

CSS – Control System Studio

TINE Users Meeting

DESY 5th December 2008

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Overview

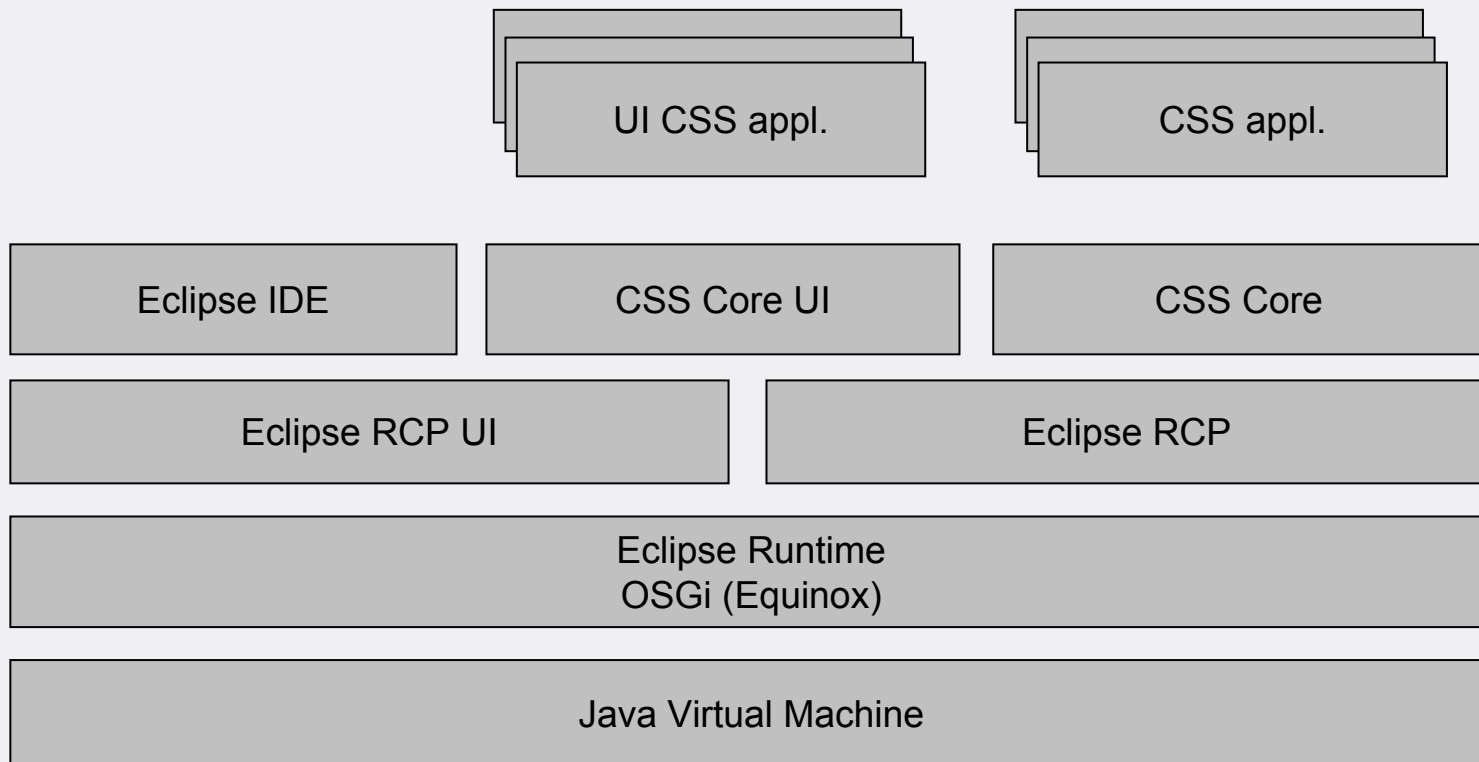
- CSS Structure
- CSS in an Onion
- Applications
 - Namespace Browser
 - Alarm System Overview
 - Alarm-Table / Alarm-Tree
 - Alarm Configuration
 - DataBrowser
 - SDS Synoptic Display Studio
- Summary

CSS Design

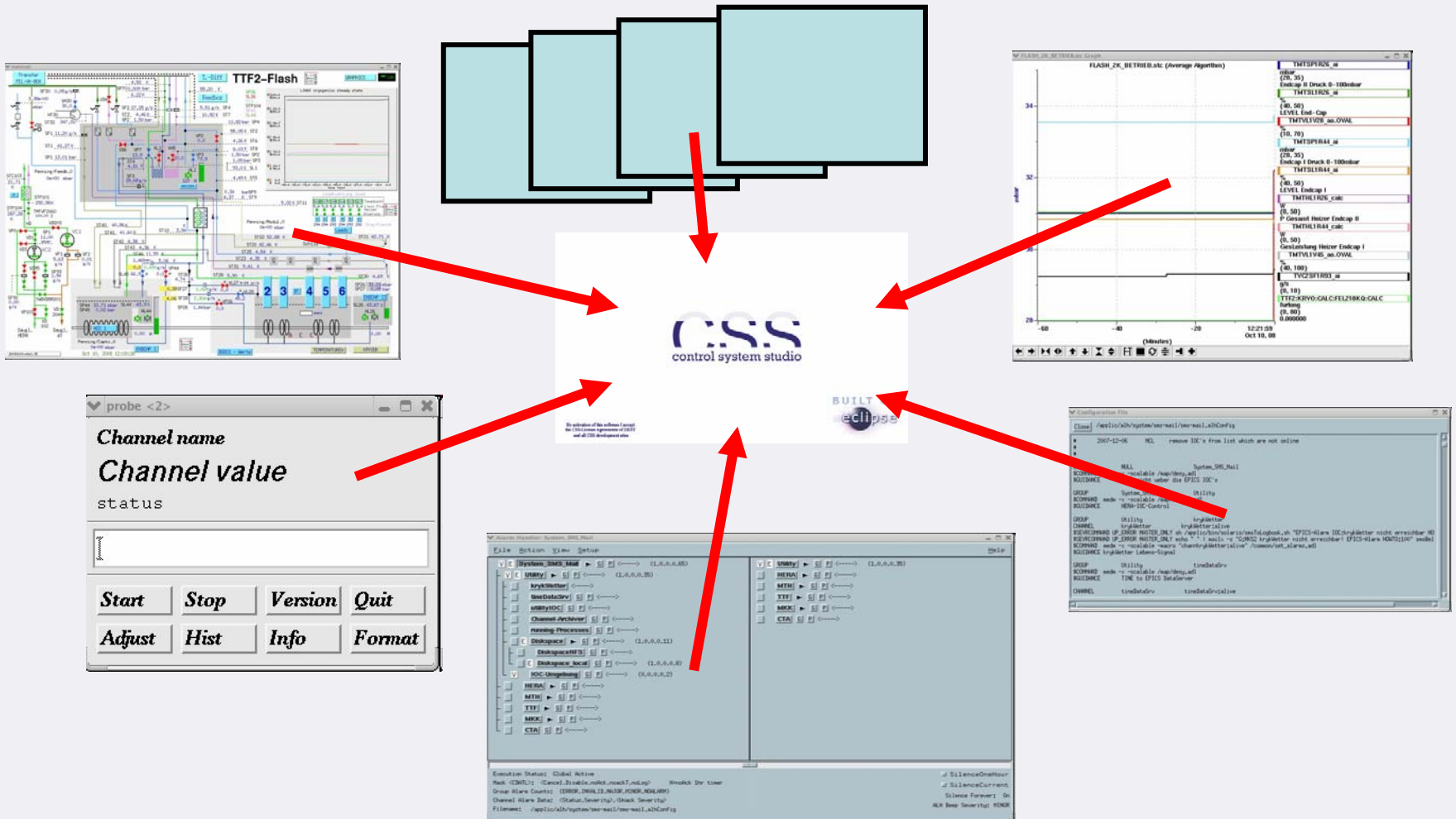
**IDE with
CSS applications**

CSS UI

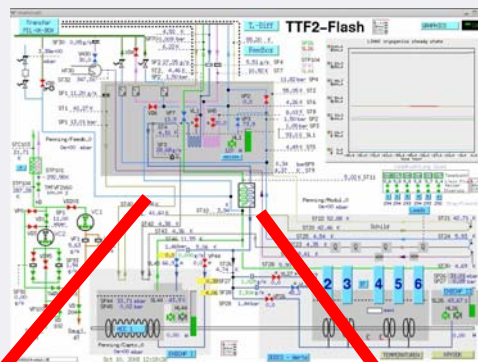
CSS Headless



Control System Studio: A Container for alle of these client applications – And many more...

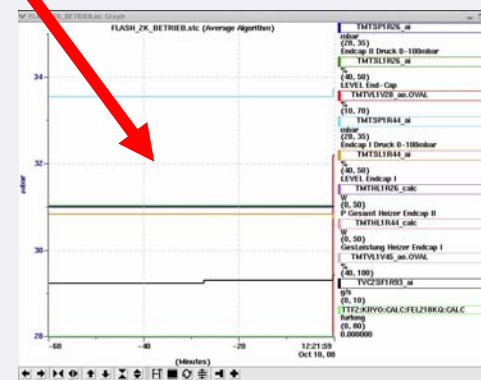
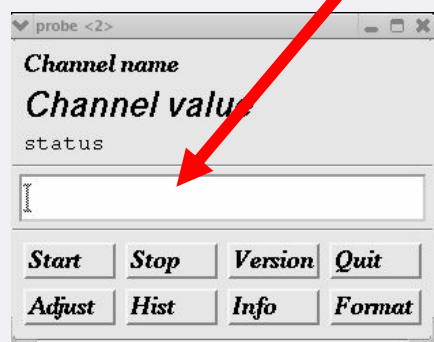


Before CSS: Information Transfer by ‚Drag and Drop‘



Sequence:

1. Start Application
2. Drag Channel from Graphic into Probe or StripTool



With CSS: Information Transfer by means of Contributions

From Graphics

Close Shell

Print selected Pvs

Copy Pvs Name to Clipboard

CSS

Team

Compare With

Replace With

RecordProperty

Name Space Search

Name Space Browser (LDAP)

Datenbrowser

Datenbrowser 'View'

Open in display

PV Tabelle

Probe

EPICS PV Hierarchie

Log Archive

47

From PV Table

Sel	Name	Time	Value	Saved
<input checked="" type="checkbox"/>	EpicsDemo1	2008...	92	
<input checked="" type="checkbox"/>	EpicsDemo1.MDEL	2008...	0	
<input checked="" type="checkbox"/>	EpicsD...			

Add

Config

Cut

Copy

Paste

Delete

Stop

Snapshot

Restore

Copy Pvs Name to Clipboard

CSS

RecordProperty

Name Space Search

Name Space Browser (LDAP)

Datenbrowser

Datenbrowser 'View'

Open in display

PV Tabelle

Probe

EPICS PV Hierarchie

Log Archive

Sequence:

1. Start CSS
2. From any application start any other application (plugin) with PV data object or list of PVs or Frontend-Controller or dataBrowser data.

From Connection View

??	INITIAL		
EpicsDemo1	CONNECTED	3.0	
EpicsDemo1	CONNECTED	3	
EpicsDemo1	CONNECTED	3.0	
EpicsDemo1.ADEL	CONNECTED	0.0	
EpicsDemo1.EGU	CONNECTED		

Copy Pvs Name to Clipboard

Print selected Pvs

CSS

RecordProperty

Name Space Search

Name Space Browser (LDAP)

Datenbrowser

Datenbrowser 'View'

Open in display

PV Tabelle

Probe

EPICS PV Hierarchie

Log Archive

Advantage using Eclipse as the Core for CSS

- Plugin Approach of Eclipse
- Inter Plugin Communication (Contributions, extension points, services)
- OSGi service layer
- Views and Perspectives (layout restored after restart)
- Update management interactive (and remote CSS-1.2)
- Before writing a new tool – see what is already available
 - Many functions and features are available by default
- One virtual Java machine (VM) for all plugins in one Eclipse Rich Client like CSS

CSS Beta Distribution (pre CSS-1.1) **NEW**

CSS-Beta

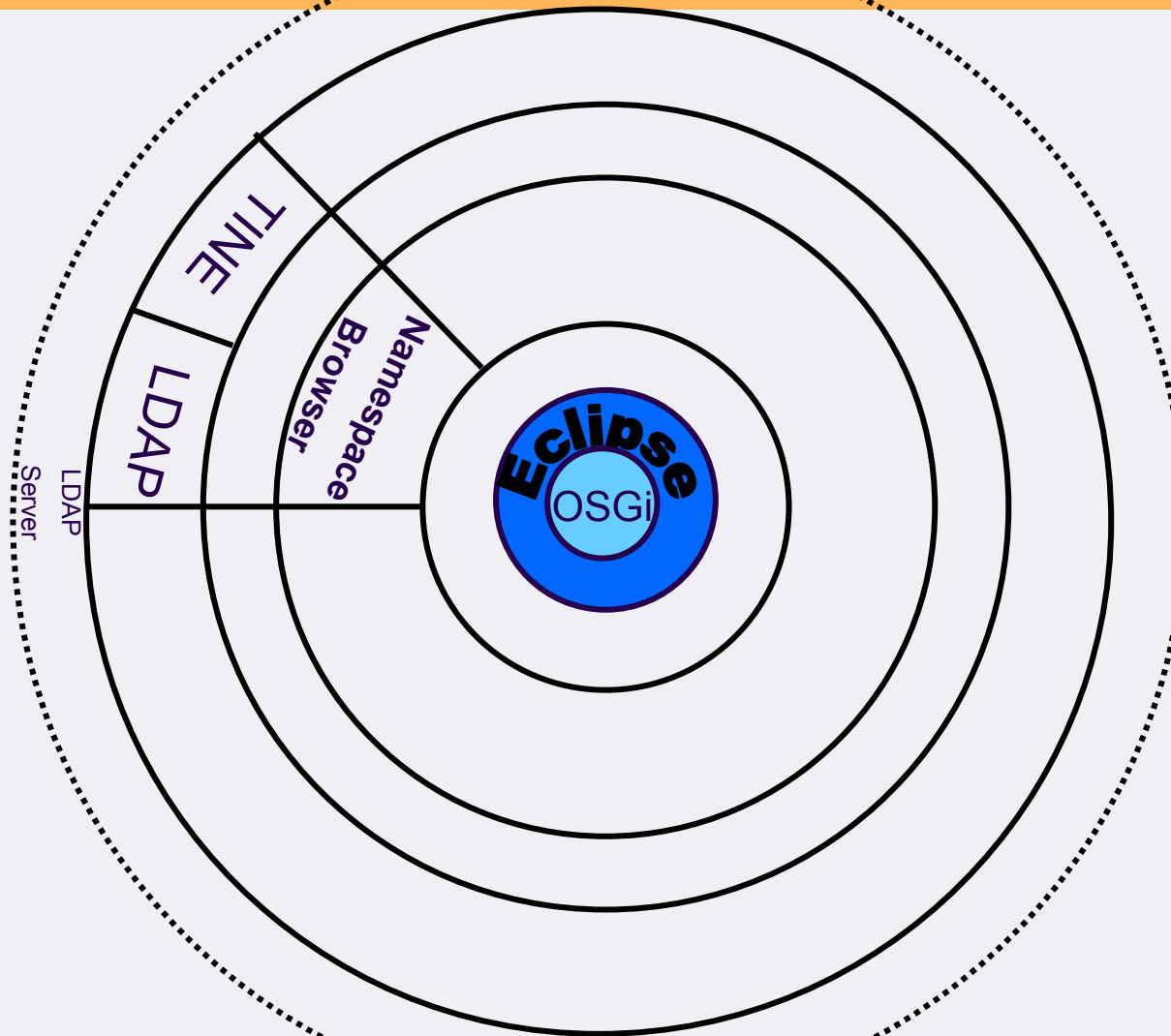
- DAL/ SimpleDal (Cosylab/ C1-WPS)
- SDS Synoptic Display Studio
- (SDS) ADL Converter
 - Sample Display Plugin(Training)
 - Layer Manager
 - Connector Overview
 - Quickstart
- DataBrowser (Kay)
 - Post Analyzer
- PvTable (Kay)
- Probe (Kay)
- PV Hierarchy (Kay)
- JMS Log Viewer (generic)
- Statistic View
- Directory Viewer (XMPP based Tree)
- Save Value
- Screenshot
- CaSnooper
- Therapist (Kay)
- Clock (Kay)

DESY-Beta add ons

- Alarm Table
- Alarm Tree
- JMS Log Archive View
- AMS New AMS
- Authorize ID
- Io Configurator
- Kryo Name Browser
- RMT Control
- SNL Debugger
- SNLEditor
- JMS Sender
- Name Space Search
- Name Space Browser
- Record Property

The CSS Onion:

Namespace Browser



Namespace Browser

Plugin to Display Hierarchical Name Configurations

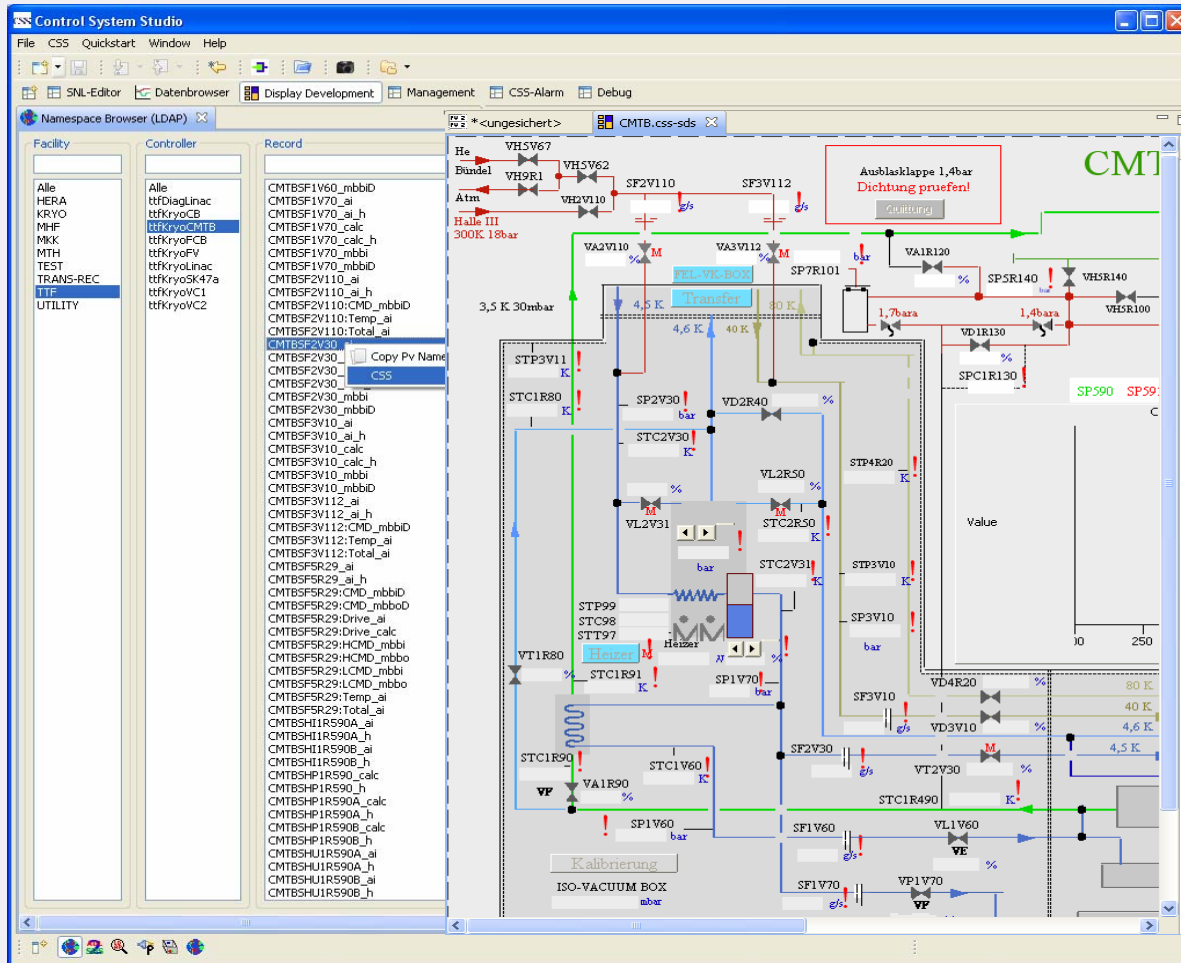
EPICS:

- The EPICS names are stored in an LDAP server
- The Structure has three levels:
Facility | IOC | Record
- Clicking on the last Element (Record) will activate the Contribution Menu -> Activate other plugins passing the record name.

TINE:

- TINE names are stored in TINE name server
- The Structure has three levels:
Context | Subsystem | Server | Device | Property
- Clicking on the last Element (Record) will activate the Contribution Menu -> Activate other plugins passing the record name.

Namespace Browser (EPICS)



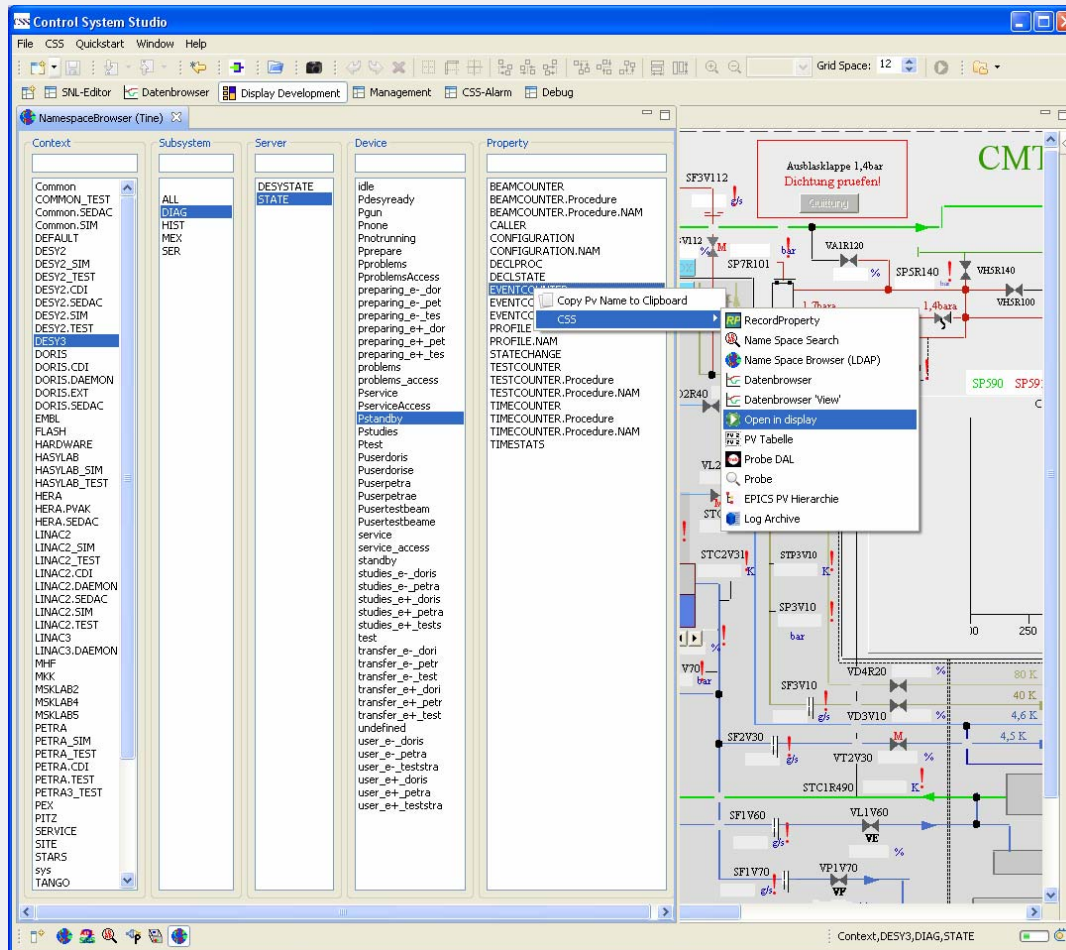
Call up:

- Display
- PV-Table
-

Drag and Drop

- Into PV-Table
- Into Display (edit mode)

Namespace Browser (TINE)



Call up:

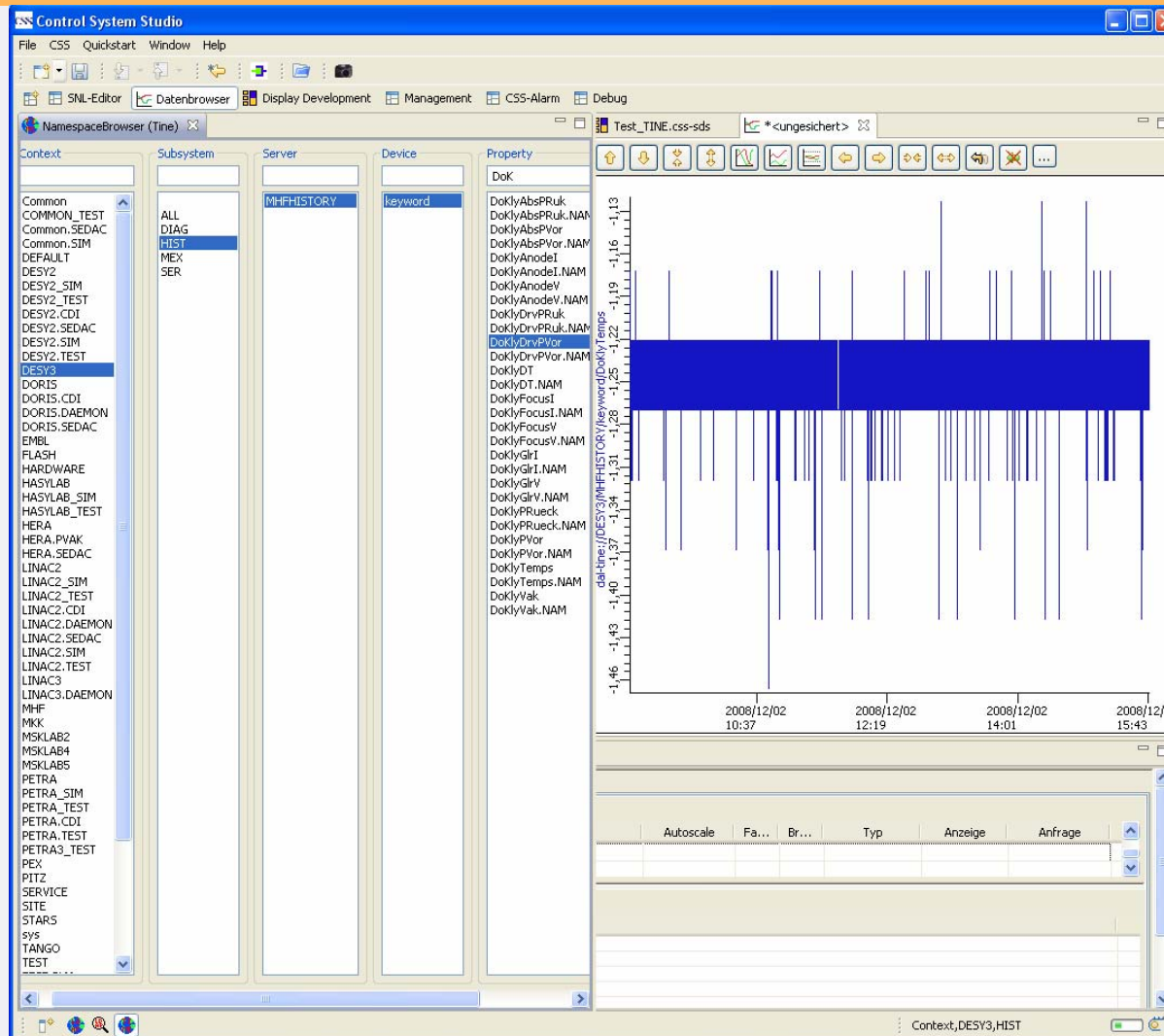
- Display
- PV-Table
-

Drag and Drop

- Into PV-Table
- Into Display (edit mode)

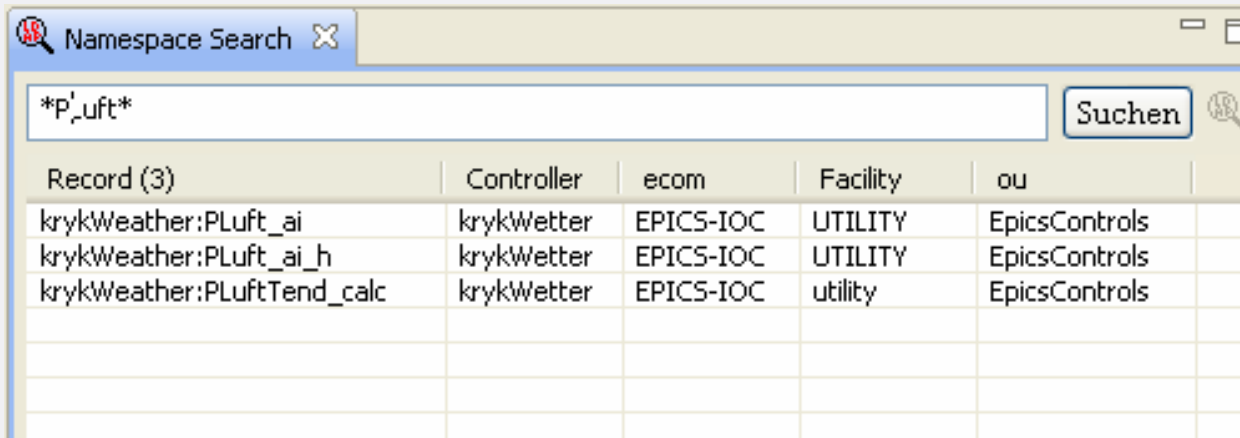
No DAL support for PV-Table - yet

Namespace-Browser (TINE) and DataBrowser



Namespace Search

Searching the Namespace for record names giving a pattern (probably only relevant for EPICS)



The screenshot shows a window titled "Namespace Search" with a search input field containing the pattern "*p'_uft*" and a "Suchen" button. Below the search bar is a table with 6 columns: Record (3), Controller, ecom, Facility, ou, and an empty column. The table contains three rows of search results.

Record (3)	Controller	ecom	Facility	ou	
krykWeather:PLuft_ai	krykWetter	EPICS-IOC	UTILITY	EpicsControls	
krykWeather:PLuft_ai_h	krykWetter	EPICS-IOC	UTILITY	EpicsControls	
krykWeather:PLuftTend_calc	krykWetter	EPICS-IOC	utility	EpicsControls	

Namespace Browser: Relevance for TINE Users:

The TINE Namespace Browser can be used to find TINE device names. (like in the instant client)

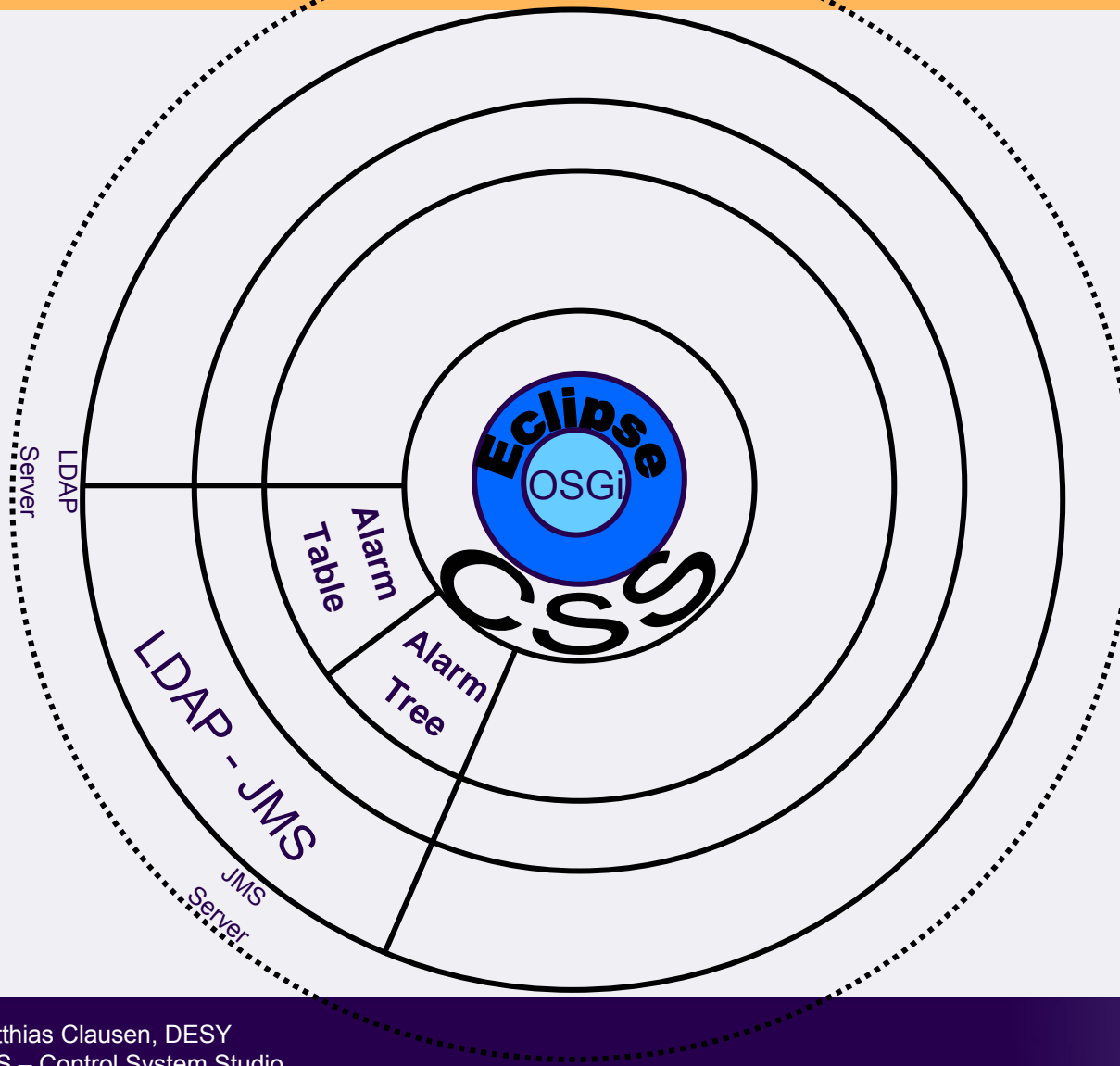
CSS Plugins/ Applications can be called from the Browser (like the DataBrowser Plugin)

TINE names can also be copied to the clipboard and dropped in other (native TINE) tools.

TINE names can be dragged into other plugins (like SDS)

The CSS Onion

Alarm- Table and -Tree

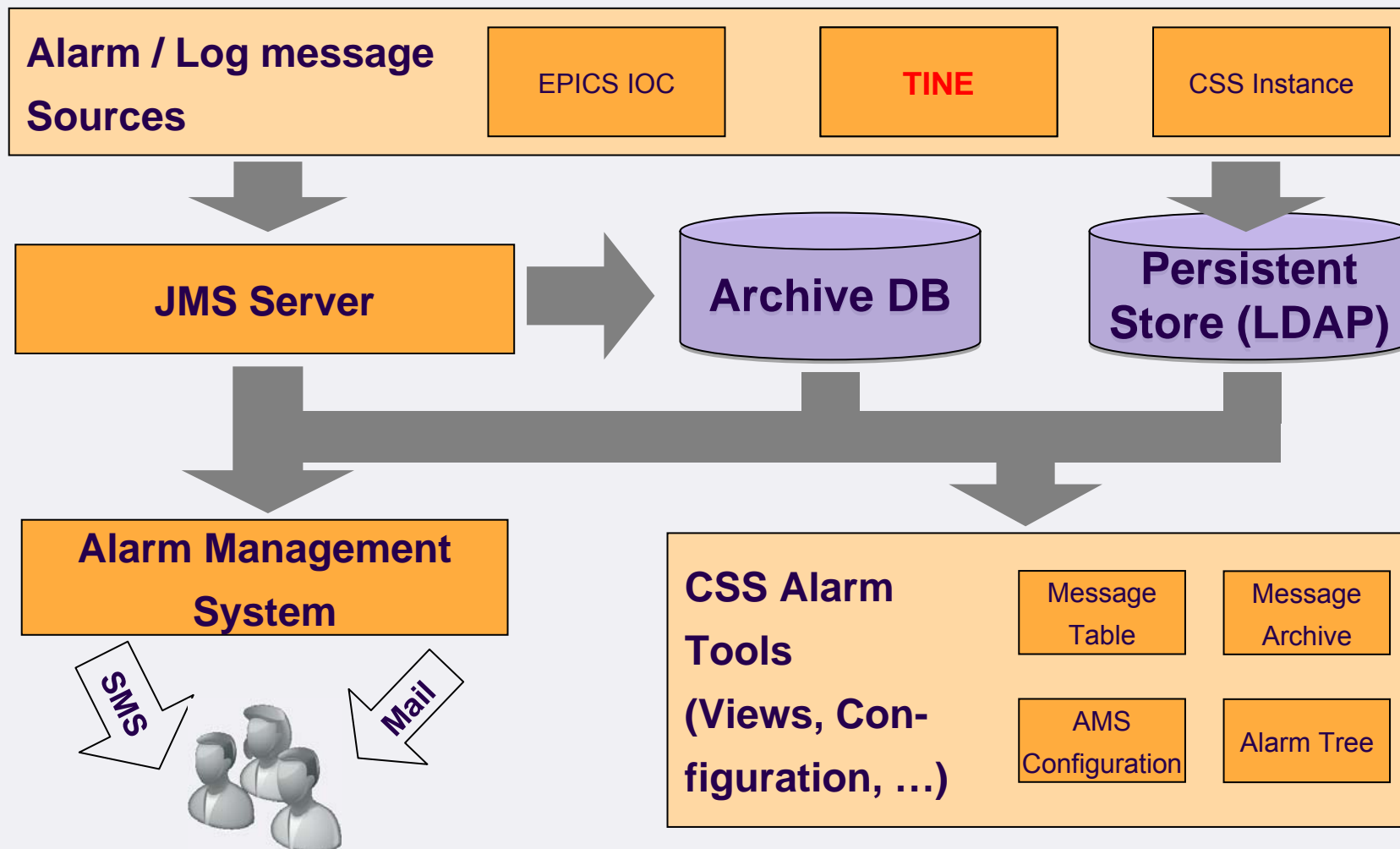


Alarm System Overview

Requirements

- Several sources for alarm/log messages (EPICS, D3, CSS, ... **TINE**)
- Rules and actions to configure special behavior for some alarm messages
- Dedicated alarm messages should be forwarded to different destinations (SMS, e-mail, voice mail, ...)
- Persistent store holds current status of all process variables
- Archive all alarm/log messages
- Operating system independent applications to view messages and configure alarm system

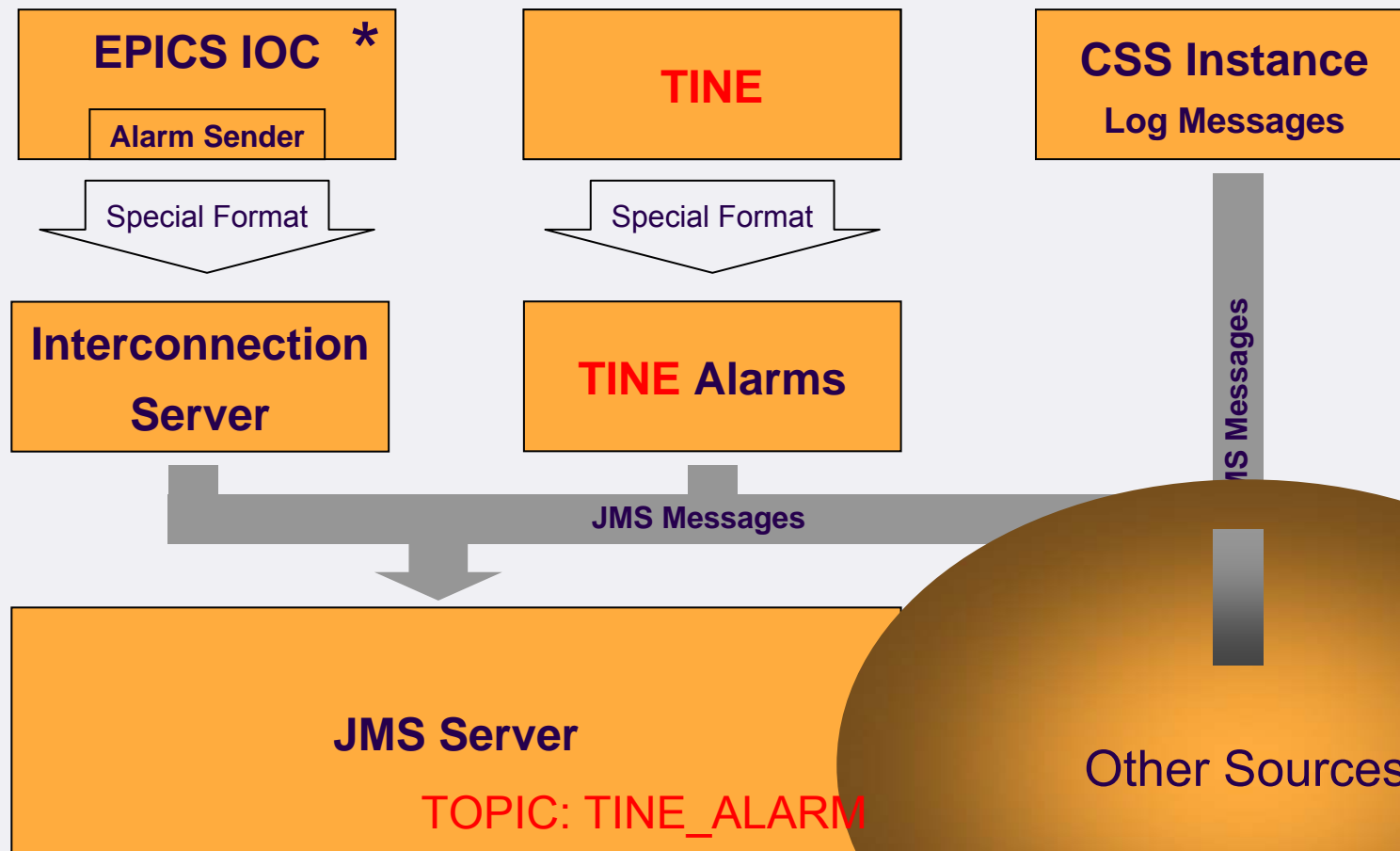
Structure of alarm system



Technical Overview

- Implementation in Java → Operating System independent
- Alarm applications with UI part are integrated in Control System Studio (CSS)
- Headless alarm applications are based on CSS platform (like the TINE2JMS application)
- Common APIs for JMS -, LDAP – Server and Database → no special implementation is required
- JMS Messages (Key, Value) for all communication between components

Message sources



* next: Log-Messages and PutLogging

Alarm Table

Control System Studio

File CSS Quickstart Window Help

SNL-Editor Datenbrowser Display Development Management CSS-Alarm Debug

Navigator Alarm Treeview JMS Alarm view... JMS Log viewer AMS Configur... AMS Monitor JMS propriet... JMS Log archi... Properties

Acknowledge INVALID Disable Sound Running Since: 04.12.08 10:16

A.	COUNT	TYPE	EVENTTIME	NAME	VALUE	HOST	FACILITY
1	1	time-al...	2008-12-04 10:29:54.712	dal-tine://Mod-4		L2Beam	LINAC2
0	0	time-al...	2008-12-04 10:47:51.595	dal-tine://Mod-12		L2Beam	LINAC2
1	1	time-al...	2008-12-04 11:04:17.448	dal-tine://Mod-7		L2Beam	LINAC2
1	1	time-al...	2008-12-04 11:16:05.844	dal-tine://Mod-9		L2Beam	LINAC2
0	0	event	2008-12-04 11:21:49.113	H1:K:PE:S1:watchdog_calc		utilityIOC	Utility
2	2	time-al...	2008-12-04 11:23:10.534	dal-tine://Mod-11		L2Beam	LINAC2
1	1	time-al...	2008-12-04 11:29:53.048	dal-tine://DEVICE 27		DOAlarm	DORIS
51	1	event	2008-12-04 11:33:04.821	alarmTest:RAMP	120	berndTest	TEST
2	2	time-al...	2008-12-04 11:34:40.005	CMTBSTOP4R21_temp		ttfKryoCMTB	CMTB
0	0	time-al...	2008-12-04 11:34:40.222	CMTBSTOP4R21_temp_h		ttfKryoCMTB	CMTB
1	1	event	2008-12-04 11:20:21.983	TMTMB1K4_ai		ttfDiagLinac	FLASH
2	2	event	2008-12-04 11:20:21.983	TMTMB1K3_ai		ttfDiagLinac	FLASH
2	2	event	2008-12-04 11:20:21.983	TMTMB1K2_ai		ttfDiagLinac	FLASH
2	2	event	2008-12-04 11:20:21.983	TMTMB1K1_ai		ttfDiagLinac	FLASH
8	8	event	2008-12-04 11:21:12.848	TSMTSTAT3_mbbID		ttfKryoFV	FLASH Vorkuehl...
1	1	event	2008-12-04 11:20:59.098	H1:K:DO:S1:watchdog_calc		utilityIOC	Utility
1	1	event	2008-12-04 11:20:59.098	H1:K:DO:S2:watchdog_calc		utilityIOC	Utility
1	1	event	2008-12-04 11:20:59.098	H1:K:DO:S3:1_watchdog_calc		utilityIOC	Utility
1	1	event	2008-12-04 11:20:59.098	H1:K:DO:S3:2_watchdog_calc		utilityIOC	Utility
1	1	event	2008-12-04 11:20:59.098	H1:K:DO:S3:3_watchdog_calc		utilityIOC	Utility
1	1	event	2008-12-04 11:20:59.115	H1:K:SV:S2:watchdog_calc		utilityIOC	Utility
88	88	event	2008-12-04 11:33:24.561	CMTBSTOP4R21_temp		ttfKryoCMTB	CMTB
88	88	event	2008-12-04 11:33:26.228	CMTBSTOP4R21_temp_h		ttfKryoCMTB	CMTB

Alarm Table:

- Color Coded by alarm Severity
- Acknowledge Alarm Management (from one to all)
- Alarms from several sources
- Callup other CSS-Plugins

Alarm Table: Properties

The screenshot shows the 'Control System Studio' interface. The left pane displays a project tree with the following structure:

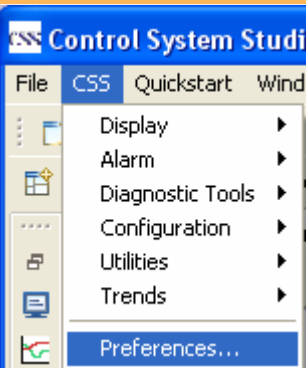
- CMTB
 - FLASH
 - Rechnersysteme
 - Applications
 - Gateway
 - IOC
 - FLASH
 - ttfKryoCB
 - ttfKryoCB:alive
 - ttfKryoCB:cpuUsed_ai
 - ttfKryoCB:fdUsed_ai
 - ttfKryoCB:memUsed_ai
 - ttfKryoCMTB
 - Transient-Recorder
 - Utility
 - Netzwerk
 - Plattenplatz
 - Rechner-Räume
 - Systems
 - Test
 - Alarm_Simulator
 - Bernds_Test-IOC
 - CMTB-Pressure-Test
 - Test
 - Valves
 - kryoCta
 - Wasseranlagen

The right pane shows the 'Properties' window for the selected alarm. The table below represents the data shown in this window:

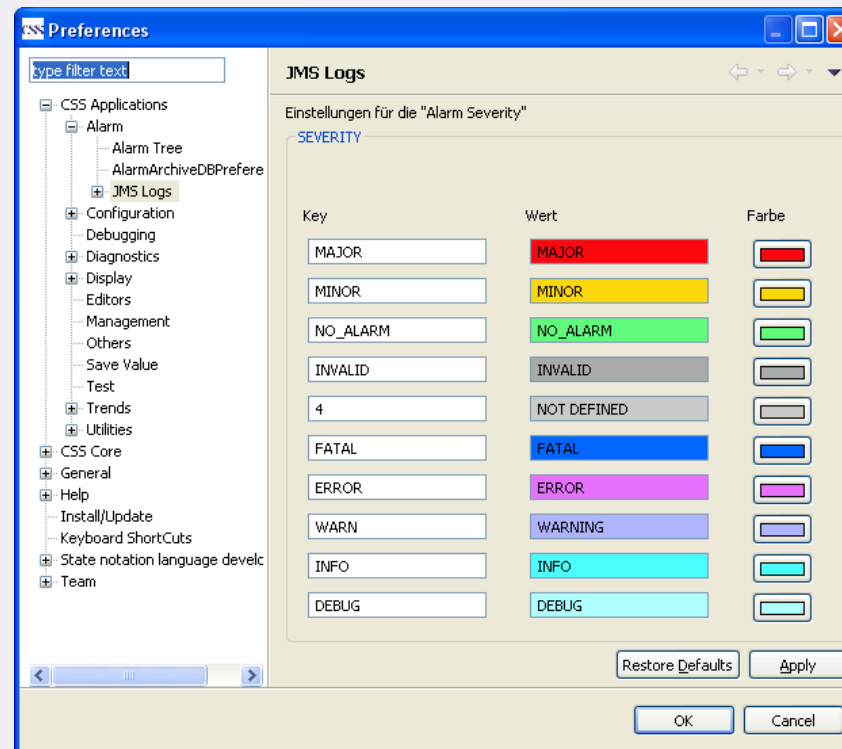
Property	Value
Ack	
APPLICATION-ID	
CLASS	
COUNT	2
DESTINATION	
DOMAIN	
EVENTTIME	2008-12-04 11:23:10.534
FACILITY	LINAC2
HOST	L2Beam
LOCATION	
NAME	dal-tine://Mod-11
OVERWRITES	
PROCESS-ID	
SEVERITY	MAJOR
SEVERITY-MAX	
SEVERITY-OLD	
STATUS	
STATUS-OLD	
TEXT	New
TYPE	tine-alarm
USER	
VALUE	

At the bottom of the window, the status bar shows 'Context:,DESY3,DIAG,STATE'.

Alarm Table Configuration: Color Codes



The Color Coding for the Alarm severity can be adjusted in the CSS preferences



Alarm Table Configuration: Alarm Topics

The screenshot shows the 'Preferences' dialog in Control System Studio. The left sidebar shows the tree structure with 'JMS Alarm viewer' selected under 'JMS Logs'. The main area is titled 'JMS Alarm viewer' and contains the following configuration:

Die Spaltennamen müssen mit den "Keys" der Nachrichten übereinstimmen
Alarm.column_names:

COUNT,52
TYPE,56
EVENTTIME,138
NAME,173
VALUE,100
HOST,100
FACILITY,100
TEXT,100
SEVERITY,100
STATUS,100
OVERWRITES,100
SEVERITY-MAX,100
SEVERITY-OLD,73
STATUS-OLD,178
USER,100
APPLICATION-ID,100
PROCESS-ID,100
CLASS,100
DOMAIN,100
LOCATION,100
DESTINATION,100

Sound File (Workspace Path)
Workspace Path:

Primary Server
Context factory:
Provider URL:

Secondary Server
Context factory:
Provider URL:

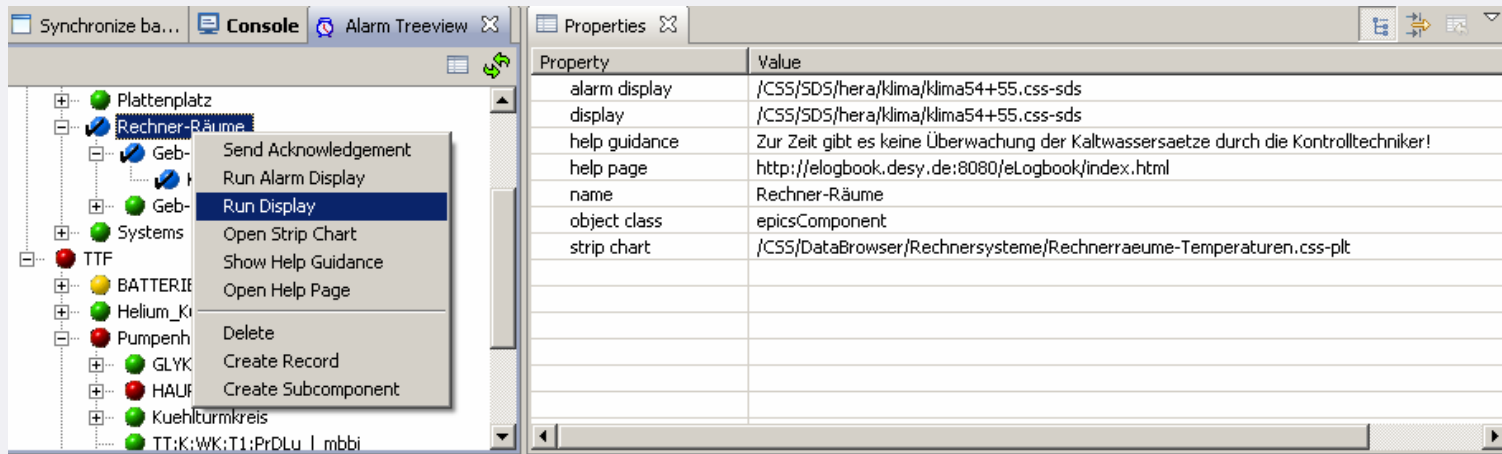
Queue name to listen:

Sender URL:

Buttons: New..., Remove, Up, Down, Restore Defaults, Apply, OK, Cancel.

Adding TINE_ALARMS
In the CSS preferences

Alarm Treeview



- Shows the current status of the persistent store (LDAP)
- Delete and create records and subcomponents by context menu
- Changes are stored in the LDAP server
- Alarm status is propagated to the root component
- Property view to view and edit tree items

Alarm Table

Relevance for TINE Users:

- A TINE2JMS headless CSS application is running in a test phase.
 - TINE alarms are currently written to the JMS-Topic: TINE_ALARM
 - At the end of the test phase tine alarms will be written to the main topic: ALARM
This will also enable the usage of the Alarm Management System and storing of alarms into Oracle.
- TINE Alarms are treated the same way like EPICS alarms. All of the available features are available for TINE alarms.

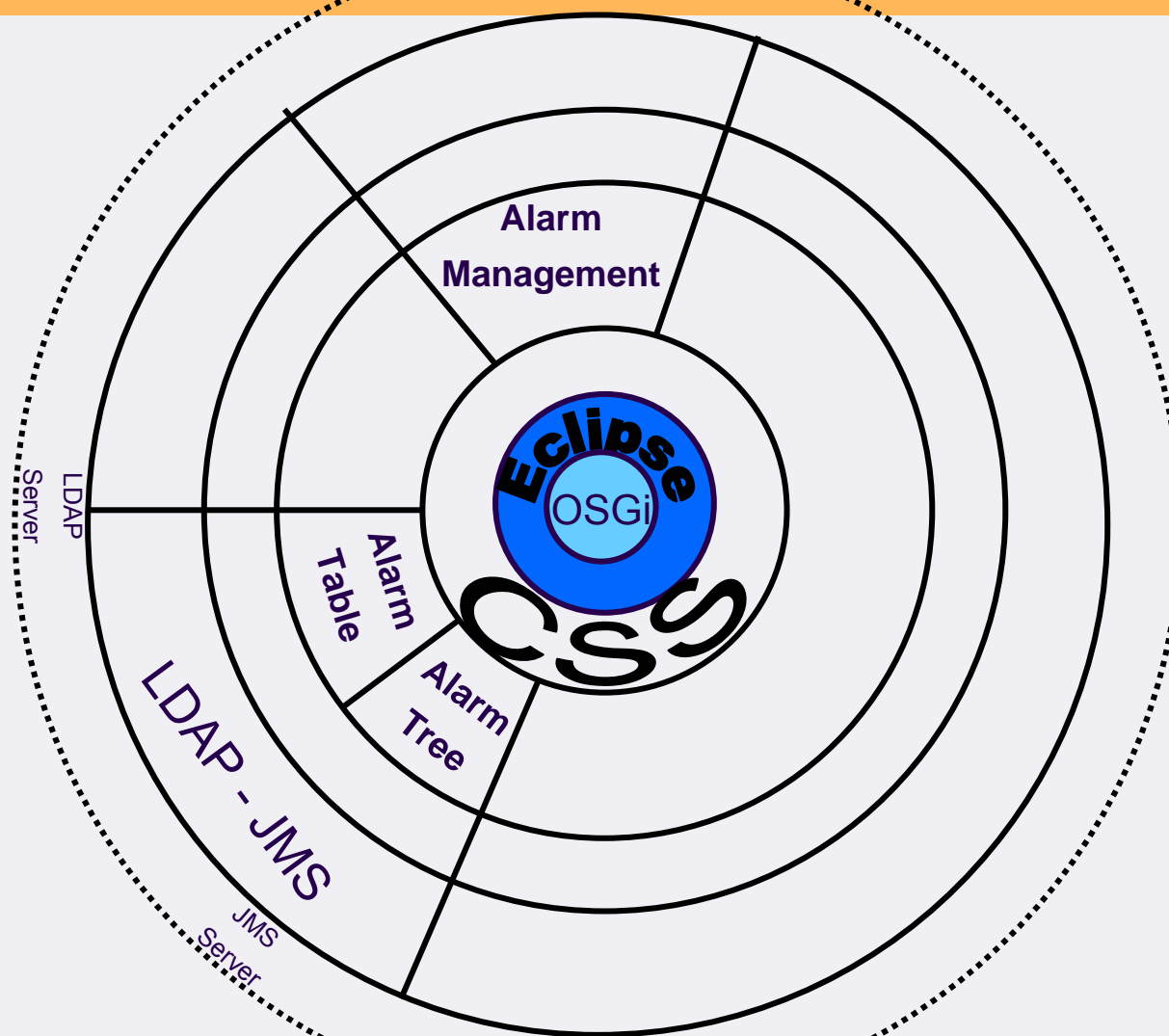
Alarm Tree

Relevance for TINE Users:

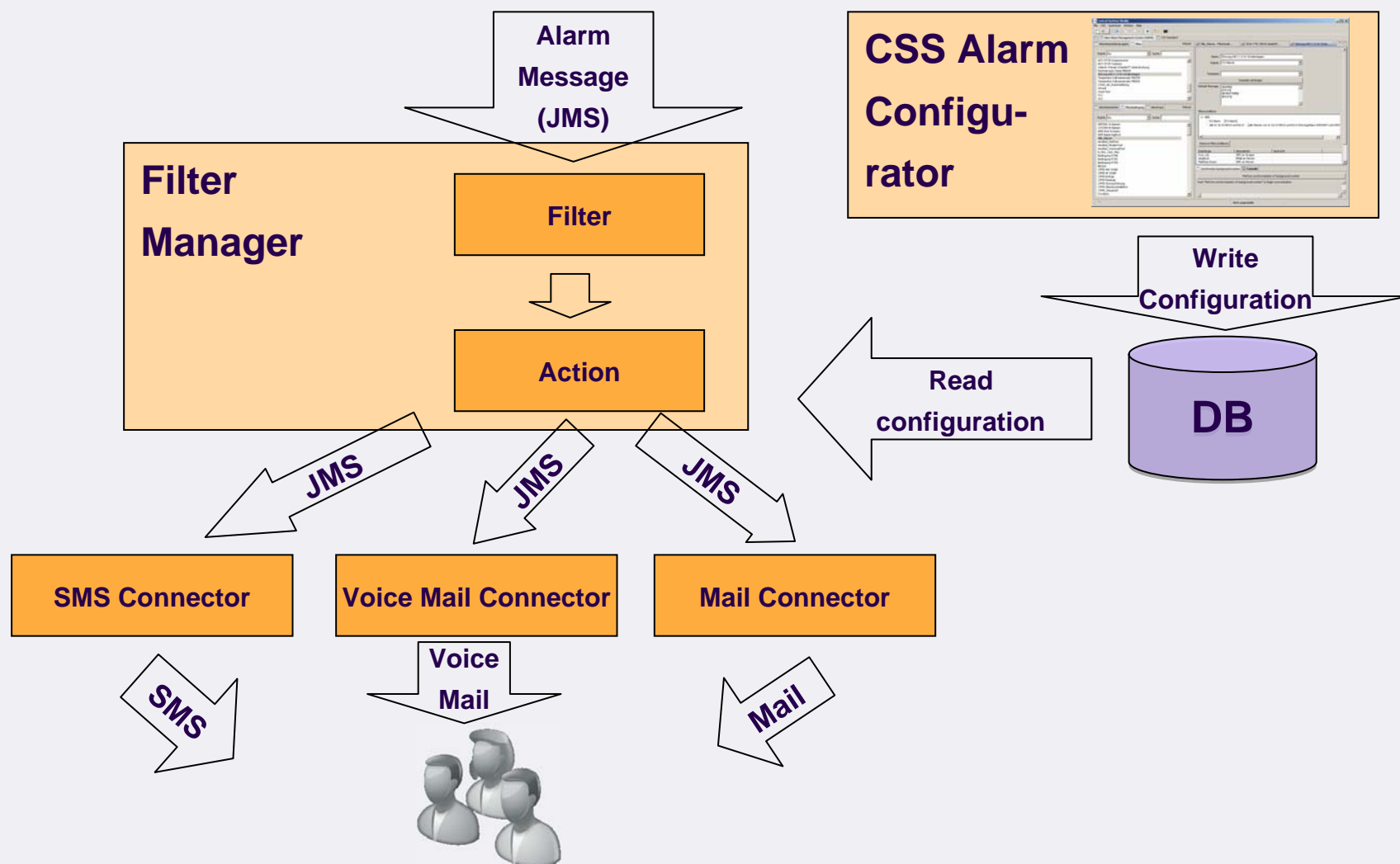
- The Alarm Tree is individually customizable.
- TINE users may configure their own sub-tree.
- Currently the TINE2JMS application does **not** write to the LDAP server. Therefore the alarm states of TINE alarms will not be updated.

The CSS Onion

Alarm- Management



Alarm Management System (AMS)



Logical elements of AMS

Operators:

- Receives alarm messages via mail, sms, ...
- PIN Code to acknowledge alarm messages

Groups:

- Operators responsible for specific facilities
- Defines priority who should be informed first, second, ...
- Maximum delay for acknowledgment

Action:

- What should be happen with an alarm message?

Logical elements of AMS

Filter:

- Checks if the filter matches
- Creates a new message with the relevant information of the alarm message
- Forwards the message to an action

Filter condition:

- A Filter is a combination of filter conditions
- Filter conditions can be connected with AND and OR
- Available condition types are:
Compare strings, Check current PV, Time based condition, ...

The screenshot shows the configuration window for a filter named 'Uhrzeit - Filter ...'. The 'Name' field is 'UTest_mit_Rueckmeldung' and the 'Rubrik' is 'Test'. The 'Default Message' is 'Test-Alarm:\$Text\$'. The 'Filterconditions' section shows a tree structure with an AND condition containing several OR conditions: 'CMTB 40K Schild [wichtige von 40K Schild]', 'CMTB 4K Schild [CMTB 4K Schild]', 'CMTB Endcap [CMTB Modul]', and 'CMTB_Steuerluft [CMTB Steuerluft]'. Below the conditions is a table for actions and recipients.

Empfänger	Alarmaktion	Nachricht
Kryo_Op	SMS an Gruppe	

AMS Configurator in CSS

The screenshot displays the Control System Studio (CSS) interface for configuring an Alarm Management System (AMS). The main window is titled "Control System Studio" and contains several panes:

- Alarmbearbeitergruppen:** A list of alarm operator groups including AMSAdmin, C1, CTA_Rechner, Halle 3, Kryo_Op, MKS_2, and MKS_2_Rufbereitschaft.
- Filterbedingung:** A section for defining filter conditions. It shows a logical expression:


```

      AND
      OR
      - CMTB 40K Schild [wichtige von 40K Schild]
      - CMTB 4K Schild [CMTB 4K Schild]
      - CMTB Endcap [CMTB Modul]
      - CMTB Steuerluft [CMTB Steuerluft]
      UTest_Bedingung [Austesten von msg mit Rueckmeldung]
      
```
- Alarmbearbeiter:** A list of alarm operators with columns for name, status (Aktiv), and notification preferences (Hinweise vom Alarmbearbeiter).

Alarmbearbeiter	Aktiv	Hinweise vom Alarmbearbeiter
Schichtleiter Handy	<input type="checkbox"/>	false
Lothar Kleiner	<input type="checkbox"/>	false
Torsten Pätzold	<input checked="" type="checkbox"/>	true
Juliusz Zajac	<input checked="" type="checkbox"/>	true
Josua Rudolph	<input checked="" type="checkbox"/>	true
Hermann Herzog	<input checked="" type="checkbox"/>	true
Michael Stephan	<input type="checkbox"/>	false
Wolfgang Schroth	<input type="checkbox"/>	false
Tobias Schnautz	<input type="checkbox"/>	false
Matthias Ewers	<input type="checkbox"/>	false
- Kryo_Op - Alarmbearbeitergruppen Editor:** A detailed view of the Kryo_Op group, showing its name, rubric, and a list of active members. The "Alarmgruppe aktiv" checkbox is checked.

The bottom status bar indicates the user is logged in as "Angemeldet als jhatje@DESY.DE".

Alarm Management System: Relevance for TINE Users:

As soon as the test phase is finished, the TINE alarms can be written to the main topic: ALARM from where the Alarm Management System is reading alarms.

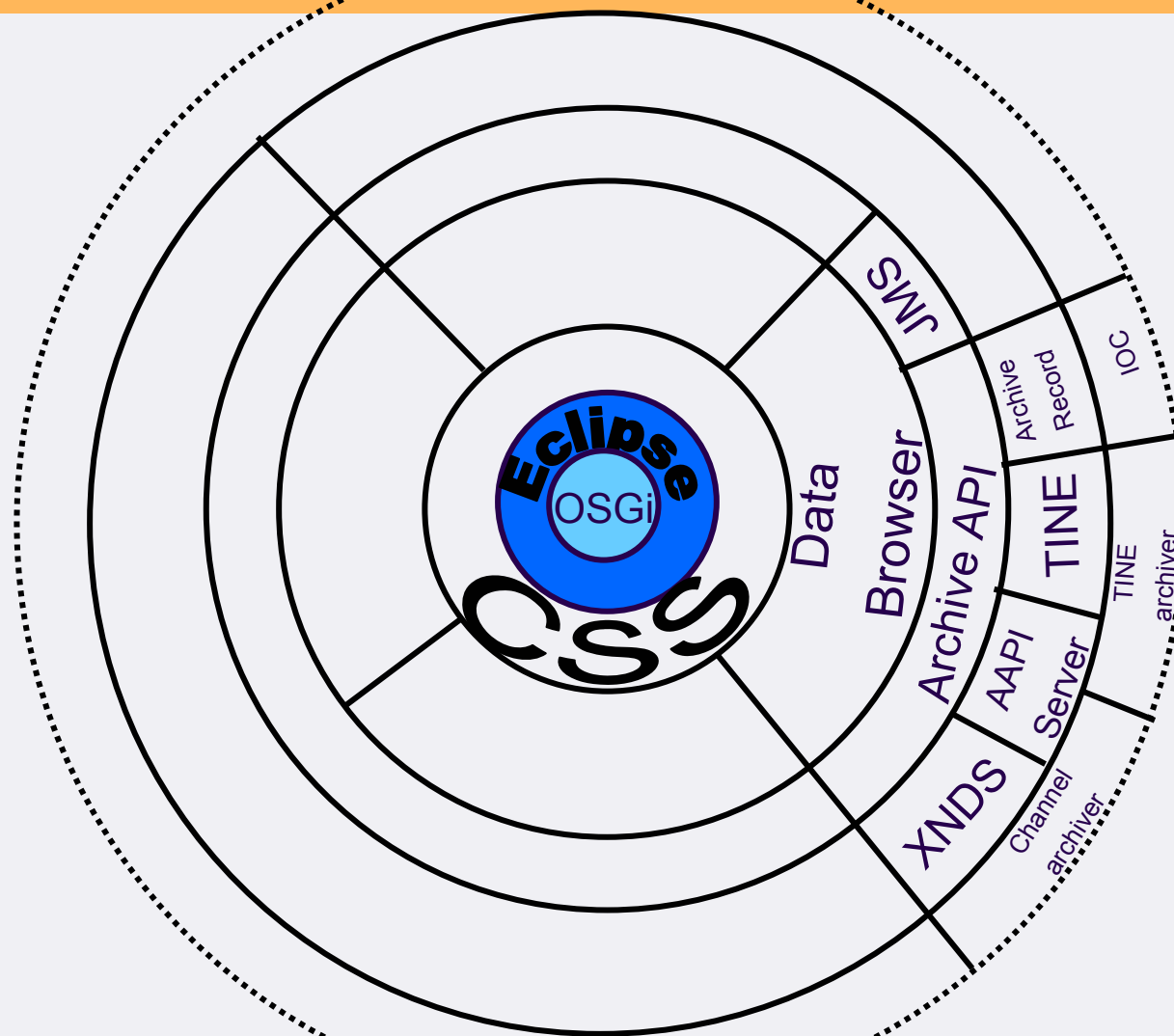
TINE users may configure their own actions in the AMS (SMS messages, mail, voicemail) and make use of the additional features like operator groups etc.

Like:

TINE Alarm → JMS → AMS → SMS (with http-link) → GSM-Phone → http-link → Web-Page with detailed information about TINE device.

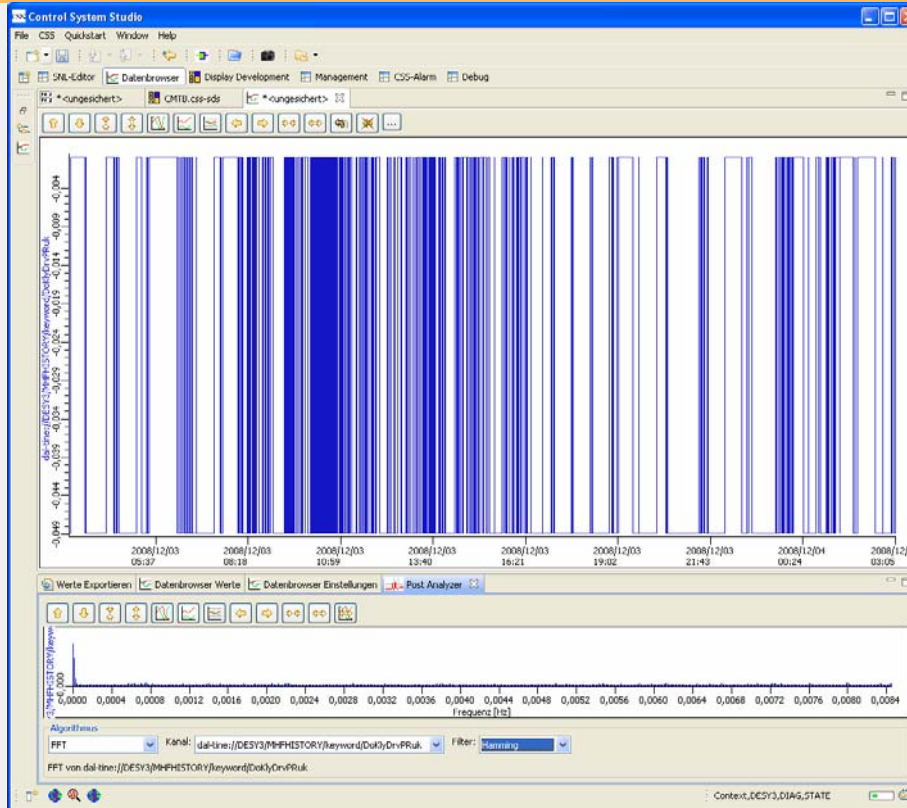
The CSS Onion

DataBrowser

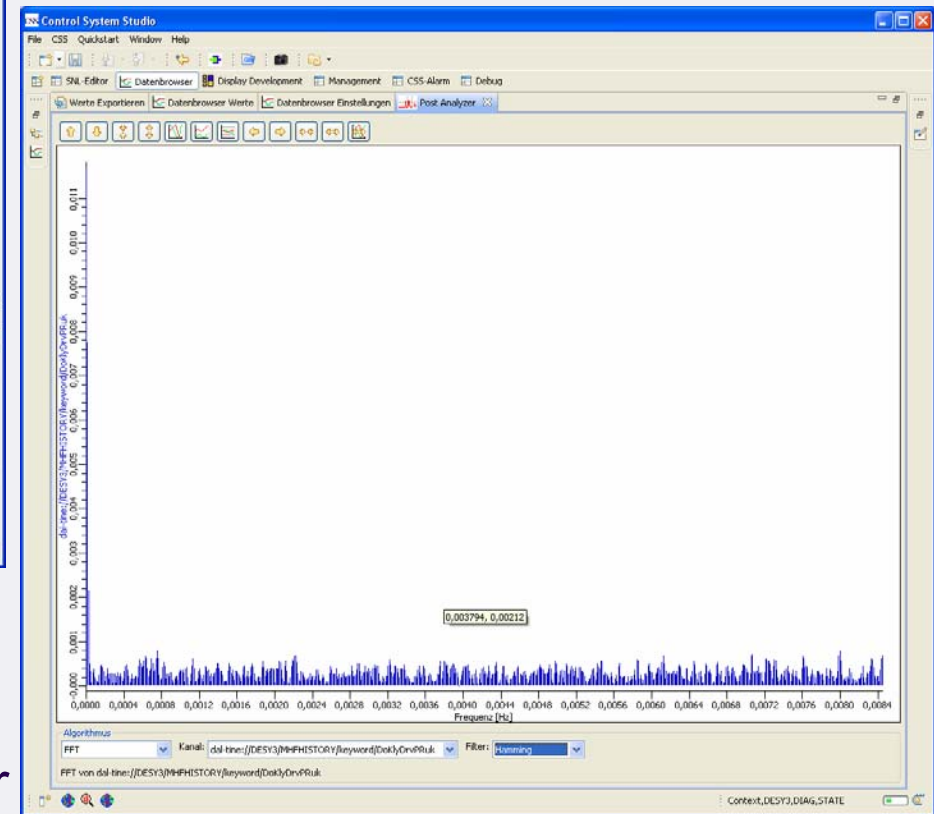


dal-tine://DESY3/MHFHISTORY/keyword/DoKlyDrvPRuk

Data



FFT in Post Analyzer

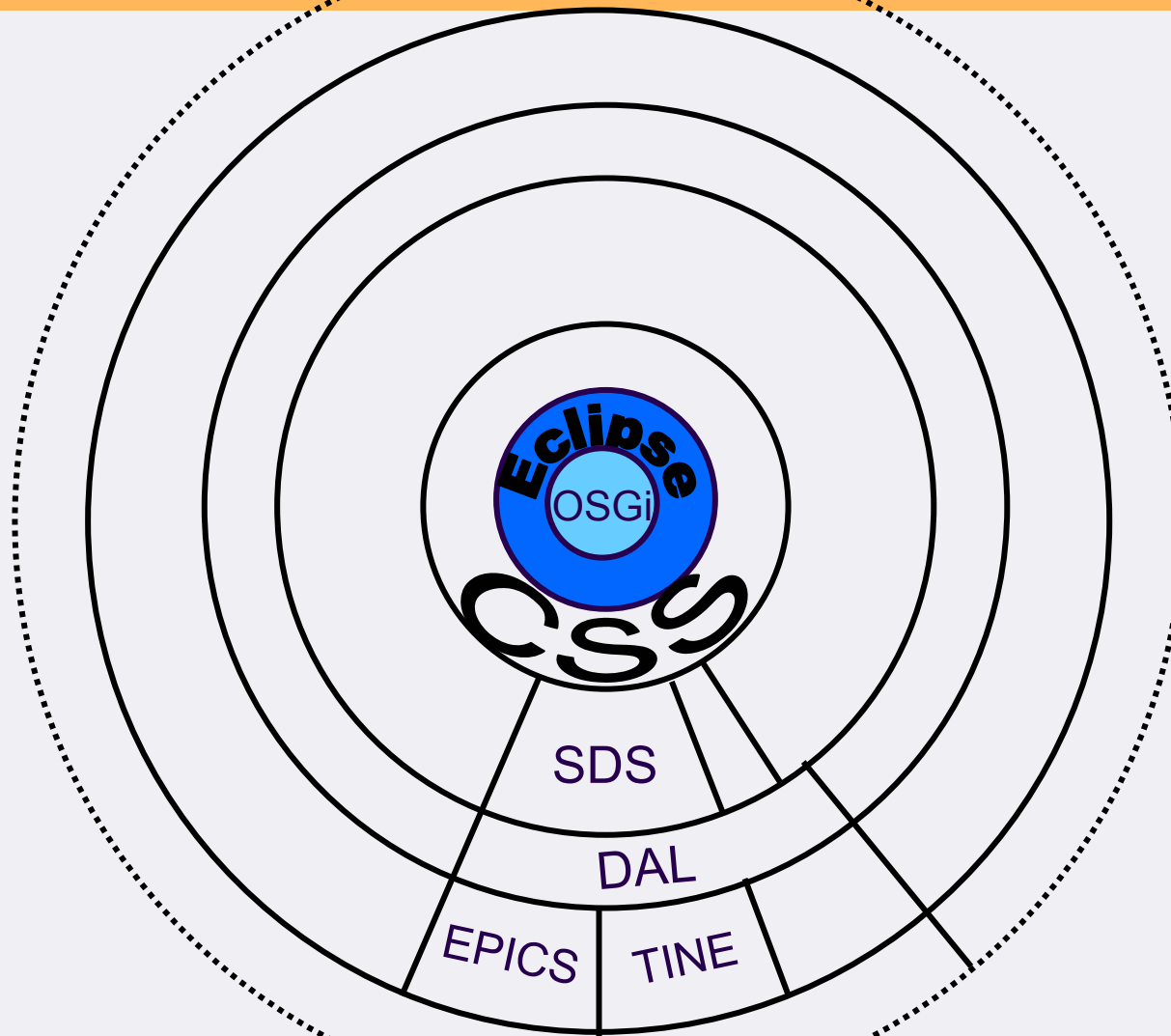


DataBrowser Relevance for TINE Users:

An AAPI plugin for TINE archived data is available. TINE archived data can be transparently read into the DataBrowser.

There is no need to store TINE data in parallel in the channelArchiver. Parallel access to TINE, EPICS and DOOCS data (another interface) is possible.

The CSS Onion Synoptic Display Studio (SDS)



Synoptic Display Studio

- Synoptic Display Studio (SDS) is a set of CSS plugins
- SDS is based on GEF
- Connection to control system via DAL
 - Support for EPICS and TINE (more to come)
 - Full asynchronous support for data updates
- WYSIWYG editor → writing configuration to XML file
- Runtime mode ← reading from XML files
- CVS support for the management of displays (Eclipse feature)
- ADL converter to reuse dm2k Displays
- Easy to add new widgets (one week for a Cosylab student)
http://css.desy.de/content/e1576/index_eng.html
- Everything can be dynamic
 - Properties
 - Display call-up (name substitution using alias names)
 - Displays in Displays (depending on the actual value of a channel)

Synoptic Display Studio UI

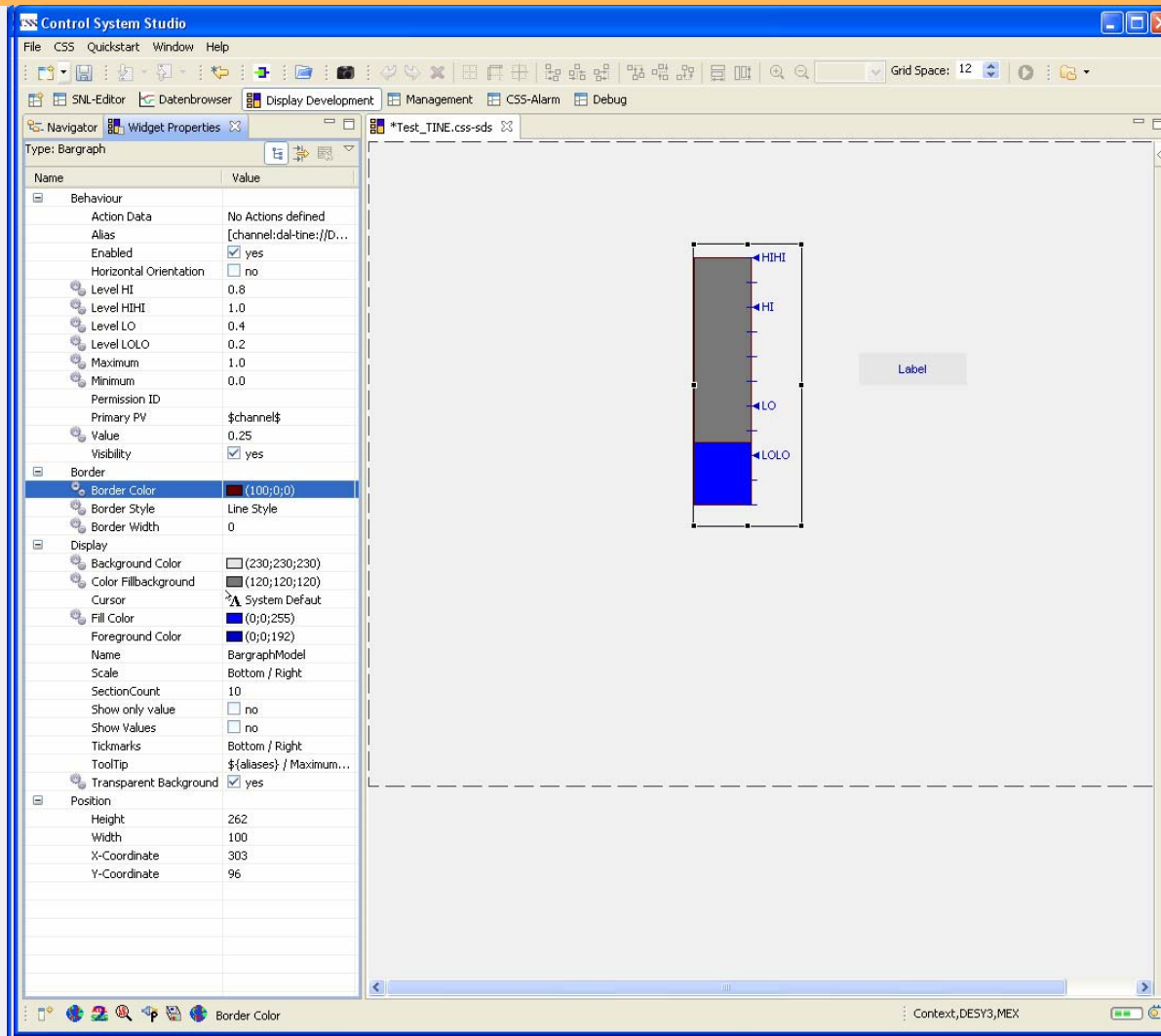
The screenshot displays the Control System Studio (CSS) interface. The main workspace shows a complex synoptic display diagram with various components like valves, pumps, and tanks. The interface is divided into several key areas:

- Workspace:** Located on the left, it contains a hierarchical tree view of the project files, including folders like 'Matthias', 'common', 'hera', 'mkk', 'test', 'ttf', and 'kryo', along with numerous individual CSS files.
- Editor field:** The central area where the synoptic display diagram is edited. It features a grid and various toolbars for drawing and editing.
- Widget palette:** Located on the right side, it lists various UI widgets such as Simple Slider, Ellipse, Arc, Label, Action Button, Polygon, Linking Container, Advanced Slider, MenuButton, Polyline, Rectangle, Text Input, Image, Waveform, Grouping Container, Bargraph, Switch, and Meter.
- Property View:** On the far right, it shows the configuration for the selected 'Bargraph' widget. It includes sections for 'Behaviour' and 'Display' with various parameters and their values.

Labels in orange boxes identify the 'Workspace', 'Editor field', 'Widget palette', and 'Property View' components.

Name	Value
Behaviour	
Action Data	ActionData(No...
Alias	[record: dal-ep...
Enabled	<input checked="" type="checkbox"/> yes
Horizontal orient	<input type="checkbox"/> no
Level HI	75.0
Level HIHI	100.0
Level LO	25.0
Level LOLO	0.0
Maximum	1.0
Minimum	0.0
Permission ID	
Primary PV	dal-epics://CM...
Value	1.0
Visibility	<input checked="" type="checkbox"/> yes
Display	
Background Col	(200;200;2...
Border Color	(100;0;0)
Border Style	Line Style
Border Width	0
Color Fillbackgr	(120;120;1...
Fill Color	(0;0;255)
Foreground Col	(89;126;225)
Name	BargraphModel
Scale	None
Section count	10
Show only value	<input type="checkbox"/> no
Show values	<input type="checkbox"/> no
Tickmarks	None
Transparent Bar	<input checked="" type="checkbox"/> yes
Position	
Height	155
Layer	
Width	23
X-Coordinate	997
Y-Coordinate	634

Dragging Channels onto the graphic pane



Initializing Properties here: the EPICS Initializer (a TINE initializer can be written easily)

Dynamic Values

Border color dynamically defined by severity characteristic. Colors defined in alarm Color rule

TINE Name

Control System Studio

File CSS Quickstart Window Help

SNL-Editor Datenbrowser Display Development

Navigator Widget Properties

Type: Bargraph

Name	Value
Behaviour	
Action Data	No Actions defined
Alias	[channel:dal-tine://D...
Enabled	<input checked="" type="checkbox"/> yes
Horizontal Orientation	<input type="checkbox"/> no
Level HI	0.8
Level HIHI	1.0
Level LO	0.4
Level LOLO	0.2
Maximum	1.0
Minimum	0.0
Permission ID	
Primary PV	\$channel\$
Value	0.25
Visibility	<input checked="" type="checkbox"/> yes
Border	
Border Color	(100;0;0)
Border Style	Line Style
Border Width	0
Display	
Background Color	(230;230;230)
Color Fillbackground	(120;120;120)
Cursor	System Default
FillColor	(0;0;255)
Foreground Color	(0;0;192)
Name	BargraphModel
Scale	Bottom / Right
SectionCount	10
Show only value	<input type="checkbox"/> no
Show Values	<input type="checkbox"/> no
Tickmarks	Bottom / Right
ToolTip	\${aliases} / Maximum...
Transparent Background	<input checked="" type="checkbox"/> yes
Position	
Height	262
Width	100
X-Coordinate	303
Y-Coordinate	96

Dynamics Wizard

Use this wizard to configure the dynamic behaviour of your properties

Use only connection states

Rules / Scripts

- Alarm color rule (Java)
- BIN_0gn_1rt color rule (Java)
- BIN_0gr_1gn color rule (Java)
- BIN_0gr_1rt color rule (Java)
- BIN_0rt_1gn color rule (Java)
- BIN_trennstlg color rule (Java)
- CRYO_Tenn#1 color rule (Java)

Input Channels

Description	Channel	Default Value
<input checked="" type="checkbox"/> Double Value	\$channel\${severity}	

Available Aliases / Macros

\$channel\$ --> dal-tine://DESY3/GLOBALS/keyword/BeamFor

< Back Next > Finish Cancel

Context, DESY3, MEX

SDS Training Displays

The following slides are copies from the training displays. These displays are part of the CSS distribution. All displays are dynamic. Many use local variables (generated inside of CSS) some displays only work with a running EPICS IOC.

Local Variables

SDS Demo Display/Training/03_Dynamics/Local_Variables.css-sds

Zoom Layers

Local Variables
Generated from simpleDAL

local://abc COUNTDOWN:100:0:100000:500

local://abc RND:1:100:500

CSS Training

Training Location not set

85,50

72,08

Application ID:	<input type="text" value="CSS"/>	
Host ID:	<input type="text" value="claus-d400"/>	
Qualified Host Name:	<input type="text" value="claus-d400.clausen.homeip.net"/>	
User ID:	<input type="text" value="claus"/>	
Active Connectors:	<input type="text" value="20,00"/>	
Memory (Max):	<input type="text" value="133.234.688,00"/>	
Memory (Total):	<input type="text" value="22.093.824,00"/>	
Memory (Free):	<input type="text" value="7.690.392,00"/>	
Thread Count	<input type="text" value="0,00"/>	
System Time	<input type="text" value="22:41:34:156"/>	

User Name not set Training IOC NOT connected NO dynamic Functionality! claus @ claus-d400.clausen.hc

MainDisplay.css-sds > Dynamics_1.css-sds > Dynamics_2.css-sds

Local variables

- Provide internal information
- Can be used as temporary local variables
- Help to test graphics

Alias Names

The screenshot shows a software interface titled "SDS Demo Display/Training/04_Alias/Alias_1.css-sds". The main display area contains the text "Alias" and "CSS Training EPICS Collaboration Meeting 2008". Below this, it says "Value of EpicsDemo1:" followed by an orange rectangular box. A yellow callout box with an upward-pointing arrow contains the text: "Select the Label and show the Widget Properties View Note the value of the Alias property. Each Widget can have several Aliases." This callout points to a "CSS Alias" dialog box. The dialog box has a list of aliases with "channel: dal-epics://EpicsDemo1" selected. A smaller "Alias" dialog box is overlaid on top, showing "Name: channel" and "Value: dal-epics://EpicsDemo1" with "OK" and "Cancel" buttons. At the bottom of the main window, there are "Home" and "Next" buttons, and a pink status bar that reads "Training IOC NOT connected" and "NO dynamic Functionality!". The bottom-left corner of the window shows "MainDisplay.css-sds".

Alias names can:

- Be used in dynamic properties
- In dynamic display callups (related displays)

Rules

SDS Demo Display/Training/06_Rules/Rules_1.css-sds

Zoom Layers

Rules

CSS Training
EPICS Collaboration Meeting 2008

Value of EpicsDemo1:
(Alarm Color Rule)

Initialisation

Value of EpicsDemo10:
(Simple Color Rule)

There are two rule types:

Java Rules
Script Rules

Simple Color Rule (Java)
Simple Color Rule (ECMA Script)

Example
Linking Container

Home

User Name not set

Training IOC NOT connected NO dynamic Functionality!

user @ claus-d400.clausen.hz

MainDisplay.css-sds

Rules can be implemented in Java classes.

Rules can also be implemented in Java script.

Scripted rules can be implemented and activated during runtime.

Rules are triggered by values of channels
→ they also work by default for TINE channel

Rules return:

- Colors
- Strings
- Display names
- Values (positions)

Actions

SDS Demo Display/Training/07_Action_Data/ActionData1.css-sds

Zoom Layers

Action Data

CSS Training

Training Location not set

Action Button (Send)

MenuBut

Label

There are two kinds of Action Data

- Send a Value
- Open a Display

Each Widget can have an arbitrary number of action data

You can execute the action from the contribution menu

Actions

- From MenuButton 1
- From MenuButton 1
- From MenuButton 3
- Open Display Local_Variables.css-sds
- Inhited from Group Action
- Inhited from Display Action

Home

User Name not set

Training IOC NOT connected NO dynamic Functionality!

claus @ claus-d400.clausen.hc

MainDisplay.css-sds

Actions are implemented for action buttons and inherited to all other SDS widgets.

→ Any widget can be clicked to start an action

Actions are:

→ Set Value Actions

→ Open Display Actions

Cursor

The screenshot shows a web browser window titled "SDS Demo Display/Training/08_Cursor/Cursor.css-sds". The interface is titled "Cursor" and "CSS Training". It features a menu bar with "Zoom" and "Layers". The main content area is divided into sections: "System Cursor" and "Other Cursor".

System Cursor section includes buttons for: Default, Arrow, Application Startup, Cross Hair, Hand, Help, i Beam, not allowed, Resize all directions, Up Arrow, and Wait.

Other Cursor section includes buttons for: Action enabled and Action disabled.

At the bottom, there is a "Home" button, a status bar showing "User Name not set", "Training IOC NOT connected", "NO dynamic Functionality!", and the email "claus @ claus-d400.clausen.hc". The footer of the browser window reads "MainDisplay.css-sds".

Available Widgets

SDS Demo Display/Training/10_Widget/WidgetOverview.css-sds

Zoom Layers

Widget Overview

CSS Training
Training Location not set

Chapter	Description	Chapter	Description
11	Polyline / Polygon	17	Grouping / Linking Container
12	Rectangle / Ellipse / Arc	18	Sixteen Binary Bar / Thumb Wheel
13	Lable / Text Input	19	Strip Chart / Waveform
14	Simple- / Advanced Slider	1A	Switch
15	Action Button / Menu Button	1B	Timer
16	Bargraph / Meter	1C	Image

User Name not set claus @ claus-d400.clausen.hk

MainDisplay.css-sds

Special Widget Container

SDS Demo Display/Training/10_Widget/17_Grouping-Linking_Container.css-sds

Zoom Layers

Grouping Container
Linking Container

Grouping Container

5,50

Button

\$channel\$

It is possible that a group is empty.
So it will remember its properties.

All Widgets can be grouped.
A Group can have an Action.
A Group can be dynamic.

A Linking Container contains a Display defined by a rule.

Special Properties:
- Resource (can be dynamic)
- Automatic Zoom

Choose Faceplate

Faceplate 0
Faceplate 1
Faceplate 2
Faceplate 3

1

Back

User Name not set

Training IOC NOT connected

NO dynamic Functionality!

Next

claus @ claus-d400.clausen.hr

MainDisplay.css-sds > WidgetOverview.css-sds

A linking container contains another display.

The display may be configured by an alias name and change this way.

The display name may come from a script and change according to a value change of a (TINE) channel.

Timer

SDS Demo Display/Training/10_Widget/1B_Timer.css-sds

Zoom Layers

Timer

CSS Training

Training Location not set

MP3

Siren

Open/Close Display

On Off

Enter Text!

On Off

Enter Text!

On Off

Enter Text!

Back

User Name not set

Next

claus @ claus-d400.clausen.hk

MainDisplay.css-sds > WidgetOverview.css-sds

- The Timer Widget can activate a script to start any kind of actions: e.g.
- Open and close other displays
 - Trigger system actions
 - Or ... start an MP3 file (in the training display)

To get started

Download CSS from:

http://css.desy.de/content/e413/index_eng.html

Run the training displays

or...

... join one of our trainings – starting next week.

Online Help @

<http://krykxmpp.desy.de:8099/help/index.jsp>

Help - CSS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://krykxmpp:8099/help/index.jsp

Most Visited ILC-TESLA-NLC Sabbatical @ SLAC XFEL DESY EPICS Private MCS

Search: Search scope: All topics

Contents

- [-] CSS Applications
- [-] CSS Core
- [-] JMS Sender

Using the Eclipse help system

Browse topics in the Contents frame () on the left. Click on a topic to have it displayed. Use the Back and Forward buttons to navigate within the history of viewed topics.

Searching

To quickly locate topics on a particular subject in the documentation, enter a query in the Search field. Use the Search frame () to display the Search view. You can narrow the scope of your search by selecting only the sections you are interested in.

Synchronizing

After you run a search and find a topic you were looking for, click either the Refresh / Show Current Topic button () or Show in Table of Contents button () to match the navigation tree with the current topic. You might also find it useful to synchronize after following in-topic links.

Capabilities

To show documentation about capabilities that are disabled in the application, select the Show All Topics button (). When you choose to show all topics in the table of contents, the headings for documentation about any disabled activities are shown in the table of contents and also appear in search results.

More information

If you cannot find the answer to your question in the on-line help, visit our website at eclipse.org to find articles and participate in the Eclipse community.

Done

Synoptic Display Studio Relevance for TINE Users:

- SDS fully supports all channels which are available through the DAL layer.
- An initial implementation for a TINE-DAL plug is available.
- It might be useful to add a TINE initializer to ease the pre-settings of widget properties.

Current Status

- CSS Version 1.1 is available from:
http://css.desy.de/content/e413/index_eng.html
 - DESY plugins can be added from the update site
- Working with the University of Hamburg:
 - Four Master thesis have been written in the CSS context.
 - Two doctoral thesis on the way
- Several plugins have been written by external collaborators (DataBrowser, PV-Table)
- CSS is the platform for cryogenic controls and utility controls for the XFEL.
- Production for Alarm Management System, Alarm Plugins and DataBrowser is running.

Future Plans

- Production phase for the Synoptic Display Studio (SDS) starts NOW
→ Commissioning for cryogenic plant
- Remote management of CSS instances based on the Eclipse Communication Framework
- Continue Collaboration with University of Hamburg and with external collaborators.
- New project with C1-WPS and HHLA with the focus on using the CSS-SDS tools as a basis for the operator applications in the container terminals (JMS DAL-plugin)

Thank you for listening