

Model-Driven Development of Self-Adaptive Applications for Mobile Devices

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Motivation

- Computing is going mobile, ubiquitous, service oriented
- Mobile use means dynamic variation in user needs and available computing and communication resources
- Applications must adapt to such changes in order to sustain availability, usability and usefulness



Madam Objectives

- Provide support for the development of applications that adapt dynamically to changes in context (at launch time and during use)



Approach

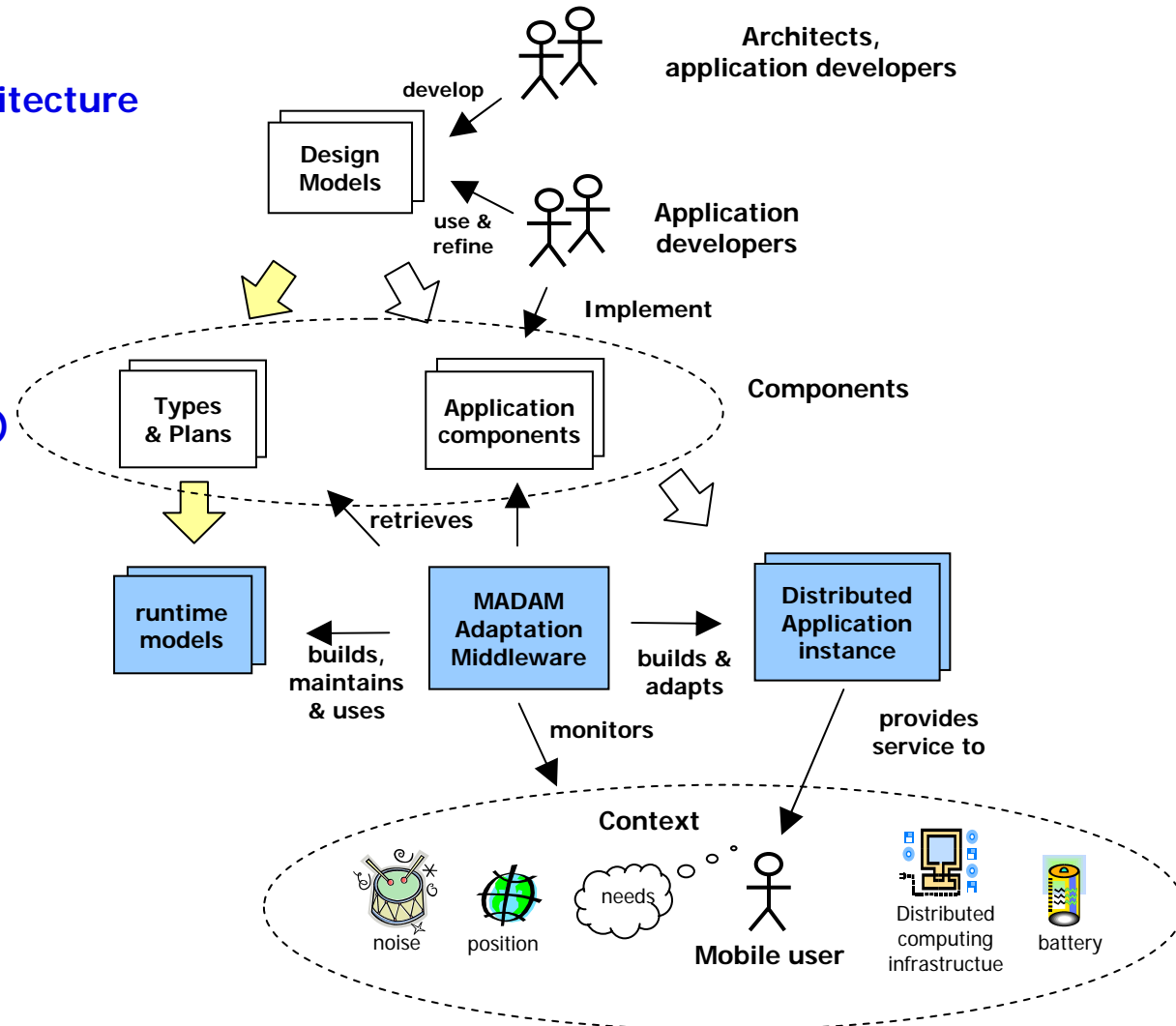
- Application reference architecture

- Notation extensions
(UML profile)
- Modeling tool

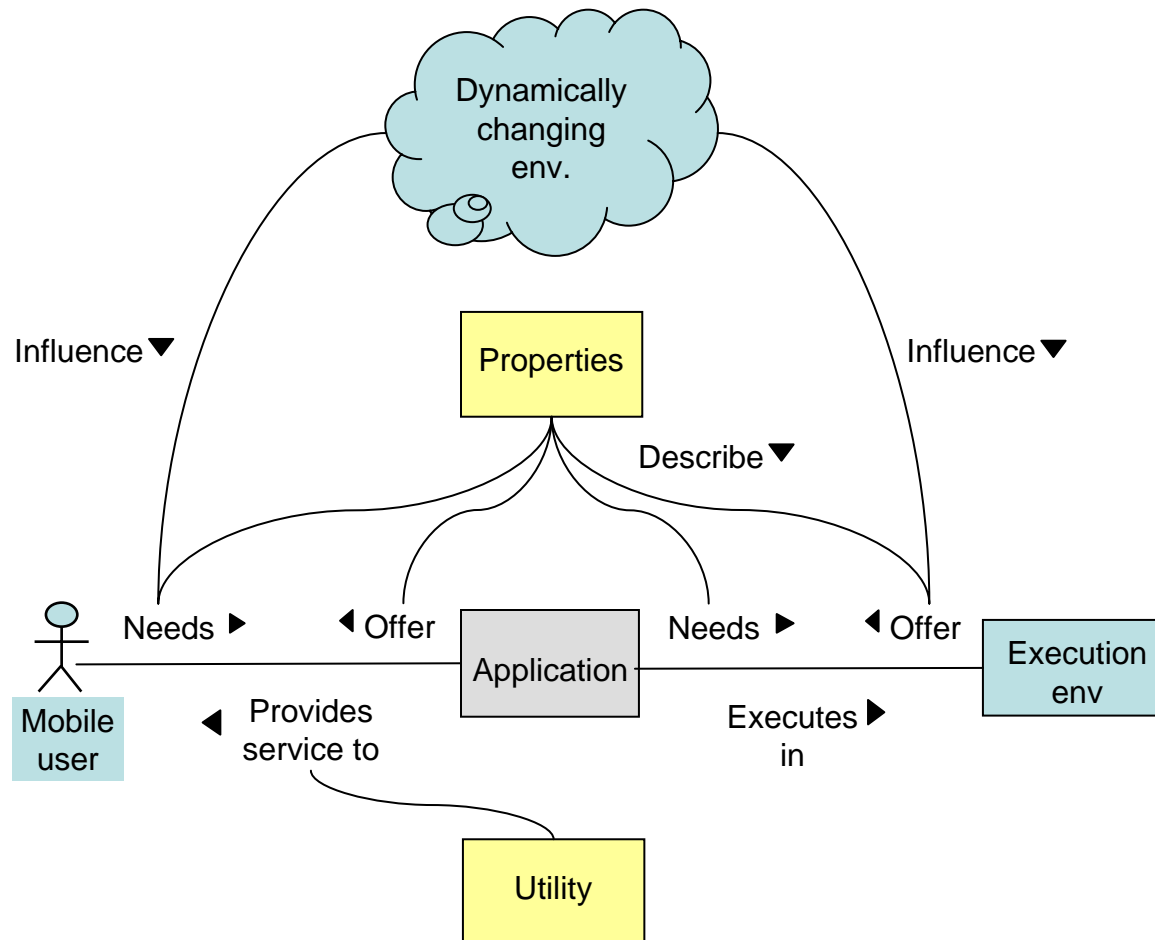
- Transformation tool
(MOFscript, based on EMF)

-Middleware

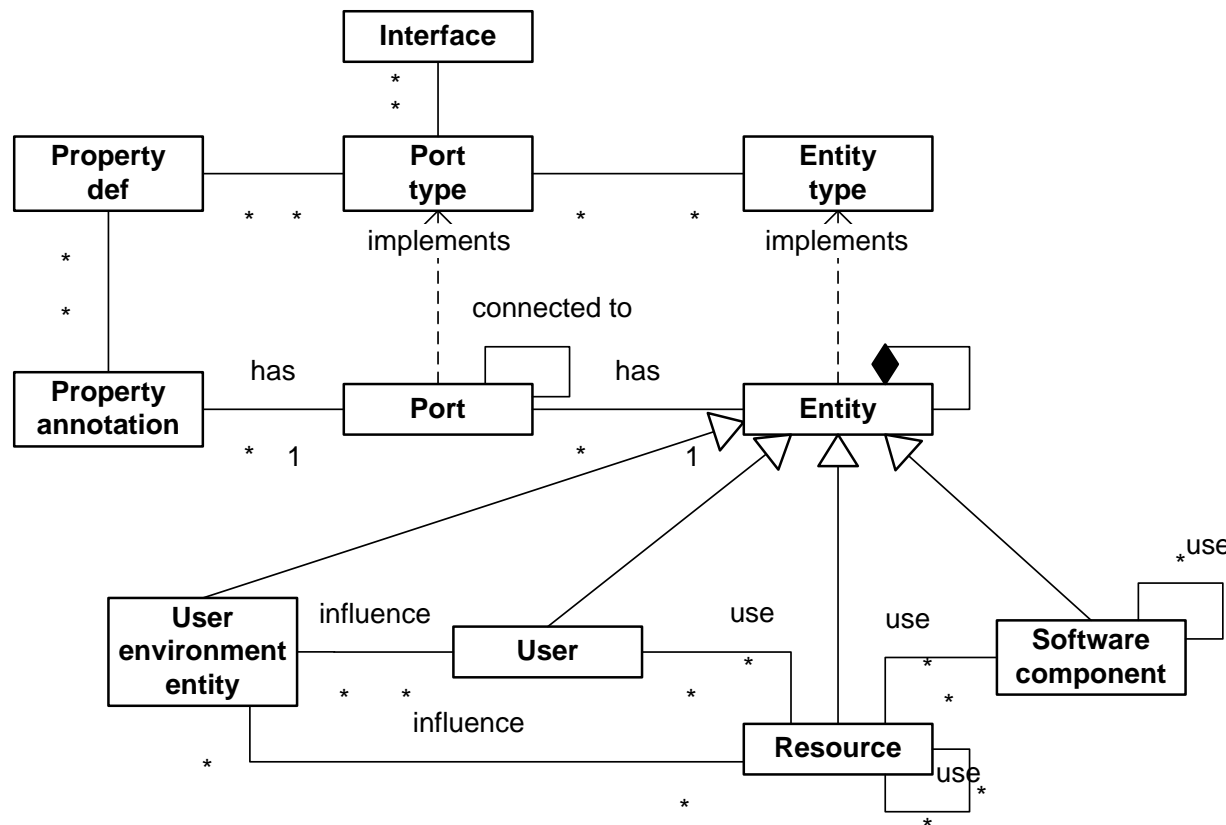
- context monitoring
- context reasoning
- adaptation reasoning & decision making
- (re)configuration
- application launch and initial adaptation



Properties and utility



Conceptual model



Results

- Developed UML profile specialising and extending UML composite structures
- Plugged it into UML modelling tool supporting profiling
- Developing transformation tool based on MOF-script
- Will be used for pilot application development in Madam



Thank you!

Questions?

More information:
www.ist-madam.org

