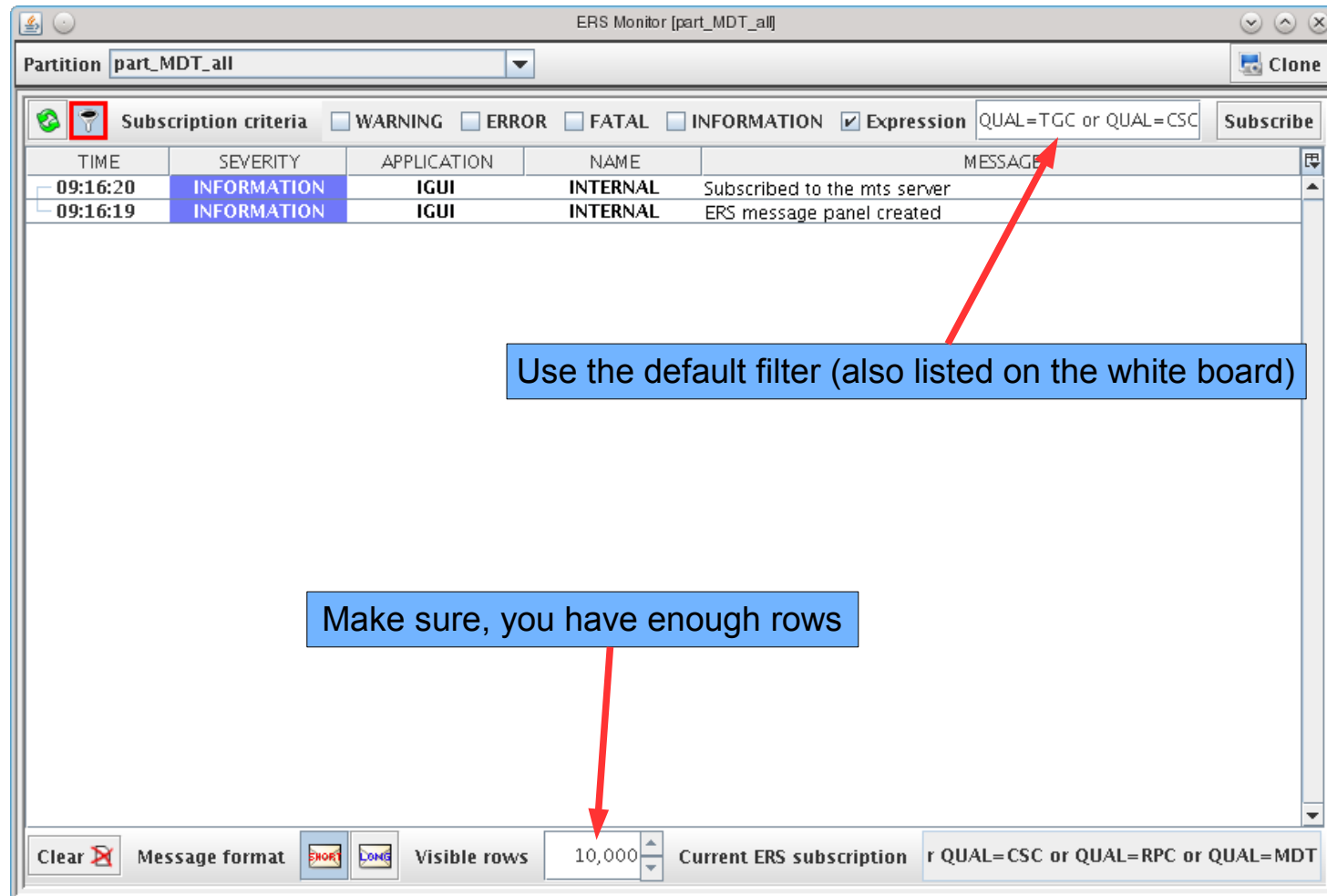
The screenshot shows the ATLAS TDAQ SOFTWARE - Partition GUI. The interface includes a menu bar (File, Commands, Access Control, Settings, Logging Level, Help), a toolbar with 'Commit & Reload' and 'Load Panels', and several main panels. The 'Run Control' panel is active, showing 'Run Control Commands' (SHUTDOWN, INITIALIZE, UNCONFIG, CONFIG, START, RESUME TRG) and '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 19:24:13, Total time: 0 h, 0 m, 55 s). The 'Segments & Resources' panel shows a tree structure with 'RootController' highlighted. The 'Dataset Tags' panel shows a list of components: DFConfig, DQM, DQMConfig, Histogramming, ISRepository, L1TriggerRates, MTS, Monitoring, PMG, RDB, and RDB_POOL_1. The 'Log' panel at the bottom shows a table of log messages with columns for TIME, SEVERITY, and MESSAGE. The 'Subscription criteria' section is set to WARNING, ERROR, and FATAL. The 'Visible rows' is set to 100. The 'Current ERS subscription' is set to sev=ERROR or sev=WARNING or sev=FATAL.

Annotations:

- Remember to confirm question about shutting down partition when exiting
- 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
- Run number
- Event counters visible here
- Same log message as in ERS
- Make sure, you have enough rows

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: crcc), then select the run number

You can easily filter on the severity

The screenshot shows the Log Service Manager interface. On the left, a tree view shows the partition structure: 'Log-05-04-00' > 'ATLAS' > 'crcc'. The 'Run Number' field is set to '244875'. The 'Message' field is empty. The 'Host' field is '14 Nov 2014 09:17:47'. The 'To' field is '14 Nov 2014 09:17:47'. The 'Severity' filter is set to 'Fatal'. The main table displays log messages with columns: cm, Application, Issued, Severity, Msg Id, and Message. The table shows several 'Error' messages from 'pbeast-receiver' and one 'Fatal' message from 'HitLbPsk2TrigDB'. The bottom panel shows the connection details for the log service.

cm	Application	Issued	Severity	Msg Id	Message
+	pbeast-receiver	07 Nov 2014 16:44:03 ...	Error	is::RepositoryNotF...	IS repository 'DF_IS:HLT-1:tpu-rack-47' does ...
+	pbeast-receiver	07 Nov 2014 16:46:22 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 16:48:41 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 16:50:56 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 16:53:16 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 16:55:30 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 16:57:48 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 17:09:20 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 17:11:43 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 17:14:01 ...	Error	is::RepositoryNotF...	IS repository 'DF_IS:HLT-1:tpu-rack-47' does ...
+	pbeast-receiver	07 Nov 2014 17:16:21 ...	Error	is::RepositoryNotF...	IS repository 'DF_IS:HLT-1:tpu-rack-47' does ...
+	HitLbPsk2TrigDB	07 Nov 2014 17:18:19 ...	Fatal	ers::Assertion	Assertion (lm_active) failed because the IPCO...
+	pbeast-receiver	07 Nov 2014 17:18:40 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	pbeast-receiver	07 Nov 2014 17:20:58 ...	Error	is::RepositoryNotF...	IS repository 'DF_Histogramming:HLT-1:tpu-r...
+	CHIP-ATLAS	07 Nov 2014 17:22:45 ...	Error	chip::msg::Common	Test failure for application: LB2CoolApp , glo...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...
+	CHIP-ATLAS	07 Nov 2014 17:22:48 ...	Error	chip::msg::Common	Test failure for application: MuCalReader:HLT...

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

Connection to: jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = atr-s.cern.ch)(PORT = 10121))(ENABLE=BROKEN) (LOAD_BALANCE = on) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = atr.cern.ch) (FAILOVER_MODE = (TYPE = SELECT)(METHOD = BASIC)(RETRIES = 180)(DELAY = 5)))) closed.

Closing connection to: jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = atr-s.cern.ch)(PORT = 10121))(ENABLE=BROKEN) (LOAD_BALANCE = on) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = atr.cern.ch) (FAILOVER_MODE = (TYPE = SELECT)(METHOD = BASIC)(RETRIES = 180)(DELAY = 5)))) closed.

Connection to: jdbc:oracle:thin:@(DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = atr-s.cern.ch)(PORT = 10121))(ENABLE=BROKEN) (LOAD_BALANCE = on) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = atr.cern.ch)

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

	Week I								Week II								Week III								Week IV						
	Mo	Tu	We	Th	Fr	Sa	Su		Mo	Tu	We	Th	Fr	Sa	Su		Mo	Tu	We	Th	Fr	Sa	Su		Mo	Tu	We	Th	Fr	Sa	Su
7 - 15		A				B			A				B				A				B				A						
15 - 23		C				D			C				D				C				D				C						
23 - 7		E				E			E				E				E				E				E						

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

