ALICE TOF Shifters Instructions

ALICE TOF Team 09/11/2009

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1. Foreword

Before to start a shift, you must be aware of:

- to know how to log on all the TOF machines (user and password for aldaqacr41, alitofon001, alitofsrv, alitofsm00...);
- to have access in the ALICE Counting Rooms (CR3 and CR4).

If not, ask an expert!!!

2. Shifters tasks

The shifter should check regularly various hardware parameters status: HV, LV, gas, cooling, temperatures, and compare them with reference values. PLEASE DO NOT TRY TO MODIFY ANYTHING UNLESS YOU ARE VERY SURE OF WHAT YOU ARE DOING.

The shifter should know what is happening in ALICE. Refer to the ALICE elog (<u>https://alice-logbook.cern.ch</u>, only from ALICE machines) for various informations on the activities and runs. In particular in runs--> "runs detector" you can see the actual running status. Try also to follow the activities in the control room and report them in the shift summary.

For long runs the shifter must check the data taken following the AMORE instruction in ALICE-TOF wiki (<u>https://twiki.cern.ch/twiki/bin/view/AliceTOF/MonitoringApplications</u>). Please report in the e-log any hole or peak in the hit rate/time/tot which is not compatible with reference values. Report in the TOF e-log <u>https://www.bo.infn.it/elog/Commissioning/</u> and <u>https://www.bo.infn.it/elog/Data+Taking/</u> all useful information on the shift:

- Runs: specify start/end time, trigger, readout components, magnetic field
- Errors/problems with as many details (also screen dumps).
- At the end of the shift write a mini summary of what happened (also in ALICE) during the shift. THIS IS VERY VERY IMPORTANT!!!!!

3. Starting

The machine devoted to monitoring and shifters general operations is ALITOFON001 (TOF Operator Node). Once you got logged into the DAQ machine assigned to TOF in the ALICE Control Room (account TOF, ask an expert if you don't know the password) you can start opening a remote desktop connection on the TOF Operator Node using your NICE credentials. All of you should have an active account on the operator node (if not, please send a request to A. Alici).

Three panels must be always running (you can launch them from Windows START menu):

- 1. <u>BasePanel (main PVSS panel);</u>
- 2. DCS User Interface (main FSM panel);
- 3. <u>Alarm panel</u> (alert monitoring).



4. TOF DCS User Interface

This panel is the standard ALICE DCS User Interface; you can launch it from START \rightarrow DCS_UI.bat. If you want, you can find related documentation at the following link (ver. 3.0.2):

http://alicedcs.web.cern.ch/alicedcs/Software/Downloads/AliceDcsUi_v3.0.pdf

This panel allows to monitor the state of the TOF Finite State Machine (FSM) and to send commands from the highest level of the hierarchy (TOP NODE) to all sub-nodes and devices. When the User Interface appears, it will ask you some credentials; use your NICE username and password to log in.



- 4.1 Description of the interface
- 1. Detector graphic locator; this small picture shows the actual status of all SMs (whether they are included or not from the FSM).
- 2. Selected node FSM state.
- 3. Logged user (click on the key to change user).
- 4. FSM node control (click to open FSM control panel).
- 5. FSM hierarchy tree browser.
- 6. Auxiliary monitoring zone; it can monitor the state and operation mode of a list of critical FSM nodes. A mouse click on the node opens in a child window the panel related to that.
- 7. FSM expert control (click to open FSM management panel).
- 8. State of distributed computers.
- 9. Click to open JCOP Alarm Panel (I recommend to open this panel from the Windows START Menu).
- 10. Click to open PVSS Info Browser.
- 11. Click to open these instructions.
- 12. Emergency button (click to shutdown the whole TOF detector). To be used only in emergency circumstances.

4.2 FSM hierarchy tree and Control panels

In the User Interface, the FSM hierarchy is displayed as a tree:



This tree is used to select which part of the detector has to be displayed or controlled. By default, the top node *TOF_DCS* is selected. A new part can be selected by right-clicking on the corresponding node and select *VIEW PANEL*.

By right-clicking on an already selected node, a new item appears in the menu: *OPEN FSM CONTROL*. This opens the panel to control this node

To control the whole FSM, open FSM Control Panel, while the top node *TOF_DCS* is selected in the FSM tree.

FSM Control :TOF_DC5: TOP			o ×
	FSM CONTROL PAN	L	
System	State		
	REA	DY 🔻 🔒	
Sub-System	State	PAGE	E 1
TOF_INFRA	READY -	PAGE	2
TOF_ACM_	STANDBY -		
TOF_RUN_	ОК 🗸		
TOF_DCS_ConfDB	READY 🔻		
TOF_SUPERMODULE_00	READY -		
TOF_SUPERMODULE_01	READY -		
TOF_SUPERMODULE_02	OFF -	×	
TOF_SUPERMODULE_03	OFF -	×	
TOF_SUPERMODULE_04	OFF -	×	
TOF_SUPERMODULE_05	READY 🔻		
TOF_SUPERMODULE_06	OFF -	×	
TOF_SUPERMODULE_07	READY 👻	I	
TOF_SUPERMODULE_08	READY 🔻	✓	
TOF_SUPERMODULE_09	READY 🔻		
Messages			

These panels are used to control the FSM. There are 3 ways to invoke these panels:

- By clicking on the *FSM Control* button while the FMS which is to be controlled is selected
- By right-clicking on the selected node in the tree view and select *OPEN FSM CONTROL*
- By double-clicking on one of the children in an already opened FSM Control panel

For each FSM a lock indicate the status of its ownership. The different states are:

- Unlocked (Grey): nobody has control of its FSM. It means you can take it.
- *Green*: you have the control of this FSM.
- *Red*: somebody else has the control. It means you cannot take it before the control is released.
- *Blue*: the control of this FSM is shared.

Taking control of the FSM

When the lock is in *unlocked* state, the control of the FSM can be taken by clicking on the lock and select *take* in the menu. Then, it is possible to change the state of the FSM by clicking on the FSM state and select a command in the menu

Releasing control

This is done by clicking on the lock and select *release* in the menu.

Excluding parts of the detector

It is possible to exclude parts of the detector from the FSM, by clicking on the lock of the part to be removed, and select *exclude* in the menu. For some children this exclusion it is only temporary. Once the FSM control is released and taken by another computer, these excluded children will be included again. It is still possible to make this exclusion permanent: after the children have been excluded, reclick on the lock and select *LockOut* in the menu.

4.3 FSM expert control panel

The FSM Expert Control panel contains all relevant information about FSM detailed status and control.

PS-Costrol Dit DelS Server Dit DelS Server Dit DelS status Total and Dit Dels status Total and Total and	ALGE MANNESS Accidents.cern.ch Dess Fillenens FrwitestartTreeDomains FrwitestartTreeDomains FrwitestartTreeDomains	A Control Panel v 0.6 Builted IS DESTRUMENTED FSM control to all distributed doma Start/Restart All	ins of: tof Stop All
alterferendoz Status	IDOR Dot_socsManager3 3 IDOR Dot_docsManager3 3 IDOR Dot_docsManager3 3 EATY Plot owned1 3	4 100-00000 0 0 0 10000 100-0055 000 0 0 0 000 00000 100-0055 0 0 0 0 00000000000000000000000	tor_dcc Manager3
alitofwn003 Status	EATY Dof_dos Manager6 🕅 🛠	DOS_MOS CONT	pha jap Manager2 🔍 🛠
MODE CONFIGURATION Config. file Apply Configuration	Create Configuration	FSM Archiving	FSM Synoptics FSM Chart

- 1. *DIM DNS Server*: it displays the status of DIM DNS server node.
- 2. *FSM Server Managers*: it displays the status of a FSM server manager; the name of the system, the status of fwFsmSrv.ctl manager and the status of the FSM server manager are showed.
- 3. *Node Status*: it displays the status of a FSM domain node. The name of node, two push button to restart and stop the FSM tree recursively, the status of FSM Domain node and the ownership of that domain are showed.
- 4. *Release FSM Node*: release the ownership of the FSM.

4.4 FSM General Overview

The core of the DCS is based on Finite State Machine. A FSM is an intuitive, generic mechanism to model the functionality of a piece of equipment or a sub-system. The entity to be modeled is thought of as having a set of stable (finite) *states*. It can move between these states by executing *actions* that are triggered either by commands from an operator or another component or by other events such as state changes of other components. The control system is build as a tree-like structure. Communication between the different nodes in the tree (the control and device units) is performed via a well defined, so called, state/command interface.

Commands will propagate from the highest levels through the control units to end in the device units where action on the real hardware is performed.

States will propagate from the lower levels to the higher levels.

The set of all disposable states for TOF DCS is (and the shifters and anyone else MUST STRICLY follow the exact sequence powering ON and OFF the detector) is:



The state **OFF** means that the full detector (LV, HV, VME crates ...) is OFF. In the **STANDBY** state all the LV channels as well as the VME slots are powered ON.

In the **STBY_CONFIGURED** important checks and configurations on the VME boards are performed.

BEAM_TUNING means essentially FEE ready but HV @ 1 kV (safe condition for beam injection). In the **READY** state the detector is finally ready for taking data.

A set of command is defined as well: GO_OFF, GO_STANDBY, GO_STBY_CONF, GO_BEAM_TUNING, GO_READY, CONFIGURE and PREPARE_FOR_RUN. During a state transition the will assume one of the following transient states: MOVING_STANDBY, MOVING_STBY_CONF, MOVING_BEAM_TUN, MOVING_READY, DOWNLOADING.

5. Base Panel

The Base Panel is a collection of many useful panels devoted to monitor and to control parts of the detector.

5.1 Gas Panel



The gas mixture is currently 93% Freon and 7% SF_6 . A change in the status of one of the subsystems will trigger an alert (an alert sms to gas system expert will be also sent).

It is important to monitor the module gas fluxes and the state of the gas subsystems (see picture above).

NB: presently the GAS FSM could be NOT READY even if everything works. Please, refer to the picture above to see if the gas system is working or not.

Vision_1: TOF_base	COOL RUN (CONNEC SM TIONS overview	TEMP	CAEN PS	HV	LV	FEE	FEAC	ACM	СТТМ	LTM	30	root 4
Cooling panels COMPLETE PARAMETERS	Coling Plant Main Proceeding Plant Main Proceeding Plant Main Proceeding Plant Main Proceeding Vater Toron 14.05 °C Cooling Claret Flux 294.12 Unin Cooling Plant Main Proceeding Vater Toron 14.05 °C Cooling Plant Main Proceeding Vater Toron 14.05 °C Cooling Claret Flux 294.12 Unin Cooling Plant Main Proceeding Vater Toron 14.05 °C Cooling Plant Main Proceeding Vater Toron 14.00 °C Plant Vater Plant	Admeters	Return W Temperat 14.7" Tank Lex 0. Pump Te 32.	(ater use (°C) (°C) (°C) (°C) (°C) (°C) (°C) (°C)	Status Leak Leak Safe Ress Ress Ress SM17.0- SM5-10 SM17.0- SM5-10 SM17.10 SM17.10 SM17.0- SM5-10 SM17.0- SM17.0- SM17.10 SM17.10 SM17.10 SM17.10	Flow Rat Search ty Heater anved tenance a Control al anved a	e Control allowed Ilowed ON ON ON ON ON ON ON ON ON ON ON ON	Coolin Run m War Alar	Coc (shu g system ade ming m	Details Details Details SET SET SET SET SET SET	Diant Die RU	statu N) DF loc atus	s ops

5.2 Cooling Panel

The status of the whole cooling plant as well as single TOF loops can be monitored from here. In normal condition you should have:

- Cooling system in RUN mode.
- ALL loops ON!
- Cooling water temperature of about 14°C.
- Return water temperature non exceeding 20°C.
- Cooling crates flux of about 300 l/min.
- Cooling FEAs flux of about 30 l/min.

NB: during maintenance operations all the loops are in ERROR. This is normal!

5.3 LV Panel



From here it is possible to monitor and to operate LV channels. Clicking on a square with *Open panel* action selected opens the relevant LV operational panel. To fix a LV channel try a few power cycles (OFF \rightarrow ON) then, if problems cannot be fixed, switch that channel OFF and remove the corresponding object from FSM.

When you are going to switch OFF/ON a whole crate, remember that:

- 1. switching ON \rightarrow you MUST first power on the RIGHT one, then the LEFT one.
- 2. switching OFF \rightarrow you MUST first power off the LEFT one, then the RIGHT one.

5.4 FEE Panel



Clicking on a crate square opens the relevant FEE operational panel. That panel could be also opened from the DCS UI:

 $DCS_UI: \rightarrow TOF_DCS \rightarrow TOF_SUPERMODULE_## \rightarrow TOF_FEESYSTEM_## \rightarrow TOF_FEEBABYCRATES_#### \rightarrow Crate## or TOF_FEEBACKCRATES_#### \rightarrow Crate## Description of the panel:$



- 1. LV operate: it opens the LV operational panel of this crate;
- 2. From here you can send commands to each VME board or enable/disable it;
- 3. From here you can send commands to the whole crate;
- 4. From here you can turn on and off the VME slot directly via the OPC server;
- 5. **VME server restart:** push to restart the VME server of this crate. After this the crate will get STANDBY;
- 6. **DIM restart:** push to restart the DIM server. After this all four SM crates will get STANDBY;
- 7. A2818 reload: push to reload the A2818 PCI card;
- 8. Crate infoBrowser (table with log messages from VME server);
- 9. VME boards temperatures display.

Selecting *LV operate* opens the LV operational panel. That panel could be also opened from the DCS UI:

 $DCS_UI: \rightarrow TOF_DCS \rightarrow TOF_SUPERMODULE_\#\# \rightarrow TOF_LVSYSTEM_\#\# \rightarrow TOF_LVBABYCRATES_\#\#\#\# \text{ or } TOF_LVBACKCRATES_\#\#\#\#$

CrateL¥												?>
CAEN Easy Board Operation Alert Summary : HV Action Action												
				-								
Board Name:	tof_d	cs:CA	AEN/:	alitofcael	lv1/bc00	/easyCra	te3/eas	/Board01			Model: [A1	396
Serial number	: 48				F	irmware r	elease:	1.05				
– Status –––							emperat	ure —		Com	mands —	
			S	ync [OK	т т	empera	ture 1	26	VP	OFF	Dn Off
12 PwS	nk		н	V Sync [ΩK							
121 110]	ON			• Oyne j	OR							
48 PwS	ОK											
VP status	FAII											
- Macisto -								_				
48 V	On	On	Off	lOn	15.0	49.60	set					
		-	•	10.0	1010	10100			4507			
	iannei Du	s —							1527	<u>12</u>		
33V 😐	On E	On	Off	Status I⊖n	102.9	3 30	set		ear alarm			
5V •	On	On	Off	On	1.6	5.00	set		IE Slots -			-
EEA IV Ch	onnoli	'				-	_		SlotSt	SlotPw		
	anner	•		C1-1-1-	lh fa a	1/0-1		1	Ok	• On	On Off	
СНОО1 😐	- Fw	On	∩ff	Status I⊖n	11/10/1	2 73	set	2	Ok	On		
CH002	On	On	Off	On	4.9	2.66	set	3	Ok	On	On Off	$\left(\cdot \right)$
СН003 🔵	On	On	Off	On	4.9	2.70	set	4	Ok	On	On Off	3)
		On	Off	On	4.1	2.70	set	5	Ok	😑 On	On Off	
04 😐	On	On										
1 5	On On	On	Off	On	4.9	2.76	set	6	Ok	🔴 On	On Off	
	On On On	On On On	Off Off	On On	4.9 4.9	2.76 2.73	set set	5	Ok Ok	On On	On Off On Off	
1 94 5 0006 CH007	On On On On	On On On	Off Off Off	On On On	4.9 4.9 4.1	2.76 2.73 2.70	set set set	6 7 8	Ok Ok Ok	 On On On 	On Off On Off On Off	
1,5 -,1006 -,1007 -,1007 -,1008	On On On On	On On On On On	Off Off Off Off	On On On On	4.9 4.9 4.1 4.9	2.76 2.73 2.70 2.63	set set set set	6 7 8 9	Ok Ok Ok Ok	On On On On	On Off On Off On Off On Off	
04 5 0006 0007 0007 0008 0009	On On On On Off	On On On On On On	Off Off Off Off	On On On On Off	4.9 4.9 4.1 4.9 0.0	2.76 2.73 2.70 2.63 0.00	set set set set	6 7 8 9 10	Ok Ok Ok Ok Ok	 On On On On On 	On Off On Off On Off On Off On Off	
04 1006 0007 0007 0008 0009 0009 00000	On On On On Off Off	On On On On On On	Off Off Off Off Off	On On On Off Off	4.9 4.9 4.1 4.9 0.0 0.0	2.76 2.73 2.70 2.63 0.00 0.00	set set set set set set	6 7 8 9 10 11	Ok Ok Ok Ok Ok Ok	 On On On On On On 	On Off On Off On Off On Off On Off On Off	

- 1. From here you can turn on and off the LV channels. Use this button if you find some of these channels in error and you want to try to fix them.
- 2. The *Clear Alarm* command allows removing all the alarm conditions in the boards housed by this specific SY1527.
- 3. From here you can turn on and off the VME slots (TO BE USED ONLY IF YOU REALLY KNOW WHAT ARE YOU DOING!!).

5.5 HV Panel



- 1. Click here to select a different time range and to have access to the channel history.
- 2. Click here to switch on/off the channel
- 3. To change a setting type in the corresponding field the value that you want to apply and then push the *set* button slots (TO BE USED ONLY IF YOU REALLY KNOW WHAT YOU ARE DOING!!).

6. Alarm Panel

By default, the panel displays all the alarms coming from all the ALICE DCS sub-systems; to display only the TOF alarms one have to use the appropriate filter.

😽 Vision_1: JCOP Alarm So	creen				
Alarm Screen	Acknowledgement	Unacknowledged Individual/Group acknowledged	de Current Alarms Historical Alarms	Select Time Range	× (
Alarm Filters Systems tof_dcs tof_hv tof_vme	Device Name * Device Type *	Logical Name * Device Descripti *	ion	Alarm Text * WEF	Alarm State
🐴 Alarm Filter					? ×
Systems tof_dcs tof_lw 2 mage Filters C C	Device Name	Logical Name	; iption 	Alarm Text	Alarm State
W tof dcs:CAEIVail W tof dcs:CAEIVail	tofcaek5/bc02/easyCra tofcaek5/bc00/easyCra SM08/L tofcaek5/bc00/easyCra SM08/L tofcaek5/bc00/easyCra SM10/L tofcaek5/bc00/easyCra SM10/L tofcaek5/bc00/easyCra SM10/L tofcaek5/bc00/easyCra SM07/L tofcaek5/bc00/easyCra SM07/L tofcaek5/bc00/easyCra SM07/L tofcaek5/bc00/easyCra SM07/L tofcaek5/bc00/easyCra tofcaek5/bc00/easyCra tofcaek5/bc00/easyCra tofcaek5/bc00/easyCra	V08/BabyCrate3233/Cr V08/BabyCrate3233/Cr V78abyCrate4041/Crat V78abyCrate4041/Crat V78abyCrate50401/Crat V78abyCrate50405/Crate0 V78abyCrate52829/Crat V78abyCrate52829/Crat V78abyCrate52829/Crat V78abyCrate52829/Crat V78abyCrate52829/Crat V78abyCrate52829/Crat V78abyCrate52829/Crat	rhoose a filter to Existing filters: tof Filter to load: tof	d Cancel	III 2008/07/11 17:51:22.043 III 2008/07/11 17:51:27.747 III 2008/07/11 17:51:27.747 III 2008/07/11 17:51:20.903 x 2008/07/11 17:51:30.903 III 2008/07/11 17:51:30.903 IIII 2008/07/11 17:51:30.903 IIII 2008/07/11 17:51:33.569 x 2008/07/11 19:21:27.469 x 2008/07/11 19:21:27.498 x 2008/07/11 19:50:93:57 x 2008/07/11 19:56:09:372 2008/07/11 19:56:09:372 2008/07/11 19:56:09:372 x

- Click on the Modify Filter button (1);
- Click on the Open folder button (2);
- Select the *tof* filter and load it (3);
- Apply the filter (4).

By right-clicking on a row in the table a small menu opens. If the corresponding help file has been defined, you can open a window with some details and instructions selecting *Alarm Help*.

E	tof_hv:CAEN/alitofcaehv1/bo	oard08/chanr	OverCuri
W	tof_dcs:crateTempSt17.ltm		HOT
W	tof_dcs:crateTempSt40.feaq	2	НОТ
		FSM Panel	
		Details	
		Trend	
		Alarm Help	

6.1 An instructive example: RDB manager DOWN

TOF data (voltage, current, temperature...) are recorded in an on-line Oracle database through the use of the RDB (Relational Database) Manager provided by PVSS. Let suppose that the following alert came

sion_1: JCOP Alarm Screen									_
arm Screen	Unack	cnowledged lual/Group wledged	le Current Alarms Historical Alarms	Select Time	Range	root			 ►
larm Filters Device Name		Logical Name		Alarm Text			Ala	rm State	
of des		*		*			*		
of_hv Dovice Type		Dovice Description			Ouiak	Filtore			
of_vme	Ŧ	*		WE	F None	available	Y	₩.	S 🛛
	1	2	-1			\sim			
Sh Device DP element	Description		Alarm text			Dir.	Value	Ack	Time .
V_tof_dcs:crateTempSt17.ltm			HOT			CAME	1		2009/08
V_tof_dcs:tof_pcAlitofsm05.status			Connection OF	F		CAME	p		2009/08
V_tof_dcs:tof_pcAlitofsm01.status			Connection OF	F		CAME	P		2009/08
tof_vme:_RDBArchive.dbConnection.co	r		RDB ARCHIVE	MANAGER NO	FRUNNING	CAME	FALSE		2009/09
V tof_hv:Gas_Di_RackiStepWS/TOF_Di_	F	GAS distribution rack 61 state NOT F					35		2009/09
V tof_hv:Gas_Di_ModStepWS/TOF_Di_N	1		GAS distributio	in state NOT RE/	ADY	WENT	135		2009/09
V tof_hv:Gas_Di_RackiStepWS/TOF_Di_	F		GAS distributio	in rack 62 state 1	IOT READY	WEN7	35		2009/09
V tof_hv:Gas_Pp_StepperWS/TOF_Pp_S	.t		GAS pump sta	te NOT READY		WENT	3		2009/09
V tof_hv:Gas_Mx_StepperWS/TOF_Mx_	3		GAS mixer sta	GAS mixer state NOT READY					2009/09
tof_hv:CAEN/alitofcaehv1/board13/char	11		Under/Voltage			WENT	FALSE		2009/09
tof_hv:CAEN/alitofcaehv1/board13/char	a		OverCurrent			WENT	FALSE		2009/09
tof_hv:CAEN/alitofcaehv2/board13/char	11		Under/Voltage			WENT	FALSE	111	2009/09
tof_hv:CAEN/alitofcaehv2/board13/char	at		OverCurrent			WENT	FALSE		2009/09
tof_dcs:crateTempSt40.feac2			TOO HOT			WENT	0		2009/09
V tof_dcs:CAEN/alitofcaelv5/bc00/easyCi	18		UNDER VOLTA	AGE		WENT	FALSE		2009/09
V tof_dcs:crateTempSt53.feac7			HOT			WENT	0		2009/09
(tof_dcs:)RDBArchive.dbConnection	Charles and an and a	Contraction (1997)	IRDB ARCHIVE	MANAGER NO	r RUNNING	CAME	FALSE		2009/09
tor_hvRDBArchive.dbConnection.	om Panel		RDB ARCHIVE	MANAGER NU	RUNNING	CAME	FALSE		2009/09
V_tof_dcs:tof_pcAlitofsm00.status 0	etails		Connection OF	F		CAME	0		2009/09
V_tof_dcs:tof_pcAlitofsm01.statusT	rend		Connection OF	F		CAME	0		2009/09
V_tof_dcs:tof_pcAlitofsm02.status 🦰	larm Help		Connection OF	F		CAME	0		2009/09
🔨 tof desitof peAlitofsmD3 status			Connection OF	F		CAME	0		2009/09

The alert is flagged in the Direction column (*Dir.* in the panel) as *CAME* or *WENT*. CAME it means that alert is still active while WENT it means that the alert went out (and you can acknowledge it using the button in the panel).

You can check also date and time of the alarm looking at the *Time* column. In the table you can see:

- 1. the system sending the alert (*tof_dcs*)
- 2. the alert description (RDB ARCHIVE MANAGER NOT RUNNING)

Right-click on the row in the table and select Alarm Help. A standard help panel opens

\\Alidesfs002\DC\$ Common\des_share\tof_share\help\en_USiso00591\tofAlarmsHelp\tofPFS\	
Elle Edit Vew Favorites Icols Help	
()Alder/s002/DCS_Common/dcs_share(tof_share)teb/	en_US.iso885
Address 😭 ((Akdosfs002/DCS_Common)dos_share)tof_share(help)en_US.iso86591*(tofAlamsHelp)toff 💌 💽 Go	Links **
Alarm Help	×
PVSS Manager DOWN	
A PVSS Manager went DOWN. The manager has to be restarted manually.	
Warning	
Error	
Fatal	
Action	
Open a new heating and connect directly to the <u>PVSS Process</u> MOMeter of the correspon system. F. (act das phrom the address <u>http://addressadress/address/addressadressadressadressadressadressadress</u>	ding m the FATE,
Contact details	
Name: Andrea Akci Email: <u>Andrea Sofine</u> Phone: 165850	
al	¥
a) Done	

The panel suggests you to open with a web browser the page <u>http://alitofwn001.cern.ch:4999/</u>

lack -	0 - 0) 👔 🏠 🔑 Searc	r h 📩	Favorites 😧 🙆 - 🗞 🕞			_
ess 🧧	http://ali	tofwn001.cem.ch:4999	Increfre	sh		💌 🔁 G	Links
Start	Project r: Stop K	Stop Project	10.09	Restart Project Wait N	fode		
elect	State	Manager	PID	Starttime	Options		
,	running	PVSS00pmon(1)	1588	2009.08.19 14:42:07.578		-	
-	running	PVSS00data(0)	156	2009.09.15 08:02:33.150			
_	running	PVSS00event(0)	2436	2009.09.15 08:03:44.744			
	running	PVSS00ctrl(1)	1012	2009.09.15 08:04:20.760	-f pvss_scripts.lst		
	running	PVSS00sim(1)	2304	2009.09.15 08:04:22.463			
	running	PVSS00dist(1)	5352	2009.09.15 08:04:29.447			
	stopped	PVSS00ui(1)	-1	1970.01.01 01:00:00.000	-m gedi		
	running	PVSS00ctrl(10)	5844	2009.09.15 08.04:31.135	-num 10 -f fwInstallationAgent.lst		
	stopped	PVSS00ctrl(2)	-1	2009.09.15 08:04:31.947	-f fwScripte let		
	running	PVSS00sim(13)	3028	2009.09.15 08.04.33.447	-num 13		
	nunning	PVSS00opc(6)	468	2009 09 15 08 04 39 744	-num 6		
	stopped	PVSS00sim(6)	-1	1970.01.01 01:00:00.000	-num 6		
	running	PVSS00mod(15)	4788	2009.09.15 08:05:02.244	-rum 15		
	stopped	PVSS00sim(15)	-1	1970.01.01 01:00:00.000	-num 15		
	running	PVSS00ctrl(2)	5636	2009.09.15 08.05.07.900	unDistribute dControl. ctl		
	nunning	PVSS00ctrl(3)	2636	2009.09.15 08:05:09 525	fwFmSrvr		
	stopped	PVSS00ui(1)	-1	1970.01.01 01:00:00.000	-p fwDeviceEditorNavigator/fwDeviceEditorNavigator.pnl -iconBar -menuBar		
	stopped	PVSS00dip(1)	-1	1970.01 01 01:00:00.000			
	stopped	PVSS00ui(1)	-1	1970.01.01 01:00:00.000	-p fwTrending/fwTrending.pnl -iconBar -menuBar		
	stopped	PVSS00ui(1)	-1	1970.01.01.01.00.00.000	-p fwFSMConfDB/fwFSMConfDB pnl -iconBar -menuBar		
	stopped	PVSS00ua(1)	-1	1970.01.01 01:00:00.000	-p dcsUi/dcsUiMainPanel pnl -centered -iconBar -menuBar		
	stopp	PVSS00rdb(99))	2009.09.15 08.05 12.885	-num 99 -dbg 0		
	stopped	PVSS00opc(11)	-1	1970.01.01 01:00:00.000	-num 11		
	running	PVSS00sim(11)	2624	2009.09.15 08:06:12.166	-num 11		

Find the right manager (*PVSS00rdb*(99)), select the radio button on the left and click on *Start*.

7. Alarms

7.1 Alarm List

- LV System
 - Over Current
 - Under Voltage
 - Over Voltage
 - Trip
 - A1396 temperature (with action on LV channels)
 - VME boards temperature (with action on VME slots)
 - FEAC cards temperature (action on FEAC cards not active jet)

HV System

- Over Current
- Under Voltage
- Over Voltage
- Trip

Connections

- Crate DIM server
- Crate VME server
- INTERCOM, ACM server, CTTM server
- RDB and DIST Managers status
- Linux PCs status
- PVSS DIM Managers status
- OPC Server status

Cooling System

- Cooling water temperature
- Crate Flux (SMS to expert will be also sent)

Gas System

- Distribution Rack 61 status (SMS to expert will be also sent)
- Distribution Rack 62 status (SMS to expert will be also sent)
- Mixer module status (SMS to expert will be also sent)
- Pump status (SMS to expert will be also sent)
- Purifier module status (SMS to expert will be also sent)

General

• Free RAM (%) for alitofwn001, alitofwn002 and alitofwn003 (SMS to expert will be also sent)

7.2 Alarm Description

• LV system

• Over Current, Under Voltage, Trip

It means that some LV channels went in an OVC, UNV, OVV or TRIP error state. **How to fix:** find out which is the channel in error reading the logical name of the object in the Alarm panel. Using the FSM hierarchy tree browser find out the relevant node and open the operational panel. Try to switch OFF and ON again that channel, or get a *Clear Alarm* if needed. If the error still persists, the corresponding object has to be removed from the FSM.

• A1396 temperature

HOT: it means that the temperature of an A1396 is more than 40°C.

VERY HOT: it means that the temperature of an A1396 is more than 45°C.

TOO HOT: it means that the temperature of an A1396 is more than 50°C.

How to fix: if the temperatures reach the 50°C, the crate will be suddenly switched off. Before it happens, check if the cooling plant is working fine. In any case the action to take is to switch off the crate (or the crates if the high-temperature crate is a right one) with the appropriate procedure.

VME boards temperature

Warning: it means that at least one temperature sensor of the VME board shows a temperature higher than $55^{\circ}C$.

Error: it means that at least 3 temperature sensors (just one in the case of a DRM) show a temperature higher than 60°C. The board (the whole crate but the CPDM in the case of a DRM) will be suddenly switched off.

How to fix: find out which is the crate housing the hot VME board reading the logical name of the object in the Alarm panel. Using the FSM hierarchy tree browser find out the relevant node, open the operational panel and disable the boards.

• FEAC cards temperature

Warning: it means that the temperature of a FEAC card is higher than 35°C. Error it means that the temperature of a FEAC card is higher than 40°C. How to fix: using the FSM hierarchy tree browser find out the relevant node, open the operational panel, switch off the card and disable it.

• HV system

Over Current, Under Voltage, Over Voltage, Trip
 It means that some HV channels went in an OVC, UNV, OVV or TRIP error state.

 How to fix: find out which is the channel in error reading the logical name of the object in the
 Alarm panel. Using the FSM hierarchy tree browser find out the relevant node and open the
 operational panel. Try to switch OFF and ON again that channel, or get a *Clear Alarm* if
 needed. If the error still persists, you have to exclude the object from the FSM.

Connections

• Connection with PCs OFF

It means that the PC could be off.

How to fix: check if the Linux machine is really off; if this is the case turn on the machine again (see <u>how to restart a Linux machine</u>).

VME server and DIM server DOWN

It means that the communication between a ddl and the corresponding Linux machine has been lost or that the Linux machine is off or hangs.

How to fix: find out to which crate the ddl belong and open the corresponding operational panel. Click on the *VME server restart* (or *DIM server restart*) button. Check the status of the Linux machine (ALITOFSM## where ## is the SM's number). If problem still persists you have to switch off the whole crate because the board temperatures are not monitored so far.

ACM server DOWN

It means that the communication with the ACM has been lost or that the Linux machine ALITOFCTRL is off or hangs.

How to fix: open the ACM operational panel and click on the *ACM restart* button. Check if ALITOFCTRL is working well.

ACM server DOWN

It means that the communication with the ACM has been lost or that the Linux machine ALITOFTRG is off or hangs.

How to fix: open the ACM operational panel and click on the *ACM restart* button. Check if ALITOFTRG is working well.

INTERCOM server DOWN

It means that the INTERCOM server is not running so far. **How to fix:** open the RUN operational panel and click on the *INTERCOM restart* button.

PVSS Dist and RDB Manager status

Some critical PVSS managers (Distribution Manager manage the connection between the main project TOF_DCS and the other projects, RDB Manager manage the data storage on ORACLE database) are continuously monitored. If they stop to work properly an alert is activated. To restart a manager you can look at the section *How to monitor PVSS managers* of this manual.

PVSS DIM Manager status

PVSS DIM Managers are continuously monitored. If they stop to work properly an alert is activated. To restart a manager you can look at the section <u>*How to monitor PVSS managers*</u> of this manual.

OPC Server status

If an OPC server hangs you lose the communication with the LV channels belonging to an SY1527 mainframe.

How to fix: go in front on the SY1527 and reset it.

Cooling System

Cooling water temperature

The temperature of the cooling water is monitored and registered at the exit of the tank. **TOO LOW:** cooling water temperature lower than 13°C. **LOW:** cooling water temperature lower than 14°C. **HIGH:** cooling water temperature higher than 18°C. **TOO HIGH:** cooling water temperature higher than 20°C. **How to fix:** check why the water temperature is so high (or low); if it is not possible to fix the problem switch off the whole TOF.

Gas System

- **Distribution Module:** the distribution module is not ready
- **Distribution Rack 61:** the rack 61 distribution system is not ready
- Distribution Rack 62: the rack 62 distribution system is not ready
- **Mixer system:** the mixer system is not ready
- **Pump module:** the pump system is not ready

8. FSM states and actions

The FSM controls and monitor the whole detector.

Here is a list of all the possible states of the TOF FSM hierarchy Top Node, and the commands associated to these states:

- **OFF:** Everything is OFF.
 - GO_STANDBY: all the front-end and the read-out electronics is switching ON. A recipe is loaded to set up once more all the LV channels (V0, Imax, Vmax and Trip time).
 - EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
 - ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **STANDBY:** all the LV channels are ON as well as the VME boards.
 - GO_OFF: turn OFF the whole detector.
 - CONFIGURE: a dedicated HV recipe which set up the V0 to the working voltage is loaded. Move the VME boards to **STBY_CONFIGURED** state.
 - EOR: move the TOF_DCS_RUN to **EOR_PROGRESSING** state
 - ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **STBY_CONFIGURED:** all the LV channels are ON and the read-out electronic is configured.
 - GO_STANDBY: move the VME boards to **STANDBY** state.
 - GO_BEAM_TUN: power on high voltage channels and load a dedicated recipe which set up the V0 to 1000V (safe condition for beam injection). Move the read-out electronic to **READY** state.
 - GO_READY: power on all the high voltage channels. Move the read-out electronic to **READY** state.
 - CONFIGURE: configure the TOF for dedicated run_type.
 - EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
 - ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **BEAM_TUNING:** safe condition for beam injection. The read-out electronic is ready for data taking, the HV channel are ON but V0 is set to 1000V only.
 - GO_STBY_CONF: switch OFF all the HV channels and move the VME boards to **STBY_CONFIGURED** state.
 - GO_READY: load a dedicated recipe which set up the HV channel V0 to the working voltage.
 - CONFIGURE: configure the TOF for dedicated run_type.
 - PREPARE_FOR_RUN: configure the TOF for dedicated run_type.
 - EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
 - ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **READY:** the detector is ready for physics data taking (the correct HV values have to be set up by the operator manually)
 - GO_BEAM_TUN: load a dedicated recipe which set up the HV channel V0 to 1000V only.
 - GO_STBY_CONF: switch OFF all the HV channels and move the VME boards to **STBY_CONFIGURED** state.

- SOR: run parameter (run type, run number and ddl list) are sent to the Run Unit and move the detector to **SOR_PROGRESSING** state.
- CONFIGURE: configure the TOF for dedicated run_type.
- PREPARE_FOR_RUN: configure the TOF for dedicated run_type.
- EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
- ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **MIXED:** the detector is in an inconsistent state (may be temporary)
 - EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
 - ACK_RUN_FAILURE: send a **RESET** to the TOF_DCS_RUN
- **ERROR:** a fatal error occurred in the detector.
 - GO_OFF: turn OFF the whole detector.
 - EOR: move the TOF_DCS_RUN to EOR_PROGRESSING state
- MOVING_STBY_CONF: the detector is moving to a STBY_CONFIGURED state.
- **MOVING_READY:** the detector is moving to a **READY** state.
- **MOVING_BEAM_TUN:** the detector is moving to a **BEAM_TUNING** state.

9. How To

- 9.1 How to switch ON the full detector
- 1. Open the <u>FSM Control Panel</u> (upper left FSM button in the DCS UI panel) while the top node (TOF_DCS) is selected in the FSM tree.
- 2. <u>Take control</u> (if it is not already taken) by clicking on the lock of the top node and select *Take*.
- 3. Click on the top node and select the commands to send moving the TOF in READY state :
 - 1. From OFF state send GO_STANDBY;
 - 2. From STANDBY send CONFIGURE(run type);
 - 3. From STBY_CONFIGURED send GO_READY.

9.2 How to switch OFF the full detector

- 1. Open the <u>FSM Control Panel</u> (upper left FSM button in the DCS UI panel) while the top node (TOF_DCS) is selected in the FSM tree.
- 2. <u>Take control</u> (if it is not already taken) by clicking on the lock of the top node and select *Take*.
- 3. Click on the top node and select the commands to send switching off the TOF :
 - 1. From READY state send GO_STBY_CONFIGURED;
 - 2. From STBY_CONFIGURED send GO_STANDBY;
 - 3. From STANDBY send GO_READY.

9.3 How to take control of the FSM

Right-click on TOF_DCS in the tree on the left side and select *view panel;* this opens the <u>FSM Control</u> <u>Panel</u>. Click on the lock and select *Take*. If control is taken by someone else, open the <u>FSM expert</u> <u>control panel</u> and release the ownership of the TOF DCS node.



9.4 I need to take control of the TOF DCS but in the FSM Control panel the lock is red painted. What can I do?

First of all, check (asking the global DCS shifter) if the control has been already taken by the global DCS shifter. If yes, ask him to release it (if it is possible). If the global DCS shifter has not taken the lock you can release it from the FSM Expert Control panel. Press the FSM Expert Control panel button in the DCS UI:



Then click on the Release FSM Node button to release the ownership of the FSM.

🔅 FSMCont	rol										
INFN				ALICE - MA	UN FSM	Control Pane	el v 0.6				
ALICE TOP	DIM DN DIM DN DIM DN	S Server IS name a IS status :	lidcsdimd DNS F	ns.cern.ch :UNNING	Distrib	uited — IS DISTRIBUITEI)!				
-FSM Ser	ver Mana	gers ———				_ESM control	to all distribu	tod domai			
tof_dcs(7	2)	RUNNING	‼ Fw	RestartAllDomains	,						
tof_hv(73)	RUNNING	‼ Fw	RestartAllDomains	;	Star	rt/Restart All	irt All			
tof_vme(7	4)	RUNNING	‼ Fw	RestartAllDomains							
alitofwn0	01 Status	s									
TOF_DCS	2	ч 🚺	EADY	tof_dcs:Manager4		OF_COOLING	😹 🔟 📃	READY			
TOF_INFR	A 🔣	80	OFF	Not owned !	×.	TOF_DCS_RUN	20	RUN_OK			
alitofwn0	002 Status	S									
HVSYS	ТЕМ_МА	S 🚺 🛛 🛛	EADY	Not owned !	~	TOF_GAS	x 🖸 📃	READY			

9.5 How to exclude part of the FSM

Click on the V button (see figure below) of the object to be excluded, then select Disable.

🚯 FSM Cont	rol :TOF_SUPERMODUL	.E_00: TOP			×] ^{PY}	
INFN	ŀ	SM CONTRO	l panel				DAOE 1
ALICE TOP	Object	5	tate				PAGET
	TOF_SUPERMODU	ILE_00	READ	Y	- 🗸		PAGE 2
	<u> </u>						
Sub-Sys	tem	State		\sim			
TOF	_LVSYSTEM_00	READY	•	\checkmark	🔅 Modes		_ 🗆 🗵
TOF	FEESYSTEM_00	READY	•	<	TOF_LVSYST	'EM_00	
TOF	HVSYSTEM_00	READY	-	\checkmark	ls Enabled	d	
					×⊂	Disable	\geq

9.6 How to restart the FSM

Click on the <u>FSM expert control</u> button. Once the FSM expert control panel opens click on the *Start/Restart All* button and wait for the FSM restart.

9.7 TOF is MIXED; what I have to do?

If TOF becomes not ready while is running, the run crashes. The shifter should recover that situation. First you have to find where the problem is. In the example below SuperModule 6 is in a mixed state; use the *FSM Control* panel to find in which subsystem (*LV*, *FE*E or *HV*) the problem is. Double-click on the rectangle called *TOF_SUPERMODULE_06* to expand it; in this example the problem is in the FEE subsystem (see below).



Now you can use the BasePanel to better investigate the situation. Open the FEE Panel and look at it; crate 24 is mixed because TRM in slot 7 is no more ready.

Vision_1: TOF_base									
GENERAL GAS	COOL	RUN info	CONNEC TIONS	SM overview	TEMP	CAEN PS	ΗV	LV	FEE
FEE panels	SN	400 SM01	SM02	SM03	5M04	SM05 9	M06 SM	07 SM08	SM09
ALL CRATES	01	00 05 0	4 09 08	13 12	17 16	21 20 25	5 <u>24</u> 29	28 33 32	37 36
2 31065	RE	RE RE F	E RE RE	RE RE	RE RE	RE RE R	MX) RE	RE RE RE	RE RE
00-71									
CRATES	RE	RE RE F	RE RE RE	RE RE	RE RE	RE RE R	E RE RE	RE RE RE	RE RE
side A - Baby	RE	RE RE F	RE RE RE	RE RE	RE RE	RE RE R	E RE RE	RE RE RE	RE RE
CRATES	RE	RE RE F	RE RE RE	RE RE	RE RE	RE RE R	E RE RE	RE RE RE	RE RE
side C - Back	HE	RE REF	RE RE RE		HE HE	RE RE R		RE RE RE	HE HE
All crates	HE	RE REF		REIDE	RE RE	RE RE R	E RE RE	RE RE RE	RE RE
verucai									
Open FSM Commands	RE			BE BE	BE BE				
	BE	BE BE F	E BE BE	BE BE	BE BE	BE BE B	E BE BE	BE BE BE	BEBE
	BE	BE BE F	E RE RE	BE BE	BE BE	BE BE B	E RE RE	RE OF BE	BE BE
	RE	RE RE F	E RE RE	RE RE	OF RE	RE RE R	E RE RE	RE RE RE	RE RE
055	RE	RE RE F	RE RE RE	RE RE	RE RE	RE RE R	e re re	RE RE RE	RE RE

Now you can right-click on the TRM corresponding square to enable a small menu with commands you can send to the board. Select GO_READY to put the TRM in a ready state.

Vision_1: TOF_base										
GENERAL GAS	COOL	RUN info	CONNEC TIONS	SM overview	TEMP	CAEN	PS H	v	LV	FEE
FEE panels	SMO	n SM01	SM02	SM02	SM04	SMOS	SM06	SM07	SMOS	SM00
ALL CRATES	01 00) 05 04	1 09 08	13 12	17 16	21 20	25 24	29 28	33 32	37 36
2 sides	RE R	E RE RI	E RE RE	RE RE	RE RE	RE RE	RE MX	RE RE	RE RE	RE RE
ALL CRATES 00-71										
CRATES	RE R	E RE R	E RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE
side A - Baby	RE R	E RE R	E RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE
CRATES	RE R				RE RE	RE RE	RE RE	RE RE	RE RE	RE RE
side L · Back	BEB			BEIDE	BE BE	BE BE	BE BE	BEBE	BE BE	BE BE
All crates	RE B	E RE R	E RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE	RE RE
Open FSM	RE R	E RE R	E OF RE	RE RE	OF RE	RE RE	RE	Croke24	Slot07	RE RE
Commands	RE R	E RE R	E RE RE	RE RE	RE RE	RE RE	RE F -	Crate24	-510(07	RE RE
	RE R	E RE R	E RE RE	RE RE	RE RE	RE RE	RE F	GO_OFF	UDDU	RE RE
	RER	E RE R	E RE RE	RE RE	RE RE	RE RE	RE F	GO_STA	VUBY Y CONE	RE RE
	HE R			RE RE		RE RE	REF	GO_REA	DY	RE RE
OFF								DISABLE		
STANDBY	03 03	2 07 06	6 11 10	15 14	19 18	23 22	27 2 —			39 38
	RE R	E OF R	E RE RE	RE RE	RE RE	OF RE	RE R	cancel		RE RE

9.8 How to fix LV issue

Open <u>LV panel</u> inside the BasePanel, select *Open Panel* in *Select action* field (up – right corner) and look at the status of LV channel. You may try to switch it ON again. If the problem cannot be fixed, exclude the corresponding object from FSM.



9.9 How to fix FEE issue

Open <u>FEE Operational panel</u> inside the BasePanel and look at the log table (crate InfoBrowser) to understand what happens. You may try a power cycle (turn the board OFF and then move it back to

READY). If the problem cannot be fixed, exclude the corresponding object from FSM (see picture below).



9.10 The status showed for a crate is not the correct one

4	tof_cra	ate											ľ
	SlotSt	SlotP	W ope	.V rate	ti	of dcs:F M	EE/Ci <mark>oving</mark>	ati or	e47 FF	S	M 11 _G	οτο	
1	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
2	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
З	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
4	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
5	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
6	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
7	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
8	Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
9	Ok	On	On	Off	5	Ena_S	tby E	ha	Dis	Off	Standby	Stby_Con	Ready
10) Ok	On	On	Off	5	Ena_S	tby E	na	Dis	Off	Standby	Stby_Con	Ready
11	Ok	On	On	Off	5	Ena_S	tby E	ha	Dis	Off	Standby	Stby_Con	Ready
12	2 Ok	On	On	Off	5	Ena_S	tby E	ha	Dis	Off	Standby	Stby_Con	Ready
							all E	na	Dis	Of	Standby	Stby_Con	Ready
[-	CAL UPGR	IBRA' ADE	TE _FV	/	VME shu	se tdc	erver own				
ſ		CC	NTRO	L_FE	E_0		VME re	se sta	erver art	D	TOF global	cmds	
		n	eneric	nes	co	мГ		_	_		Reload	DB	

It may happen that the status showed for a crate is not the correct one (see picture below).

If you restart the VME server for this crate pressing on the VME server restart button the problems should disappear.

9.11 How to exclude HV channels from the FSM

The HV are managed by a dedicated FSM running in a separated machine. Single HV channels cannot be included or excluded in the usual way; the operational panel (in the DCS UI panel) and the enable or disable buttons have to be used instead.



After excluding the bad HV channel shifter should update the HV configuration file. Naming convention for configuration file is: *HVConfiguration_[year]_[month]_[day].txt*

	<u>-0'</u>
GENERAL GAS COOL RUN CONNEC SM TEMP CAEN PS HV LV FEE FEAC ACM CTTM LTM INFO 9:12:31 AM 11/10/200	<mark>&</mark>] 09
HV panels Mod0 Mod1 Mod2 Mod3 Mod4 Mod0 Mod1 Mod2 Mod3 Mod4 Mod0 Mod1 Mod2 Mod3 Mod4 HV panels SM00 Neg P P	2 × ×

9.12 How to monitor PVSS managers

If you would like to monitor or manage the status of the PVSS managers or to restart the whole project, you can connect directly to the PMON using a web browser and select the address:

- <u>http://alitofwn001.cern.ch:4999</u> for TOF_DCS
- http://alitofwn002.cern.ch:4999 for TOF_HV
- <u>http://alitofwn003.cern.ch:4999</u> for TOF_VME

9.13 How to restart a Linux machine

- 1. Open a *ssh* session on alitofsrv, then type:
 - 1.1. go [sm nr.] (if you want to restart alitofsm00 type go 0; you will directly redirect to alitofsm00);
 - 1.2. *su* (*root* password is like the usual *tof* password)
 - 1.3. halt
- 2. From alitofsrv give the commands:
 - 2.1. cd SOFT/IPMI
 - 2.2. ./nodepower status alitofsm[sm nr.] (if you get no answer you have to go in the CR3 and switch ON/OFF the machine directly from the front panel)
 - 2.3. ./nodepower off alitofsm[sm nr.]
 - 2.4. ./nodepower on alitofsm[sm nr.]
- 3. Wait for machine restart.

9.14 A whole crate OFF

If looking at the crate operational panel you find all the slots in fail

					to	of dcs:FEE	/Crat	e05
1	SlotSt	SlotF	∥ope	V rate]	OFF		
1	Fail	On	Qn	Off	3	Ena_Off	Ena	Dis
2	Fail	On	On	Off	3	Ena_Off	Ena	Dis
3	Fail	On	On	Off	3	Ena_Off	Ena	Dis
4	Fail	On	On	Off	3	Ena_Off	Ena	Dis
5	Fail	On	On	Off	3	Ena_Off	Ena	Dis
6	Fail	On	On	Off	3	Ena_Off	Ena	Dis
7	Fail	On	On	Off	3	Ena_Off	Ena	Dis
8	Fail	On	On	Off	3	Ena_Off	Ena	Dis
9	Fail	On	On	Off	3	Ena_Off	Ena	Dis
10	Fail	On	On	Off	3	Ena_Off	Ena	Dis
11	Fail	On	On	Off	3	Ena_Off	Ena	Dis
12	Fail	On	On	Off	3	Ena_Off	Ena	Dis
							-	

it means that the 3.3V channel is no more ON. Select LV operate to investigate.

9.15 Run Unit in error

If the object TOF_DCS_RUN is in error try to:

- 1. send a *RESET* command from the *FSM Control Panel*;
- 2. restart the *INTERCOM* server from the TOF_DCS_RUN panel.

The	e system is	RU	NNING	2003.03.03.16.13.37.6.	11	
Lasta	ction seen SOR		1	on 2009.09.0916.19.34.618		
Runty	pe PHYSICS			on 2009.09.09161934.618	• E	
Runn	umber 85221			on 2009.09.09.19.19.34.618	- 11	
DDL i n. of	at 1200 120 1292 124 DDL 1308 130 71 1300 130 1328 132	1 1204 03 1296 09 1312 01 1320 19 1332	1205 1200 1209 1297 1304 1305 1313 1316 1317 1321 1324 1325 1333 1336 1337	on 2009.09.09 16:19:34.618)	7
Crat	e list 00 01 17 24 2 100 01 17 24 2	41 1344 83 1286 84 1300 04 05 5 28 2	1345 1340 1349 1290 1291 1294 • 1290 1291 1294 • • 08 09 12 13 16 • 9 32 33 36 37 20	RUNNING 2009.09.09 16:19:37.6:	13	
	56 57 6 06 10 30 31 3 46 47	0 61 6 11 14 4 35 3 50 51	4 65 68 69 02 03 15 10 19 26 27 0 39 22 23 42 43 54 55 58 59 62			
ack	0 SOR/EOR	0 61 6 11 14 4 35 3 50 51 7 70 7 20M resta	4) 65 68 69 02 03 15 10 19 20 27 15 10 19 20 27 15 15 58 59 62 1 1 1 1 1 1 1 1 1 1 1 1 1			2009.09.0916193763
ack	0 SOR/EOR	0 61 6 11 14 4 35 3 50 51 7 70 7 20M resta	4) is is is is is is is ic ics 15 10 19 25 27 13 22 23 42 43 5 55 56 59 62 1 1 1 1 1 1 1 1 1 1 1 1 1		-	2009 09 09 16 19 37 63
ack msg	0 SOR/EOR 106 120 106 120 101 101 101 101 1	0 61 6 11 14 4 35 35 50 51 100M rest transitio level Enor Enor Enor Enor Enor Enor Enor Enor Enor	4 i 65 i 69 i 69 i 62 i 50 15 i 10 19 i 52 i 27 15 i 10 19 i 28 i 27 15 i 15 i 10 19 i 28 i 27 15 i 15 i 15 i 16 i 27 15 i 15 i 16 i 26 i 27 15 i 15 i 16 i 26 i 27 16 i 15 i 16 i 16 i 17 16 i 16 i 16 i 17 17 i 16 i 16 i 17 18 i 16 i 16 i 16 i 17 18 i 16 i	Jin cate 33 din cate 16 din cate 22 din cate 23 din cate 16 din cate 33 din cate 33 din cate 44		 2009 09 09 16 19 37 63 2009 09 02 05 45 27 44
ack msg	0 SORVEOR 106 120 1 101 10 10 10 1 101 10 10 10 10 10 101 10 10 10 10 10 10 10 10 10 10 10 10	0 61 6 11 14 4 36 35 50 51 1 701 7 50 51 51 1 701 7 50 51 51 51 51 51 51 51	4 i dis i dis i di 1 di 1 di 1 5 i la 1 i si di 2 i di 1 6 i si la 1 i si di 2 i zi la 1 6 i si s	In calle 33 din cate 16 din cate 12 din cate 22 din cate 23 din cate 33 din cate 64 ating comada	*	2009 09 09 16 19 37 63 2009 09 02 05 45 27 44

9.16 ACM in error

Before to call an expert:

- 1. check if the VME crate is ON
- 2. restart the ACM Server

Vision_1: TOP										×
15:52:36 10-09-0	9 dista v.3.0.7					IO USER LOGGE	ĒD		US	SHUTDOWN
aalici		() I							
A TOP DOP ACH			/	Δ 🧭 🖪	1 🙆 🖏 👘	E C			1 1 2 2 -	LICUNSAL
FDDOD FDDOD	- V 💥 I									18.0 °C 61.622 mbar
D. OFTOF IMEDA	I (DF ACM S	tatus is	ERROR			-	~	UNE Control	\sim
TOF DCS ACM 44	ack	0 Exec	cuted reques	t to move ACM	OFF	(ACM	00_0FF	The control	
tof_acm	/IEW PANEL	time	level	description		1	restart	/	073	te power 🙂 🔪
(+ OF DCS_CTTM C	OPEN FSM CONTROL	2009.09.15.18	38.34 Info	ACM crate w	ent ON upon request. VME o	annel opened		GO_STANDS	Y	
D GTOF_DCS_RUN		2009.09.15 18	40.54 Info	ACM is now !	STBY_CONFIGURED			GO STBY CO	NE	
OF_SUPERMODULE_00 OP OP		2009.09.15 18	156:40 Info	ACM is now	READY				SysRESET	
ID OF_SUPERMODULE_01		2009.09.1519	103:03 Info	ACM is now?	STBY_CONFIGURED			00_READY		
E-OF_SUPERMODULE_02		2003.09.15 19	1:05:19 Info	Moving to S1	TANDBY'					\sim
E OF SUPERMODULE 03		2009.09.15 19	205.38 Info	ACM crate w	ill go OFF, closing VME conn	schon				
E-OF_SUPERMODULE_04		2009.09.15.19	105.38 Info	ACM crate w	ill be turned OFF					
B-OUTOF_SUPERMODULE_05		2009.09.15.19	107:00 Info	ALM crate w	If go UPF, closing VME conn	schon				
DESTOP_SUPERMODULE_06		2009.09.15.19	07:00 Info	ACM crate w	e be turned OFF		Clear Tab	ke		
TOP_SUPERMODULE_07		1	107.00 1110	ACH CORE W	a be ramed or r	1	Clear Mag from	PVSS		
D OTOF_SUPERMODULE_08						<u> </u>				
		Busy	-1.000	-1.000000	-1.000000 -1.000000	Busy	0	0 0	0	
BOTOF SUPERMODULE 11		Occupancy	-1.0000	-1.000000	-1.000000 -1.000000	Counters	0	0 0	0	
TOP SUPERMODULE 12			-1.000	000 -1.000000	-1.000000 -1.000000		0	0 0	0	
STOP SUPERMODULE 13			-1.0000	1.000000	+1.000000 +1.000000		0	0 0	0	
Sub-System	State		PAGE 1	00 -1.000000	-1.000000 -1.000000		0	0 0	0	
TOT INTERA	055	1 1 -	TT TATA T	-1.000000	-1.000000 -1.000000		0	0 0	0	
TOF_INFIN	UN	<u> </u>	PAGE 2	00 -1.000000	-1.000000 -1.000000		0	0 0	0	
TOF DCS ACM	DRROR	• < 1 T		00 -1.000000	-1.000000 -1.000000		0	0 0	0	
				-1.000000	-1.000000 -1.000000		0	0 0	0	
TOF_DCS_CTTM	ERROR	 ✓ 		00 -1.000000	-1.000000 -1.000000		0 0	0 0	0	
				-1.00000	-1.000000 -1.000000	(M)	0	0 0	0	
TOF_DCS_RUN	RUN_INHIBIT			00 -1.000000	-1.000000 -1.000000		0	0 0	0	
B OTOF_SUPERMODULE_17			SM12 -1.0000	-1.000000	-1.000000 -1.000000		0	0 0	0	
IN TOF_LVSYSTEM_17			CM12 -1.0000	-1.000000	-1.000000 -1.000000		0	0 0	0	
Interstem_17			SM14 -1.0000	00 -1.000000	-1.000000 -1.000000		0	0 0	0	
Inter_HVSYSTEM_17			CMUE -1.0000	1.000000	-1.000000 -1.000000		0	0 0	0	
			-1.0000	000 -1.000000	-1.000000 -1.000000		0	0 0	0	
			-1.0000	-1.000000	-1.000000 -1.000000		0	0 0	0	
1			2017) 11000	,	,	541	0- P	- 10	12	- Di

9.17 CTTM in error

Before to call an expert:

- 1. check if the VME crate is ON
- 2. restart the CTTM Server

Vision_1: TOP			NOUSERLOGGED	
aalici 🔍 📃			NO ODER EDOOLD	
TOF_DCS_CTTM		🔺 🗉 🗇 🚫		Ev. 10.0 °C 61.626 mbar
	TOF CTTM stat			\sim
B G LOF_DATA				WME Control
TOP_DCS_CTTM ++	ack o		C CTTM OO_OFF	crate power
B-OFTOF DCS RUN OPEN FRANCON	TROL I time	level description	GO_STAND	W I
B GOTOF_SUPERMODULE_00				
CONTOF_SUPERMODULE_01			00_STBY_0	
B OF_SUPERMODULE_02			GO_READ'	
E-GTOF_SUPERMODULE_03				
B GOTOF_SUPERMODULE_04				
B-OTOF_SUPERMODULE_05				<u> </u>
D 1010F_SUPERMODULE_06				
E GTOF_SUPERMODULE_07			Clear Table	
IN SUPERMODULE OF			AL Country box B/CC	
TOP_SOPERMODULE_09			Clear Mtg rom PV55	
STOP SUPERVOLUE 11				
Sub-System St	nte	Louors I		
	1.01	PAGET		
TOF_INFRA	011 - 20	PAGE 2		
TOF_DCS_ACM	ERROR -	nnels		
TOF_DCS_CTTM	ERROR -			
TOF_DCS_RUN	RUN_INHIDIT -			L
Interpretation of the second secon	· · · · · · · · · · · · · · · · · · ·			
In the state of				
B-0010F_SUPERMODULE_17				
B-10F_LVSYSTEM_17				
B-GTOP_PEESYSTEM_17				
e-mailer_invisible_1/				
I				-
4				

9.18 No link to PVSS DIM service

If you receive such a message it means that one of the PVSS DIM managers is not running. If the source of this message is the INTERCOM server it means that the DIM manager 47 should be restarted (see the section *HOW to monitor PVSS managers*).

If the source of this message is the ACM server it means that the DIM manager 48 should be restarted (see the section *HOW to monitor PVSS managers*).

If the source of this message is the CTTM server it means that the DIM manager 46 should be restarted (see the section *HOW to monitor PVSS managers*).

If you receive a message like

PVSS DIM slot power services/command not available

while you are trying to power on or to configure a VME slot it means that the DIM manager 49 should be restarted (see the section *HOW to monitor PVSS managers*).

9.19 How to recover a DRM in error

									0	tof_cra	ite										
VP status FAIL										SlotSt	SlotPv	U Deper	V	tof	dcs:	FEE/Cra RROR	nte42	S	M 10 _{GO}	то	
48 V On	On	Off On	26.0	49.50	set				1	Ok Ok	On On	On	Off	1	Error Ena F	Ena Rear Ena	a Dis	Off	Standby Standby	Stby_Con Stby_Con	Ready
-VME LV Channe	els —					S	SY1527 -		3	Ok	On	On	Off	9	Ena F	Reac Ena	Dis	Off	Standby 3	Stby_Con	Ready
P	w	Statu	s IMon	VCon		Шſ	clear als	m [4	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
3.3 V 😐 On	On	Off On	96.3	3.31	set		cicar aic		5	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
5 V 😐 On	On	Off 🕖 n	1.7	5.00	set		/ME Slot	is —	6	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
-FEALV Channel	e	_			_		SlotS	t	7	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
							1 0		8	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
CH001 C	v Or l	Statu	s IMon	VCon	1.001				j 9	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
CHOUT On	On	Office	4.2	2.78	set		2 OK		j 10	Ok	On	On	Off	9	Ena_F	Reac Ena	Dis	Off	Standby	Stby_Con	Ready
CH002 0 0n	On	Office	4.2	2.74	set		3 OK		11	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
	On	Oπ On	4.9	2.72	set		4 Ok		12	Ok	On	On	Off	9	Ena_F	Reac Ena	a Dis	Off	Standby	Stby_Con	Ready
CHUU4 On	Un	Off On	5.0	2.76	set				1							ell Ens	Die	Off	Standby	Sthy Con	Ready
CHUU5 On	On	Off On	4.1	2.73	set		6 Ok		5								DIS		order roley	5407_0011	riculary
CHUU6 On	Un	Uff Un	4.9	2.69	set		7 Ok		٢_											1	
CHUU7 On	On	Off On	5.0	2.69	set		8 Ok		5 E			CALI	BRAT	ΓE		VME_S	YSRES	<u>ر</u>	A2818 relo	ad	
CH008 • On	On	Off On	5.0	2.60	set		9 Ok		٩Г			UPGR/	ADE_	FW		VME s	server				
CH009 Off	On	Off Off	0.0	0.00	set	1	0 Ok		٩ Г		CO	NTROL	FE	E_CN	/ID	shuto	iown		OE global c	mds –	
CH010 Off	On	Off Off	0.0	0.00	set	1	1 Ok		•							VME s	erver		Keload U	8 1	
CHU11 Off	On	OffOff	0.0	0.00	set	1	2 Ok		•		ge	eneric (DCS	CON	1	res	tart		for ALL TO	F	
									1				_	_		m sg ti	me	leve	l desci	iption	

If you find the situation illustrated in the figure above and if you have the following message in the crate <u>infoBrowser</u>

failed to open VME connection to crate (ret=-2)

then you can try as following:

- 1. Try a power cycle on the DRM (switch the card off, then on again);
- 2. Switch off the DRM, select A2818 Reload and then turn on the DRM;
- 3. If problem is still in, try to switch off the whole crate, i.e. press the *LV operate* button and turn off the 3.3V and the 5V channel. Remember that if the crate is a right one you MUST to turn off before the left crate, then the right one.
- 4. <u>Reboot</u> the relevant PC Linux.

9.20 How to exclude a DDL from readout

						DCA INTO:	14:48:02:	(PHYSICS)	TUFFER	J 15 READ 1	ć	
	XDATE - selection of	active equipn	nent		-							
					D-RC	RCs for de	etector : T	OF				
					Data sou	irce : 🔳 [DDL 🔲 Ini	ternal				
	ldc-T	OF-A00-A04-0	1280	1281	128 4	1285	1288	1289	1292	1293	1296	1297
	ldc-T	OF-A05-A09-0	i 1300	= 1301	i 1304	i 1305	i 1308	1 309	i 1312	= 1313	= 1316	= 1317
	ldc-T	OF-A10-A13-0	i 1320	i 1321	📕 1324	📕 1325	i 1328	1 329	i 1332	= 1333		
	ldc-T	OF-A14-A17-0	= 1336	📕 1337	i 1340	📕 1341	i 1344	📕 1345	i 1348	📕 1349		
	ldc-T	OF-C00-C04-0	i 1282	1283	1286	1287	i 1290	📕 1291	i 1294	E 1295	i 1298	📕 1299
	ldc-T	OF-C05-C09-0	i 1302	i 1303	i 1306	i 1307	i 1310	📕 1311	= 1314	F 1315	i 1318	📕 1319
	ldc-T	OF-C10-C13-0	i 1322	i 1323	i 1326	📕 1327	i 1330	📕 1331	i 1334	i 1335		
	ldc-T	OF-C14-C17-0		i 1339	📕 1342	📕 1343	i 1346	📕 1347	i 1350	📕 1351		
			2									
Detector: TOF			~	-								
infoBrowser												
runControl												
readout status												
select equipment	, 2											
detector files												
ECS		4										
Quit												
	Some changes are pending	g: Commit	Rollback							Refresh	Desele	ect all
<u>****</u> _ & <u>*</u> *	BUG ECS/DAQ	AMORE	55 📃 tof@	⊉aldaq	XAlic	e DAQ	<mark>×</mark> infoBr	ows ኦ	TOF_D		DATE - s	e

- 1. Open the TOF Detector Control Agent;
- 2. Select select equipment;
- 3. deselect the DDL you want to exclude (remember **ddl number = crate number +1280**);
- 4. commit your modifications;
- 5. release the resources (see below) from the DCA panel.



9.21 How to check the FEAC threshold

Before starting a new run it is important to check if the thresholds are correct. **Remember that the TOF_DCS must be READY and not running!**



Currently thresholds are 500mV (this value could be change in future). If you find an LTM with different values try a power cycle (OFF \rightarrow READY). If this doesn't fix the problem call an expert.

9.22 How to extract error from the DAQ site InfoBrowser

It is likely in your shift report you want to report error messages from the InfoBrowser (either the ALICE DAQ or the TOF one). To select a portion of messages and save it in a file follows this procedure:

- decide which messages you want to extract
- deselect the online bottom
- typically use the following keys to get only the messages you want: min Time, Level, Facility, then push *Query*

Info	Time	Host	Facility	Message	
inio	18:33:36	alitofsm16	VME65	> TRM in slot # 5 selected for acquisition	
Info	18:33:36	alitofsm16	VME65	> TRM in slot # 6 selected for acquisition	
info	18:33:36	alitofsm16	VME65	> TRM in slot # 7 selected for acquisition	
nfo	18:33:36	alitofsm16	VME65	TRM in slot # 8 selected for acquisition	
nto	18:33:36	alitofsm16	VME65	> TRM in slot # 9 selected for acquisition	
nfo	18:33:36	alitofsm16	VME65	> TRM in slot # 10 selected for acquisition	
nfo	18:33:36	alitofsm16	VME65	> TRM in slot # 11 selected for acquisition	
nfo	18:33:36	alitofsm16	VME65	> TRM in slot # 12 selected for acquisition	
nfo	18:33:36	alitofsm16	VME65	> Active TRMs: 10 (Mask: 0x7FE)	
nfo	18:33:36	alitofsm16	VME65	> L1 acceptanhce window from L0: 205 - 225 BC	
nfo	18:33:36	alitofsm16	VME65	> DRM is already running with EXT CLK	
nfo	18:33:36	alitofsm16	VME65	Setting up PULSER lines using L0 generation via LTU	
info	18:33:36	alitofsm16	VME65	Slot 1 now READY to take data	
nfo	18:33:39	alitofsm10	DIM43	Power transition will be requested on slot 12	
nfo	18:33:41	alitofsm10	DIM43	detected power change in slot # 12 (was 0 now 1)	
nfo	18:33:42	alitofsm10	DIM43	Power transition completed on slot 12	
nfo	18:33:42	alitofsm10	VME43	=> GOTO_STANDBY request for slot 12	
nto	18:33:42	alitofsm10	VME43	Slot 12 now in STANDRY	
nfo	18:33:44	alitofsm10	VME43	-> GOTO STBY CONFIGURED request for slot 12	
nfo	18:33:44	alitofsm10	VME43	Aming TBM in crate 43 (SM: 10, link 3) slot 12 (VME ad: 0xC0000000)	
BBOB	18:33:46	alitofsm10	VME43	> Failed handshake with Microprocess on this TRM	
RROR	18:33:46	alitofsm10	VME43	Slot 12 NOT configured	
nfo	18:33:55	alitofsm10	DIM43	detected nower change in slot # 12 (was 1 now 0)	
nfo	18:34:18	alitofsm10	VME43	=> GOTO_STBY_CONFIGURED request for slot 11	
info	18:34:18	alitofsm10	VME43	Disaming TRM # 11 on crate 3	
info	18:34:18	alitofsm10	VMEAT	Slot 11 now in STDRY_CONFIGURED	
info	18:34:25	alitofsm10	VME43	-> GOTO READY request for slot 11	
info	18:34:25	alitofsm10	VME43	Arming TBM in crate 43 (SM: 10, link 3) slot 11 (VMF ad: 0x80000000)	
info	18:34:28	alitofsm10	VME43	TRM Control Register set to: 0x0083	
info	18:34:28	alitofsm10	VME43	> Final TRM Status 0x383C	
nfo	18:34:28	alitofsm10	VME43	Slot 11 now READY to take data	
nfo	18:34:40	alitofsm10	DIM43	Power transition will be requested on slot 12	
nfo	18:34:41	alitofsm10	DIM43	detected power change in slot # 12 (was 0 now 1)	
Info	18:34:42	alitofsm10	DIM43	Power transition completed on slot 12	
nfo	10:34:42	alitofsm10	VME43	=> GOTO_STANDBY request for slot 12	
info	18:34:42	alitofsm10	VME43	Slot 12 now in STANDRY	
nfo	18:34:44	alitofsm10	VME43	=> GOTO_STBY_CONFIGURED request for slot 12	
	1000000	1	15 11 1	1	

• once you have the entries you want to save, push "export" and save them in a file. The file with the error is pure text and it can be usefully sent as an attach in log entry.

9.23 Readout error

If during a run you get errors in the DAQ like

Read Event Rorc Data, eqld=1287, CDH mismatch

ReadEvent RorcData: eqId=1287, (ERROR 357) CDH trigger error bit(s)

First of all try to start a new run. If you get still problems remove the DDL from readout.

10. Useful information

Andrea's CERN mobile: Gilda's CERN mobile: Roberto's CERN mobile: ALICE Control Room: ALICE TOF Twiki: https://twiki.cern.ch/twiki/bin/view/AliceTOF/WebHome ALICE TOF Elog: https://www.bo.infn.it/elog/ALICE-TOF/ ALICE DCS Pages: http://alicedcs.web.cern.ch/alicedcs/ ALICE Homepage: http://aliceinfo.cern.ch/