# 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

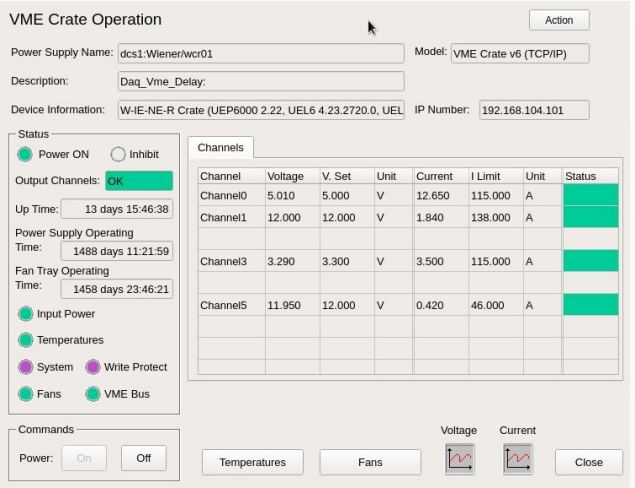
**Hardware controlled by CANOpen OPC UA Server**

| 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/Drifts 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 15:05:25.964 |
| BUS_1 | 19 | MW2 power supply rack (H23). 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 15:05:25.967 |
| BUS_2 | 24 | On gallery. Jura side. | OPERATIONAL | 2021.11.15 15:05:22.730 |
| 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/Drifts electronics rack. Saleve side. | OPERATIONAL | 2021.11.15 15:05:22.733 |

# OPC-UA Servers 2021

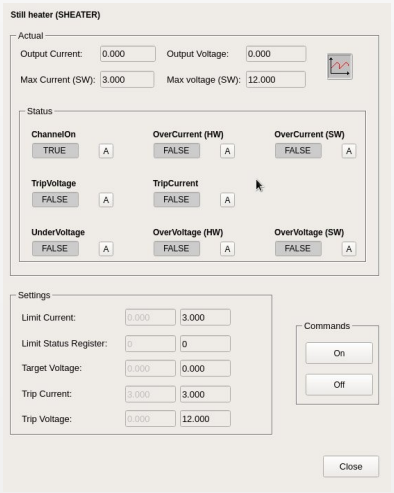
Wiener (1.0.0)

- 3 VMEs 6021 and 1 LV PL508M
- No issues




LXI (1.0.11)

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



# 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

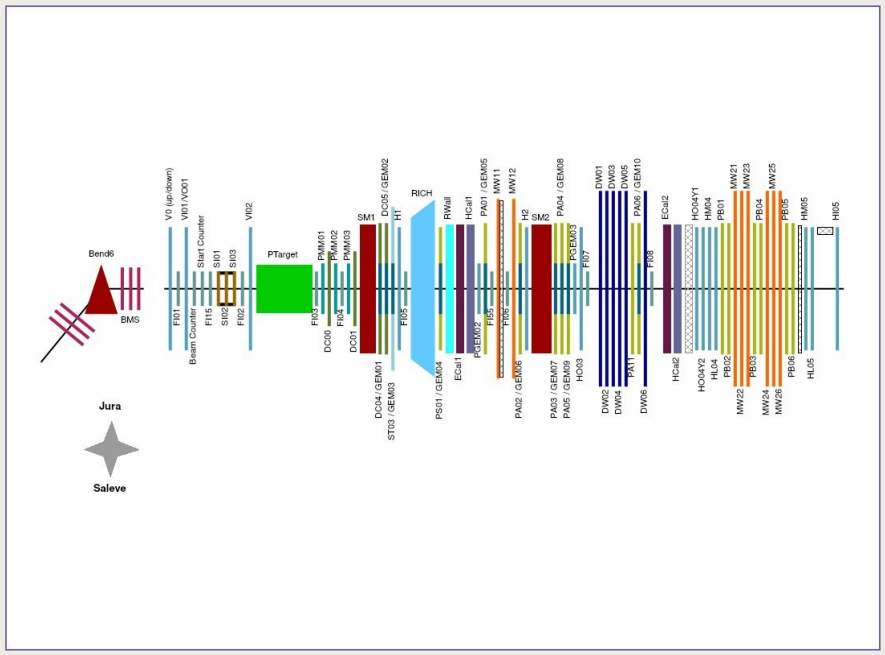
DIP

- 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

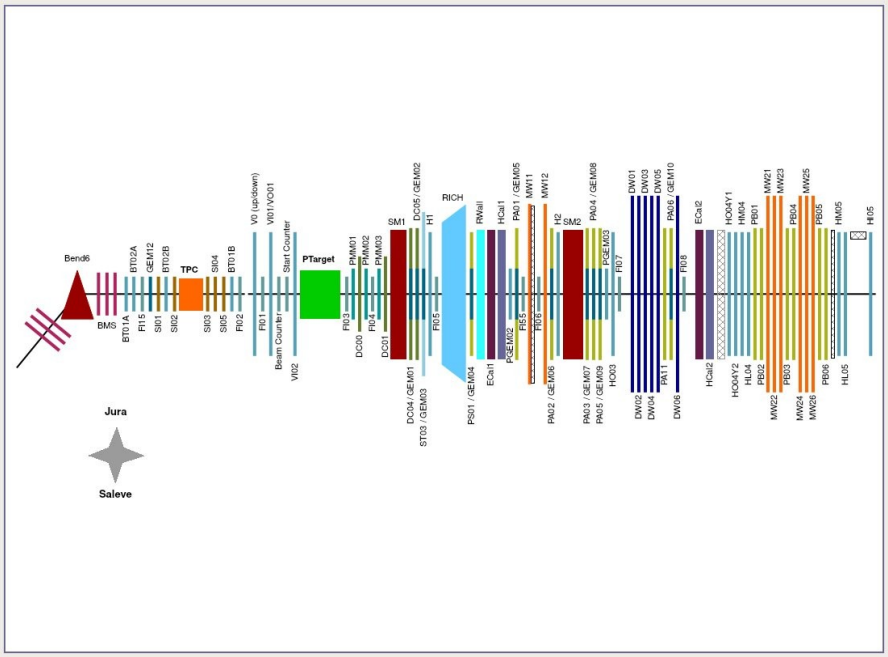
- IKAR TPC Safety System

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

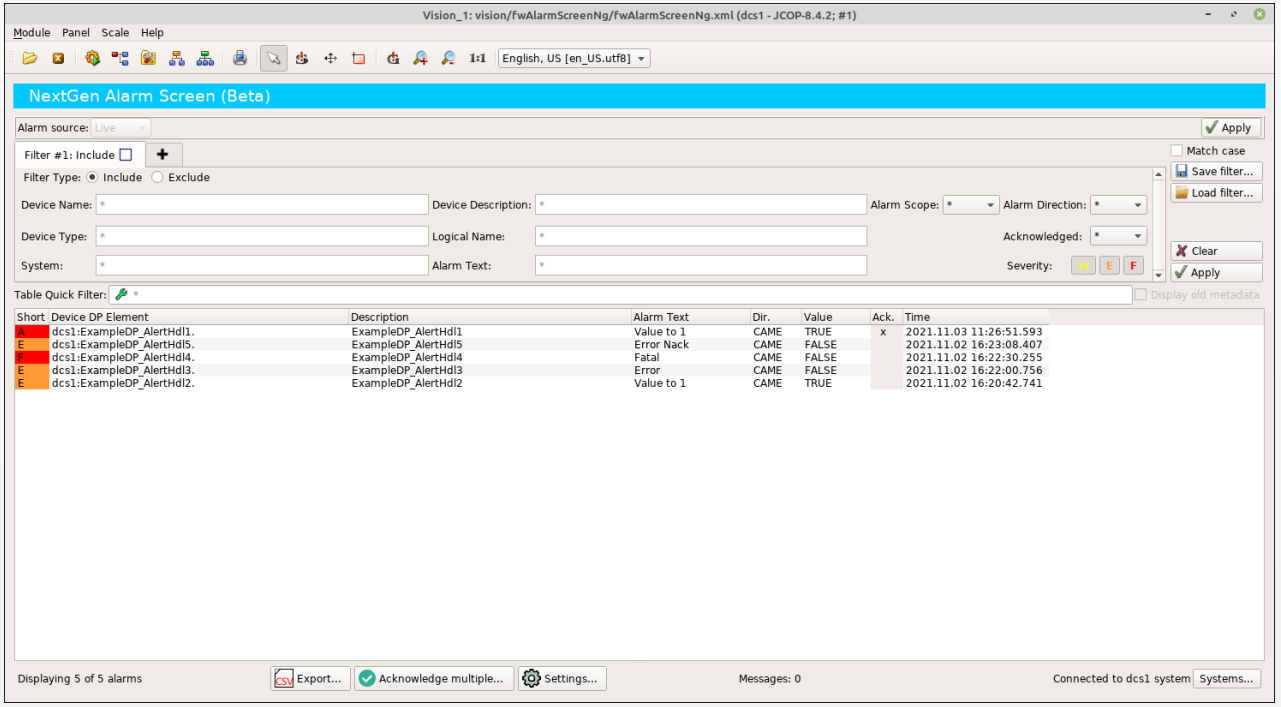
SLiC servers

- 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



# 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
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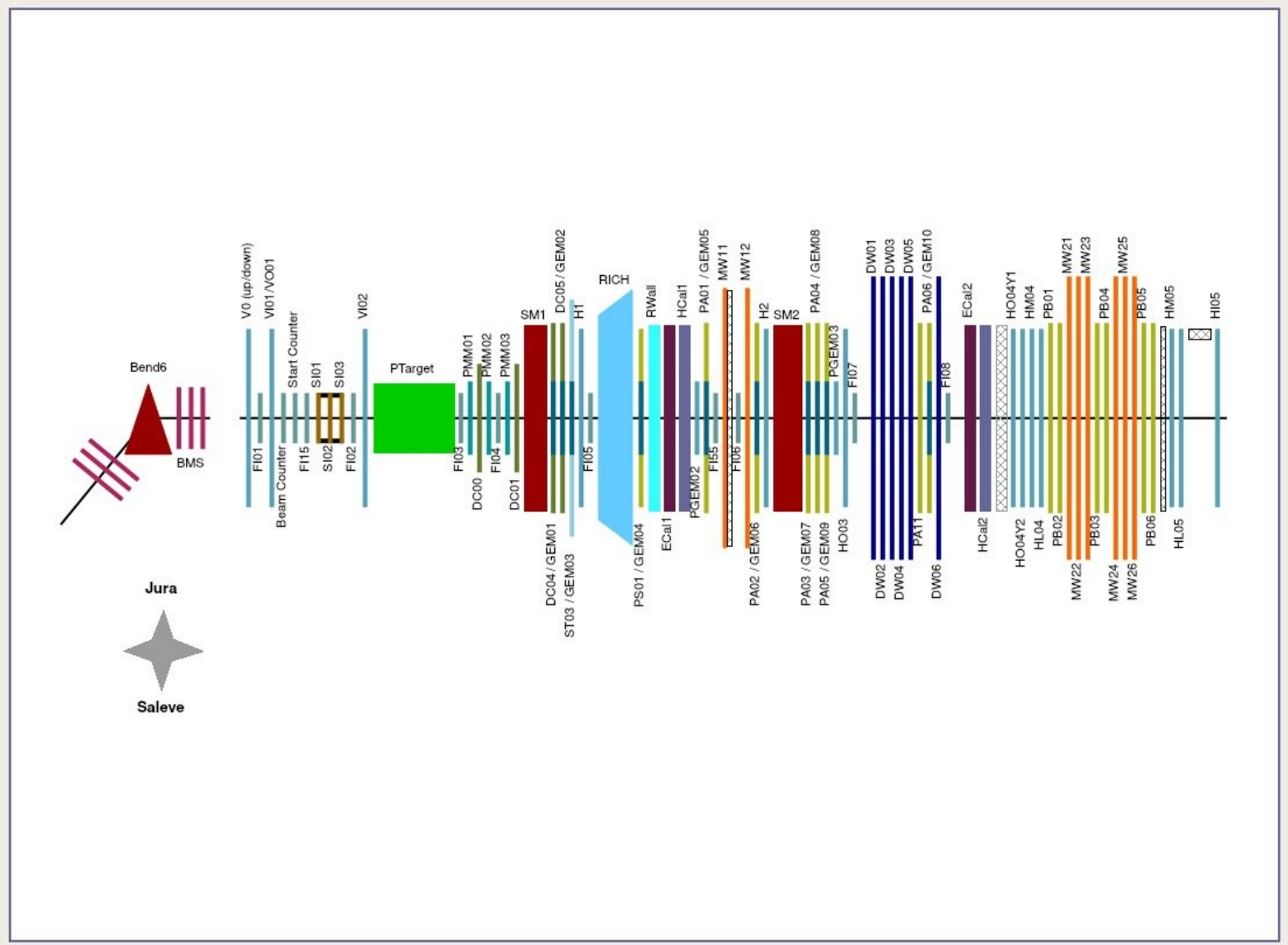
- OPC-DA Servers: Iseg, Wiener (Krakow), Schneider

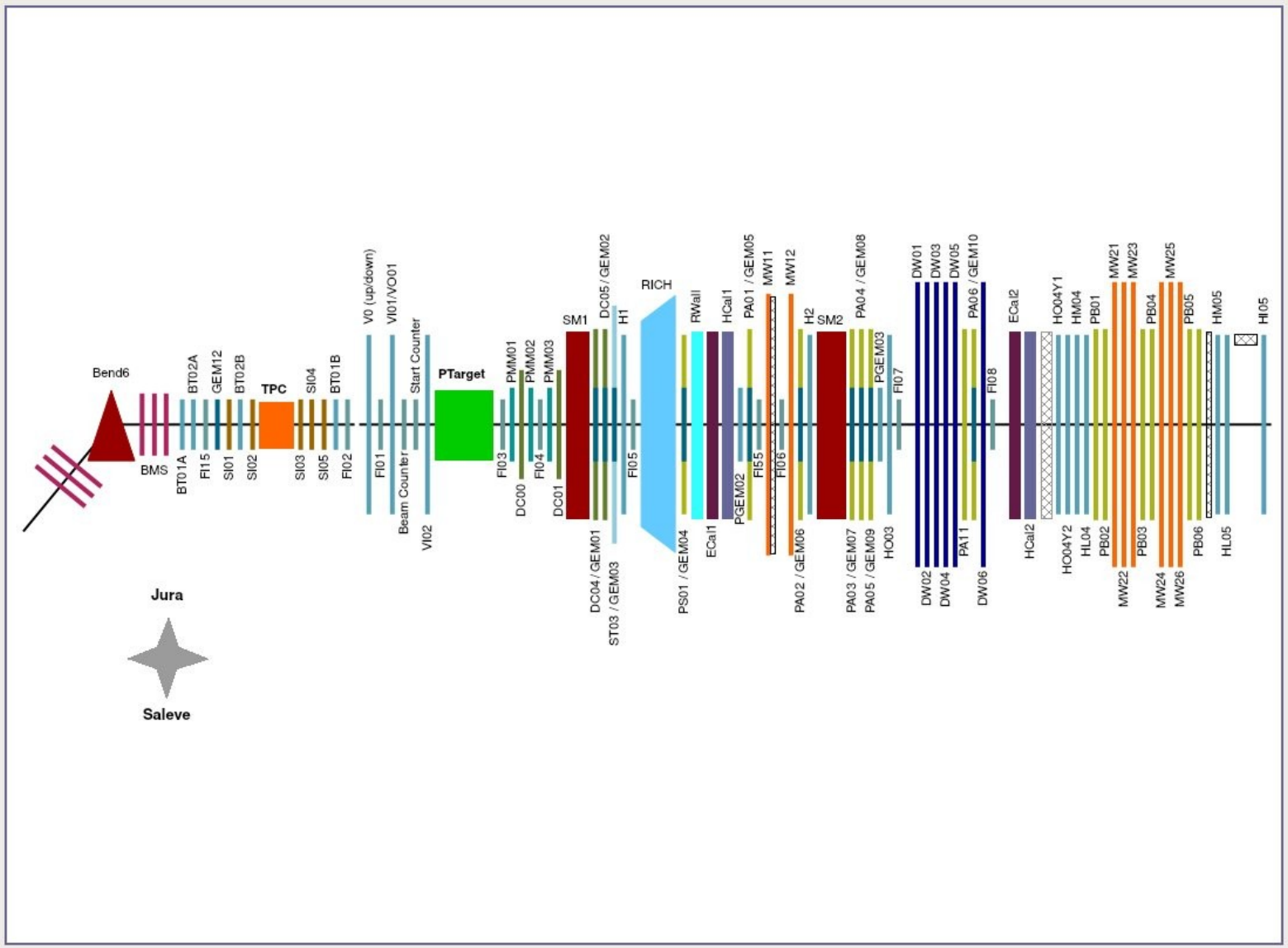
SLiC servers

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

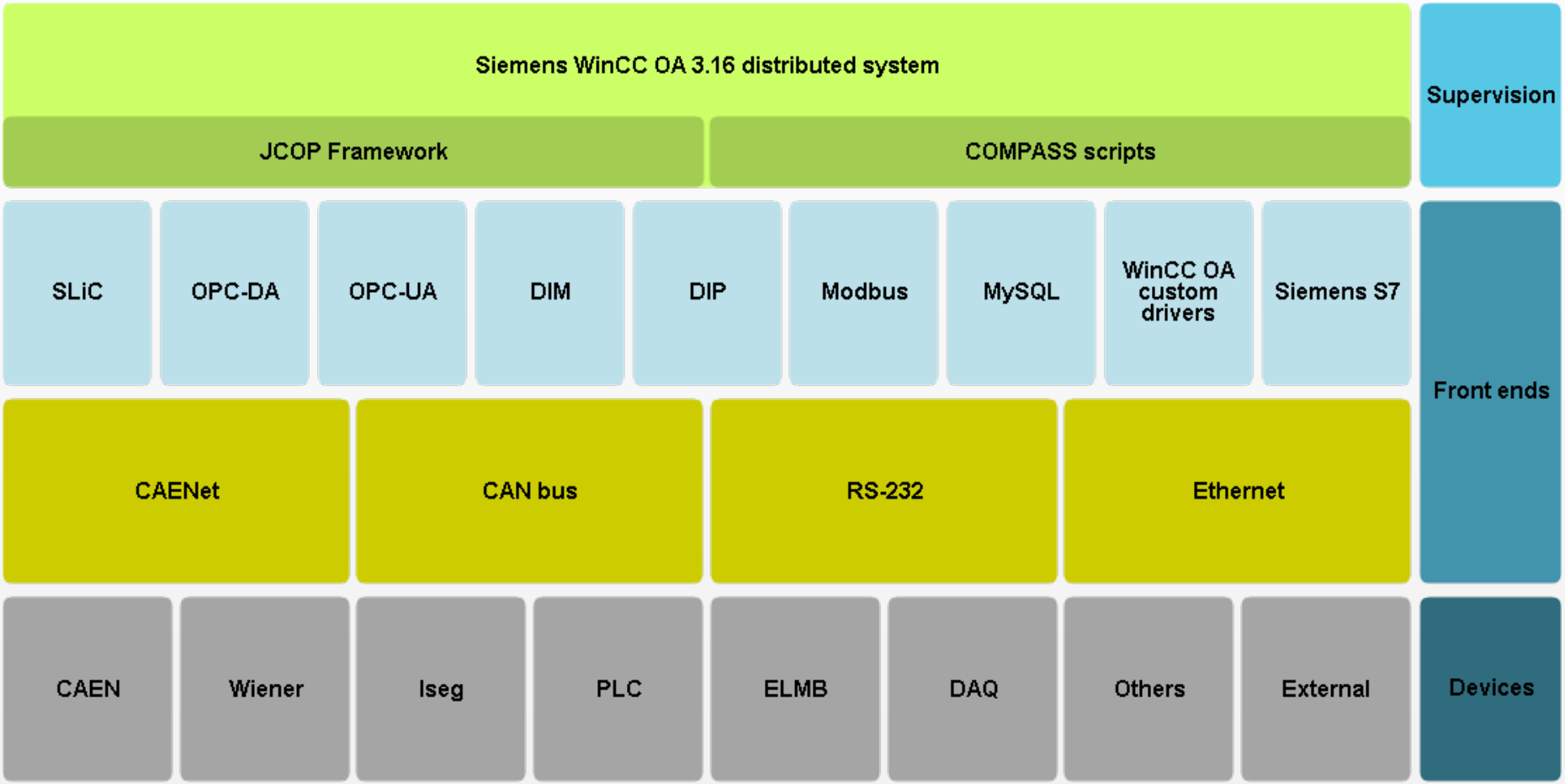
# COMPASS


Bend6
BMS
Jura
Saleve
V0 (up/down)
VI01/VO01
Beam Counter
Start Counter
FI15
SI01
SI02
SI03
FI01
FI02
VI02
PTarget
FI03
PMM01
DC00
PMM02
FI04
PMM03
DC01
SM1
DC04 / GEM01
ST03 / GEM03
DC05 / GEM02
H1
FI05
RICH
PS01 / GEM04
RWall
ECal1
HCal1
PGEM02
PA01 / GEM05
FI55
MW11
FI06
PA02 / GEM06
MW12
H2
SM2
PA03 / GEM07
PA05 / GEM09
PA04 / GEM08
PGEM03
HO03
FI07
DW02
DW04
DW01
DW03
DW05
PA11
DW06
PA06 / GEM10
FI08
HCal2
ECal2
HO04Y2
HL04
PB02
HO04Y1
HM04
PB01
MW22
MW21
MW23
PB03
PB04
MW24
MW26
MW25
PB06
PB05
HL05
HM05
HI05

# AMBER


Bend6
BMS
BT01A
BT02A
FI15
GEM12
SI01
BT02B
SI02
TPC
SI03
SI04
SI05
BT01B
FI02
VI01
V0 (up/down)
VI01/VO01
Beam Counter
Start Counter
VI02
PTarget
FI03
PMM01
DC00
PMM02
FI04
PMM03
DC01
SM1
DC04 / GEM01
DC05 / GEM02
ST03 / GEM03
H1
FI05
RICH
PS01 / GEM04
RWall
ECal1
HCal1
PGEM02
PA01 / GEM05
FI55
MW11
FI06
PA02 / GEM06
MW12
H2
SM2
PA03 / GEM07
PA04 / GEM08
PA05 / GEM09
PGEM03
HO03
FI07
DW01
DW02
DW03
DW04
DW05
PA11
PA06 / GEM10
DW06
FI08
ECal2
HCal2
HO04Y1
HO04Y2
HM04
HL04
PB01
PB02
MW21
MW22
MW23
PB03
PB04
MW24
MW25
MW26
PB05
PB06
HM05
HL05
HI05
Jura
Saleve

# 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