PHOS DCS guide

(for PVSS based products only)

Alexander Mamonov

Last update: 1th October, 2010

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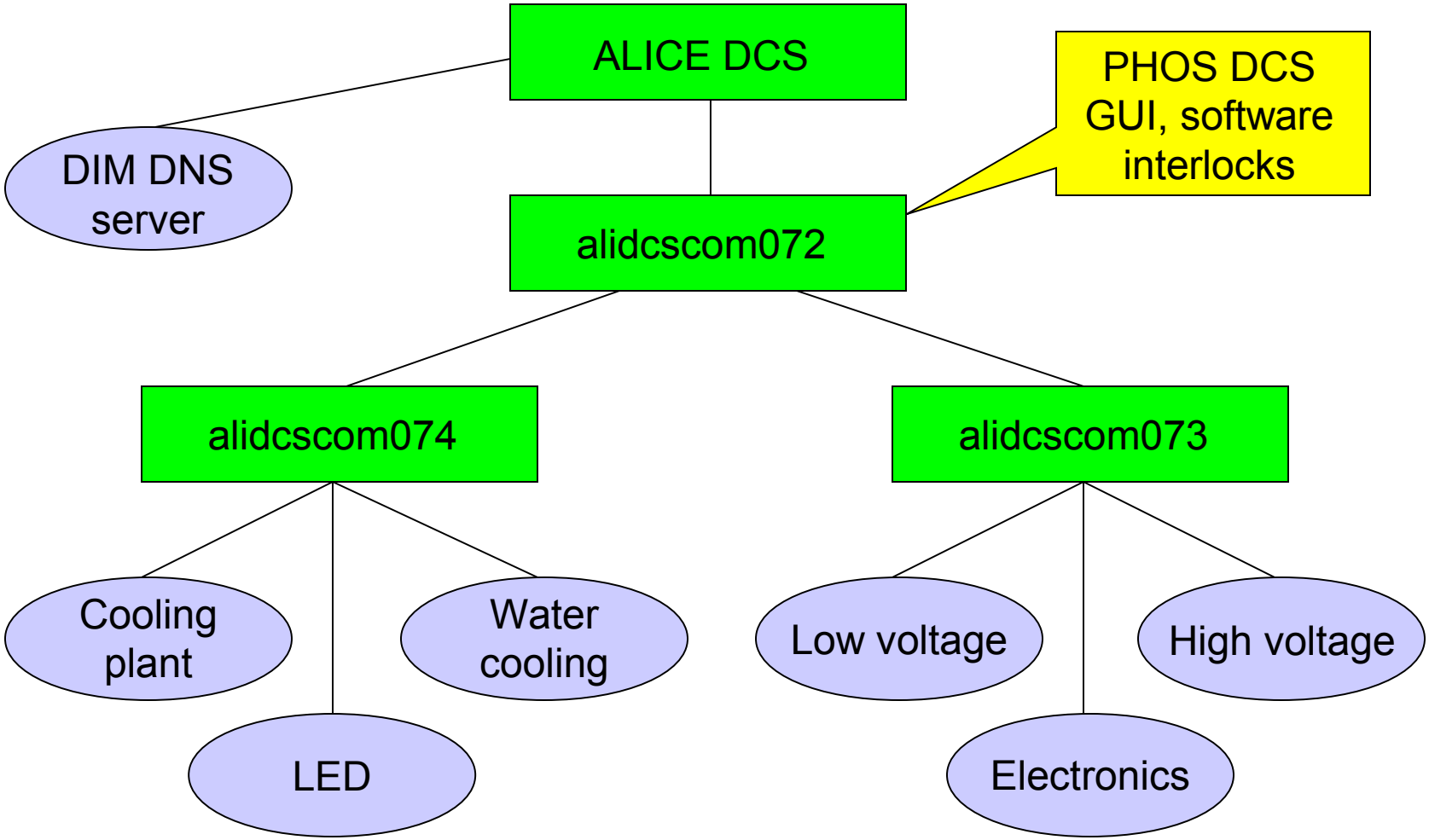
Purpose of this guide

- This guide is the manual for the experts on call of PHOton Spectrometer and advanced users of ALICE Detector Control System;
- The guide describes only products based on PVSS SCADA and appropriate CERN Framework;
- The guide does not contain information on electronics and the trigger unit control;
- The guide serves as a reference for the configuration, operation, and troubleshooting of PHOS Detector Control System.

Contact list

- Power supply, PVSS project, this guide:
  - Alexander Mamonov
  - alexander.mamonov@cern.ch
- Matrix cooling plant:
  - Alexei Kuryakin
  - alexei.kuryakin@cern.ch
- LED system:
  - Serguei Sadovsky
  - serguei.sadovski@cern.ch
- Electronics and trigger:
  - …
  - …
- Water cooling:
  - …
  - …
- Hardware interlock deactivation:
  - Andre Augustinus
  - andre.augustinus@cern.ch
- PHOS Run Coordinator
  - Svein Lindal
  - svein.lindal@gmail.com

PHOS DCS structure



How to monitor PHOS from the web?

- Ooops! Not ready yet.

Instruction for newcomers

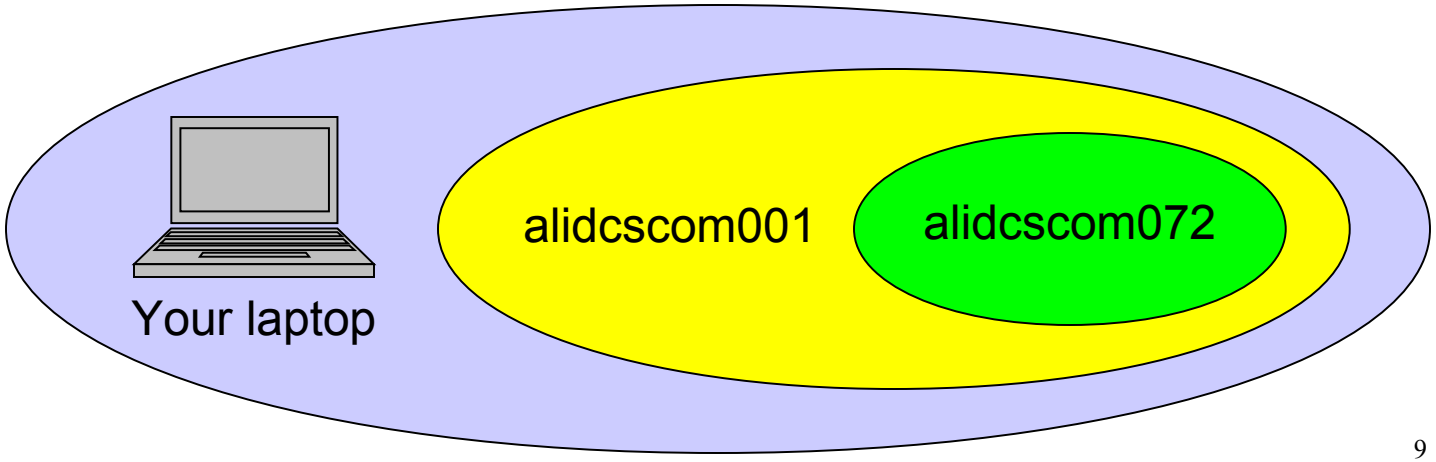
- To get an access to PHOS DCS system you have to:
  - send the request for access to alidcscom072 computer;
  - send the request for access to PHOS DCS GUI.

- Send your both mails to:
  - Alexander Mamonov (alexander.mamonov@cern.ch);
  - Svein Lindal (svein.lindal@gmail.com).

- Finally you will get:
  - The confirmation from ALICE DCS for access to alidcsom072;
  - Temporary password to the DCS GUI
    (change it to the same one with NICE as soon as possible).

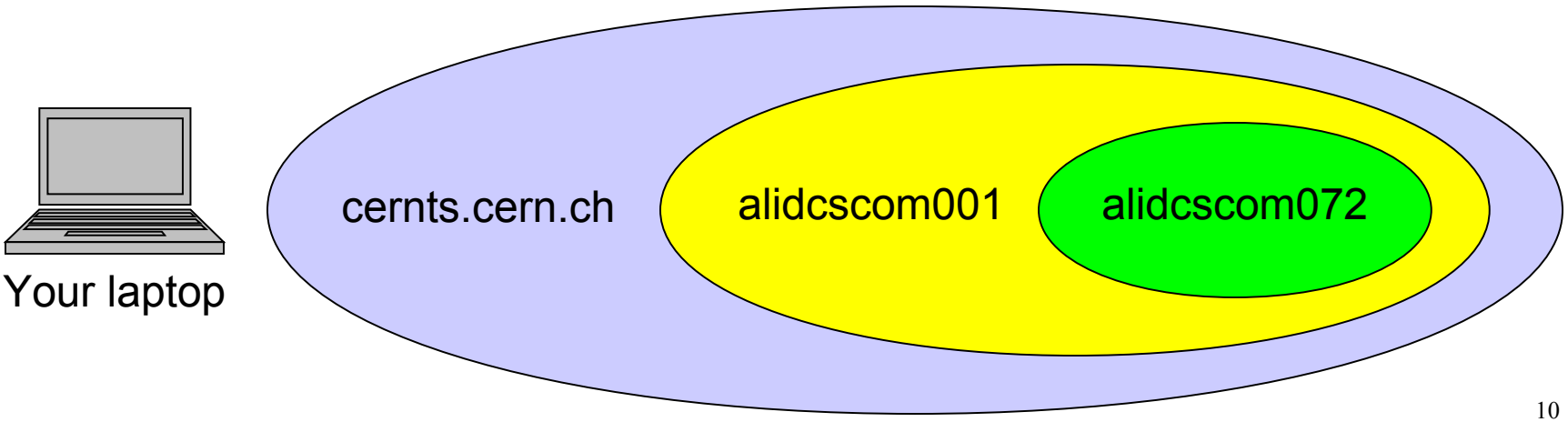
How to get an access to PHOS DCS? You are at CERN

- Log in to alidcscom001.cern.ch cavern gate;
- log in to alidcscom072.cern.ch PHOS DCS computer;
- click Start and choose PHOS shortcut;
- type your NICE login and password in the open window (temporary password for the newcomers).



How to get an access to PHOS DCS? You are outside of CERN

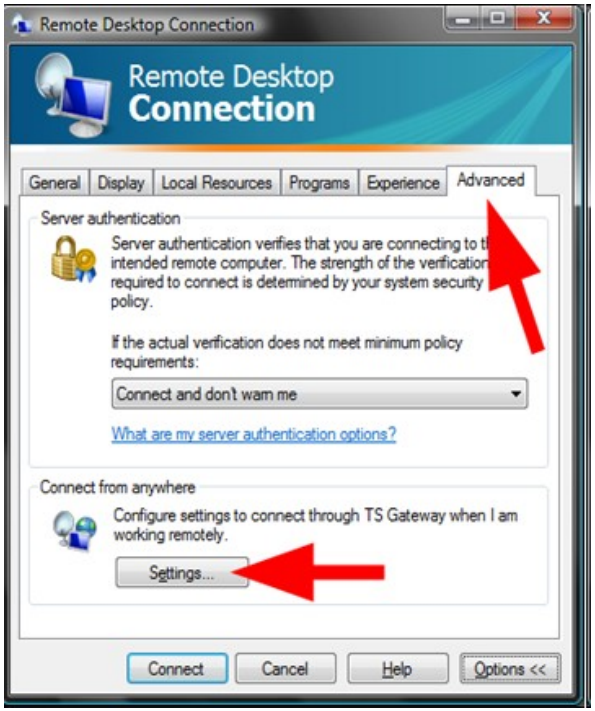
- **Log in to cernts.cern.ch gate;**
- log in to alidcscom001.cern.ch cavern gate;
- log in to alidcscom072.cern.ch PHOS DCS computer;
- click Start and choose PHOS shortcut;
- type your NICE login and password in the open window (temporary password for the newcomers).

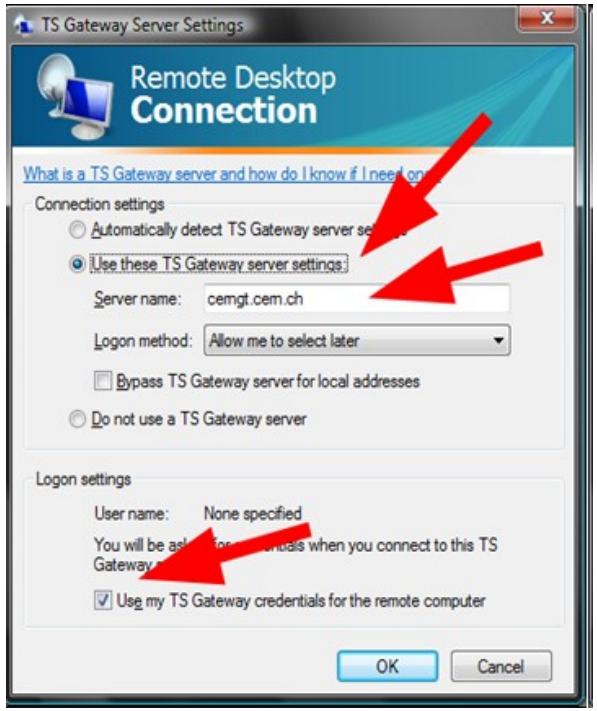


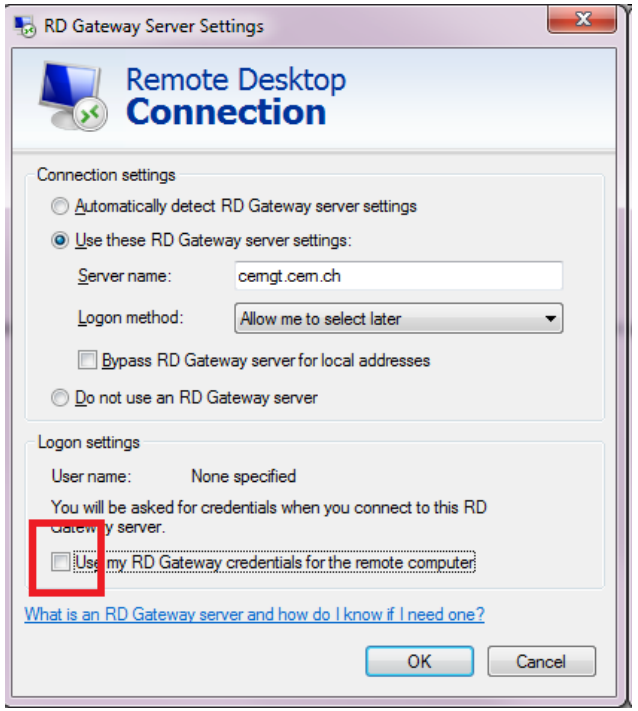
How to make my connection better?

- You can manually configure Remote Desktop Connection to connect using the Gateway. For this:
  - Start Remote Desktop Connection, either from the "Start" menu, or by typing "mstsc" from command prompt.
  - Enter the name of the PC to which you want to connect and click the button "Options".
  - Go to the "Advanced" tab and click on the button "Settings" in the "Connect from anywhere" section.
  - Select "Use these TS Gateway server settings" (in more recent versions of RDP client it will be "Use these RD Gateway server settings"), enter "cerngt.cern.ch" as Server Name and select "Use my TS Gateway credentials for the remote computer" checkbox at the bottom.
  - Click "OK" and then "Connect" to open the connection. Note also that you can save these settings in an RDP file using the "Save As" button on the "General" tab.
  - You can use one account to authenticate on the gateway and then another account to connect to the target PC. For this in the last step clear the "Use my TS Gateway credentials for the remote computer" checkbox.

How to make my connection better?







https://winservices.web.cern.ch/winservices/Help/?kbid=350001

- For Linux clients use “-z -x -P -a” rdesktop command options to optimize your connection.

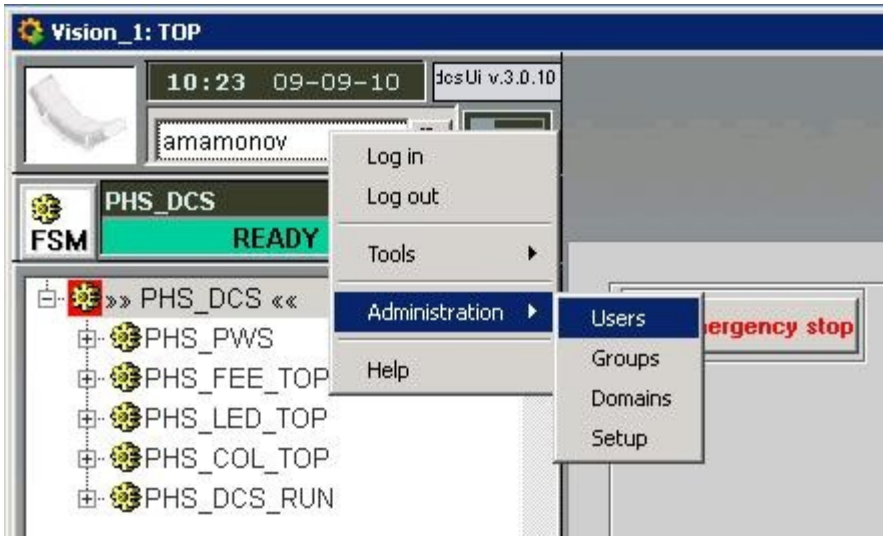
https://winservices.web.cern.ch/winservices/Help/?kbid=320011

PHOS DCS GUI. Color designations

Different colors are connected to the different states of the detector:

- Blue – stable state;
- Yellow – unstable state, which usually leads to green or blue color state;
- Green – stable state, which usually indicates ready state;
- Orange - warning state, no connection to device;
- Red – error, wrong state of device or subsystem;
- Purple – internal error of the system, inform the DCS expert.

How to change my password?

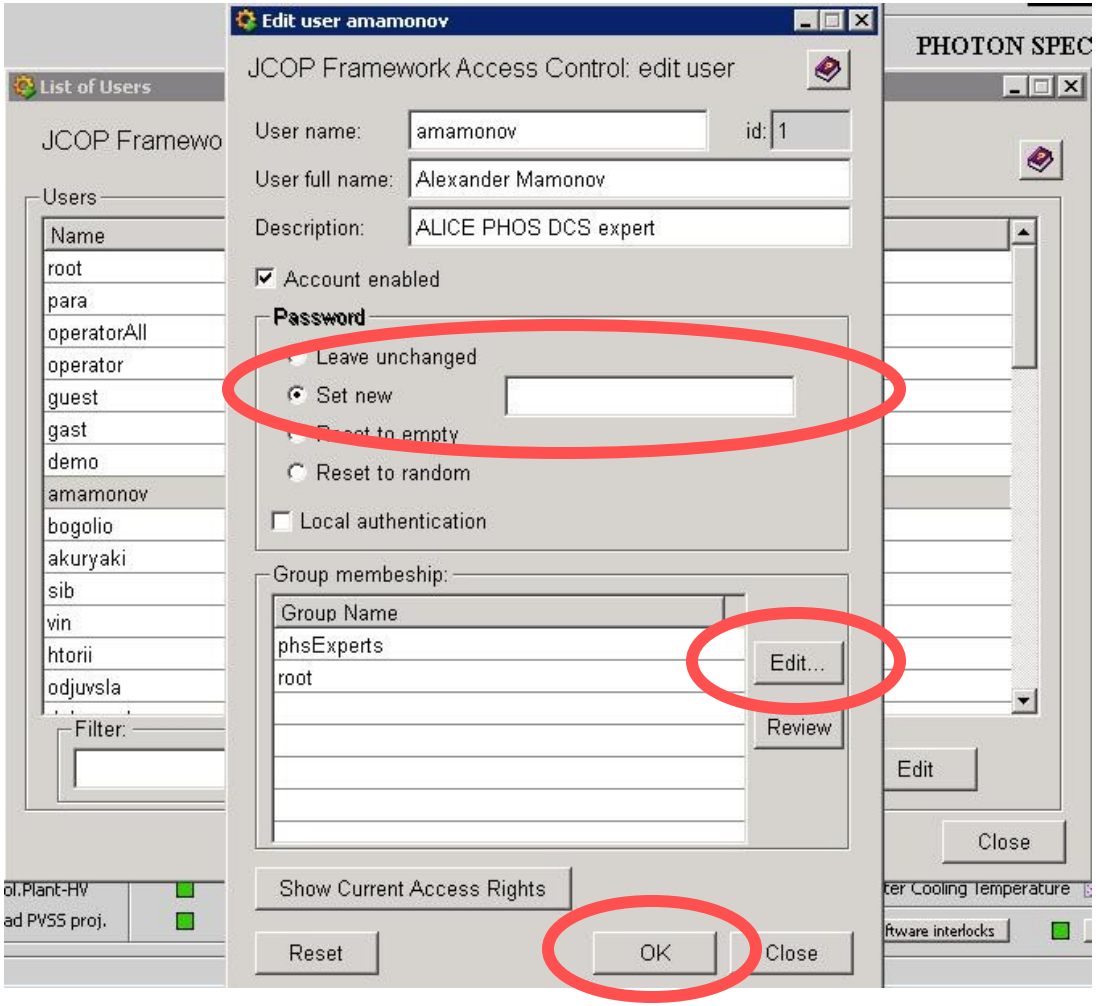


To change your password click the right mouse button on your user name in the left top side of the DCS GUI.

Choose “Administration” and then “Users” in pop up window.

Ask any PHOS expert on call to provide you some help if your DCS GUI account is blocked or does not exists.

How to change my password?



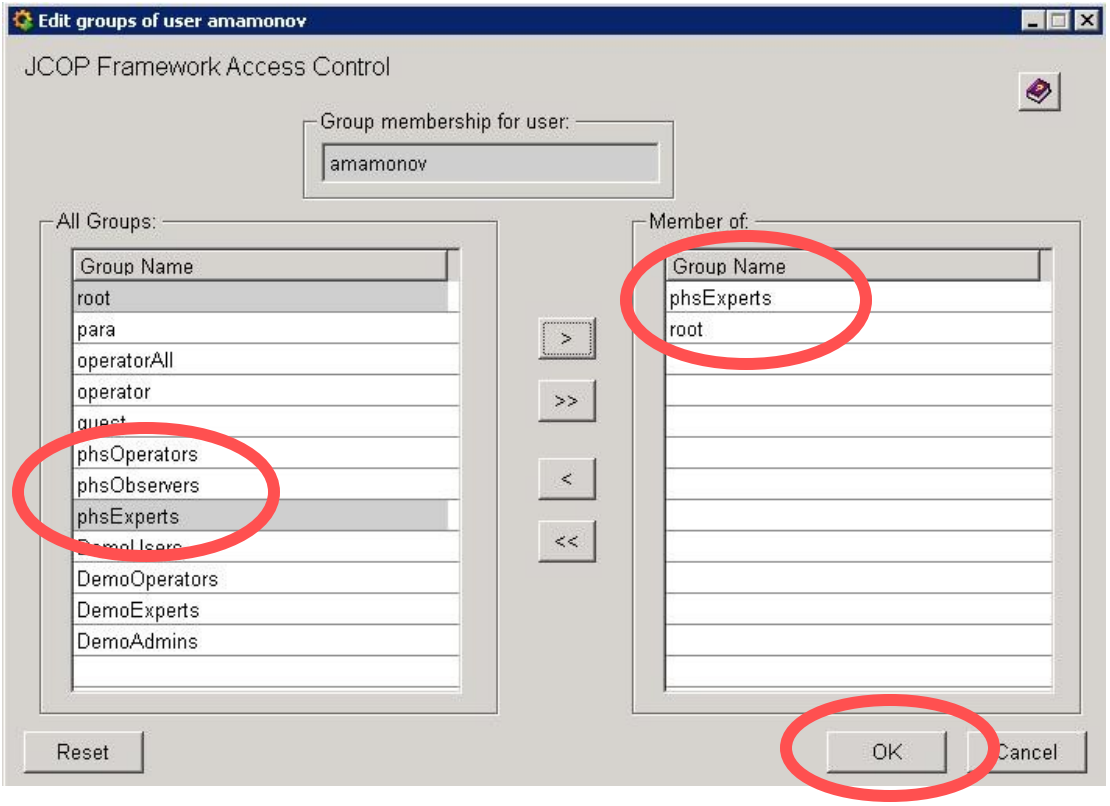
Find yourself in “Edit user” window.

In the pop up window choose “Set new” field and type your NICE password.

Click “Edit” to edit user permissions.

Click “OK” to save your changes and close the window.

How to change my permissions?



To change your permissions click “Edit” on the previous page window.

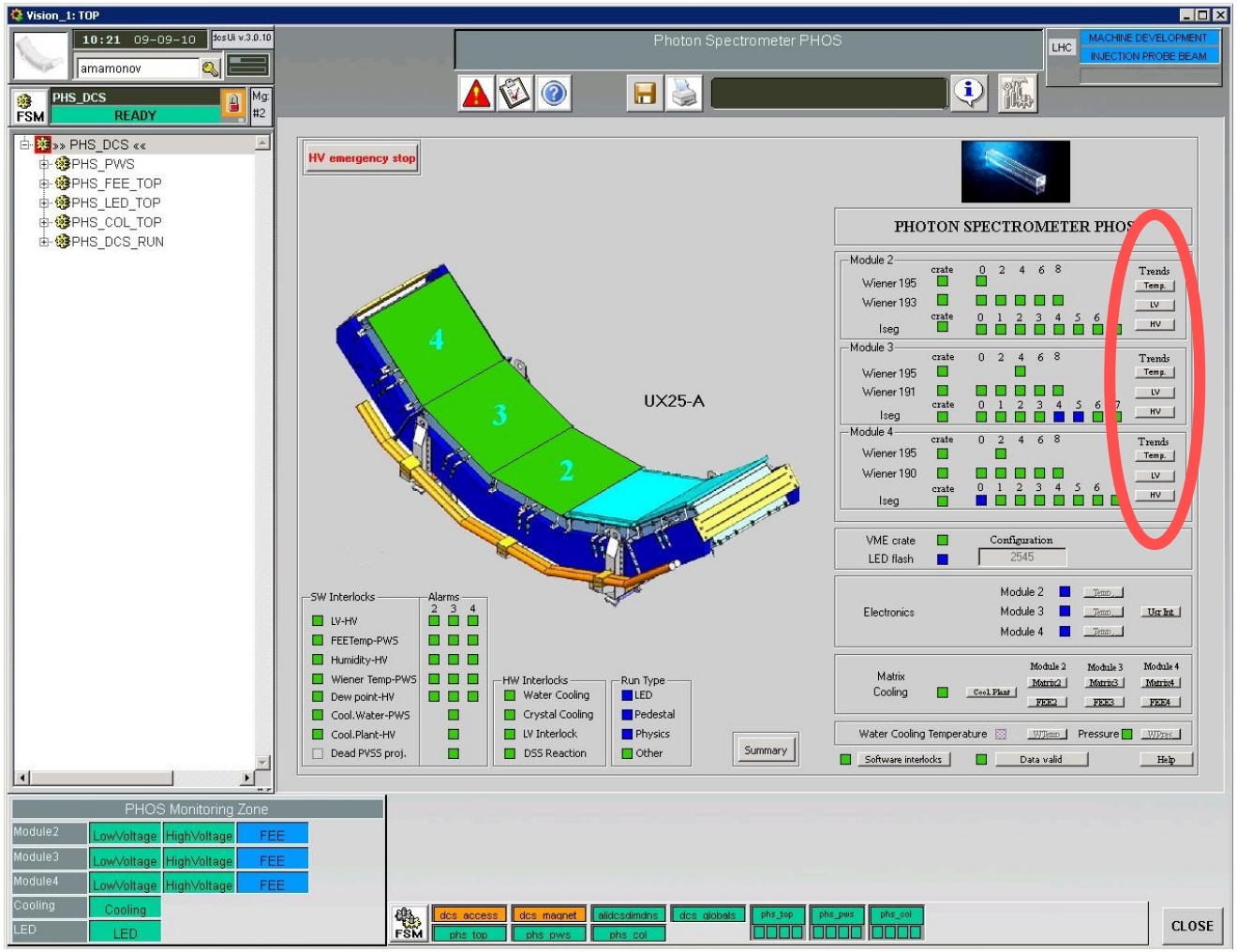
Choose your privileges:

- phsOperators;
- phsObservers;
- phsExperts;
- root.

Add the last two if your are an expert on call of PHOS.

Click “OK” to save your changes and close the window.

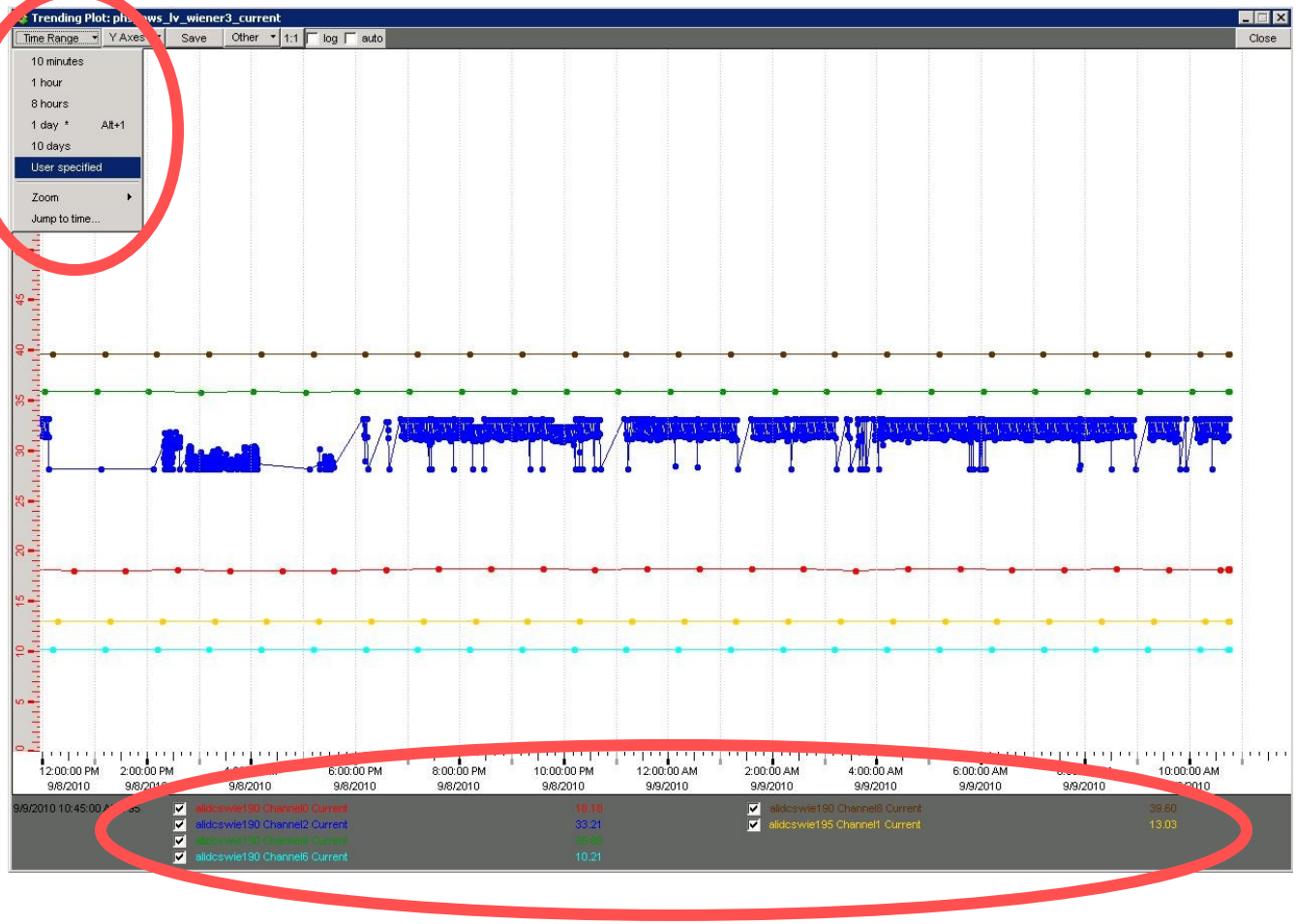
How to work with plots?



In DCS GUI all the plots are shown as buttons.

Choose the button to click in order to open the plot.

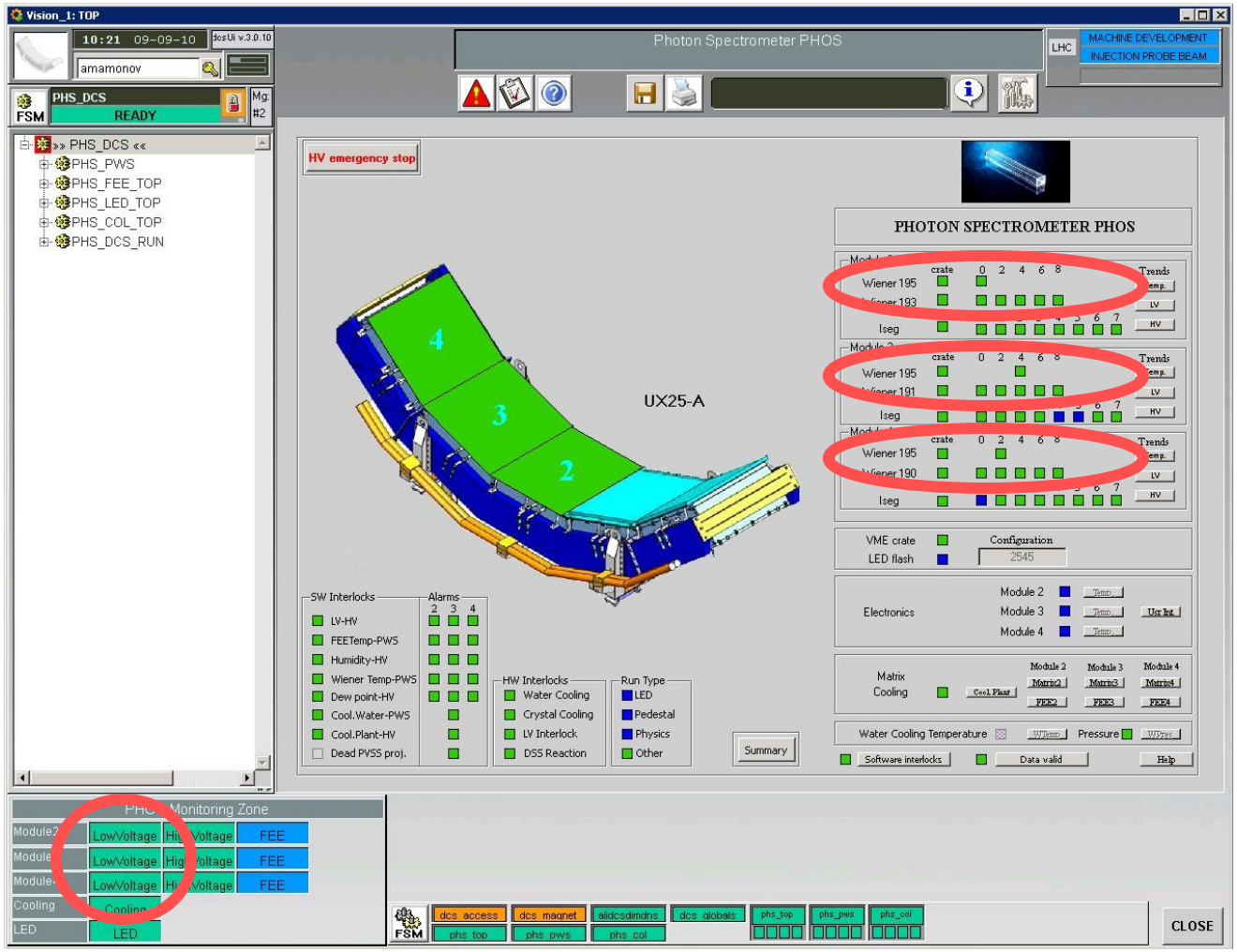
How to work with plots?



In the pop up menu in the left top side of the plot time settings, Y axe scale etc. can be changed.

The legend of the trend with measurement data is available in the bottom of the window.

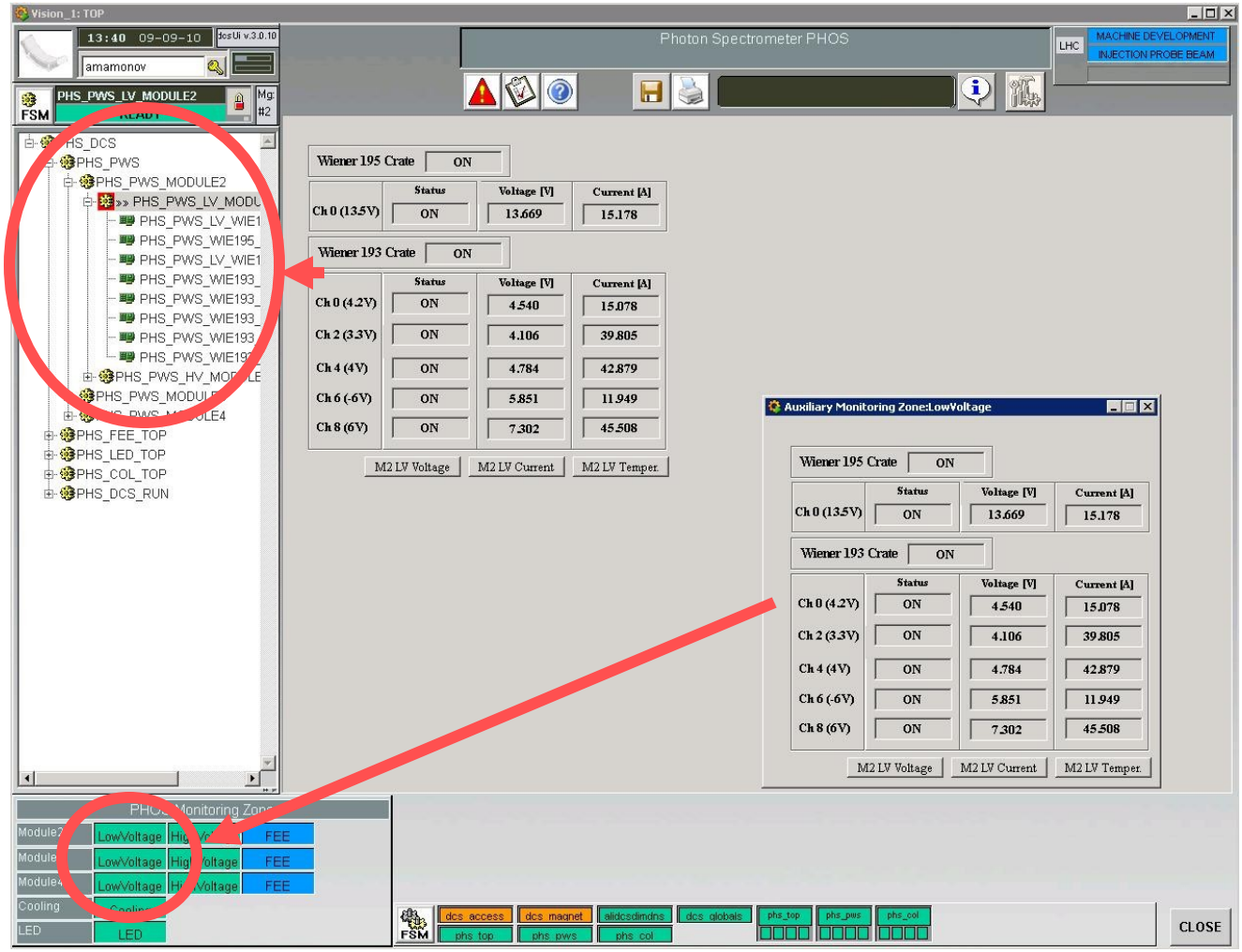
How to check the status of low voltage?



General state of low voltage channels is shown as colored squares in the right side of the DCS GUI.

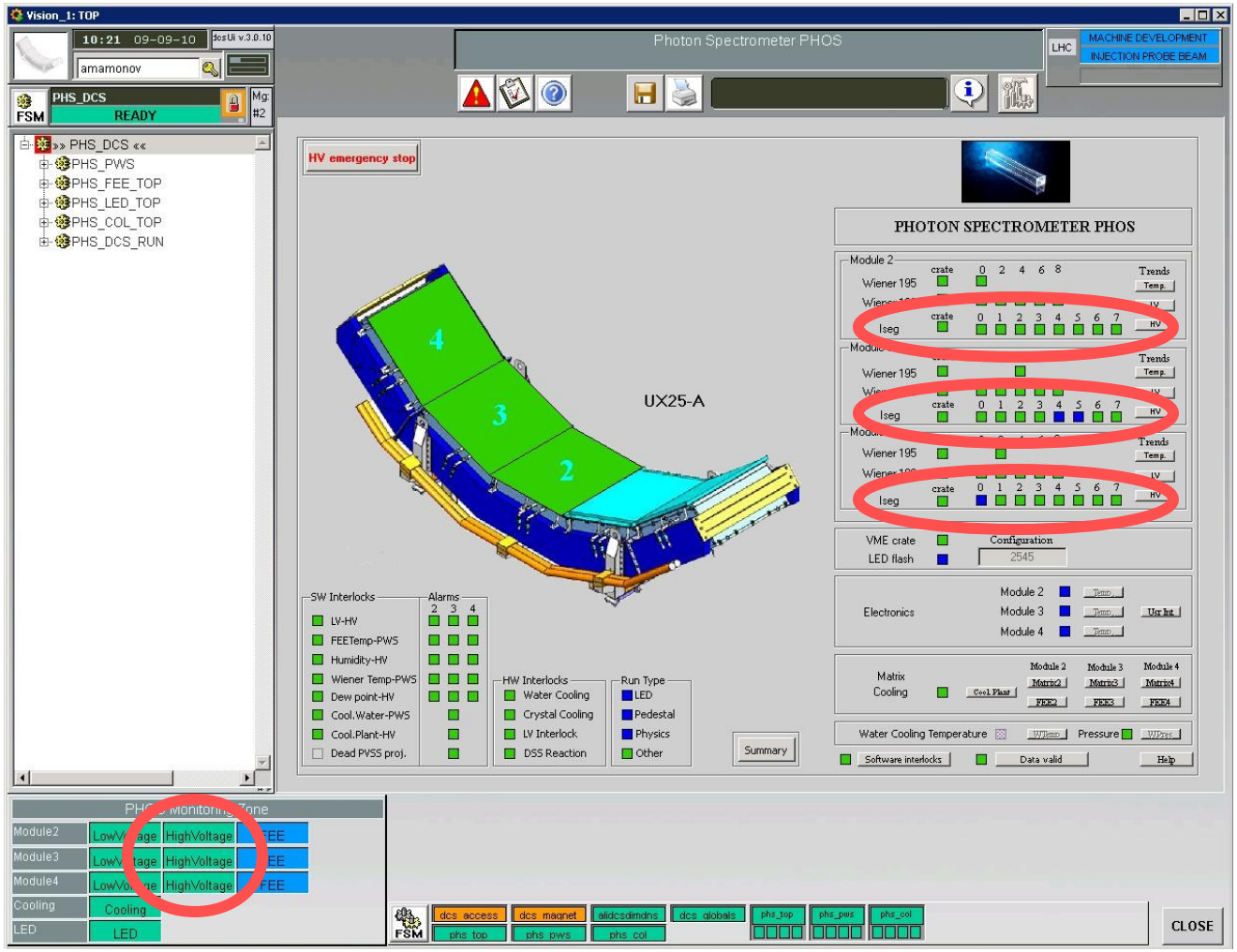
Measurement currents and voltages are available from the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of low voltage?



Information on general state of the channel, measurement current and voltage is available from the FSM tree in the left side or from the monitoring zone in the left bottom side of the DCS GUI.

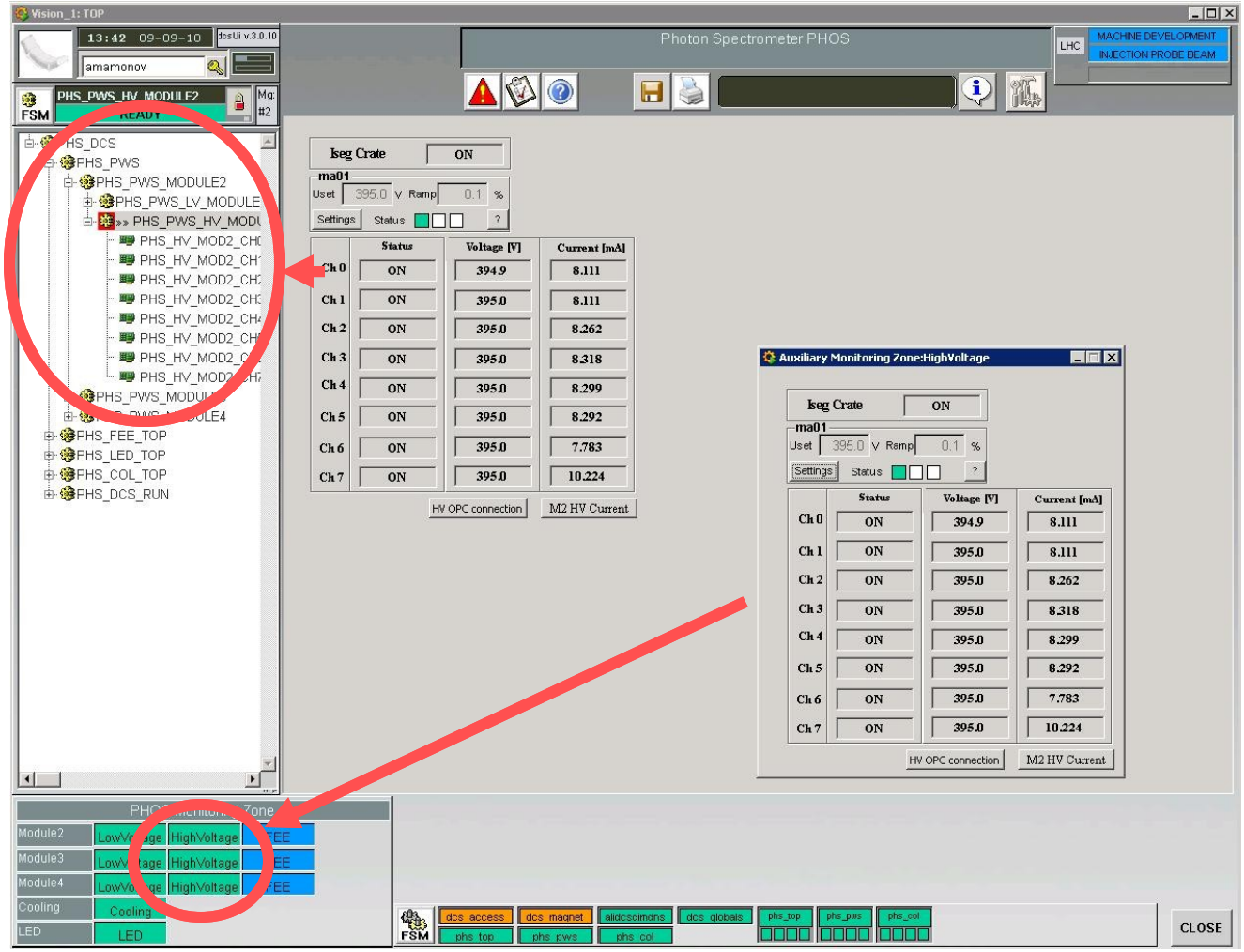
How to check the status of high voltage?



General state of high voltage channels is shown as colored squares in the right side of the DCS GUI.

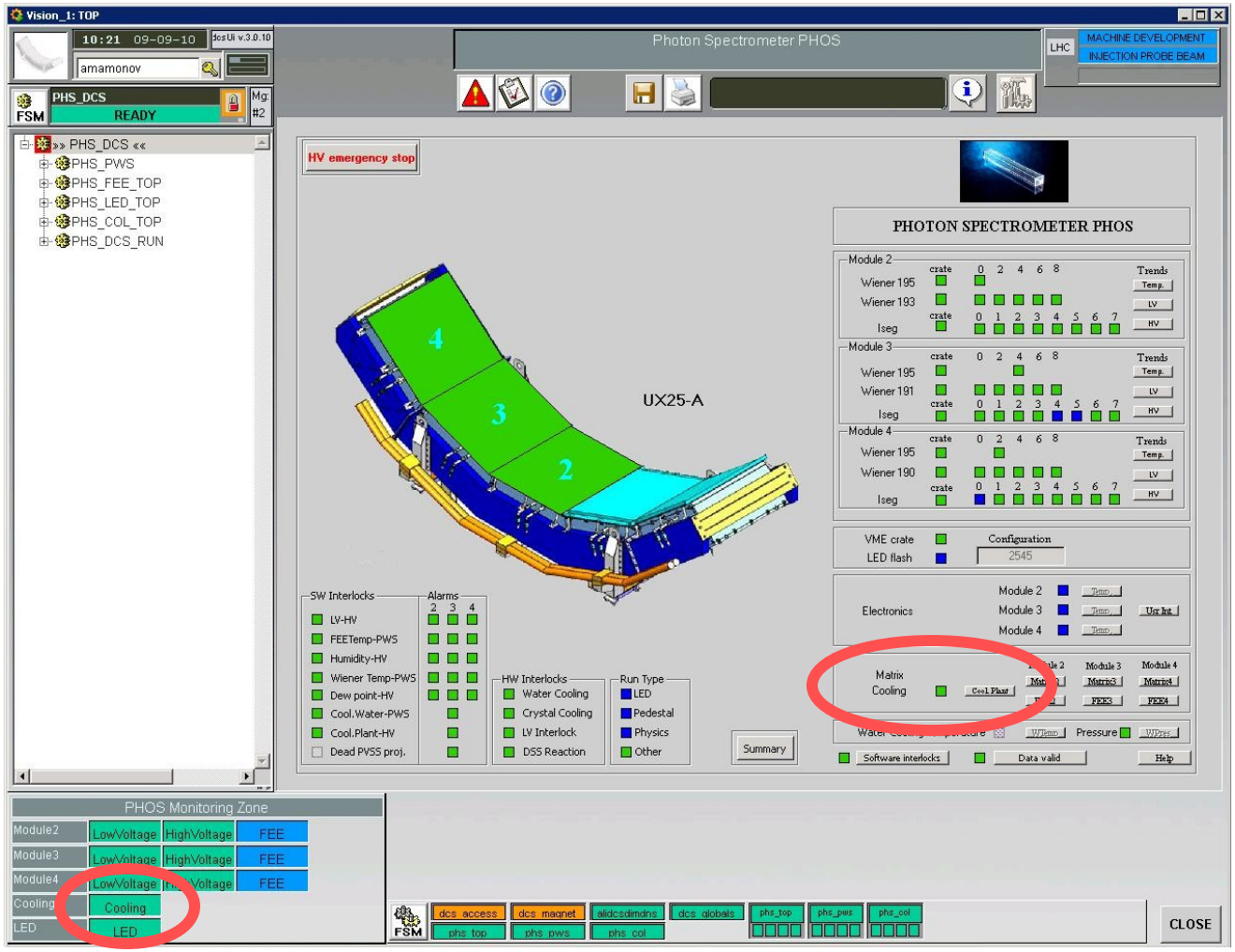
Measurement currents and voltages are in the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of high voltage?



The information on general state of the channel, measurement current and voltage is available from the FSM tree in the left side or from the monitoring zone in the left bottom side of the DCS GUI.

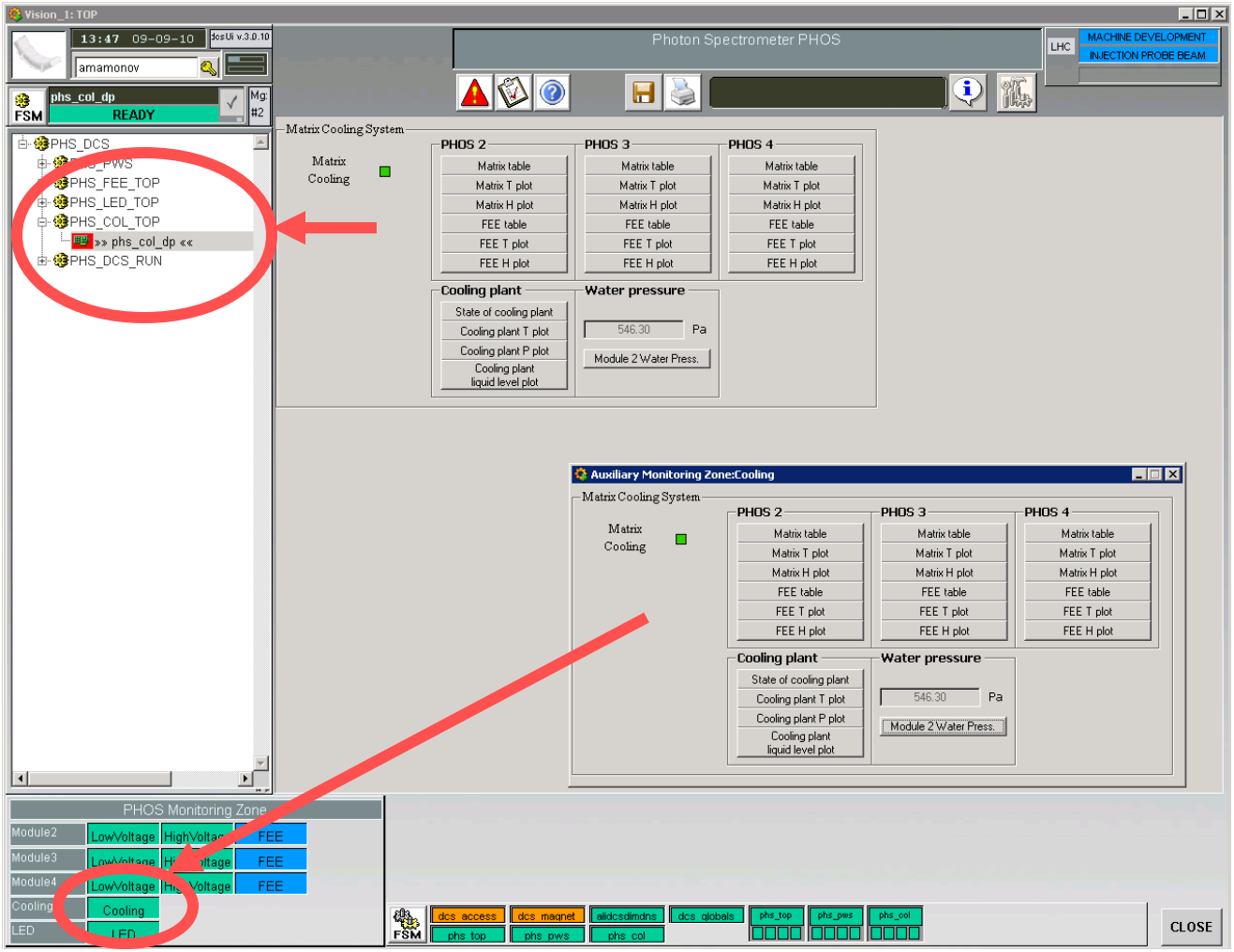
How to check the status of the matrix cooling plant?



The state of the matrix cooling plant is shown as colored square in the right bottom side of the DCS GUI.

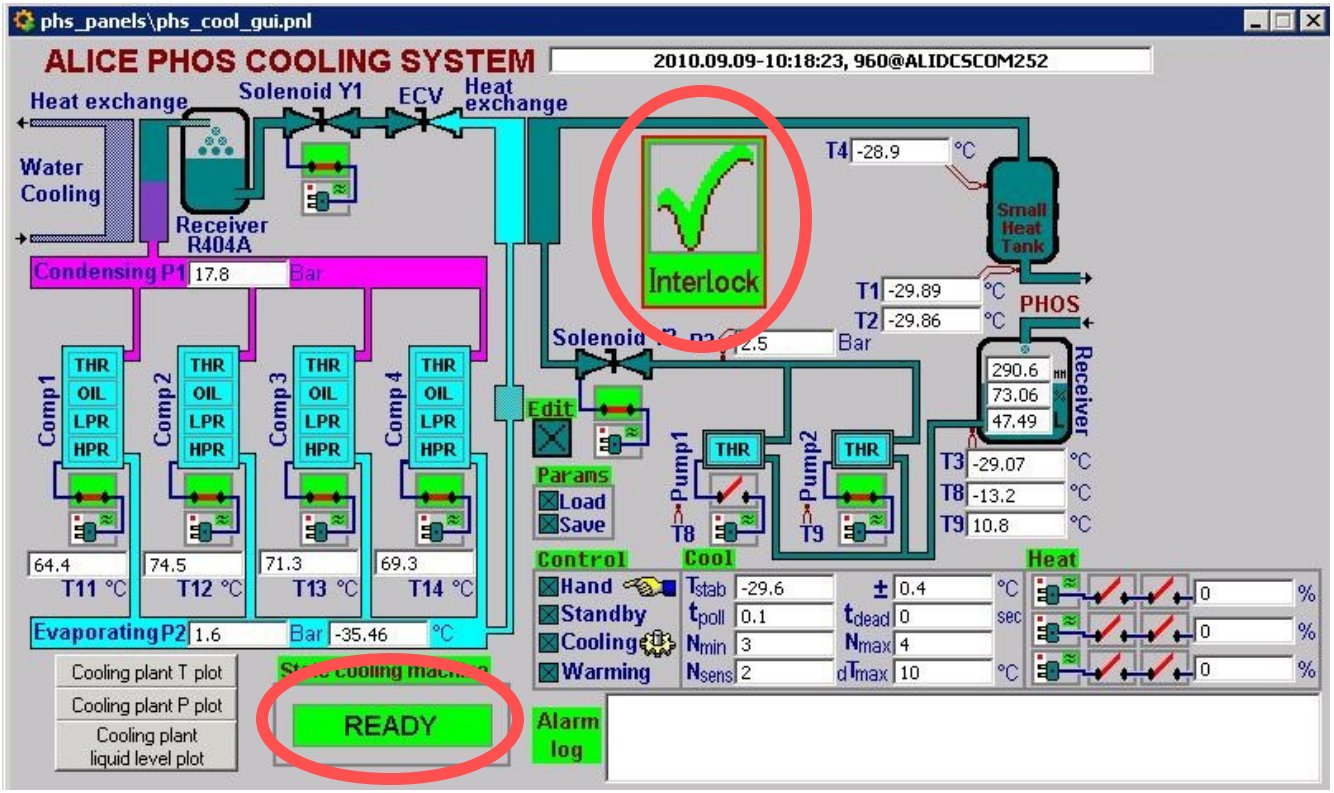
Quick access button is in the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of the matrix cooling plant?



The information on general state of the matrix cooling plant is available from the FSM tree in the left side or from the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of matrix cooling plant?

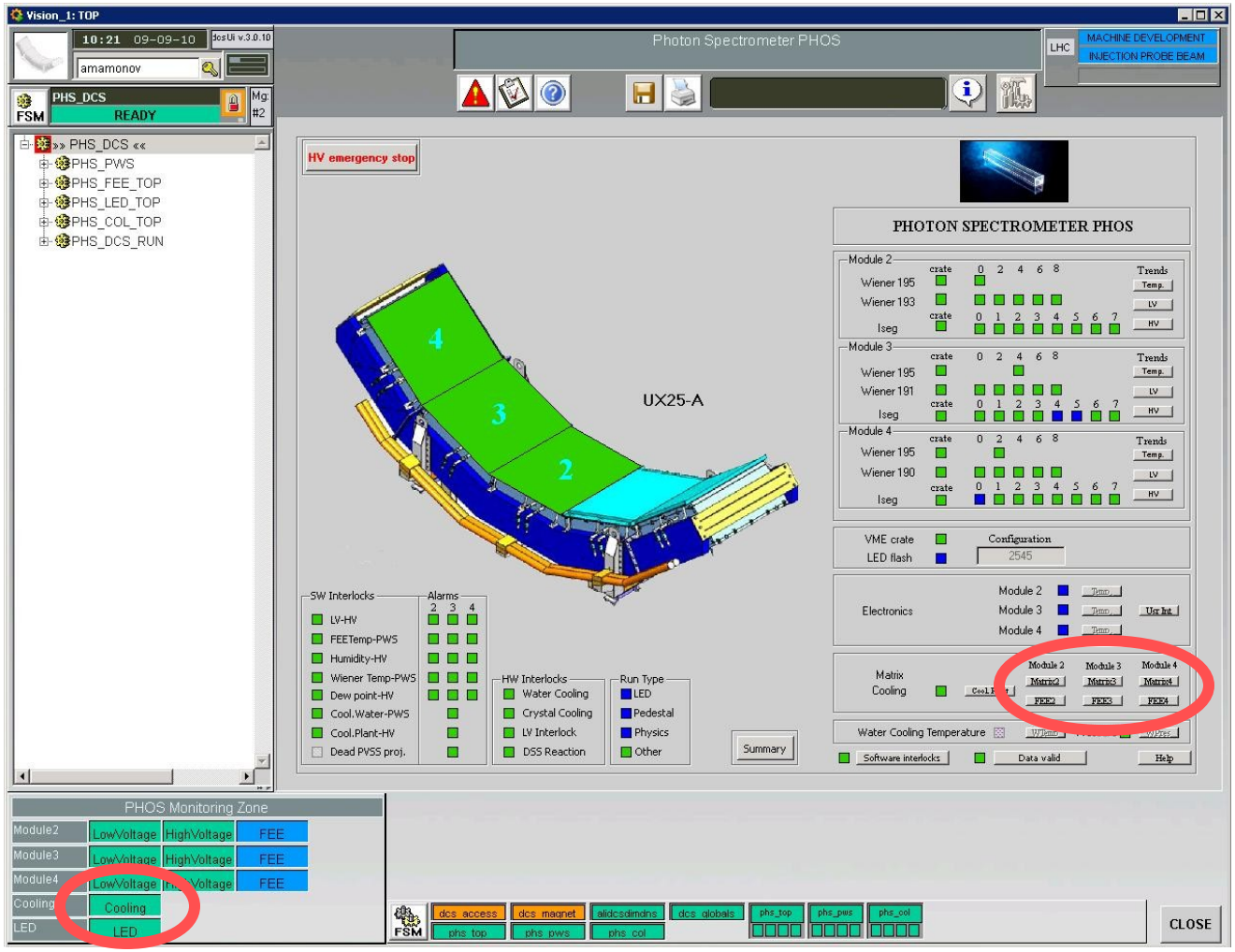


The most important information is the state of the matrix cooling plant and the status of the interlock.

All the rest of the data is for the cooling plant experts.

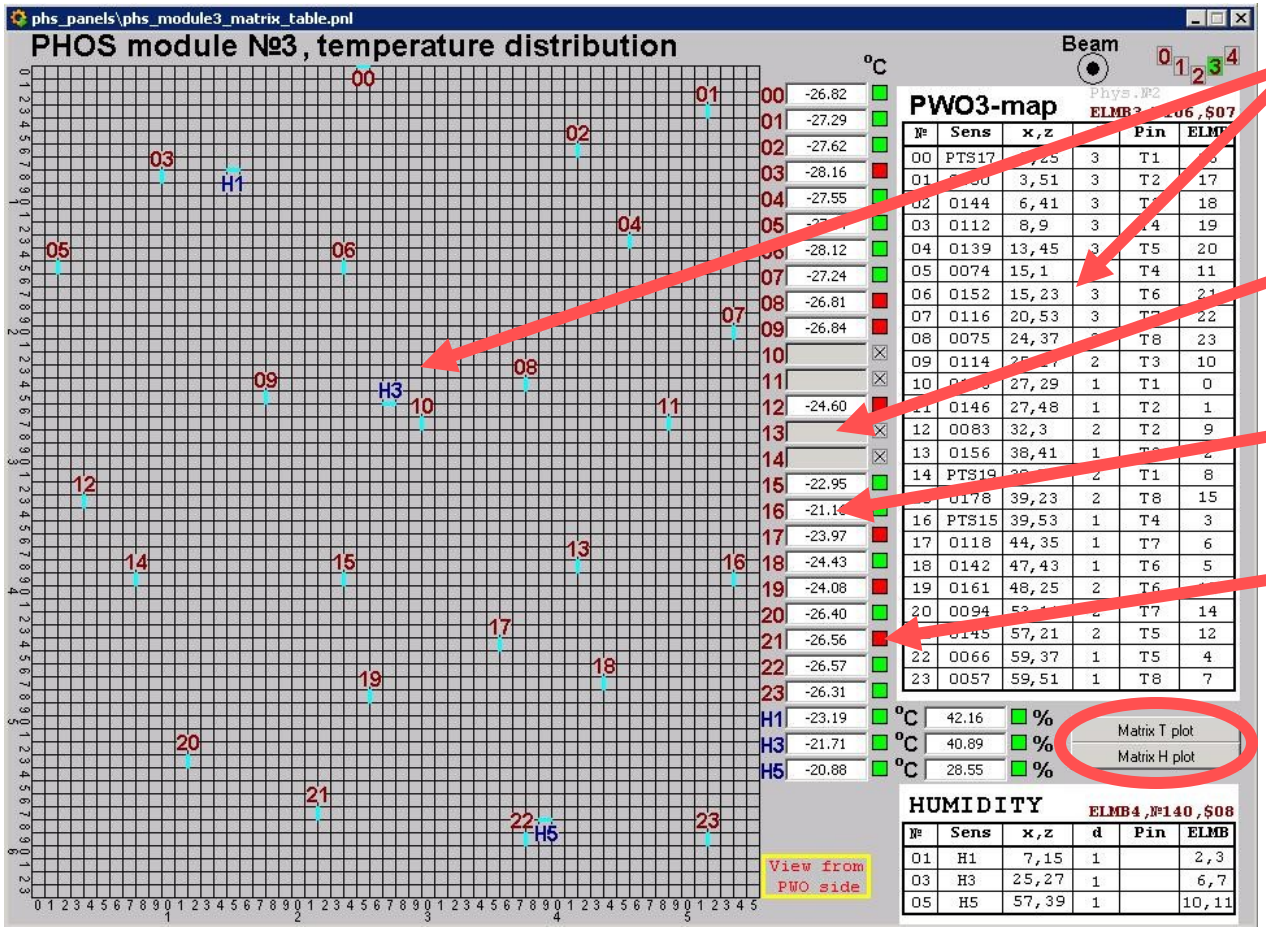
Contact the cooling plant expert if the picture you see differs from this one.

How to check the temperature and humidity data?



Detailed information on temperature and humidity is available by clicking the button in the cooling plant field or from the monitoring zone in the bottom side of the DCS GUI.

How to check the temperature and humidity data?



Sensors distribution

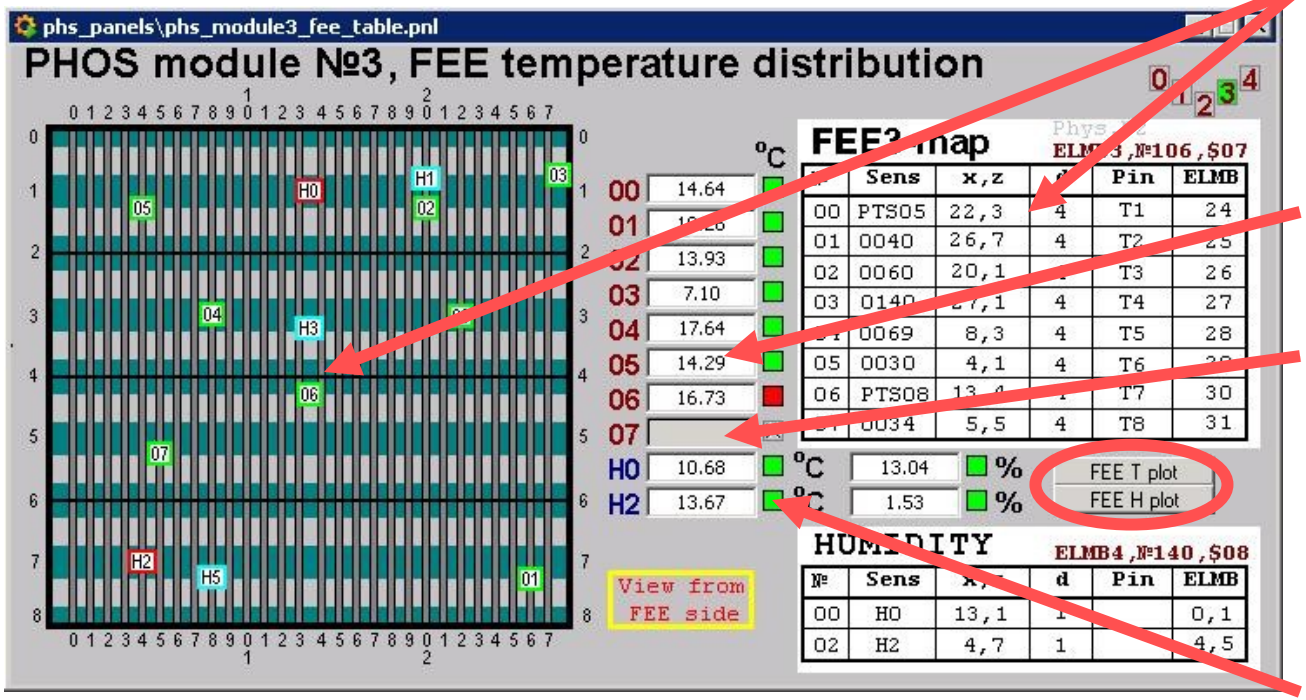
Dead channel (no data)

Measurement data

Channel status

Trends over time

How to check the temperature and humidity data?



Sensors distribution

Measurement data

Dead channel (no data)

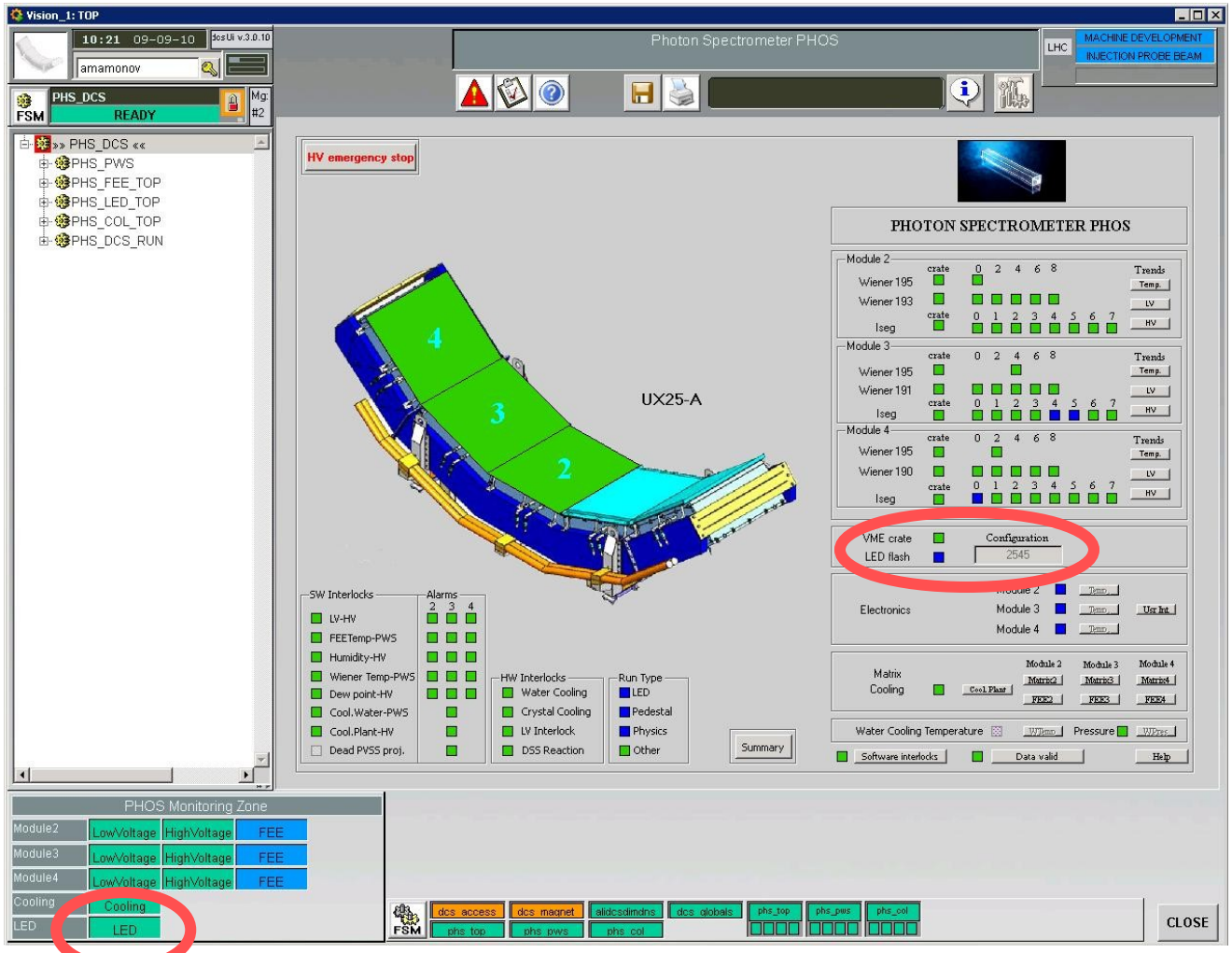
Trends over time

Channel status

How to check the temperature and the pressure of the cooling water?

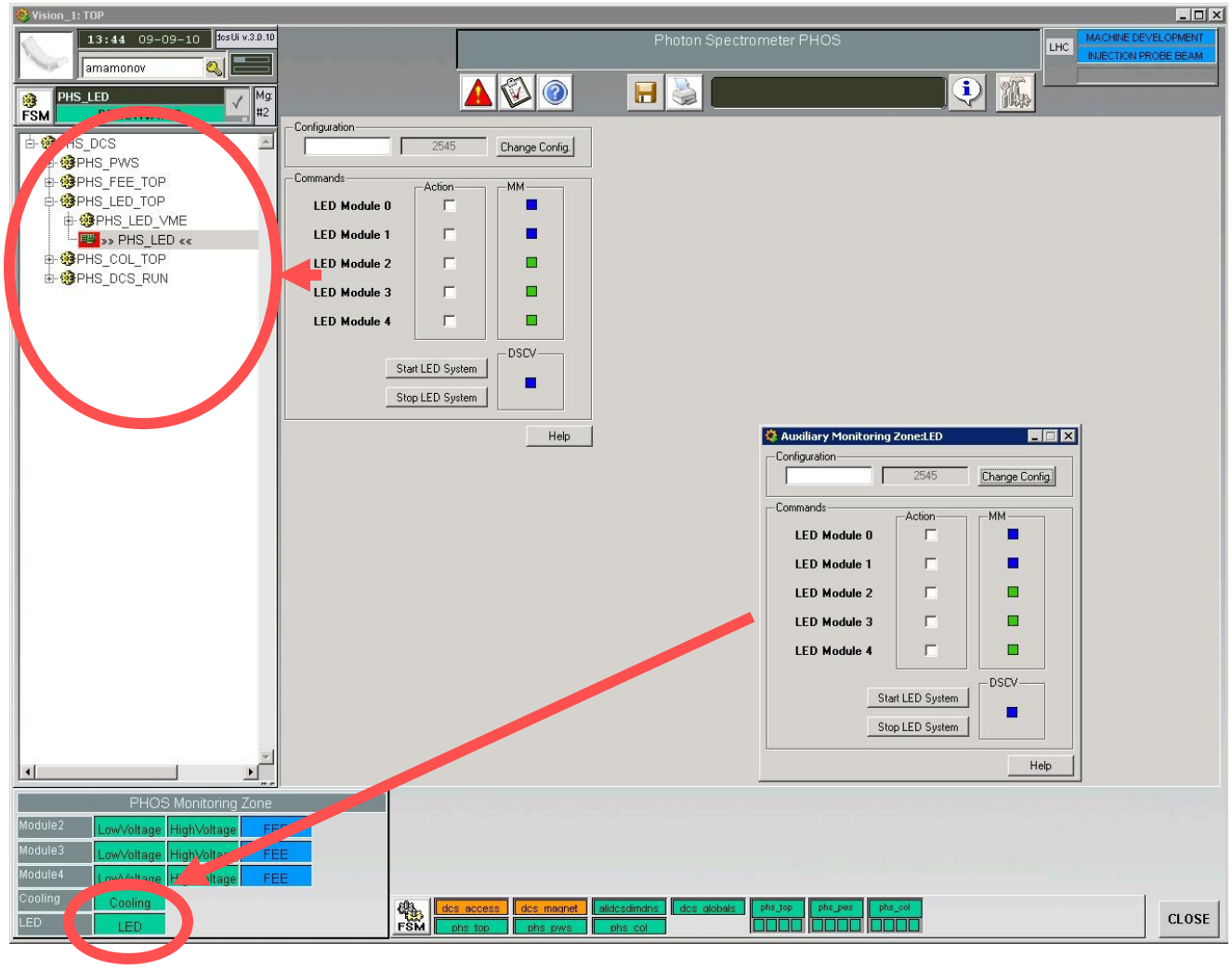
- Ooops! Not ready yet.

How to check the status of the LED?



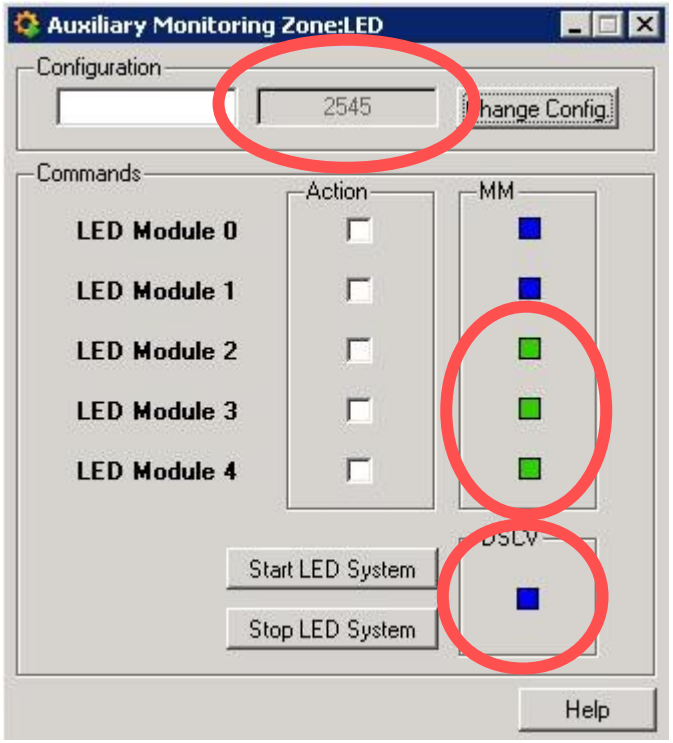
The state of the LED system is available from the LED field or from the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of the LED?



The LED status and the current configuration are available from the FSM tree in the left side or from the monitoring zone in the left bottom side of the DCS GUI.

How to check the status of LED?



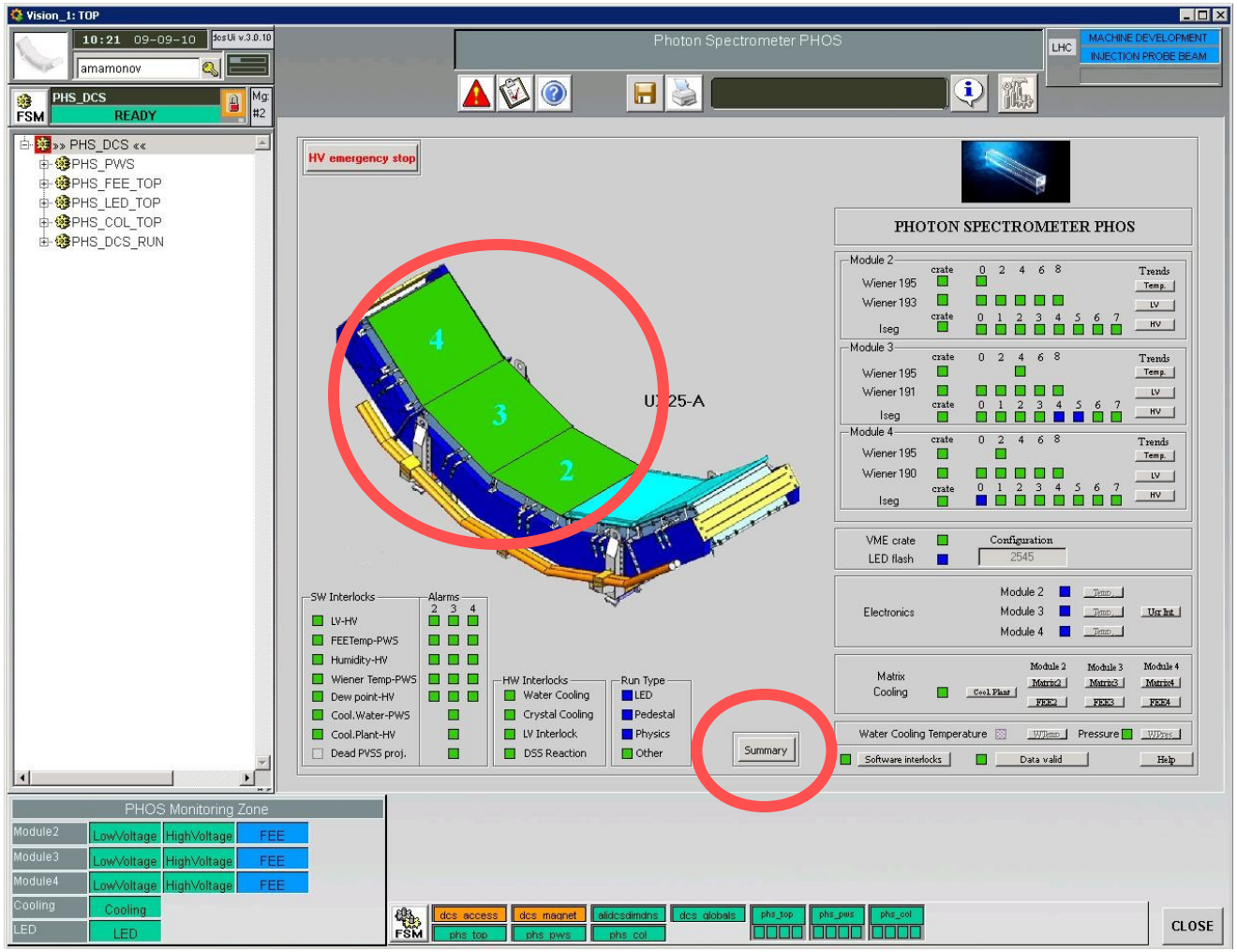
The current LED configuration.

Readiness of LED modules for flashing.

Is the LED flashing right now?

More information is in “How to configure the LED system manually” chapter.

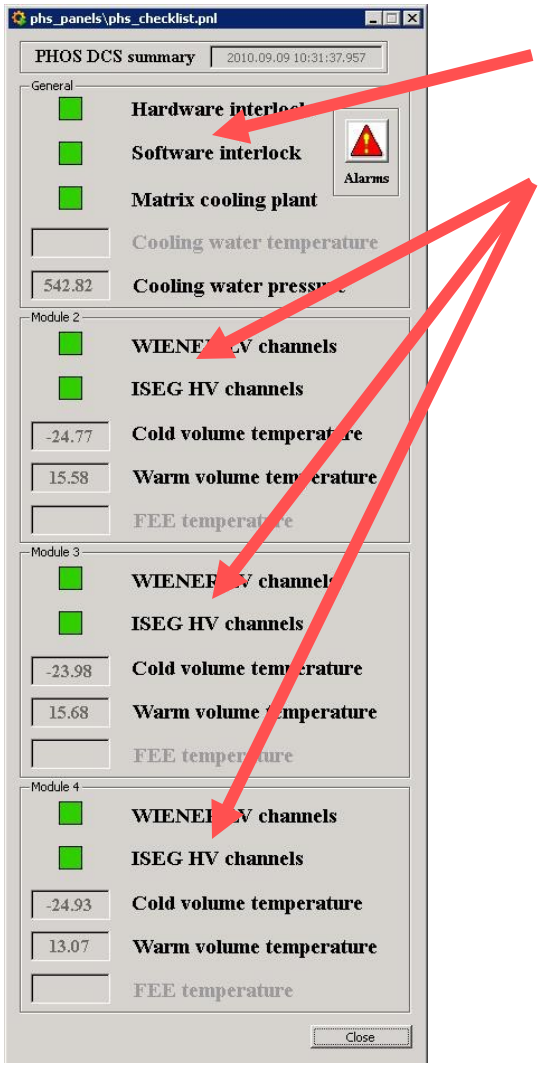
How to get the overview of PHOS?



General state of the whole PHOS detector is shown as colored modules in the central side of the DCS GUI.

The special panel with summary information is available in the bottom central part of the DCS GUI.

How to get the overview of PHOS?

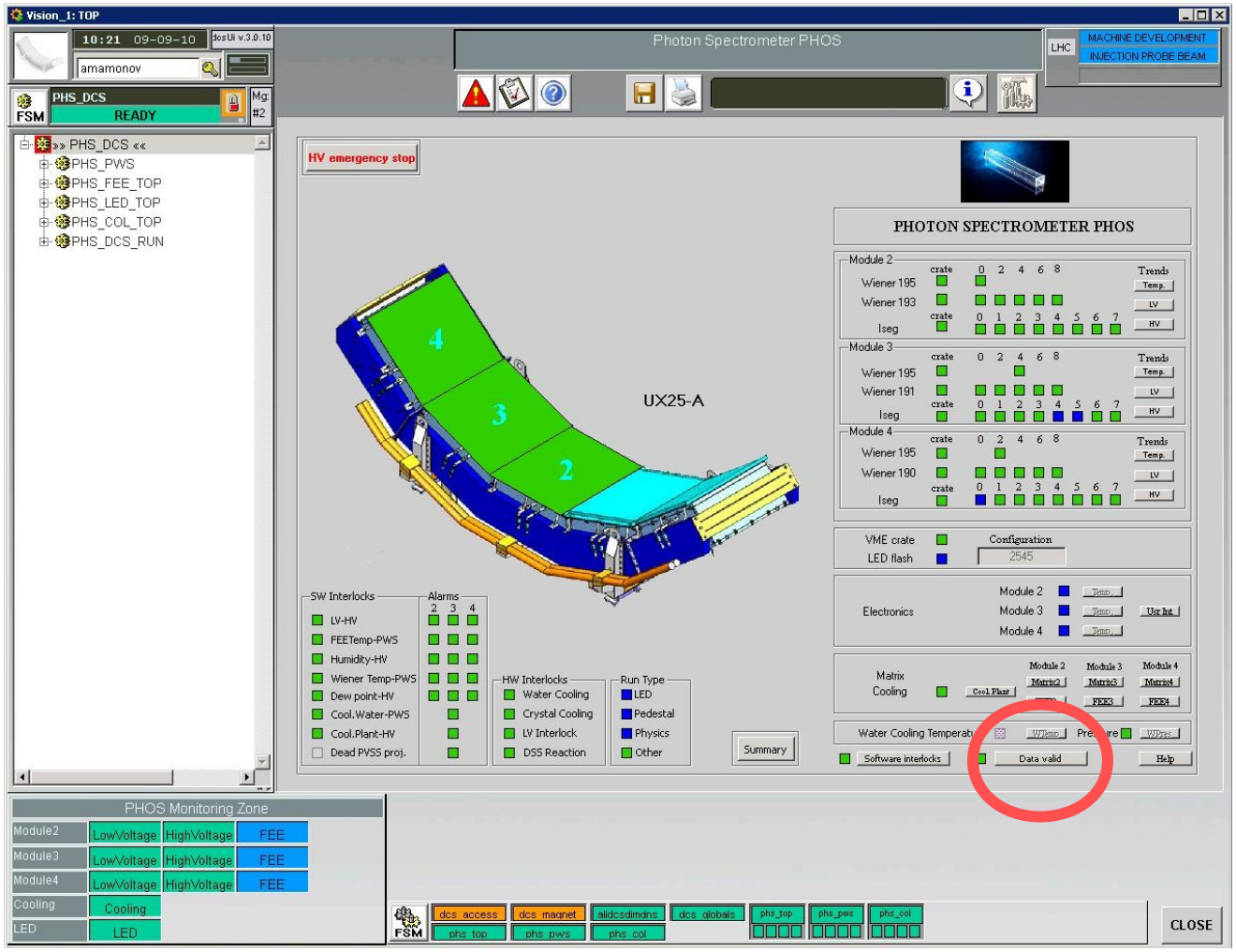


The status of the interlocks and the matrix cooling plant relevant to all PHOS modules.

The status of low voltage, high voltage and the module temperature for each PHOS module.

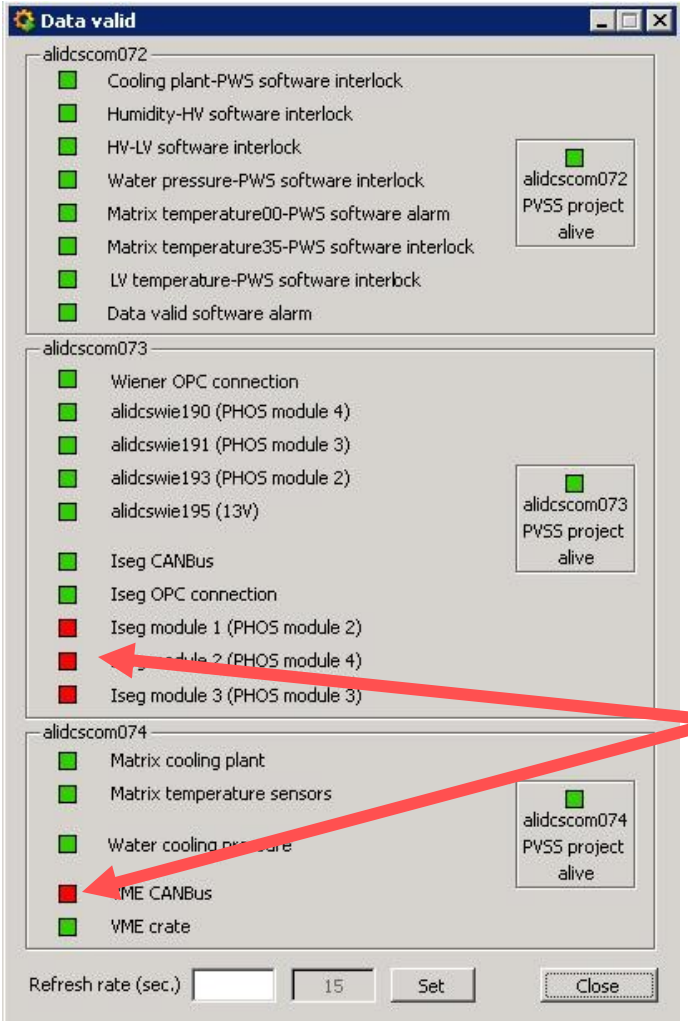
This panel is not finished. Information on temperature of electronic cards and cooling water will be added soon.

How to check if the subsystem is alive?



From “Data valid” panel in the right bottom side of the DCS GUI it is possible to check if the data is valid for each DCS channel of the PHOS.

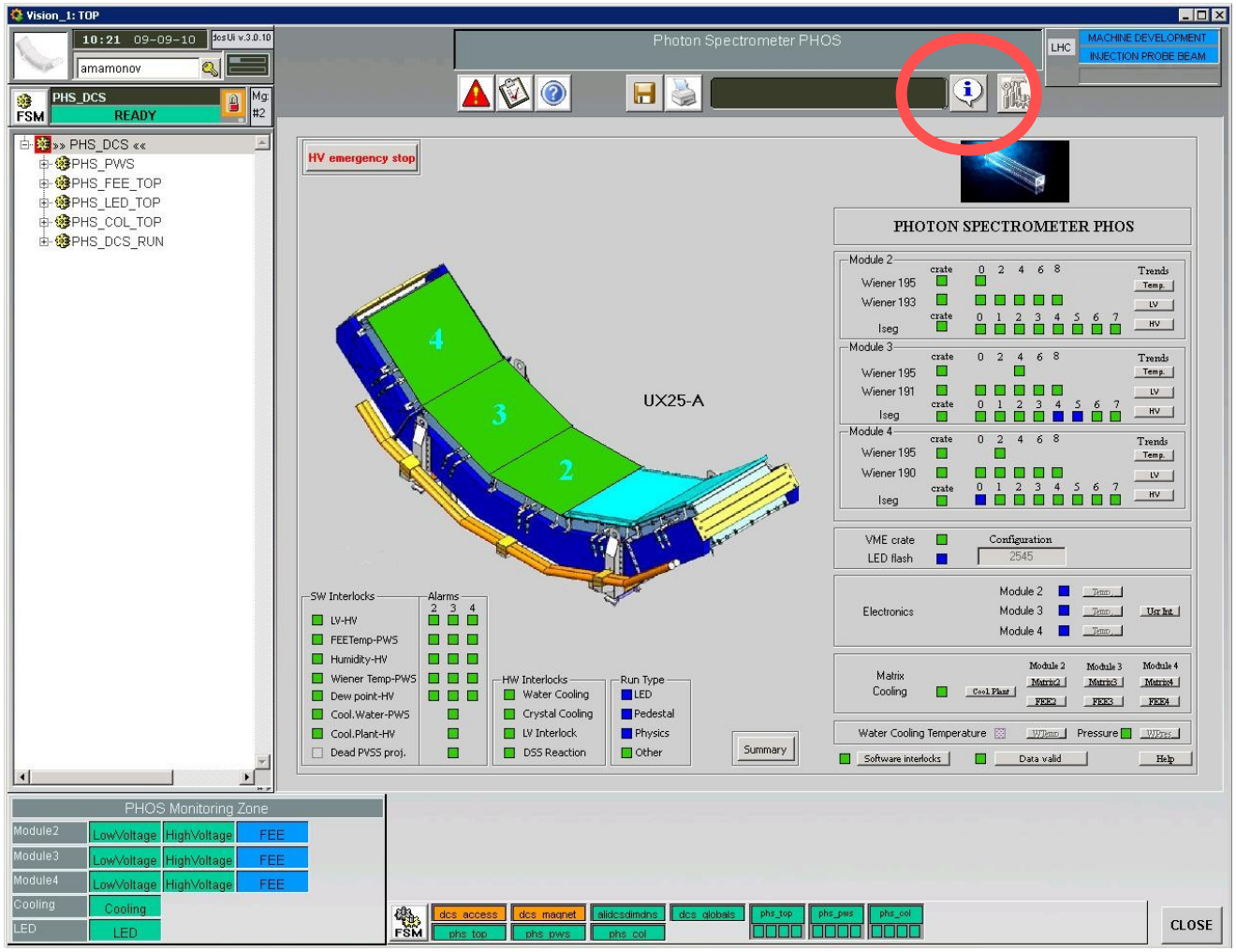
How to check if the subsystem is alive?



"Data valid" panel checks the connection to all the devices for each PHOS module. After you have opened the panel for the first time wait for a few seconds before you get data.

Red squares for ISEG module and VME CAN Bus show that there is no connection to these devices. The DCS expert is working hard to fix this bug…

How to send a command to another user?



To send the command to another detector or ALICE DCS shifter click “I” button in the top right side of the DCS GUI.

How to send a command to another user?

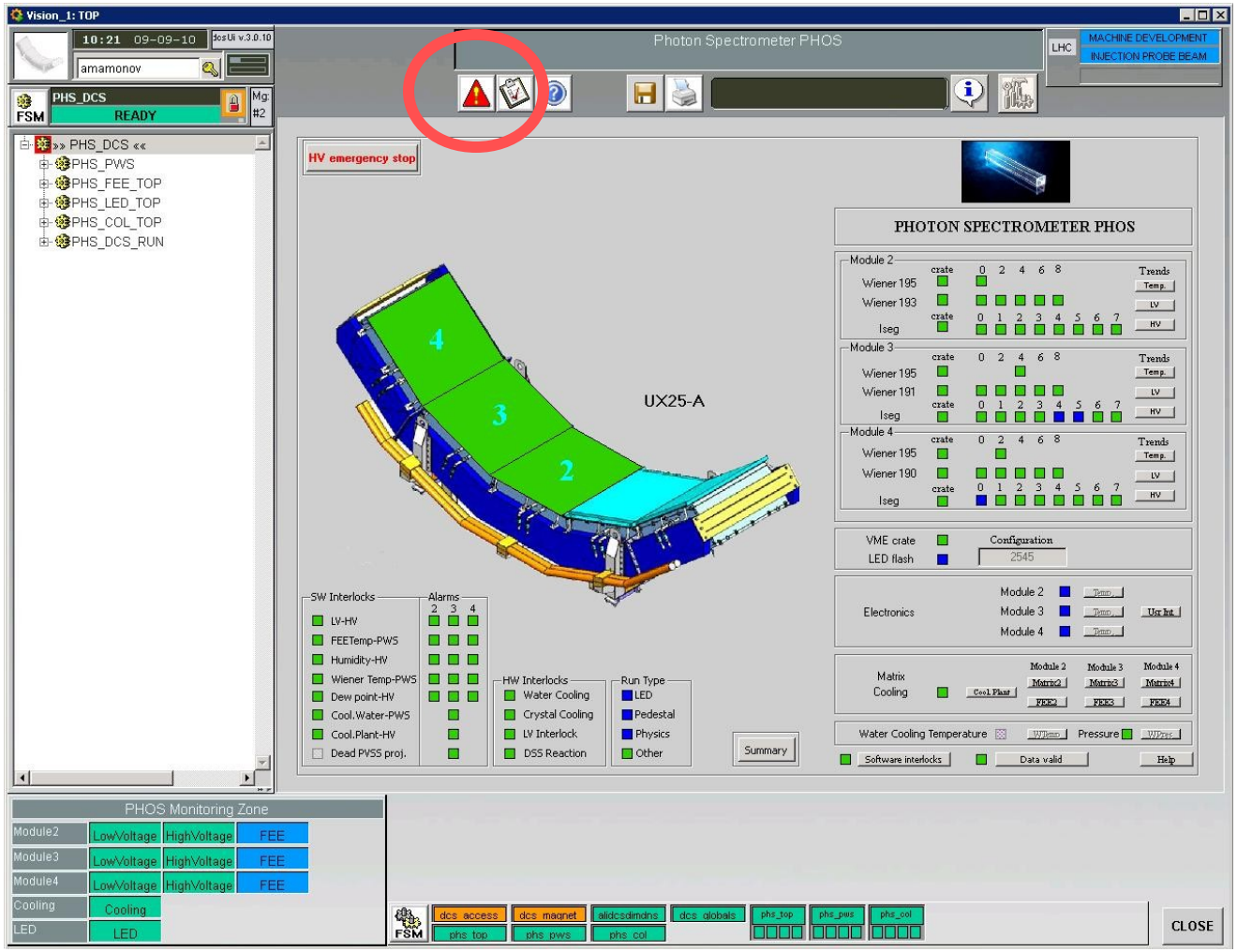
To send any information to another detector or ALICE DCS shifter type your message, choose the recipient and click “Send message” button.

If you want to send a message to another PHOS user, choose “PHO” and change it to “PHS” in the sender field.

Keep in mind that your message will be sent to all online users of chosen detector.

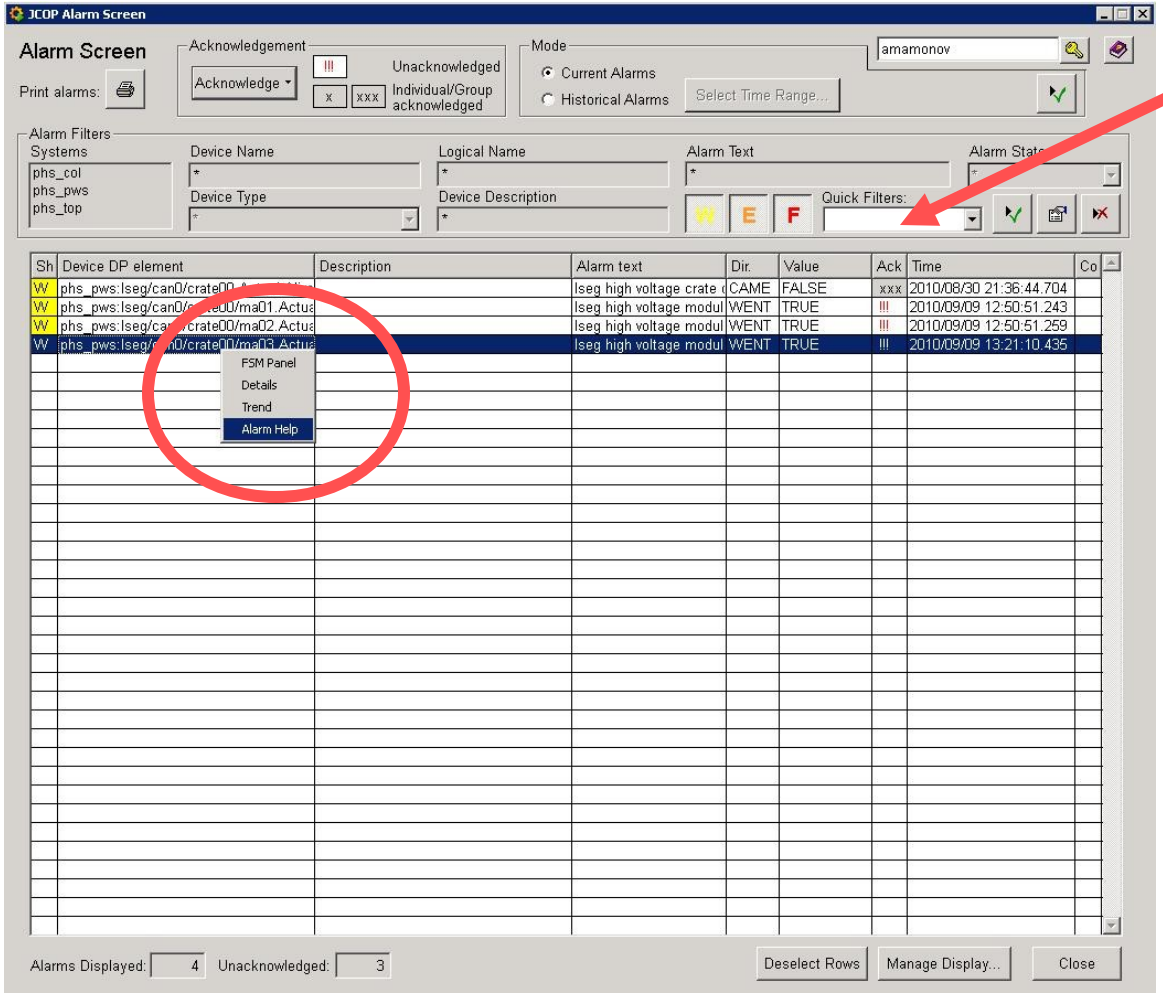
You can send the broadcast message to all users (but your name will be also shown with your message).

How to get actual alarms?



Click on the alarm button in the top side of the DCS GUI to get actual alarms.

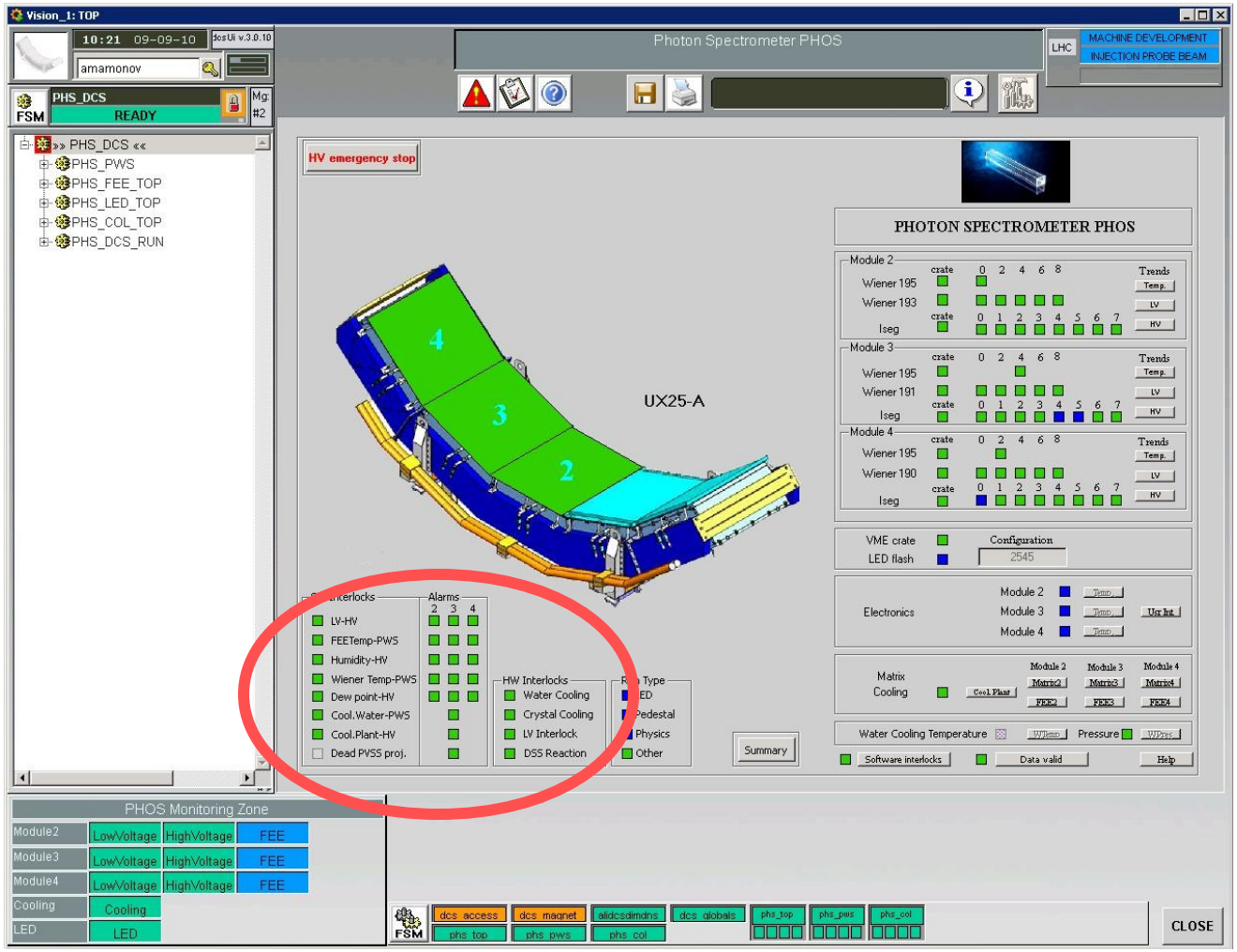
How to get the description of alarms?



Choose “standard” filter if you want to get only actual alarms for PHOS detector.

To get the detailed description of the detector alarms click the right mouse button on the alarm and choose “Alarm help” in the pop up menu.

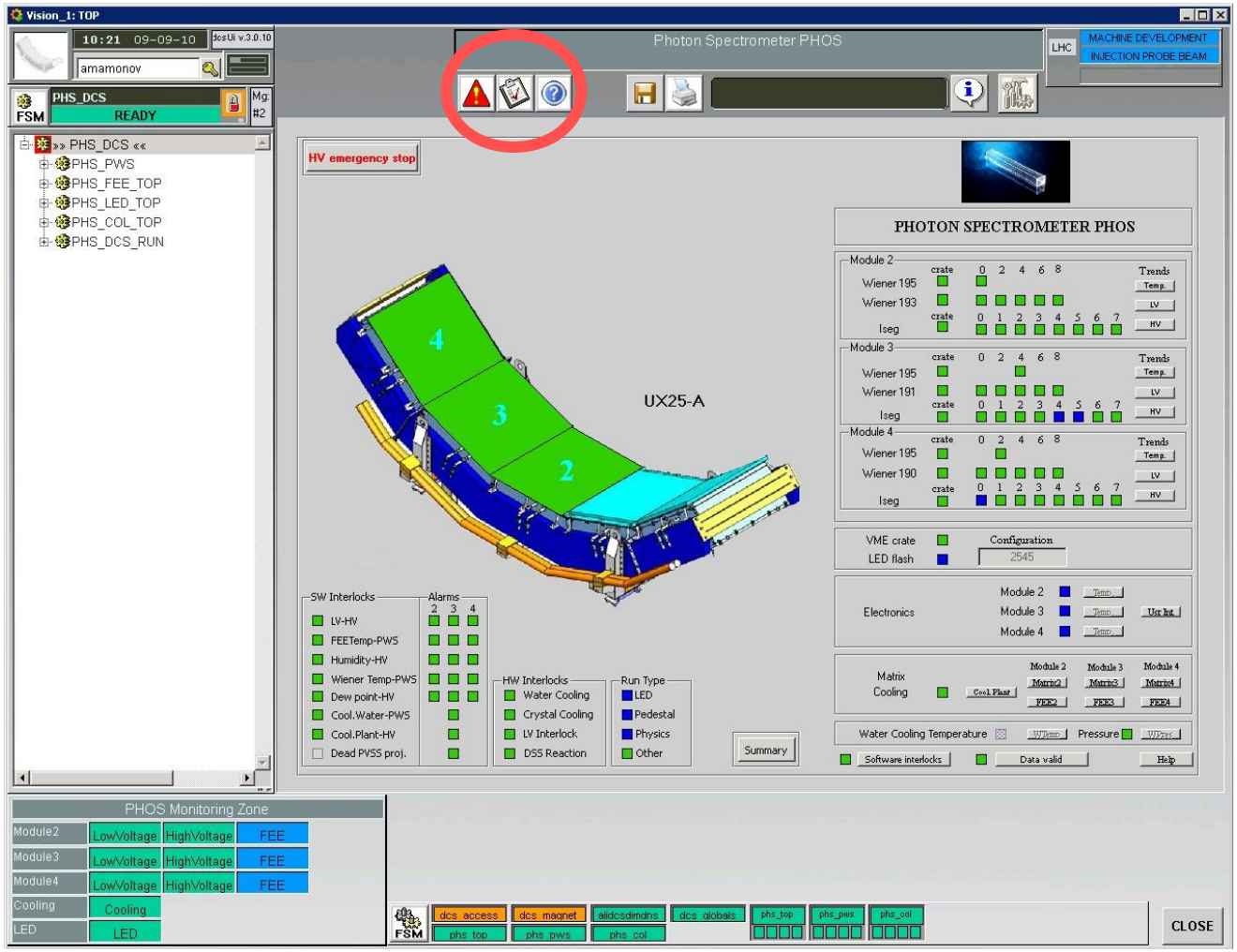
How to understand the interlock triggered?



There are hardware and software interlocks in the system.

The state of them both is shown in the central bottom side of the DCS GUI.

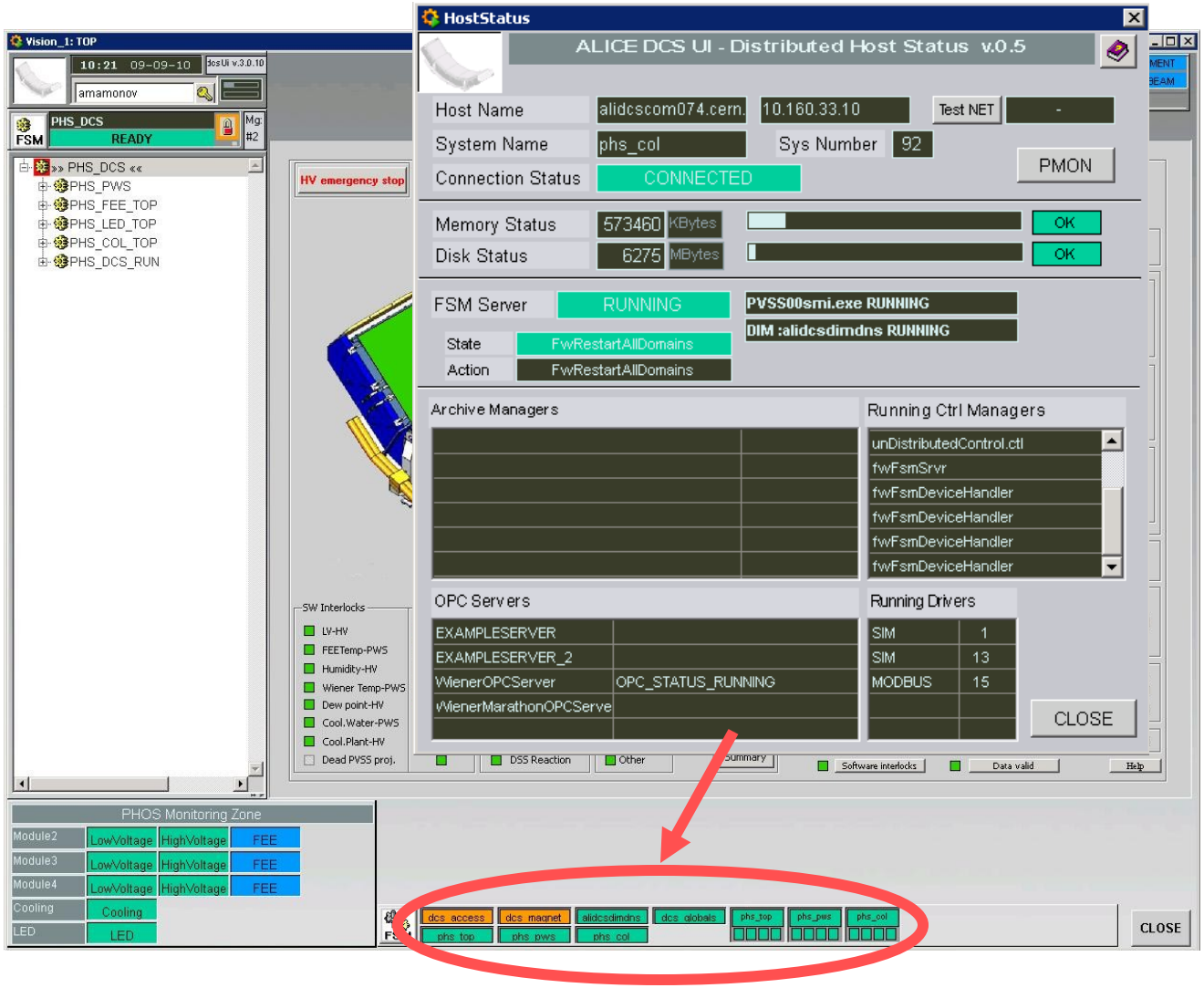
How to get this guide?



It is possible to get this guide in .pdf format directly from the DCS GUI.

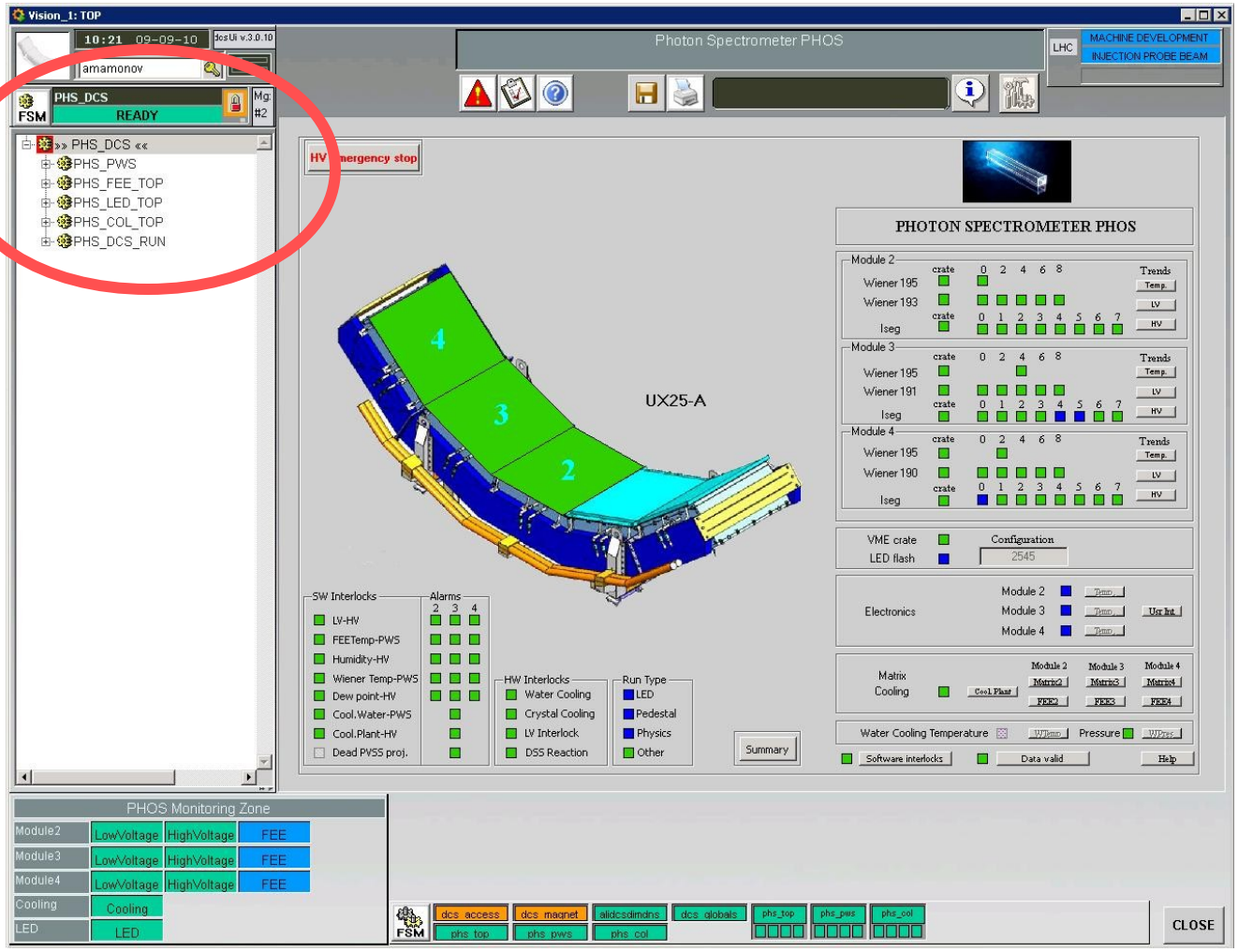
Check “Links” chapter to get the web link on .ppt format.

Additional GUI information



System information on PVSS project status is available from the bottom side of the DCS GUI.

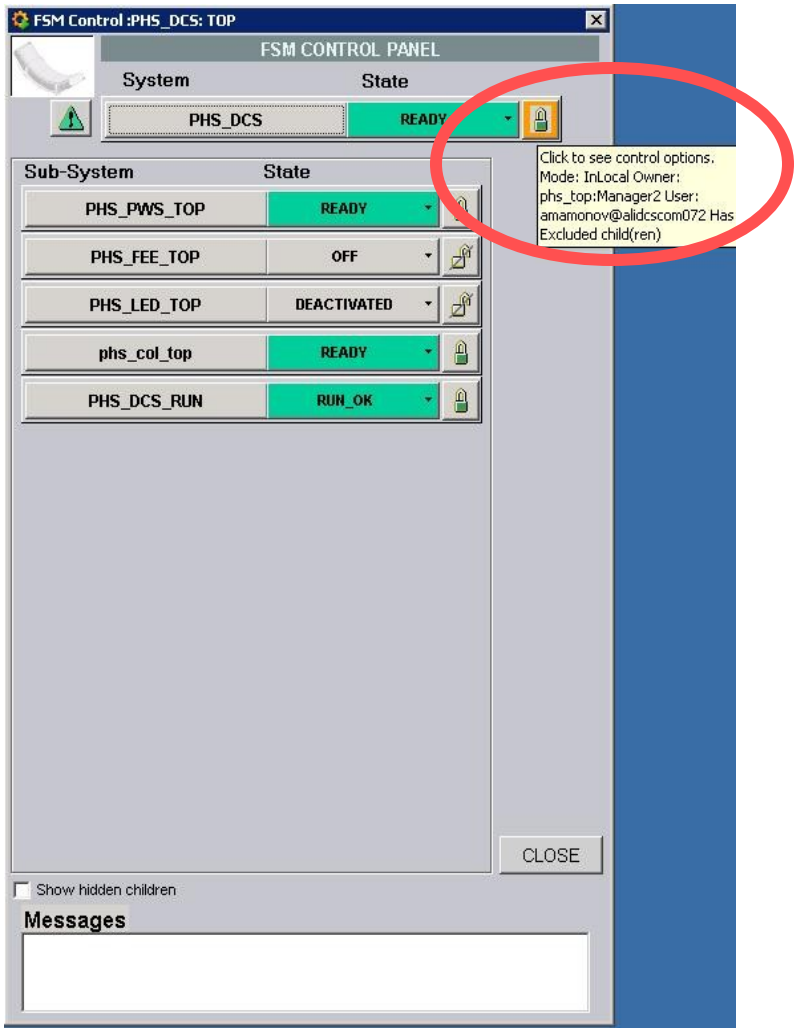
CONTROL. How to take the control?



The control panel is distributed in the left top side of the DCS GUI.

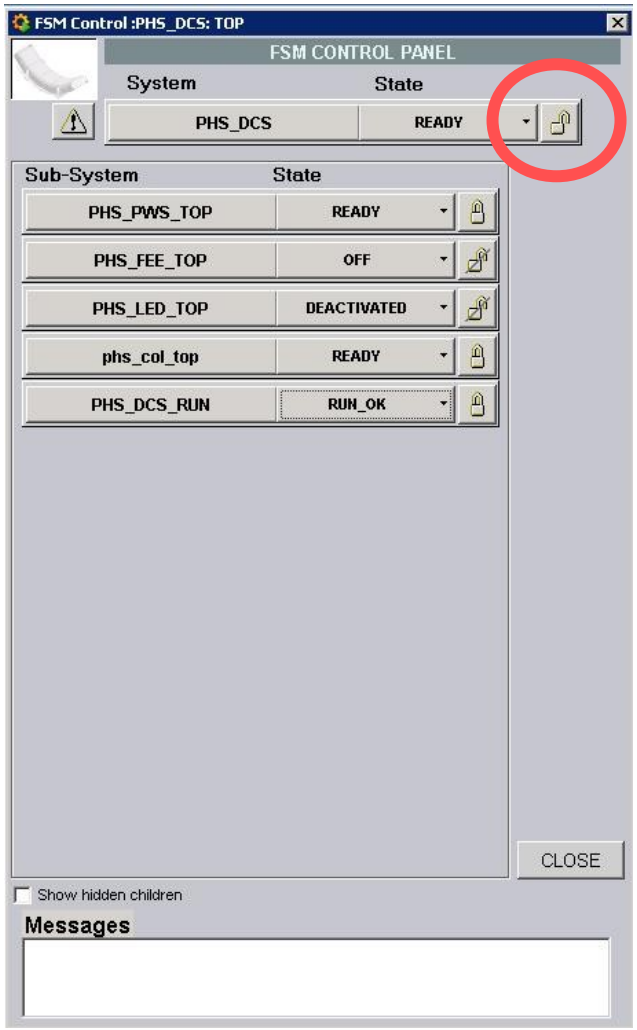
Click the FSM button to open the control window.

Who is the control owner?



To understand who the control owner is put the mouse cursor on the padlock on the top control level. In the pop up window you will see the detailed information on the person who operates the detector at present.

How to take the control?

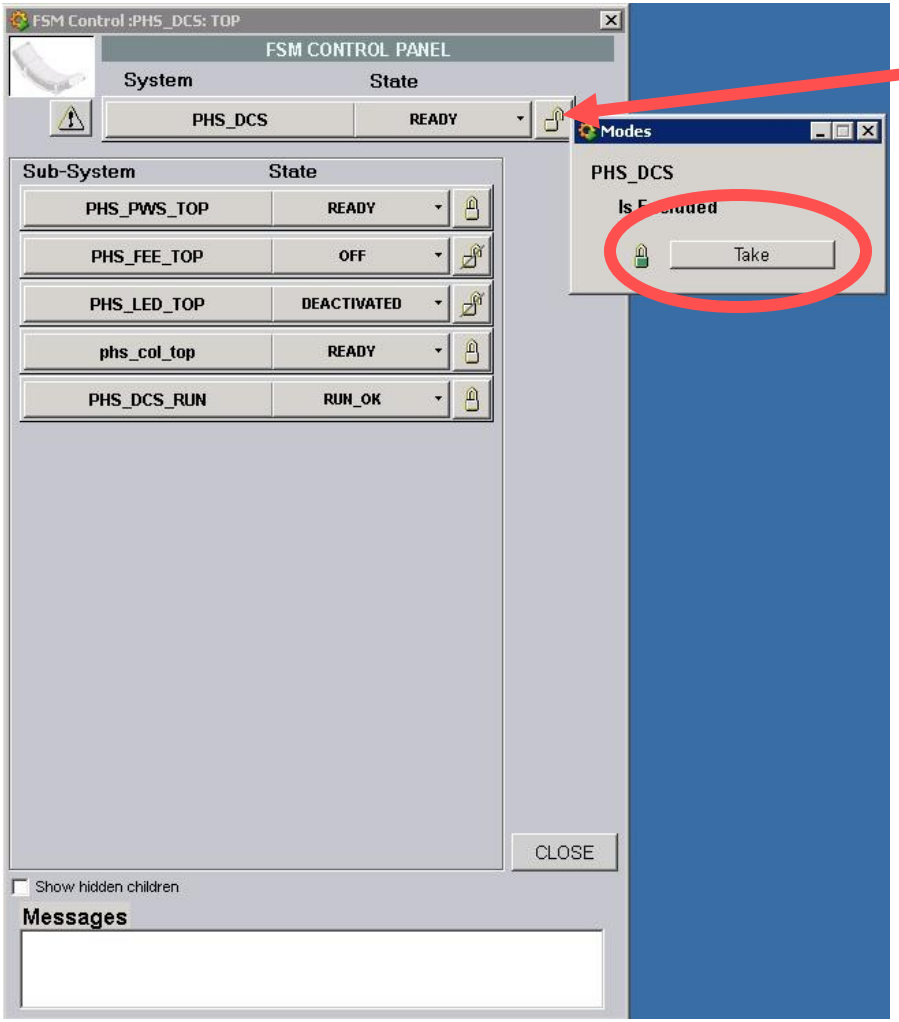


To take the control click on the padlock.

It is possible to take the control if the parent window padlock is grey or the control is shared with another user.

Ask the ALICE DCS expert to release the control before you get a chance to take the control.

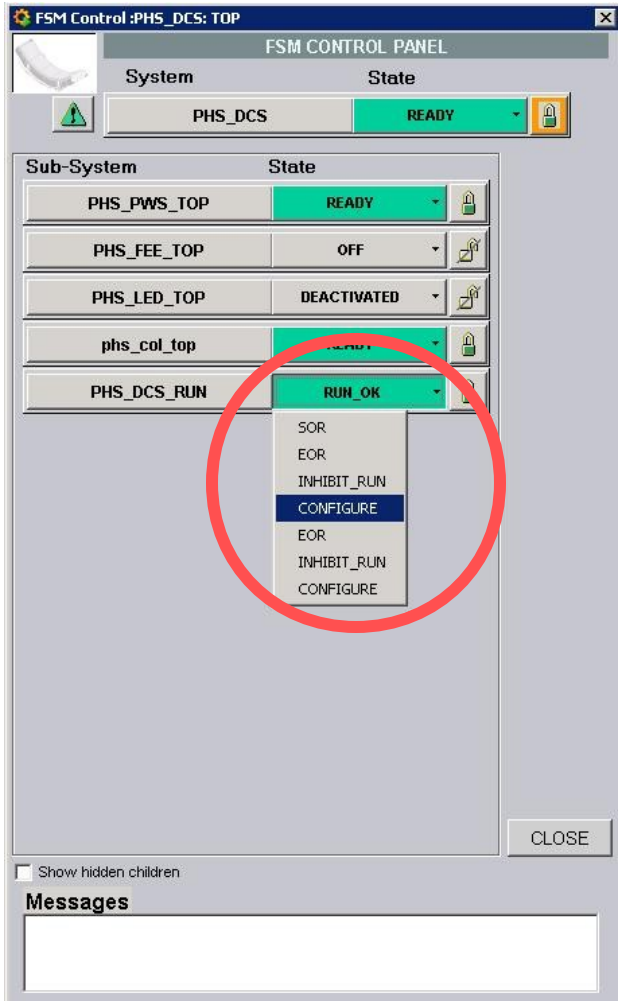
How to take the control?



To take the control click on the padlock.

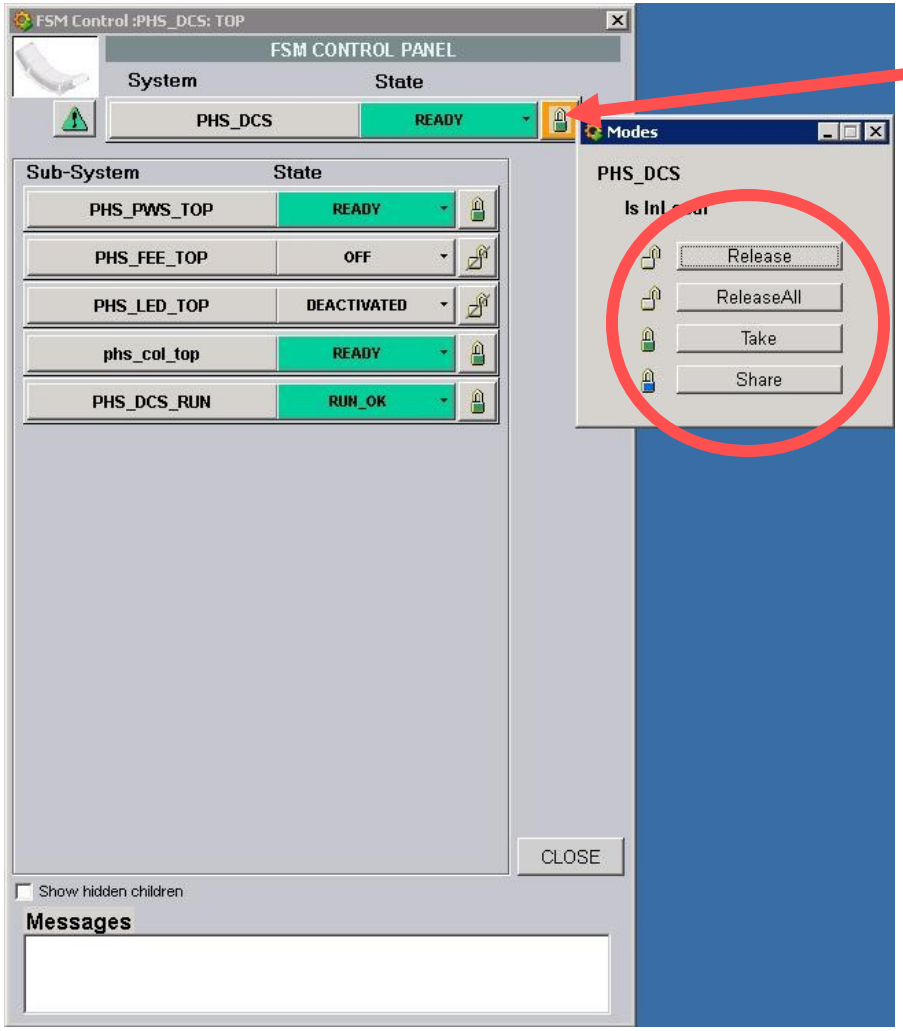
Click “Take” in the open window for control taking.

How to send the commands?



Click on the state of the subsystem to see the list of available commands. To send any command to the detector choose the command and click on it.

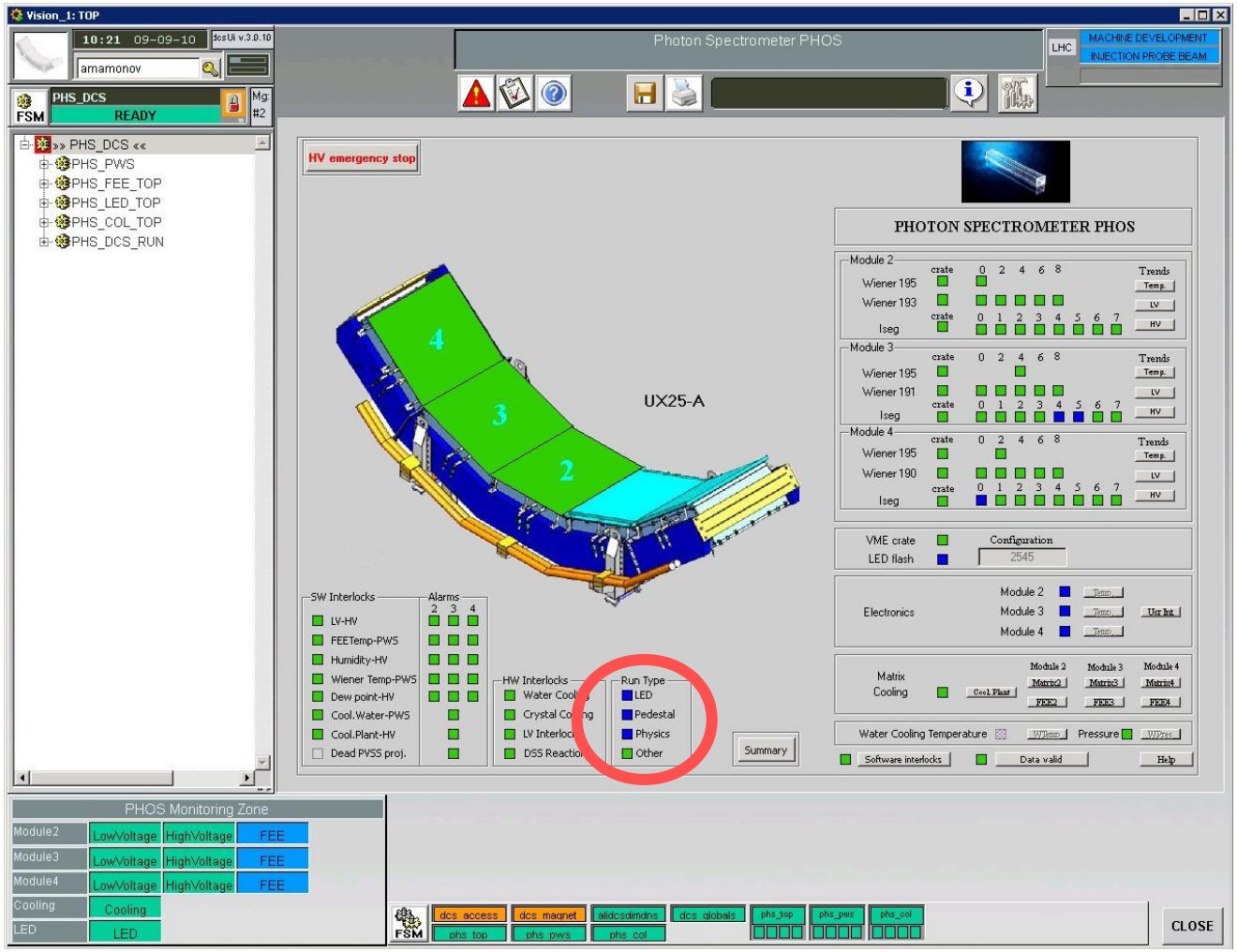
How to share and release the control?



To share or release the control click on the padlock.

Click “Release” in the open window to release the control or “Share” to share the control.

How to change the run type?

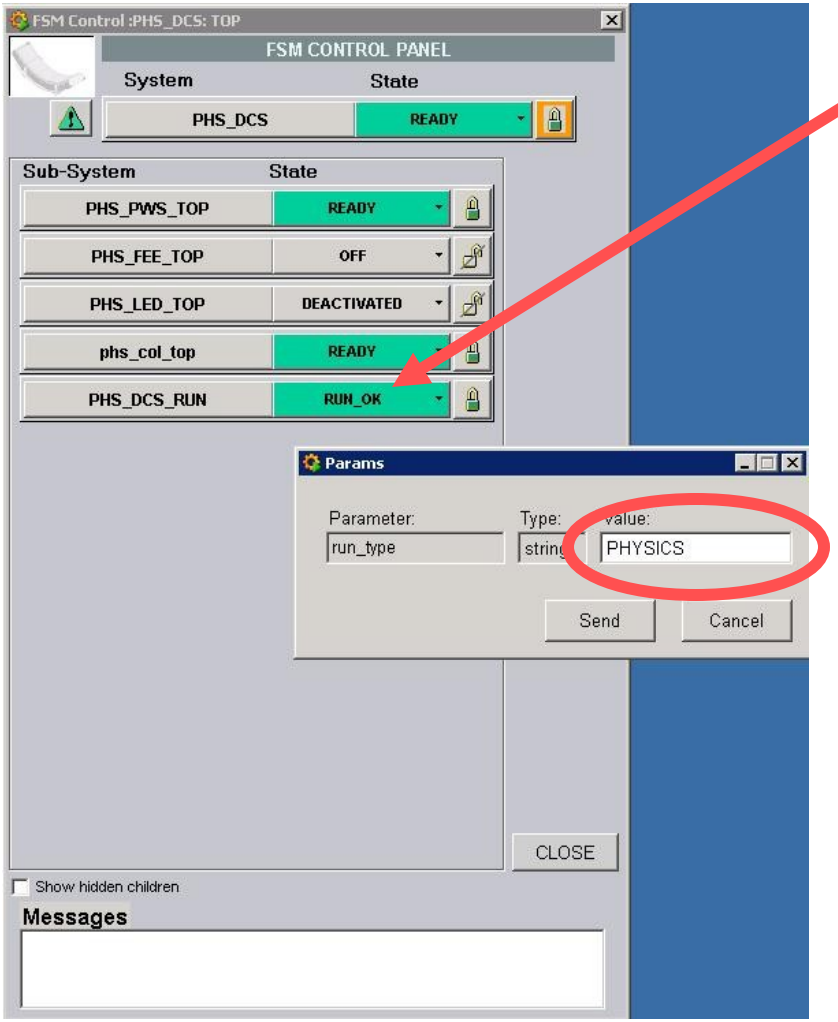


The information on the run type is shown in the bottom side of the DCS GUI.

There are four types of the Run:

- LED;
- Pedestal;
- Physics;
- Other.

How to change the run type, enable and disable the LED system?

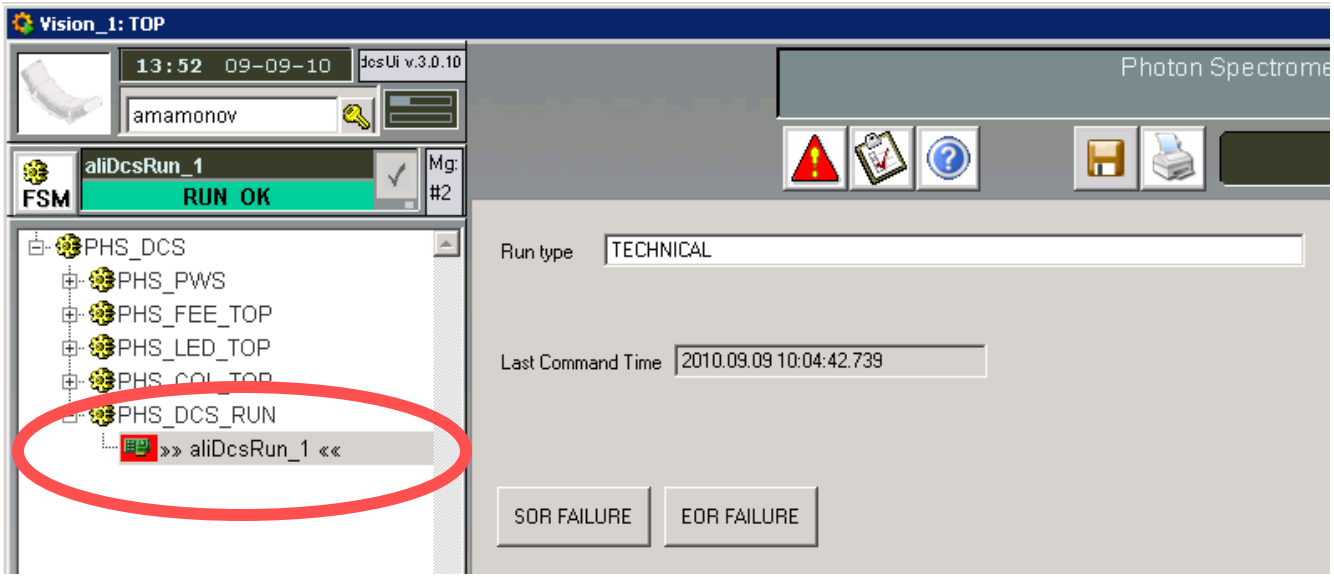


Click on PHS_DCS_RUN control level and choose “CONFIGURE” command.

Type the chosen run type (LED, Pedestal or Physics) to configure the detector for the appropriate run type.

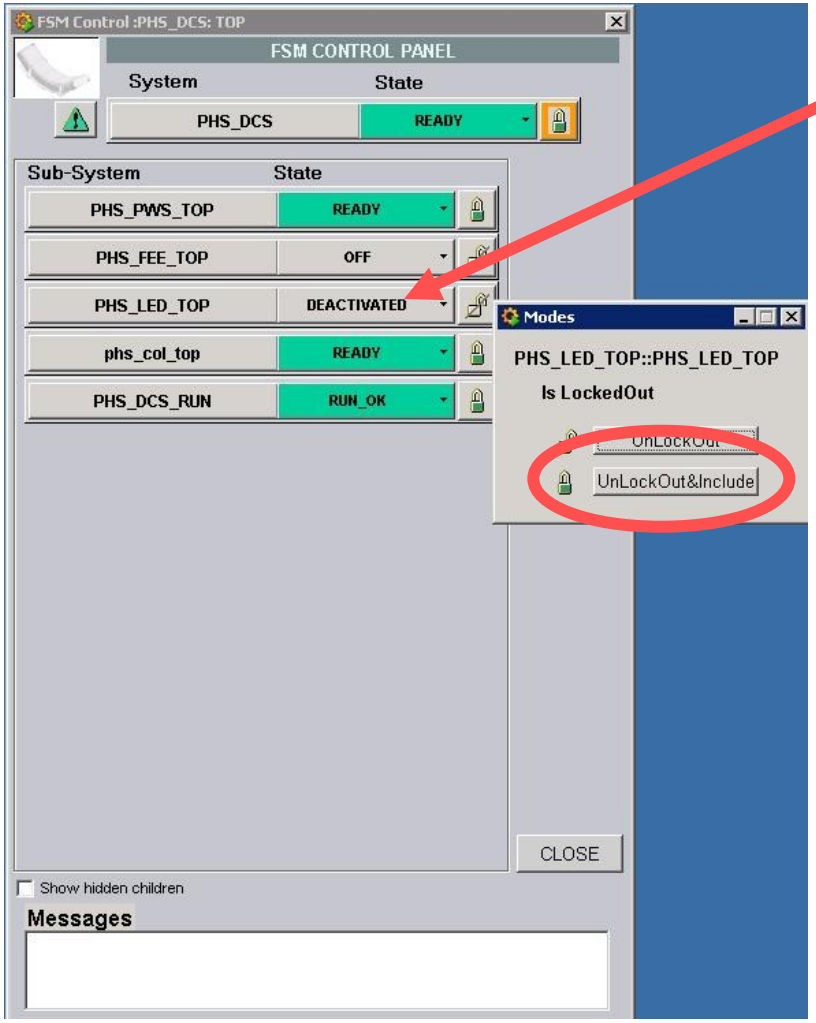
At present “Pedestal” and “Physics” run types DCS configuration are the same. **Choose “LED” run type to activate the LED system and the others to deactivate it**.

How to change the run type?



It is possible to send the command as the ALICE Run Coordinator to Start the Run and to Stop The Run from the FSM tree in the left side of the DCS GUI.

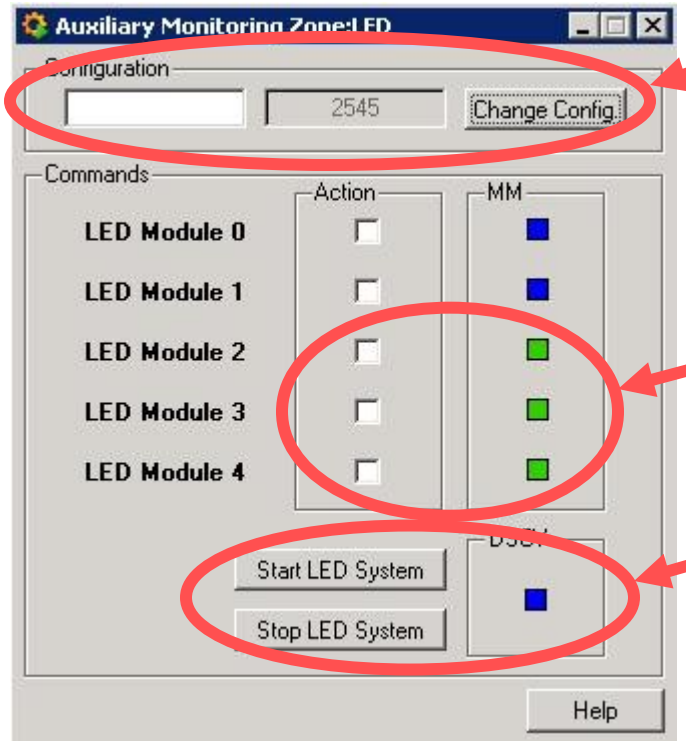
How to configure the LED system manually?



Before you start to configure the LED system check if it is included in the control list of the detector.

If it is not included, the color of the subsystem is grey. Click on the subsystem padlock and choose “UnlockOut&include” to include the subsystem in the DCS.

How to configure the LED system manually?

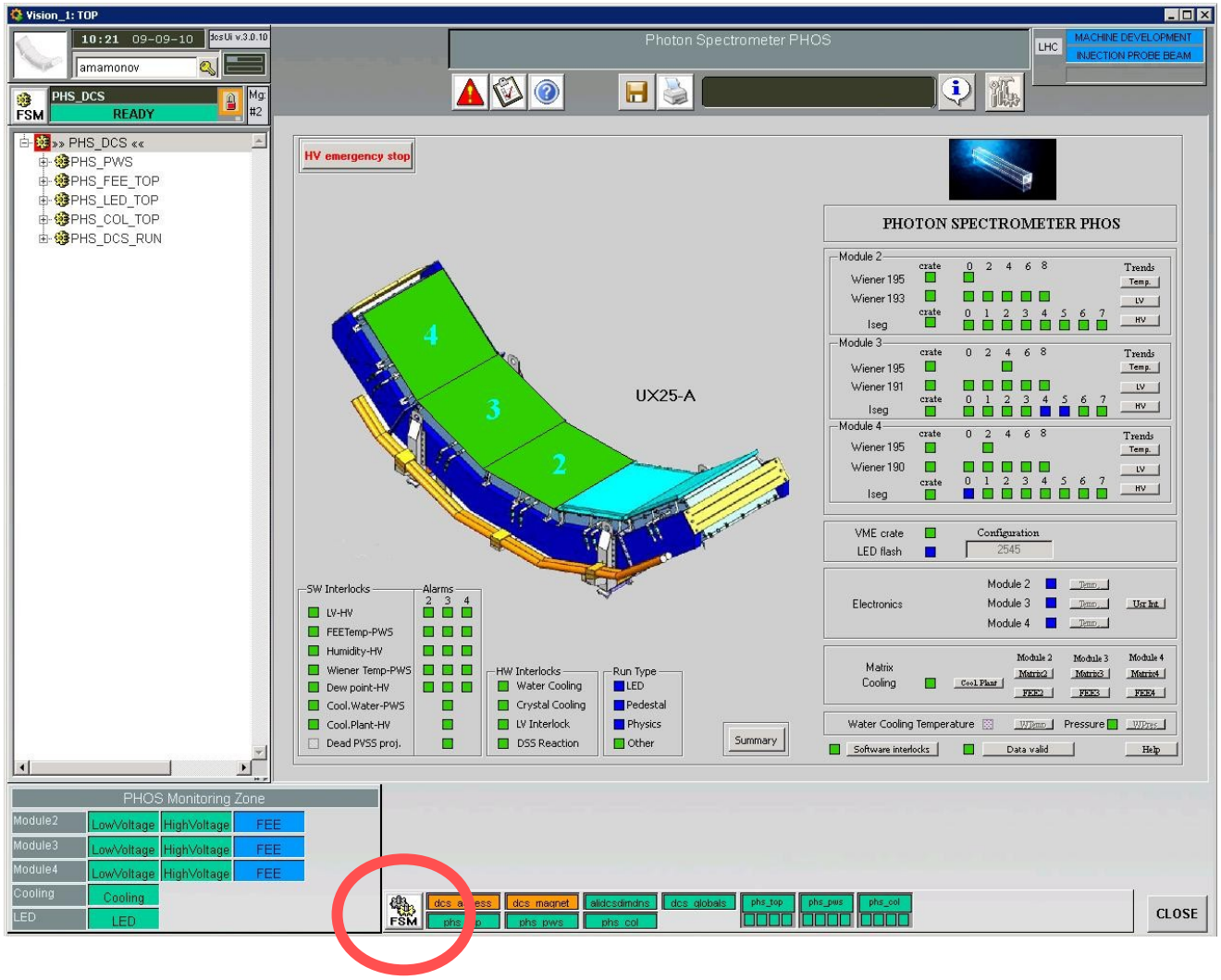


Choose the configuration of the LED system and click “Change Config.” to apply the modification (follow the web links in “Links” chapter to get the detailed description of LED configurations).

Tick the square to choose the module you want to flash (only one or all the modules can be chosen).

Click “Start LED System” button to start flashing and “Stop LED System” to stop flashing.

How to restart the DCS system?



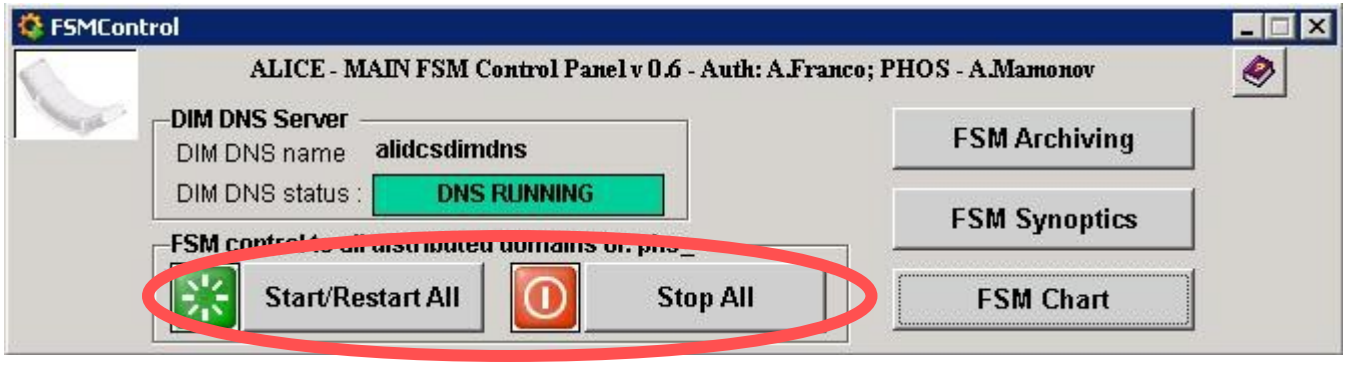
This option is available only for users with expert permission.

If the DCS system crushes or works unstably, try to restart the system clicking “FSM” button in the bottom side of the DCS GUI.

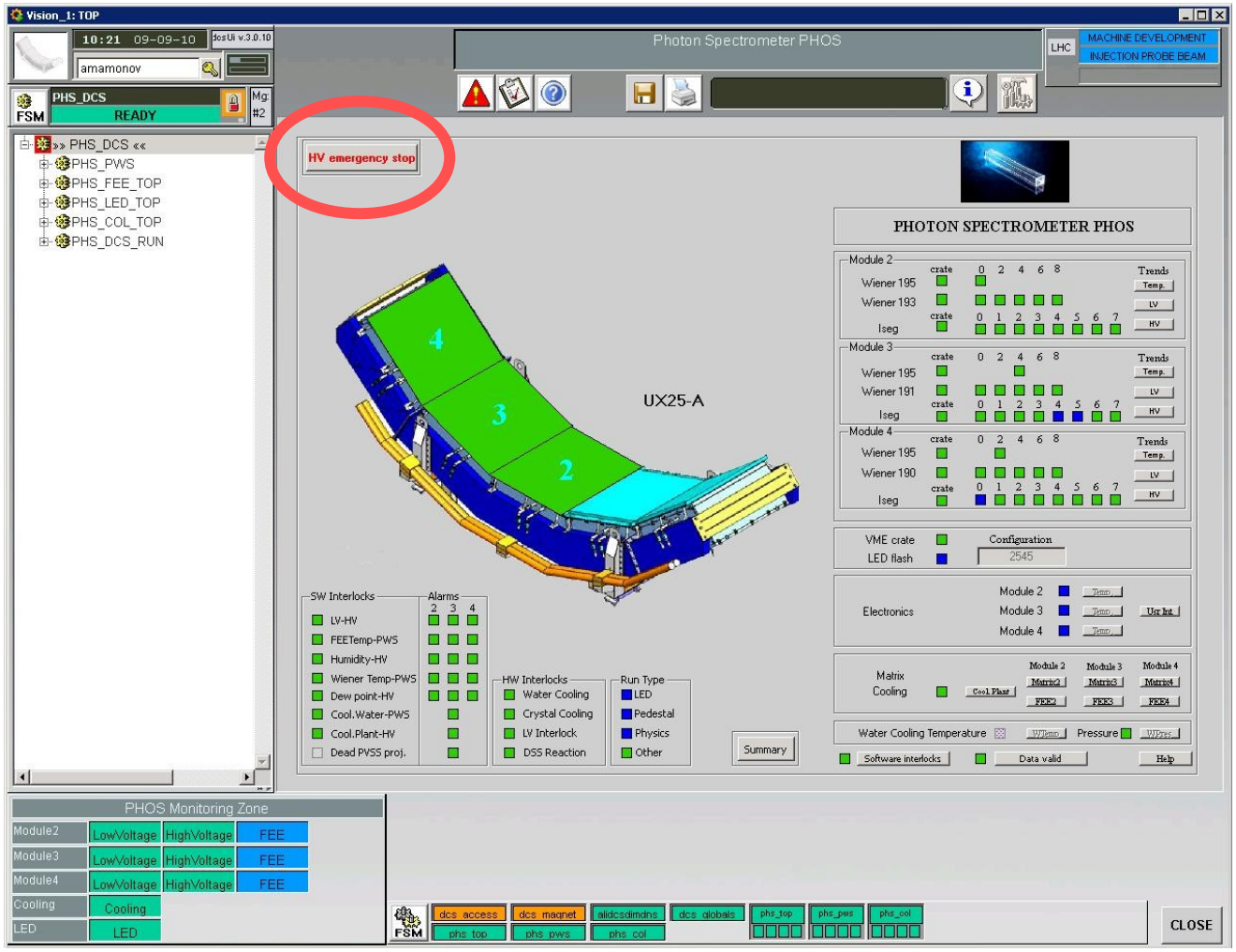
How to restart the DCS system?

This panel is available only for users with expert permission.

To restart the system click “Start/Restart All” button and wait for a few minutes. To stop the system click “Stop All” button. Be ready to contact the DCS expert after this procedure.



How to stop high voltage in emergency mode?



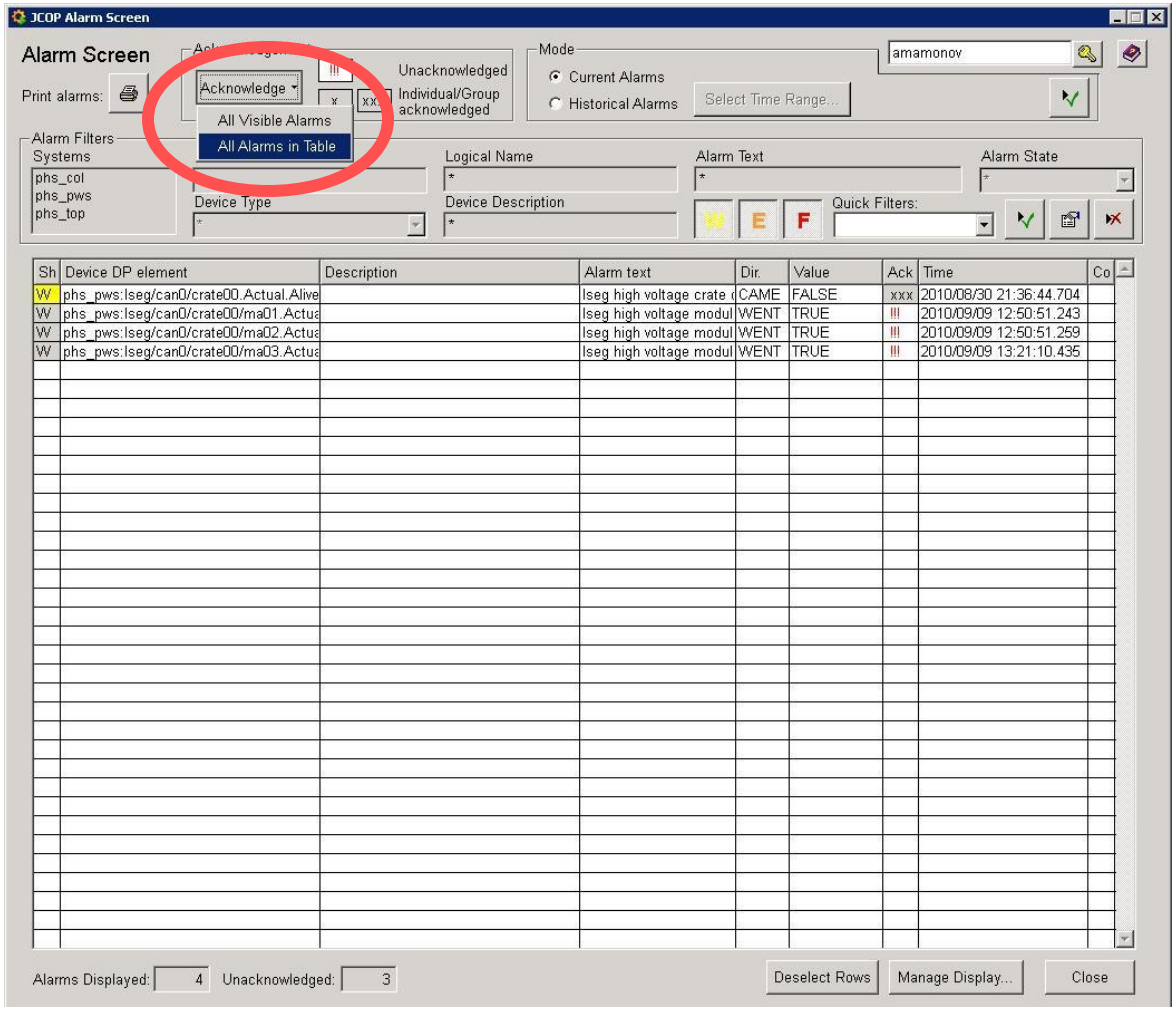
Special “HV emergency stop” button is intended for quick stop of high voltage for the chosen module and is available in the left top side of the DCS GUI.

How to stop high voltage in emergency mode?

Choose the PHOS module and click “Yes” to stop high voltage in emergency mode.

Click “No” if you want to keep high voltage.

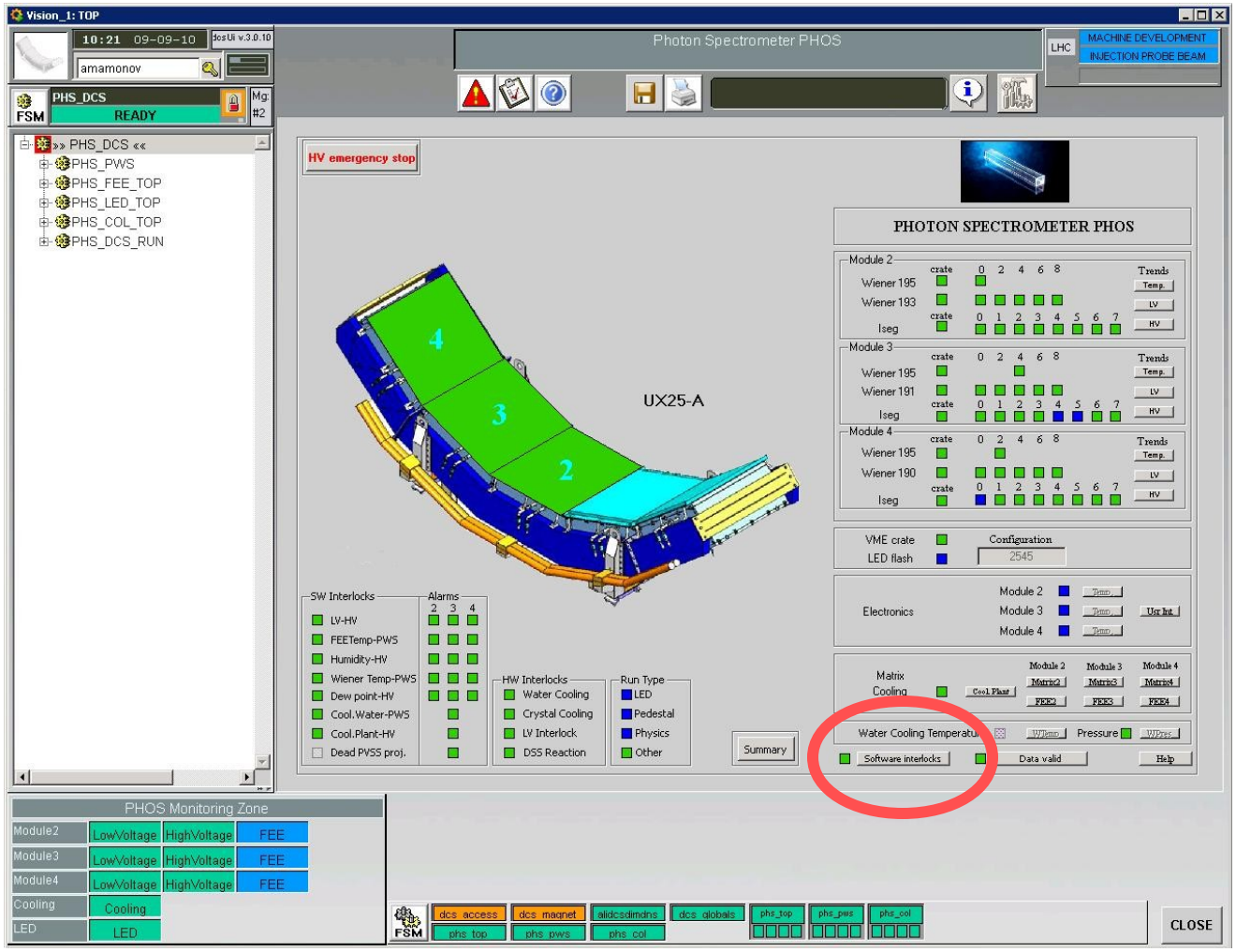
How to reset actual alarms?



To reset actual alarms click “Acknowledge” and choose any option in the pop up window.

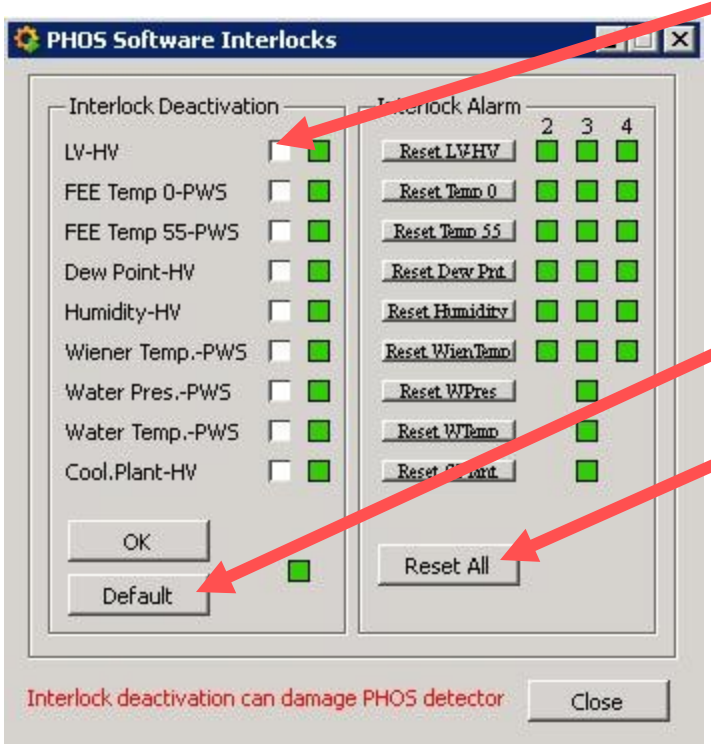
This operation is available for users with root permission only.

How to enable and disable the software interlock?



There is a special "Software interlock" button in the bottom side of the DCS GUI for the software interlock activation and deactivation.

How to enable and disable the software interlocks?



Activation and deactivation of the software interlocks.

Default button.

Reset button of all actual alarms.

Choose the interlock you want to deactivate and click “OK”. Click

“Default” button to activate all software interlocks.

Click “Reset All” to reset all actual alarms connected with software interlocks.

Even if you reset the alarm you won’t stop the interlock triggering.

How to enable and disable the hardware interlocks?

Only Andre Augustinus (ALICE DCS team) is the person who has the right to activate and deactivate the hardware interlocks of PHOS detector. Contact him if you want to temporary deactivate any hardware interlock.

What to do if the interlock triggers?

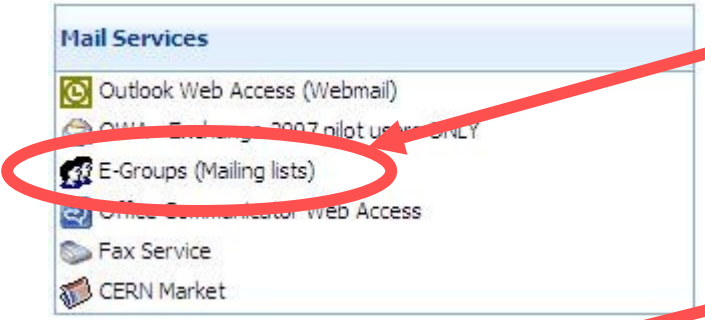
- Open Alarm panel and follow the instructions in the description of the appeared alarm.
- If you still have a question, contact the expert oncall of PHOS detector (or the Run Coordinator if you are the expert oncall) to get further instructions.
- Contact the ALICE DCS expert to reset the triggered hardware interlock.
- If necessary, follow “Contact list” chapter to inform the experts on the incident.
- Inform the PHOS community on the details of the incident.

A special email with the description of the triggered interlock will be sent to phos-alarm@cern.ch mail group after the triggering of any PHOS interlock.

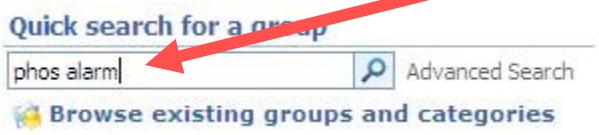
How to subscribe on emails from the cavern?

https://mmmservices.web.cern.ch/mmmservices/

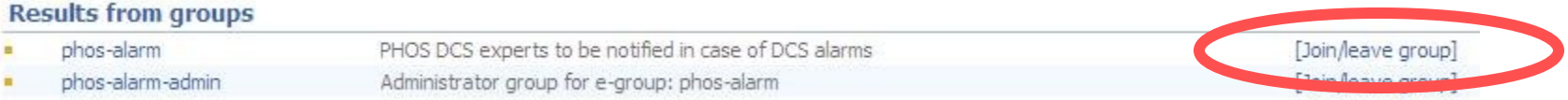
Follow this link and find “E-Groups (Mailing list)”.



In “quick search” type “phos alarm” to find the group.



Click “Join/leave group” to join/leave the group.



In 24 hours time you will get the confirmation that you are a new group participant.

Links

- PHOS web page:
  - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/index.html
- PHOS LED manual:
  - Short - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M
  - Long - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M
- PHOS DCS guide:
  - Stable - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M
  - Editable - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M
- PHOS DCS manual (old version):
  - In English - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M
  - In Russian - http://aliceinfo.cern.ch/Collaboration/Technical_Coordination/ALICE_Project/PHOS/Documents/M