

# CSS – Alarm Displays

***EPICS Meeting – Control System Studio SIG***

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# Overview

- Requirements for the new alarm system
- Schema of DESY alarm system
- Alarm configuration system
- Alarm displays
- Alarm tree

# Requirements I

## The new alarm system should be a substitution for the alarm handler

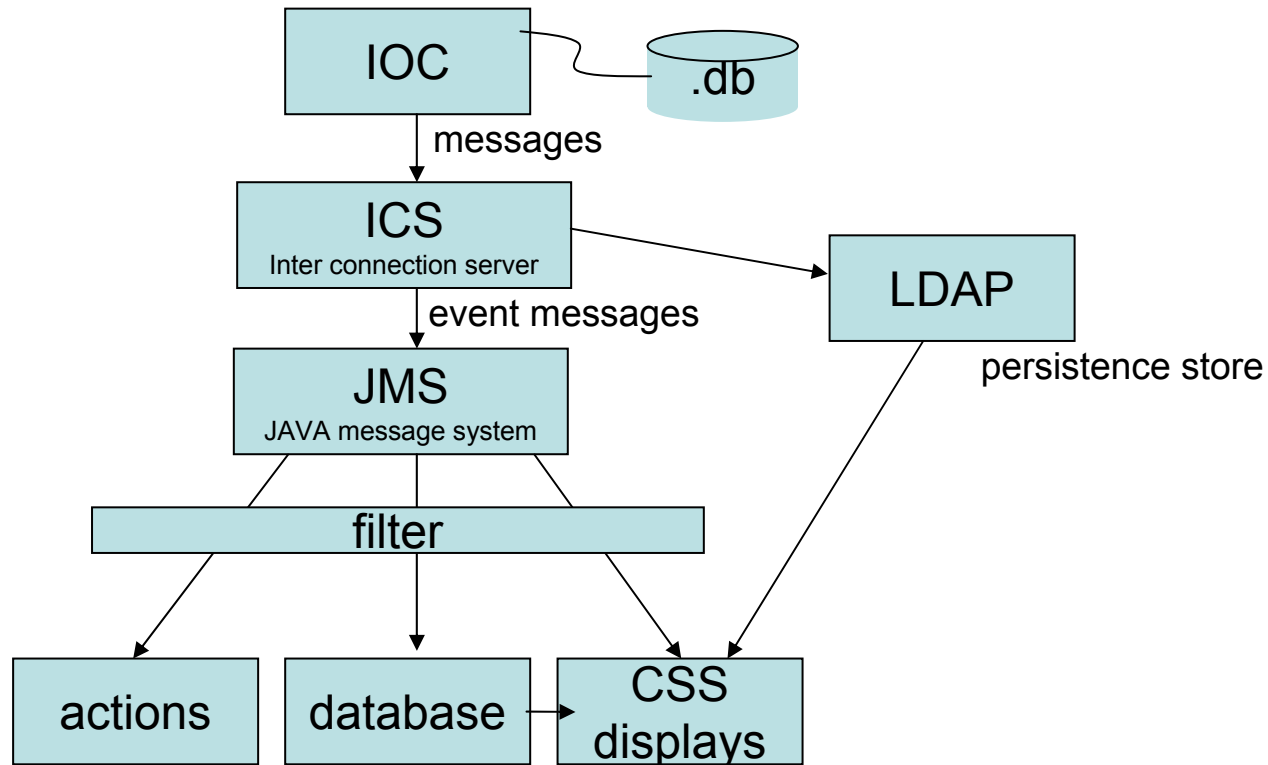
- Which alarm messages are important
- Who is interested in the alarm messages
- In which way a person or group should be informed (SMS, Mail, ...)
- Is the way to inform somebody dependent of other conditions
- What should be done if a the system does not receive an acknowledgement

# Requirements II

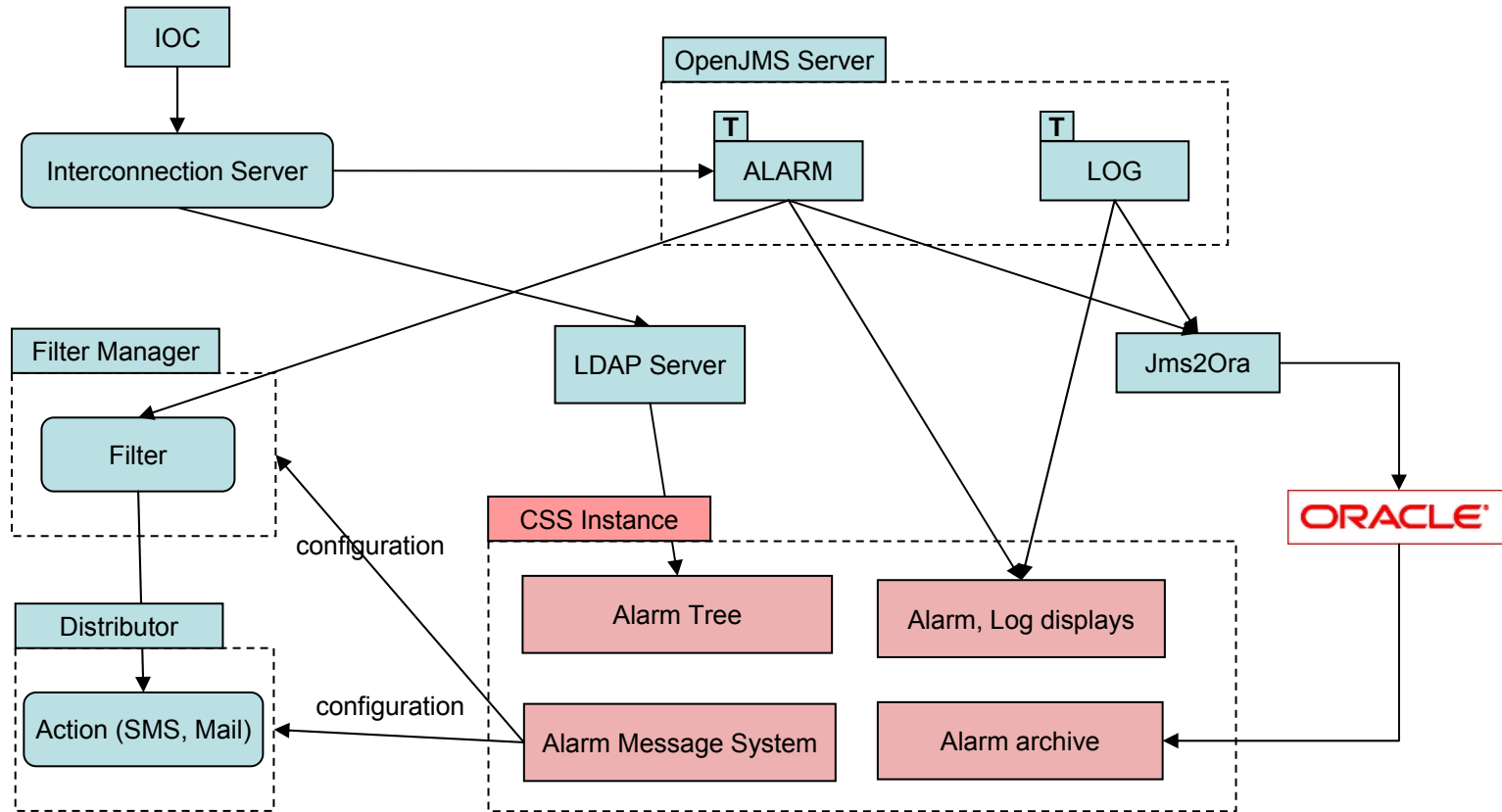
## Display of the alarm status

- View for the status of all records
- Chronological view of all alarm messages
- View only for actual alarm messages
- View with search mechanism for archived alarm messages
- Sending acknowledgement for alarm messages

# Structure of the Alarm System



# Structure of the Alarm Displays and Configuration



# Alarm Message System (AMS)

**AMS is developed by TIKTO Informationstechnologie GmbH  
but it is open source**

- AMS consists of two parts: Filter and Distributor
- Filter and Distributor are separated processes
- CSS is only necessary for configuration
- The configuration is stored in Oracle
- Alarm messages are JMS-MapMessages (set of property-value pairs)
- Easy to extend the Filter and Distributor

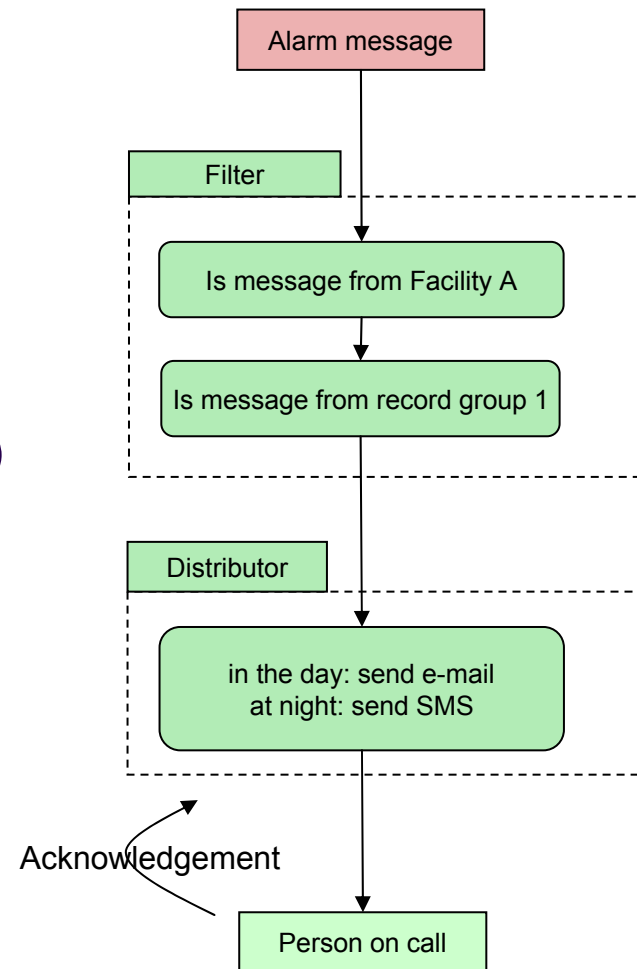
# Alarm Message System

## Filter

- A filter is a set of conditions
- Users can configure conditions and build their own filters
- It is possible to add new conditions types

## Distributor (Actions to forward messages)

- The user can set the preferred way to get messages
- Users are arranged in groups ordered by priority
- Users have to acknowledge messages





# Alarm Displays

## There are three types of displays: Log -, Alarm - and Archive – View

- The Views display the property-value pairs of an alarm message
- Properties and severity are configurable
- Usable for messages from other control systems
- Same data model for all display types
- Object contribution and DnD integration

# Alarm Displays

## Log view

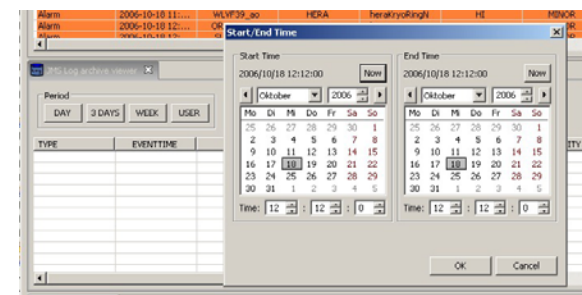
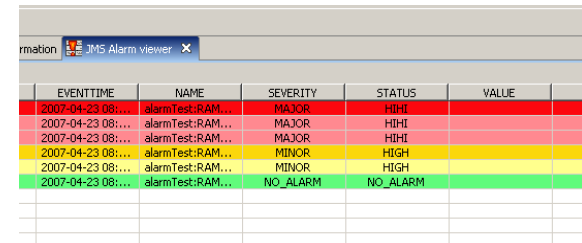
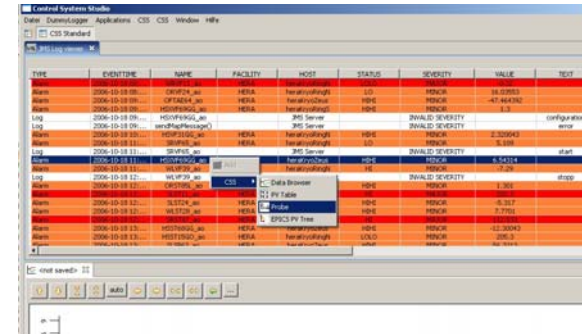
- For all messages (alarm, log, ...)
- New messages on top of the table

## Alarm view

- For actual alarm messages
- Old messages from same record with other severity will be greyed out
- First sort criterion is 'Severity', second 'Eventtime'

## Archive view

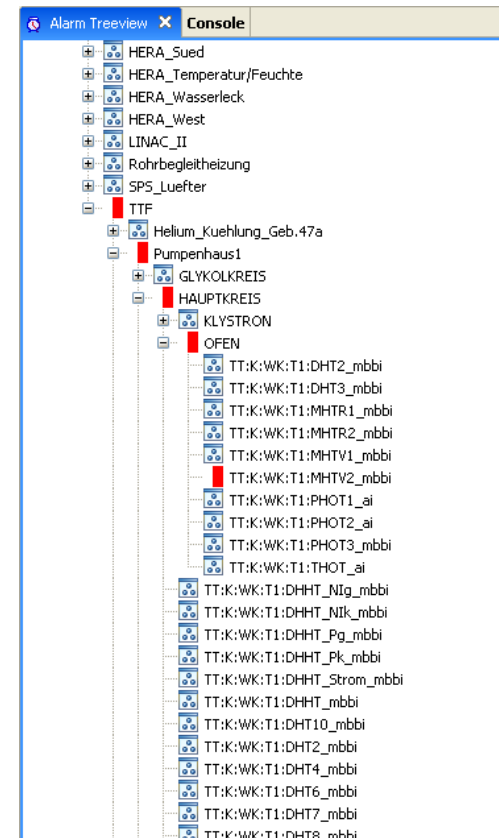
- For messages archived in DB
- User defined time period
- Search for patterns in all properties



# Alarm Tree View

## The AlarmTreeView represents the persistent store of the alarm status

- In EpicsControls all records of the system are ordered by plant and IOC
- An Alarm status of a record is indicated by a colored flag and propagated to the tree root
- In EpicsAlarmcfg the records are ordered by special subject (e. g. all records related to power supply)
- Users can define their own subset of records



# Installation

## What do you need to use the alarm system

- CSS installation
- JMS server
- LDAP server
- Interconnection server (Headless CSS)
- AMS applications filter and distributor (Headless CSS)
- SQL-Database

**We provide the software and configuration files on the  
CSS homepage: [css.desy.de](http://css.desy.de)**

# Outlook

## Alarm message system

- Redundancy

## Alarm displays and Alarm Tree

- Acknowledgement of alarm messages
- Support object contribution and DnD functionality
- Show history for alarm status of a Record
- Change alarm properties on an IOC