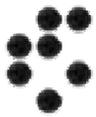# Abeans and CosyBeans

Application and User Interface Frameworks for EPICS

Igor Verstovsek (igor.verstovsek@cosylab.com), et al.

Cosylab (the company that brought you Visual DCT :-)

Jožef Stefan Institute

cosylab

CONTROL SYSTEM LABORATORY

Application Frameworks and EPICS

- What are they?
  - Abeans
    - Modeling, data exchange
  - CosyBeans
    - Visual representation
  - High quality of code and documentation
  - 6 years of continuous development
  - Used at: ANKA, ESO, DESY (work in progress), SNS (work in progress), RIKEN (testing), GSI (testing),…
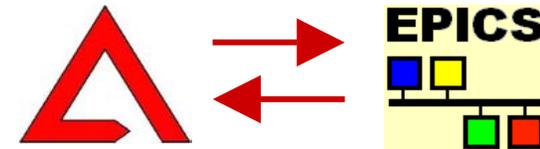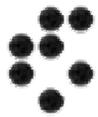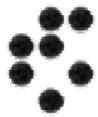
Abeans   1/2

Modeling of control systems

- Models
  - Logical containment of CS Objects
  - EPICS records map to Abeans Channel Object
- Plugs
  - Connection to remote modeling layer
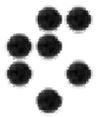 - ACS CORBA, UFC, TINE and **EPICS (jca)**

Abeans 2/2

- Services
  - Error reporting, Logging, Resource loading, Configuration management...
  - Easy to replace, register at runtime
- Therefore Abeans are used by
  - Visualization libraries (e.g. CosyBeans)
  - Calculation packages (XAL by SNS, Orbit Correction in ANKA)
- Abeans *prepare* the data for visualization
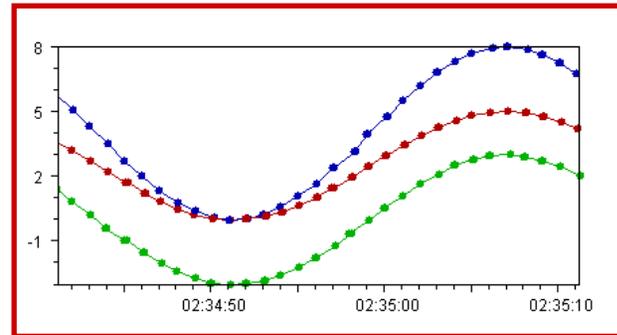 - Java Beans

CosyBeans 1/4

Graphical components

- Optimized for
  - Functionality
  - Performance
  - Good looks :-)
- Use standard Java visual building tools
- Point & click vs. programming ?
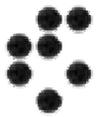 - Combine both !

CosyBeans   2/4

- Displayers (controls)
  - gauger, slider, ledder, wheelswitch, chart – trend and profile, date displayer, auto-resizable label, number field, object table, active tree,…

- Application support
  - smart drag and drop, report area, standard actions (e.g. print, help), logging panel, window closer,…
  - provided on demand

CosyBeans   3/4

- Launching the Application
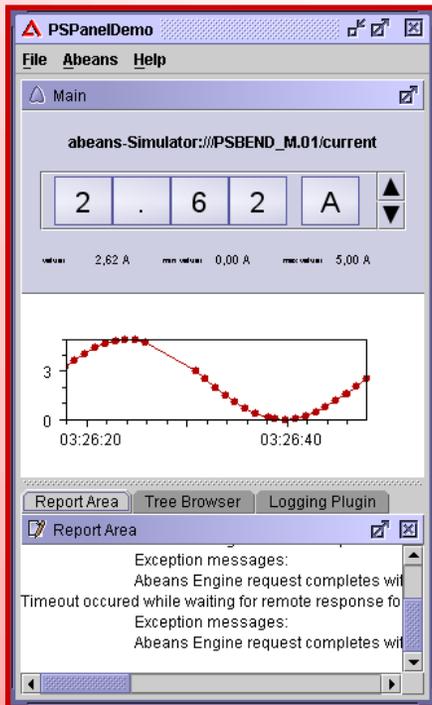
JVM Sharing
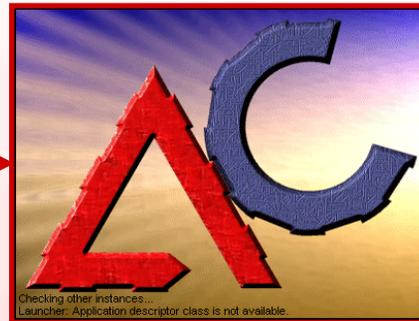
Application

Applet

Internal Frame

Webstart
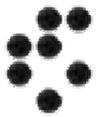
CosyBeans   4/4

- ## Java Virtual Machine Sharing

Java Abeans
Application

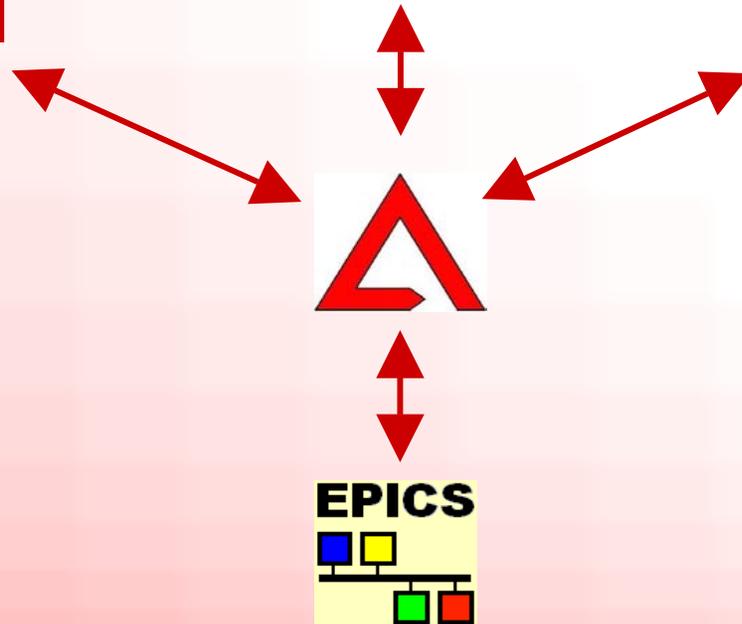JVM 1

Another Java
Abeans Application

JVM 2

Share?

Yes

Transfer App. data
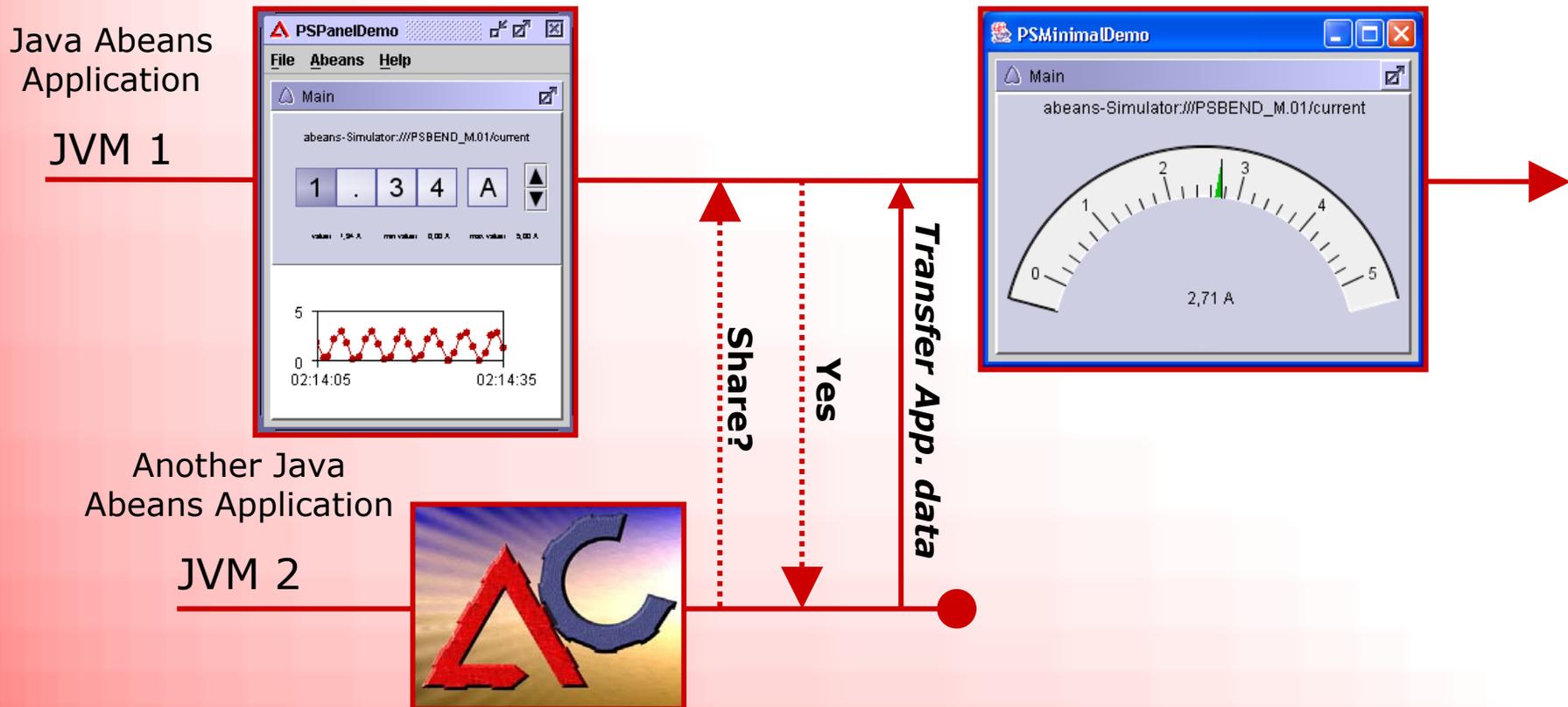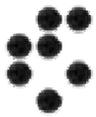
Example: Power Supply Table
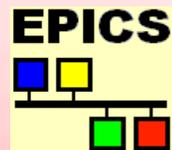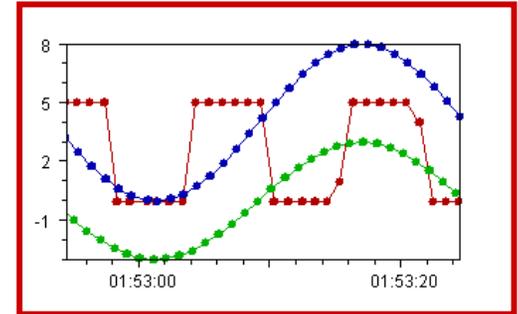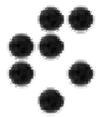
Display of Data Quality
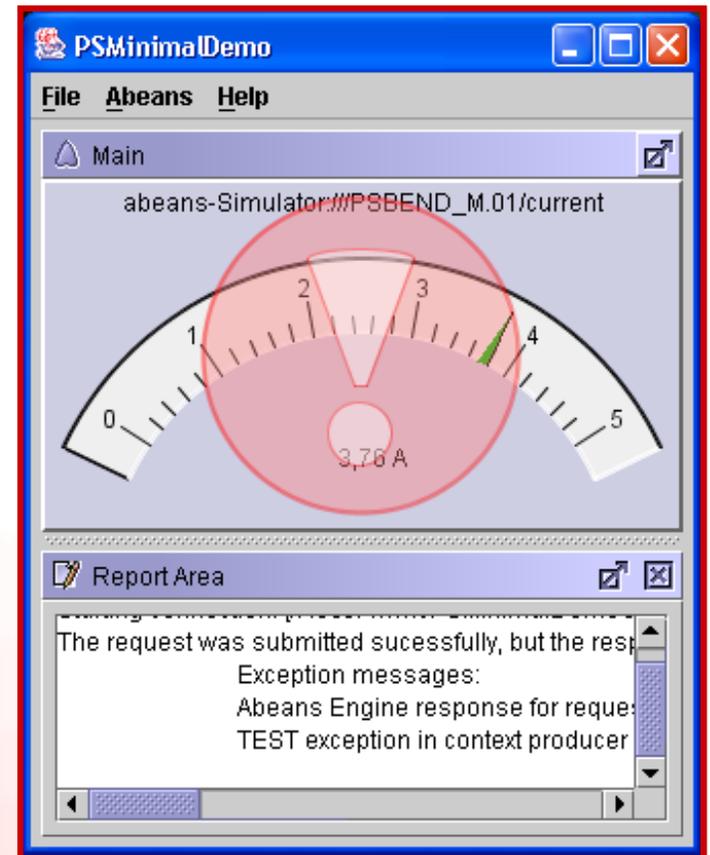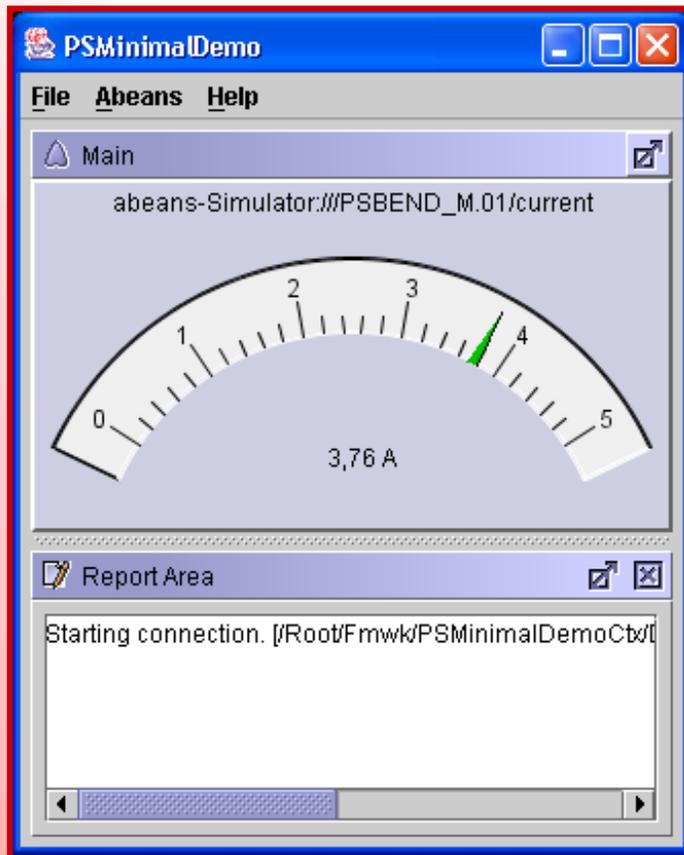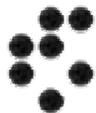
Archive Reader for DESY

Abeans and CosyBeans "Live"

Quality Assurance

- The libraries are very well documented
- Same core code is used everywhere
  - Fix once, enjoy everywhere
- Automatic *JUnit* tests are used
  - Run with every build
- Automatic ANT build process
  - The same as Visual DCT
- *Request Tracker* bug management tool
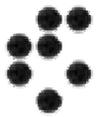
Conclusion

- Bring experience from other CS to EPICS
  - 20 man-years of development
- Everything is open source
- EPICS – Abeans: Collaboration with SNS

Abeans and CosyBeans are ready for EPICS

Thank you!

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