



Context Acquisition and Acting in Pervasive Physiological Applications

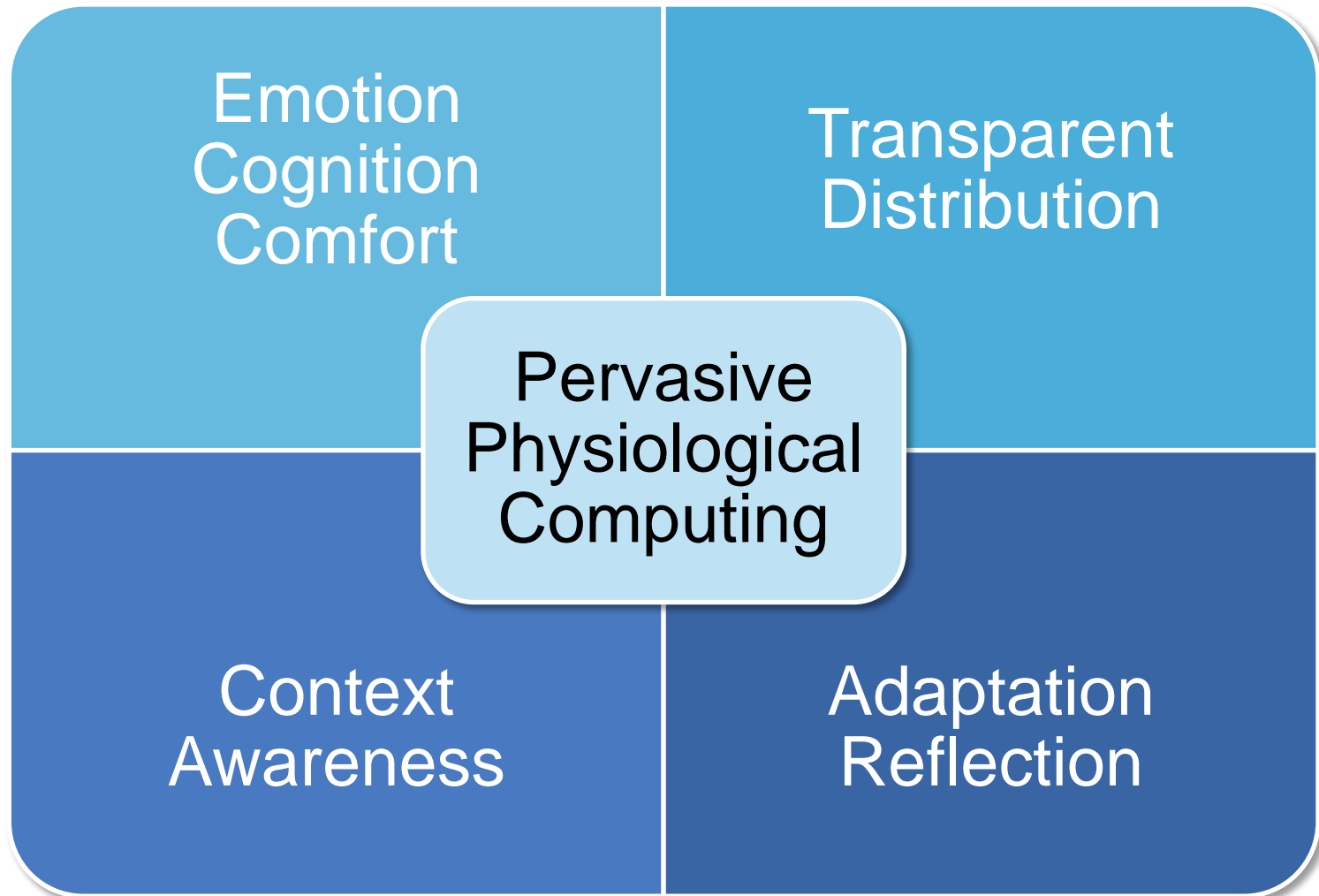
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UCPA 2010
Dec 6 2010
Sydney

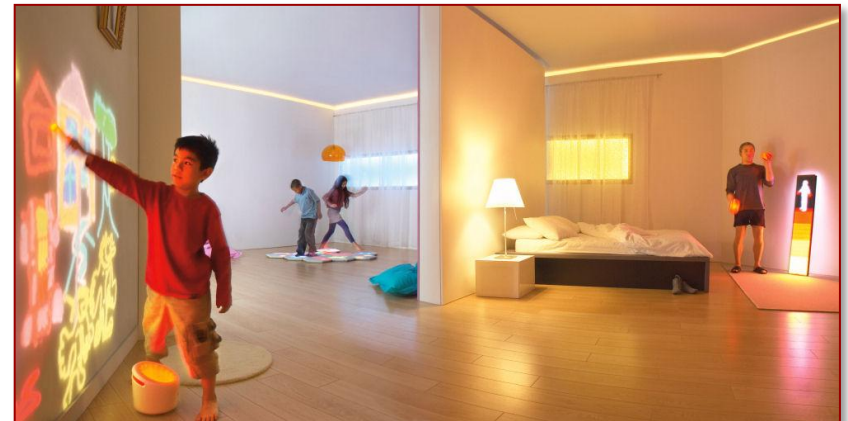
PERVASIVE PHYSIOLOGICAL COMPUTING

What it's all about





Application Domains



Challenges

- Processing of digital signals
- Generating sensible responses
- Adapting to inter-personal variation of responses
- Example: Affective Music Player



REFLECT FRAMEWORK

Supporting Developers



Natural

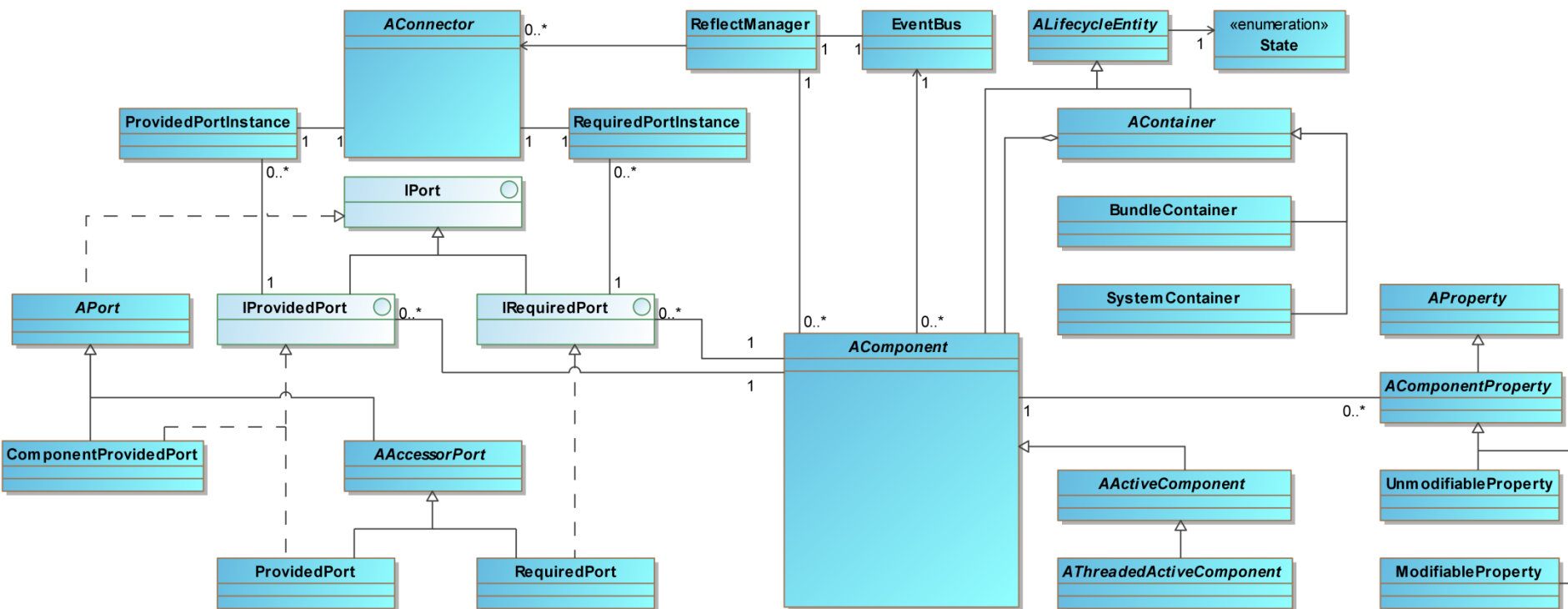
Experiment
Structuring
Support

OSGi

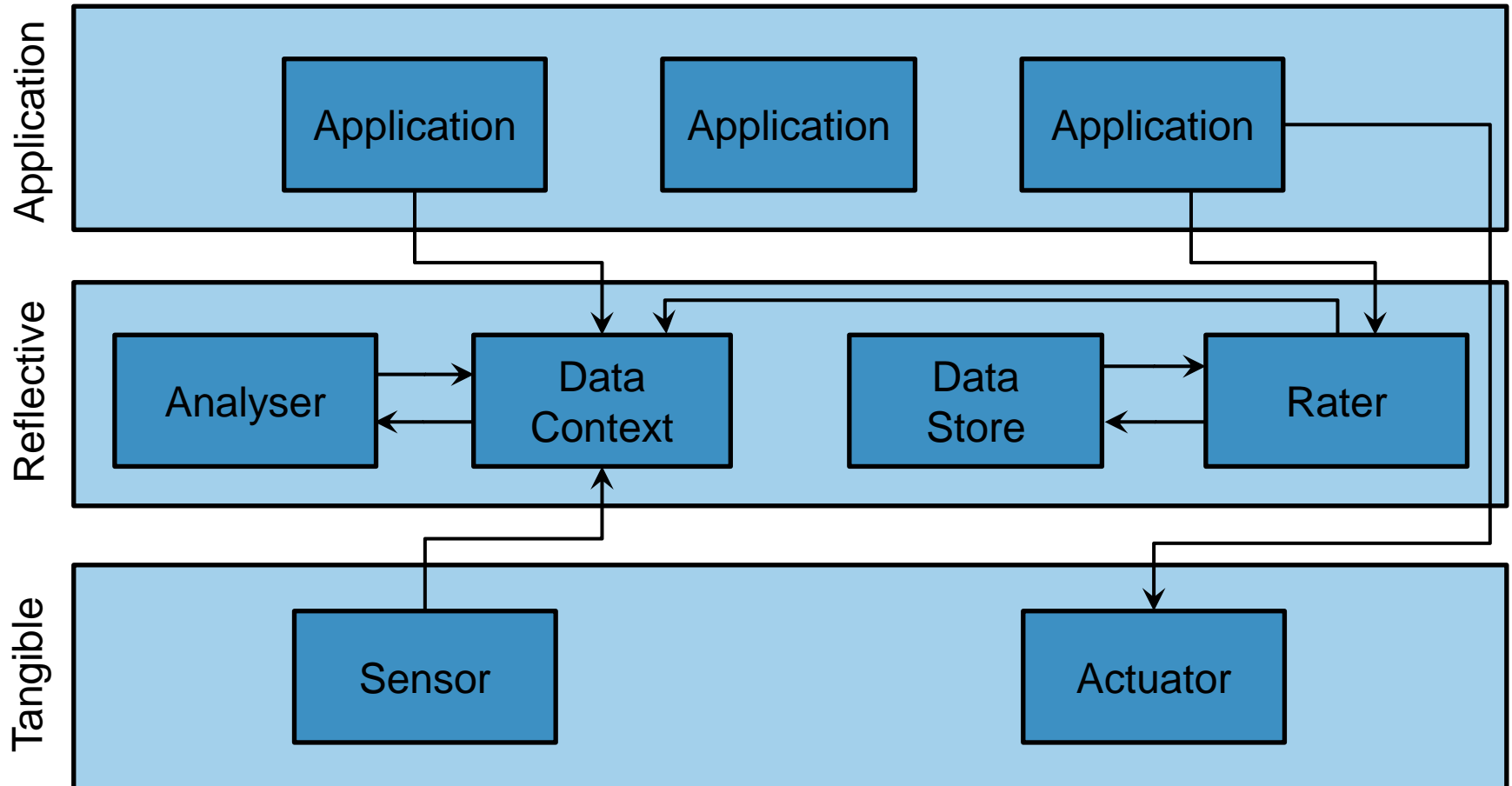
Design Decisions

Features

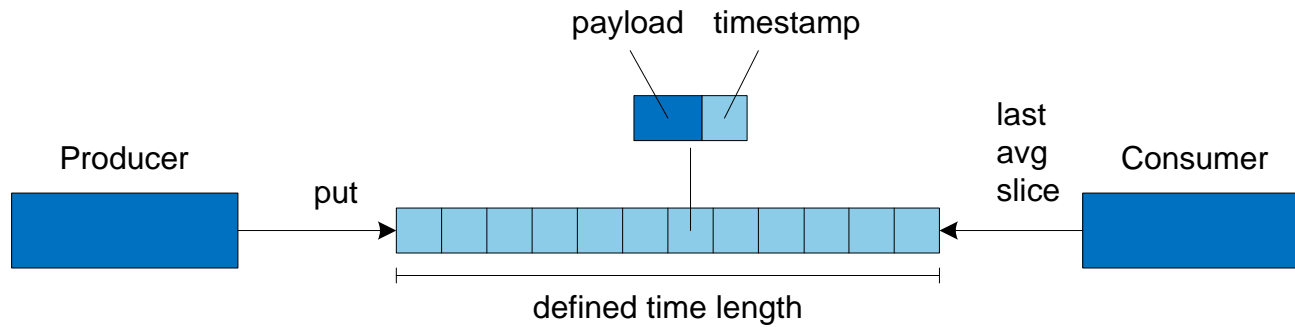
- Component-based
- Multithreaded
- Reconfiguration at runtime
- Extensions for
 - Context Acquisition
 - Decision Making



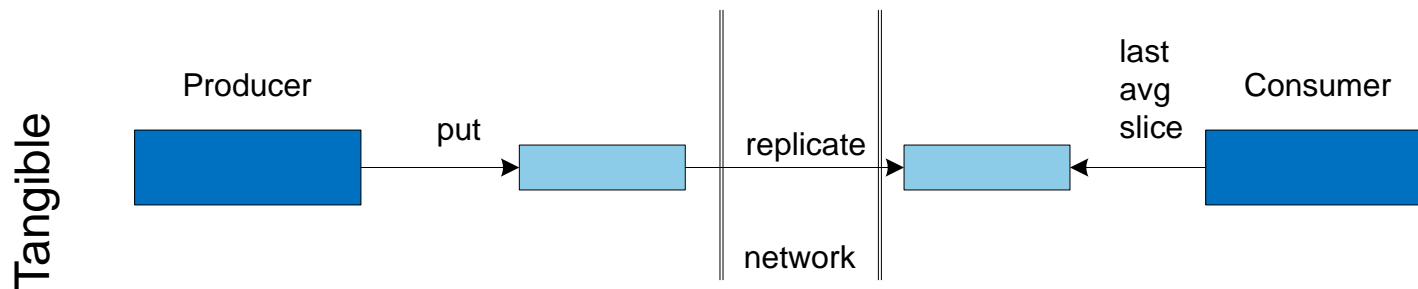
Basic Application Structure



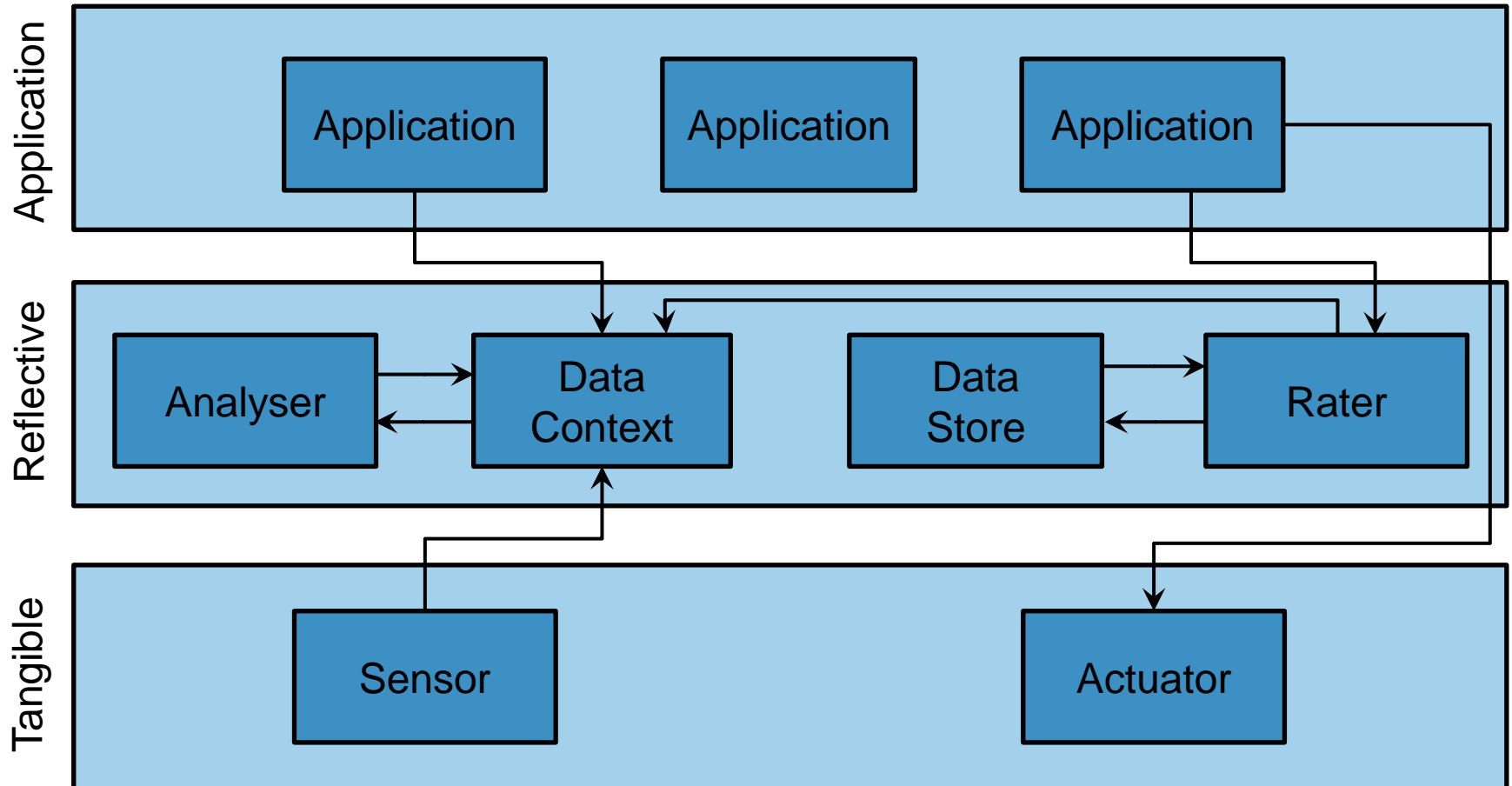
Data Windows



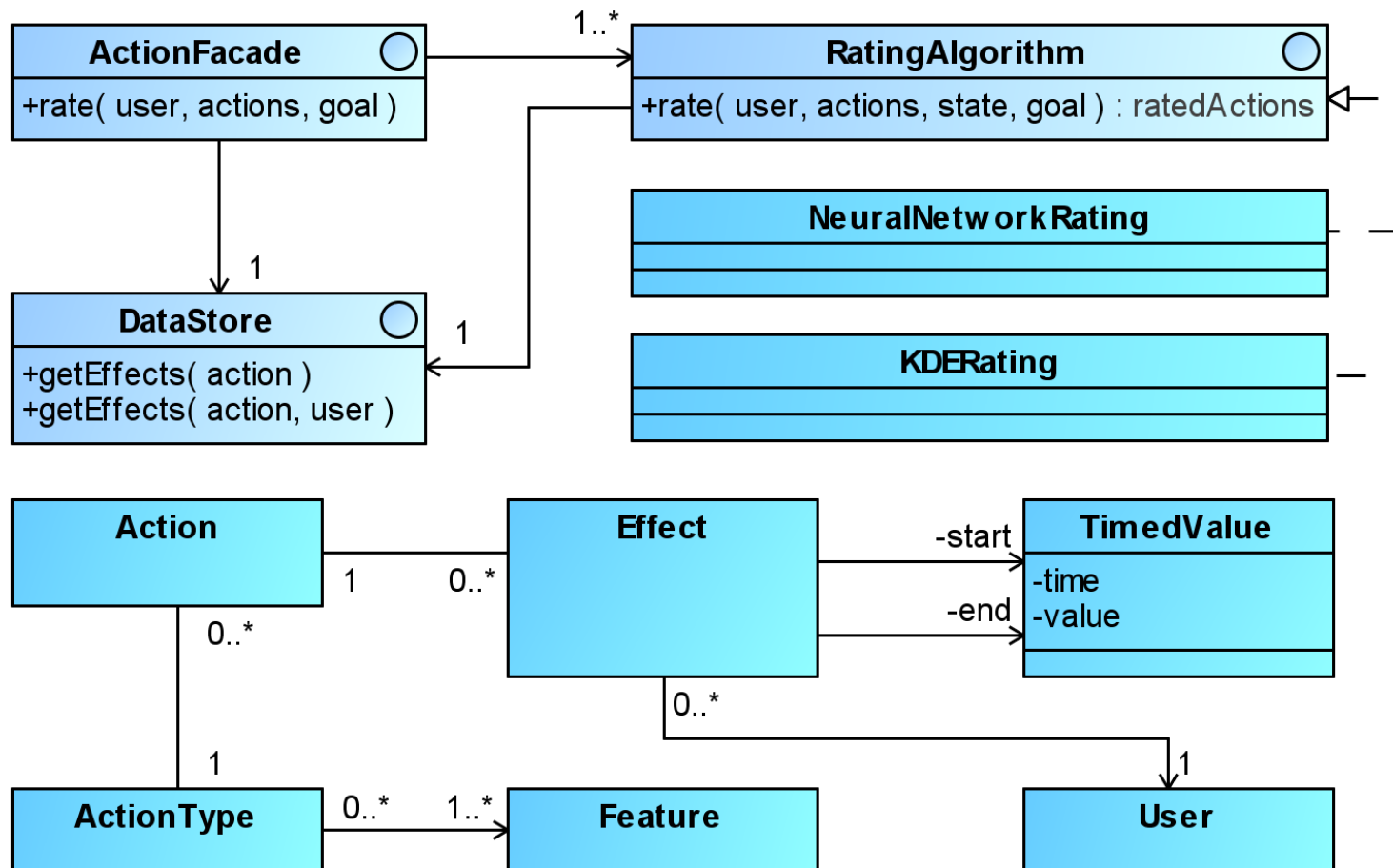
Remote Replication



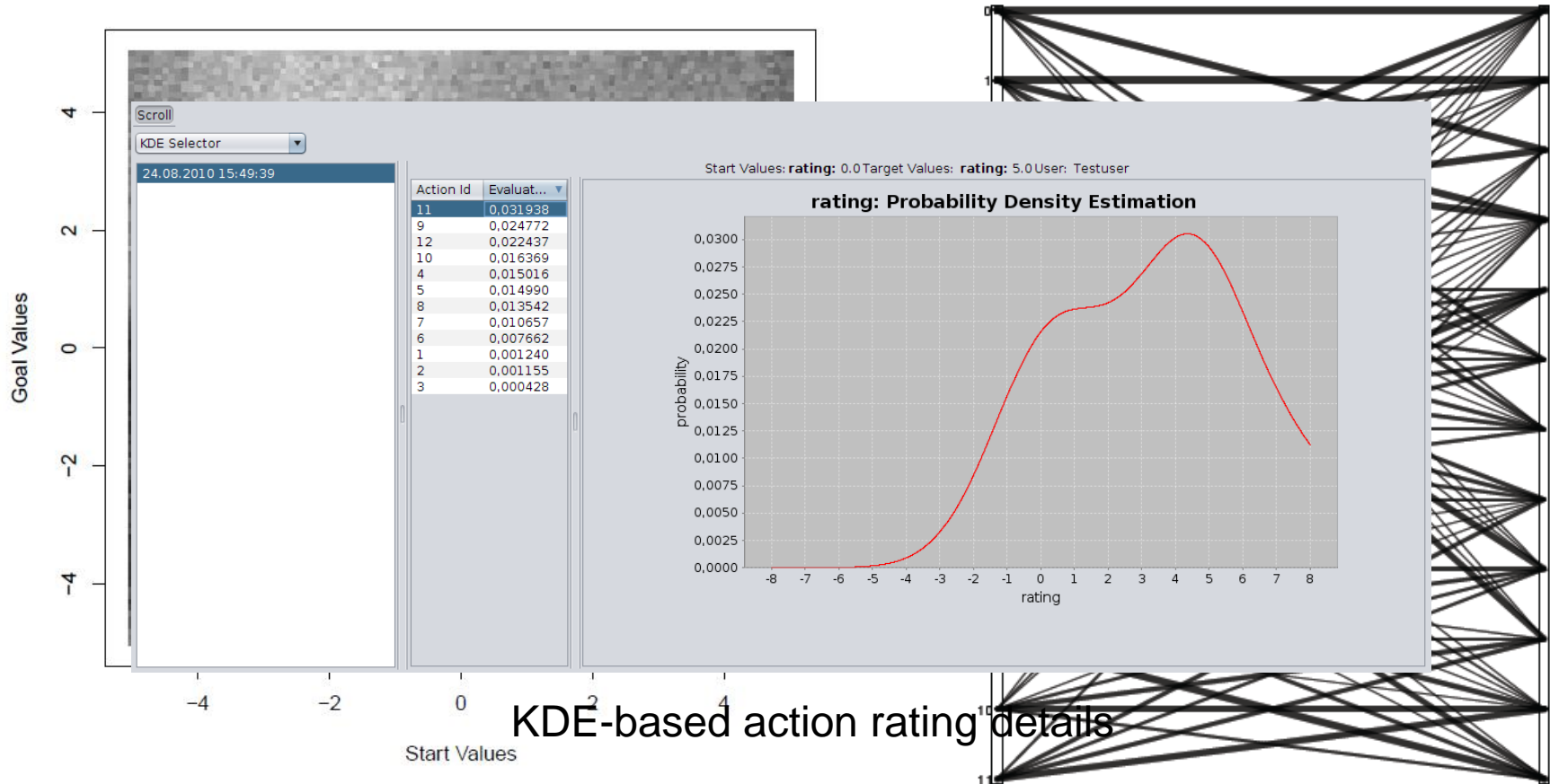
Basic Application Structure



Rating Framework Structure



Inspecting Raters



Quantitative rating summary

Qualitative rating summary

Conclusion

- Pervasive physiological computing
- Component-based framework with domain-specific extensions
- **Context acquisition framework** based on data windows
- **Acting framework** based on raters
- Quantitative and qualitative inspection of raters

Thank You

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