



**ATLAS
DCS**

ATLAS Control Room Interface

**Prepared by Alex Barriuso Poy
Central ATLAS DCS**



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Purpose

◆ **Advertise Developments**

- Comments welcome
- Common interest

◆ **Highlight Limitations**

- Missing functionality
- Limits of current version



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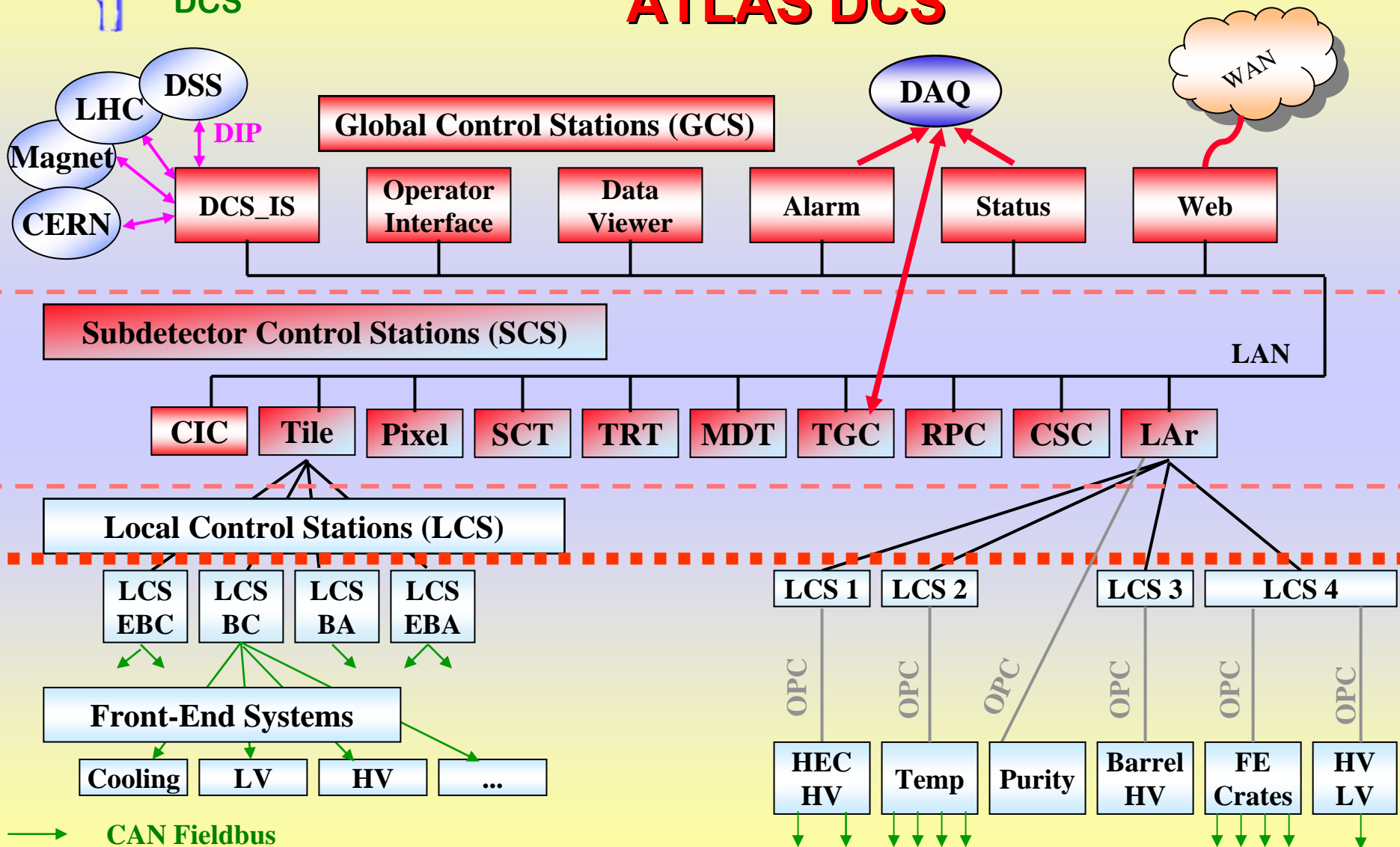
Outline

- ◆ **Introduction. Top Level Interface**
- ◆ **The FSM tool**
- ◆ **Operator Interface. The “fwFsmAtlas” component**
- ◆ ***Demonstration***
- ◆ **Conclusions**



Introduction

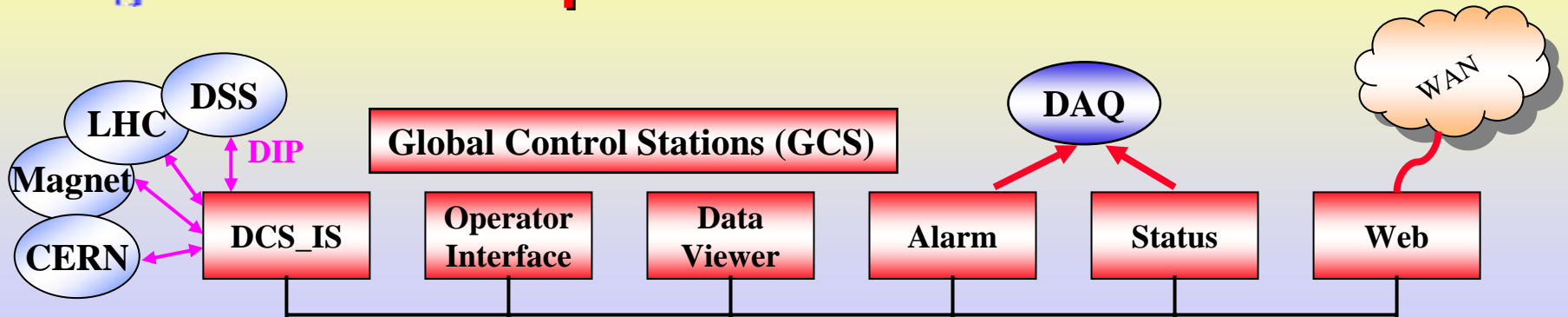
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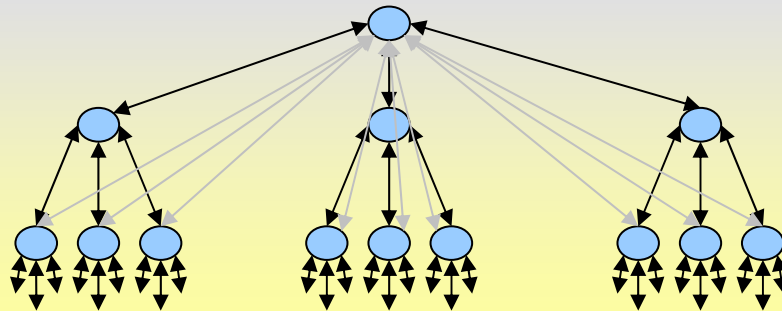


Introduction

Top Level Constituent Parts



- ◆ **DSS** works stand-alone independent of the **DCS**
- ◆ The top level DCS interfaces to ~160 PCs

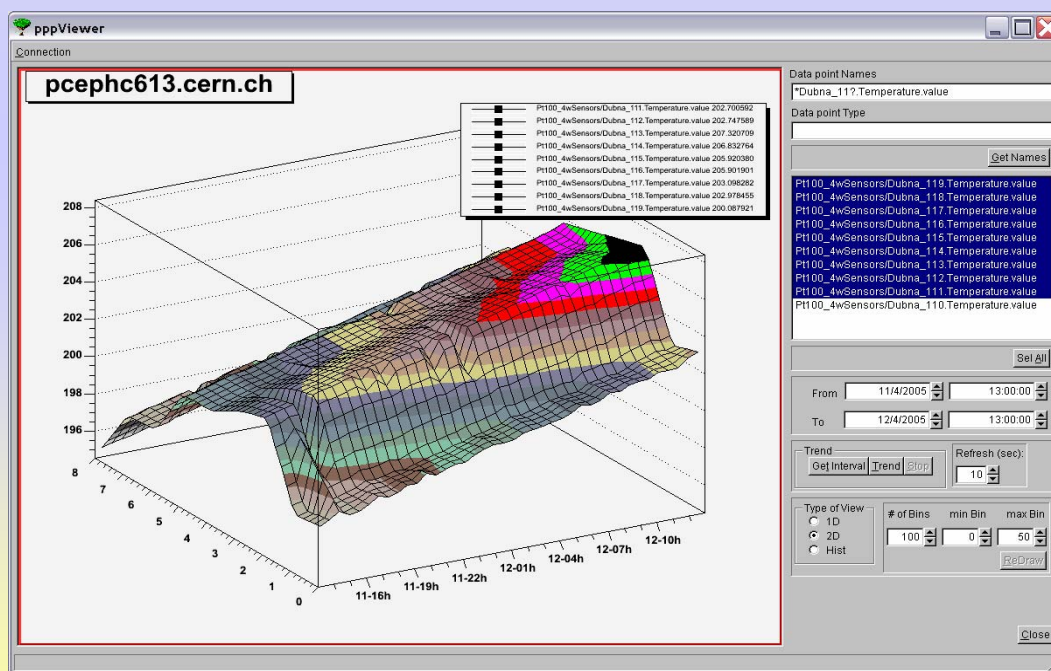




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Data Viewer

- ◆ PVSS II functionality limited. Substantial improvements in next release
- ◆ Meanwhile users could use ROOT on demand
- ◆ Decision to be made when PVSS II 3.5 available



Real time data plotted in ROOT from the LAr cooldown test (April 05)



Alarm Screen

- ◆ Access to any alert in the system from a single Alarm Screen
- ◆ Alerts are sent if a value changes from one alert range to another
- ◆ Order of lines according to severity then time
- ◆ Possibility for limited filtering (button to return to default state)
- ◆ Possibility to acknowledge (and comment) when an alarm comes, but it is possible that it goes away without acknowledge
- ◆ Automatic functions can be assigned to alerts (sound signal)
- ◆ PVSS 3.5 new alert panel
 - June 06
 - *Improvements in filtering?*

[illegible]

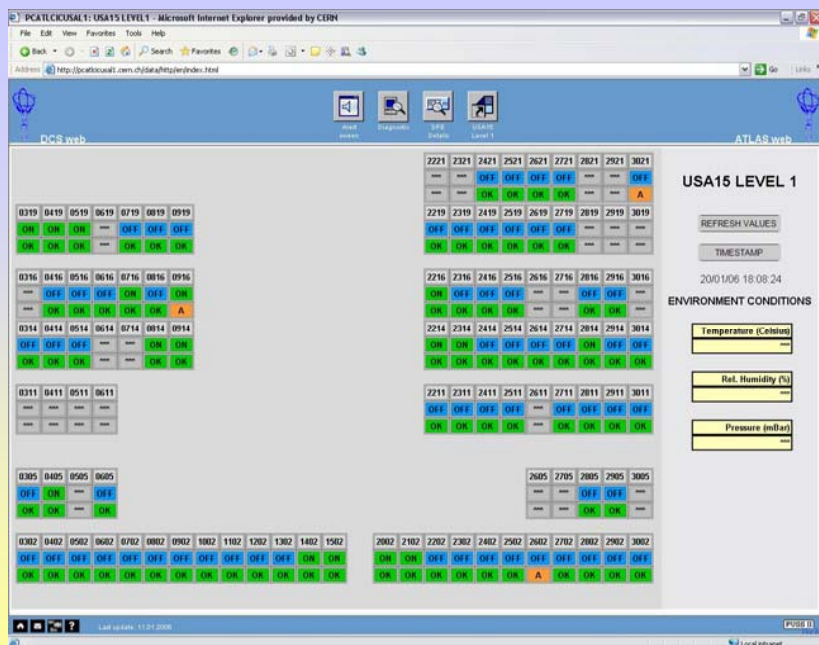


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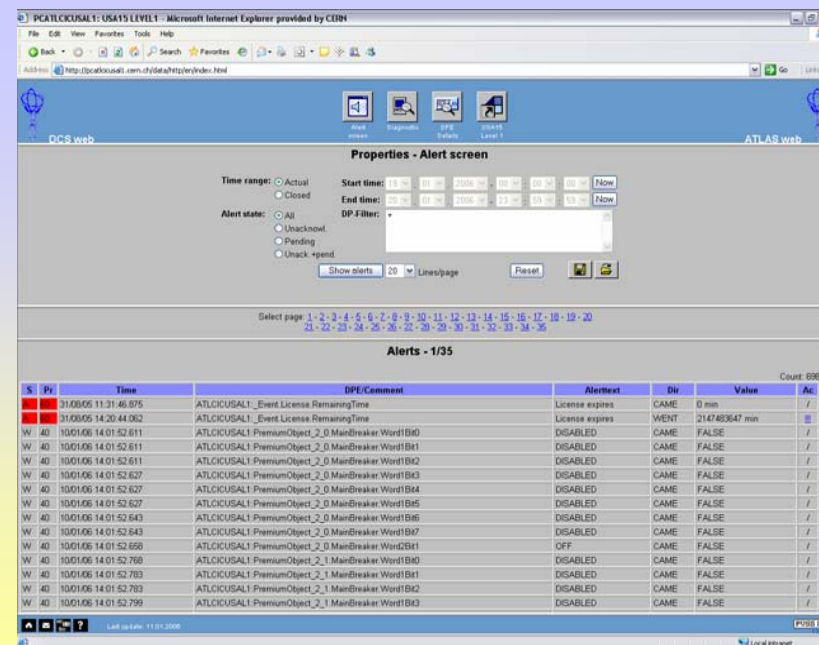
WEB

<http://atlas.web.cern.ch/Atlas/GROUPS/DAQTRIG/DCS/dcshome.html>

- ◆ DCS information available directly from your web browser
- ◆ Interaction not possible, only for data displaying
- ◆ Accessibility dependent on the ATLAS network policy. At present, special proxy setup needed
- ◆ Web applications already working in the pit for rack monitoring in USA15 level 1 and level 2
- ◆ *Improvements in PVSS II 3.5?*



User Information



Expert Information



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Outline

- ◆ Introduction. Top Level Interface
- ◆ The FSM tool
- ◆ Operator Interface. The “fwFsmAtlas” component
- ◆ Demonstration
- ◆ Conclusions

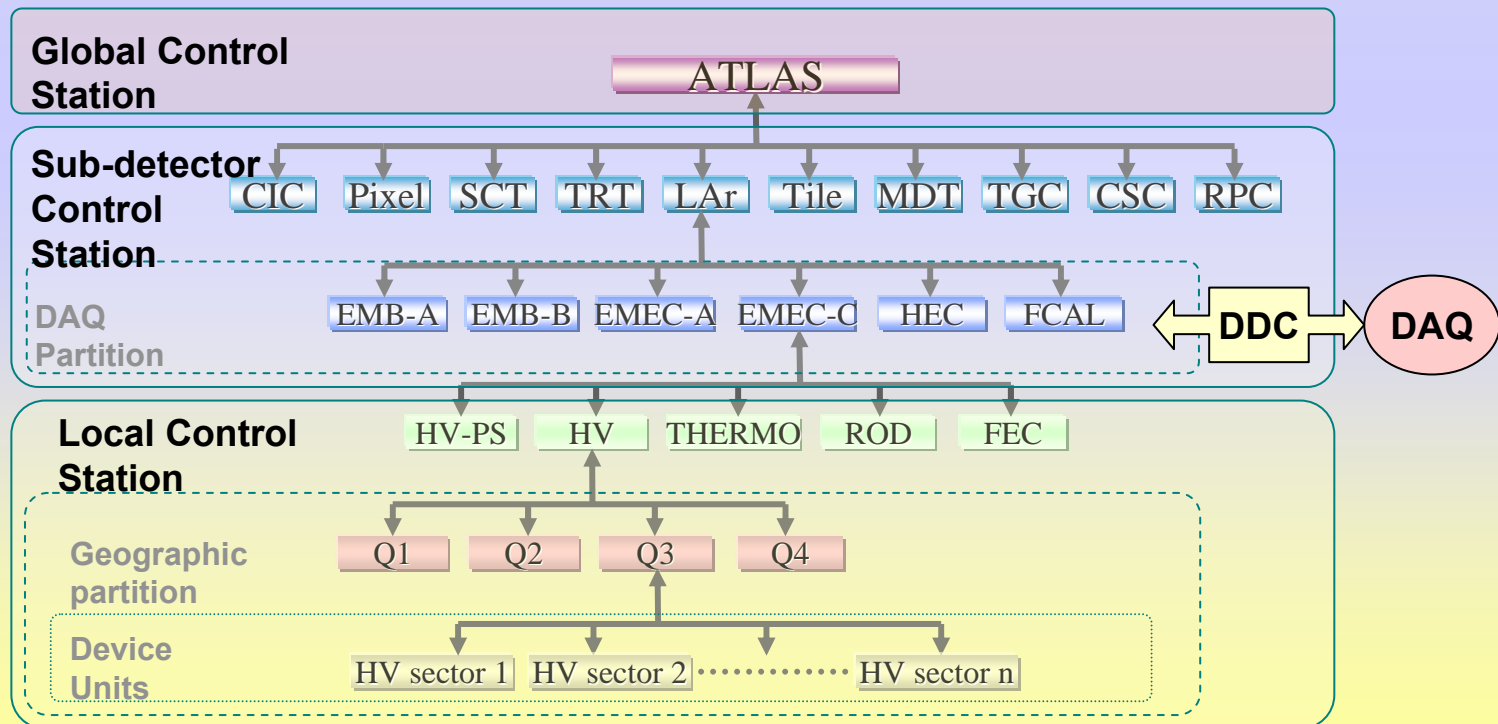


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Operator Interface

Finite State Machine (FSM) Architecture

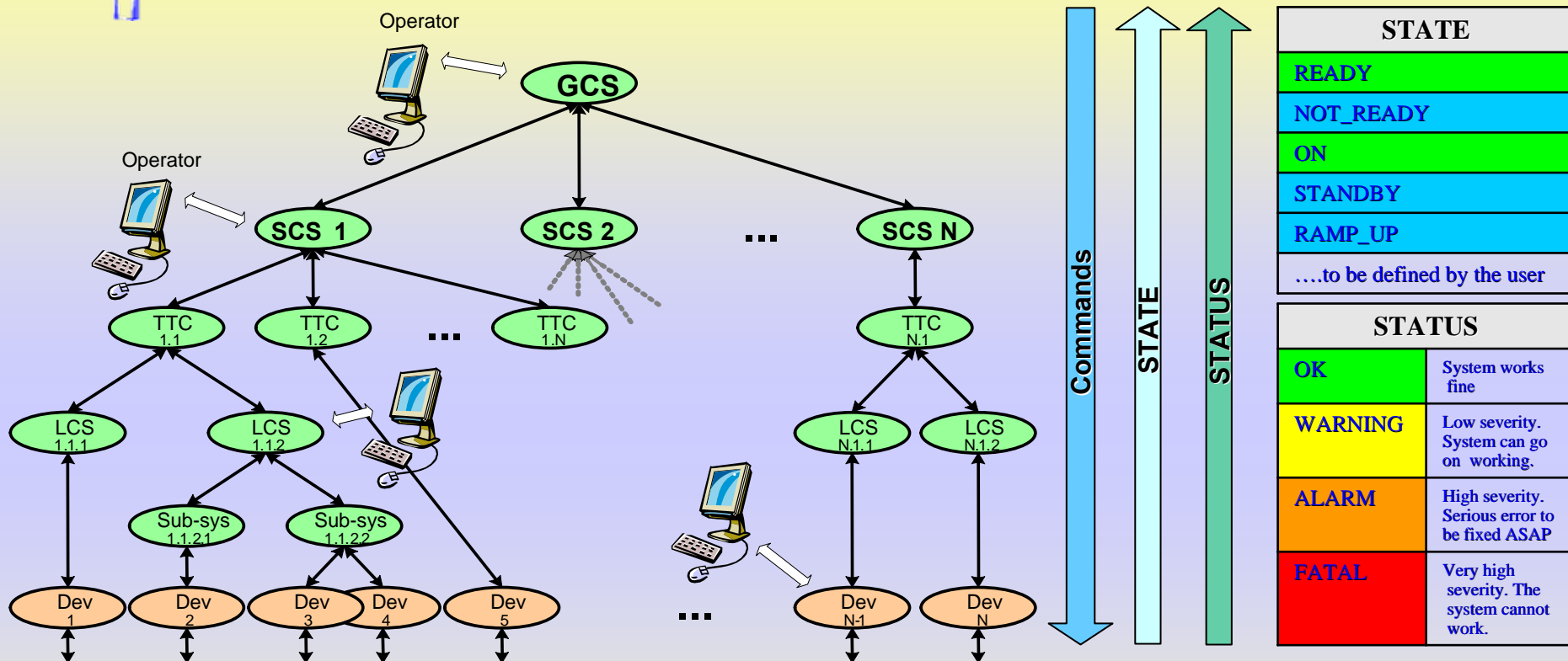
- ◆ The FSM (part of the JCOP Framework) is the main tool for the implementation of the full control hierarchy in ATLAS
- ◆ It is envisaged that the shift operators will operate **DCS ONLY** through the Operator Interface (based on the FSM) and the PVSS alarm screen
- ◆ **Documentation:** https://edms.cern.ch/file/691473/1_0/FSM_Integration_Guideline_1_0.pdf





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The FSM Tool



Messages via a double Information Path – STATE & STATUS

- **STATE** defines the operational mode of the system (ON, OFF, etc)
- **STATUS** defines how well the system is working (OK, WARNING, ALARM, FATAL)
- Two parallel information paths. E.g. HV system is in RAMPING_UP state (which takes several minutes) and an error triggers. The error is propagated through the STATUS while keeping the same STATE



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◆ **Motivation:**

- ◆ **Target :**

- ◆ **Solution :**

- 13



Operator Interface

Integration of the UIs

FSM Module

Panel Navigation
(as web browser)

Secondary
Module
310x410

Alert Module

Main
Module
900x860

Message Module

ATL_GCS: FSM_DISPLAY_PACKAGE:Manager2

System	State	Status
ATL_GCS	READY	ALARM

Sub-System	State	Status
PIX_SCS	READY	OK
SCT_SCS	READY	ALARM
TRT_SCS	READY	OK
LAR_SCS	READY	OK
TIL_SCS	READY	OK
MDT_SCS	READY	OK
RPC_SCS	READY	OK
TGC_SCS	READY	OK
CSC_SCS	READY	OK
CIC_SCS	READY	OK

ATL_GCS

ATL_GCS \$node

ATL_GCS \$obj

W	40	12/7/2005 2:13:40 PM.127	FSM_DISPLAY_PACKAGE:AnalogDig	WARNING	CAME
W	40	12/7/2005 2:13:47 PM.049	FSM_DISPLAY_PACKAGE:AnalogDig	WARNING	CAME
E	60	12/7/2005 2:13:47 PM.049	FSM_DISPLAY_PACKAGE:AnalogDig	ALARM	CAME

root

4:34:52 PM 12/8/2005

Message



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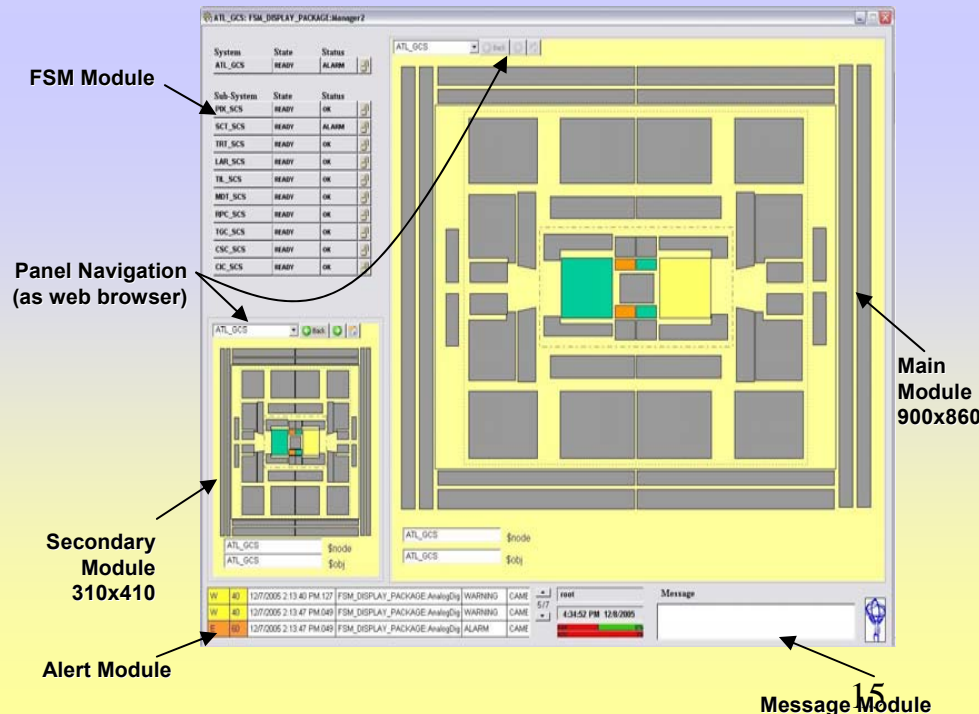
Operator Interface

Screen Layout - 5 Constituent Parts

- ◆ **FSM Module:** Providing all FSM functionality. The module has a limited size (in case of many FSM children a scroll bar appears)
- ◆ **Main Module:** Dimensions 900x860. The main panel for the selected FSM node, this can be a SCS, a HV system, etc
- ◆ **Secondary Module:** Dimensions 310x410. PURPOSE: to keep a main view of a certain sub-detector while studying more in detail a problem that triggers deeper in the hierarchy
- ◆ **Message module:** important messages with its time stamp
- ◆ **Alarm module**

Navigator within the Main and Secondary module allows the navigation through the different levels of the hierarchy. It 'acts' as a web browser

Widgets for display and navigation



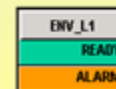
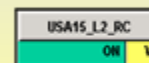
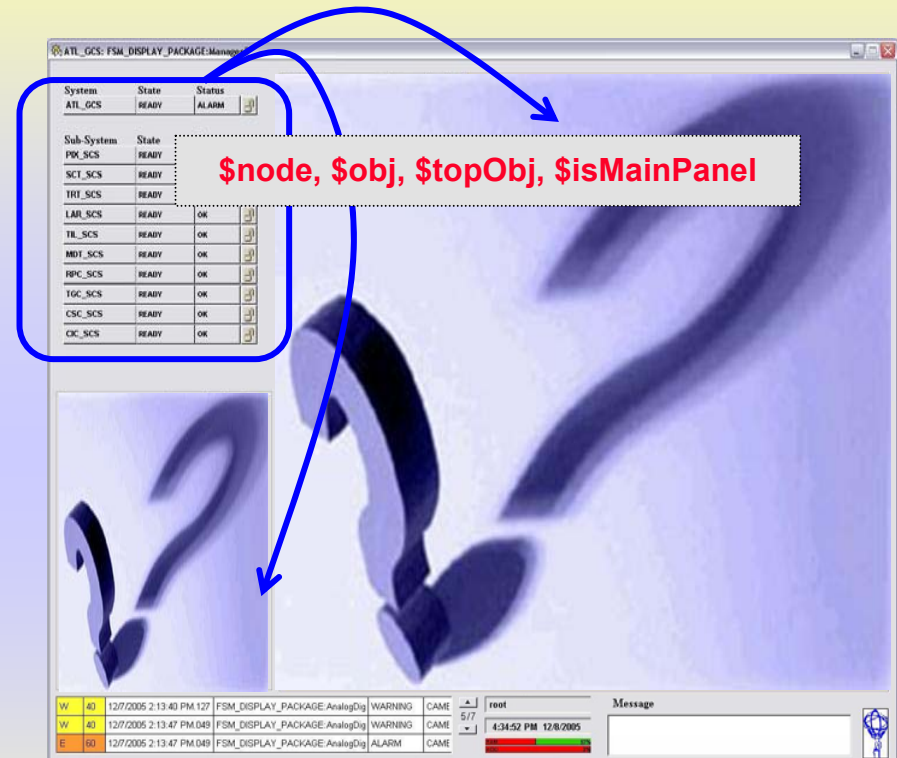


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Common Screen Layout

How it works

- ◆ **For easier integration within SCSs and GCS, we use standardized panel sizes**
 - Screen resolution 1280x1024
 - Main panel 900x860
 - Secondary panel 310x410
- ◆ **Both Main and Secondary panel have all FSM functionality.**
 - Four dollar parameters are sent
 - \$node, \$obj → FSM functionality is also available within the operators panels
 - \$stopObj, \$isMainPanel → References used for navigation
- ◆ **Main and Secondary Panel work independently**
- ◆ **The sub-detectors must create 2 panels for FSM object**
- ◆ **Additional widgets for displaying and navigation available**





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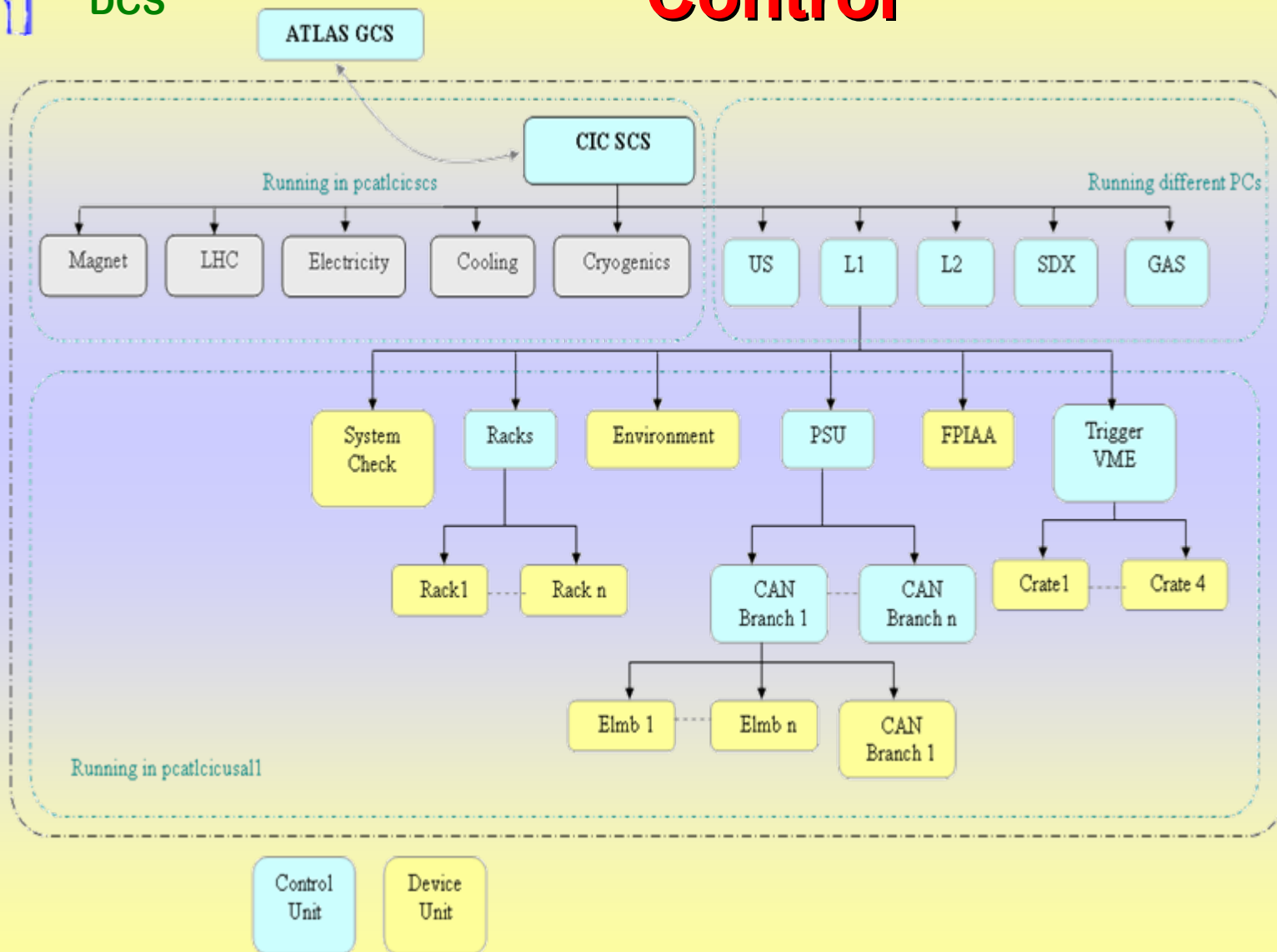
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Common Infrastructure Control





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Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_SCS

ERROR FINDER

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
0 \$isMainPanel

COMMON INFRASTRUCTURE CONTROL

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
1 \$isMainPanel

UNDER CONSTRUCTION

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
1 \$isMainPanel

0/0





ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSManager2

System	State	Status
CIC	READY	WARNING
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_SCS

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node

CIC_SCS \$obj

CIC_SCS \$topObj

0 \$isMainPanel

UNDER CONSTRUCTION

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

CIC_SCS \$node CIC_SCS \$topObj

CIC_SCS \$obj 1 \$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_SCS

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
0 \$isMainPanel

COMMON INFRASTRUCTURE CONTROL

UNDER CONSTRUCTION

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

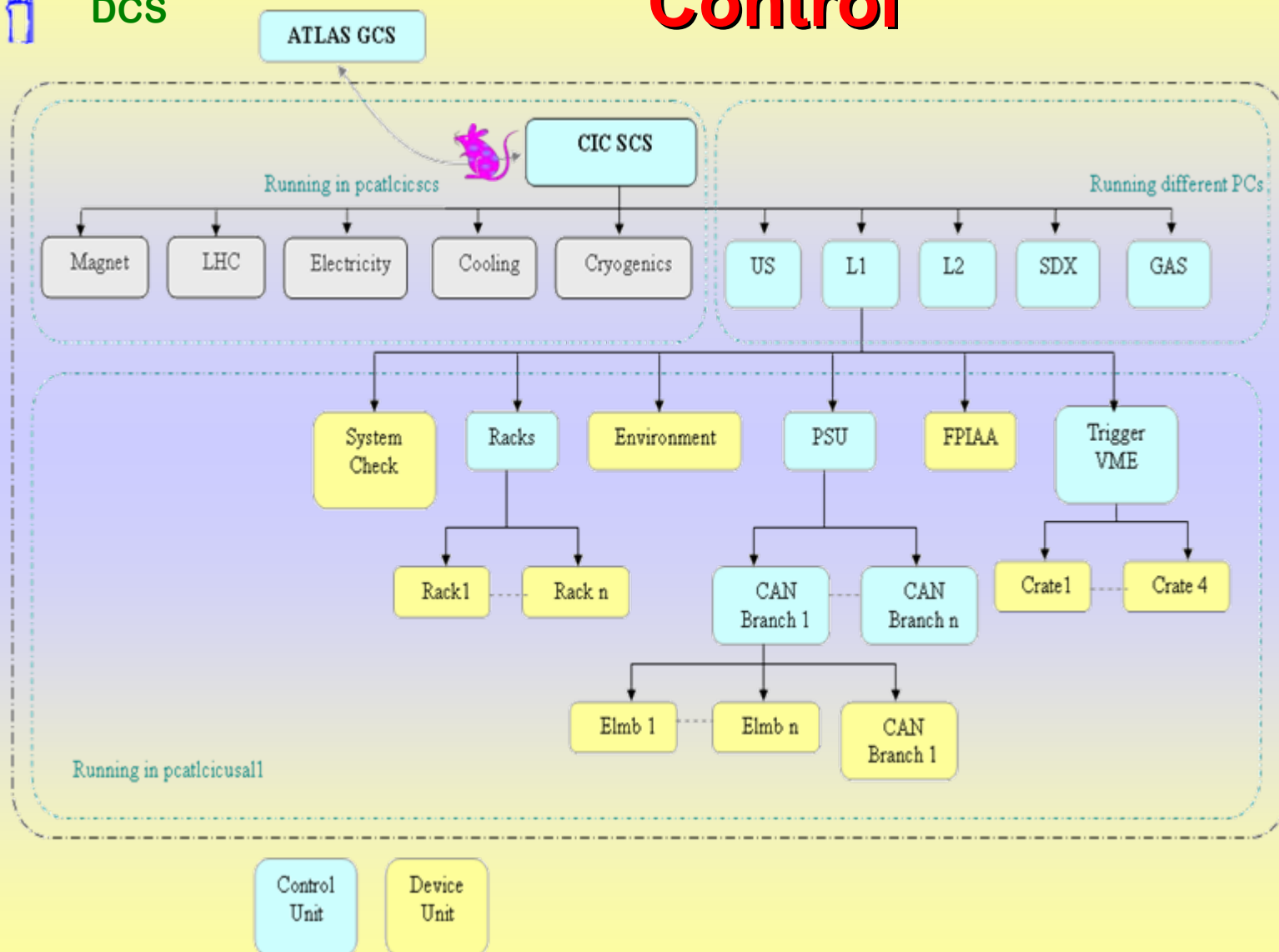
CIC_SCS \$node CIC_SCS \$topObj
CIC_SCS \$obj 1 \$isMainPanel

0/0



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Common Infrastructure Control





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Demonstration

CIC_SCS: ATLCICSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

ERROR FINDER

COMMON INFRASTRUCTURE CONTROL

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
0 \$isMainPanel

COMMON INFRASTRUCTURE CONTROL

USA15_L1 READY A

USA15_L2_RC ON W

FSM INFO FOR NAVIGATION

CIC_SCS \$node
CIC_SCS \$obj
CIC_SCS \$topObj
0 \$isMainPanel

0/0



ATLAS
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Demonstration

CIC_SCS: ATLCICSCSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

COMMON INFRASTRUCTURE CONTROL

USA15_L1: READY A

USA15_L2_RC: ON W

FSM INFO FOR NAVIGATION

CIC_SCS	\$node
CIC_SCS	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

CIC_MAGNET

MAGNET

WIDGETS

COOLING: READY OK

LHC: READY OK

ELECTRICITY: READY OK

USA15_L1_RC: ON A

USA15_L2_RC: ON W

CRYOGENICS: READY OK

FSM INFO FOR NAVIGATION

CIC_MAGNET	\$node	CIC_SCS	\$topObj
CIC_MAGNET	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_COOLING

GENERAL COOLING

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WIDGETS

- MAGNET: READY OK
- LHC: READY OK
- ELECTRICITY: READY OK
- USA15_L1_RC: ON A
- USA15_L2_RC: ON W
- CRYOGENICS: READY OK

COMMON INFRASTRUCTURE CONTROL

USA15_L1: READY A

USA15_L2_RC: ON W

FSM INFO FOR NAVIGATION

CIC_SCS	\$node
CIC_SCS	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

CIC_COOLING	\$node	CIC_SCS	\$topObj
CIC_COOLING	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_LHC

LHC

WIDGETS

- MAGNET: READY OK
- COOLING: READY OK
- ELECTRICITY: READY OK
- USA15_L1_RC: ON A
- USA15_L2_RC: ON W
- CRYOGENICS: READY OK

COMMON INFRASTRUCTURE CONTROL

USA15_L1: READY A

USA15_L2_RC: ON W

FSM INFO FOR NAVIGATION

CIC_SCS	\$node
CIC_SCS	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

FSM INFO FOR NAVIGATION

CIC_LHC	\$node	CIC_SCS	\$topObj
CIC_LHC	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS


Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_LHC

LHC



WIDGETS

- MAGNET: READY OK
- COOLING: READY OK
- ELECTRICITY: READY OK
- USA15_L1_RC: ON A
- USA15_L2_RC: ON W
- CRYOGENICS: READY OK

CIC_SCS

CIC_SCS

CIC_MAGNET

CIC_LHC

CIC_ELECTRICITY

CIC_COOLING

CIC_CRYOGENICS

CIC_USA15level1

CIC_USA15level2

USA15_L2_RC: ON W

FSM INFO FOR NAVIGATION

CIC_SCS	\$node
CIC_SCS	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

CIC_LHC

FSM INFO FOR NAVIGATION

CIC_LHC	\$node	CIC_SCS	\$topObj
CIC_LHC	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_LHC

LHC

WIDGETS

- MAGNET: READY OK
- COOLING: READY OK
- ELECTRICITY: READY OK (open panel)
- USA15_L1_RC: ON W
- USA15_L2_RC: ON W
- CRYOGENICS: READY OK

CIC ELECTRICITY

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

FSM INFO FOR NAVIGATION

CIC_LHC	\$node	CIC_SCS	\$topObj
CIC_LHC	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_ELECTRICITY

ELECTRICITY

electricity is our friend

WIDGETS

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1_RC	ON	A
USA15_L2_RC	ON	W
CRYOGENICS	READY	OK

CIC_ELECTRICITY

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node	CIC_SCS	\$topObj
CIC_ELECTRICITY	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CRYOGENICS

WHAT DO YOU THINK IS THE CAUSE FOR YOUR WEIGHT PROBLEM? THE LAW OF GRAVITY.

© ERKKI ALANEN

WIDGETS

- MAGNET: READY OK
- LHC: READY OK
- ELECTRICITY: READY OK
- USA15_L1_RC: ON A
- USA15_L2_RC: ON W
- COOLING: READY OK

ELECTRICITY

- MAGNET: READY OK
- LHC: READY OK
- COOLING: READY OK
- USA15_L1: READY A
- USA15_L2: READY W
- CRYOGENICS: READY OK

FSM INFO FOR NAVIGATION

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

CIC_USA15level2_RC

USA15level2

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

CIC USA15level2_RC

Back

RCA/USA15level2/Y0402A2

RCA/USA15level2/Y0405A2

RCA/USA15level2/Y0411A2

RCA/USA15level2/Y0414A2

RCA/USA15level2/Y0416A2

RCA/USA15level2/Y0419A2

RCA/USA15level2/Y0421A2

RCA/USA15level2/Y0502A2

RCA/USA15level2/Y0505A2

RCA/USA15level2/Y0511A2

RCA/USA15level2/Y0514A2

RCA/USA15level2/Y0516A2

0416 0516 0616 0716 0816 0916 1016 1116 1216 1316 1416 1516 1616 1716 1816

0414 0514 0614 0714 0814 0914 1014 1114 1214 1314 1414 1514 1614 1714 1814

0411 0511 0611 0711

0405 0505 0605 0705 0805

0402 0502 0602 0702 0802 0902 1002 1102 1202

1602 1702 1802 1902 2002 2102 2202 2302 2402 2502 2602 2702 2802 2902

2221 2321 2421 2521 2621 2721 2821 2921

2219 2319 2419 2519 2619 2719 2819 2919

2216 2316 2416 2516 2616 2716 2816 2916

2214 2314 2414 2514 2614 2714 2814 2914

2211 2311 2411 2511 2611 2711 2811 2911

2405 2505 2605 2705 2805 2905

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC ELECTRICITY

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

RCA/USA15level2/Y0402A2

Trigger Level1

Rack Information

DB Label	Y.04.02.A2
Usage	Spare
Responsible	FARTHOUA
Detector	Trig
Number	4
Row	02
Weight	90
Last Update	
Last Change	
Coments:	

Rack Properties

Name	Value
Fire	NOT DETECTED
Temperature	OK
Emergency stop	NOT TRIGGERED
Box door	CLOSED
Power connector	OK
Main Breaker	OFF
Main braker status	TRIPPED
Main breaker control	UNLOCKED
VME1	OFF
VME1 status	OK

Map

Twido Box

STATE	MBrk	VME1	VME2	VME3	Sock.	Ventl.
LOGIC						
POS.						

Turbine 4U

Blank plate 42U

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCSManager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC ELECTRICITY

System	State	Status
MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

CIC_USA15level2_RC

USA15level2

FWD

0421 0521 0621 0721 0821 0921 1021 1121 1221 1321 1421 1521 1621 1721 1821

0419 0519 0619 0719 0819 0919 1019 1119 1219 1319 1419 1519 1619 1719 1819

2221 2321 2421 2521 2621 2721 2821 2921

2219 2319 2419 2519 2619 2719 2819 2919

0416 0516 0616 0716 0816 0916 1016 1116 1216 1316 1416 1516 1616 1716 1816

0414 0514 0614 0714 0814 0914 1014 1114 1214 1314 1414 1514 1614 1714 1814

2216 2316 2416 2516 2616 2716 2816 2916

2214 2314 2414 2514 2614 2714 2814 2914

0411 0511 0611 0711

2211 2311 2411 2511 2611 2711 2811 2911

0405 0505 0605 0705 0805

2405 2505 2605 2705 2805 2905

0402 0502 0602 0702 0802 0902 1002 1102 1202

1602 1702 1802 1902 2002 2102 2202 2302 2402 2502 2602 2702 2802 2902

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

RCA/USA15level2/Y0402A2

Trigger Level1

Rack Information

DB Label	Y.04.02.A2
Usage	Spare
Responsible	FARTHOU
Detector	Trigger
Number	4
Row	02
Weight	90
Last Update	
Last Change	
Comments:	

Rack Properties

Name	Value
Fire	NOT DETECTED
Temperature	OK
Emergency stop	NOT TRIGGERED
Box door	CLOSED
Power connector	OK
Main Breaker	OFF
Main breaker status	TRIPPED
Main breaker control	UNLOCKED
VME1	OFF
VME1 status	OK

Map

Twido Box

STATE LOGIC POS.

MBrk VME1 VME2 VME3 Sock. Ventl.

Turbine 4U

Blank plate 42U

CIC ELECTRICITY

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYGENICS	READY	OK

FSM INFO FOR NAVIGATION

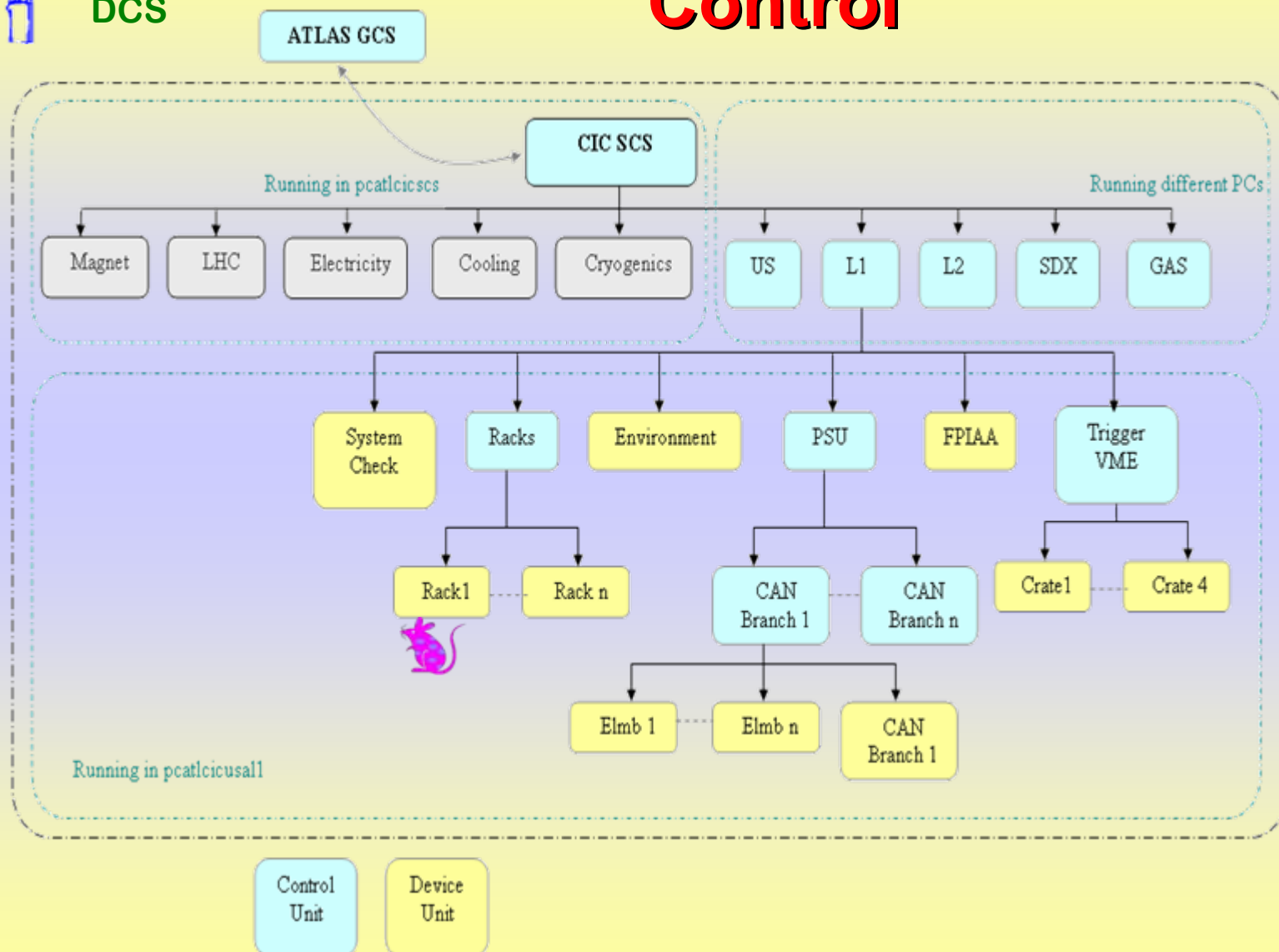
CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

0/0



ATLAS
DCS

Common Infrastructure Control





ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

RCA/USA15level2/Y0402A2

Trigger Level1

Rack Information

DB Label	Y.04.02.A2
Usage	Spare
Responsible	FARTHOUA
Detector	Trigger
Number	4
Row	02
Weight	90
Last Update	
Last Change	
Comments:	

Rack Properties

Name	Value
Fire	NOT DETECTED
Temperature	OK
Emergency stop	NOT TRIGGERED
Box door	CLOSED
Power connector	OK
Main Breaker	OFF
Main breaker status	TRIPPED
Main breaker control	UNLOCKED
VME1	OFF
VME1 status	OK

Twido Box

STATE LOGIC POS.

MBrk VME1 VME2 VME3 Sock. Ventl.

Turbine 4U

Blank plate 42U

ELECTRICITY

MAGNET READY OK

LHC READY OK

COOLING READY OK

USA15_L1 READY A

USA15_L2 READY W

CRYGENICS READY OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_SCS

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

Error Finder

CIC ELECTRICITY

System	State	Status
MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node	CIC_SCS	\$topObj
CIC_ELECTRICITY	\$obj	CIC_SCS	\$isMainPanel
CIC_SCS	\$topObj	1	\$isMainPanel
0	\$isMainPanel		

UNDER CONSTRUCTION

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

CIC_SCS

Wait...

ERROR FINDER

COMMON INFRASTRUCTURE CONTROL

DISPLAY WIDGETS

USA15_L1_RC ON A

USA15_L2_RC ON W

ENV_L1 READY ALARM

CIC ELECTRICITY

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

UNDER CONSTRUCTION

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

CIC_SCS	\$node	CIC_SCS	\$topObj
CIC_SCS	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

COMMON INFRASTRUCTURE CONTROL

ERROR FINDER

DISPLAY WIDGETS

- USA15_L1_RC: ON A
- USA15_L2_RC: ON W
- ENV_L1: READY ALARM

ELECTRICITY

MAGNET	READY	OK
LHC	READY	OK
COOLING	READY	OK
USA15_L1	READY	A
USA15_L2	READY	W
CRYOGENICS	READY	OK

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

UNDER CONSTRUCTION

FSM INFO FOR NAVIGATION

CIC_SCS	\$node	CIC_SCS	\$topObj
CIC_SCS	\$obj	1	\$isMainPanel

0/0



ATLAS
DCS

Demonstration

CIC_SCS: ATLCICSCS:Manager2

System	State	Status
CIC	READY	ALARM
MAGNET	READY	OK
LHC	READY	OK
ELECTRICITY	READY	OK
COOLING	READY	OK
CRYOGENICS	READY	OK
USA15 LEVEL1	READY	ALARM
USA15 LEVEL2	READY	WARNING

RCA/USA15level2/Y0419A2

Back

Twido Box

STATE LOGIC POS.

MBrk VME1 VME2 VME3 Sock. Ventl.

Turbine 4U

Air deflector 2U

MAGNET

Rack Information

DB Label	Y.04.19.A2
Usage	Proximity Cryogenic System
Responsible	SBRISSA
Detector	MAGNET
Number	4
Row	19
Weight	90
Last Update	
Last Change	
Comments:	

Rack Properties

Name	Value
Main breaker status	TRIPPED
Main breaker control	UNLOCKED
VME1	OFF
VME1 status	OK
VME2	OFF
VME2 status	OK
VME3	OFF
VME3 status	OK
Sockets	OFF
Sockets status	OK

Map

FSM INFO FOR NAVIGATION

CIC_ELECTRICITY	\$node
CIC_ELECTRICITY	\$obj
CIC_SCS	\$topObj
0	\$isMainPanel

0/0



ATLAS
DCS

Conclusions

- ◆ **The FSM is the main tool to operate the ATLAS DCS**
- ◆ **Frame, with the basic functionality, for building the Operator Interface ready: feedback from sub-detectors needed**
- ◆ **In order to get a consistent Operator Interface a set of rules need to be applied during the integration of the DCS BE**
- ◆ **Documentation :**
 - **“DCS Integration Guide”, see:**
https://edms.cern.ch/file/685451/1/ATLAS_DCS_Integration_Guidelines.pdf

Thank you!