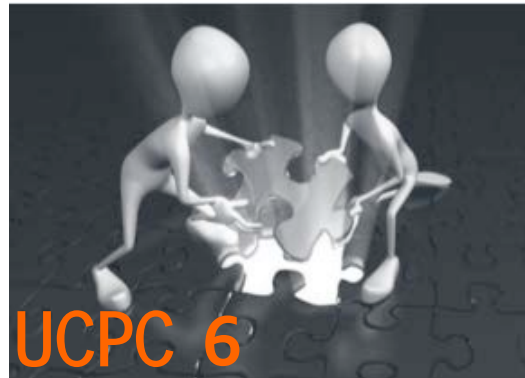
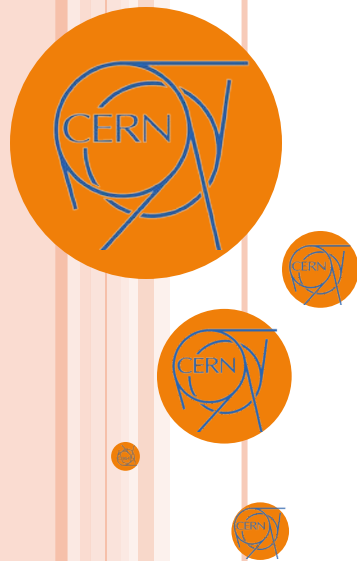


UNICOS: UNIFIED INDUSTRIAL CONTROL SYSTEM CPC (CONTINUOUS PROCESS CONTROL)

BASIC COURSE SESSION 4: SCADA



UCPC 6

UNICOS-Continuous Process Control



OUTLINE

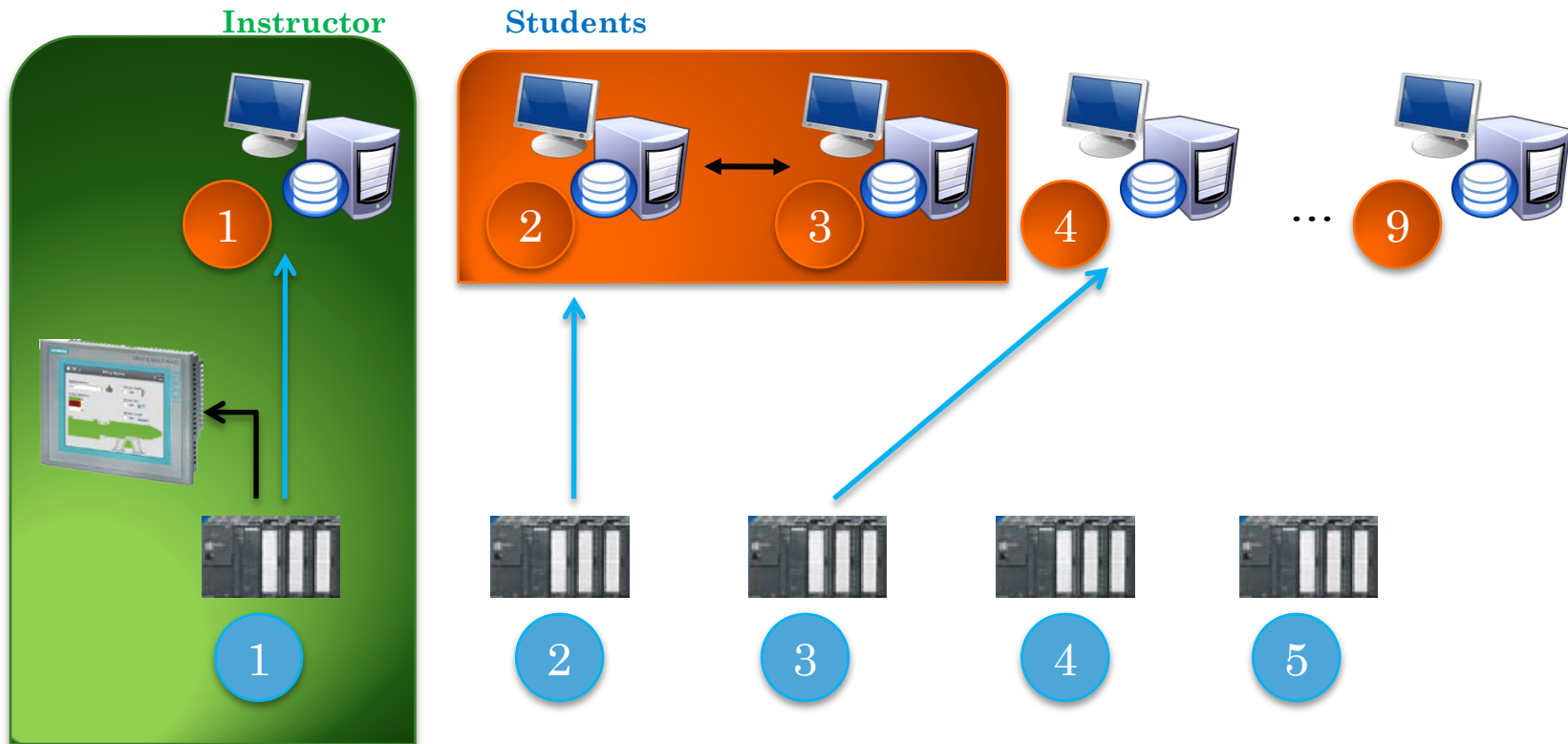
1. Introduction
 - ✓ Architecture
 - ✓ Terms
2. Basic Features
 - ✓ Environment & login
 - ✓ Widget & faceplate information
 - ✓ Panels (Navigation), Trending
 - ✓ Device overview
3. Diagnostic Features
 - ✓ Events & Alarms
 - ✓ Diagnostics: System Integrity & System Status,
 - ✓ Front-ends
 - ✓ Access control setup
4. OWS

OUTLINE

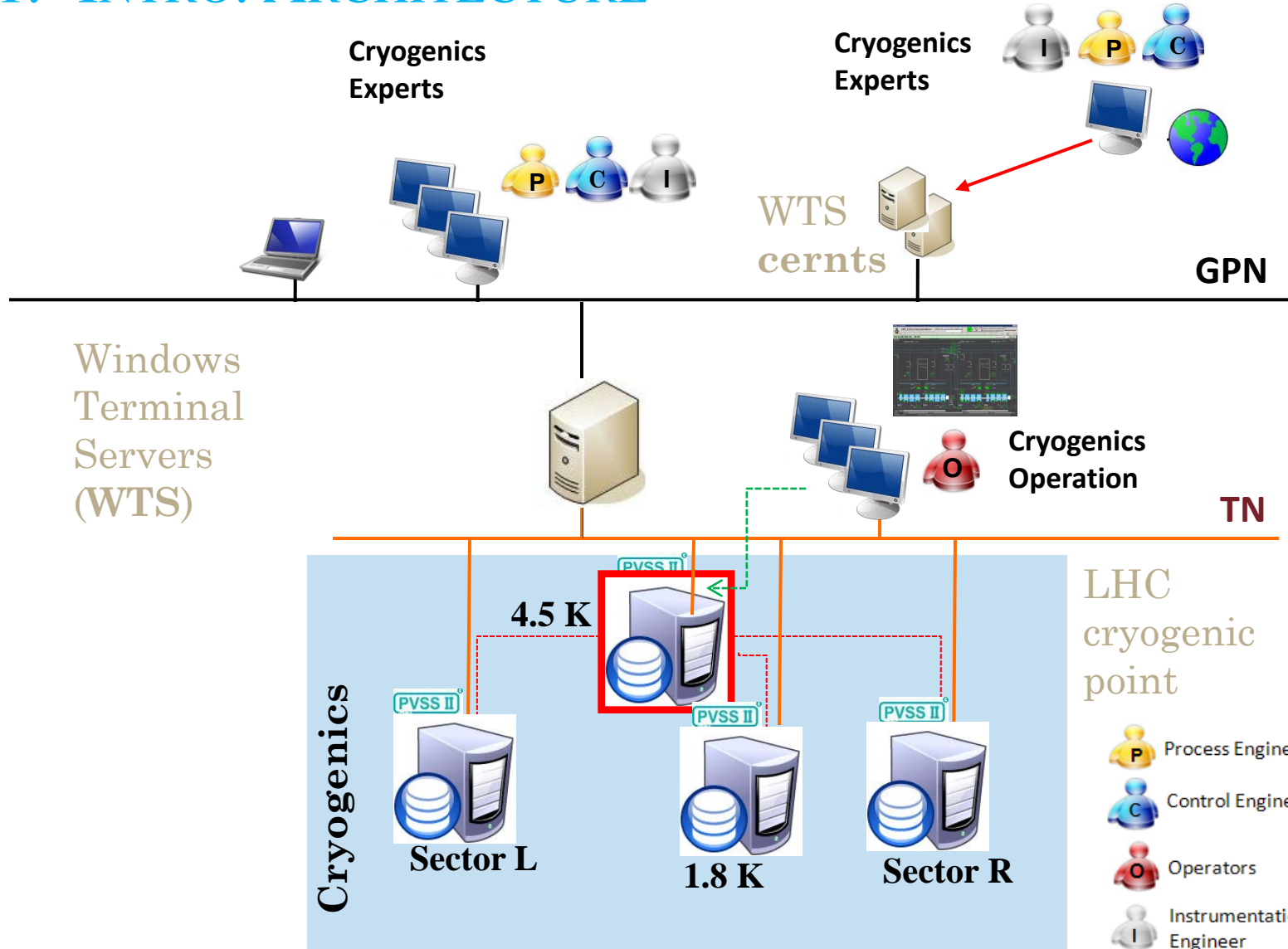
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1.- INTRO: SCADA SYSTEM

- Supervisory, Control and Data Acquisition



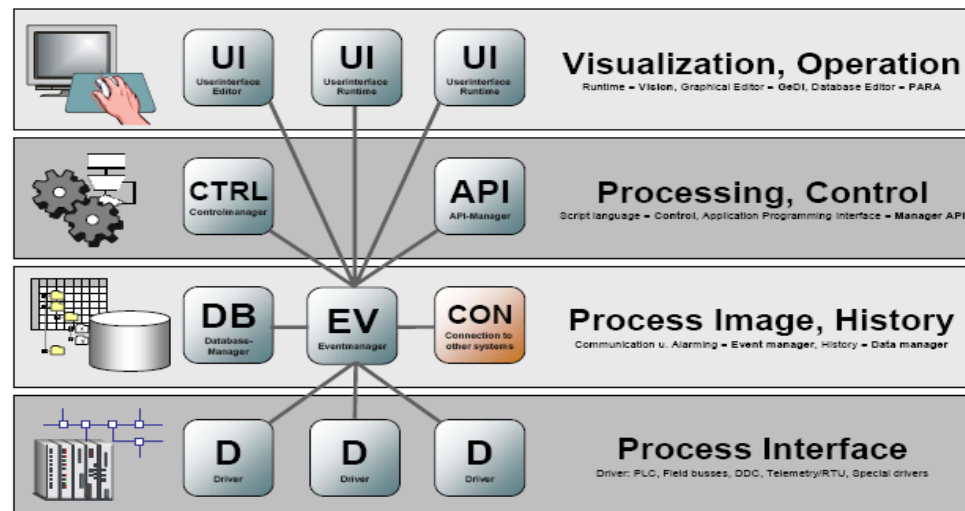
1.- INTRO: ARCHITECTURE



1.- INTRO: WINCC OA ARCHITECTURE

- Modular architecture: Managers
- Drivers (D): Process Interface (PLCs,...)
- Central processing: Event manager (EV) holds the current image of the process variables in memory
- Data Manager (DB) parameterization and archiving of value changes
- User interface (UI) : graphical display

Managers can run in different machines!



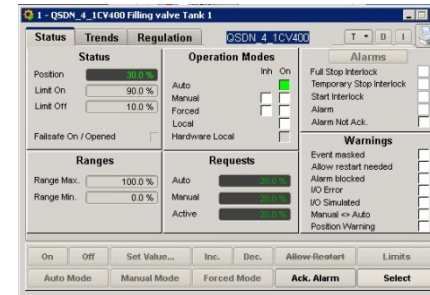
INTRO: UNICOS WINCC OA FEATURES

- Uniform look and feel
 - ✓ Widgets, faceplates
 - ✓ Tags Naming as in PLC
- Devices connection
 - ✓ Directly set-up on application import
 - ✓ Diagnostics
- System Integrity
 - ✓ Checks that all the SCADA features are working fine
 - ✓ Automatic reaction
 - ✓ Report
- Reporting tools
 - ✓ Event list
 - ✓ Alarm list
 - ✓ Messages
 - ✓ Trending
- Access Control

1.- INTRO: TERMS

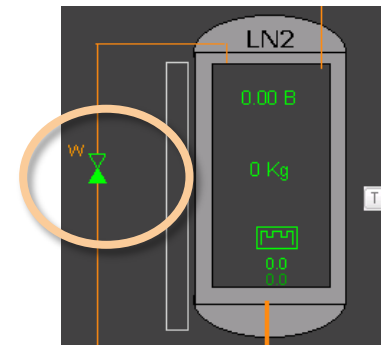
- Device: Process Component, the devices can be the sensors (temperature, pressure...), actuators (Motor, valve...), controllers, PCOs, ...

- Faceplates: Overlap panel presenting all dynamic values, status and information associated to a device.



- Panels: Panels are windows used to represent the status of the process by observing animated objects.
 - ✓ Background panel: Panel covering the entire display
 - ✓ Pop-up panel : the overlap panel covers part of the display it can be moved and eventually will be closed when the base panel from where it has been opened is closed (child Panel)

- Widgets: mimics or widget are small display elements presenting a device in a synoptic with a subset of its associated dynamic values, status and information



- Trends

- ✓ Trend Plot : panel presenting on the same time base several trend curves
- ✓ Trend Page : panel presenting several trend plot in the same window.

1.- INTRO: WINCC OA DEVICE

- Device type = WinCC OA DPT.
- Device name

✓ Widget:

[WCCOASystemName]:[WCCOAAlias]

E.g.: dist_1: QSDN_4_1LT400

✓ Trending:

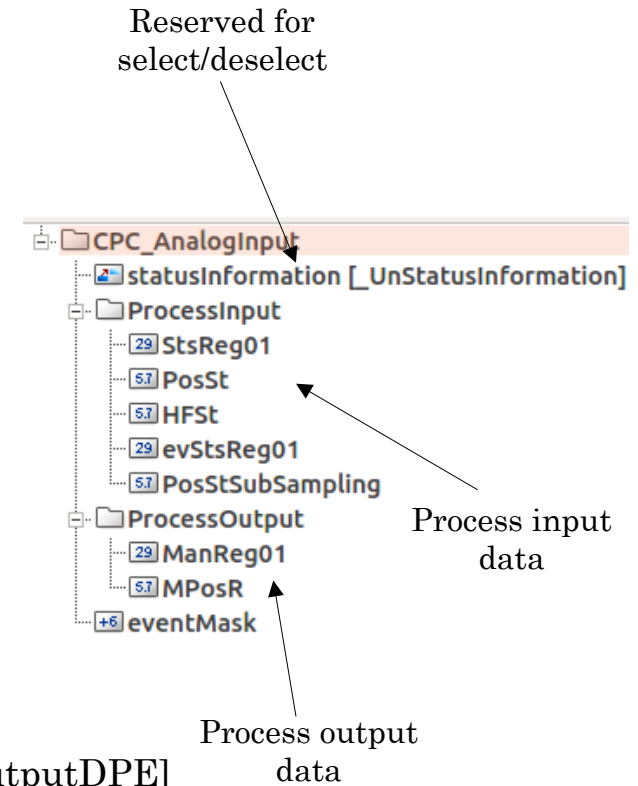
[WCCOAsystemName]:[WCCOAAlias].[leafProcessInput/OutputDPE]

E.g.: dist_1: QSDN_4_1LT400.ProcessInput.PosSt

- DP name

[WCCOASystemName]:[prefix]-[FrontEnd]-[Application]-[DpType]-[#####]

E.g.: un-CFP_LABO_BEN-QSDN-CPC_AnalogInput-10000



1.- INTRO: PROJECT NAME CONVENTION

- Project name = System name

- Directories:

- ✓ Project:

- PVSS_projects/[ProjectName]/[ProjectName]

- E.g.: PVSS_projects/QSDN/QSDN

- ✓ Installed components:

- PVSS_projects/[ProjectName]/installed_components

- E.g.: PVSS_projects/QSDN/installed_components



1.- HANDS-ON: CREATE A PROJECT

- Project name
 - QSDN
- System name
 - QSDN:

- Directories:

- ✓ Project:
PVSS_projects/QSDN/QSDN
- ✓ Installed components:
PVSS_projects/QSDN/installed_components



Procedure in unicos [wincc oa ucpc](#) page - [download](#)

- Follow path convention!
 1. Create the project
 2. Install fw installation (unzip)
 3. Install unicos packages using fwInstal
 4. Install cpc package using fwInstal

- Get components (2-4) from:
 1. UAB project/Baselines
 2. cern.ch/unicos -> download section
- Unzip the components (3, 4) to the temporal dir

OUTLINE

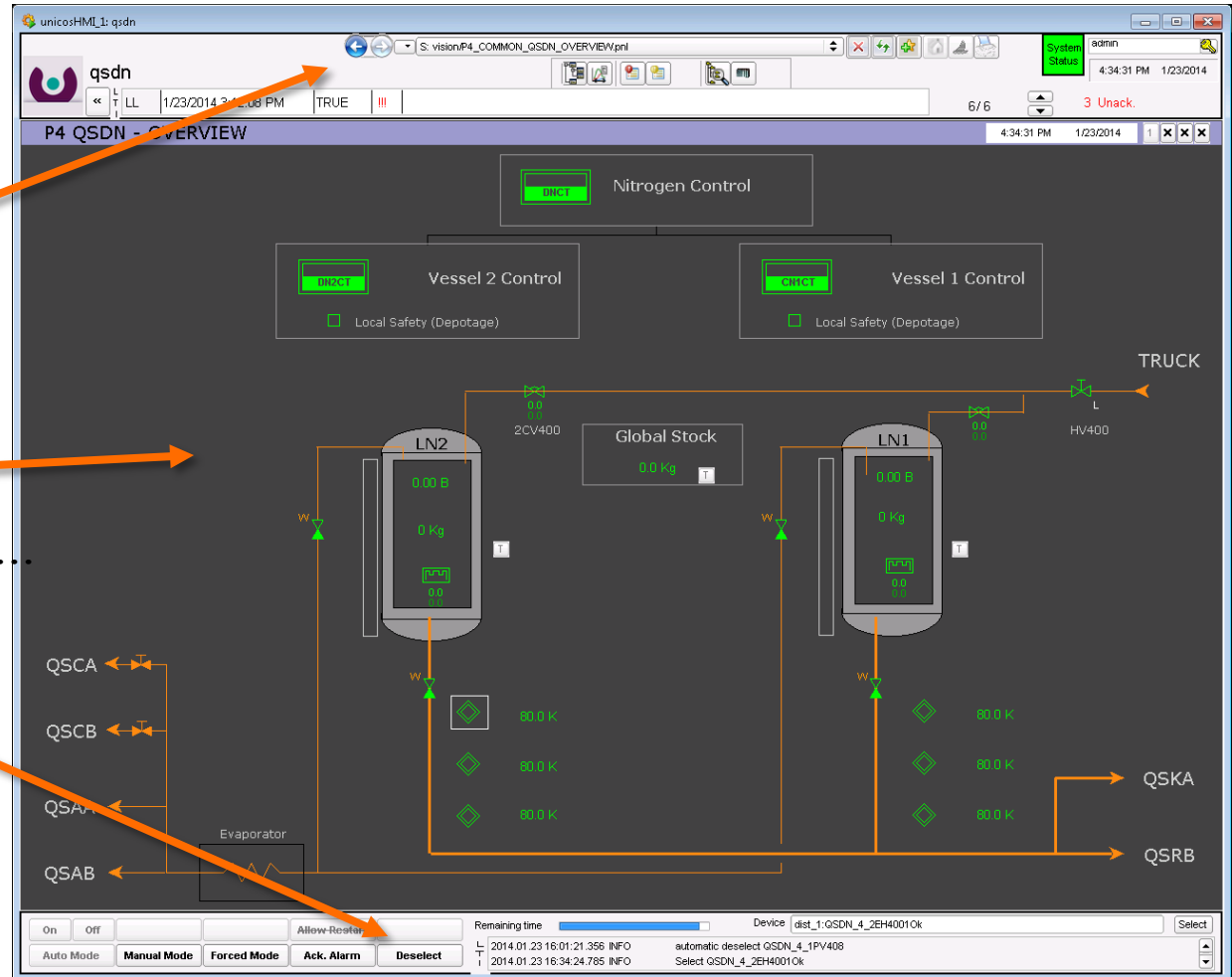
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4. OWS

Same layout on each display

- Header
 - ✓ Fix area (toolbar)

- Process area
 - ✓ Synoptics, trends ,...

- Footer
 - ✓ Contextual area





2.- BASICS: HEADER

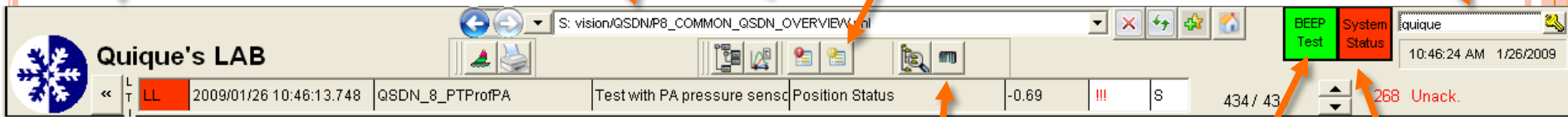
Panel, trend horizontal navigation

Logo, application name

Navigation Panel

UNICOS utilities: WindowTree, TrendTree AlarmList, EventList, etc.

Current user (login), date & time



Management menu Configuration menu

Alerts row

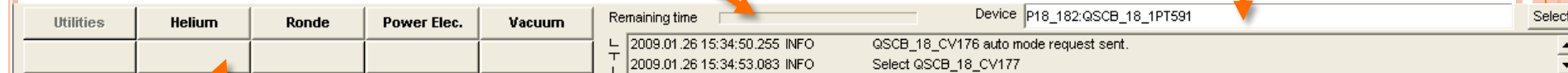
Front-end diagnostics

Beep

System Status

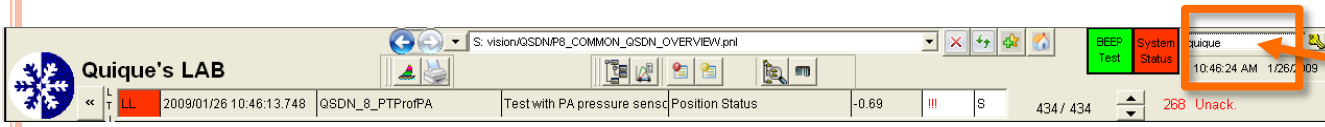
Remaining select time

Device to select or Last device selected

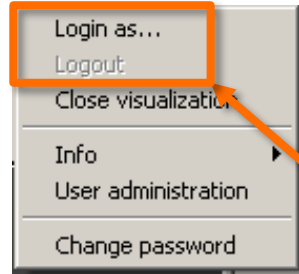


Contextual area

Right-click: history of all received messages



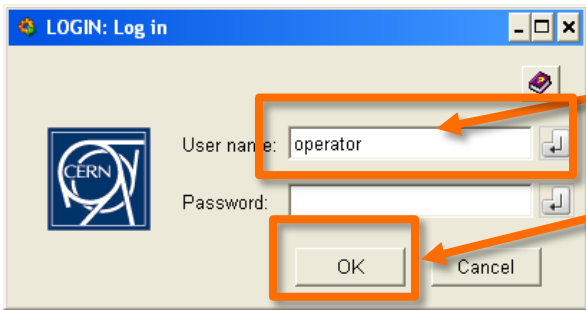
1 Right click
On the Current User name
Or click on the “key”



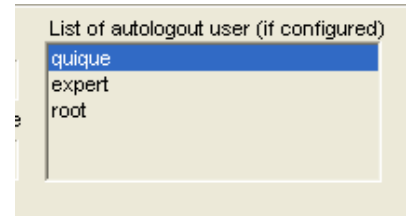
2 Click Login as

3 Enter a user / password

4 Click Login



Default users:
root
admin
expert
operator
monitor



As default the “**expert**” login is configured to be log off automatically after ½ hour of inactivity

2.- BASICS: DEVICE TREE OVERVIEW

unicosHMI_1: qsdn

System Status: admin, 4:35:56 PM 1/23/2014

Device Overview: dist_1: > CFP_LABO_BEN > QSDN > CPC_Analog

Widget: Snapshot

Device 1 to 10

Devices shown: QSDN_4_1CV400, QSDN_4_2CV400, QSDN_4_CV400, QSDN_4_analog1, QSDN_4_analog2, QSDN_4_analog3, QSDN_4_analog4, QSDN_4_analog5, QSDN_4_analog6, QSDN_4_analog7.

unicosHMI_1: qsdn

System Status: admin, 4:36:47 PM 1/23/2014

Device Selection: dist_1: > CFP_LABO_BEN > QSDN > CPC_Analog

Device Overview: dist_1: > CFP_LABO_BEN > QSDN > CPC_Analog

Widget: Snapshot

Filter:

Last update: 2014.01.23 16:36:43.734 LOCAL TIME

Filtered devices: 10 / 10

Device Type	Alias	Value	Local time	State	Inv	F	S	▲
CPC_Analog	QSDN_4_1CV400	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_2CV400	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_CV400	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog1	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog2	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog3	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog4	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog5	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog6	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	
CPC_Analog	QSDN_4_analog7	0.0 %	2014.01.23 15:58:34.7	Off/Closed Status Auto Mode Status Manual (Allow) Restart OK		F	S	

2.- BASICS: WIDGETS ANIMATION

(W) DATA QUALITY (warnings)	Object	Letter	Color	Priority
Invalid data	all	N	Cyan	highest
Old (data not up to date)	all	O		
Field object with an alarm blocked IO object with IOError blocked	Field, I/O	B	Orange	
IO error	all except xPAR, xSTATUS	E		
IO simulated		S		
Forced <=> Auto	PCO,	W		
Manual <=> Auto	Field, I/O			
Position Warning				
Configuration Warning	AA	C	Orange	lowest

(Ai) ALARM & INTERLOCKS	Object	Letter	Color	Priority
Full stop interlock		F	Red	highest
Temporary Stop Interlock	PCO,	S		
Start Interlock	Field	I		
Alarm		A		
Position Alarm (Local)	Local	P		
Manual Restart Required (after a full stop interlock)	PCO, Field	R	Orange	lowest

BODY	Color	Priority
Data not accessible	Magenta	highest
Invalid	Cyan	
Alarm Unacknowledged	Red Blinking	
Alarm	Red	
Warning /Man. Restart required	Orange	
Forced mode	Yellow	
Auto/Manual mode	Green	lowest

(Ai) Info (Alarm objects)	Object	Letter	Color	Priority
Alarm condition	DA	A	Red	highest
High Threshold alarm	AA, AI,	HI		
Low Threshold alarm	AIR, AO,	LI		
High Threshold warning	AOR	H	Orange	lowest
Low Threshold warning		L		

(X) Additional Information	Letter	Color
Controller mode (up to 3 letters)	A,M,F,L,R,P,T	White

(Ai) MASK & BLOCK info	Object	Letter	Color	Priority
Alarm Blocked (PLC)	PCO,	B	Yellow	highest
Alarm Masked (only SCADA)	Field,	M		
Event Masked (only SCADA)	all	e	Yellow	lowest

Comment notification

(F) Feedback & (O) Order	Color
Feedback value	Green
Order value	Green

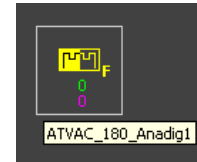
(M) Mode & Working State	Object	Letter	Color	Priority
Hardware Local Mode		HL	White	highest
Local Mode		L	White	
Auto Mode	PCO, Field, PID	none	none	
Manual Mode		M	White	
Forced Mode		F	Yellow	
Inhibit Manual/Forced		h	White	lowest



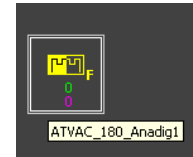
Analog	AI,AS	Analog	Analog	Analog	OnOff	AI,AS	PID	Analog	OnOff	OnOff	DA	AA	AA		
Data Invalid	No refresh Data	Data not connected	Forced Mode	Auto Regulated & order: 17.1 stat: 16.3	Warning & Forced Mode	Forced Mode & Event Masked	Manual & Regulation & Simulated	Inhibit Manual mode activate	Temporary Stop Interlock	Start Interlock active		Blocked alarm	Warning High		

2.- BASICS: WIDGET INTERACTION

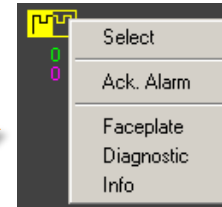
- Mouse over
- Mouse click
 - ✓ Select if user authorized: at least “operator”
- Mouse double click
 - ✓ Select, open faceplate
- Mouse right click
 - ✓ Menu
- Device selected:
 - ✓ White box around
 - ✓ Contextual button opened in context area
 - ✓ Device name set in the footer of the Graphical Frame



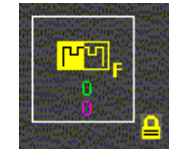
Device selected
mouse over



Device selected
By another UIM
No action possible



Device selected



On / Open	Off / Close	Set Value	Inc.	Dec.	Limits
Auto Mode	Manual Mode	Forced Mode	Ack. Alarm	Deselect	



2.- BASICS: FACEPLATE INFORMATION

- Status (data) area
- Trend area
- Info: HTML page
- Diagnostic: custom panel
- Trends: Popup
- Menu (widget)
- Contextual button

- ✓ Per device type
- ✓ Animation depend on the state of the device

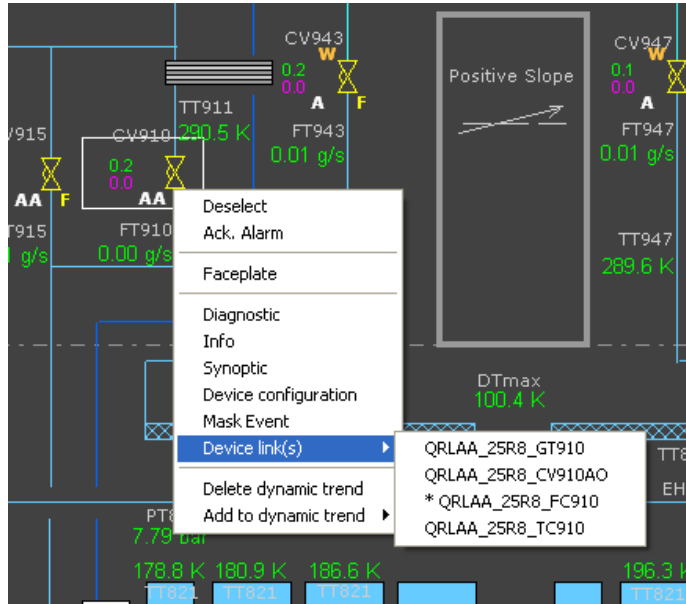
The screenshot shows a control panel for a device named "QSDN_4_CV400 Connecting Valve". The interface is divided into several sections:

- Status:** Shows "Position" at 0.0%, "Limit On" at 90.0%, and "Limit Off" at 10.0%. There is a "Failsafe On / Opened" checkbox.
- Operation Modes:** Includes "Auto" (checked), "Manual", "Forced", "Local", and "Hardware Local". Each mode has an "Inh" and "On" sub-option.
- Alarms:** Lists "Full Stop Interlock", "Temporary Stop Interlock", "Start Interlock", "Alarm", and "Alarm Not Ack." with checkboxes.
- Warnings:** Lists "Event masked", "Allow restart needed", "Alarm blocked", "I/O Error", "I/O Simulated", "Manual <-> Auto", and "Position Warning" with checkboxes.
- Requests:** Shows "Auto", "Manual", and "Active" modes with progress bars.
- Ranges:** Shows "Range Max." at 100.0% and "Range Min." at 0.0%.
- Bottom Panel:** Contains buttons for "On", "Off", "Set Value...", "Inc.", "Dec.", "Allow-Restart", "Limits", "Auto Mode", "Manual Mode", "Forced Mode", "Ack. Alarm", and "Deselect".

Orange arrows from the text on the left point to specific elements in the screenshot:

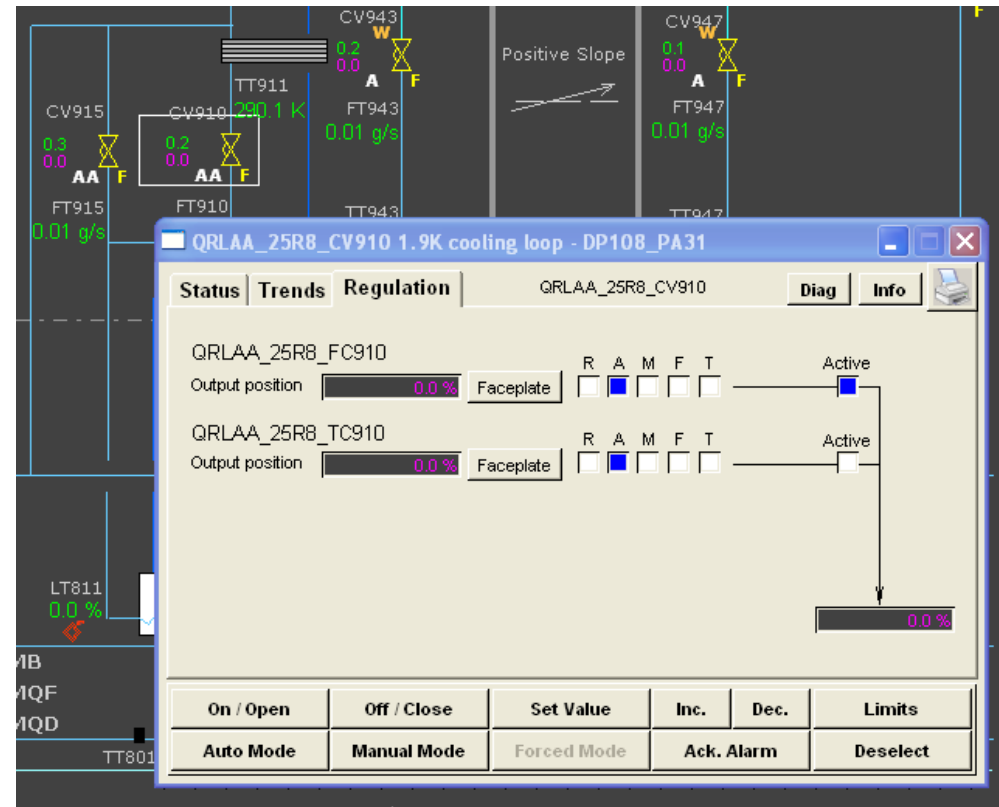
- "Info: HTML page" points to the title bar area.
- "Diagnostic: custom panel" points to the top right corner.
- "Trends: Popup" points to the "Trends" tab.
- "Menu (widget)" points to the "QSDN_4_CV400" label.
- "Contextual button" points to the "On" button in the bottom panel.

2.- BASICS: CONTROLLERS I (DEVICE LINKS)



- Opening the Faceplate of the controller through the controlled object:
- right click on the analog widget
- Device links selection (feedbacks & controllers)
- Or by the TAB “regulation”

- In both cases there is an indication about which controller is active (this feature depends on the logic programmed)



1 - QSDN_8_1PC400 Vessel 1 Heater Control

Status Trends QSDN_8_1PC400

4.000 100.0 %

0.000 0.0 %

MV = 0.000
SP = 0.000
OUT = 0.0

MV= QSDN_8_1PT400
OUT= QSDN_8_1EH400

Event masked

Operation Modes

Active Regulation AutoMan R
Auto Position A
Manual Position M
Forced Position F
Tracking T

SetPoints Requests

Auto 2.340 Bar
Manual 2.340 Bar
Active 0.000 Bar

Output Position Requests

Auto 0.0 %
Manual 0.0 %
Active 0.0 %

PID Param Act <=> Def

Kc 3.000
Ti 2.200
Td 3.300
Tds 4.400

SetPoints Limits

High 4.000 Bar
Low 0.200 Bar

Output Limits

High 100.0 %
Low 0.0 %

Warnings

I/O Error
I/O Simulated

SetPoint Output PID Limits

Auto Mode Manual Mode Forced Mode Regulation Deselect

1 - QSDN_8_1PC400 Vessel 1 Heater Control Set P...

PID Limits

SetPoint

Saved	Active	New
4.000	4.000	4.000
0.200	0.200	0.200
	Max Range	4.000
	Min Range	0.000

Output

Saved	Old	New
100.0	100.0	100.0
0.0	0.0	0.0
	Max Range	100.0
	Min Range	0.0

Save Restore OK Apply Cancel

1 - QSDN_8_1PC400 Vessel 1 Heater Contro...

PID Parameters

Saved	Active	New
3.000	3.000	3.000
2.200	2.200	2.200
3.300	3.300	3.300
4.400	4.400	4.400

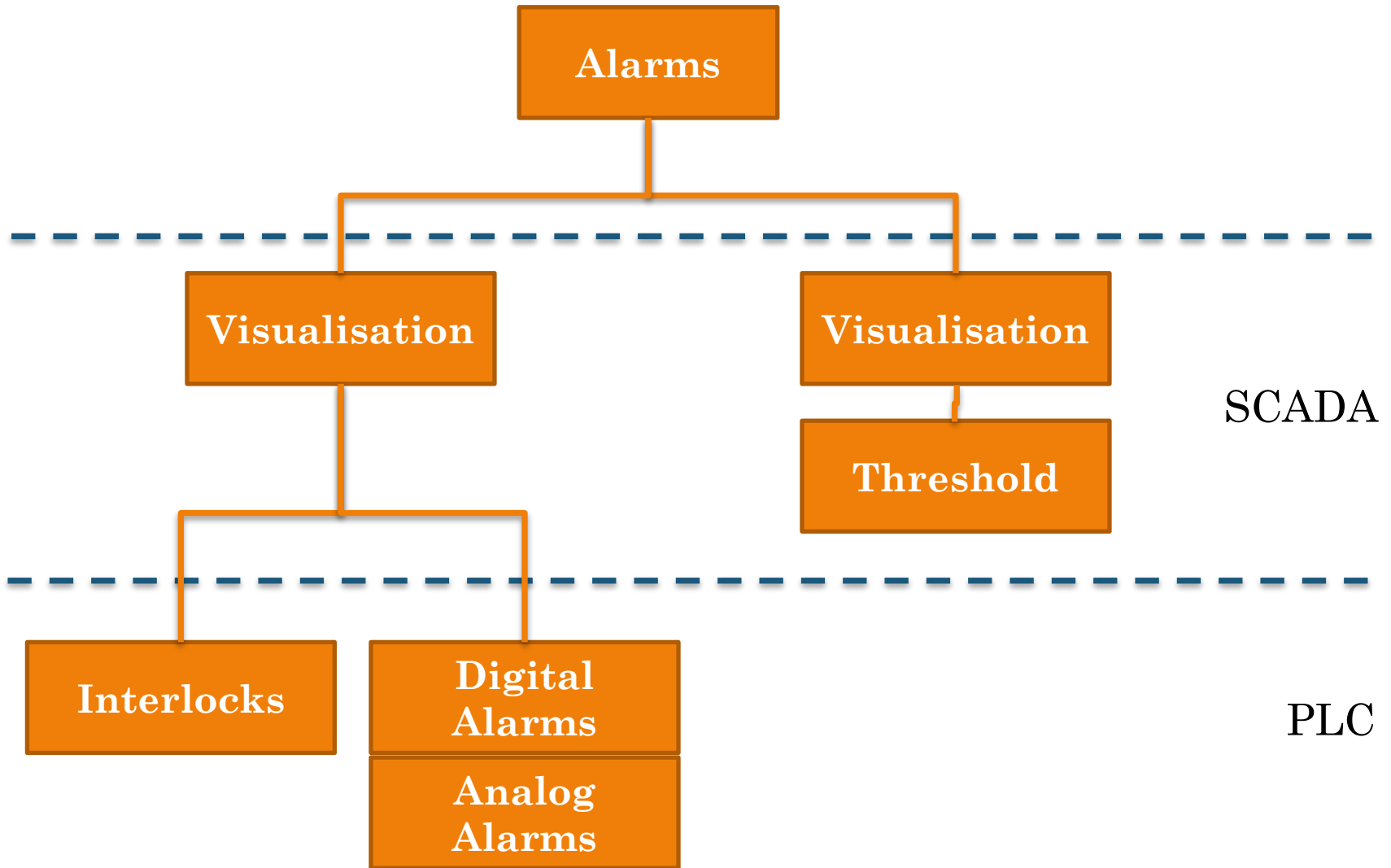
Save Restore OK Apply Cancel

Default parameters are tagged as “Saved” parameters.

There are two possible actions:

1. “**Save**” to assign the current parameters to the default ones.
2. “**Restore**” to assign the default parameters to the current ones.

2.- BASICS: ALARMS I: PRINCIPLE



2.- BASICS: ALARMS I: ANIMATION

Alarm widget shows the alarm state according to:



- Not active



- Active and not acknowledged by the operator (blinking)



- Active (acknowledge done)



- Not active and not acknowledged (blinking border)



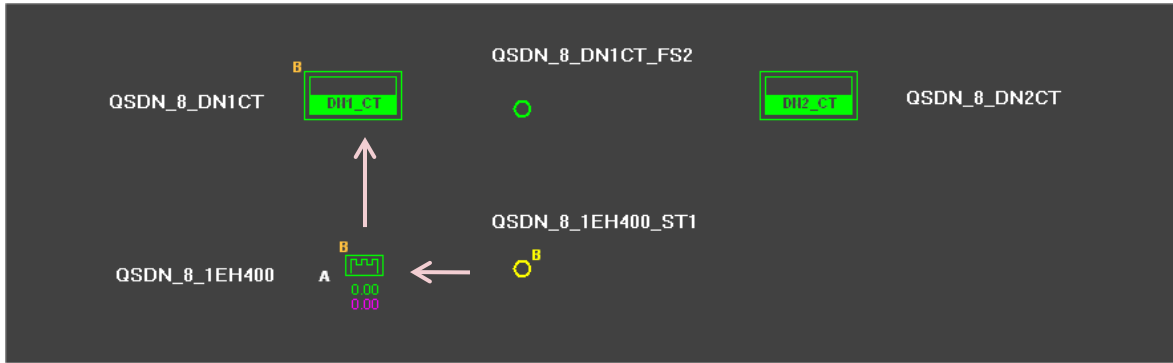
- Blocked (by the user)



- Blocked but alarm present in the input.
(W = position warning)
The alarm will be active after unblock action!

2.- BASICS: ALARMS II: PROPAGATION

Alarms are propagated to their parents to allow showing a possible blocking action by the user in a dependent object.



The screenshot shows the control interface for **QSDN_4_DN1CT Control Vessel 1**. It includes sections for Status, Operation Modes, Orders, Requests, Alarms, and Warnings. The **Alarms** section is highlighted with an orange arrow pointing to the right-hand screenshot.

Status	Operation Modes	Alarms	Warnings
On / Opened <input type="checkbox"/>	Auto <input checked="" type="checkbox"/>	Full Stop Interlock <input type="checkbox"/>	Event masked <input type="checkbox"/>
Off / Closed <input checked="" type="checkbox"/>	Manual <input type="checkbox"/>	Temporary Stop Interlock <input type="checkbox"/>	Allow restart needed <input type="checkbox"/>
ALL Alarms Blocked <input type="checkbox"/>	Forced <input type="checkbox"/>	Start Interlock <input type="checkbox"/>	Alarm blocked <input type="checkbox"/>
Temporary FullStop <input type="checkbox"/>	Local <input type="checkbox"/>	Alarm <input type="checkbox"/>	I/O Error <input type="checkbox"/>
		Alarm NotAck. <input checked="" type="checkbox"/>	Alarm Simulated <input type="checkbox"/>
			Manual <> Auto <input type="checkbox"/>

The screenshot shows the **1 - QSDN_4_DN1CT Control Vessel 1 Configured alarms** window. It displays a list of alarms under the **Full stop** tab. The **Stop Interlock** section is highlighted with an orange arrow pointing from the left-hand screenshot.

Alarm type	Alarm	Status
Full stop	QSDN_4_DN1CT_FS1 Vessel1 CtrCmd Circuit breaker Off	Alarm (A)
	QSDN_4_DN1CT_FS2 Vessel1 Low Level Switch Off	Alarm (A)
Stop Interlock	QSDN_4_DN1CT_FS4 Vessel1 Heaters1 And 3 in stop interlock status	Interlock (G)
	QSDN_4_DN1CT_FS5 Vessel1 Heaters2 And 3 in stop interlock status	Interlock (G)
	QSDN_4_DN1CT_FS7 Vessel1 Heaters1EH400 in stop interlock status	Interlock (G)
No interlock alarms	QSDN_4_DN1CT_FS8 Vessel1 1EH40010k OnSt=1 or 1EH40020k OnSt=1 or 1EH40030k OnSt=1 And 4	Interlock (G)

alarms associated to a device (analog, PCO, ...)

■ Start Interlocks

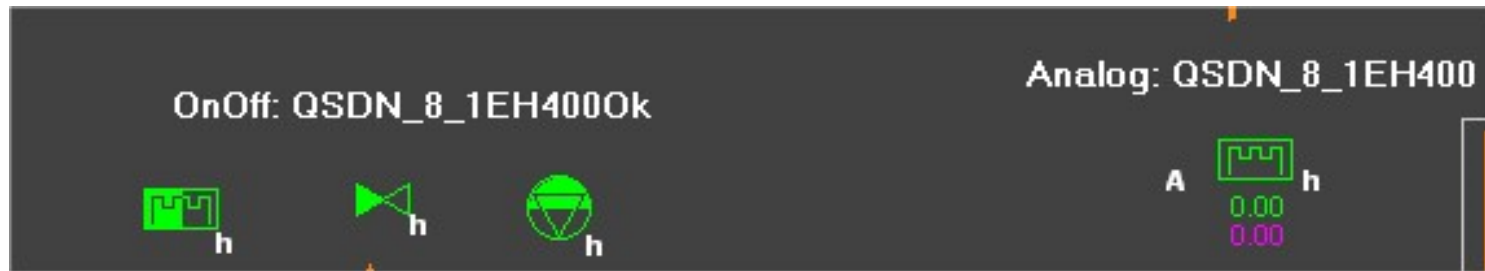
- In case of a START interlock in a field object: the body of the widget won't change its color and only the letter (I) will change to red. Still the alarm is going to be generated!.



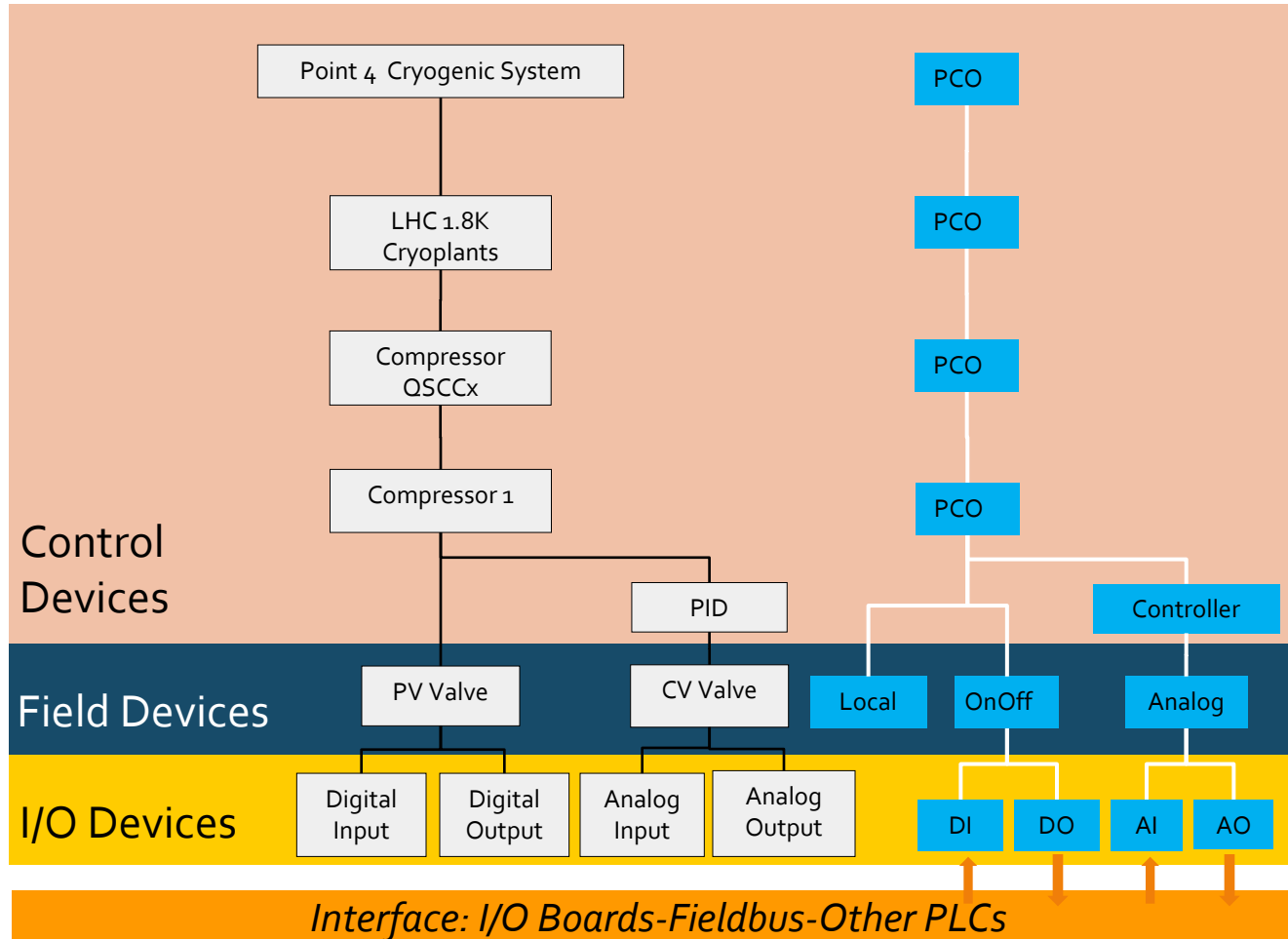
- Temporal Stop Interlock
- Full Stop Interlock
- Alarm

2. - BASICS: MODES

- Auto Inhibit Manual/Forced mode
 - Whenever the Auto Inhibit Manual/Forced pins are used in the user logic code, there will be a visible indication (“h”) in both the widgets and faceplates (apart of inhibiting the corresponding buttons).



2. – BASICS: HIERARCHY. RECALL



2. - BASICS: HIERARCHY

- Master:
- Parents:
- Children:
- FS:



HANDS-ON: GENERATE AN ALARM

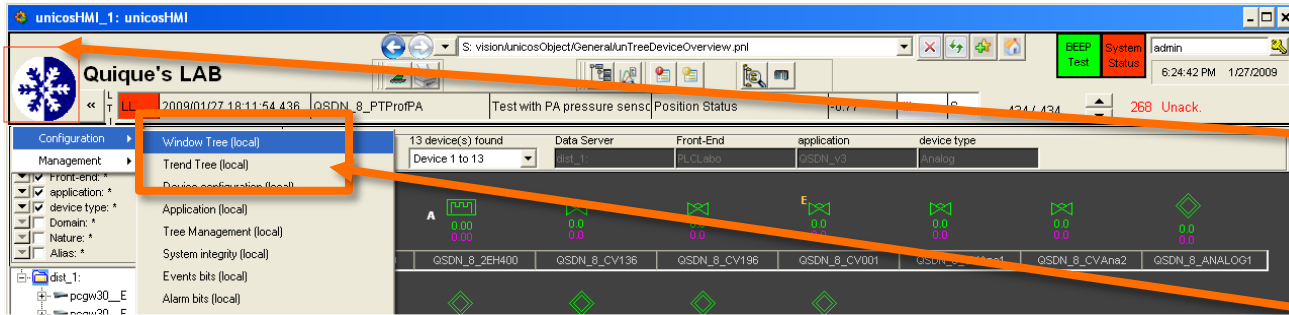
- We will:
 - Trigger an alarm from PLC



- See it in action on SCADA



2.- BASICS: WINDOW / TREND TREE

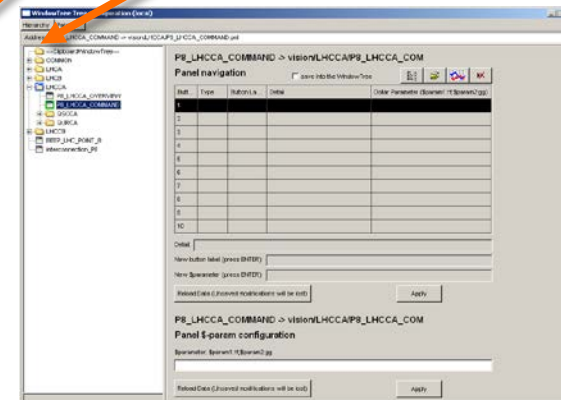
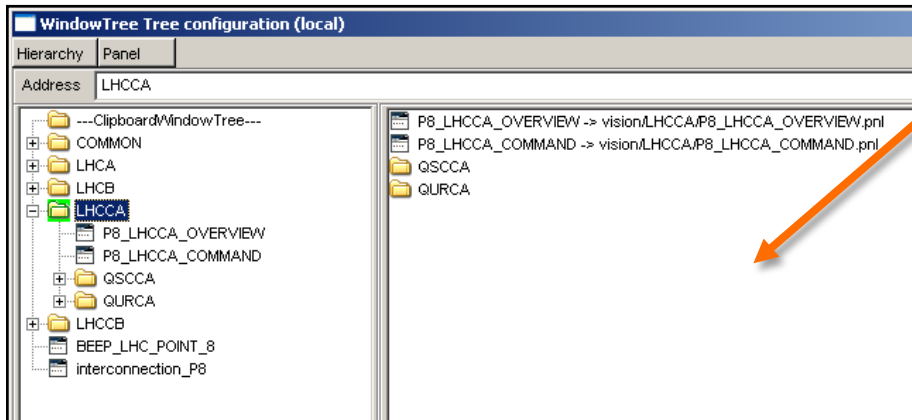


1 Click

2 Select

3 Explore to find your panel or the folder where to put the Panel

4 For each panel, you can define its navigation



2.- BASICS: PLOT CONFIGURATION

TrendTree Tree configuration (local)

Hierarchy | Plot/Page

Address Codes_defaults_T5

---ClipboardTrendTree---
 Predefined_Trends
 QSCA
 Compressors_Skid
 Regulation_Comp
 Compressors_Divers
 QSRA_QURA
 QSRA
 QURA
 PB_arret_CP1_12_5_05
 LDV
 MP
 7PC215_7PT220
 Augmentation_BP
 Start_unit_fault_CP4
 Tuning_regul_BP
 Codes_defaults_T5
 TU7
 QURA_Fusible_AO2
 QSCA_2_1LT630
 test
 QSCA_2_PC135_PT132
 Test_pression_lignes
 Test_pression_2
 Start_unit_fault_CP5
 Rechauffage_adso_BF
 _unicosHMI_2_DynamicTrend
 QSDN
 QSDN_essai
 Depotage
 QSRA_2_1TT529_1
 regeneration_ADS
 User_Defined_Trends

Plot Parameters

Plot Name P2_22:Codes_defaults_T5

Plot Title Codes_defaults_T5

Background Color Foreground Color

Time Range 0 days 1 hours 0 minutes

Show Legend Show Grid Log scale

DP Element	Legend Text	Curve			Y Axis				Archive
		Color	Type	Visible	On	Min	Max	Auto	
P2_22:QSRA_2_T5Bit2.P	QSRA_2_T5Bit2.PosSt	Blue	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
P2_22:QSRA_2_T5Bit1.P	QSRA_2_T5Bit1.PosSt	Yellow	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
P2_22:QSRA_2_T5Bit6.P	QSRA_2_T5Bit6.PosSt	Green	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
P2_22:QSRA_2_T5Bit5.P	QSRA_2_T5Bit5.PosSt	Pink	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
P2_22:QSRA_2_T5Bit4.P	QSRA_2_T5Bit4.PosSt	Cyan	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
P2_22:QSRA_2_T5Bit3.P	QSRA_2_T5Bit3.PosSt	Teal	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
		Red	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>
		Blue	Steps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	<input type="checkbox"/>	<input type="checkbox"/>

Global Settings for this plot

Steps

Template parameters can be defined in the plot title, dp elements and legends using {} brackets
 e.g. System:{datapoint}.value The template parameter values are passed to the plot when it is displayed.

Save as... Apply

DPE Selection

Filter Options

System Name

Domain

Nature

Device Type

DPName

Address

Description

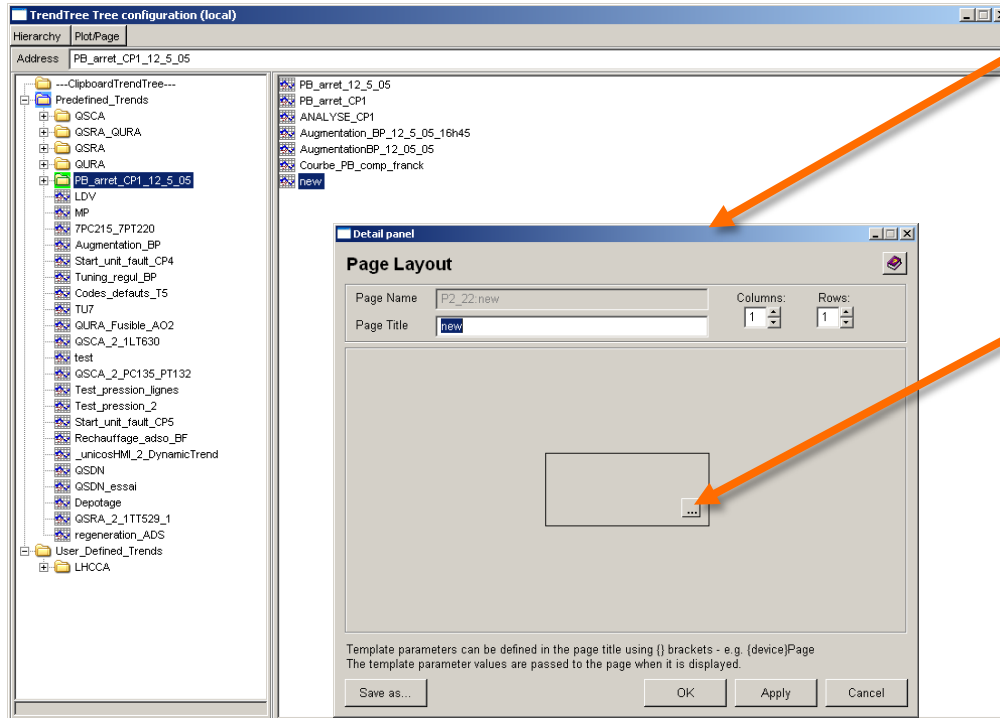
Search

UNICOS DP selector

OK Cancel

2.- BASICS: TREND PAGE CONFIGURATION

Creating a new trend page



- 1 go to configuration, trend tree, select a directory where you want to create it
- 2 Click right and choose new page
- 3 Choose an existing trend and apply

2.- HANDS-ON: ADD A TREND PLOT

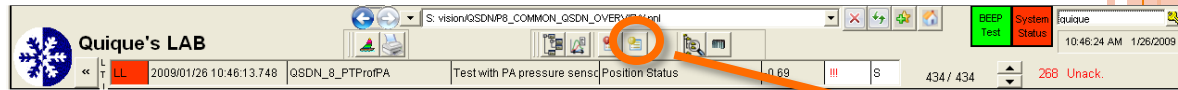
- We will:
 - Create a trend plot

- Create a trend page

OUTLINE

1. Introduction
 - ✓ Architecture
 - ✓ Terms
2. Basic Features
 - ✓ Environment & login
 - ✓ Widget & faceplate information
 - ✓ Panels (Navigation), Trending
 - ✓ Device overview
3. Diagnostic Features
 - ✓ Events & Alarms
 - ✓ Diagnostics: System Integrity & System Status,
 - ✓ Front-ends
 - ✓ Access control setup
4. OWS

3.- DIAGNOSTIC: EVENT LIST



Filter: object, alias, etc,
Save, load filter, etc.

Query time interval

Number of found event

Event List

Systems: **Idist**

Filter

Application: **GSDN** Domain: * Alias: * Description: * Invalid: *
 Device type: * Nature: * Bit: * Event: *

Start: 23/01/2014 17:31:52 Now Time zone: LOCAL
 End: 23/01/2014 17:38:44 Now

Events Total: **22**

Events shown on page: 22 Position: 1 to 22

Local Time	Alias	Description	Domain	Nature	Bit	Event	Invalid
2014.01.23 17:37:05.4	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Auto Mode Status	Falling	
2014.01.23 17:37:05.4	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Mode Status	Rising	
2014.01.23 17:37:08.11	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Different From Process	Rising	
2014.01.23 17:37:13.4	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Auto Mode Status	Rising	
2014.01.23 17:37:13.4	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Different From Process	Falling	
2014.01.23 17:37:13.4	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Mode Status	Falling	
2014.01.23 17:37:43.7	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Auto Mode Status	Falling	
2014.01.23 17:37:43.7	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Mode Status	Rising	
2014.01.23 17:37:45.9	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Different From Process	Rising	
2014.01.23 17:37:51.1	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Auto Mode Status	Rising	
2014.01.23 17:37:51.1	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Different From Process	Falling	
2014.01.23 17:37:51.1	QSDN_4_1PT400	Vessel 1- LN2 Vessel Pressure - PIW110	QSDN	AI	Forced Mode Status	Falling	
2014.01.23 17:38:17.6	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Auto Mode Status	Falling	
2014.01.23 17:38:17.6	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Forced Mode Status	Rising	
2014.01.23 17:38:21.2	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Forced Different From Process	Rising	
2014.01.23 17:38:25.6	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Auto Mode Status	Rising	
2014.01.23 17:38:25.6	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Forced Different From Process	Falling	
2014.01.23 17:38:25.6	QSDN_4_1LE400	Vessel 1- LN2 Level - PIW108	QSDN	AI	Forced Mode Status	Falling	
2014.01.23 17:38:37.7	QSDN_4_1TT4001	Vessel 1- Heater section1-Temp. control - PIW100	QSDN	AI	Auto Mode Status	Falling	
2014.01.23 17:38:37.7	QSDN_4_1TT4001	Vessel 1- Heater section1-Temp. control - PIW100	QSDN	AI	Forced Mode Status	Rising	
2014.01.23 17:38:44.9	QSDN_4_1TT4001	Vessel 1- Heater section1-Temp. control - PIW100	QSDN	AI	Auto Mode Status	Rising	
2014.01.23 17:38:44.9	QSDN_4_1TT4001	Vessel 1- Heater section1-Temp. control - PIW100	QSDN	AI	Forced Mode Status	Falling	

Lines displayed: 100 Right click opens options.

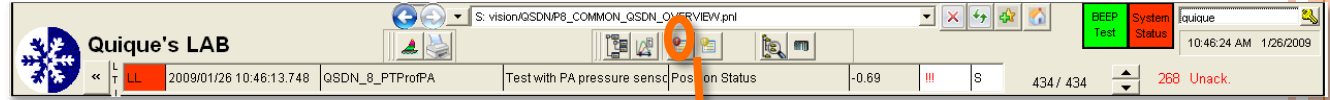
Maximum number of displayed line

Export

Print

Display Masked events

3.- DIAGNOSTIC: ALERT SCREEN: ALARMS



Mode of operation

Filters:
object type, alias, etc.

UN COS Alarm Screen

Alarm filter

Current alarms Application: Nature: * Name: * Alert text: *
 Append new alarms Device type: * Domain: * Description: * Alert state: *
 Historical alarms Start: 23/01/2014 17:36:32 End: 23/01/2014 17:46:32 Time zone: LOCAL Alias: *

Short	Local Time	Alias	Description	Domain	Nature	Name	Value	Ack.	S
L	2014.01.23 15:00:27.411	QSDN_4_DN1CT_SI1	Vessel1 Bad Level	QSDN	ALARM	Warning	TRUE		S
LL	2014.01.23 15:00:27.411	QSDN_4_DN1CT_SI1	Vessel1 Bad Level	QSDN	ALARM	Alarm	TRUE	!!!	S
L	2014.01.23 15:00:27.411	QSDN_4_DN2CT_SI1	Vessel2 Low Level	QSDN	ALARM	Warning	TRUE		S
LL	2014.01.23 15:00:27.411	QSDN_4_DN2CT_SI1	Vessel2 Low Level	QSDN	ALARM	Alarm	TRUE	!!!	S
L	2014.01.23 15:12:08.654	QSDN_4_DNCT_TS1	Air supply Low Pressure	QSDN	ALARM	Warning	TRUE		S
LL	2014.01.23 15:12:08.654	QSDN_4_DNCT_TS1	Air supply Low Pressure	QSDN	ALARM	Alarm	TRUE	!!!	S

6 alarms 3 unacknowledged Acknowledge

All selected systems online

Acknowledge
Visible alarms

- Different components could be configured to be checked by the System Integrity: PLC, Archives, drivers, ...

The screenshot shows the 'System Integrity Configuration' dialog box within the 'qsdn' application. The main window title is 'unicosHMI_1: qsdn'. The application bar shows 'qsdn' and a status bar with '1/23/2014 3:12:08 PM', 'TRUE', and '3 Unack.'. A navigation menu on the left lists various configuration options, with 'System Integrity (local)' selected. The 'System Integrity Configuration' dialog has a title bar and a green header. It features a 'System:' dropdown set to 'dist_1' and a 'unicos_scripts:' dropdown set to 'Running'. A 'Select sub-system:' list on the left contains items like DIM, DPE, File, ImportFile, PVSSDB, RDB, SOFT_FE, api, archive, ctrl, dist, driver, unicosPLC, and unicosS7PLC. The main area of the dialog is empty with the text 'No sub-system selected.'. At the bottom, there are buttons for 'Internal config ...', 'E-mail config ...', and 'Close'. The status bar at the very bottom of the application shows a timestamp '2014.01.23 17:43:21.600 INFO' and a message 'automatic deselect QSDN_4_ZEH4001Ok_ST1'.



3.- DIAGNOSTIC: SYSTEM INTEGRITY NOTIFICATIONS (EMAIL-SMS)

- Notifications are configured via email (sms) through two different categories:
- System Integrity (admin users)
- Process Alarms (expert users)

The screenshot displays the 'qsdn' software interface. The main window is titled 'E-Mail/SMS Configuration' and shows various settings for monitoring and notifications. A 'Mail / SMS Configuration' window is open, showing a table for setting limits for different process variables. An orange arrow points from the 'Set Limits PosSt' dialog box to the 'Mail / SMS Configuration' window.

	Old	New	Mail / SMS
HH	336.5	336.5	<input type="checkbox"/> category Mail/SMS
H	323.0	323.0	<input type="checkbox"/> unSystemIntegrity
L	107.0	107.0	<input type="checkbox"/> unProcessAlarm
LL	93.5	93.5	<input type="checkbox"/>

Need to acknowledge

Ok Apply Cancel

- The animation of the system status square depends on the items that have been selected in the user application. Those items must be configured in the system integrity to become selectable for the configuration
- The BEEP must be configured with a unicos ALARM in this panel.

The screenshot displays the 'Application Configuration' dialog box within the 'unicosHMI_1: qsdn' application. The interface includes a top navigation bar with a status indicator (green 'System Status'), user name ('admin'), and timestamp ('5:53:54 PM 1/23/2014'). A left-hand menu shows 'Configuration' and 'Management' options, with 'Application (local)' selected. The main configuration area is divided into sections: 'General' (Application name: qsdn, HMI logo: [empty]), 'Front-End applications' (Panel bar background colour: unCorporateColor, Panel bar foreground colour: white), 'Alarms' (Beep: [checked]), and 'Settings' (Device, Panel, Line 1, Line 2). The status bar at the bottom right shows '6/6' and '3 Unack.'.

3.- DIAGNOSTIC: SYSTEM STATUS

- The animation of the system status square depends on the items that have been selected in the user application. Those items must be configured in the system integrity to become selectable for the configuration
- There are two colors in the animation of the system status: red (critical) and orange (warning). ...).

Application Diagnostic

Main Data Server
System name: CRYO: DS hostname: cs-ccr-qlhcds1.cern.ch OWS hostname: CERNTSBE08

P4_LHCC
System: P4_43: Application name: P4_LHCC

unicos_scripts: Running unDeviceListUpdate: Running unBackup: Running Unicos script set: Running

State	Description	Value
OK	2014.01.21 10:54:56.486: (SBS) (CRYO) Communication CFP_SHM4_Q	0
OK	2014.01.06 12:24:40.307: (SBS) (CRYO) Time synchro CFP_SHM4_QSC	0
Bad	2014.01.13 10:12:46.387: (SBS) (CRYO) Communication CFP_UX45_QU	10
OK	2014.01.06 12:24:40.313: (SBS) (CRYO) Time synchro CFP_UX45_QUR	0
OK	2014.01.06 12:34:41.313: (SBS) (CRYO) Archive boolean_18k 6 Ok	0
OK	2014.01.06 12:34:41.318: (SBS) (CRYO) Archive analog_18k 7 Ok	0
OK	2014.01.06 12:34:41.317: (SBS) (CRYO) Archive event_18k 8 Ok	0
OK	2014.01.06 12:25:10.259: (SBS) (CRYO) PVSS DB file size Ok	0
OK	2014.01.07 09:06:36.037: (SBS) (CRYO) LHCLogging 1 Ok	0
OK	2014.01.22 11:04:59.310: (SBS) (CRYO) Communication CFP_SH4_QSC	0
OK	2014.01.06 12:24:40.302: (SBS) (CRYO) Time synchro CFP_SH4_QSCC	0
Bad	2014.01.16 10:09:17.617: (SBS) (CRYO) Communication CFP_UX45_QU	10
OK	2014.01.06 12:24:40.310: (SBS) (CRYO) Time synchro CFP_UX45_QUR	0
Bad	2014.01.06 12:29:40.272: (SBS) (CRYO) Archive Alarm file size Bad	40
OK	2014.01.06 12:34:41.309: (SBS) (CRYO) Archive ValueArchive_0000 0 Ok	0
Bad	2014.01.06 12:25:09.950: (SBS) (CRYO) CMWServer 10 Bad	1000



3.- DIAGNOSTIC: SYSTEM STATUS VS SYSTEM INTEGRITY

System Alert summary

The screenshot displays the 'Application Diagnostic' window for the 'Main Data Server'. The system name is 'CRYO' and the DS hostname is 'cs-cqr-qlhcds1.cern.ch'. The OWS hostname is 'CERNTSBE08'. The application 'P4_LHCC' is running. The interface includes a 'System Status' monitor window showing the time as 2:30:28 PM on 1/24/2014.

The 'Alarm List' window is open, showing a table of system alerts:

State	Description	Value
OK	2014.01.21 10:54:56.486: (SBS) (CRYO) Communication CFP_SHM4_Q	0
OK	2014.01.06 12:24:40.307: (SBS) (CRYO) Time synchro CFP_SHM4_Q	
Bad	2014.01.17 10:12:46.387: (SBS) (CRYO) Communication CFP_UX4	
OK	2014.01.18 12:24:40.313: (SBS) (CRYO) Time synchro CFP_UX45	
OK	2014.01.06 12:34:41.313: (SBS) (CRYO) Archive boolean_18k 6 Ok	
OK	2014.01.06 12:34:41.318: (SBS) (CRYO) Archive analog_18k 7 Ok	
OK	2014.01.06 12:34:41.317: (SBS) (CRYO) Archive event_18k 8 Ok	
OK	2014.01.06 12:25:10.259: (SBS) (CRYO) PVSS DB file size Ok	
OK	2014.01.07 09:06:36.037: (SBS) (CRYO) LHCLogging 1 Ok	
OK	2014.01.22 11:04:59.310: (SBS) (CRYO) Communication CFP_SH4	
OK	2014.01.06 12:24:40.302: (SBS) (CRYO) Time synchro CFP_SH4	
Bad	2014.01.16 10:09:17.617: (SBS) (CRYO) Communication CFP_UX4	
OK	2014.01.06 12:24:40.310: (SBS) (CRYO) Time synchro CFP_UX45	
Bad	2014.01.06 12:29:40.272: (SBS) (CRYO) Archive Alarm file size Ba	
OK	2014.01.06 12:34:41.309: (SBS) (CRYO) Archive ValueArchive_000	
Bad	2014.01.06 12:25:09.950: (SBS) (CRYO) CMWServer 10 Bad	

The 'Alarm List' window also includes a table with columns: Short, Local Time, Alias, Description, Domain, Nature, Name.

Alert detail

System Integrity Alert History



3.- DIAGNOSTIC: FRONT-END DIAGNOSTICS (PLC S7) (1)



Application System Status admin 12:05:27 PM 9/24/2012

2012/05/23 10:43:13.651 SCVE_Cr1_AI_XC1727 Pression XC7-27 MR Cr1 Position Status 62/ 62 55 Unack.

Front-End Diagnostic

Configured Front-Ends

System: dist_1

CFP_LABO_BEN

Checked Front-End Alarms

State	Description
OK	2014.01.23 15:07:43.667: Communication (TSPP PLC watchdog) CFP_LABO_BEN -> DS driver 2 C
OK	2014.01.23 15:12:20.803: Time synchronization CFP_LABO_BEN -> DS driver 2 Ok
OK	2014.01.23 15:58:29.823: S7 driver TSPP/polling connection CFP_LABO_BEN -> DS driver 2 Ok

Enable / Disable S7_PL_CFP_LABO_BEN Sync. date / time Request all data Delete sub-apps

Configuration

Sub-applications: QSDN	Import time: 2014.01.22 18:09:56.267	Analog archive: analog	Boolean archive: boolean	Event archive: event
------------------------	--------------------------------------	------------------------	--------------------------	----------------------

Status: Enabled Driver: 2 S7: Running

Specific Information

Type: S7-300 PN/DP

PLC name: CFP_LABO_BEN

_S7_Conn: _CFP_LABO_BEN

Send IP: 0

DS IP: 188.184.20.253

Import vers.: CPC6

Last GQ: 2014.01.23 15:58:34.713

PLC alarms

State	Description	Value
OK	2014.01.23 15:07:43.667: Communication (TSPP PLC watchdog) CFP_LABO_BEN -> DS d	0
OK	2014.01.23 15:12:20.803: Time synchronization CFP_LABO_BEN -> DS driver 2 Ok	0
OK	2014.01.23 15:58:29.823: S7 driver TSPP/polling connection CFP_LABO_BEN -> DS driver :	0

Alarm text:

Alarm value:

Communication S7 static data Version PLC info PLC command interface Run-time data

PLC -> DS Counter: 2278 Invalid

Timestamp: 2014.01.23 17:57:16.314

Close



3.- DIAGNOSTIC: FRONT-END DIAGNOSTICS (PLC S7) (2)



Application System Status admin 12:05:27 PM 9/24/2012

2012/05/23 10:43:13.651 SCVE_Cr1_AI_XC1727 Pression XC7-27 MR Cr1 Position Status 62/ 62 55 Unack.

Front-End Diagnostic

Configured Front-Ends

System: dist_1

CFP_LABO_BEN

Checked Front-End Alarms

State	Description
OK	2014.01.23 15:07:43.667: Communication (TSPP PLC watchdog) CFP_LABO_BEN -> DS driver 2 C
OK	2014.01.23 15:12:20.803: Time synchronization CFP_LABO_BEN -> DS driver 2 Ok
OK	2014.01.23 15:58:29.823: S7 driver TSPP/polling connection CFP_LABO_BEN -> DS driver 2 Ok

Enable / Disable S7_PLC_CFP_LABO_BEN Sync. date / time Request all data Delete sub-apps

Configuration

Sub-applications: QSDN	Import time: 2014.01.22 18:09:56.267	Analog archive: analog	Boolean archive: boolean	Event archive: event
------------------------	--------------------------------------	------------------------	--------------------------	----------------------

Status: Enabled Driver: 2 S7: Running

Specific Information

Type: S7-300 PN/DP

PLC name: CFP_LABO_BEN

_S7_Conn: _CFP_LABO_BEN

Send IP: 0

DS IP: 188.184.20.253

Import vers.: CPC6

Last GQ: 2014.01.23 15:58:34.713

PLC alarms

State	Description	Value
OK	2014.01.23 15:07:43.667: Communication (TSPP PLC watchdog) CFP_LABO_BEN -> DS d	0
OK	2014.01.23 15:12:20.803: Time synchronization CFP_LABO_BEN -> DS driver 2 Ok	0
OK	2014.01.23 15:58:29.823: S7 driver TSPP/polling connection CFP_LABO_BEN -> DS driver :	0

Alarm text:

Alarm value:

Communication S7 static data Version PLC info PLC command interface **Run-time data**

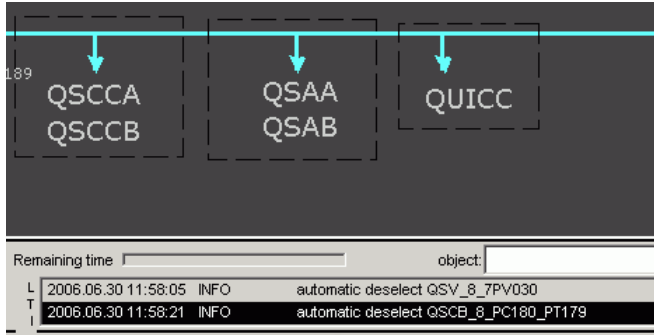
TSPP	Error code: 0	<input checked="" type="checkbox"/> Connected	Polling	Error code: 0	<input checked="" type="checkbox"/> Connected
Se.F: 0	Re.F: 1611	Rj.F: 0	Se.F: 4025	Re.F: 2121	Rj.F: 0



3. HANDS-ON: RE-IMPORT DEVICES



3.- DIAGNOSTIC: OTHER DIAGNOSTICS (LOG HISTORY)



Log History

Filter: Start time: 24/01/2014 14:11:53, End time: 24/01/2014 14:41:53, Time zone: LOCAL

Messages: Total: 661

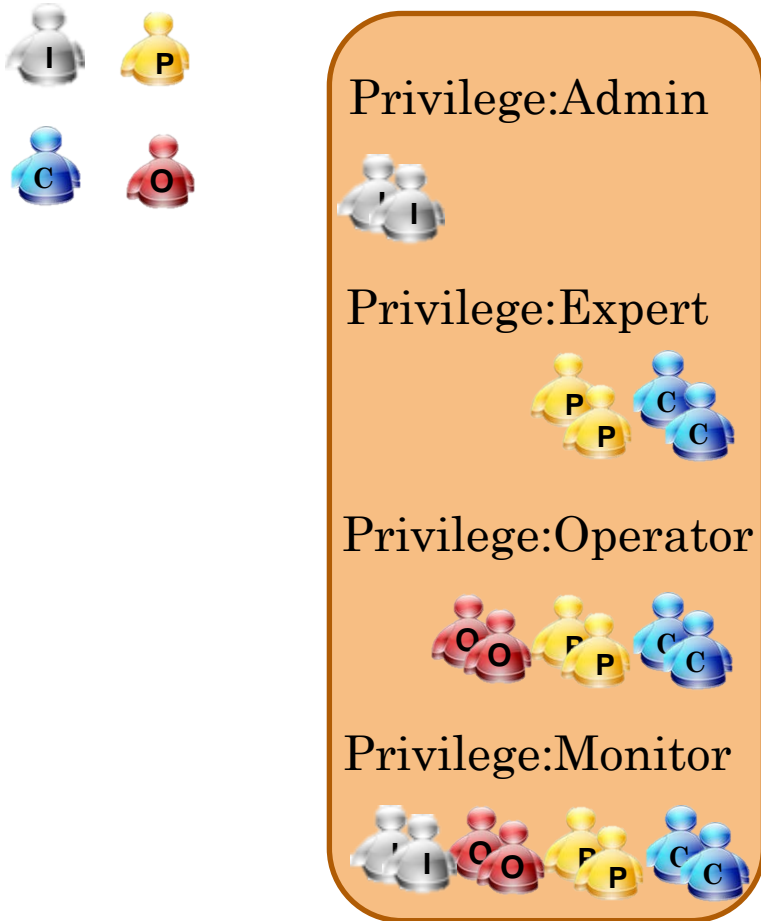
Position: 312 to 661

Local time	Type	Text
2014.01.24 14:23:12.913	INFO	Select QSCA_6_CV180
2014.01.24 14:23:15.794	INFO	QSCA_6_CV180 auto mode request sent.
2014.01.24 14:23:19.120	INFO	Select QSCA_6_CV189
2014.01.24 14:23:22.088	INFO	QSCA_6_CV189 auto mode request sent.
2014.01.24 14:23:31.981	INFO	Select QSCA_6_1TC567_1TT639
2014.01.24 14:23:36.770	INFO	QSCA_6_1TC567_1TT639 manual mode request sent.
2014.01.24 14:24:10.160	INFO	QSCA_6_1TC567_1TT639 PID limits set to SetPointH=40, SetPointL=0, OutputH=100, OutputL=40
2014.01.24 14:24:18.633	INFO	Select QSCA_6_7TC567_7TT669
2014.01.24 14:24:22.654	INFO	QSCA_6_7TC567_7TT669 manual mode request sent.
2014.01.24 14:24:31.514	INFO	QSCA_6_7TC567_7TT669 PID limits set to SetPointH=40, SetPointL=0, OutputH=100, OutputL=40
2014.01.24 14:25:12.932	INFO	Select QSCA_6_1CV567
2014.01.24 14:25:19.089	INFO	Select QSCA_6_1TC567_1TT639
2014.01.24 14:25:20.236	INFO	QSCA_6_1TC567_1TT639 Please wait, request is being sent to the PLC.
2014.01.24 14:25:29.770	INFO	QSCA_6_1TC567_1TT639 regulation mode request sent.
2014.01.24 14:27:27.828	INFO	automatic deselect QSCA_6_1TC567_1TT639
2014.01.24 14:27:30.934	INFO	Select QSCA_6_CSC7
2014.01.24 14:27:34.743	INFO	QSCA_6_CSC7 manual mode request sent.
2014.01.24 14:27:39.780	INFO	Select QSCB_18_1PT126
2014.01.24 14:27:44.526	INFO	Select QSCA_6_CSC1
2014.01.24 14:27:48.814	INFO	QSCA_6_CSC1 manual mode request sent.
2014.01.24 14:27:55.595	INFO	Select QSCB_18_1PT130
2014.01.24 14:29:46.956	INFO	automatic deselect QSCA_6_CSC1
2014.01.24 14:29:55.980	INFO	automatic deselect QSCB_18_1PT130
2014.01.24 14:29:57.428	INFO	QSKA_6_QSKA_CT acknowledgement successful.
2014.01.24 14:33:40.814	INFO	Select QSCA_6_PV198
2014.01.24 14:33:44.952	INFO	QSCA_6_PV198 manual mode request sent.
2014.01.24 14:34:36.920	INFO	QSCA_6_PV198 on/open request sent.
2014.01.24 14:35:13.221	INFO	Select QUIC_8_7PT731
2014.01.24 14:36:35.042	INFO	automatic deselect QSCA_6_PV198
2014.01.24 14:37:13.357	INFO	automatic deselect QUIC_8_7PT731

Lines displayed: 100 Right click opens options.

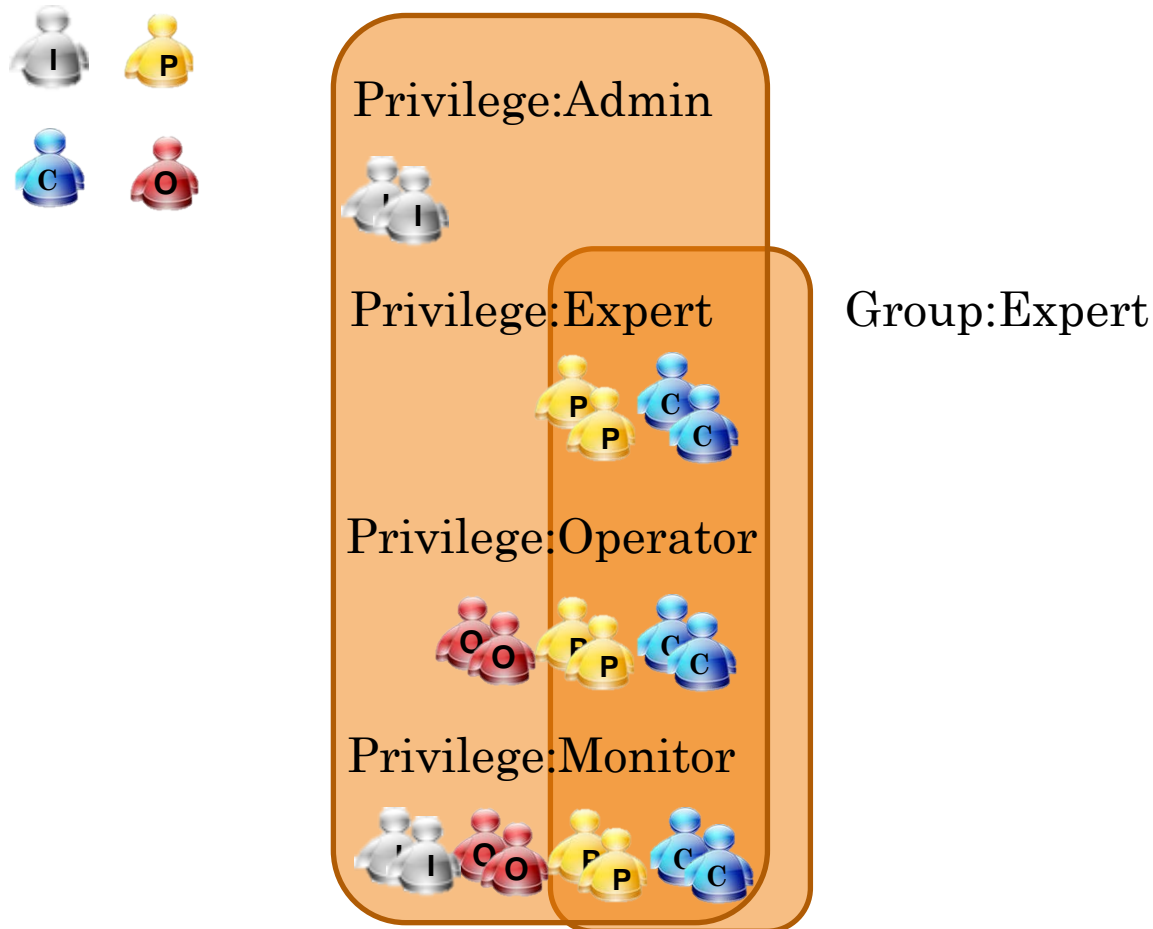
3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



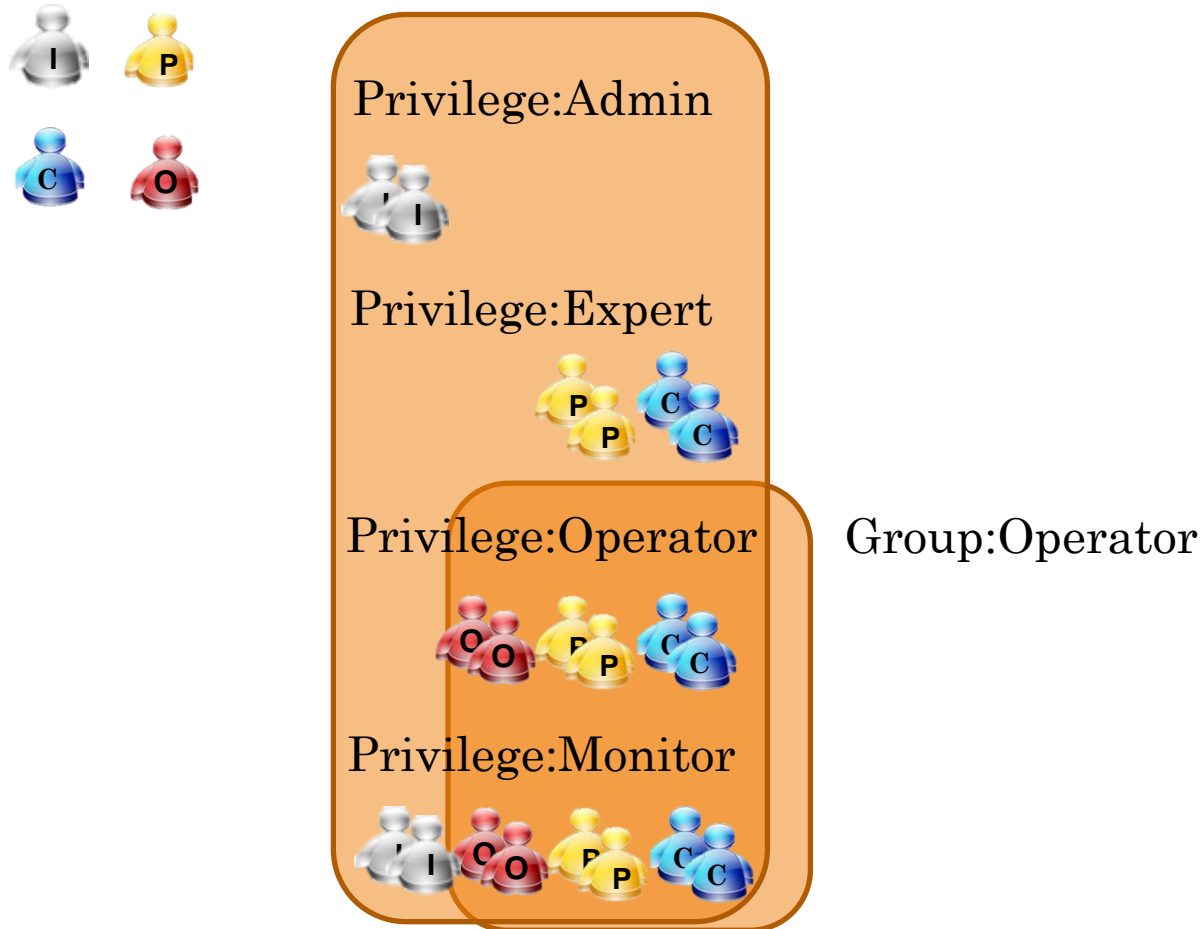
3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



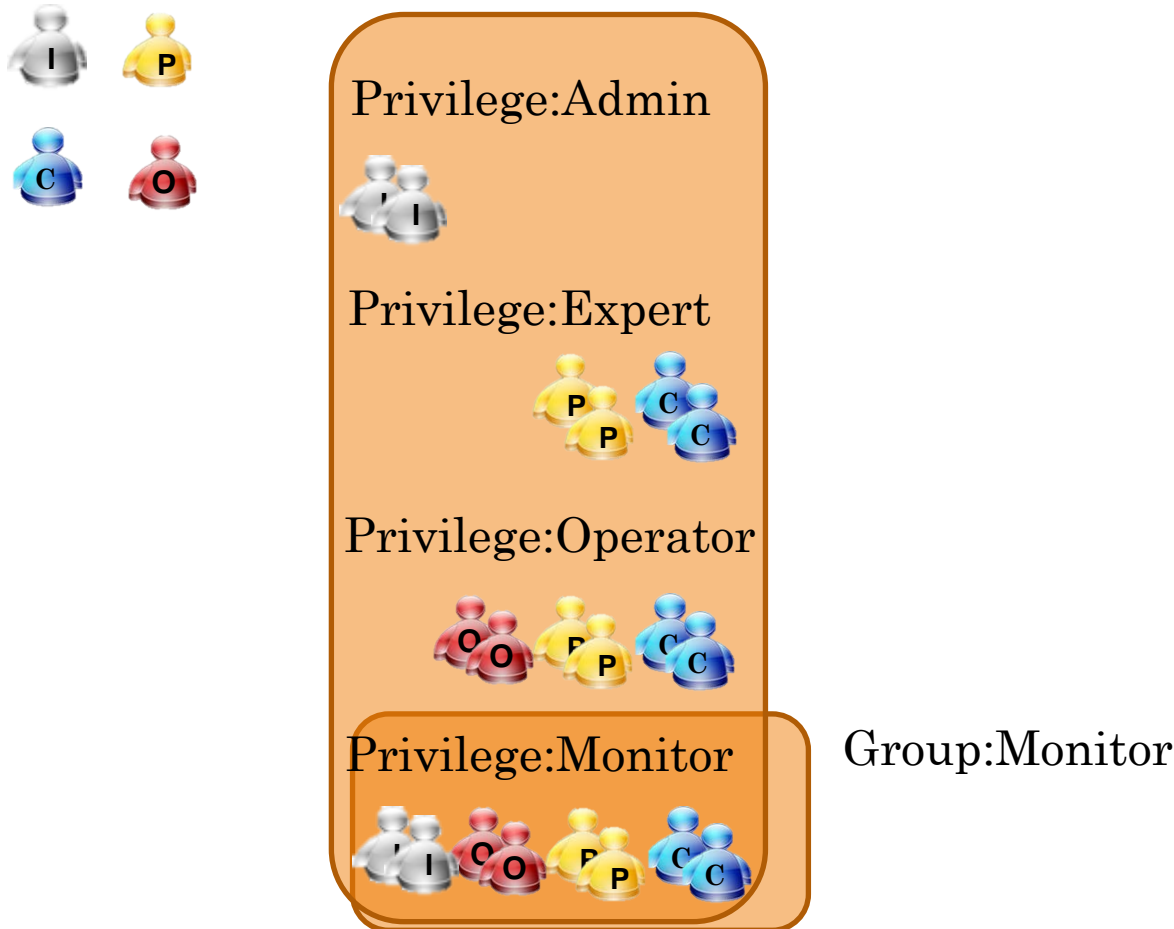
3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



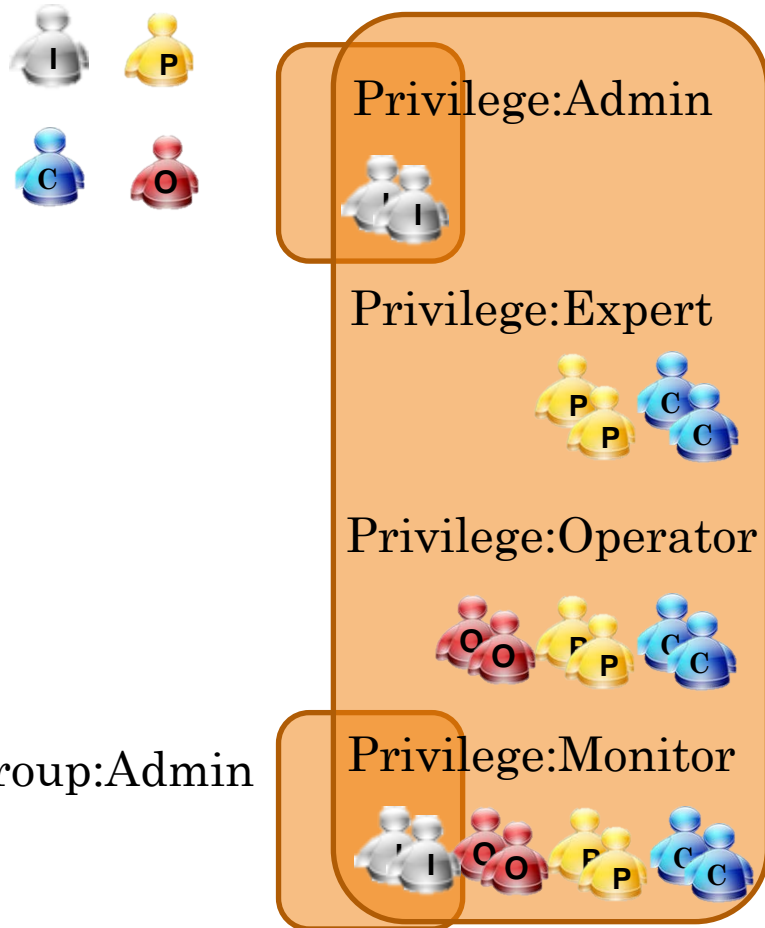
3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



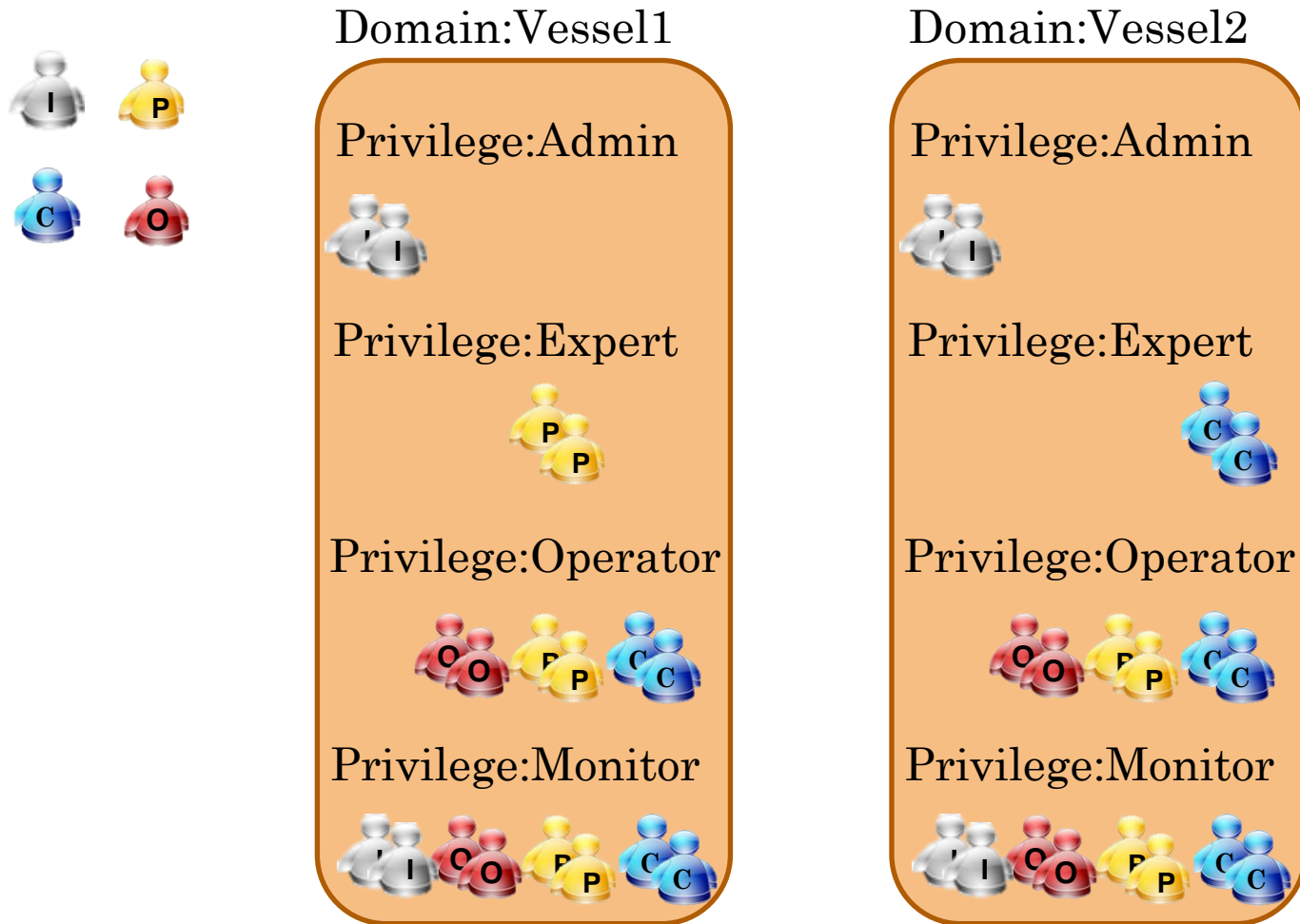
3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



3.- DIAGNOSTIC: ACCESS CONTROL

■ AC principle:



3.- DIAGNOSTIC: ACCESS CONTROL

- Default UNICOS AC roles:

Group	Can act on the domains	With the privileges
admin	UNICOS	admin, expert, operator, monitor
expert	UNICOS	expert, operator, monitor
operator	UNICOS	operator, monitor
monitor	UNICOS	monitor

- Default UNICOS AC users:

User	Group
admin	admin
expert	expert
operator	operator
monitor	monitor

AC: protection from non-malicious, erroneous actions

3.- HANDS-ON: ACCESS CONTROL

- Let's create new AC rules!
- We begin with new groups:

Group	Can act on the domains	With the privileges
cryoExpert	UNICOS	expert, operator, monitor
cryoOperator	UNICOS	operator, monitor
sysAdmin	UNICOS	admin, monitor

- How we set up AC in production:
UNICOS_Access_Control_Domains.docx
- We recommend you to use e-groups!

3.- HANDS-ON: ACCESS CONTROL

Create new group

JCOP Framework Access Control: create new group

Group name: id:

Group full name:

Description/expertise level:

Granted access rights:

Domain	Privilege

Show all system privileges

Included groups

Included groups

Show all groups recursively

Synchronize with e-group:

Group name = cryoExpert
 Edit Granted access rights
 Domain = UNICOS
 Privileges = 21,22,23
 Click >
 OK and Close

Edit privileges of group

JCOP Framework Access Control

Group:

Access Rights

Domain:

ID	Privilege
21	monitor
22	operator
23	expert
24	admin

Granted privileges:

Show all granted privileges

Domain	Privilege
UNICOS	monitor
UNICOS	operator
UNICOS	expert

3.- HANDS-ON: ACCESS CONTROL

- Let's add new users:

User	Task	Group
fritz	He is the process engineer	cryoExpert
jean	He is the shifter	cryoOperator
maria	She manages the SCADA mainenance	sysAdmin

3.- HANDS-ON: ACCESS CONTROL

Example: adding fritz

Log-in as root, right-click on the key/Administration/Users

The screenshot shows a control system interface with a 'List of Users' dialog box open. The dialog title is 'List of Users' and it contains a table of users. Below the table, it shows 'Number of users: 10' and a 'Filter:' input field. At the bottom of the dialog are 'Add', 'Delete', and 'Edit' buttons. An orange arrow points from the 'Administration' menu item in the top right corner of the main window to the 'Add' button in the dialog.

Name	Full Name
root	root
para	para
operatorAll	operatorAll
operator	operator
guest	guest
gast	gast
demo	demo
monitor	monitor
expert	expert
admin	admin

3.- HANDS-ON: ACCESS CONTROL

JCOP Framework Access Control: edit user

User name: id: 1

User full name: Fritz Schmidt

Description: Cryogenics expert

Account enabled

Password

Leave unchanged

Set new

Reset to empty

Reset to random

Local authentication

Group membership:

Group Name
cryoExpert

User name = fritz
Edit Group membership, add cryoExpert
Ok, Close

JCOP Framework Access Control

Group membership for user: fritz

All Groups:

Group Name
root
para
operatorAll
operator
guest
monitor
expert
admin
cryoExpert

Member of:

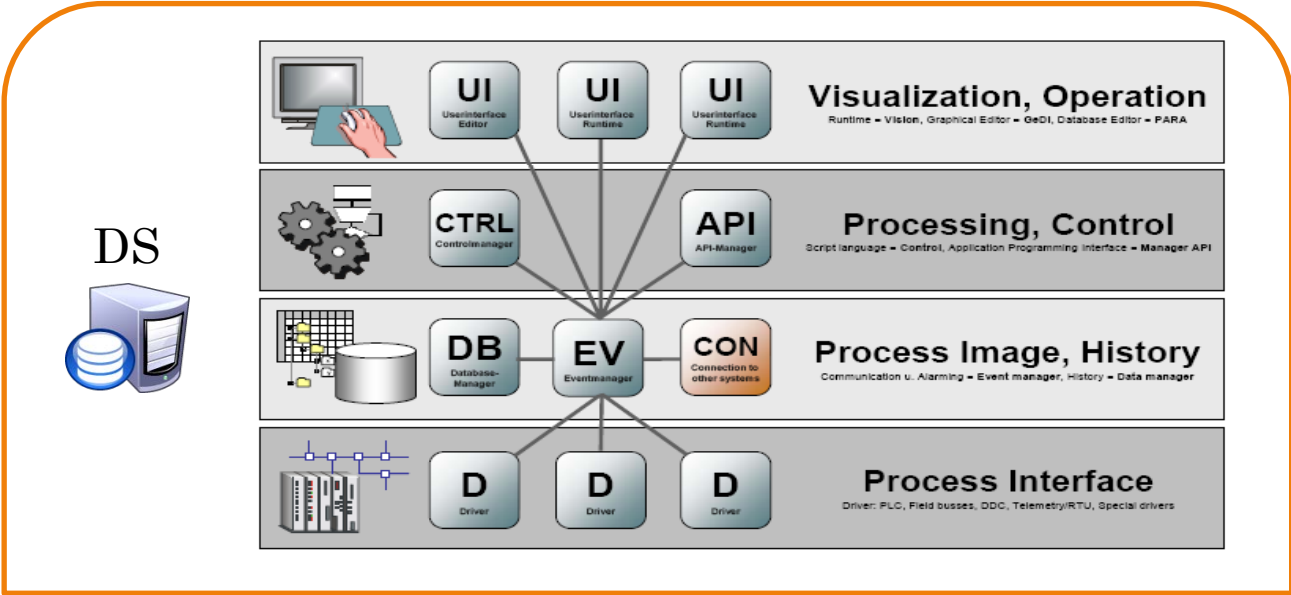
Group Name
cryoExpert

OUTLINE

1. Introduction
 - ✓ Architecture
 - ✓ Terms
2. Basic Features
 - ✓ Environment & login
 - ✓ Widget & faceplate information
 - ✓ Panels (Navigation), Trending
 - ✓ Device overview
3. Diagnostic Features
 - ✓ Events & Alarms
 - ✓ Diagnostics: System Integrity & System Status,
 - ✓ Front-ends
 - ✓ Access control setup
4. **OWS**

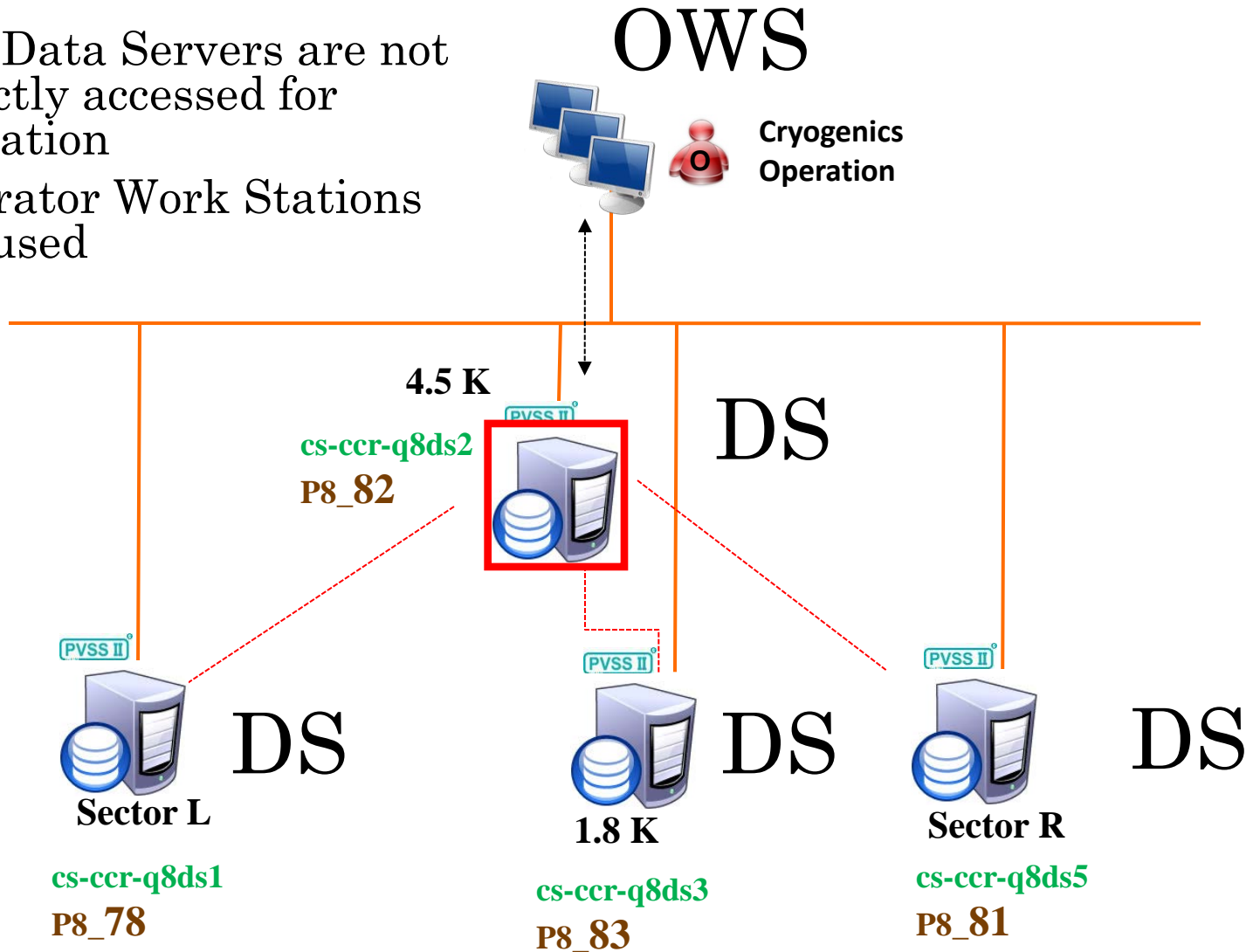
4. OWS: REMOTE UI = OWS

- OWS = Operator Work Station
 - package with a Remote UI WinCC OA project
- UI connection to the DS



4. OWS: REMOTE UI: WHY?

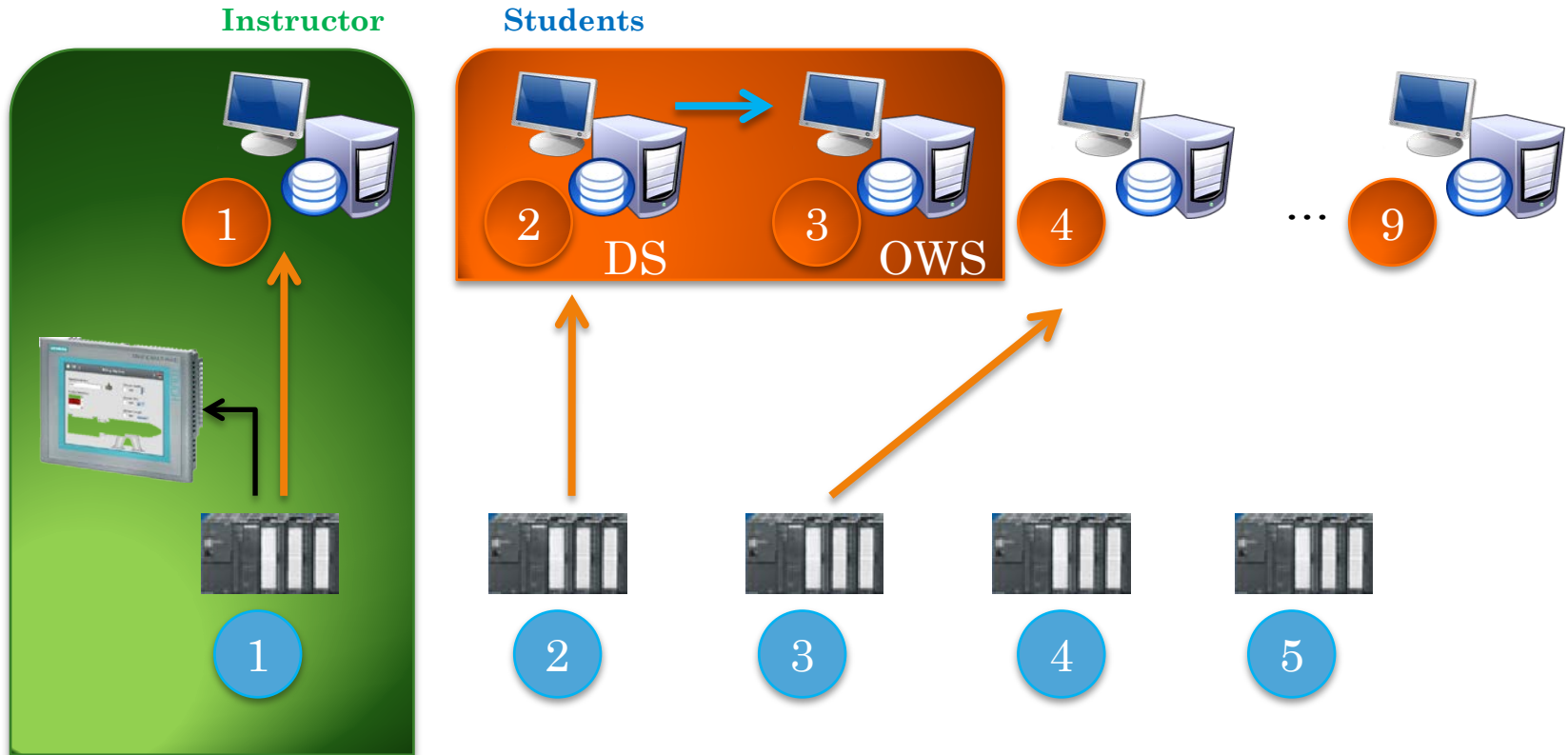
- The Data Servers are not directly accessed for operation
- Operator Work Stations are used



----- Distributed connection

4. HANDS-ON: OWS SETUP

We are now going to do this setup:
1 PLC → 1 DS → 1 OWS



4. HANDS-ON: OWS SETUP

- Make your project accessible
 - With windows Explorer, go to your project directory
 - Setup the Share option, name the folder alias as PVSS_projects.
 - E.g. if you have PVSS_projects/QSDN/QSDN, share PVSS_projects, set it visible with the name PVSS_projects.

4. HANDS-ON: OWS SETUP

■ Get OWS

- Install from CMF if possible!

Or

- download the OWS:

<http://j2eeps.cern.ch/wikis/display/EN/UNICOS+OWS>

- Unzip it to C:\temp
- Run Install-unicos-wcco-a-OWS.bat as admin
- Open WinCC OA Project Administrator
- Register the project [Ctrl+R] :
 - C:\dev_disk\PVSS_projects\OWS_3.11
- With Windows Explorer, go to
C:\dev_disk\PVSS_projects\OWS_3.11\examples\unicosO
WS-HMI
- Make a copy of unicosHMI.bat,
- Rename the copy to qsdnHMI.bat

4. HANDS-ON: OWS SETUP

■ Edit qsdnHMI.bat

```
::starting PVSS00ui with 1 screen

@echo OFF

set PVSS_PATH=C:\Siemens\Automation\WinCC_OA\3.11\bin

set DS_HOSTNAME=yourPcName

set DS_PROJECTPATH=PVSS_projects\QSDN\QSDN

start /B %PVSS_PATH%\WCCOAui -p
vision/graphicalFrame/unicosHMI.pnl -proj OWS_3.11 -
iconBar -menuBar -style windows +config
\\%DS_HOSTNAME%\%DS_PROJECTPATH%\config\config_ows
```



4. HANDS-ON: OWS SETUP



- Run qsdnHMI.bat



UNICOS DOWNLOADS



- UNICOS CPC

<http://unicos.web.cern.ch/download-unicos>

- Support Contact:

icecontrols.support@cern.ch