MstApp, a rich client control applications framework at DESY

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MstApp Overview

- **Abstract**:

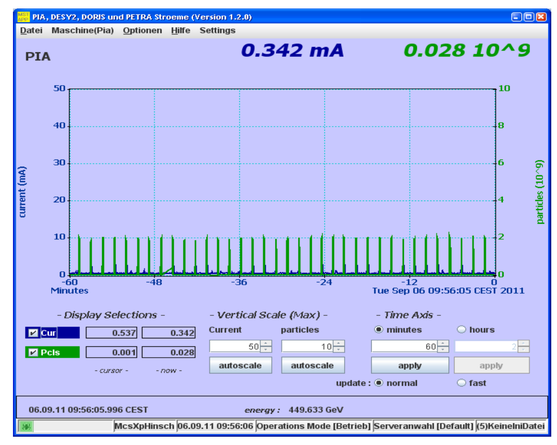
The control systems for PETRA 3 and its pre accelerators extensively use rich clients for the control room and the servers. Most of them are written with the help of a rich client Java framework: MstApp. MstApp takes care of many common control system application aspects beyond communication. MstApp provides a common look and feel: core menu items, a colour scheme for standard states of hardware components and standardized screen sizes/locations. It interfaces our console application manager (CAM) and displays on demand our communication link diagnostics tools. MstApp supplies an accelerator context for each application; it handles printing, logging, resizing and unexpected application crashes. Due to our standardized deploy process MstApp applications know their individual developers and can even send them – on button press of the users - emails. Further a concept of different operation modes is implemented: view only, operating and expert use Administration of the corresponding rights is done via web access of a database server. Initialization files on a web server are instantiated as JAVA objects with the help of the Java SE XMLDecoder Data tables are read with the same mechanism. New MstApp applications can easily be created with in house wizards like the NewProjectWizard or the DeviceServerWizard MstApp improves the operator experience, application developer productivity and delivered software quality.

- **General features:**
  - Standard colors
  - Standard sizes and positions
  - Standard menus
  - Operation- and server- modes
  - Printing directly to logbook
  - Help

- **Implemented tools:**
  - Unhandled crashes
  - Logging
  - Protocols
  - Communication link diagnostic tools (Spider, Tarantula)
  - Resizing (ApplicationResizeManager)
  - Console Application Manager (CAM)

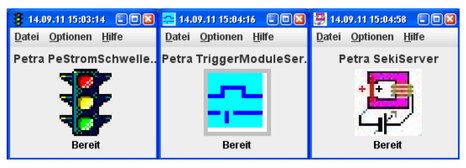
Applications

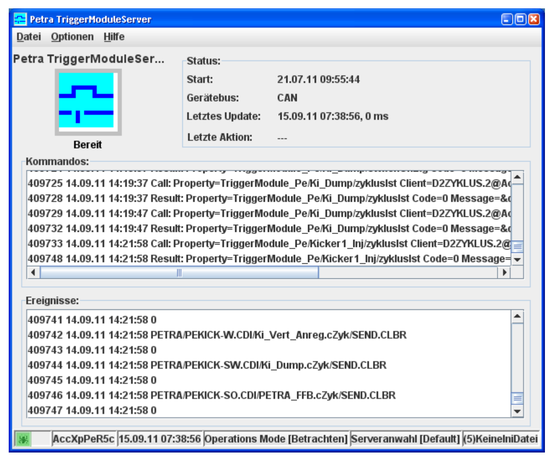
- **Client:**
  - 106 applications
  - One rich client per application
  - Tight integration into the enviroment
  - Common look-and-feel



- **Server:**
  - 158 applications
  - Common look-and-feel
  - Small mode. Just a square with a picture
    - All server in a line
  - Medium mode: additional information
  - Large mode: developer added information

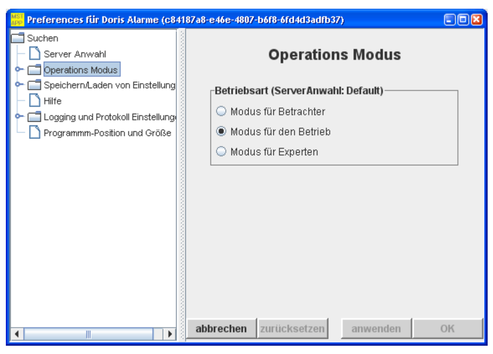
Example: PC for PETRA Septa/Kicker

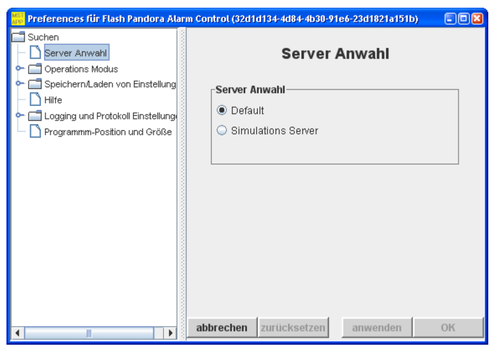




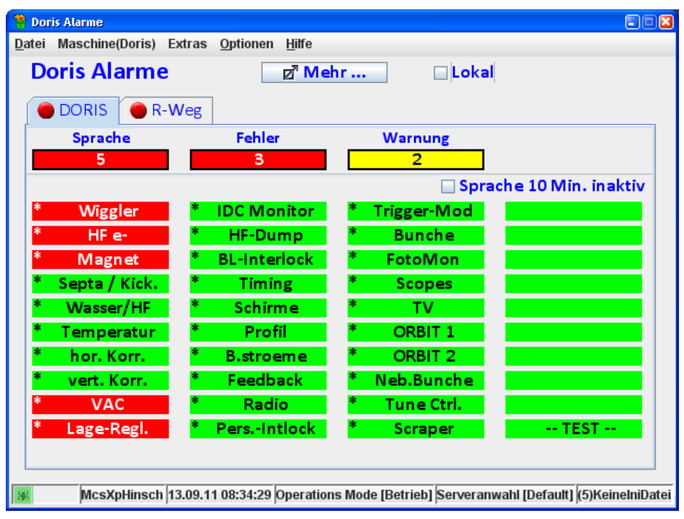
Features

- **Operation modes:**
  - Users in the control room need read- and write-access („Betrieb“)
  - Hardware developers need expert view („Experten“)
  - Users outside the control room should only have read access („Betrachter“)
- **Server modes:**
  - Default: The client is connected to the original server
  - Simulations Server: For tests the client gets and sends data to a server not connected to the hardware.

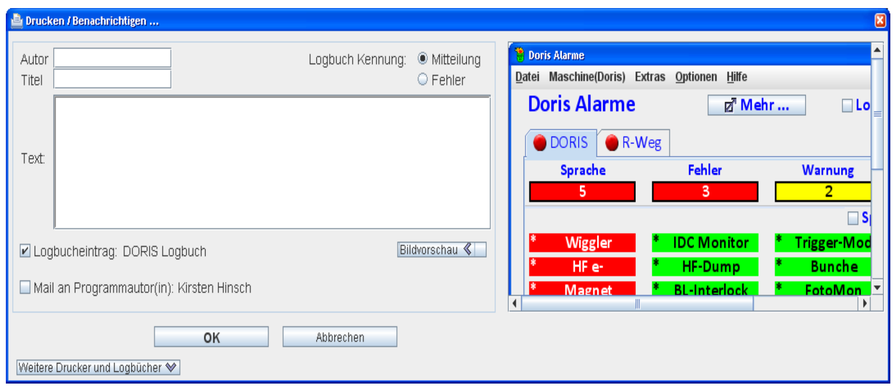




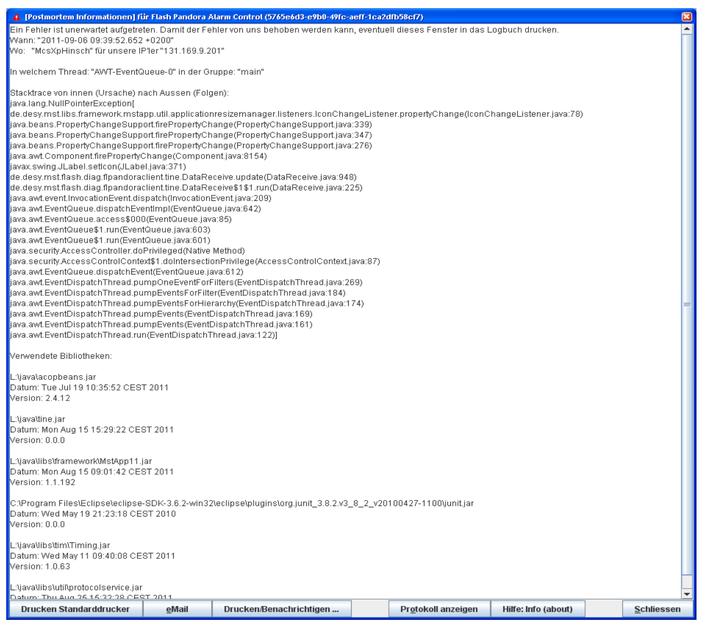
- **Standard Colors:**
  - Different colors for different component states e.g.:
    - Red / white -> error
    - Yellow/black -> warning
    - Green/black -> ok



- **Printing to logbook and Developer E-Mails:**
  - Identical print dialog frame for each application
  - Automatically chosen logbooks
  - Automatically added screenshot
  - Printing to printer or logbook or/and sent an E-Mail to the author



- **Unhandled crashes:**
  - A JAVA shutdown hook catches unhandled errors
  - The crash screen allows printing a schreenshot and sending an Email



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