LABORATOIRE D'INFORMATIQUE
DE NANTES ATLANTIQUE

Topic: Behaviour Abstraction from Code

ECONET Project

Behaviour Abstraction from Code
Filling the Gap between Component Specification and Implementation

supported by Egide

COLOSS - DSRG - LCI - OBASCO

Cluj - september, 21-24 2008

ÉGIDE

http://www.egide.asso.fr/fr/programmes/econet/

Welcome

<div align="center">

Welcome to Cluj!
Bine ați venit!

</div>

LCI's Welcome by Dan Chiorean

Few introductory words on

- Econet Project Current State
- Workshop
- Workshop Organization

Econet Project Current State 1/3

- Title: Behaviour Abstraction from Code
- Subtitle: Filling the Gap between Component Specification and Implementation
- Goal:
  The goal of this project is to contribute to the reverse engineering way by developing techniques and solution to get abstractions from code, including some component interface description. for extraction of abstractions from code (including some component interface description) and for verification of the abstractions against the code, The underlying goal is to check some compatibility between code and abstractions e.g. to check an in-line bank service with no available code, to check that a client component is compatible with an implemented component.

- ...

Econet Project Current State 2/3

Events

- March 2007: starting the project
- September 2007: workshop at Prague
    $\implies$ Project Architecture, Case Study, Organisation
- October: workshop report, project evaluation
    $\implies$ Project Continuation
- May 2008: workshop at Nantes
    $\implies$ CCMM specification, API, Interfaces
- September 2008: workshop at Cluj

Results

- Workshop Reports
- Common Component MetaModel Specification, and API
- Module Design and prototypes
- Tools Support
- Documentation, Wiki, SVN repository

Econet Project Current State 3/3

Metamodel

- Drafts abstract and concrete metamodels
- Common Component MetaModel Specification version 1.1
- CCMM implemantation and API
- Module Design and prototypes
- Tools Support
- Documentation, Wik, SVN repository

Process A

Process B

Case Study

Econet Project Current State 3/3

Metamodel

Process A

- Workflow (AST, recoder...)
- Experimentations

Process B

Case Study

Econet Project Current State 3/3

Metamodel

Process A

Process B

- Modular tool box
- Annotation Management: version 1 (APT), version 2 (Recoder)
- Clustering Java Classes into Components
- UML components $\leftrightarrow$ Java
- Experimentations

Case Study

Econet Project Current State 3/3

Metamodel

Process A

Process B

Case Study

- Test1 and Test2 subsets
- Annotated Java programs
- Experimentation on a Test1 instantiation of CCMM

Econet Project Current State 3/3

Metamodel

Process A

Process B

Case Study

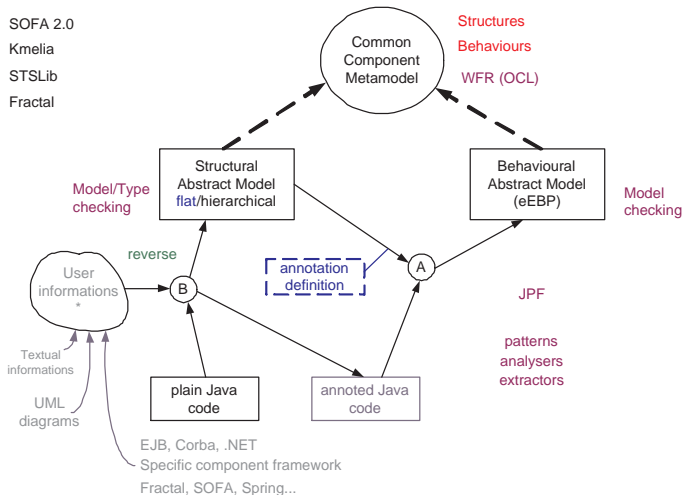Progress
- since 3 months

Project Snapshot 1/2
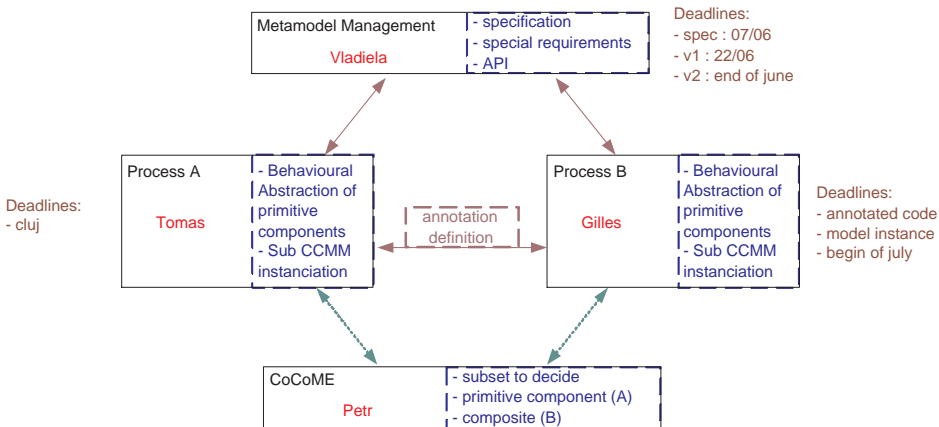
- Project Architecture

SOFA 2.0
Kmelia
STSLib
Fractal

Structures
Behaviours
WFR (OCL)

Common
Component
Metamodel

Structural
Abstract Model
flat/hierarchical

Model/Type
checking

Behavioural
Abstract Model
(eEBP)

Model
checking

reverse

User
informations
*

annotation
definition

A

B

JPF

Textual
informations

UML
diagrams

plain Java
code

annoted Java
code

patterns
analysers
extractors

EJB, Corba, .NET
Specific component framework
Fractal, SOFA, Spring...

Project Snapshot 1/2

- Project Architecture Three parts
    1. Component Metamodel cross LTS extensions, WFR
    2. Structure Abstraction user interacted tool
    3. Behavior Abstraction A-interface definition, annotations generation
- Problem Domain Restriction
    - metamodel $\implies$ components and behaviours
    - A $\implies$ no connections, no composition, no statement abstraction
    - B $\implies$ no composition, no statement abstraction, user-interactions
- Benchmark = CoCoME

Project Snapshot 2/2

Tasks, responsabilities, schedule

Workshop 2008 Cluj

Contents

- Participants
- Objectives and Delivery
- Program and Schedule

Workshop 2008 Cluj (participants)

Workshop Participants

- Dan CHIOREAN - LCI
- Dragos PETRASCU - LCI
- Frantisek Plasil - DSRG
- Gilles ARDOUREL - COLOSS
- Jean-Claude ROYER - OBASCO
- Ondrej Sery - DSRG

- Pascal ANDRE - COLOSS
- Petr HNETYNKA - DSRG
- Tomas Poch - DSRG
- Vladiela PETRASCU - LCI
- ?? (LCI)

Workshop 2008 Cluj (objectives)

Workshop Objectives and Delivery (open issue !)

- Objectives ⤳ Integration + Continuation + Publication
    - Integrate the two processes and the Metamodel API
      finalise the interfaces, improve the modules, tests on Test1 benchmark
    - Continuation *find/define a new collaboration context on a new project*
        - *National*
        - *Multipart*
        - *European*
    - Publication *target conference and start writing*
        - *RE conference and workshops*
        - *CBSE conference and workshops*
        - *MDE conference and workshops*

- Delivery ⤳ workshop report + roadmap until the end of the project
    - Project Prototype and Documentation
    - Research reports and publications plan
    - Perspectives and Project submission plan

Workshop 2008 Cluj (program)

Workshop Program and Schedule

- Day 1 and 2 are dedicated to workshop presentations. The durations and schedules leave time for numerous discussions...
  - Subproject assessment (design, realisations, tools, difficulties...)
  - Technical presentations for related subjects
  - Demos
- Day 3 is dedicated to project discussions and social events
  - Project Continuation
  - Publications
- Day 4 is dedicated to the project organisation and coordination issues
  - Discuss and solve technical problems
  - Share the experiences,
  - Interfaces for design interacting processes, tools,
  - More on the practical organisation and responsabilities

Workshop 2008 Cluj (schedule)

Workshop Schedule Overview (initial version)

1. Assessment
   - Sunday $\implies$ Metamodels (chair: Vladiela)
   - Monday $\implies$ Process B - Structural Abstraction (chair: Gilles) + Process A - Behaviour Abstraction (chair: Tomas)
   - Demos, tutorials
2. Organisation
   - Tuesday $\implies$ Project continuation and publication (chair: Frantisek) + Social Event
   - Wednesday $\implies$ Coordination, Planning, Roadmap (chair: Pascal)
3. Contribution
   - Wednesday $\implies$ CCMM validation, Experimentation assessment, technical discussions
   - Wednesday $\implies$ Task, Responsabilities, Perspectives

More details on the Workshop Wiki
http://www.lina.sciences.univ-nantes.fr/coloss/wiki/doku.php?

id=econet:cluj2008:program08c

Workshop Organisation

Welcome to Cluj!
Bine ați venit!

Welcome package

- LCI presentation
- Tourism and city information

Few words on the organisation

- Rooms and Wifi
- Accomodation
- Social event