

ImPrESS

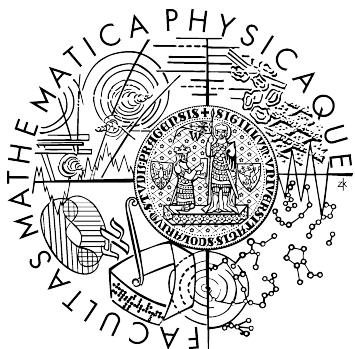
Project Overview

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CHARLES UNIVERSITY IN PRAGUE
FACULTY OF MATHEMATICS AND PHYSICS



OW2
Consortium



Project Partners

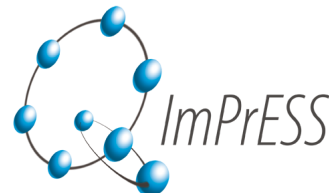
Academia

- FZI Karlsruhe, Germany
- Politecnica di Milano, Italy
- MRTC Malardalen, Sweden
- Charles University, Czech Republic

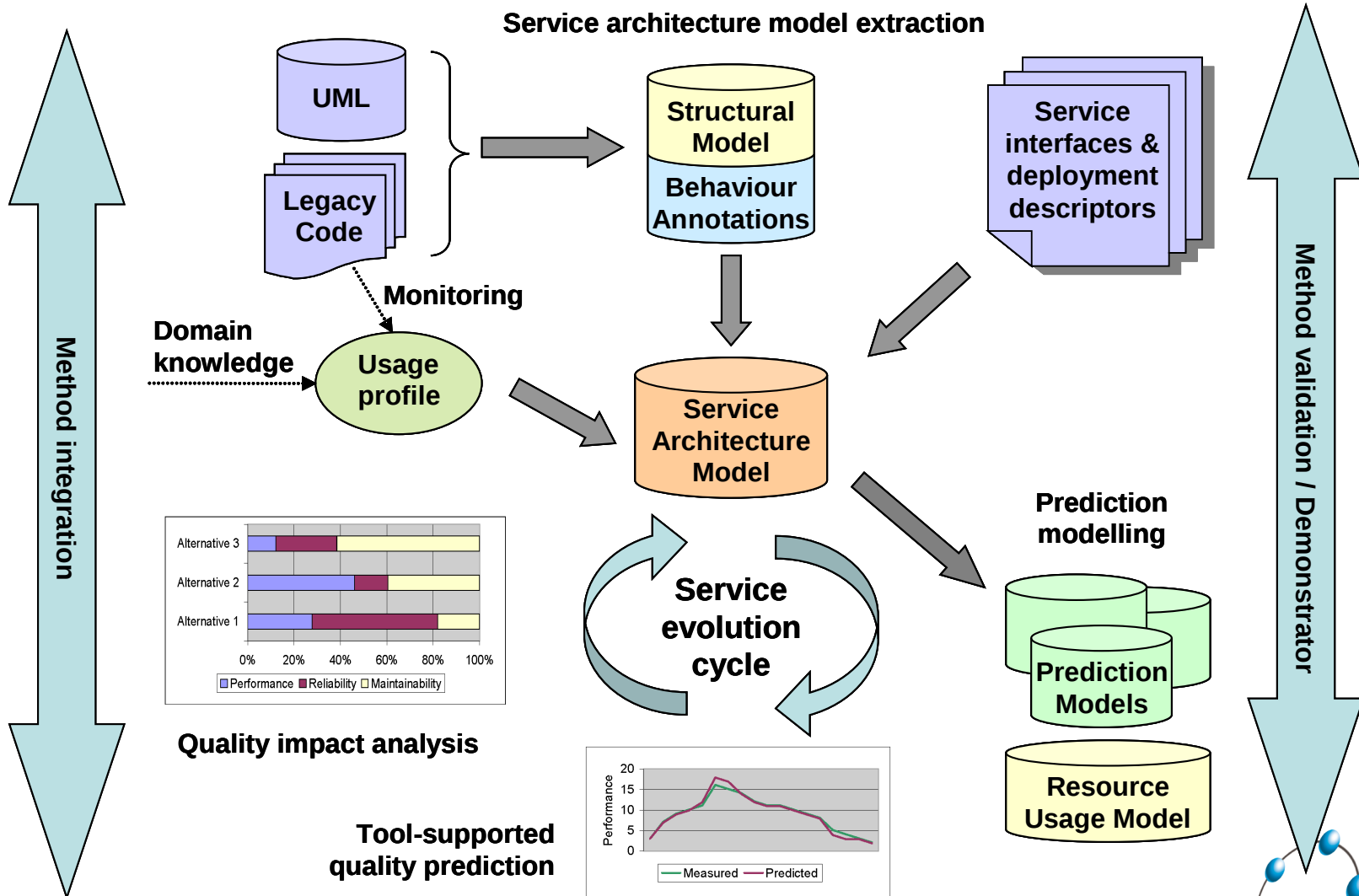


Industry

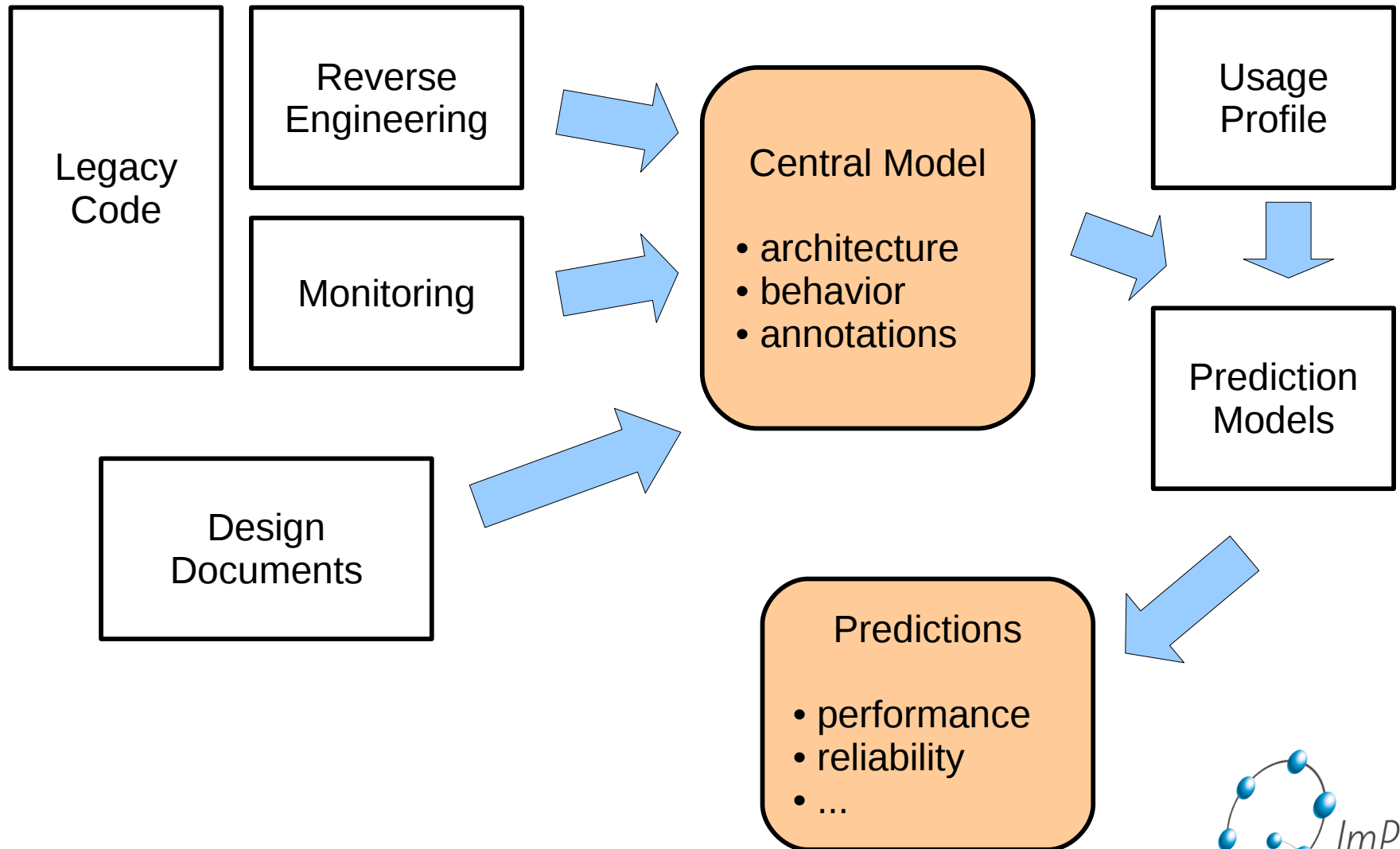
- ABB Corporate Research, Germany
- Ericsson Nikola Tesla R&D, Croatia
- Itemis, Germany
- Softeco, Italy



The (Really) Big Picture



Now Somewhat Smaller Big Picture



Why Interesting To Us ?

Friendly technologies

- ActiveMQ, Jonas, Petals ...
- some embedded and telecom (OpenSAF)
- development tools as plugins for Eclipse
- model compatible with SOFA / Fractal

Some useful tools

- code analysis and generation
- monitoring and maintenance

Code Analysis Tools

SISSy

- generic parser for Java, C/C++, Delphi
- structure visualization
- software metrics
- antipatterns (50+)

- working release

Code Analysis Tools

Java2PCM & JAbstractor

- recovery of behavior model from code
- formalisms somewhat resembling the UML activity diagrams

SOFA Code Checker

- model checks code behavior compliance
- all alpha prototype releases

Code Analysis Tools

ArchiRec

- recover component architecture from code
- uses combination of heuristics
 - breaking of encapsulation
 - common patterns in names
 - ...
- alpha prototype release
- tested on CoCoME
(similar to RUBiS or ECPperf)

Modeling Tools

Palladio Modeler

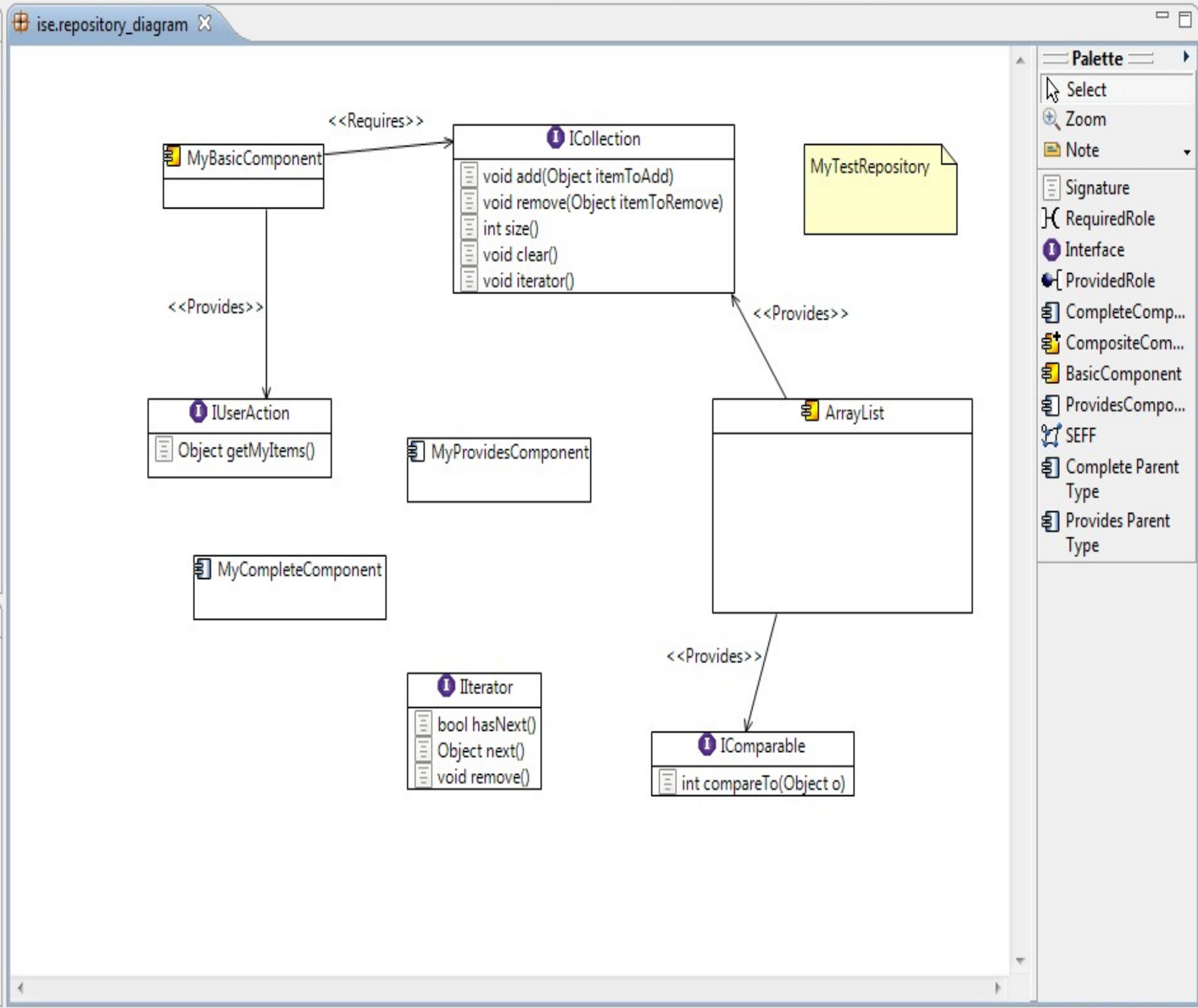
- performance modeling toolset
- tons of features
 - method parameters
 - arbitrary distributions
- working release

Tahoma 9 B I A 100%

Package Explorer Hierarchy

- cocomePcmModel
- de.uka.ipd.sdq.codegen.test
- ISE2007
 - ise.repository
 - ise.repository_diagram
 - ise.usagemodel
 - ise.usagemodel_diagram
- JSS2007
- PCMFulExample
 - Blog.AddEntry.seff_diagram
 - default.composite_diagram
 - default.repository
 - default.repository_diagram
 - FullExample.allocation
 - FullExample.allocation_diagram
 - fullexample.repository_diagram
 - FullExample.resourceenvironment

Outline

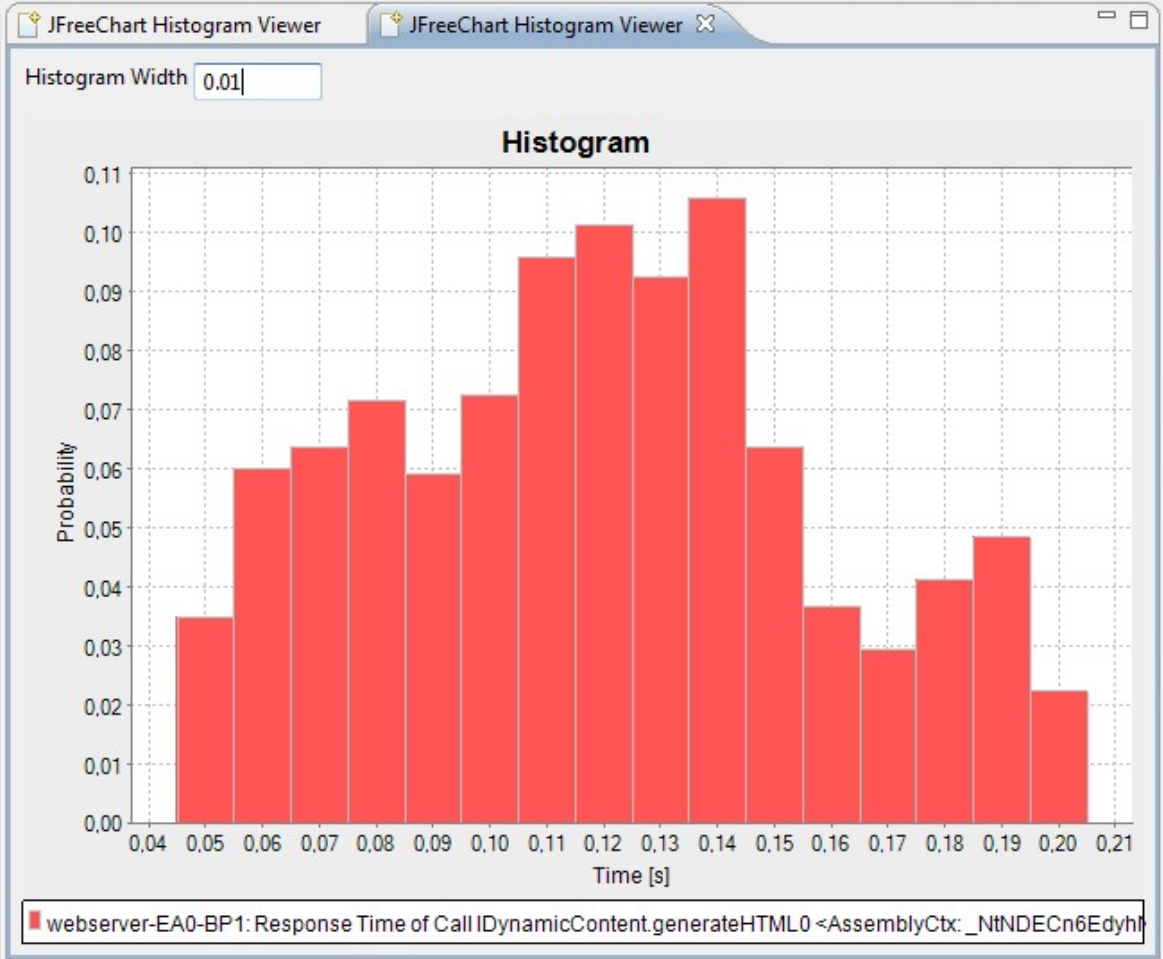


Palette

- Select
- Zoom
- Note
- Signature
- RequiredRole
- Interface
- ProvidedRole
- CompleteComp...
- CompositeCom...
- BasicComponent
- ProvidesCompo...
- SEFF
- Complete Parent Type
- Provides Parent Type

Experiments View

- DB Datasource
 - webserver-EA0-BP1
 - Experiment Runs
 - Wed Jul 04 10:08:45 CEST 2007 [ID:0]
 - webserver-EA0-BP1: Response Time of Call_HTTP
 - webserver-EA0-BP1: Response Time of Call IDyna
 - webserver-EA0-BP1: Response Time of Call IDyna
 - webserver-EA0-BP1: Response Time of Call IMon
 - webserver-EA0-BP1: Response Time of Call IMon
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 - webserver-EA0-BP1: Response Time of defaultUs
 - webserver-EA0-BP1: Utilisation of aName [LAN] <
 - webserver-EA0-BP1: Utilisation of AppServer [cpu
 - webserver-EA0-BP1: Utilisation of AppServer [hdd
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 - webserver-EA0-BP1: Wait time at server [hdd] <
 - Wed Jul 04 10:31:46 CEST 2007 [ID:2]
 - webserver-EA0-BP1: Response Time of Call_HTTP
 - webserver-EA0-BP1: Response Time of Call IDyna
 - webserver-EA0-BP1: Response Time of Call IDyna
 - webserver-EA0-BP1: Response Time of Call IMon
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 - webserver-EA0-BP1: Wait time at server [cpu] <
 - webserver-EA0-BP1: Wait time at server [hdd] <
- Sensors
 - webserver-EA0-BP2
 - webserver-EA1-BP1
 - webserver-EA1-BP2
 - webserver-EA2-BP1
 - webserver-EA2-BP2
 - webserver-EA3-BP1
 - webserver-EA3-BP2
 - webserver-EA4-BP1
 - webserver-EA4-BP2
 - webserver-EA5-BP1
 - webserver-EA5-BP2



JFreeChart Histogram Viewer

Sensors	Context	Experiment Datetime	Sensors
	ExperimentRu...	Wed Jul 04 10:31:46 C...	webserver-EA0-BP1: Response Ti...

Monitoring Tools

SOFA Monitoring Infrastructure

- generic monitoring framework (something like DTrace for components)
- can connect to running application
- no overhead when not monitoring
- beta prototype release

To Conclude

- Useful (hopefully) tools
- Compatible with OW2 apps
- Tested on large problems (~1M LOC)
- Not limited to project duration

<http://www.q-impress.eu>

<http://dsrg.mff.cuni.cz>