

**Jožef Stefan
Institute**

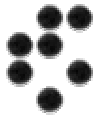


The New Abeans and CosyBeans

**Cutting Edge Application and User
Interface Framework**

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Pucelj, Gasper Tkacik

Jozef Stefan Institute, Cosylab Ltd.

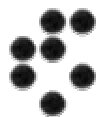


Application Frameworks

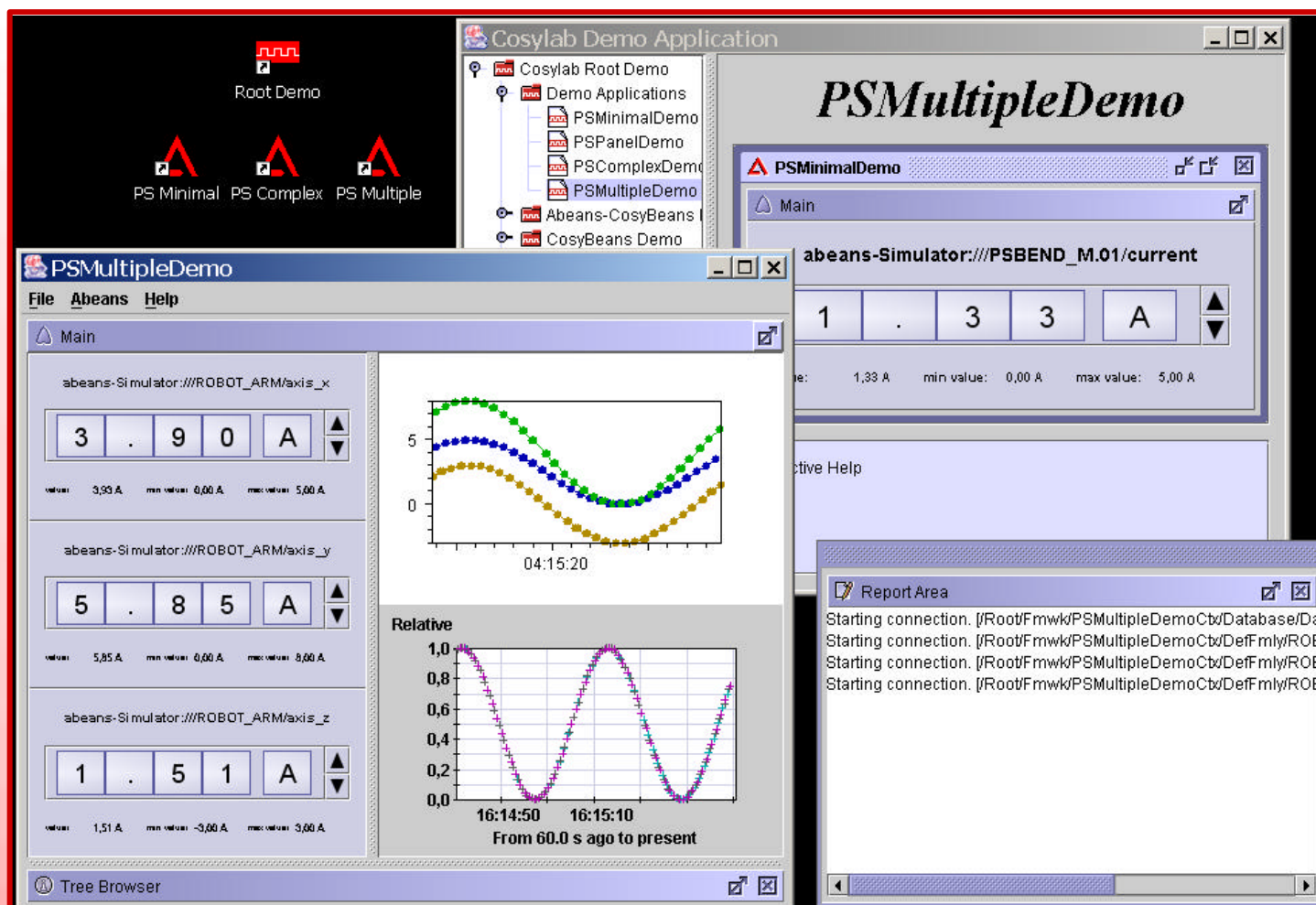
- What are they good for?
 - Factor out shared functionality
 - Provide extension points
 - Try to insure high quality of the code
- Cosylab experience with application frameworks:
 - 6 years of continuous development
 - Projects: ANKA, DESY, ESO, RIKEN, SNS,...

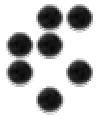
Need for a new design

Abeans and CosyBeans
Release 3

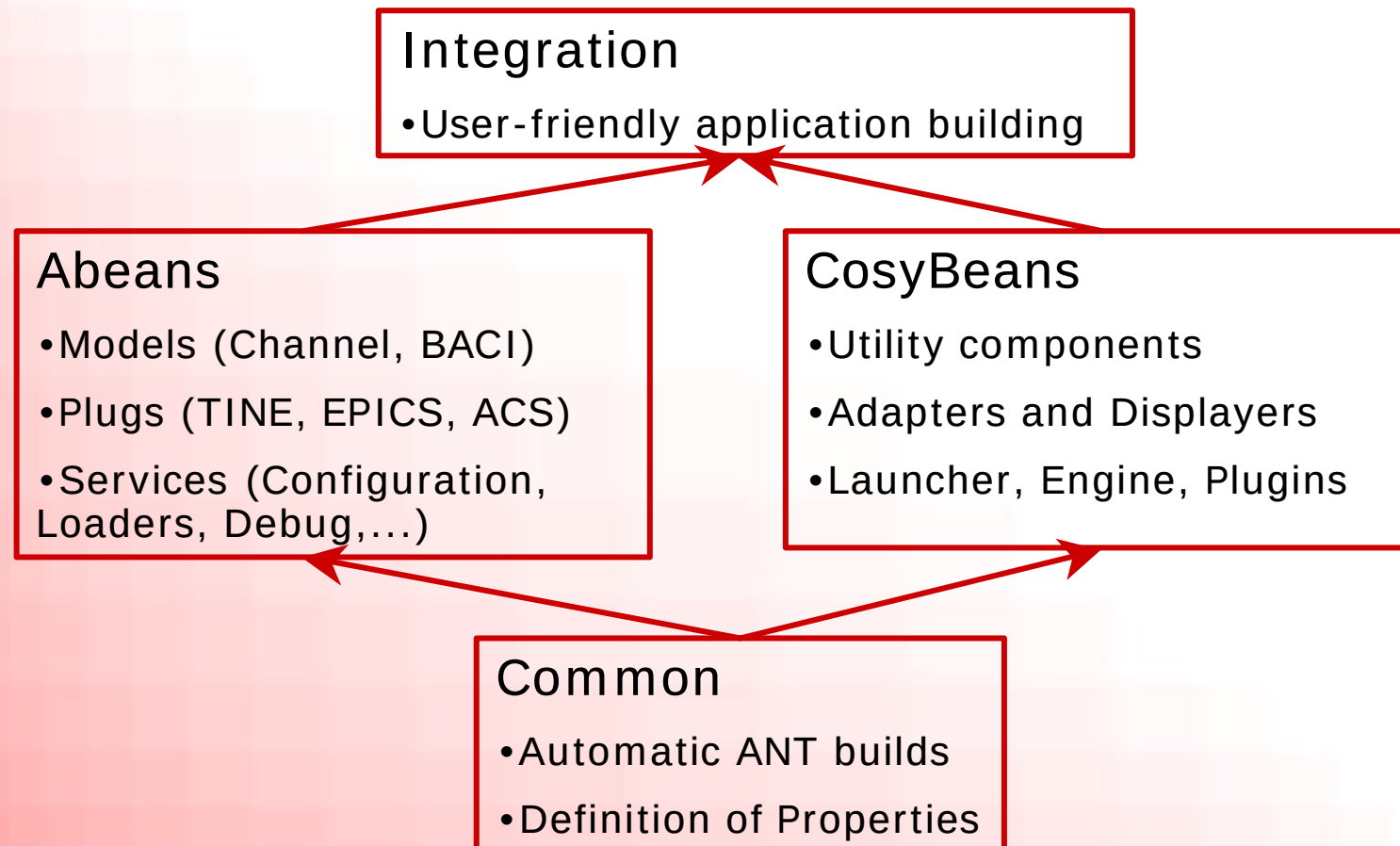


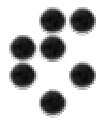
Demonstration





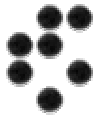
Functionality Overview





Common

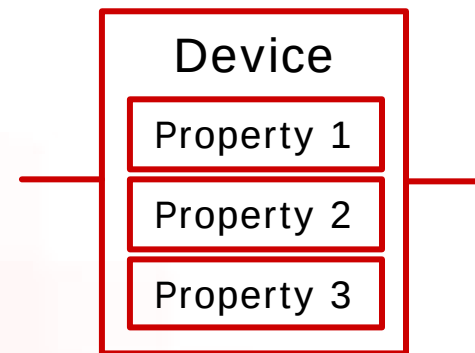
- Automatic builds
 - Using ANT build tool
- Definition of basic CS Specific interfaces
 - Property, Access, Monitor,...
- Utility classes for the Java platform



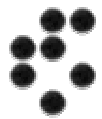
Abeans

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- Models
 - Logical containment of CS Objects
 - Channel, BACI



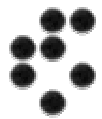
- Plugs
 - Connection to remote modeling layer
 - TINE, EPICS, ACS CORBA



Abeans

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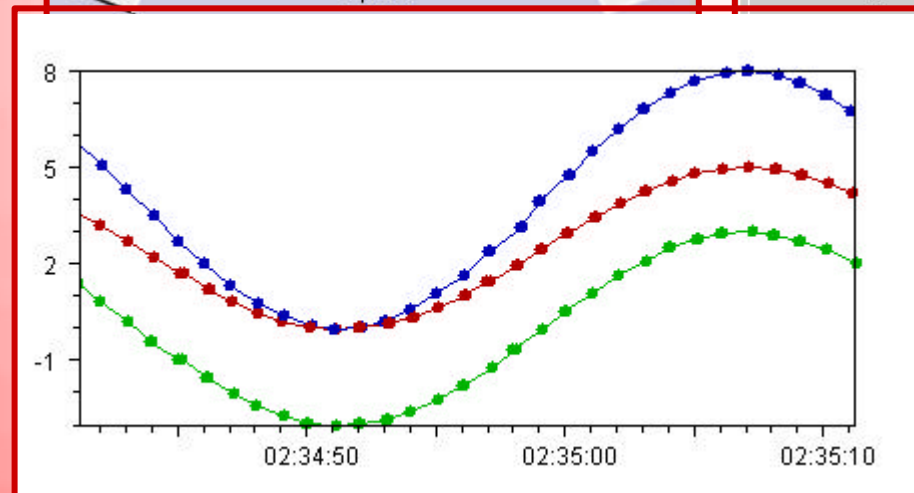
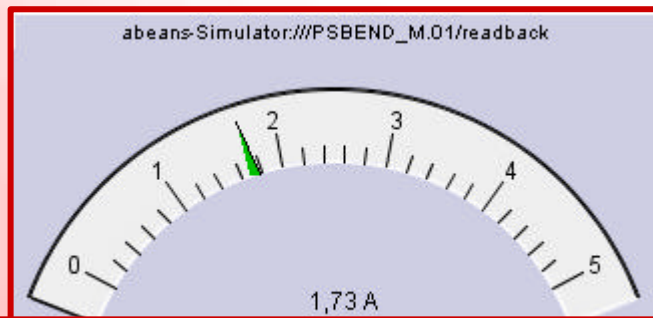
- Services
 - Implementation of shared functionality
 - Error reporting, Logging, Debug,...
- Abeans are usually used by
 - Visualization libraries (CosyBeans)
 - Calculation packages (XAL, OrbitCorrection)
- Abeans are not a GUI framework
 - Abeans *prepare* the data for visualisation



CosyBeans

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- Utility graphics components



About PSMultipleDemo

Program System License

cosylab
CONTROL SYSTEM LABORATORY

PSMultipleDemo

Project web page : <http://www.cosylab.com>

Documentation web page : <http://www.cosylab.com>

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LedderPanel



On



Leak



Receive



Error

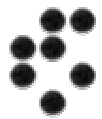


Danger



Transmit

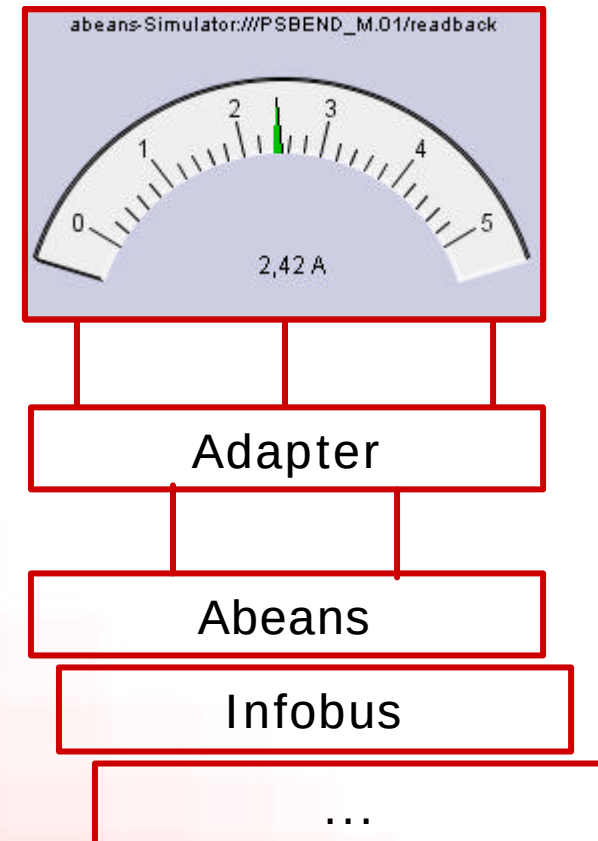
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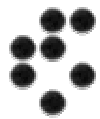


CosyBeans

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- Adapters and Displayers
 - Lifecycle
 - Connection status
 - Data quality
 - timeouts, errors, etc.

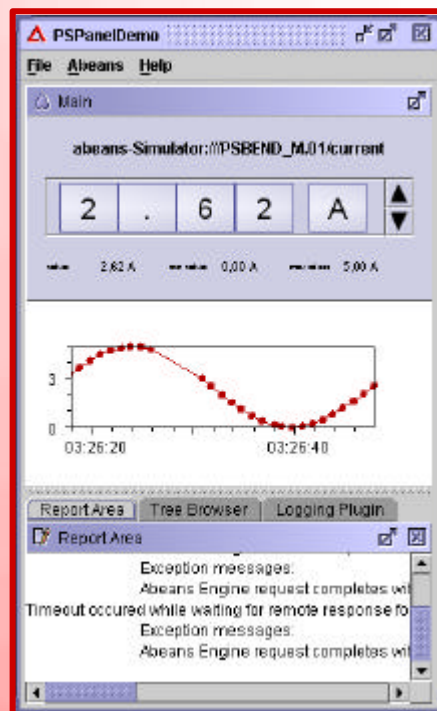




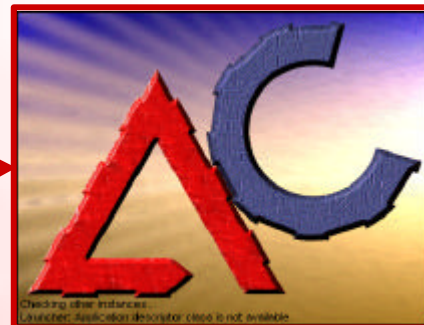
CosyBeans

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- Application Outline: CosyPanel and Launcher



JVM Sharing

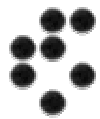


Application

Applet

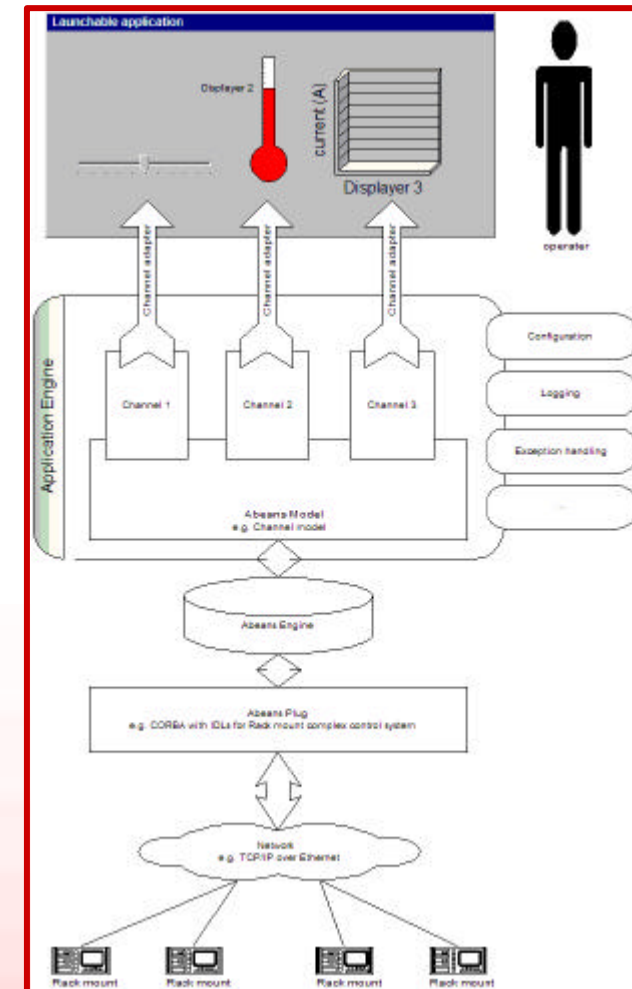
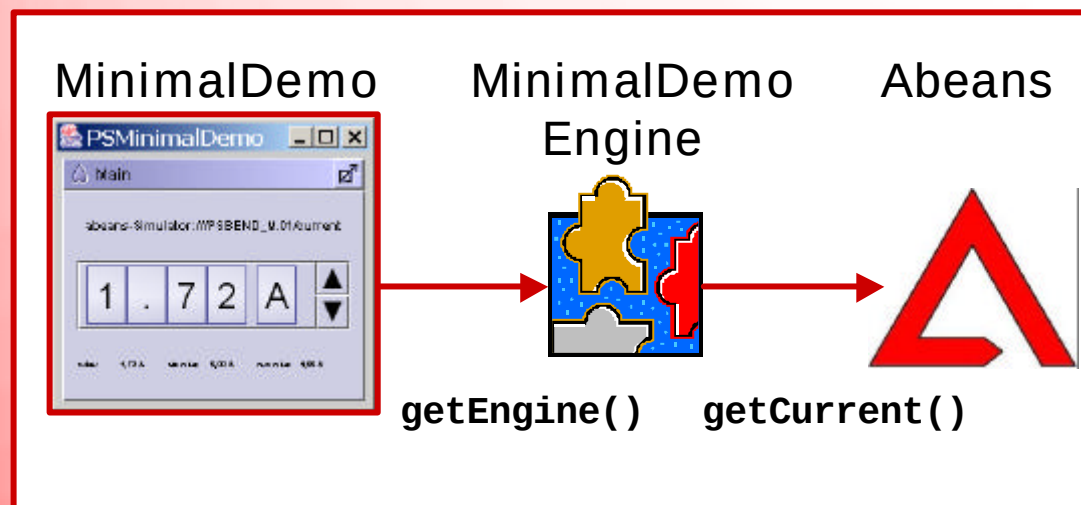
Internal Frame

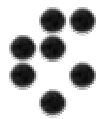
Webstart



Integration of Abeans and CosyBeans

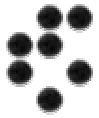
- Abeans Engine and Abeans Launchable
 - Facade Pattern ?
 - Simple Syntax





Quality Assurance

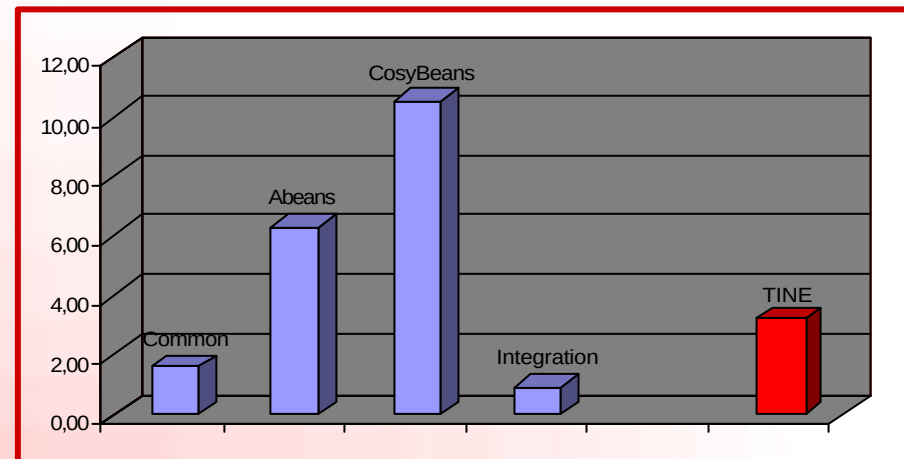
- The libraries are very well documented
- Same core code is used everywhere
 - Fix for one customer, enjoy everywhere
- Automatic *JUnit* tests are used
 - Run with every build
- *Request Tracker* bug management tool
- Plan: Automatic bug reporting
 - Similar to Netscape or MS IE

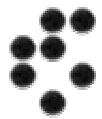


Frameworks at Work

- Investment into the frameworks is large
- Frameworks must be widely used
 - the 3:1 rule
- Current Users
 - TINE
- Near Future Users
 - SNS, ESO, ANKA, RIKEN,...

Product	SLOC	Work	Cost
Common	7,343	1.58 my	\$ 213,000
Abeans	26,715	6.30 my	\$ 851,000
CosyBeans	44,931	10.54 my	\$ 1,423,000
Integration	4,214	0.91 my	\$ 122,000
Together	83,203	20.76 my	\$ 2,804,000
TINE	14,120	3.22 my	\$ 435,000





Conclusion

- Advantages of Application Frameworks
- Abeans and CosyBeans are mature
- Frameworks are fun
 - Much more fulfilling to write an application framework than it is to develop tons of similar applications

Thank You!