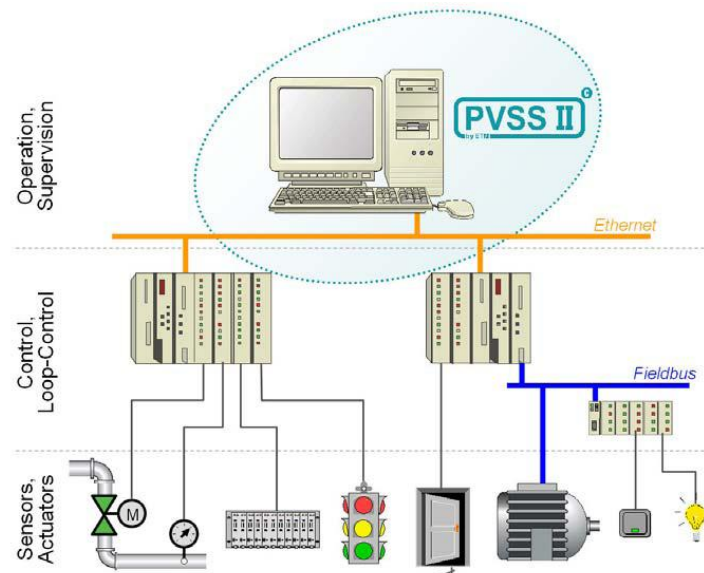


PVSS Navigator



What is PVSS?

- “**P**rozess **V**isualisierung und **S**teuerungs **S**ystem”
(process visualization and control system)
- SCADA (**S**upervisory **C**ontrol and **D**ata **A**cquistition)
- Control and Visualization of process data

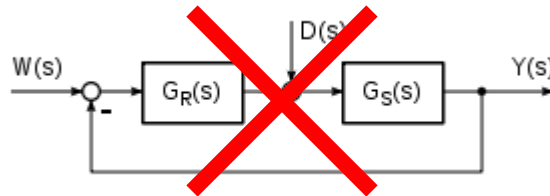


What is PVSS **NOT** for

- **NOT** for realtime control



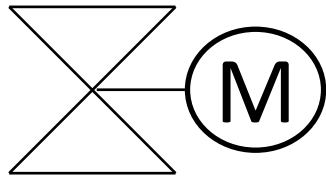
- **NOT** for closed loop control



- **NOT** for high bandwidth data acquisition

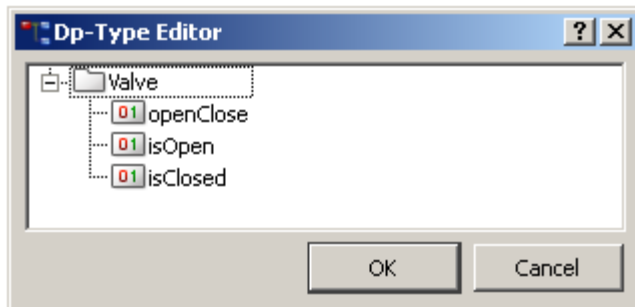
HIGH SAMPLE RATE

PVSS Data Point Concept

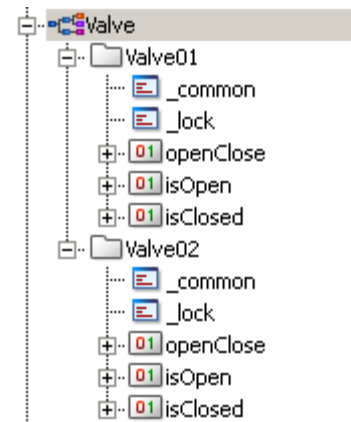


- one input: openClose
- two outputs: isOpen, isClosed

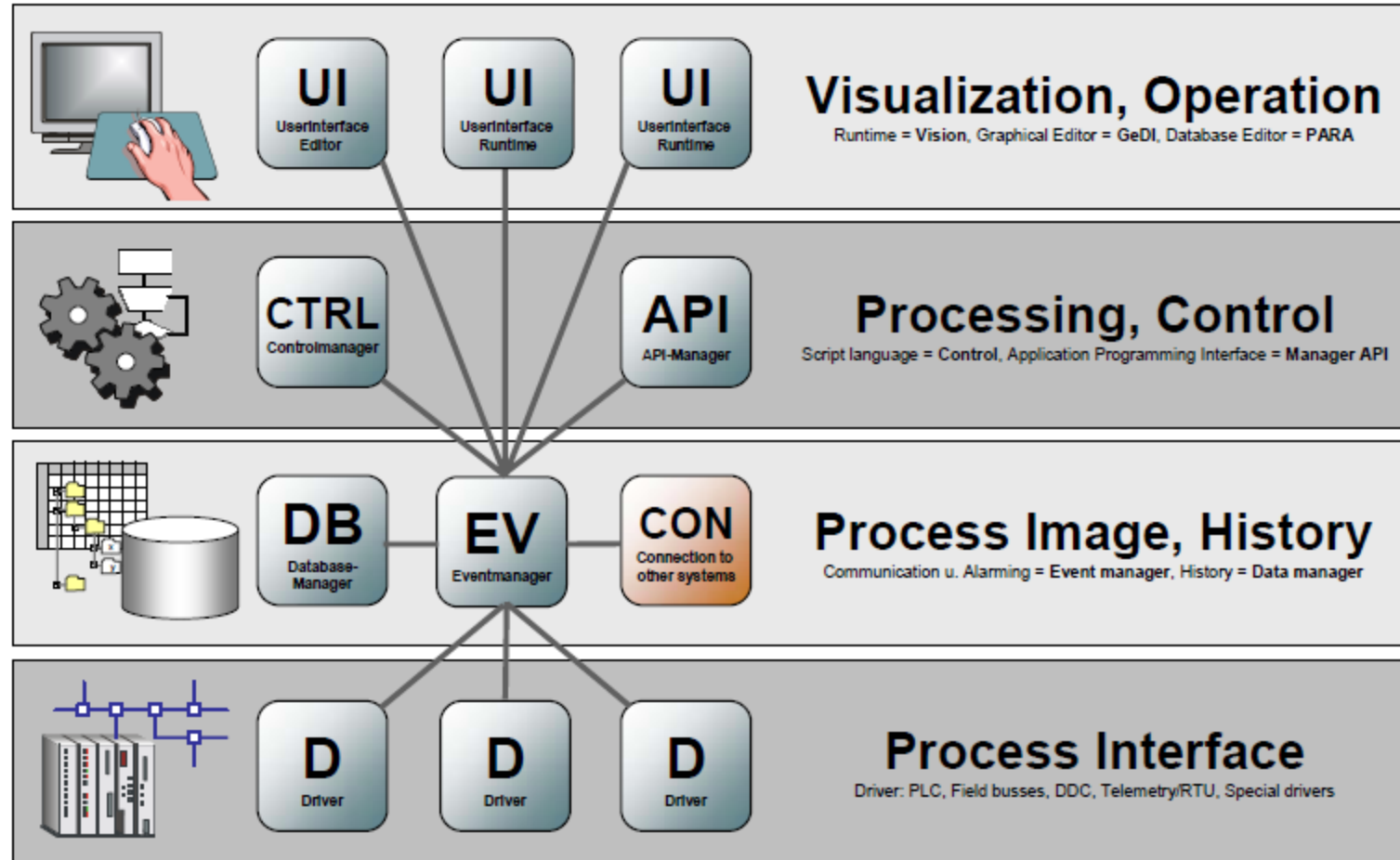
Create the Type:



Create instances:



PVSS Manager Concept



Managing the Panels

Questions:

- How to find a particular panel?
- How to open a particular panel?
- Who takes care of the screen configuration?
- Who takes care of panel access rights?



Answer:

The Navigator



What is/does the Navigator

- Single access point for all control panels
- Holds all information about available panels
- Let the user browse through the panels in a tree structured view
- Handles the user login
- Handles the permissions (users, roles, domains)
- Takes care on the screen configuration (working place, number of screens, resolution)



Navigator

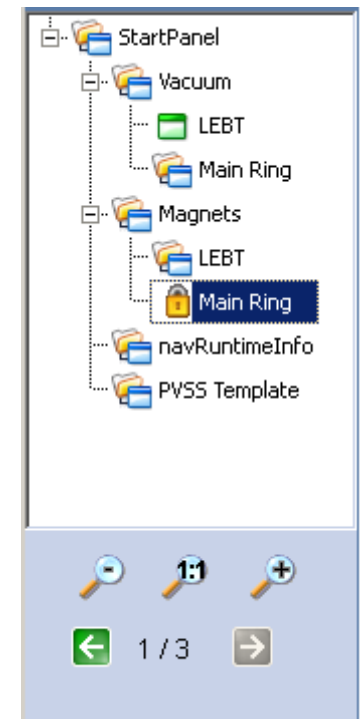
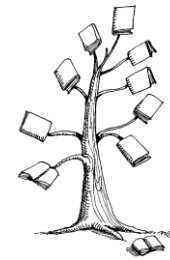
The screenshot displays the MACS Navigator Accelerator Controls interface. The window title is "MACS_Navigator1: Accelerator Controls". The main content area is titled "Sources Overview" and displays "Main Source" in large text. The left sidebar shows a tree view with the following structure:

- StartPanel
 - Vacuum
 - LEBT
 - Main Ring
 - Magnets
 - LEBT
 - Main Ring
 - Sources
 - Source1
 - Source2
 - navRuntimeInfo
 - Role Administration
 - PVSS Template

The status bar at the bottom shows the user is "mmarchha" with roles "root; VacuumExpert; MagnetExpert; SourceExpert;". The system time is 1:46:38 PM on 6/18/2010. The version number is 001.001.008 and the filepath is /Sources/pnlSourceMain.pnl.

Tree Configuration

- Each node has a assigned panel
- Multiple nodes can refferere to the same panel
- Organizing the tree according to the current user permissions
- Holds the panel information
(a panel may be opened at the same time only once)
- All information about the tree and the panels is stored in a Data Point



Access Control

- Includes Access Control Component of JCOP
- Concept of Users, Roles and Domains
- Domain permissions: read, write and execute
- Required permission can be defined per panel and per element in the panel (e.g. button)



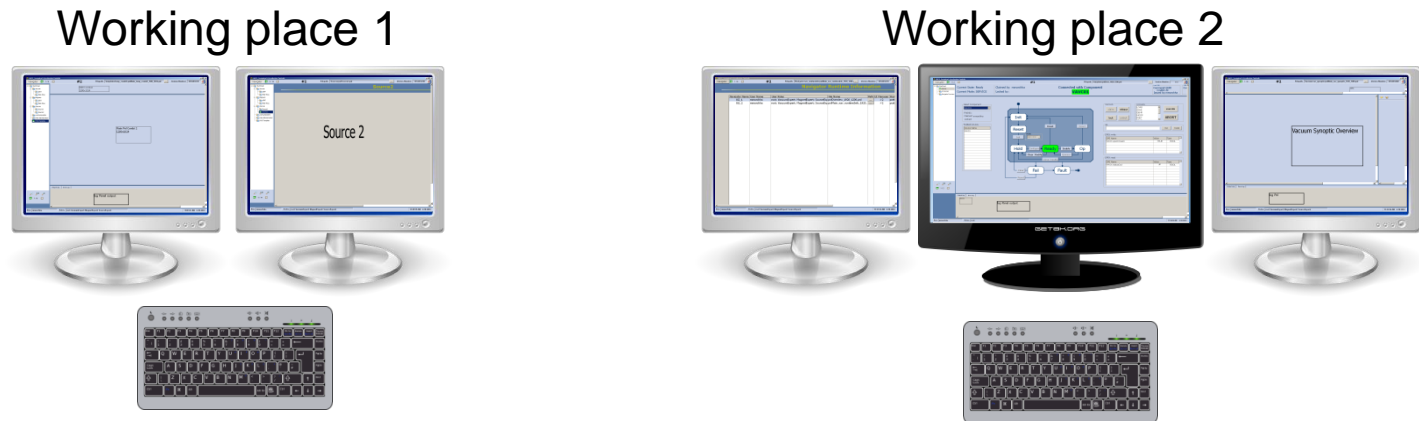
User login

- Over the actual OS user



Screen Configuration

- Definable per user and per working place(planned)
- Each Screen has his own navigator panel



- 3 supported resolutions
 - 1280x1024
 - 1920x1200
 - 2560x1600

Example: Navigator Information

MACS_Navigator1: Accelerator Controls

Navigator 1 / 5 #1 Filepath: /Navigator/nav_runtimeInfo/pnlMain_nav_runtimeInfo_1920_1200_1... Version Number: xxx

Navigator Runtime Information

ebg MedAustron

| Navigator Name | User Name | User Roles | File Name | Path | UI Manager | Host Name | Host IP | Monitor | start time |
|----------------|-----------|------------|--------------------------------|------|------------|-----------|-----------------|---------|-------------------------|
| Ui2_1 | mmarchha | root; | pnlMain_nav_runtimeInfo_1920 | ... | #2 | pcebgma29 | 137.138.195.153 | #1 | 2010.06.18 13:29:33.054 |
| Ui3_1 | root | root; | pnlMain_feco_control_1920_1200 | ... | #3 | pcebgma29 | 137.138.195.153 | #1 | 2010.06.18 13:37:33.276 |

User: mmarchha Roles: root; 1:39:24 PM 6/18/2010

Example: FECOS panel

MACS_Navigator: Accelerator Controls

Navigator 1/2

#1

Filepath: /FECOS/feco_control/pnlMain_feco_control_1920_1200.pnl Version Number: xxx

Current State: Ready Claimed by: mmarchha Connected with Component VAVC01

Current Mode: SERVICE Locked by:

Last CMD: Command: QUIE CmdID: 20 Issued by: mmarchha

CMD Status: Command: QUIE CmdID: 20 Status: Completed

Select Component: VAVC01

PreInfo: Claimed: Locked:

Related Devices:

| Device Name |
|-------------|
| VAV01 |
| |
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| |

The diagram is a state machine for the VAVC01 component. It includes states: Init, Reset, Hold, Ready, Op, Fail, and Fault. Transitions include 'Init', 'Reset', 'Configure', 'Enable', 'Clear', 'Modify', 'Quiesce', and 'Clear'.

```
graph TD; Start(( )) --> Init; Init --> Reset; Reset --> Init; Reset --> Hold; Hold --> Ready; Ready --> Op; Op --> Ready; Op --> Fault; Ready --> Hold; Ready --> Fault; Hold --> Fault; Fail --> Reset; Fault --> Start; Fault --> Fail;
```

Claim/Lock: claim release lock unlock

Commands: LOAD SAVE GENR NOOP PGET execute ABORT

URL: FILE FOLDER

| DPE Name | Value | Type |
|-------------------|-------|------|
| VAV01.openCloseIn | TRUE | BOOL |
| | | |
| | | |
| | | |
| | | |

| DPE Name | Value | Type |
|-----------------|-------------------------------------|------|
| VAV01.statusOut | <input checked="" type="checkbox"/> | BOOL |
| | | |
| | | |
| | | |
| | | |

Output Log Error Log

FECOS

log Panel output

User: mmarchha Roles: root; 1:30:25 PM 6/18/2010

Example: PCON DataAcquisition

MACS_Navigator1: Accelerator Controls

Navigator 1 / 4

#1

Filepath: /PowerConverter/pcon_dataAcquisitionVisualization/pnlMain_pco ...

Version Number: xxx

PCON DataAcquisition

| Power_Converter | Color | Style |
|--------------------|-------|-------------|
| PO_06_005_POC_G001 | green | cwLineSolid |
| PO_01_001_POA_C001 | blue | cwLineDash |

add>>

remove

startPlot

halt

resume

Toolbox

Scale

ppm

mA

A

User: mmarchha

4:58:15 PM 6/23/2010

Outlook

- Next Panels to develop:
 - Power Converter Data Acquisition Panel (ongoing)
 - ProShell Control Panel
- Additional features:
 - Screen configuration per working place
 - Dynamic screen configuration