

Archive Playback - Post Mortem Data Analysis

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Archive Playback - Overview

- **The Platform**
- **Use case**
- **Tools**
- **Software Architecture**
- **Data**
- **Conclusion**
- **Credits**

What is CSS?

What's that good for?

Integration in CSS

UML overview

What is needed?

Current state

Platform

Control System Studio

- Open-Source platform
- Written in Java
- Based on Eclipse
- Developed by a community

Useful for

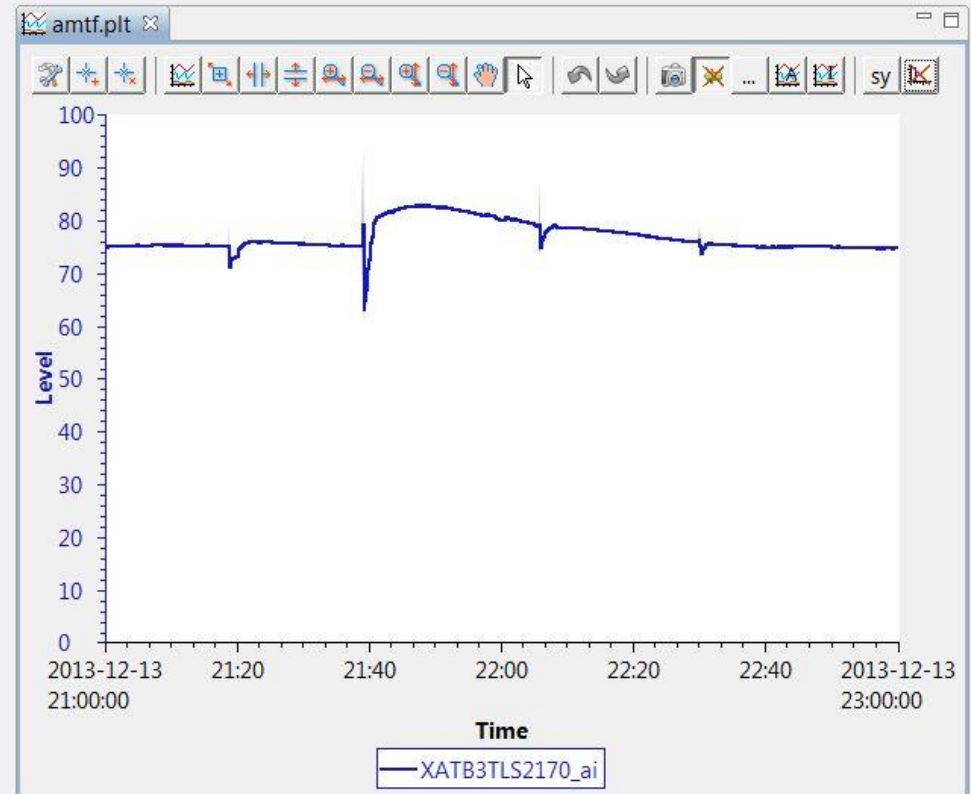
- Developing process controls
- Operating
- Maintaining the infrastructure



Use case – Currently missing

Some incident is inspected

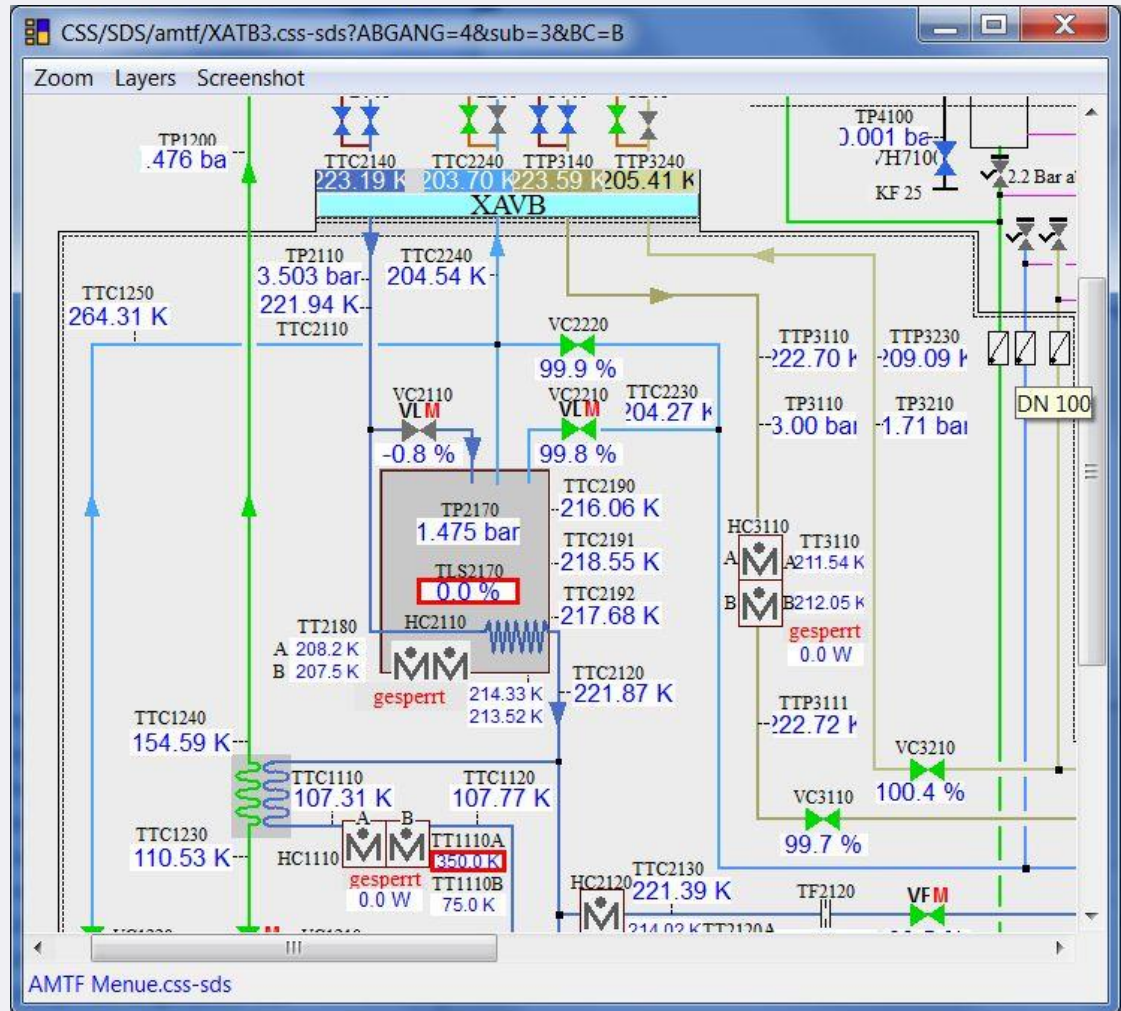
- We only see what we are asking for
- We see the timeline of events
- But not the structure of the surroundings



Use case – Display centric

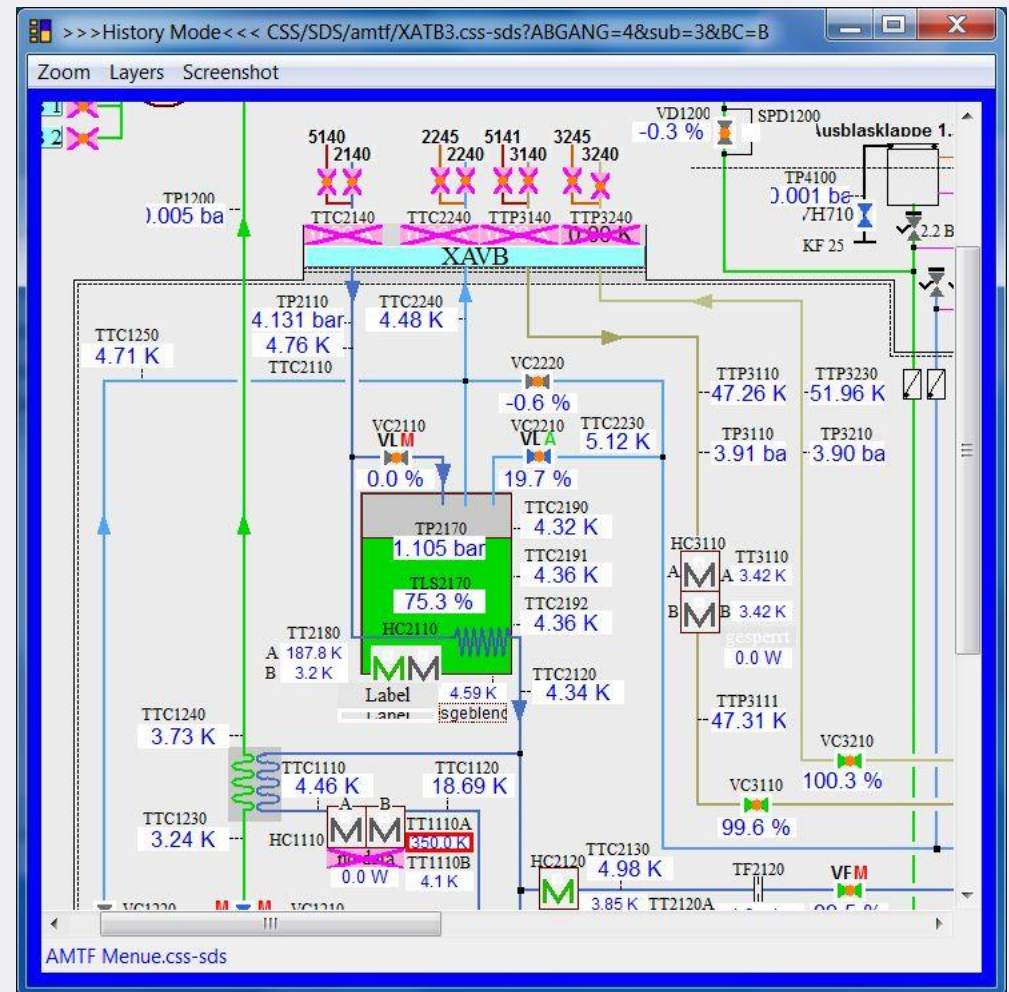
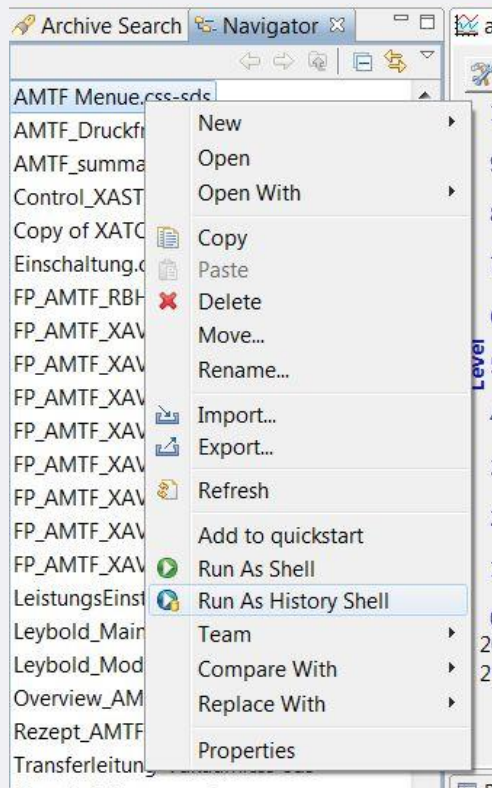
- The display shows the surroundings
- But it is limited to the current state
- Not suitable post-mortem

How do we put this together?



Use case – Display centric

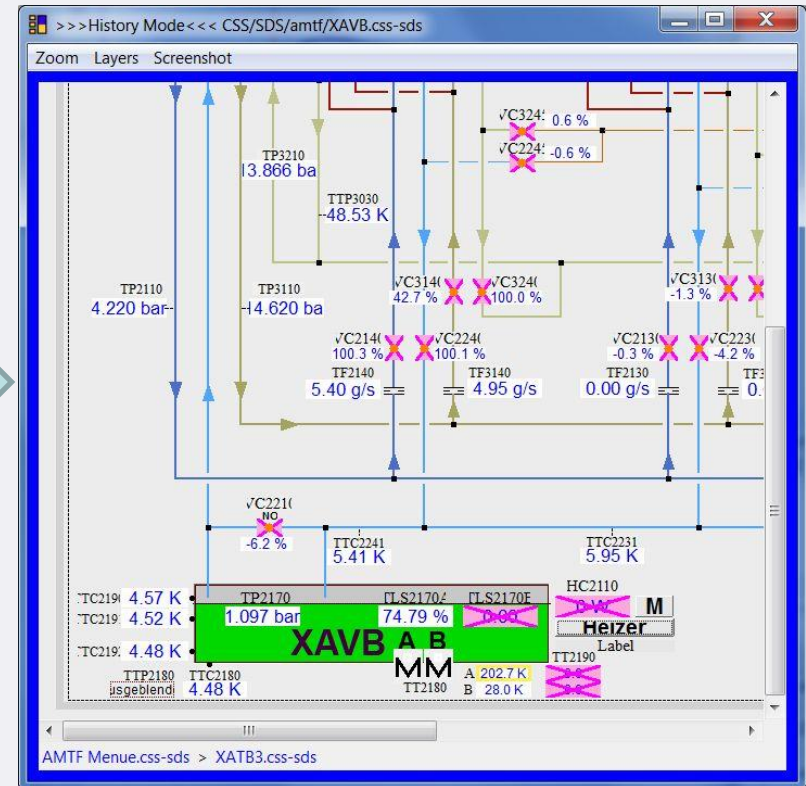
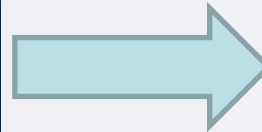
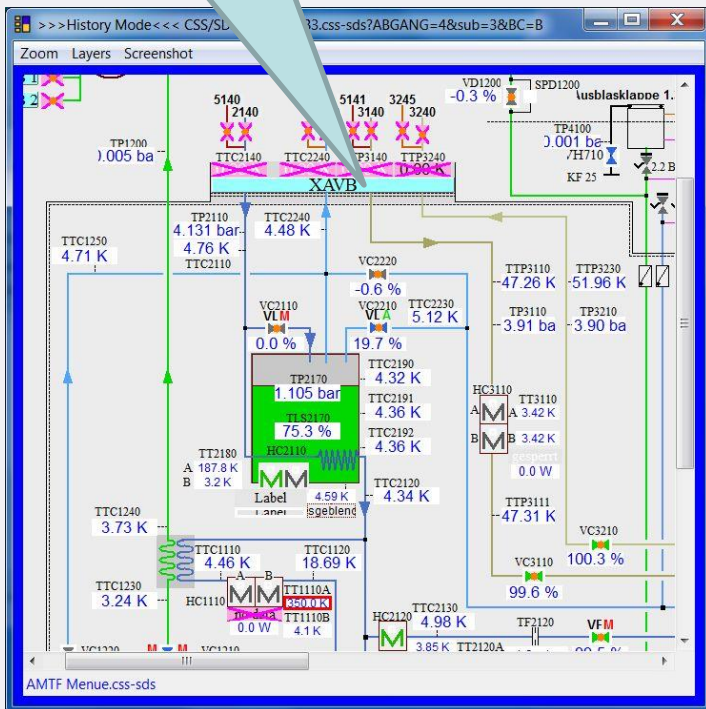
Start the display in
so-called
History-Mode



Use case – Focusing

History Mode propagates

Click opens another display

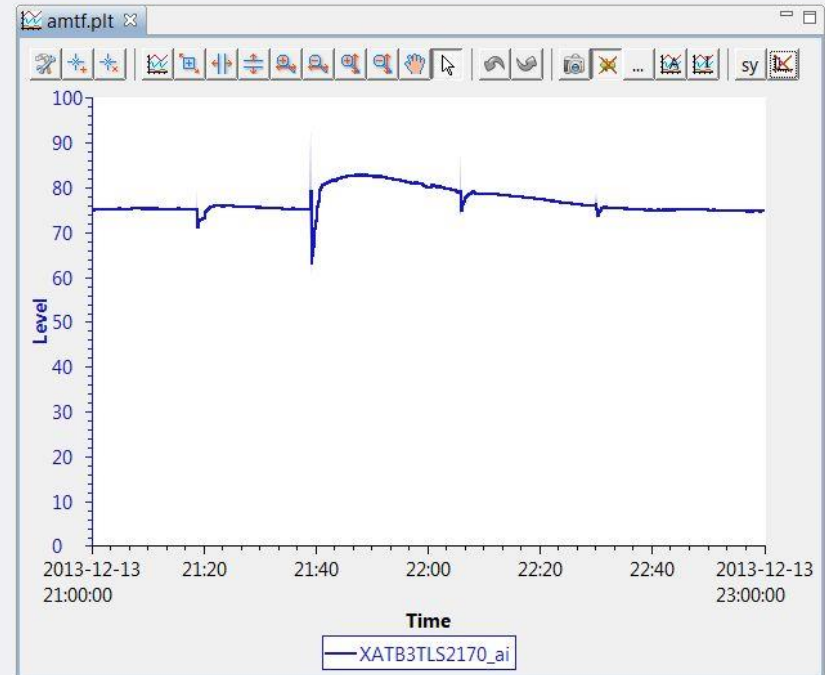
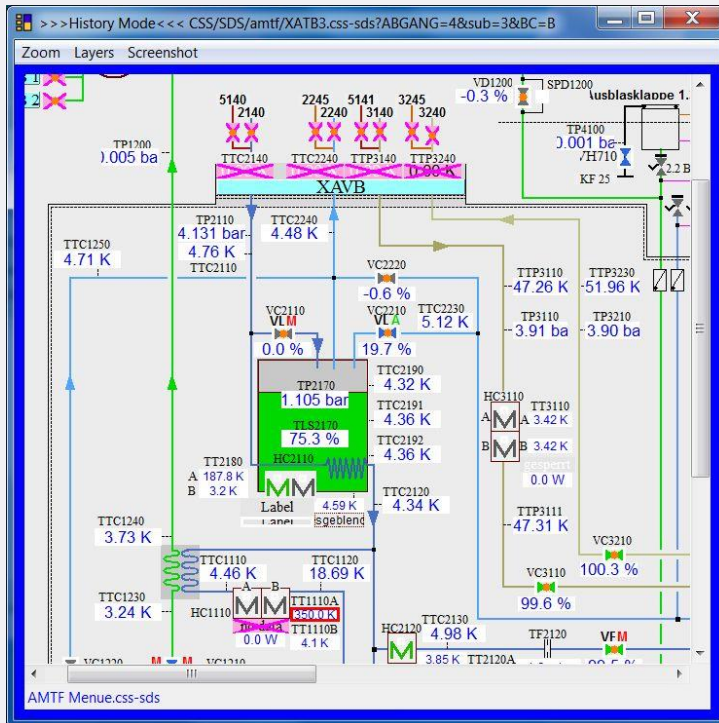


Use case – Focusing

Trends and Displays should be related

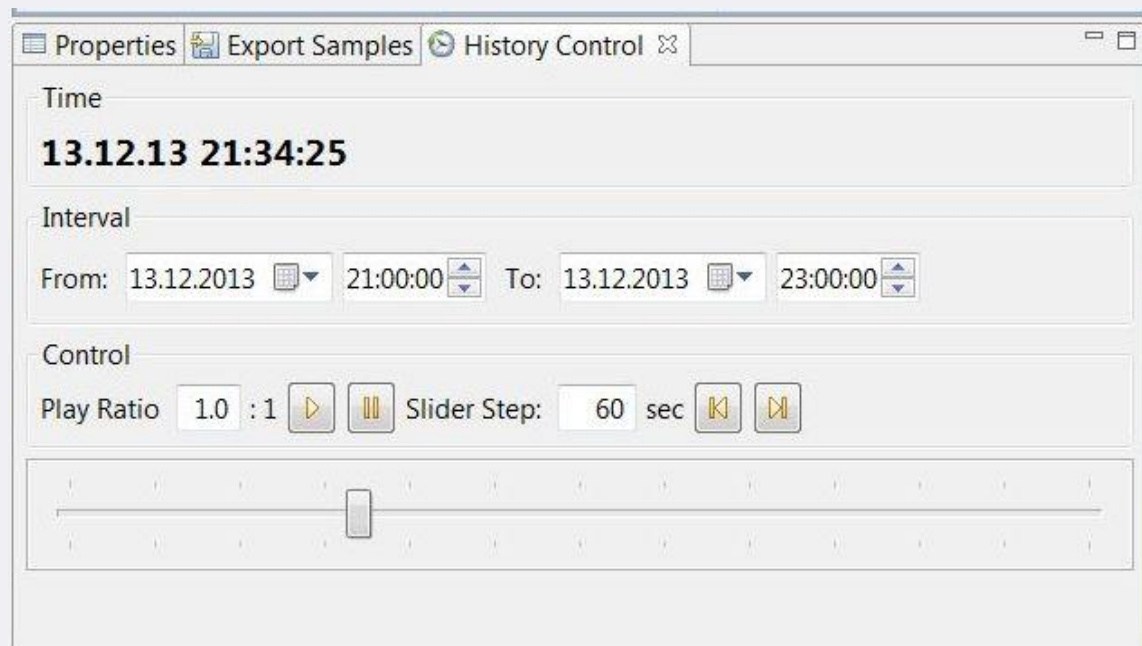
Structure

Timing



Tools – History Control View

A simple tool allows for navigation



Tools – Trendplotter

History Mode is available for trends too

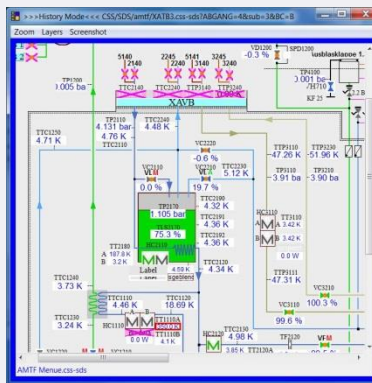
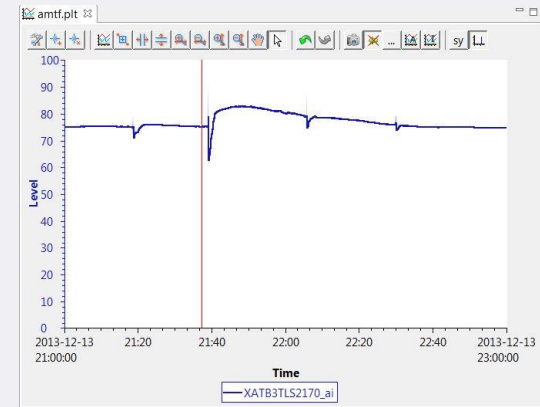
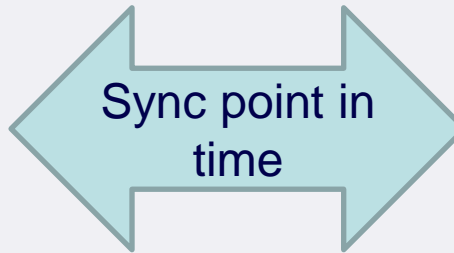
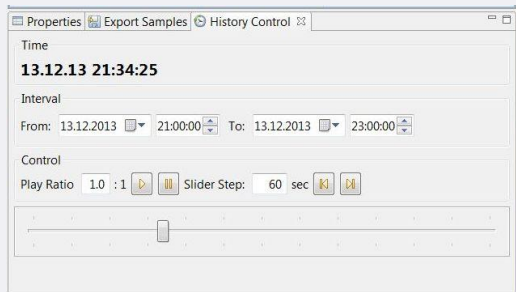


Switches mode

- Cursor marks the currently selected time
- Time range is selectable here

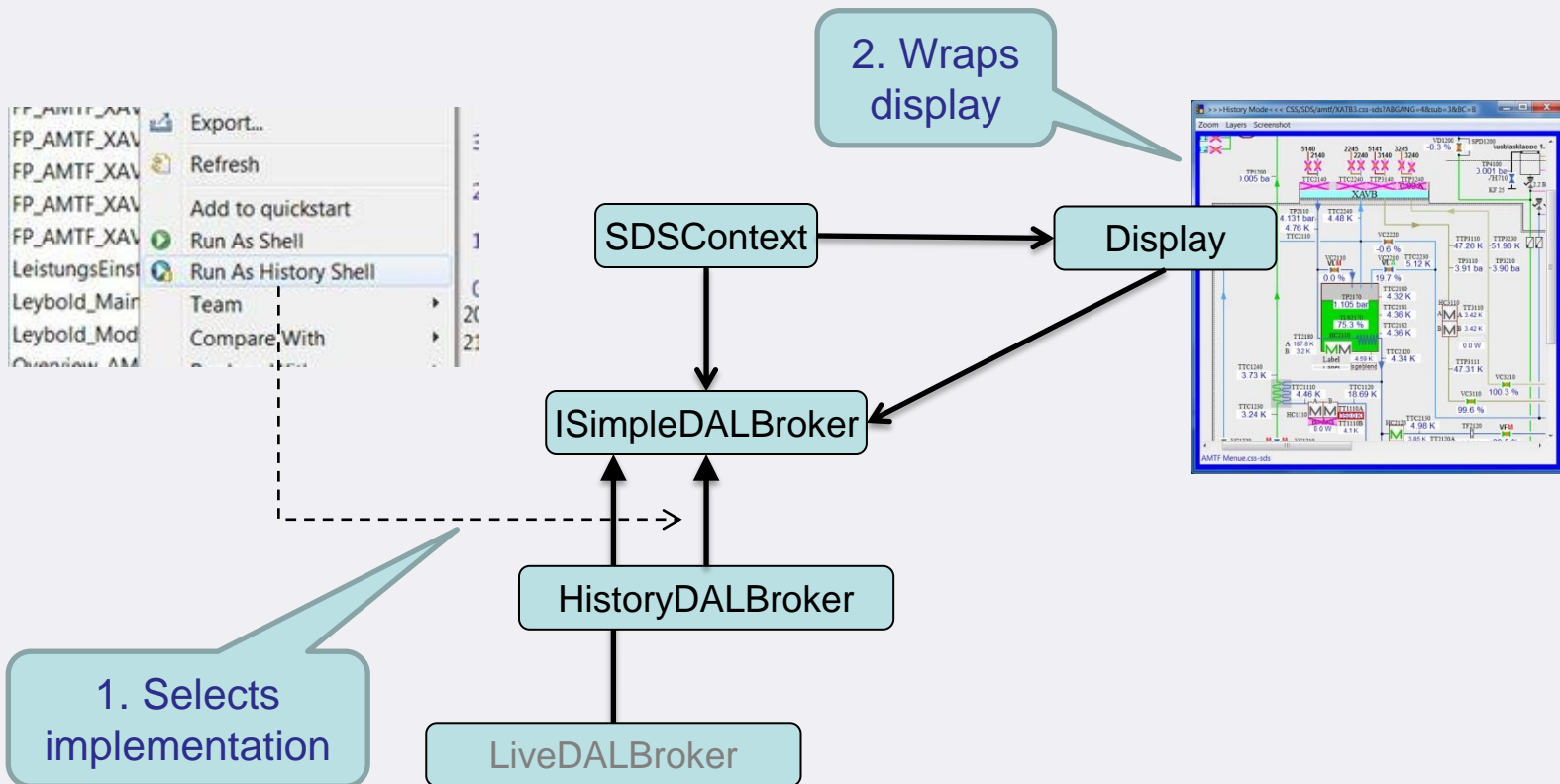
Tools – Interplay

All parts work together ...

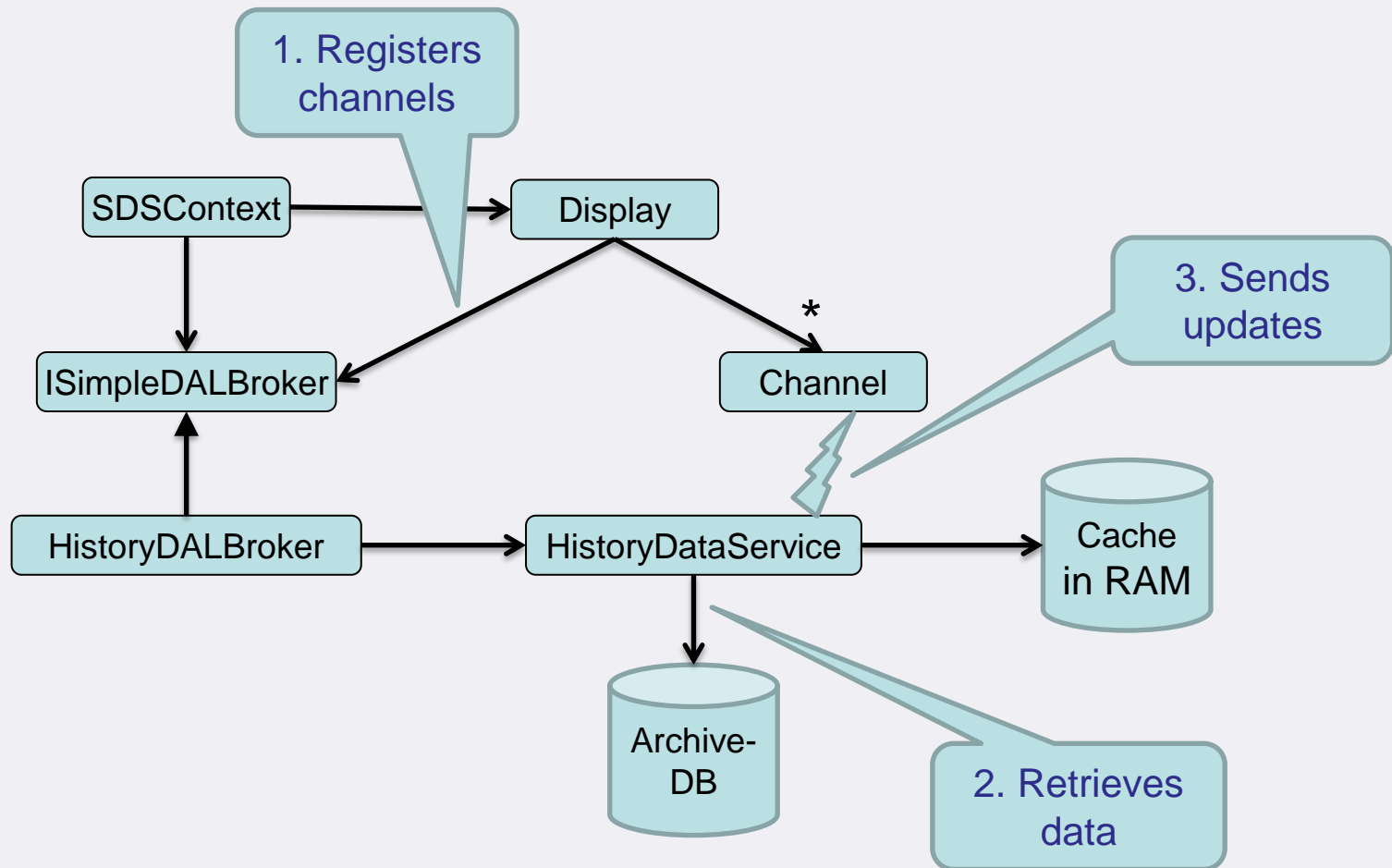


Architecture – Display in history mode

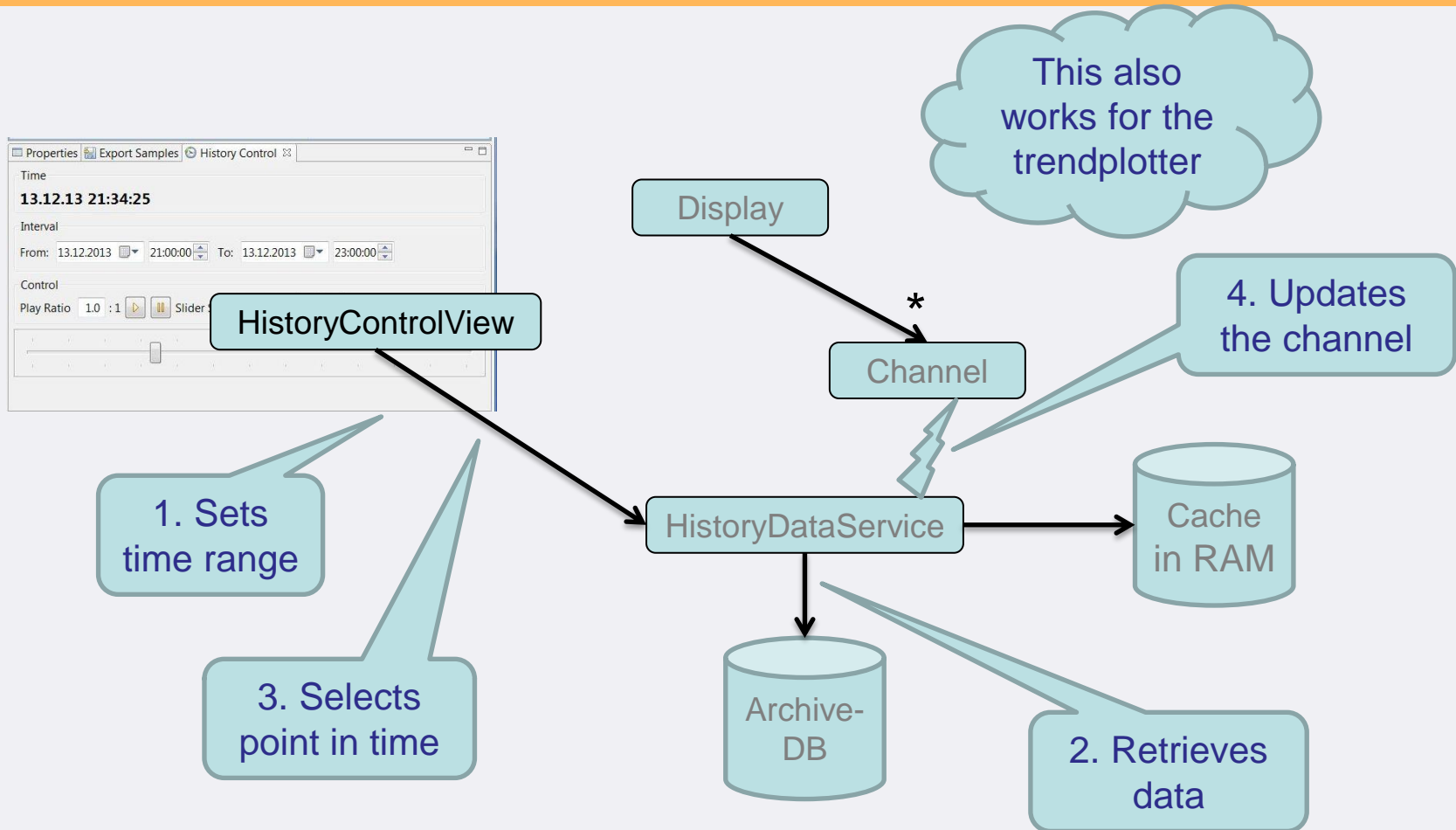
Display works without changes



Architecture – Data provision



Architecture – Time control



Data – What is needed

Samples

- Timestamp
- Value
- Alarm state / Severity

Metadata

- Display range
- Units
- Connection state



Data – Taken from the archive

Enhancements to the archive

- Alarm state / severity
- Metadata

Why not use the control system for metadata?

- Still available if IOC is down
- Still available after rework of facility

Conclusion – Current state

- Fits nicely into CSS
Seamless integration into GUI / Use model
Makes use of extendable programming model
- Positive feedback on prototype

- Caching in RAM limits time range
- Possibly long initial load time
- Tools do not sync time range in both directions
- Fast motion may omit crucial data
- Only available for SDS / Trendplotter



Credits – Where does it come from?

Master thesis by
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Student of comp. science
at University of Hamburg

Communication via
joerg.penning@desy.de

Conclusion



Thanks
for your
attention!