

# COMPASS DCS Status

Technical Board, November 2021



**FCT** Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

# OPC-UA Servers 2021

## CAEN (0.9.7)

- 17 HV PS and 1 VME integrated
- No issues

Hardware controlled by CAEN OPC UA Servers									
Crate	Model	Location	Det.	IP Address	Crate Port #	Server Port #	Manager #	Manager Status	Communication OK
HOD_CCR5	SY1527	SM2 Jura	...	192.168.104.24	4527	4901	61	Running	OK
CAEN4527-W45	SY4527	W45 rack	...	192.168.104.23	4528	4902	62	Running	OK
CAEN4527-SM2	SY4527	SM2 Saleve	...	192.168.104.22	4529	4903	63	Running	OK
HOD_CCR7	SY4527	Trigger barrack	...	192.168.104.17	4530	4904	64	Running	OK
HOD_CCR6	SY1527	Trigger barrack	...	192.168.104.16	4531	4906	65	Running	OK
RICH_CCR2	SY1527	RICH rack	...	192.168.104.26	4532	4907	66	Running	Communication lost
RICH_CCR3	SY1527	RICH rack	...	192.168.104.25	4533	4908	67	Running	Communication lost
DC5_CCR1	SY4527	Gallery Jura	...	192.168.104.21	4534	4909	68	Running	OK
CAEN4527-MW2	SY4527	MW2 rack	...	192.168.104.11	4535	4910	69	Running	OK
RICHCOHVHYBRID_CCR1	SY4527	RICH bottom Jura	...	192.168.104.27	4536	4911	70	Running	Communication lost
RICHCOHVHYBRID_CCR3	SY4527	RICH top	...	192.168.104.28	4537	4912	71	Running	Communication lost
BMS_CCR8	SY1527	BMS barrack	...	172.22.24.208	4538	4913	72	Running	OK
CAEN4527-GALLERY-1	SY4527	Gallery Jura	...	192.168.104.18	4539	4914	73	Running	OK
CAEN4527-SM2-1	SY4527	SM2 Jura	...	192.168.104.19	4540	4915	74	Running	OK
CAEN4527-RICH-2	SY4527	RICH rack	...	192.168.104.29	4541	4916	77	Running	Communication lost
CAEN4527-SILICON-1	SY4527	Silicon rack	...	192.168.104.20	4542	4917	78	Running	Communication lost
CAEN5527-MM-1	SY5527	MM rack	...	192.168.104.30	4543	4918	79	Running	OK
RWALL_VME_CCR1	VME8100	SM2 Saleve	...	192.168.104.105	8100	4905	75	Running	OK

## CANOpen (2.2.4-211)

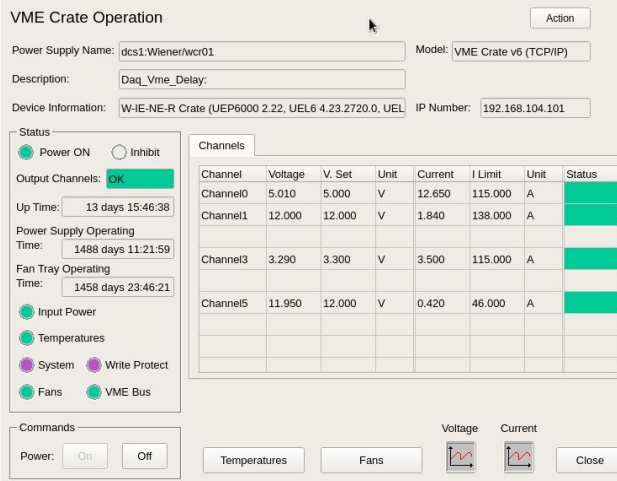
- 28 ELMBs distributed over 2 CANBus lines
- No major issues
- Few ELMBs need to be remotely switched back on after powercut

Hardware controlled by CANOpen OPC UA Server				
Bus	ELMB	Location	State	Timestamp
BUS_2	2	MW1 FE LV power supply rack. SM2 region. Jura side.	OPERATIONAL	2021.11.15 15:05:22.721
BUS_1	3	BMS electronics barrack	OPERATIONAL	2021.11.15 15:05:25.960
BUS_2	4	MW1 FE LV power supply rack. SM2 region. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.721
BUS_2	5	SCIFIG FE LV power supply rack. SM2 region. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.721
BUS_2	6	Straw frame. Jura side.	OPERATIONAL	2021.11.15 15:05:22.724
BUS_2	7	RICH rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.724
BUS_2	8	SCIFI rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.724
BUS_1	9	BMS HV barrack (HNB 202)	OPERATIONAL	2021.11.15 15:05:25.961
BUS_2	10	MM/Drits electronics rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.724
BUS_1	11	MWPC power supply rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:25.961
BUS_1	12	MWPC power supply rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:25.961
BUS_2	13	MWPC power supply rack. Jura side.	OPERATIONAL	2021.11.15 15:05:22.727
BUS_2	14	MWPC power supply rack.	OPERATIONAL	2021.11.15 15:05:22.727
BUS_2	15	On gallery. Jura side.	OPERATIONAL	2021.11.15 15:05:22.727
BUS_1	16	Trigger barrack (HNB 422).	OPERATIONAL	2021.11.15 15:05:25.961
BUS_2	17	Pump room	OPERATIONAL	2021.11.15 15:05:22.727
BUS_1	18	Trigger room (HNB 429)	OPERATIONAL	2021.11.15 15:05:22.727
BUS_1	19	MW2 power supply rack (#23). Saleve side.	OPERATIONAL	2021.11.15 15:05:25.964
BUS_1	20	W45 power supply rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:25.964
BUS_1	23	W45 power supply rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:25.964
BUS_2	24	On gallery. Jura side.	OPERATIONAL	2021.11.15 15:05:25.967
BUS_2	25	RICH rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.730
BUS_2	31	Close to DC4. Jura side.	OPERATIONAL	2021.11.15 15:05:22.730
BUS_1	32	W45 rack.	OPERATIONAL	2021.11.15 15:05:25.967
BUS_1	33	W45 rack.	OPERATIONAL	2021.11.15 15:05:25.967
BUS_1	34	W45 rack.	OPERATIONAL	2021.11.15 15:05:25.967
BUS_1	35	W45 rack.	OPERATIONAL	2021.11.15 15:05:25.970
BUS_2	37	MM/Drits electronics rack. Saleve side.	OPERATIONAL	2021.11.15 15:05:22.733

# OPC-UA Servers 2021

## Wiener (1.0.0)

- 3 VMEs 6021 and 1 LV PL508M
- No issues



VME Crate Operation

Power Supply Name: dcs1.Wiener/wcr01 Model: VME Crate v6 (TCP/IP)

Description: Daq\_Vme\_Delay

Device Information: W-IE-NE-R Crate (UEP6000 2.22, UEL6 4.23.2720.0, UEL IP Number: 192.168.104.101)

Status:  Power ON  Inhibit

Output Channels: **OK**

Up Time: 13 days 15:46:38

Power Supply Operating Time: 1488 days 11:21:59

Fan Tray Operating Time: 1458 days 23:46:21

Input Power

Temperatures

System  Write Protect

Fans  VME Bus

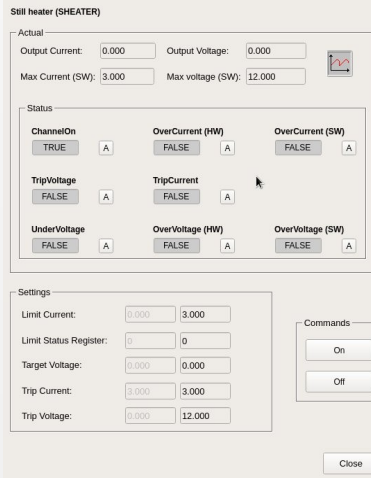
Channel	Voltage	V. Set	Unit	Current	I Limit	Unit	Status
Channel0	5.010	5.000	V	12.650	115.000	A	<input checked="" type="checkbox"/>
Channel1	12.000	12.000	V	1.840	138.000	A	<input checked="" type="checkbox"/>
Channel3	3.290	3.300	V	3.500	115.000	A	<input checked="" type="checkbox"/>
Channel5	11.950	12.000	V	0.420	46.000	A	<input checked="" type="checkbox"/>

Commands: Power:

Temperatures Fans Voltage Current Close

## LXI (1.0.11)

- Beta version
- 1 LV Aim TTI PL303-P
- No issues



Still heater (SHEATER)

Actual

Output Current: 0.000 Output Voltage: 0.000

Max Current (SW): 3.000 Max voltage (SW): 12.000

Status

ChannelOn:  TRUE A

OverCurrent (HW):  FALSE A

OverCurrent (SW):  FALSE A

TripVoltage:  FALSE A

TripCurrent:  FALSE A

UnderVoltage:  FALSE A

OverVoltage (HW):  FALSE A

OverVoltage (SW):  FALSE A

Settings

Limit Current: 0.000 3.000

Limit Status Register: 0 0

Target Voltage: 0.000 0.000

Trip Current: 3.000 3.000

Trip Voltage: 0.000 12.000

Commands:

Close

# COMPASS 2021

## DIM Servers

- Rhode & Schwarz PS – GEM LVs
- ETH484-B – GEM Ctrs
- Aim TTi PL303QMD-P and TSX3510P – GEM and Silicon ADC LVs
- Delta Elektronika PS – ECal1

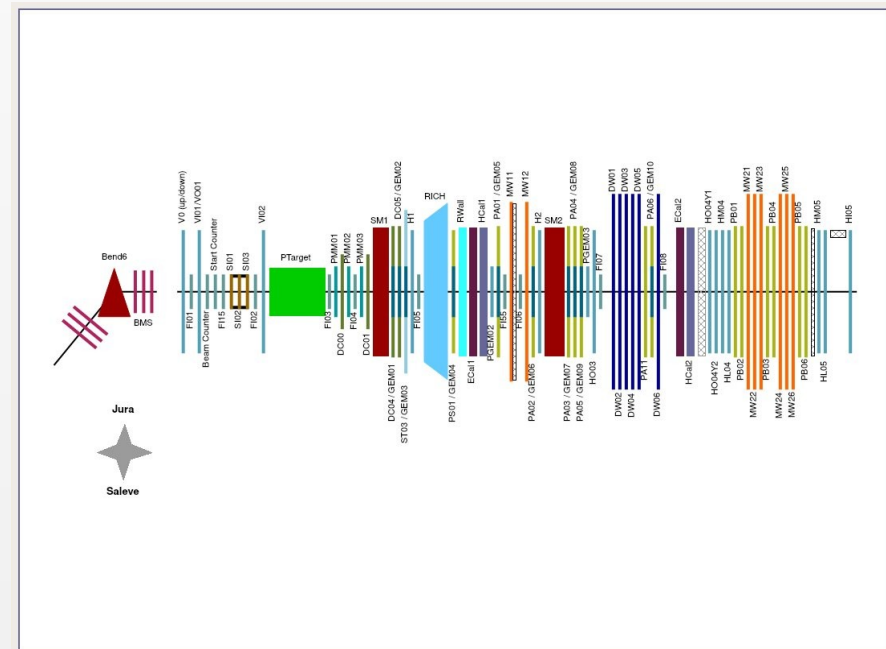
## DIP

- BA82 water information

## MySQL DB

- Beam position  
FI01XY and FI15XY

## Gunn diode monitoring



# AMBER 2021

## DIM Servers

- Duet3D motor – Trigger
- EPICS – TPC Actar Hv and Keller Pressure and temperature

## DIP

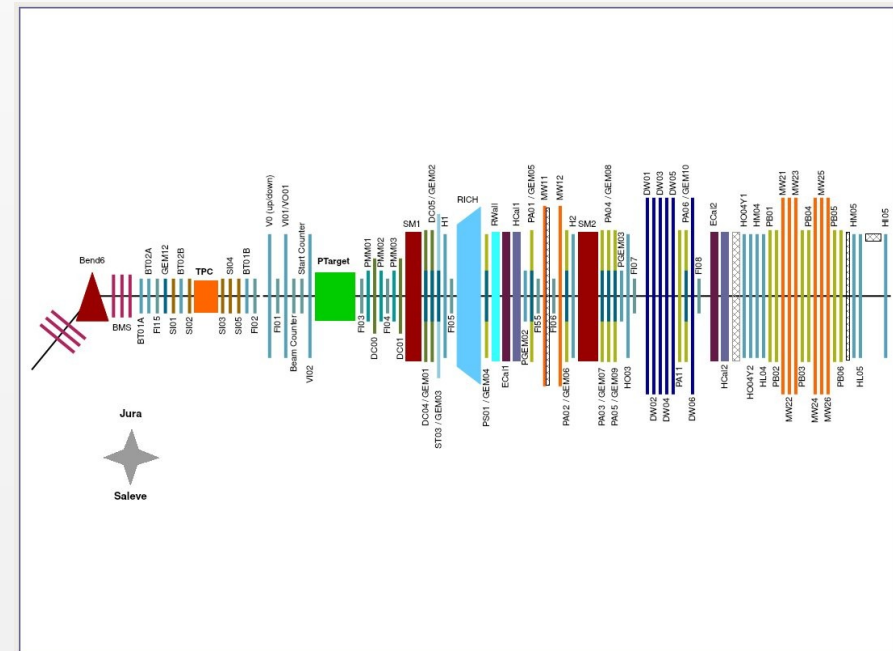
- IKAR TPC Safety System

## ELMB

- 16 temperature probes - Silicon


## MySQL DB

- Scalers



# YETS Plans

## DCS main distributed project

- CC7 / x86\_64
- **WinCC OA 3.16 (patch 20211025)**  **New PC**
- **JCOP Framework release 8.4.2**
- WinCC OA Oracle DB schema 8.9
- OPC-UA Servers: CAEN(?), **CANOpen**, **Wiener**, IPBus, LXI

## DCS scattered projects

- Windows 7 64-bit
- **WinCC OA 3.16 (patch 20211025)**
- OPC-DA Servers: Iseg, Wiener (Krakow), Schneider

## SLiC servers

- SLC5 / i386, custom kernel build options
- CAEN A1303 PCI CAENET controllers, driver v 1.7
- DIM servers for the remaining **CAEN SY403** and **SY527**

# YETS Plans

JCOP Framework release 8.4.2

- **NextGen Alarm Screen**
  - Better performance
  - More flexible filtering
  - New features like grouping of alarms

The screenshot displays the 'NextGen Alarm Screen (Beta)' interface. At the top, there is a menu bar with 'Module', 'Panel', 'Scale', and 'Help'. Below the menu bar is a toolbar with various icons. The main area is titled 'NextGen Alarm Screen (Beta)' and contains several filter sections. The 'Alarm source' is set to 'Live'. The 'Filter #1' section includes a 'Filter Type' dropdown set to 'Include' and several input fields for 'Device Name', 'Device Description', 'Device Type', 'System', 'Alarm Text', 'Alarm Scope', 'Alarm Direction', 'Acknowledged', and 'Severity'. There are also buttons for 'Apply', 'Match case', 'Save filter...', 'Load filter...', 'Clear', and 'Apply'. Below the filter sections is a 'Table Quick Filter' section. The main table displays a list of alarms with the following columns: Short, Device DP Element, Description, Alarm Text, Dir., Value, Ack., and Time. The table contains 5 rows of data, with the first row highlighted in red and the second row highlighted in orange. The status bar at the bottom indicates 'Displaying 5 of 5 alarms' and includes buttons for 'Export...', 'Acknowledge multiple...', and 'Settings...'. The status bar also shows 'Messages: 0' and 'Connected to dcs1 system'.

Short	Device DP Element	Description	Alarm Text	Dir.	Value	Ack.	Time
A	dcs1:ExampleDP_AlertHdl1.	ExampleDP_AlertHdl1	Value to 1	CAME	TRUE	x	2021.11.03 11:26:51.593
E	dcs1:ExampleDP_AlertHdl5.	ExampleDP_AlertHdl5	Error Nack	CAME	FALSE		2021.11.02 16:23:08.407
F	dcs1:ExampleDP_AlertHdl4.	ExampleDP_AlertHdl4	Fatal	CAME	FALSE		2021.11.02 16:22:30.255
E	dcs1:ExampleDP_AlertHdl3.	ExampleDP_AlertHdl3	Error	CAME	FALSE		2021.11.02 16:22:00.756
E	dcs1:ExampleDP_AlertHdl2.	ExampleDP_AlertHdl2	Value to 1	CAME	TRUE		2021.11.02 16:20:42.741

# YETS Plans

## Integrations

- Ptgt Gunn diodes
- RICH LV Wiener PL508M
- Silicon PLC Cooling System monitoring via Modbus
- W45 LV remote powercycling
- DIP subscription of PGSEA 908 data
- DAQ data streams, etc

Any other requests?



Thank you!

Extra slides

# Overview 2021

## DCS main distributed project

- CC7 / x86\_64
- WinCC OA 3.16 (patch 20201109)
- JCOP Framework release 8.4.1
- WinCC OA Oracle DB schema 8.9
- OPC-UA Servers: CAEN, CANOpen, Wiener, IPBus, LXI

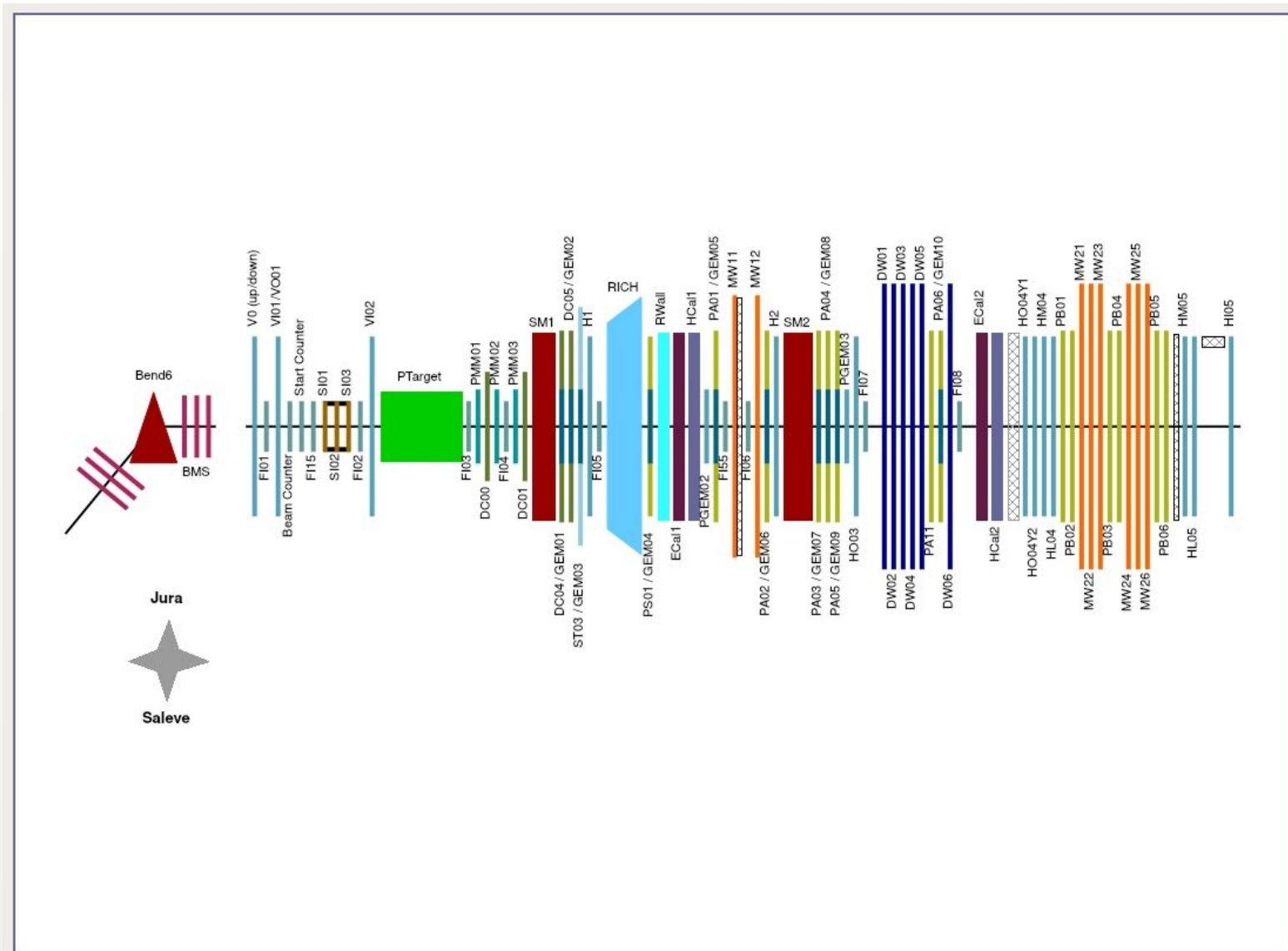
## DCS scattered projects

- Windows 7 64-bit
- WinCC OA 3.16 (patch 20201109)
- OPC-DA Servers: Iseg, Wiener (Krakow), Schneider

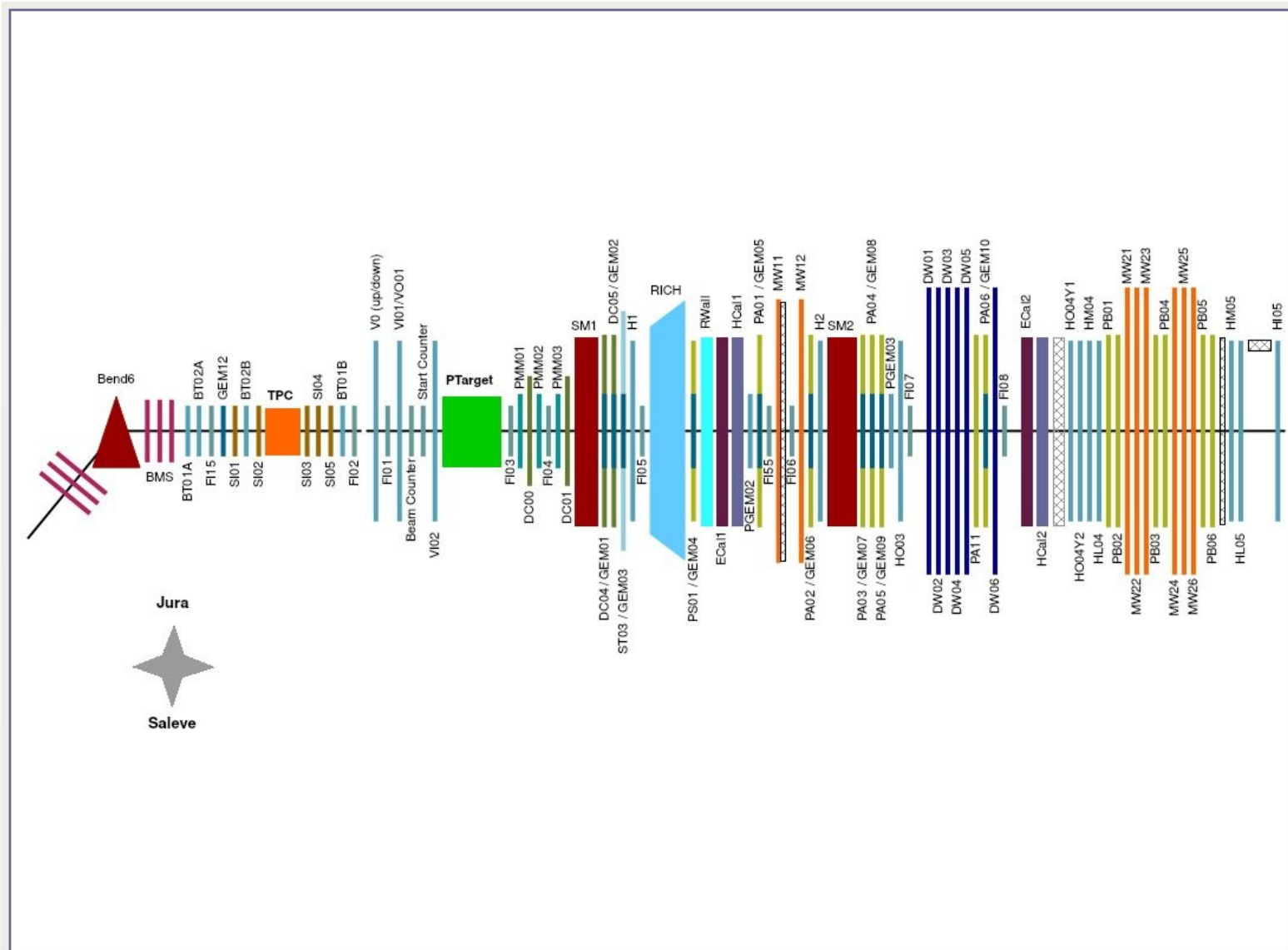
## SLiC servers

- SLC5 / i386, custom kernel build options
- CAEN A1303 PCI CAENET controllers, driver v 1.7
- DIM servers for the remaining **CAEN SY403** and **SY527**

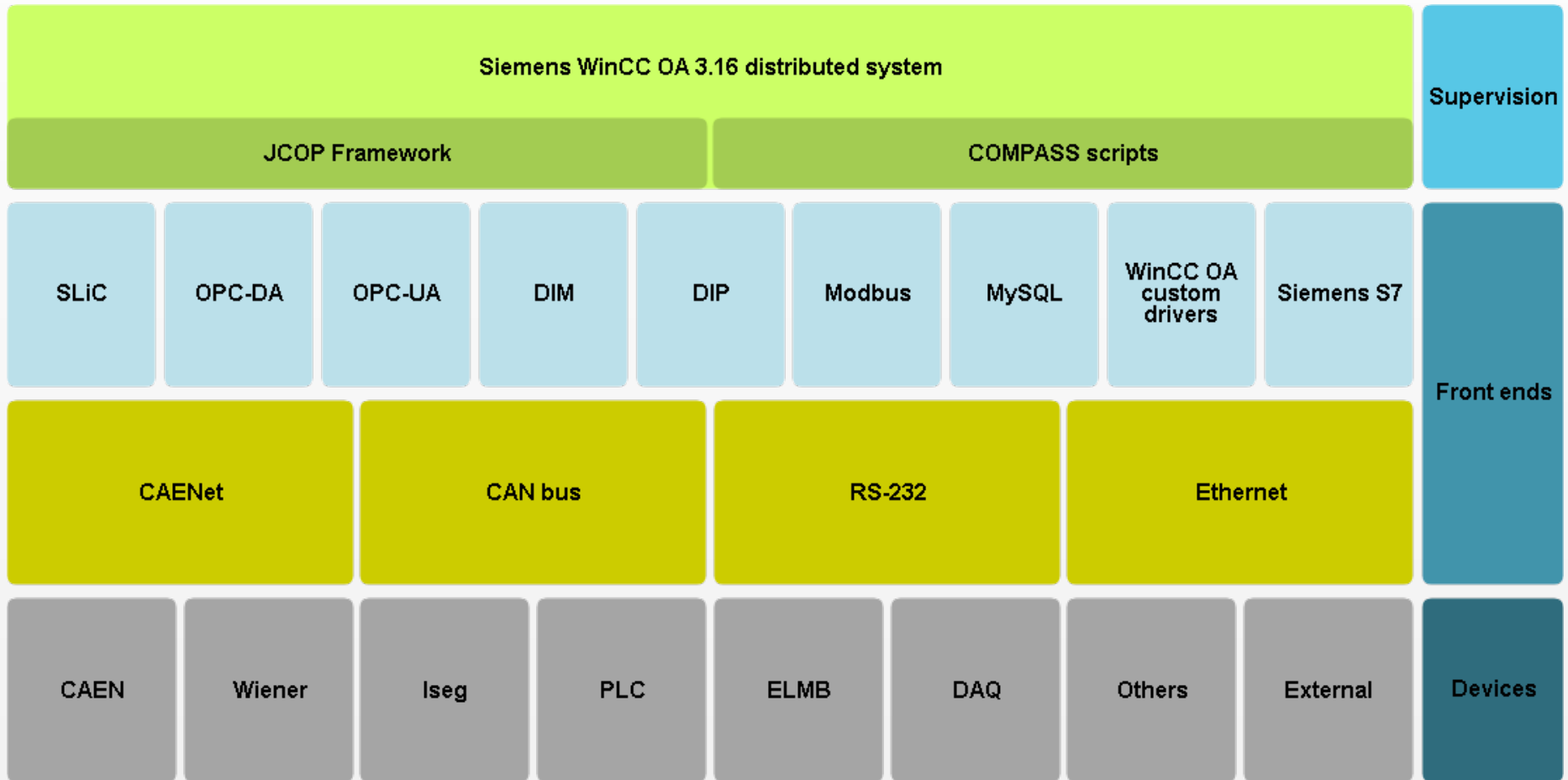
# COMPASS



# AMBER



# COMPASS DCS



2021

## COMPASS DCS – Short term plans

Adaptation of COMPASS DCS to Physic Programmes and integration of new equipment

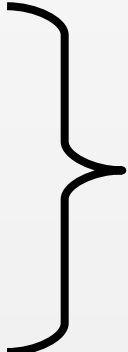
Logging of all user actions

LDAP/FreeIPA user authentication

Improve DAQ related monitoring

- Configuration DB, Detectors readout (ex: NINO discriminator boards work ongoing)

Additional monitoring of external systems

- Access control and monitoring
  - Beam
  - Accelerators status
  - Water
  - Piped Gas
- 
- To be defined