DOOCS DAQ software for the EUDET prototype

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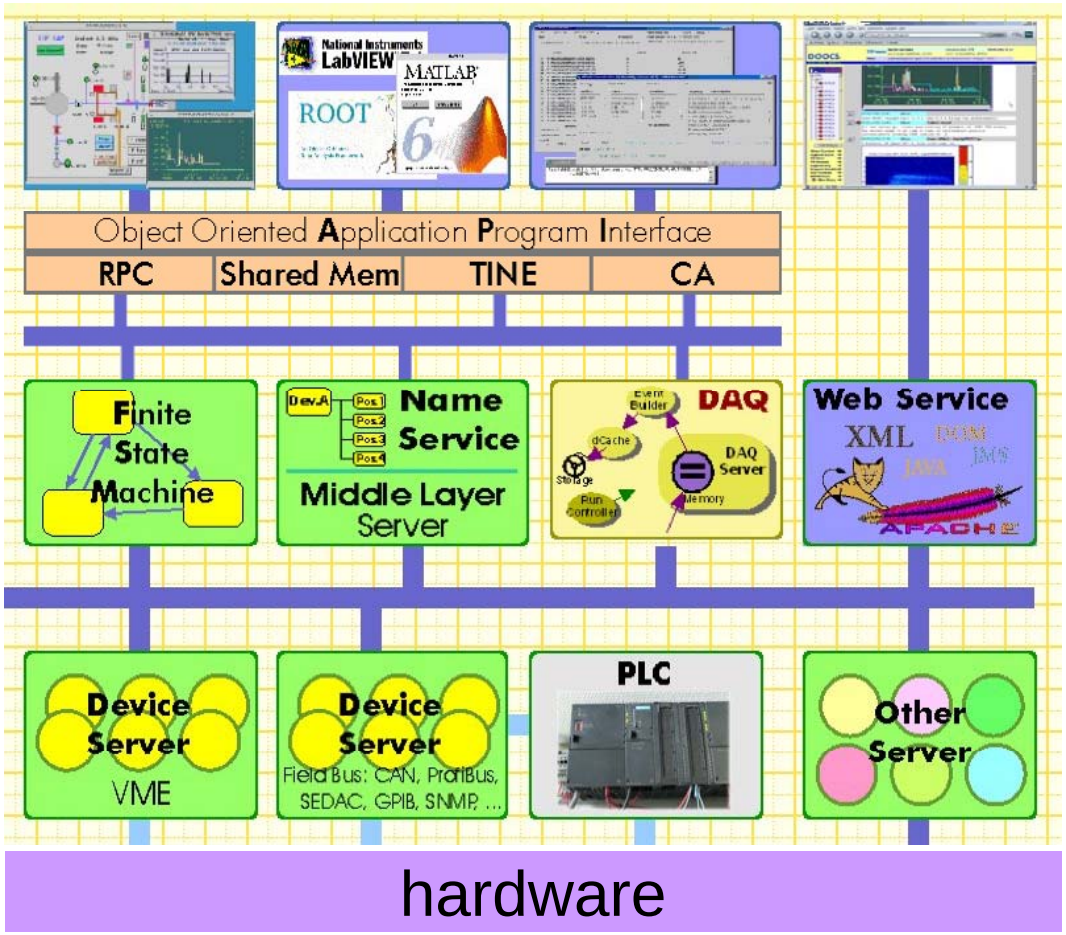
Overview over the task
- DOOCS software -

http://tesla.desy.de/doocs/doocs.html



User Interface

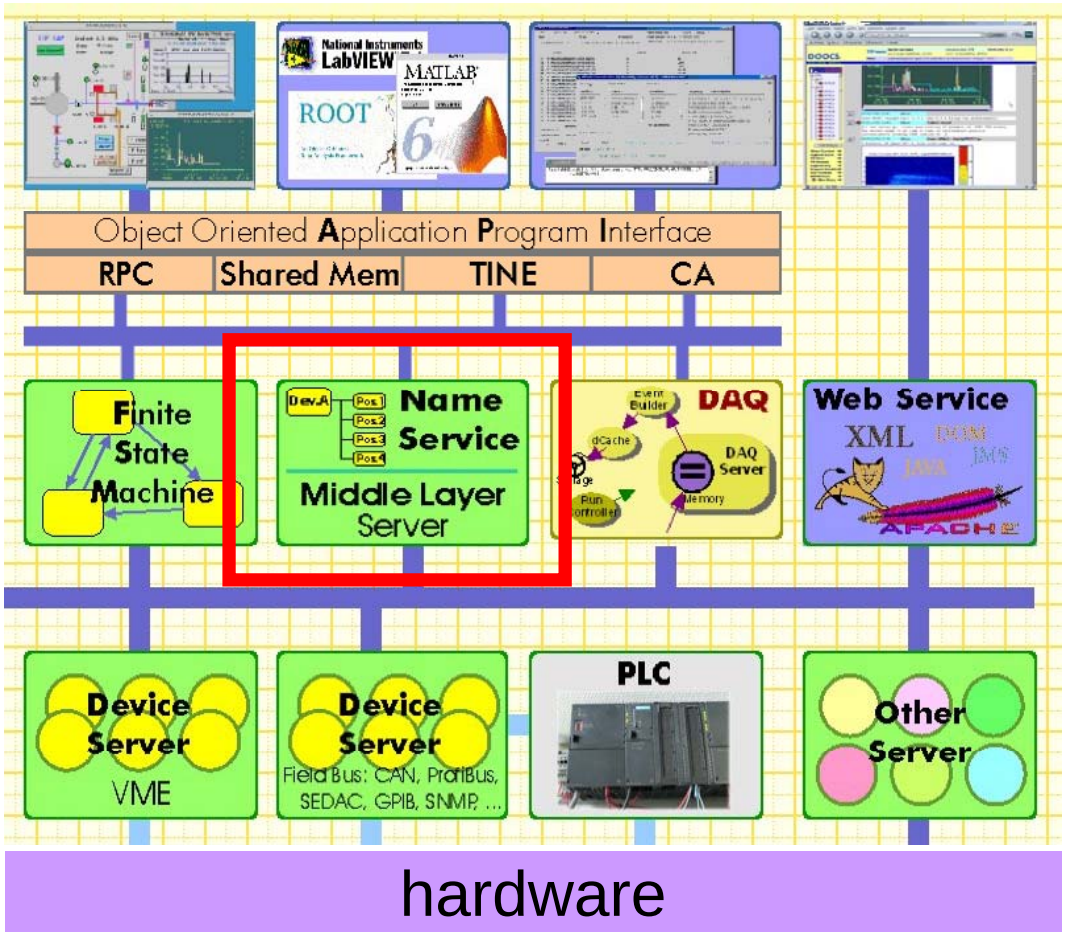
Program Interface

Middle Layer

Hardware interface

Overview over the task
- ENS naming service -

provided by DOOCS and already in use for RPC communication between client and server



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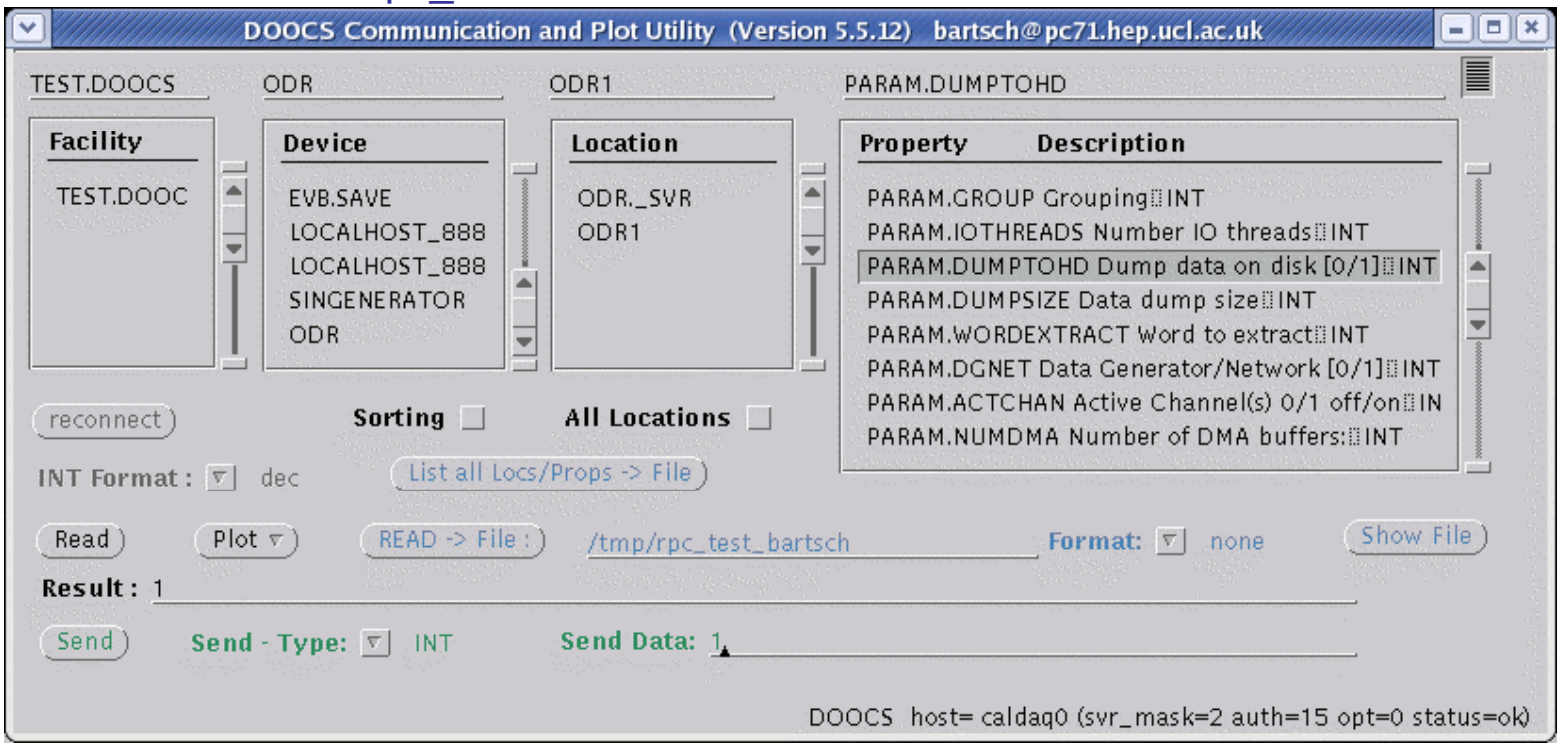
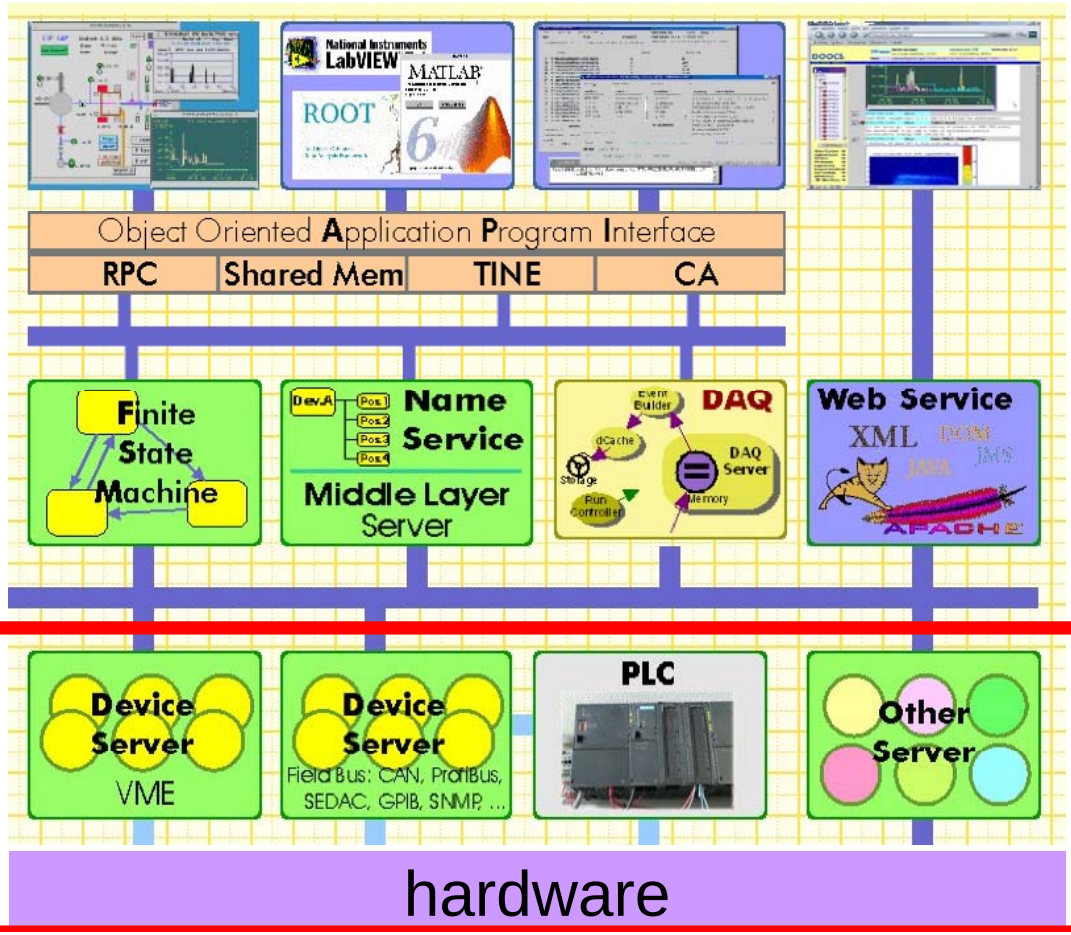
ENS Naming Service

Screenshot of the rpc_util GUI



- Naming convention is already specified (similar for LDA, DIF and ASICS)
- Properties need input from hardware programmers

Overview over the task



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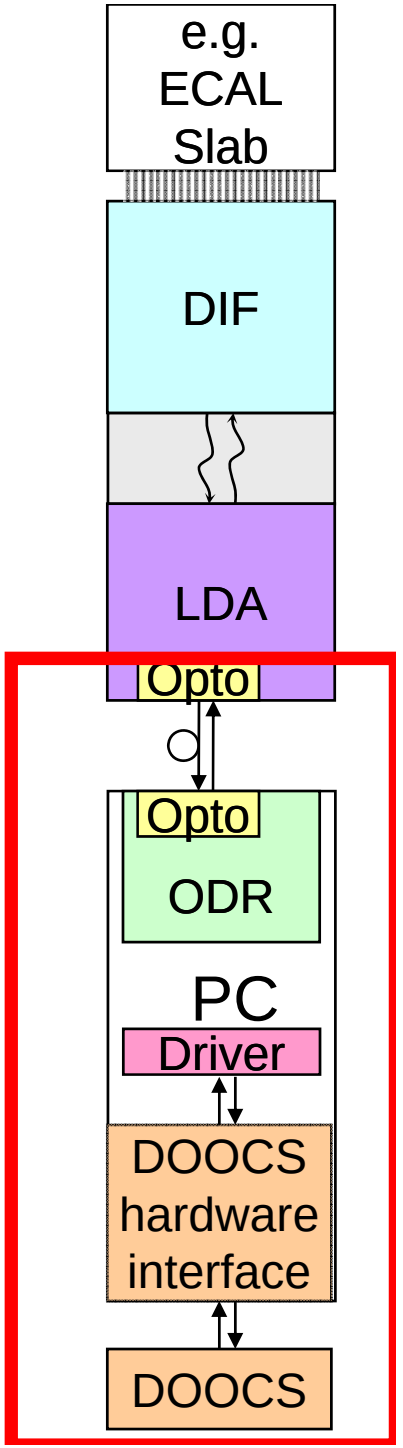
Hardware interface

Hardware interface most important at this stage

Hardware interface

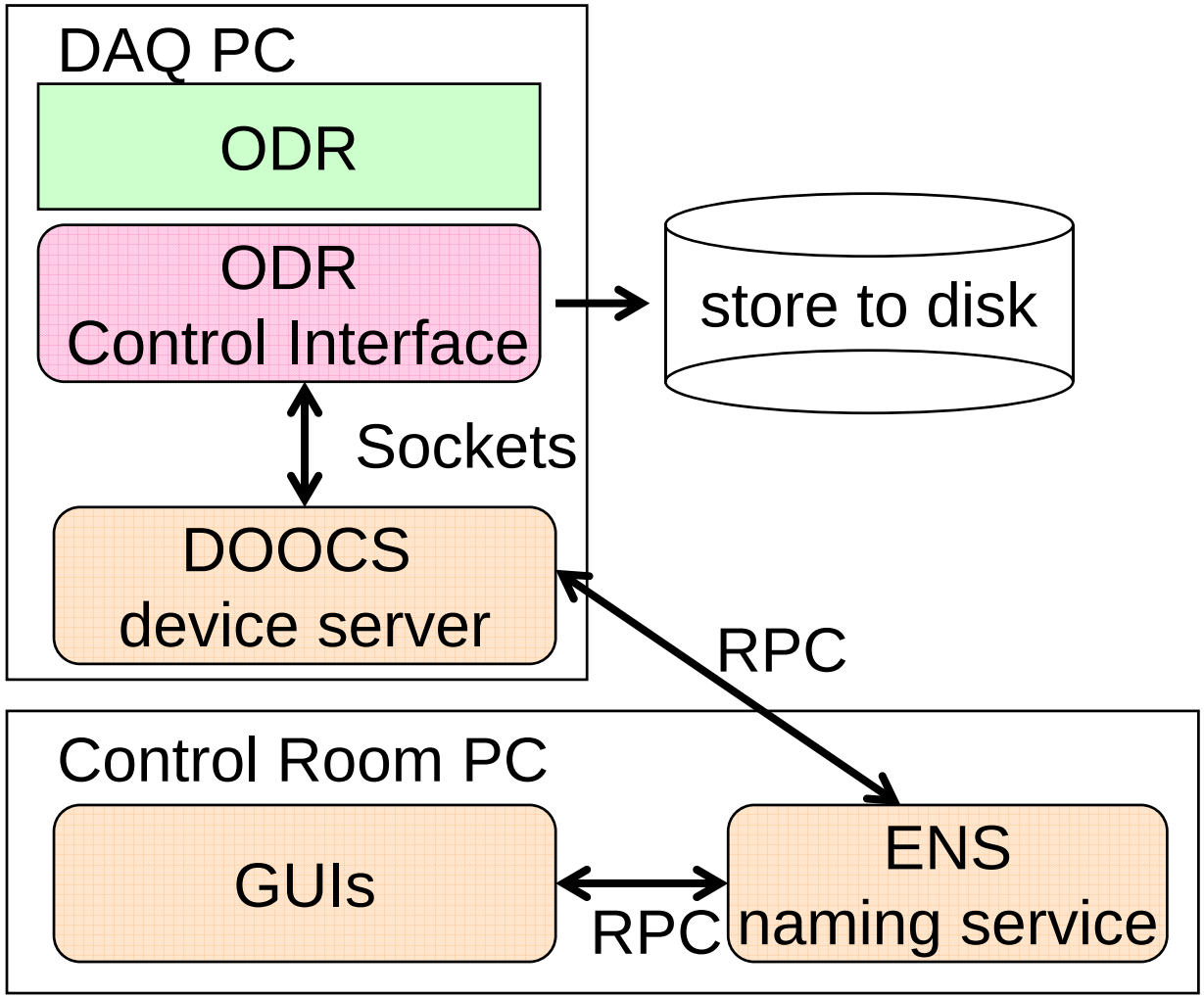
Concentrating on the ODR interface:
- because it is the first hardware layer to talk to
- the device is close to be ready
- easy communication with colleagues at UCL and RHUL

Plan:
- start with the LDA and DIF in September
- have the interfaces ready about end of the year



Overview over the ODR interface

- communication between different parts of DOOCS by RPCs
- configuration files used to find different parts of the system

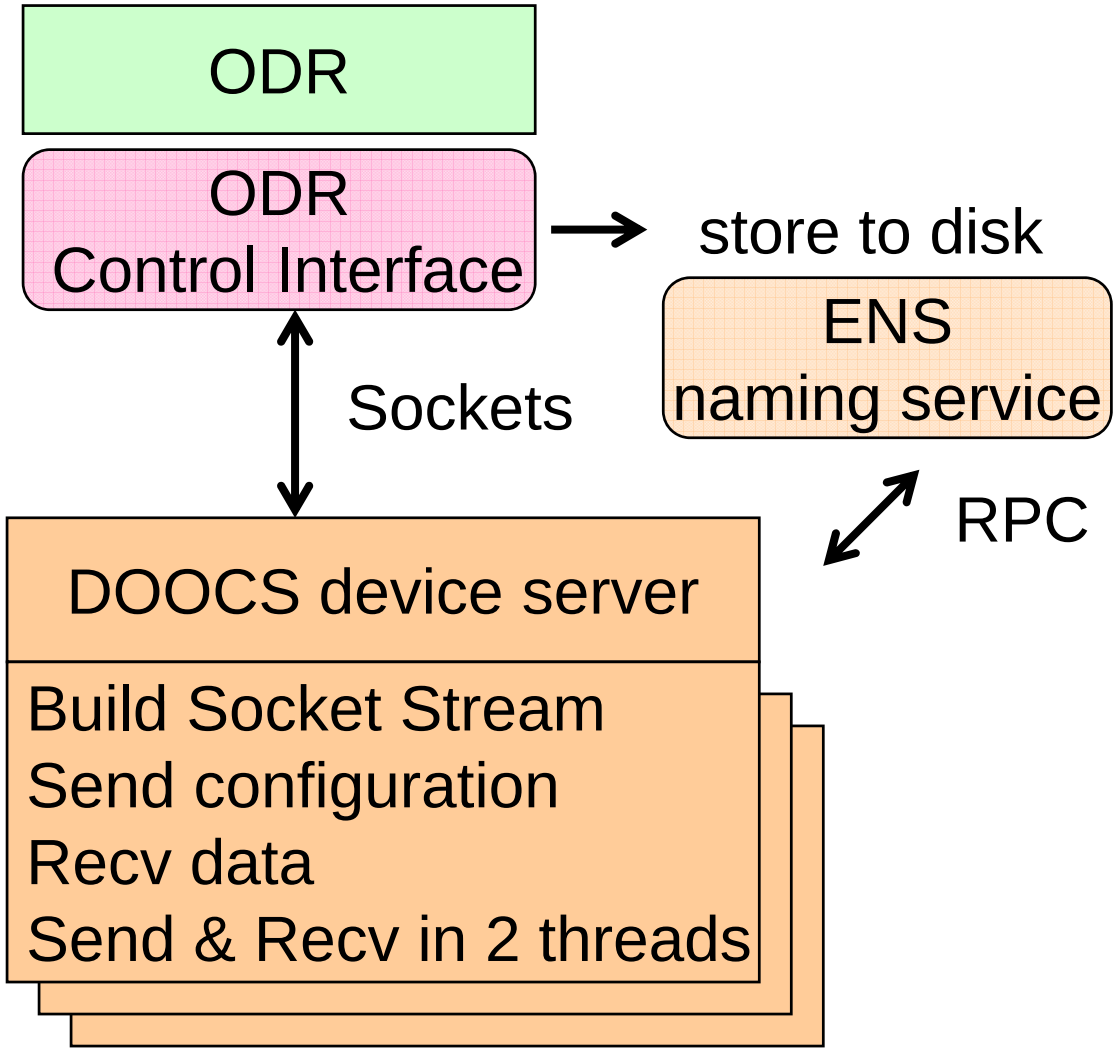


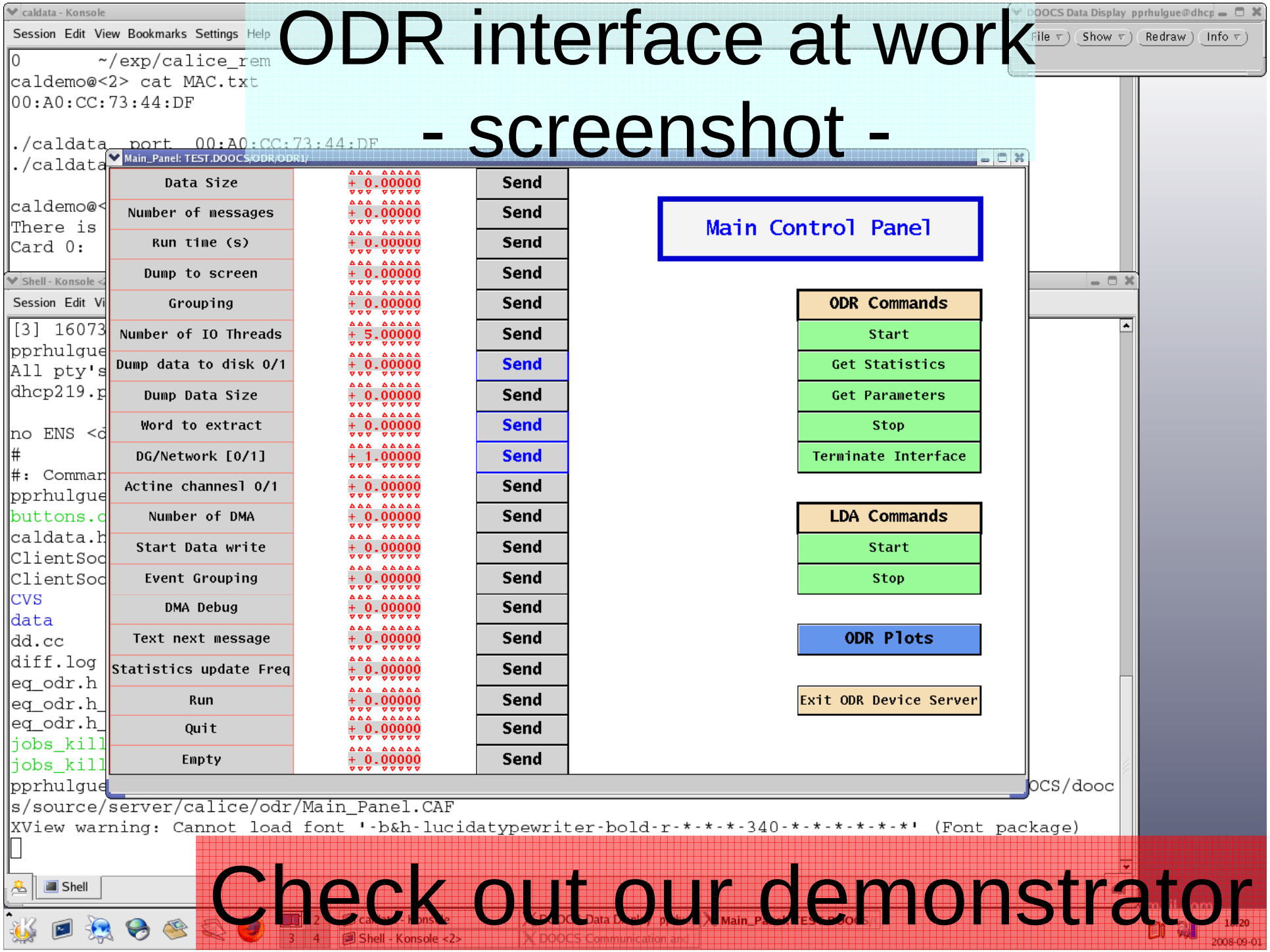
Overview over the ODR interface

- one device server can have many instance all connecting to different ports and hostnames

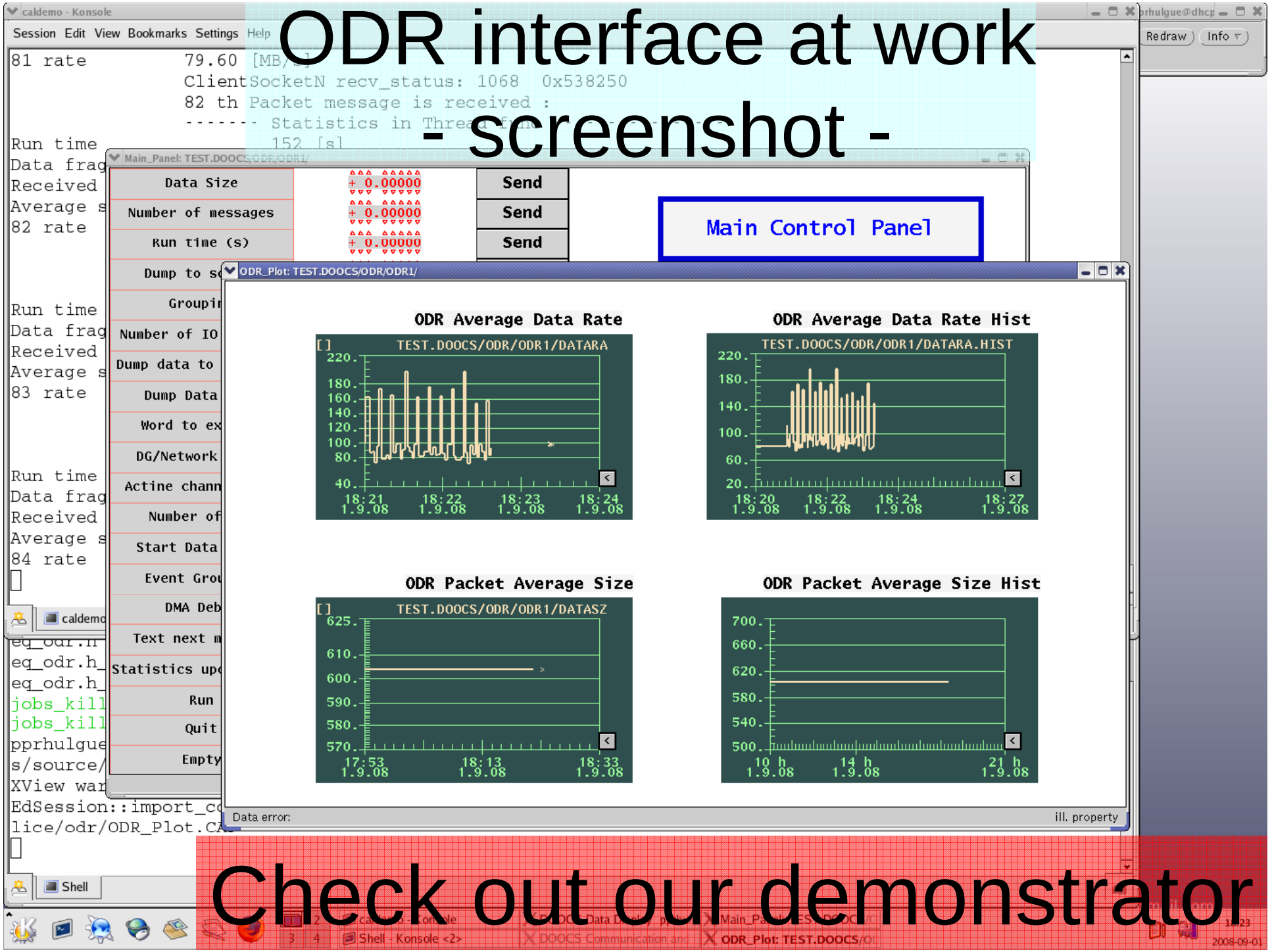
- using 2 threads: one for receiving, one for sending on the socket

- sockets format chosen to build an interface to the ODR and the LDA




ODR interface at work
- screenshot -
Main_Panel: TEST.DOOCS/ODR/ODR1/
Data Size
Number of messages
Run time (s)
Dump to screen
Grouping
Number of IO Threads
Dump data to disk 0/1
Dump Data Size
Word to extract
DG/Network [0/1]
Actine channesl 0/1
Number of DMA
Start Data write
Event Grouping
DMA Debug
Text next message
Statistics update Freq
Run
Quit
Empty
Send
Main Control Panel
ODR Commands
Start
Get Statistics
Get Parameters
Stop
Terminate Interface
LDA Commands
Start
Stop
ODR Plots
Exit ODR Device Server
Check out our demonstrator

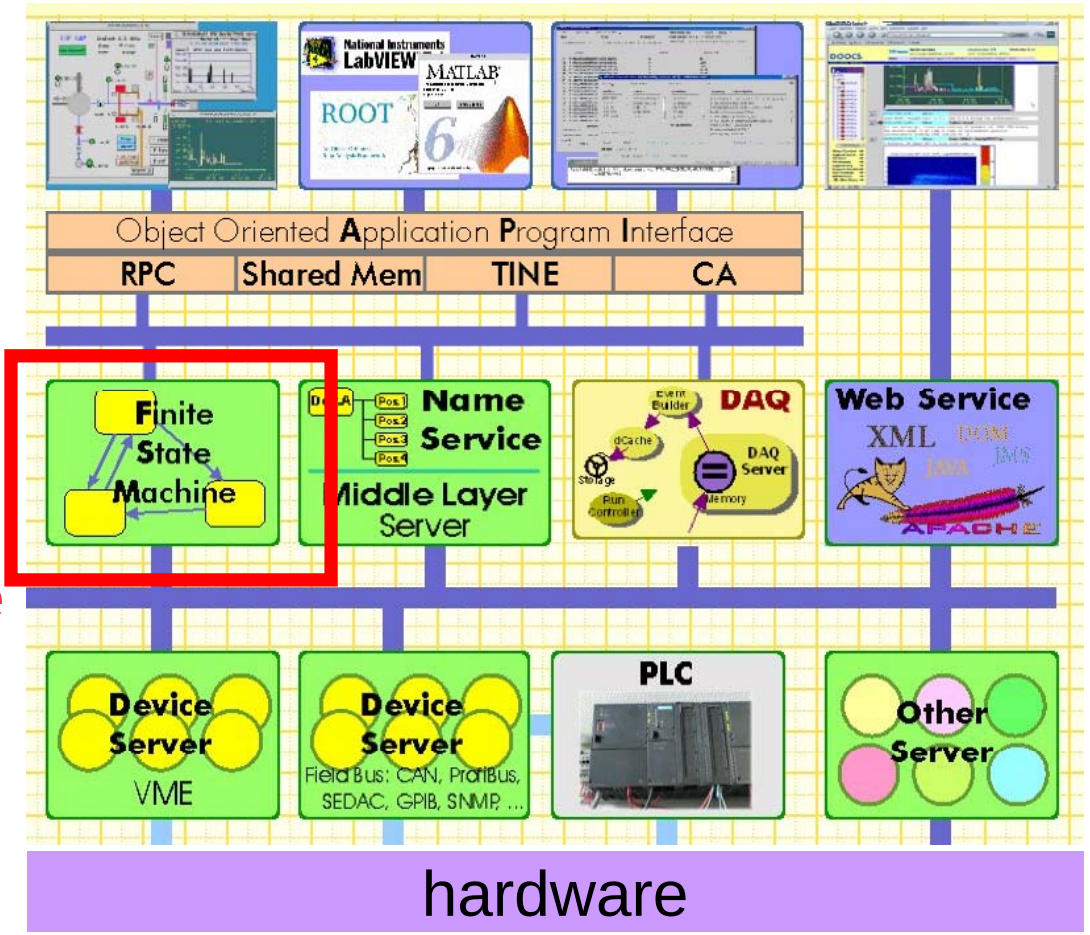
ODR interface at work
- screenshot -



Check out our demonstrator

Overview over the task

- important
- ramps the whole DAQ system up and down
- will be started after the hardware interfaces are ready (Jan-Mar 2009)



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Hardware interface

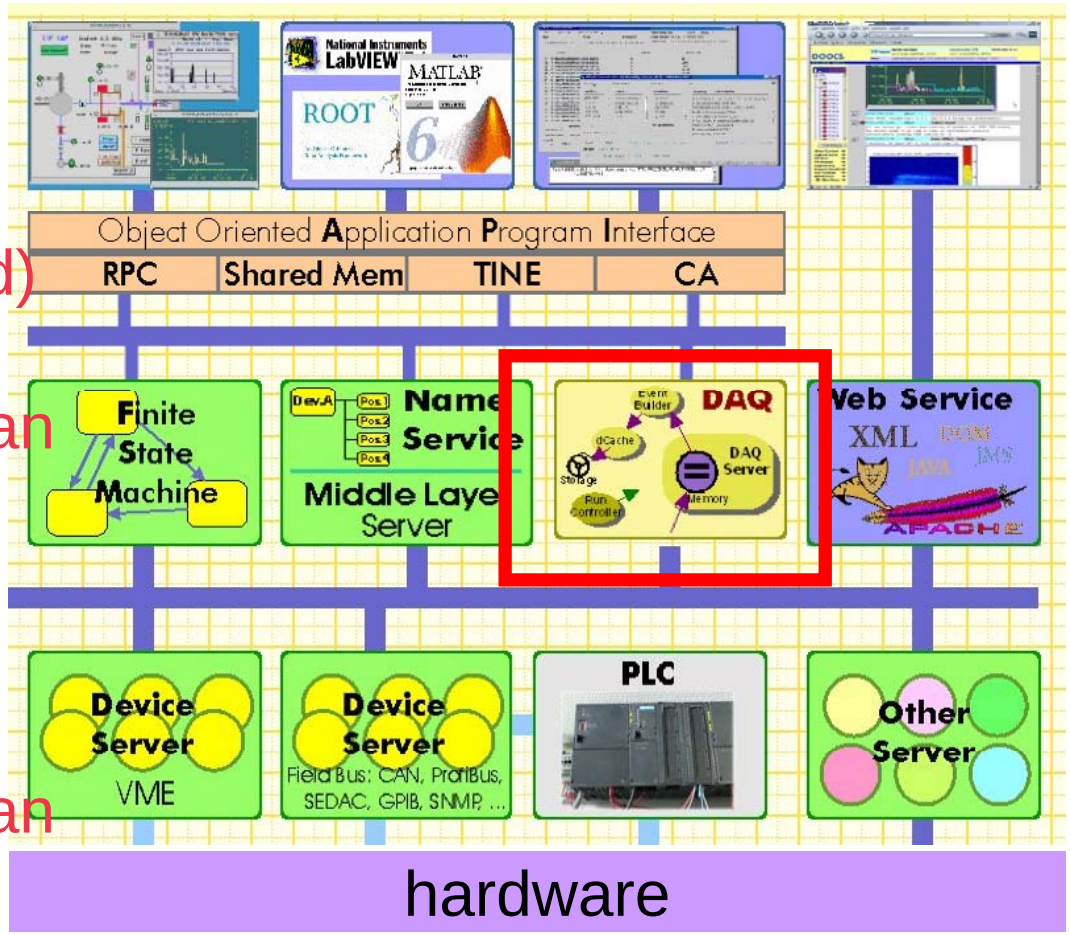
Overview over the task

DAQ:
- Event collection
- Event building
- LCIO conversion

(to be implemented)

Importance: low, can be done at the end of the software project;

Alternatively this can be done offline



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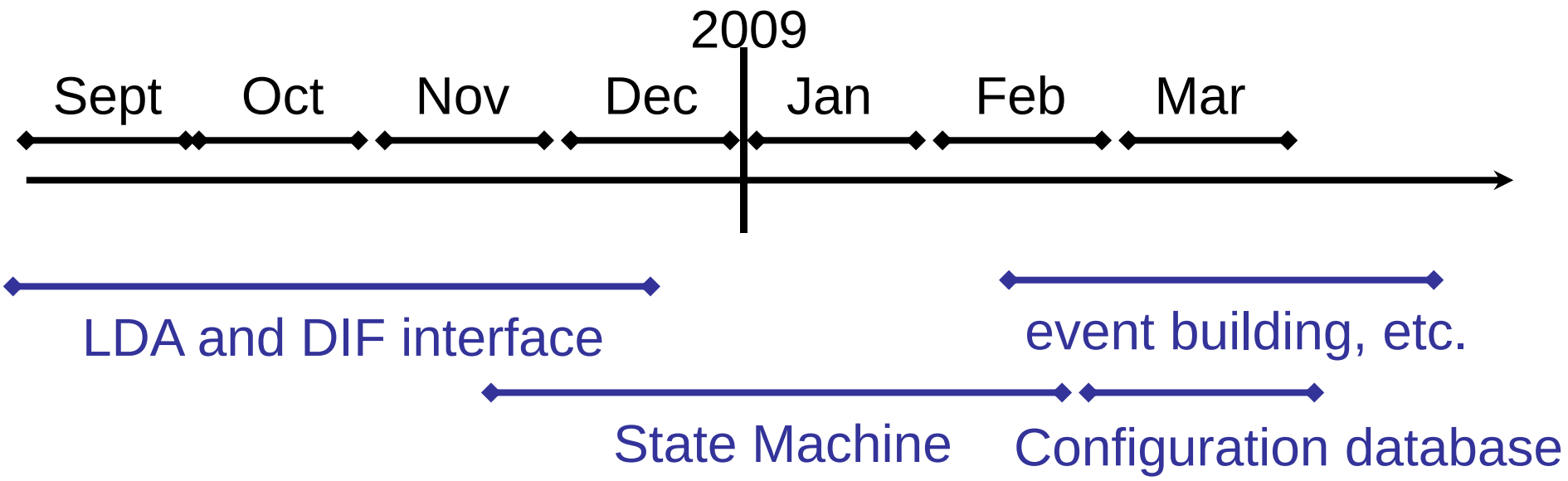
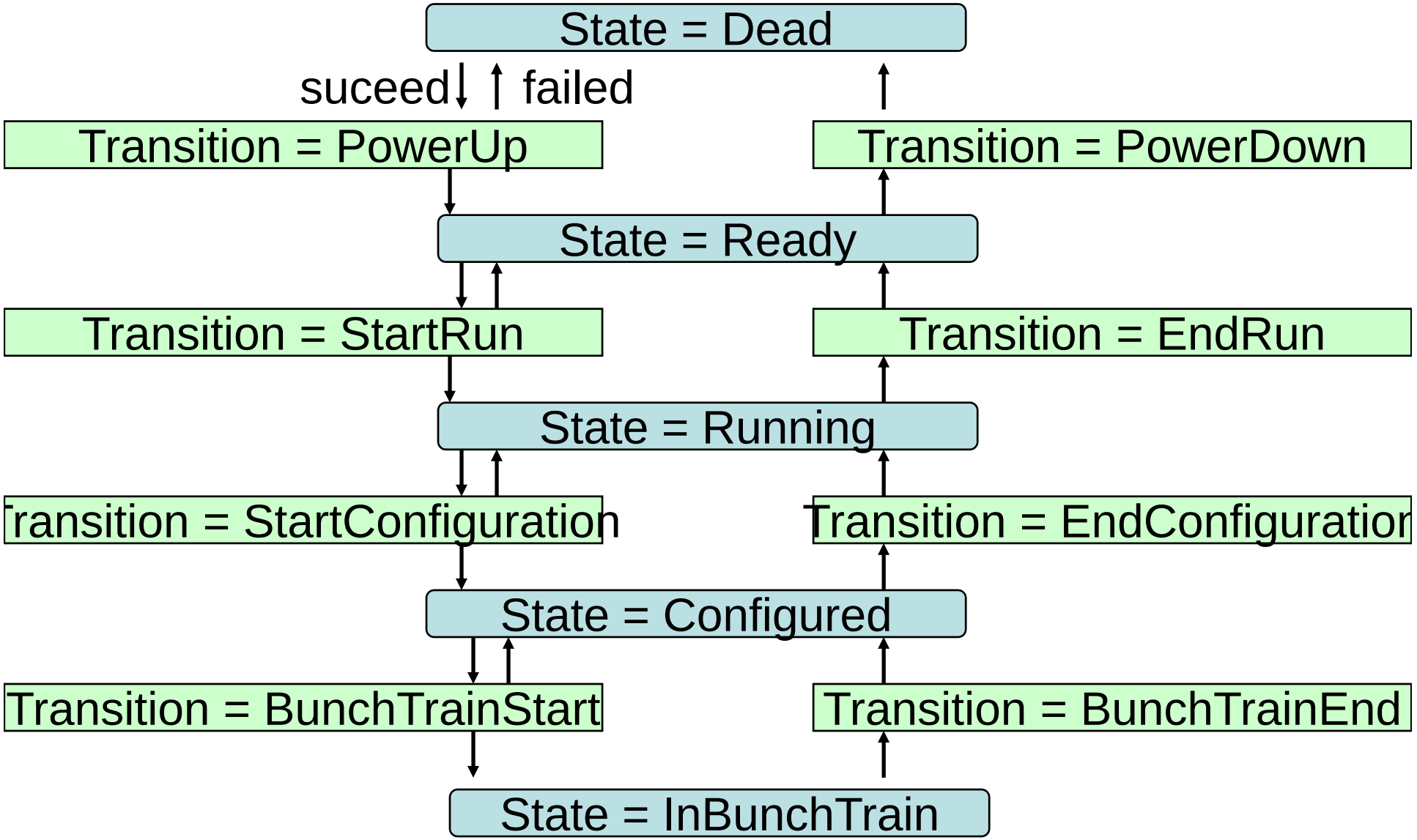
suggested timeline

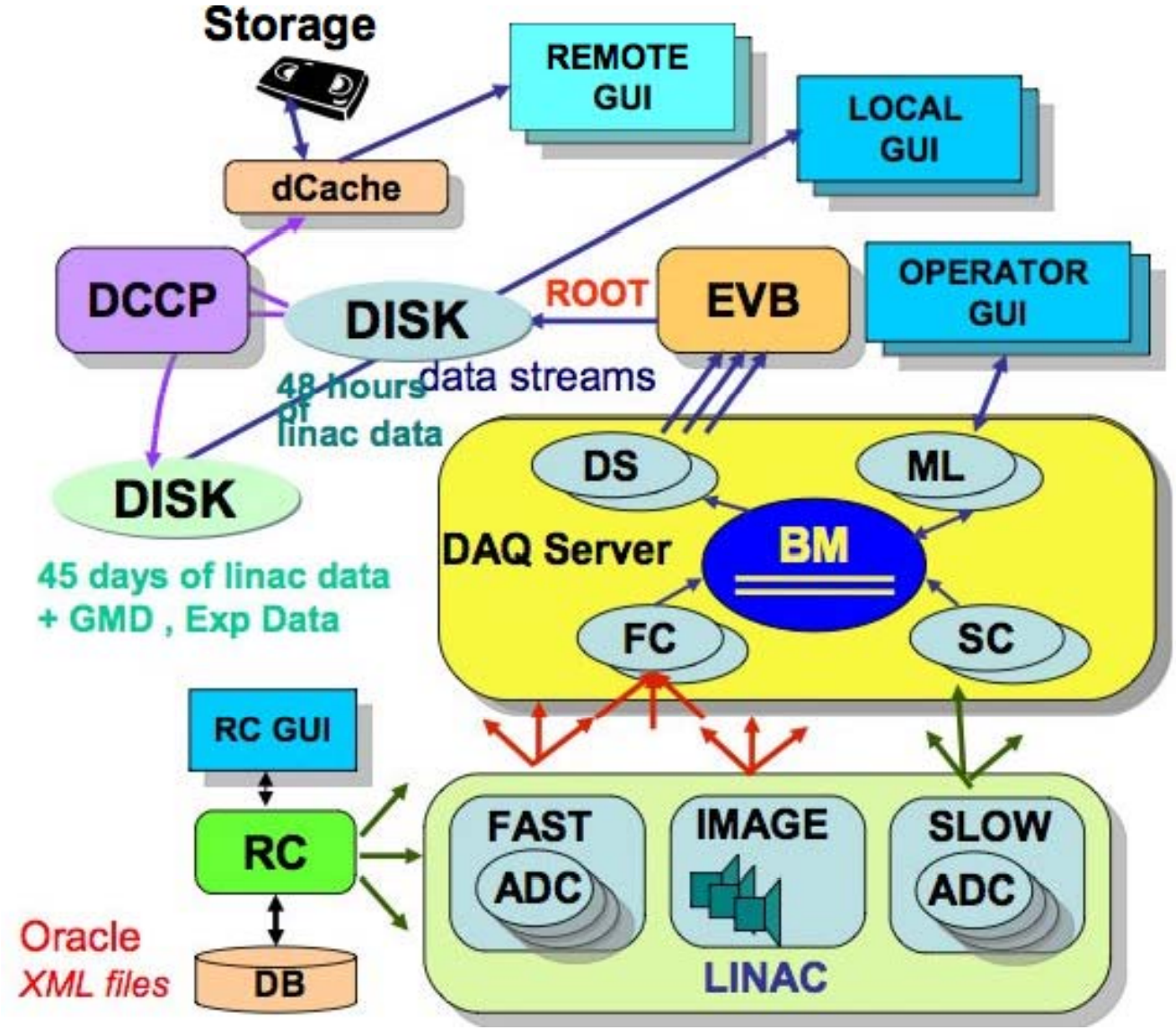


backup slides

State Analysis



DAQ system



FC/SC:
Fast/Slow Collector

BM:
Buffer Manager

EVB:
Event Builder

Example with dummy data has been successfully tested

Alarm handling