COMPASS DCS Status

Technical Board, May 2021

Overview

DCS main distributed project
- CC7 / x86_64
- **WinCC OA 3.16 (patch 20201109 - recommended)** ➡ New PC will be installed soon
- **JCOP Framework release 8.4.1**
- WinCC OA Oracle DB schema 8.9
- **OPC-UA Servers: CAEN, Wiener, CANOpen, IPBus, LXI**

DCS scattered projects
- Windows 7 64-bit
- **WinCC OA 3.16 (patch 20201109 - recommended)**
- OPC-DA Servers: Iseg, Wiener (Krakow), Schneider, ~~CAEN~~, ~~CANOpen~~

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**

CAEN

All new equipment has been installed

Cables labeled before exchange of crates and boards

Cables connected after checking crate and boards
- Cabling and mapping shall be checked and confirmed by detector experts

CAEN

CAEN OPC-UA server 0.9.7
- Installed and recommended version

- Supports Rwall CAEN VME8100

CERN JCOP fwCaen 8.4.3

- All COMPASS board models and variations (S/D/N/P) supported

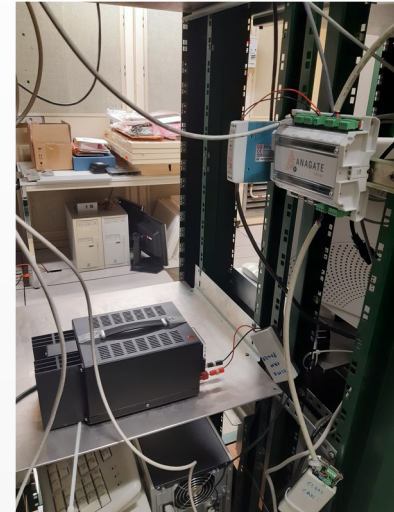OPC-DA to OPC-UA migration performed for most of the devices

- Straw HV migration from Iseg still to CAEN still to be performed

  - Crate, boards and cable adapters already installed

- Some crates still don't have the correct network IP address

  - Need to be registered in the new COMPASS slowctrl network

ELMB

Installation of new Anagate CAN x4 interface

Migration from OPC-DA to OPC-UA

- CANOpen OPC-UA server 2.2.4-211
- Installation of new fwELMB component
- Update of ELMBs mapping

Wiener

Wiener OPC-UA server 1.0.0
- Control and monitoring of 3 VMEs and 1 PL508 LV

Wiener (Krakow) OPC-DA server

- Control and monitoring of devices not supported by Wiener OPC-UA

IPBus

IPBus OPC-UA server

- Compiled and installed

- Integration of TDC Veto H1

    - Monitoring only

    - Commands to be tested

LXI

LXI (**L**AN e**X**tensions for **I**nstrumentation)
- Supported by Rohde & Schwarz (GEM) and Aim TTi LVs (Ptgt)
- CERN LXI OPC-UA TTi LV server available
    - Test with PTgt PL303P performed – polling rate ~15 seconds

- DIM Server for GEM LVs
    - Higher polling rate required – tested during last Dry Run

DIP

Request to monitor Gas and Water systems at 888

Mattermost

DCS notifications are now sent to Mattermost channels too

CERN SSO

Scada ID required to login in the DCS with your CERN account
- Most of COMPASS members have not yet obtained a Scada ID and/or requested me to add them in a specific detector group
  - https://resources.web.cern.ch/resources/ --> List Services --> WinCC-OA Scada (Pvss) --> Settings
  - Members with assigned shifts will be added to the general shift/ operator group

To-do list

Integration of
- Ptgt
- Silicons
- GEMs
- MWPC
- Gas and water systems at 888

Update
- Hv and Lv mappings
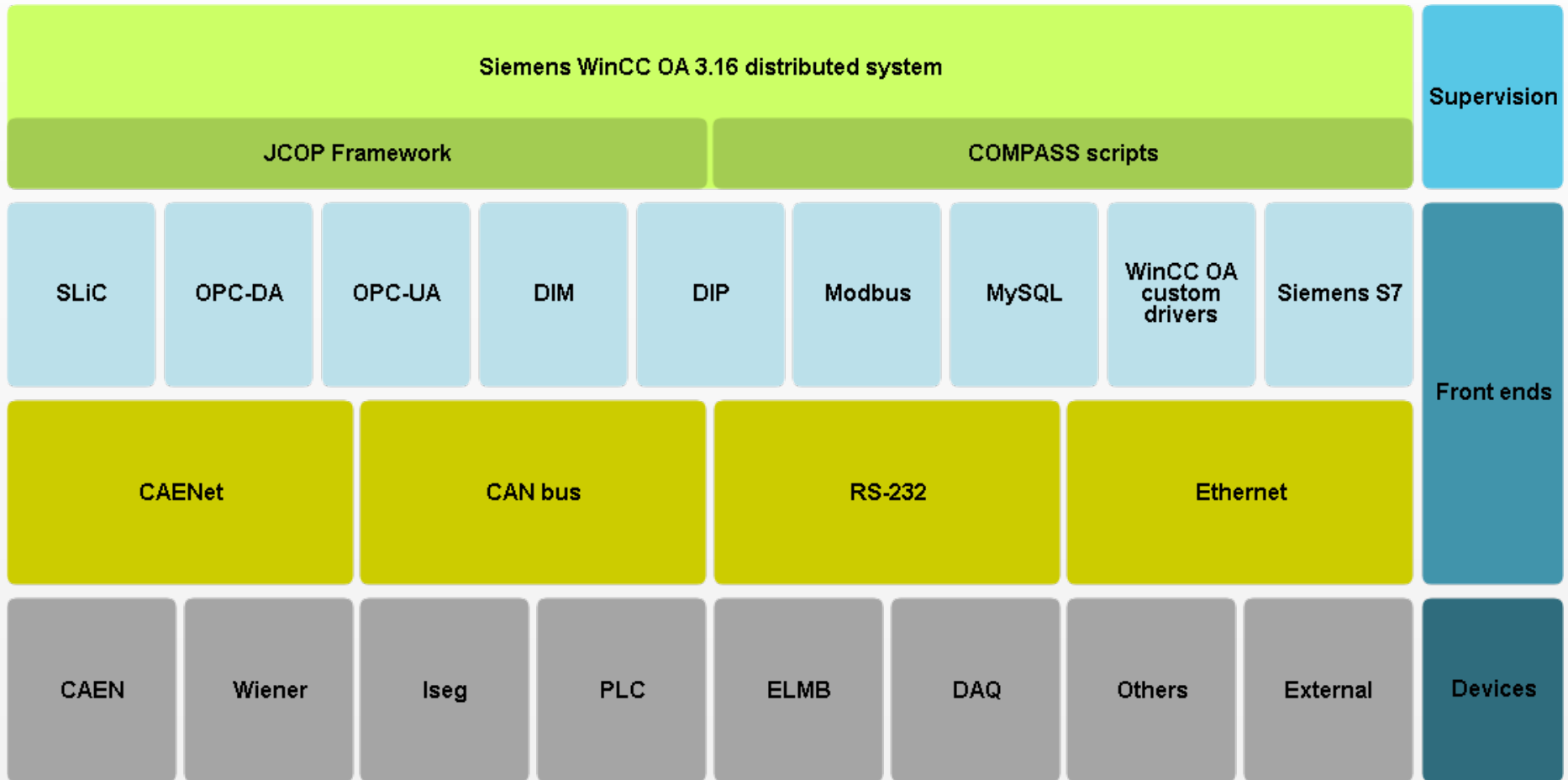- Triggers and Veto information

Check
- Beam line, rates and radiation levels via DIP
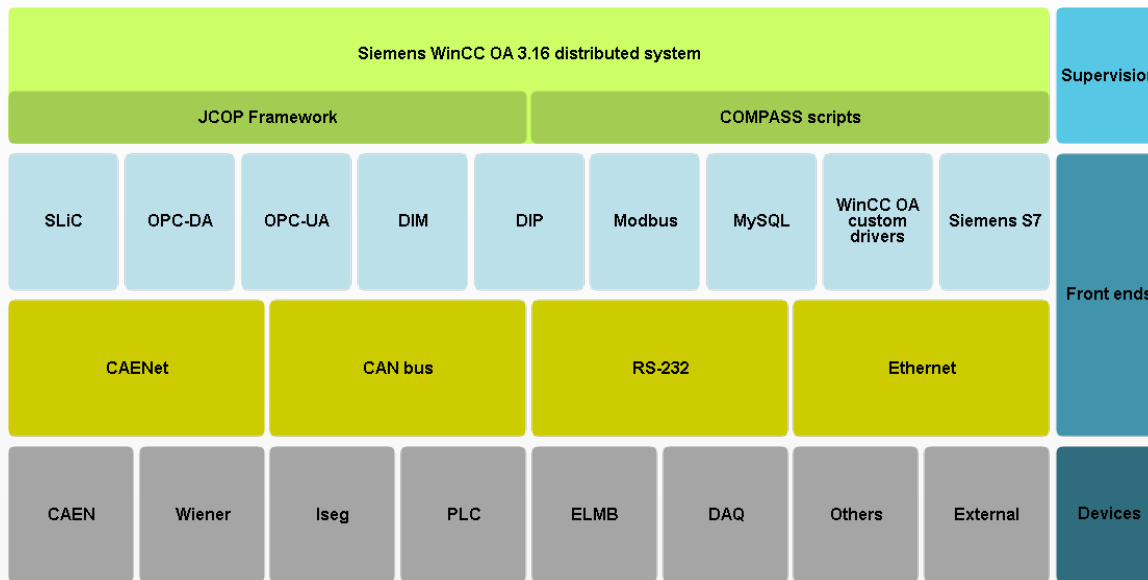- Bend6 and SM1 hall probes and SM2 field via NMR

Any other requests?

Thank you!

Extra slides

COMPASS DCS

COMPASS DCS – Short term plans

Siemens WinCC OA 3.16 distributed system									Supervision
JCOP Framework				COMPASS scripts					
SLiC	OPC-DA	OPC-UA	DIM	DIP	Modbus	MySQL	WinCC OA custom drivers	Siemens S7	Front ends
CAENet		CAN bus		RS-232		Ethernet			
CAEN	Wiener	Iseg	PLC	ELMB	DAQ	Others	External		Devices

2021

DCS hardware upgrade

WinCC OA upgrade
- 3.15 → 3.16
  - Major upgrade

JCOP framework upgrade

OPC-DA is being phased out → move to OPC-UA
- COMPASS OPC-UA "compatible" equipment will be moved to OPC-UA
  - Thanks to COMPASS effort older non-supported equipment will be decommissioned

- CANopen, CAEN, Iseg, Wiener and IPBus OPC-UA servers
  - Based on Quasar framework developed at CERN
    - https://github.com/quasar-team/quasar/wiki
    - Provides consistent implementations of OPC-UA servers

COMPASS DCS – Short term plans

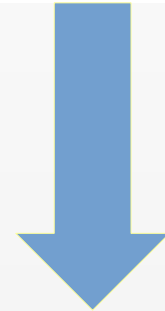## Start transition from PCI-CAN to Ethernet-CAN interfaces

Anagate X series

From IV JCOP Workshop 2015

COMPASS DCS – Short term plans

Adaptation of COMPASS DCS to Physic Programmes and integration of new equipment
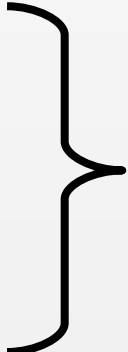
Logging of all user actions

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   To be defined
- Water
- Piped Gas