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M2M Creation Review

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Agenda

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Introduction

- The Model-to-Model Transformation (M2M) Project is a proposed open source project under the Eclipse Modeling Project (http://www.eclipse.org/modeling/).

- Other kinds of operations on models are/will be covered by other projects, for instance:
  - Model-to-Text transformations (M2T) are covered by the M2T project proposal.

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Background

- Model-to-model transformation is a key aspect of MDD (Model-Driven Development).
  - See the *Model Driven Development* section of Eclipse ECESIS (http://www.eclipse.org/ecesis/).
- There are many existing technologies for M2M transformation, for instance:
  - The ATL component of the GMT project (part of the Eclipse Modeling Project),
  - The OMG specification QVT (MOF™ Query / Views / Transformations).

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Some Resources

- On QVT:
  - OMG, MOF QVT Final Adopted Specification
    http://www.omg.org/cgi-bin/doc?ptc/2005-11-01
  - Kurtev, I., Presentation of QVT
    http://www.modelware-ist.org/index.php?option=com_wrapper&Itemid=164
- On ATL:
  - Jouault, F., Presentation of ATL
    http://www.modelware-ist.org/index.php?option=com_wrapper&Itemid=163
- On QVT and ATL alignment:
  - Kurtev, I., Alignment of ATL and QVT
    http://www.modelware-ist.org/index.php?option=com_wrapper&Itemid=165
  - Jouault, F., Kurtev, I., On the Architectural Alignment of ATL and QVT, in proc. of ACM SAC 2006, pages 1188-1195
    http://www.sciences.univ-nantes.fr/lina/atl/bibliography/SAC06a

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Description

- The M2M project will deliver:
  - a framework for model-to-model transformation languages,
  - three transformation engines:
    - ATL,
    - Procedural QVT (Operational) ,
    - Declarative QVT (Core and Relational) .
- Concrete transformation scenarios will be developed as part of the project.
- Follow-on development phases will accommodate community feedback and the knowledge gained during the initial development phase.
  - For instance, other transformation languages may be supported.

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Participants

- The following companies will contribute committers to get the project started:
  - INRIA - ATL component
    - Frédéric Jouault (proposed project lead)
    - Freddy Allilaire
  - Borland (www.borland.com)
    - Radek Dvorak (procedural QVT component lead)
    - Aleksandr Igdalov
    - Sergey Boyko
  - Compuware (www.compuware.com)
    - Peter Braker (Infrastructure and declarative QVT component lead)
    - Wim Bast
    - Ronald Krijgsheld
- Interested parties include :
  - IBM (www.ibm.com)
  - Unisys (www.unisys.com)
  - France Telecom (www.francetelecom.com)
  - Software Engineering, University of Twente, the Netherlands (trese.cs.utwente.nl)
  - Software Composition and Modeling Laboratory, University of Alabama at Birmingham (www.cis.uab.edu/softcom)

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Initial Code Contributions

- The ATL component will migrate from GMT to M2M:
  - ATL material can be found in the GMT project (http://www.eclipse.org/gmt/atl/):
    - Source and binaries,
    - Documentation,
    - A list of transformation definitions for common domain models.
- Borland's Together Architect modeling product has an implementation of QVT which is being reviewed for contribution.
  - A current dependency on the Kent OCL library will need to be processed for third party inclusion, and will ultimately be replaced by the MDT OCL implementation.

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Community

- ATL community:
  - > 2000 posts on the ATL mailing list since January 2005,
  - Bugs reports,
  - Contribution of patches,
  - Contribution of ATL transformation scenarios.
- QVT community:
  - OMG standard is developed by many commercial and educational parties like IBM, Compuware, Sun, France Telecom, INRIA and others.
  - Multiple implementations of the standard are available.

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Roadmap

- Infrastructure component:
  - A version of the infrastructure component, validated against early versions of the declarative QVT component, will be delivered at T0+12.
- ATL component:
  - ATL will be migrated from GMT to M2M at T0, when the project is created.
- Procedural QVT component:
  - Borland's QVT engine will be contributed after its review for contribution is completed.
- Declarative QVT component:
  - Compuware will provide an implementation of the QVT Core language at T0+18.

T0 is the project creation date

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End of the presentation

- Thanks
  - Questions?
  - Comments?

news://news.eclipse.org/eclipse.modeling.m2m

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