

# MUON DAQ INSTRUCTIONS FOR MUON SHIFTERS

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on behalf of the Muon DAQ experts*

Muon Shifters Training Session  
30.04.2015

Slides originally made by  
Nicoletta Garelli (SLAC) and Cenk Yildiz (UCI)

# Outline

- Introduction and Tasks During Global Runs
- Segments of Muon Systems
- Before the Run
- During the Run
- Automated Recoveries / Removals
- Calibration Procedures

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# Introduction

- Overview of the **main DAQ related tasks**  
(Not a guide to debug the DAQ systems)
- For each muon system
  - How the muon segments look like in the ATLAS partition
  - The automated recoveries
  - What you should do during calibration time
- *Note:* only beginning of Run II operations.
  - Not yet ultimate shifter instructions
  - Cosmic data taking is different from beam operations
  - You have to be flexible in adapting to the situation (still many experts around, so don't worry)

# In Brief

- **Call the relevant expert to**
  - Report major problems related to a muon system (e.g. ATLAS cannot take data)
  - If you do not know what to answer to the RC, Trigger and Shift leader shifters
- **Place an e-log entry choosing DAQ and the relevant muon detector as system affected**
  - To report muon DAQ related issues (e.g. Automated recovery took place, problems during configure, problems with the calibration partitions)

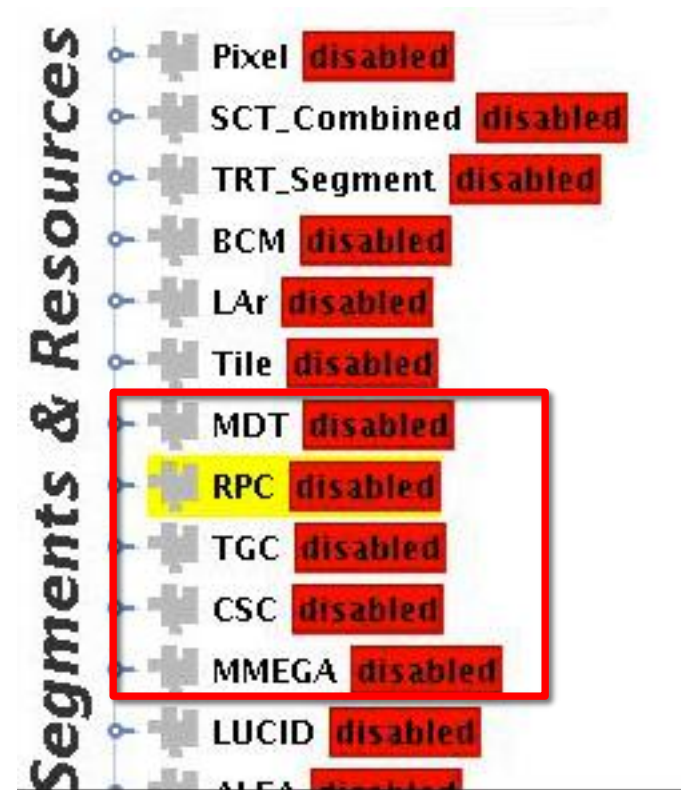
The screenshot shows the ATLAS e-log system interface. At the top, there is a dropdown menu for "Default Message Type" (circled in red) and an "Author:" text input field. Below this is a green bar indicating "6 selected". A blue bar contains the controls "✓ Check all" and "✗ Uncheck all". The main area is a grid of checkboxes for different muon system components. The "DAQ" checkbox is checked and circled in red. Other checked items include "CSC", "MMG", "MDT", "RPC", and "TGC".

Component	Selected
Pixel	<input type="checkbox"/>
Beam Conditions	<input type="checkbox"/>
CSC	<input checked="" type="checkbox"/>
FTK	<input type="checkbox"/>
SysAdmins	<input type="checkbox"/>
Counting Room	<input type="checkbox"/>
Tier0	<input type="checkbox"/>
SCT	<input type="checkbox"/>
LArg	<input type="checkbox"/>
ALFA (RPO)	<input type="checkbox"/>
Monitoring	<input type="checkbox"/>
Magnets	<input type="checkbox"/>
GAS	<input type="checkbox"/>
RunCoord Info	<input type="checkbox"/>
TRT	<input type="checkbox"/>
Tile	<input type="checkbox"/>
MDT	<input checked="" type="checkbox"/>
DataQuality	<input type="checkbox"/>
Cryo	<input type="checkbox"/>
Radioprotection	<input type="checkbox"/>
OnlineDB	<input type="checkbox"/>
ID Gen. (IC)	<input type="checkbox"/>
Lucid	<input type="checkbox"/>
HLT	<input type="checkbox"/>
Event Displays	<input type="checkbox"/>
DCS	<input type="checkbox"/>
Tech. Infra	<input type="checkbox"/>
Other	<input type="checkbox"/>
BCM	<input type="checkbox"/>
ZDC	<input type="checkbox"/>
TGC	<input checked="" type="checkbox"/>
LVL1	<input type="checkbox"/>
Network	<input type="checkbox"/>
DSS	<input type="checkbox"/>
Safety	<input type="checkbox"/>

# Tasks during Global Runs 1/2

When the **ATLAS** partition is in use

- Understand **the scope of the run** (standard LHC operations, cosmic run, high rate test, etc.) and its impact on DAQ (e.g. expected rates).
  - Run plan (usually projected on the wall)  
<https://atlasop.cern.ch/twiki/bin/view/Main/PlanOfTheDay>
- Cross-check if **the five muon detectors are included in the run**
  - Should they be enabled? If yes, are all necessary sub-segments enabled? If not sure, call the on-call expert
  - TIP: Open the IGUI-SPY



# Tasks During Global Runs 2/2

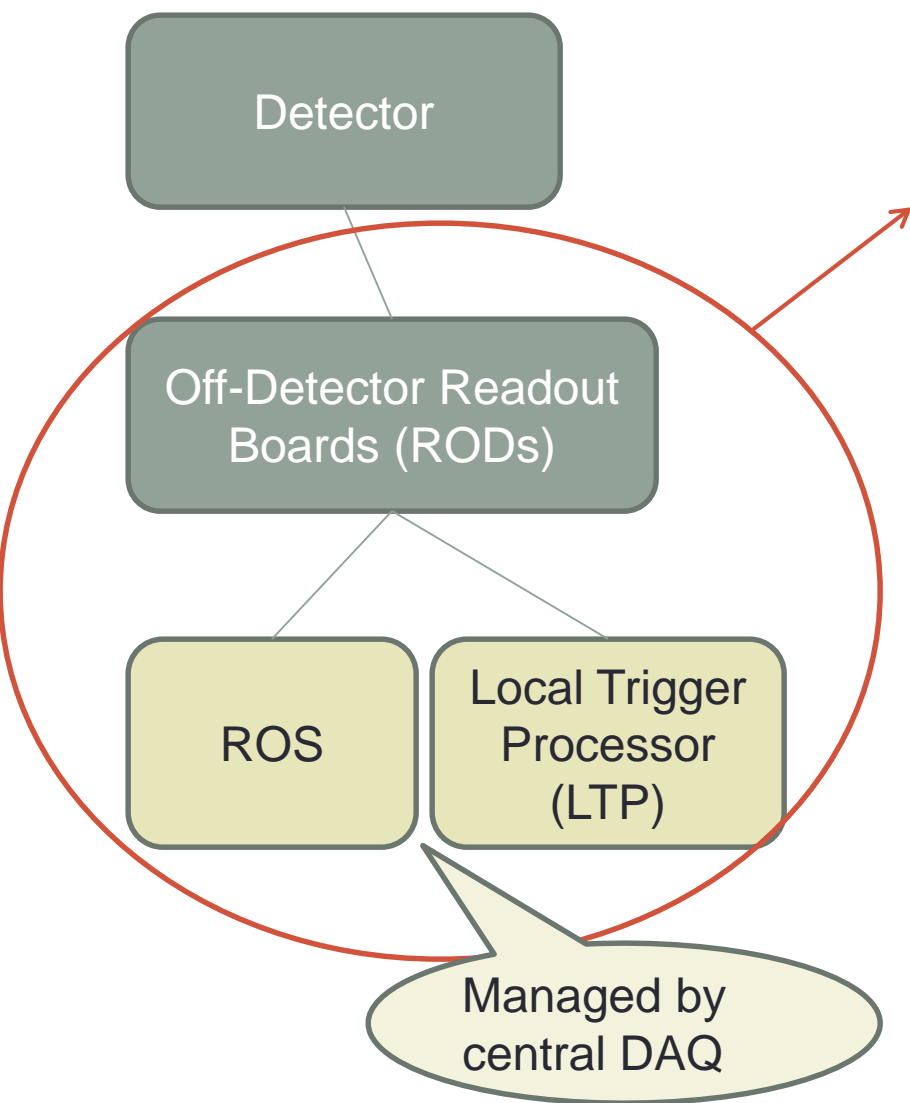
- Follow the RC shifter bringing the ATLAS partition in RUNNING STATE
  - Check if **the muon segments properly completed INITIALIZE and CONFIGURE**
  - If a muon application is killed or excluded → ask why!
- Follow the on-going run and react if
  - Muon system causes back-pressure → automated actions and/or call expert
  - Muon system throws many warning/error messages → e-log and/or call expert
- At the end of the run, the RC shifter should properly perform STOP, UNCONFIGURE and **SHUTDOWN** of the ATLAS partition
  - Difficult for you to follow
  - If a muon application does not allow to complete the transition → the RC shifter should and/or put OUT **only** the problematic application

# Outline

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- **Segments of Muon Systems**
- Before the Run
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# TTC (Timing, Trigger & Control) Partition



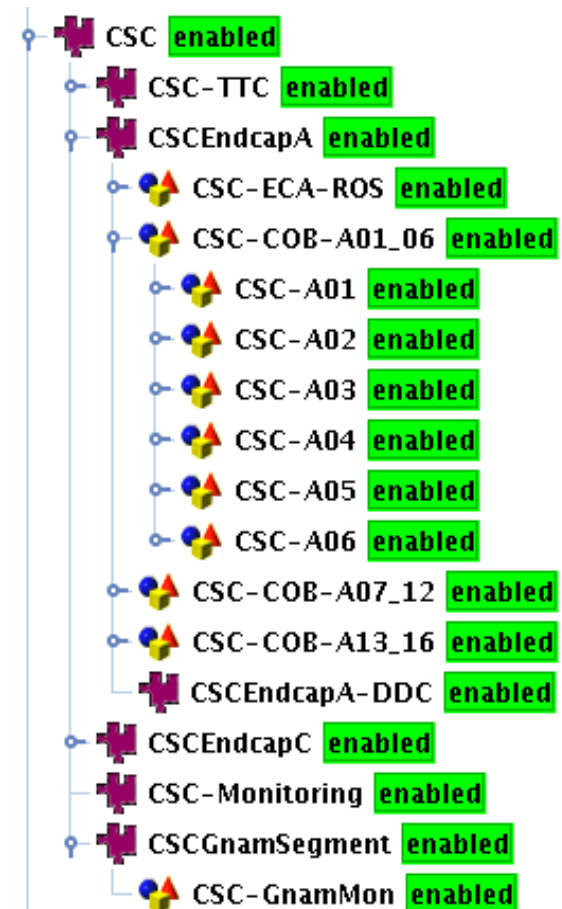
A part of the readout which can individually take data.

- Represented as a segment
- Can be excluded from a global run and used in parallel for tests

Detector	# of TTC Partitions
CSC	2 (Endcap A, Endcap C)
MDT	4 (Barrel A, Barrel C, Endcap A, Endcap C)
RPC	2 (Barrel A, Barrel C)
TGC	2 (Endcap A, Endcap C)
MMEGA	1

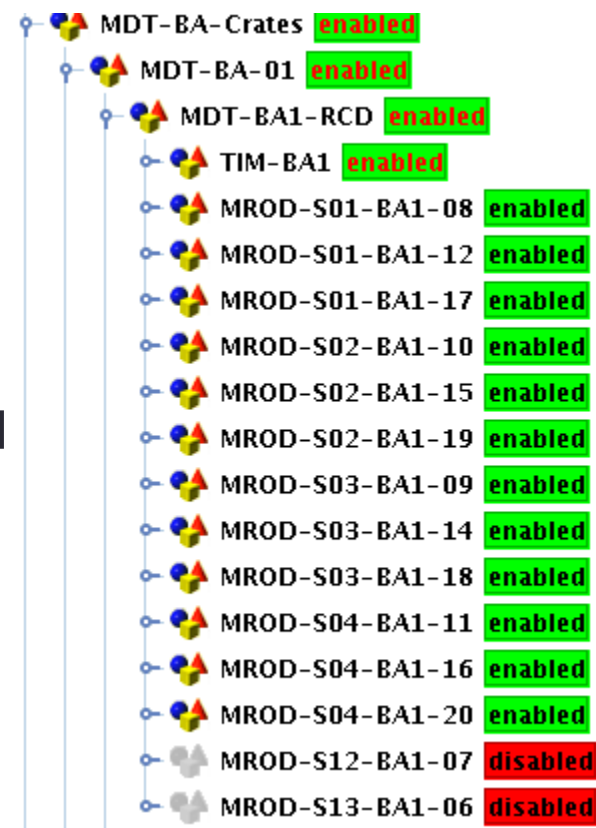
# CSC Segments

- CSC readout is **new!** It uses ATCA as platform
  - Transparent for you, but some names different from the rest of ATLAS
  - Top segment called CSC
- Each endcap has 16 'RODs'
- 5 main segments:
  1. TTC
  2. EndcapA
  3. EndcapC
  4. CSC-Monitoring: For firmware monitoring
  5. Gnam: For data monitoring
- Each Endcap segment has:
  1. 3 COBs: a COB groups 4 to 6 chambers
  2. 1 ROS
  3. DDC (= DAQ to DCS Communication) to exchange information with DCS



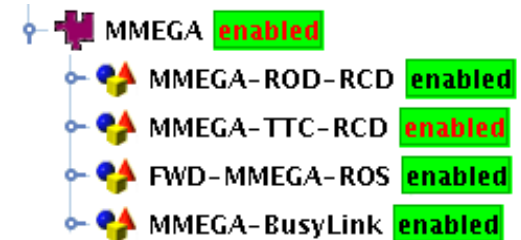
# MDT Segments

- MDT has 210 RODs (for reading out ~1200 chambers) & 14 ROSes (6 for the barrel, 8 for the end-cap)
- 4 main segments (1 per TTC partition) + 2 monitoring applications (MDA & DQM)
- Each segment has:
  1. TTC
  2. DDC (= DAQ to DCS Communication) to exchange information with DCS
  3. 4 Crates, each with 13 or 14 RODs and 1 TIM busy module)
  4. ROS
  5. Links
  6. BusyLinks



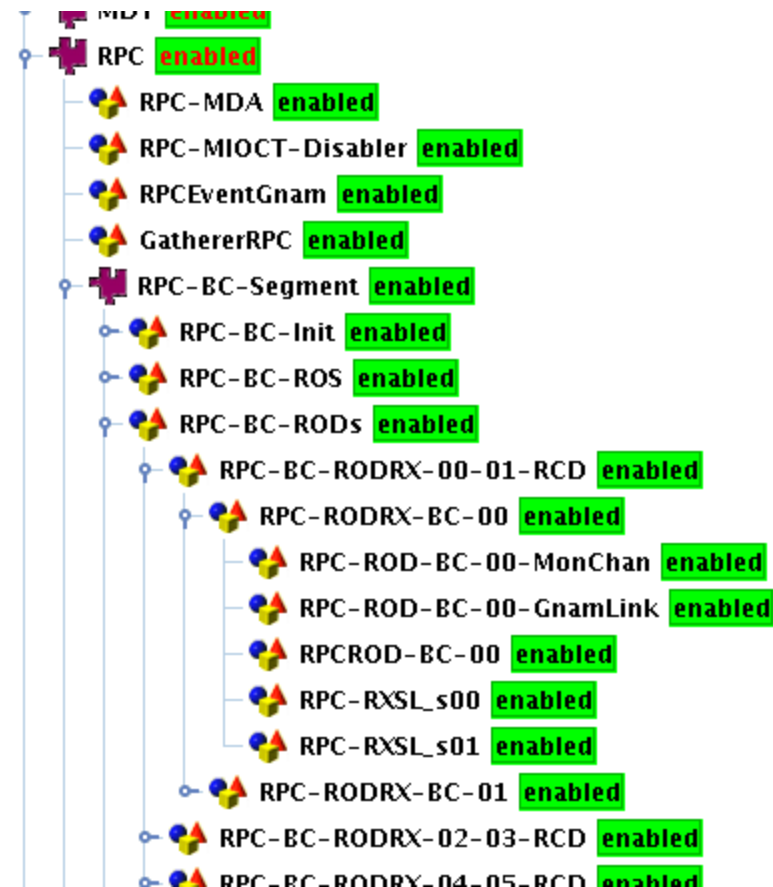
# MMEGA Segments

- MMEGA is a prototype in preparation for Phase-I
- There is no detector connected to the readout yet
- 1 ROS and 1 ROD
- 4 main segments:
  1. ROD
  2. TTC
  3. ROS
  4. BusyLink



# RPC Segments

- RPC has 1 ROS and 16 RODs per side
- 2 main segments
  1. Barrel A
  2. Barrel C
- Each one has:
  1. Init
  2. ROS
  3. RODs composed of RODRX segments  
1 RODRX contains **1 ROD**  
and 2 **SectorLogic (SL)**
  4. Gnam
  5. Slink
  6. TTC



# TGC Segments

- TGC has 12 sectors per side, 1 ROS, 24 RODs, grouped in 4 VME crates, numbered from A01 to C12
  - Each ROD reads the FE electronics through 8 or 9 **SSW** (Star Switches = data concentrators)
  - 1 SSW covers  $\sim 1/2\%$  of the entire system

- 5 Segments:

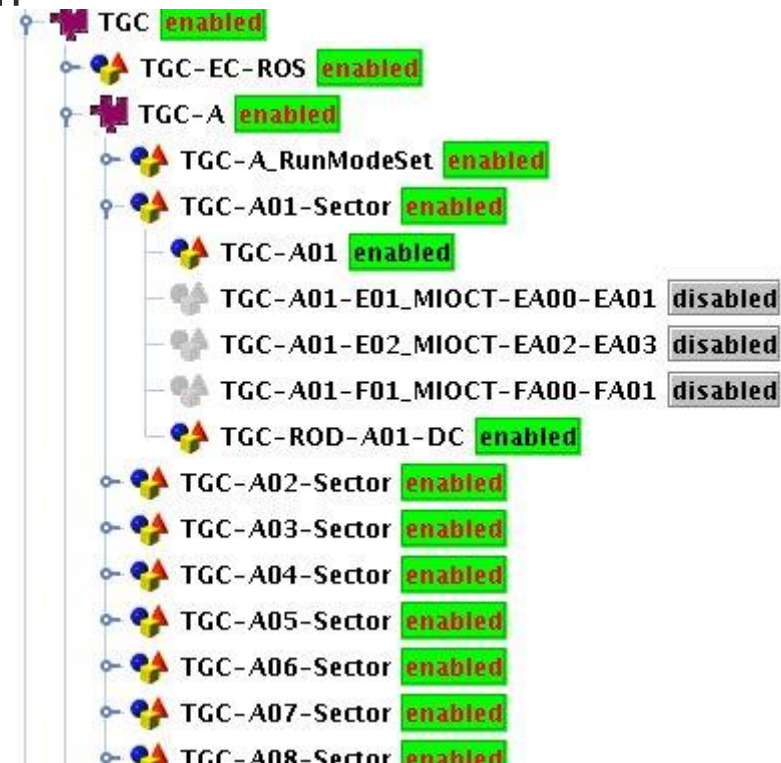
1. ROS

2. A/C side

The sides are organized in **Sectors**  
each Sector contains **1 ROD** and  
**3 trigger chambers (MIOCT)**

3. Gnam

4. Db-monitoring



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# Enabling/Disabling Resources

- Before an ATLAS run, prior to press INITIALIZE, the RC shifter might be asked (by an expert or the shift leader or YOU) to enable/disable a muon segment
  - **!! BE SURE ABOUT WHAT YOU AND THE RC SHIFTER ARE DOING! !!**
- The resources should already be properly linked by DAQ experts
  - E.g. If you remove a ROD, the corresponding ROS link and busy line will be removed too
- Enabled/Disabled Resources are partition specific
  - If you disable a chamber in standalone partition → it will NOT be automatically disabled in the ATLAS partition.
  - See back-up slide for MDT, ROD or chambers exclusion from DAQ.
- Write in the elog if a segment was enabled or disabled during the shift.



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# DAQ Monitoring

- Keep an eye on the ERS monitoring window
  - Suggested ERS subscription filters muon only messages.
- If you see an abnormal flow of messages or if the RC shifter ask you about some muon-related message
  1. use the LogManager tool to read the message
  2. Place an e-log entry describing what is going on and reporting the message
- In case of problems, call experts

# What can be restarted while running

- Restart = RC shifter should right-click on an element and click on 'Restart', if available
- Usually no individual RC applications/segments should be restarted while running (see: Automated Actions)
- Monitoring applications/segments like Gnam or DQ can be restarted while running

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# Automated Actions to prevent/remove busy

Detector	Stopless Removal	Stopless Recovery	TTC Restart
CSC	COB	-	CSC segment
MDT	ROD	-	MDT segment
RPC	ROD+SL	ROD+SL	RPC segment
TGC	ROD+SL	ROD+SL	TGC segment
MMEGA	ROD	-	MMEGA segment

- **Stopless Removal:** the RC shifter will get a pop-up window and he should ask you before pressing YES or NO
  - YES: part of the detector will stop taking data
  - **NOTE: During stable beams, removal happens automatically!**
- **TTC Restart:** it should be executed by the RC shifter only on demand (extrahordinary situation)
  - Expects tons of errors till the end of the restart (it usually takes ~5 minutes)

# Procedure during Automated Actions

- **Stopless Removal:**

- CSC: say YES and then call the expert.
- MDT: say YES. If more than 3 RODs are kicked out → ask to perform a TTC Restart
- TGC: say YES. Then call the expert and be ready to use the TGC panel (see next slides)
- RPC: say YES and then call the expert
- MMEGA: say yes and call the expert

- **Stopless Recovery:** If it occurs more than twice within minutes on the same component, it is not properly working → call the expert

- In the future there will be a way to automatically monitor the amount of dropped resources

- Just take into account that too many disabled resources imply recording useless data for physics

# CSC Recoveries

- CSC Stopless Removal will happen if a chamber goes busy
- It removes a COB (4-6 chambers)
- There is no automated recovery
- TTC Restart will recover the whole CSC

# MDT Recoveries

- The MDT ROD stopless removal is sort of 'the last resort action'
- Normally, DAQ will drop mezzanines or chambers (NO pop-up window will appear for that)
- A dropped mezzanine or chamber is automatically recovered under DCS control
  - If automated recovery does not work → see DCS' presentation
- You can detect the dropped mezzanine/chambers via ERS messages, or via the DCS dropped recovery panel (actually simpler that way).
  - In the future the Shifter Assistant will help you



# RPC Recoveries

- In case of RPC ROD stopless removal (popup window in RC desk) → call the L1 RPC on-call, since this indicates a major problem
- Trigger towers are automatically recovered/removed
  - You can detect the trigger towers recovery/removal via ERS
  - You can see the removed trigger towers via DCS
  - The list of masked trigger towers should be in the white board

# TGC Recoveries

- The **SSW** (Star Switches) can drop during the run
- An automatic and fast recovery automatically occurs
- You can detect the recovery only via ERS messages
  - In the future the Shifter Assistant will notify you
- During Run I, multiple SSWs drop was a major ATLAS problem
  - Not yet 100% solved, that's why we need to keep an eye on it
  - See next slides for TGC panel

# TGC – ad-hoc Panel

- You have to monitor and take actions via a dedicated TGC Panel during ATLAS runs:
  - Open the panel on your SPY IGUI through the ‘Load Panels’ tab

**File** **Commands** **Access Control** **Settings** **Logging Level** **Help**

**Commit & Reload** **Load Panels**

☒ TGCIntegratedPanel  
☐ IguiPanels.DFPanel.DFPanel  
☐ PmgGui.PmgISPanel

**RUN CONTROL STATE**

Run Control Commands

**SHUTDOWN** **INITIALIZE**

**UNCONFIG** **CONFIG**

**STOP** **START**

**HOLD TRG** **RESUME TRG**

**Beam Stable** ●

**Run Information & Settings**

**Run type** Emulated  
**Run number** 246085  
**Super Master Key**  
**LHC Clock Type** BCref  
**Recording** Disabled  
**Start time** 18-Nov-2014 20:02:44  
**Stop time** 18-Nov-2014 20:09:17  
**Total time** 0 h, 6 m, 32 s

**Run Control** **Segments & Resources** **Dataset Tags** **TGC**

TGC combined panels

- Shifter
- Rod Detailed
- Monitoring
- Condition DB
- Configuration

Global ROD and data verifier status Last update: Thu Nov 20 15:22:14 CET 2014, run state: ???

Active readout and trigger

**Readout 0% Trigger n/a because run isn't in warm start**

**A-Side**

ROD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	future	future	future	future	future	future	future	future	future	future	future	future
Dropped SSWs												

**VME sampling**

	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	future	future	future	future	future	future	future	future	future	future	future	future

**C-Side**

ROD	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	future	future	future	future	future	future	future	future	future	future	future	future
Dropped SSWs												

**VME sampling**

	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	future	future	future	future	future	future	future	future	future	future	future	future

**Information** **Counters** **Settings**

# TGC: check no ROD is busy nor ignored

Run Control Segments & Resources Dataset Tags TGC

TGC combined panels

- Shifter
- Rod Detailed
- Monitoring
- Condition DB
- Configuration

Global ROD and data verifier status Last update: Mon Jan 26 11:26:29 CET 2015, run state: ???

Active readout and trigger  
Readout 0% Trigger n/a because run isn't in warm start

A-Side												
ROD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271477	271394	272119	271421	271536	269937	267837	268404	267639	269170	268409	269245
Event errors			1087460									

C-Side												
ROD	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271385	272235	272240	272155	272161	272233	272357	276075	275589	275611	275866	275871
Event errors												

VME sampling

	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3763	3585	1482	3785	3471	3684	2564	2300	2272	2373	1553	2349
Errors	45156	46605	20748	45420	86775	66312	30768	29900	54528	42714	54782	42282

VME sampling

	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3546	3363	3538	3546	3808	3454	3115	2899	2899	2977	2763	2980
Errors	42552	43719	42456	42552	81204	62172	37380	37687	69576	53586	69075	53640

# TGC: Check how many StarSwitches (SSW) are dropped

Run Control Segments & Resources Dataset Tags TGC

Global ROD and data verifier status Last update: Mon Jan 26 11:26:29 CET 2015, run state: ???

Active readout and trigger  
Readout 0% Trigger n/a because run isn't in warm start

**A-Side**

ROD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271477	271394	272119	271421	271536	269937	267837	268404	267639	269170	268409	269245
Event errors			1087460									

**VME sampling**

	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3763	3585	1482	3785	3471	3684	2564	2300	2272	2373	1553	2349
Errors	45156	46605	20748	45420	86775	66312	30768	29900	54528	42714	54782	42282

**C-Side**

ROD	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271385	272235	272240	272155	272161	272233	272357	276075	275589	275611	275866	275871

**VME sampling**

	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3546	3363	3538	3546	3808	3454	3115	2899	2899	2977	2763	2980
Errors	42552	43719	42456	42552	81204	62172	37380	37687	69576	53586	69075	53640

# TGC: Looking for ROD exceptions and errors

in Control Segments & Resources Dataset Tags TGC

TGC combined panels

- Shifter
- Rod Detailed
- Monitoring
- Condition DB
- Configuration

Global ROD and data verifier status Last update: Mon Jan 26 11:26:29 CET 2015, run state: ???

Active readout and trigger

Readout 0% Trigger n/a because run isn't in warm start

A-Side

ROD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271477	271394	272119	271421	271536	269937	267837	268404	267639	269170	268409	269245
Event errors			1087460									

VME sampling	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3763	3585	1482	3785	3471	3684	2564	2300	2272	2373	1553	2349
Errors	45156	46605	20748	45420	86775	66312	30768	29900	54528	42714	54782	42282

C-Side

ROD	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Event flow	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
ROD state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
FPGA status	On	On	On	On	On	On	On	On	On	On	On	On
Dropped SSWs												
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
Processed events	271385	272235	272240	272155	272161	272233	272357	276075	275589	275611	275866	275871

VME sampling	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Last update	now	now	now	now	now	now	now	now	now	now	now	now
Events	3546	3363	3538	3546	3808	3454	3115	2899	2899	2977	2763	2980
Errors	42552	43719	42456	42552	81204	62172	37380	37687	69576	53586	69075	53640

# TGC: detailed error panel e.g. A03 (what should be reported to expert)

Run Control Segments & Resources Dataset Tags TGC

DAQ Status sector A03 @ 2015-Jan-26 11:58:27.373590 First L1A @ 11:56:52.460

Enabled Exception interrupts: 5438 Exceptions FIFO length: 1025 Fmt'd events interrupts: 5438 Formatted events length: 292 History frame: 0 Events in CircBuffer: 0

2015-Jan-26 11:58:28.397060 Counters @ 2015-Jan-26 11:58:28.397060 VME sampling @ 2015-Jan-26 11:58:28.57...

On On On On On

1/956246 1/956248

ady Free Not Processed

ady Free Not Processed

ady Free Not Processed

wn Ctrl-Empty Free

wn Ctrl-Empty Free

wn Ctrl-Empty Free

ady Free Not Processed

ady Free Not Processed

ady Free Not Processed

ady Free Not Processed

ady Free Not Processed

0 76 82

0 0 0

739 292 0

0 0 0

014094A8

18284000 0x01

0x0 0x2F500000 0x8B789FFF

3E000000

0xFC700 0xFBF3 0x0

0x0000 0x00 3563

General counters

- Events read from VME 5505
- Event errors 3824244

Event errors

- SBid does not match SBinfo table 3824244

System errors

Detailed errors

RX Occupancies

Mixed errors

- Unexpected SB BCID
- Unexpected trigger bits
- Sector Logic BCID[2:0] does not match its SB BCID

Events 5490

- BCid differs from event header 49410
- Content error somewhere in event 5490

Atlas status word 5490

- Data may be incorrect 5490

TGC status word 5490

- SBid does not match SBinfo table 5490
- Unexpected SB BCID 5490

SSW raw data fragments 49410

- SLBs decoded 609390
- Wrong SLB ID 5490

Hits records 0

- Occupancy denominator 1000000





# TGC: manual fast recover/ full reconfiguration (e.g. reconfigure A08)

Run Control Segments & Resources Dataset Tags TGC

TGC combined panels

- Shifter
  - Rod summary
  - Recover/Reconfigure
  - Disabled Rods and SSWs
  - Occupancies
  - Sector Logic
  - HV Status
  - HV VMon
  - W-thresholds
  - S-thresholds
  - DQ from DCS
- Rod Detailed
- Monitoring
- Condition DB
- Configuration

Recovery Last update: Mon Jan 26 11:28:33 CET 2015, run state: ???

Active readout and trigger

Readout 0% Trigger n/a because run isn't in warm start

A-Side												
	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12
Info	now	now	now	now	now	now	now	now	now	now	now	now
Rod state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
Resource enabled	On	On	On	On	On	On	On	On	On	On	On	On
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
SSWs dropped												
N Reconfig												
Auto-reconfig on dropped SSW	On	On	On	On	On	On	On	On	On	On	On	On
Auto-recover on ROS asserting Xoff	On	On	On	On	On	On	On	On	On	On	On	On
Auto-reconfig on ROD busy	On	On	On	On	On	On	On	On	On	On	On	On
Auto-reconfig on disabled channel	On	On	On	On	On	On	On	On	On	On	On	On
Fast recover	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go
Full reconfiguration	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go
Toggle resource state	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go	Go
Expert Only												

C-Side

	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12
Info	now	now	now	now	now	now	now	now	now	now	now	now
Rod state	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run	In run
Resource enabled	On	On	On	On	On	On	On	On	On	On	On	On
Busy	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free	Free
SSWs dropped												

Two red arrows point to the 'Fast recover' and 'Full reconfiguration' rows in the A-Side table. A red circle highlights the 'Go' button for A08 in the 'Full reconfiguration' row.

## TGC: Re-enable auto recovery (after consultation with expert!)

[illegible]

# Outline

- Introduction and Tasks During Global Runs
- Segments of Muon Systems
- Before the Run
- During the Run
- Automated Recoveries / Removals
- **Calibration Procedures**

# Standalone Partition

Start it via the DAQ Panel

The screenshot shows the DAQPanel interface. On the left, under 'Insert Here Some Info', there are fields for 'Setup Script' (with a 'Browse' button), 'Part Name' (set to 'be\_test'), and 'Database File' (with a 'Browse' button). Below these are 'Setup Opt', 'Oks Opt', 'ERS Filter' (with a dropdown showing 'QUAL=TGC or QUAL=CSC or QUAL=RPC or QUAL=MDT'), and 'EvDump Opt'. On the right, a panel titled 'CSC calibration (pedestal) runs' contains a table of settings. A red box highlights the 'Setup Script', 'Database File', and 'Part Name' fields on the left, and the 'CSC calibration (pedestal) runs' panel on the right. A red arrow points from the 'Setup Script' field to the text box below. Another red arrow points from the 'CSC calibration (pedestal) runs' panel to the text box below.

Each standalone partition requires its specific setup script, database file, partition name and eventually other parameters (e.g. OHP Opt). The muon detectors procedures are described here:

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

The DAQPanel interface also includes buttons for 'Busy', 'DQM Display', 'Trigger Presenter', 'SFO Display', 'OHP', and 'Exit'. At the bottom, there are buttons for 'Resize', 'Clear Log', 'Change role', and 'Exit'.

# Calibration Procedures

- During LHC interfills, ATLAS detectors can be calibrated or standalone runs can be taken
- The RC shifter has to shutdown the ATLAS partition, YOU steer the muon operation
- You have to finish in time to join the next ATLAS run
- **Only for CSC, shifters should start taking pedestal runs, after combined run is stopped in the morning, if resources are free**

Detector	Calibration	Required Procedure
MDT	Calibration data recorded during each ATLAS run, within the ATLAS partition infrastructure. The DAQ architecture is called Calibration Stream	NO
CSC	Pedestal runs	YES
RPC	NO	NO
TGC	Three types: Random, Track test, ASD test (not yet for shifters)	YES
MMEGA	NO	NO

# THANKS!

# Back-Up

# MDT Removing a ROD Chamber from DAQ

- If asked by an MDT expert to disable ROD or a chamber from DAQ, this can be done from RC desk

For Example, go to:

→Segment and ressources

→MDT

→To the partition (here BarrelA).

→Crates.

→And then the MROD.

You can disable directly the ROD, there is no need to disable the chambers one by one!

## Segments & Ressources

