Collaborative Modeling
the **New Deal**

Cédric Brun

Obeo, France

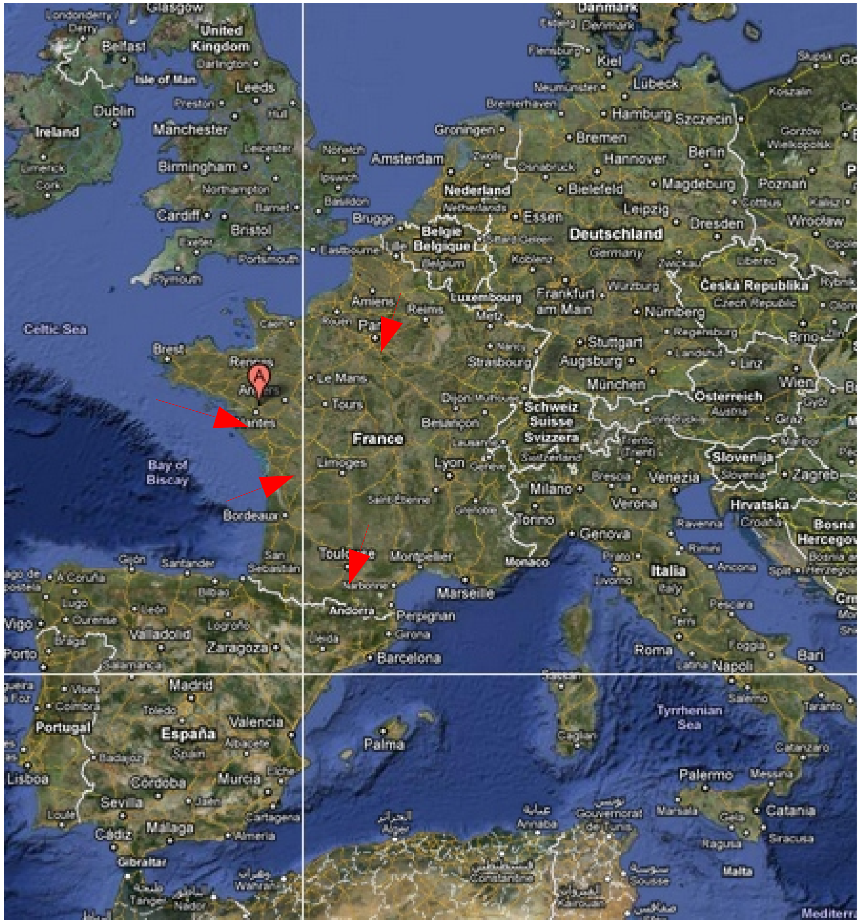
CTO at **Obeo**

Eclipse :

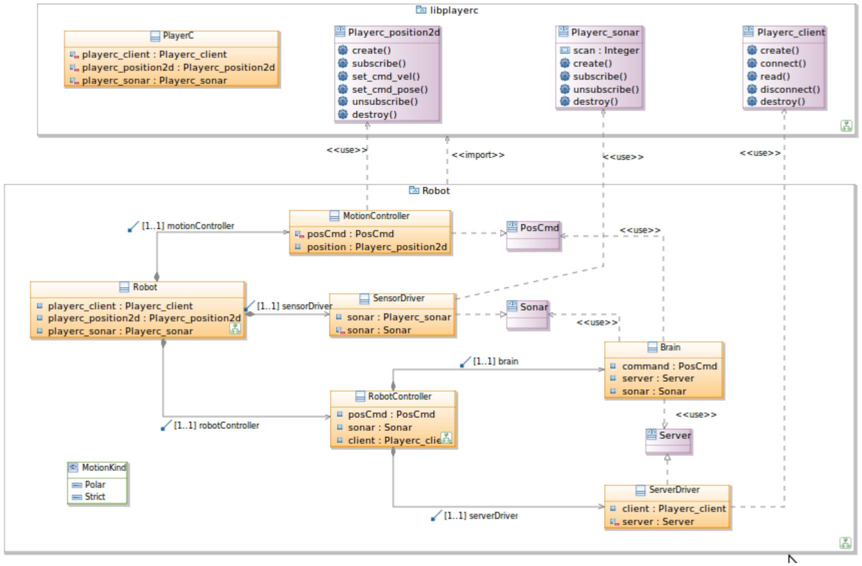
- Architecture Council
- Planning Council
- EMF Compare lead
- Amalgam lead

Obeo

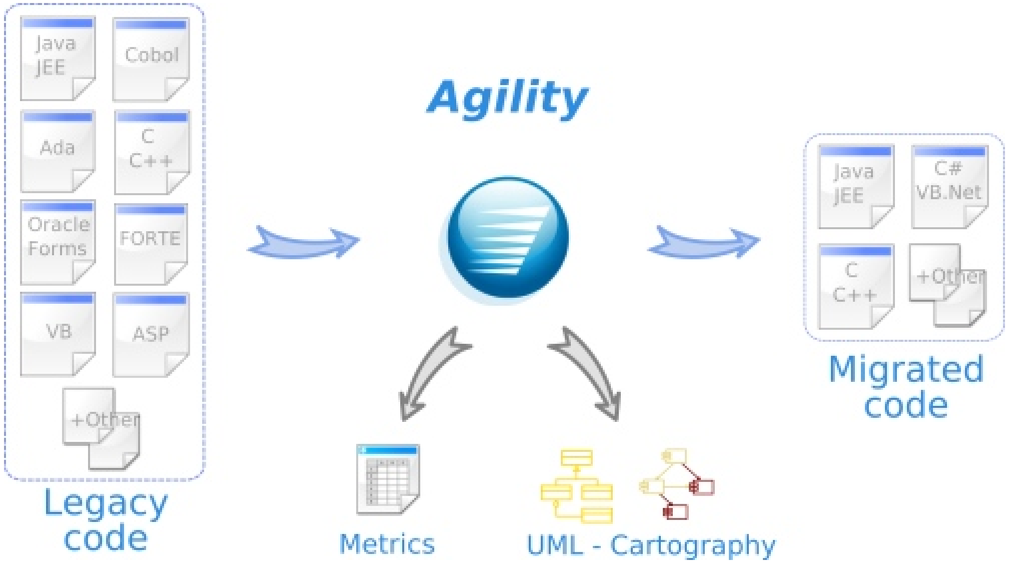
- Eclipse Strategic Member
- 16 commiters
- leading 6 projects



Modeling



Modernization



Open Source

Acceleo

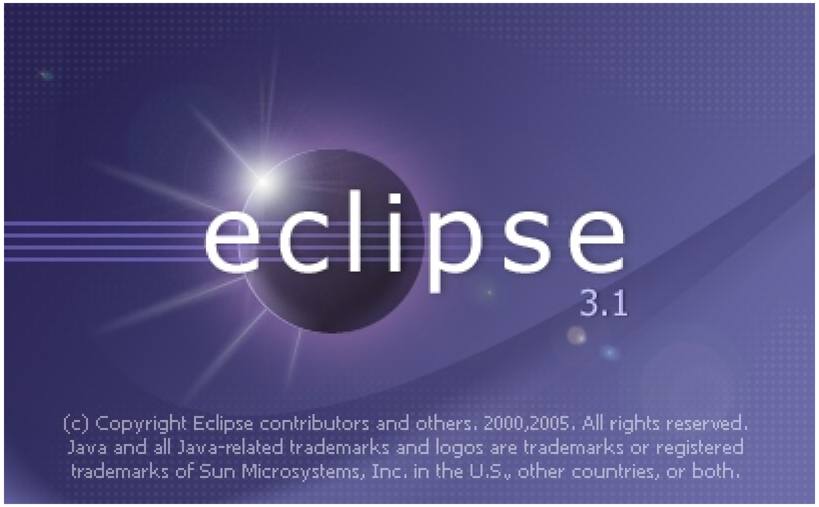
eef

eclipse modeling PROJECT

R&D Projects

ITEA Verde, ITEA2 OPEES

Back in **2006**



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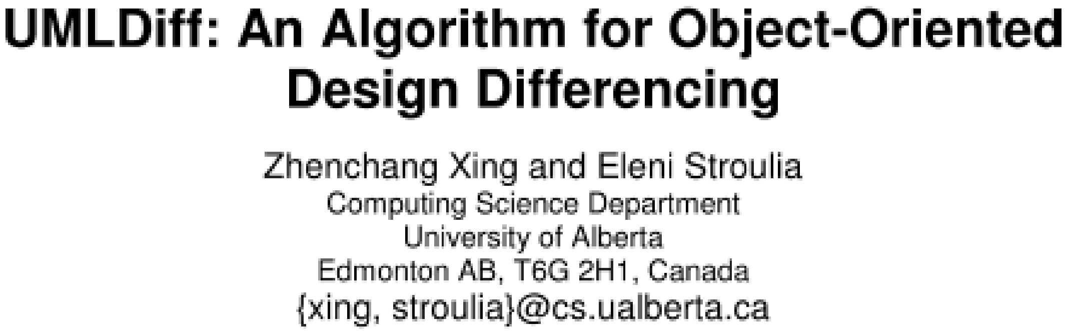
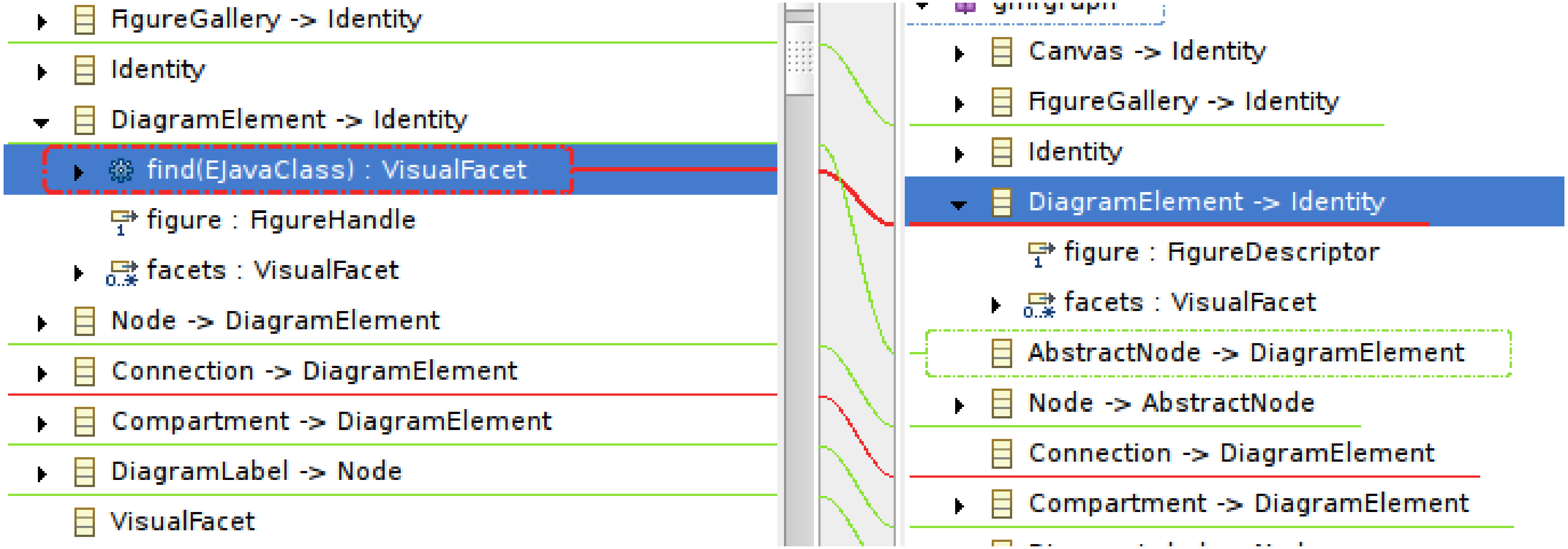


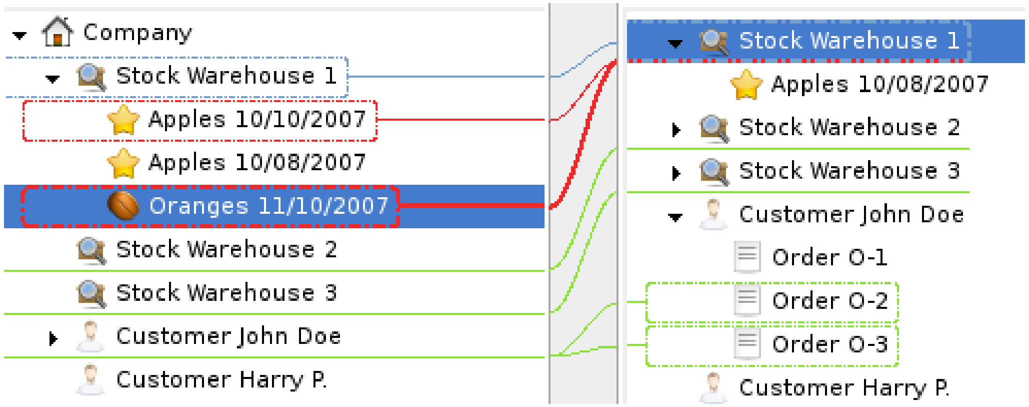
UMLDiff: An Algorithm for Object-Oriented Design Differencing

Zhenchang Xing and Eleni Stroulia
Computing Science Department
University of Alberta
Edmonton AB, T6G 2H1, Canada
{xing, stroulia}@cs.ualberta.ca

emf compare 1.0!


FigureGallery -> Identity
Identity
DiagramElement -> Identity
find(EJavaClass) : VisualFacet
figure : FigureHandle
facets : VisualFacet
Node -> DiagramElement
Connection -> DiagramElement
Compartment -> DiagramElement
DiagramLabel -> Node
VisualFacet
gmfgraph
Canvas -> Identity
FigureGallery -> Identity
Identity
DiagramElement -> Identity
figure : FigureDescriptor
facets : VisualFacet
AbstractNode -> DiagramElement
Node -> AbstractNode
Connection -> DiagramElement
Compartment -> DiagramElement

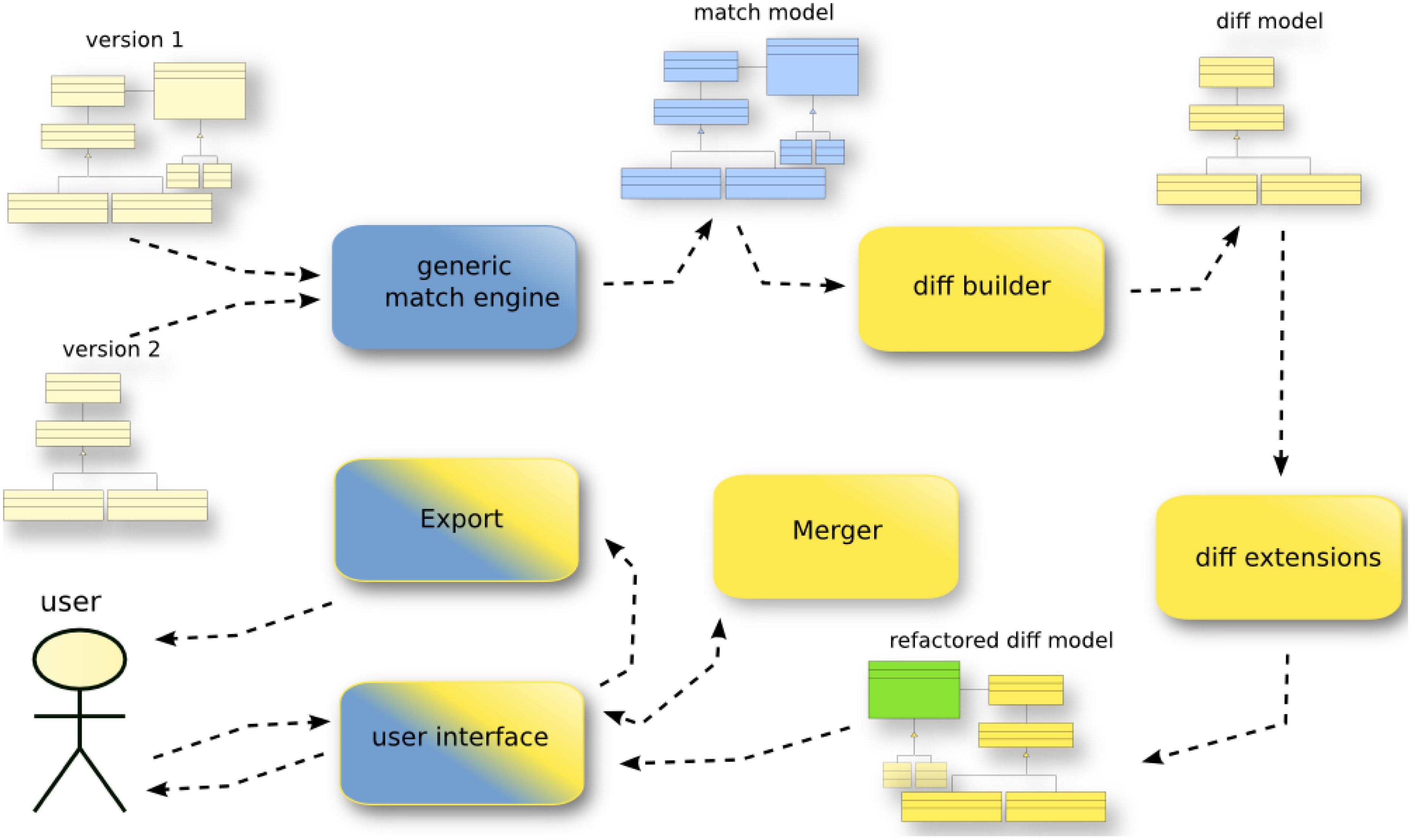
- SVN, CVS, GIT
- UML, EMF, DSL's
- History, Compare, Merge



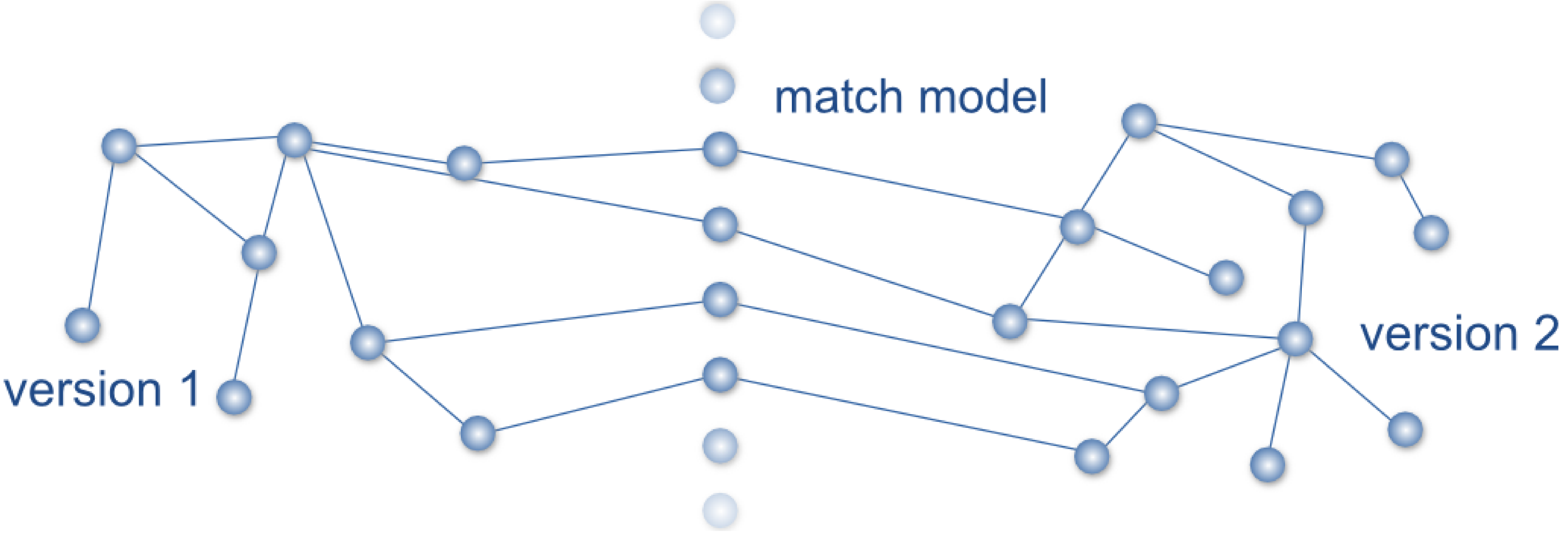
What looked

Hard ?

How is it **Working ?**

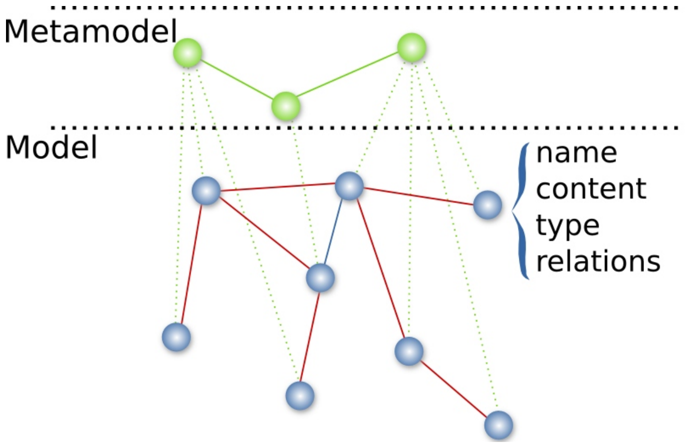


Who is
Who ?

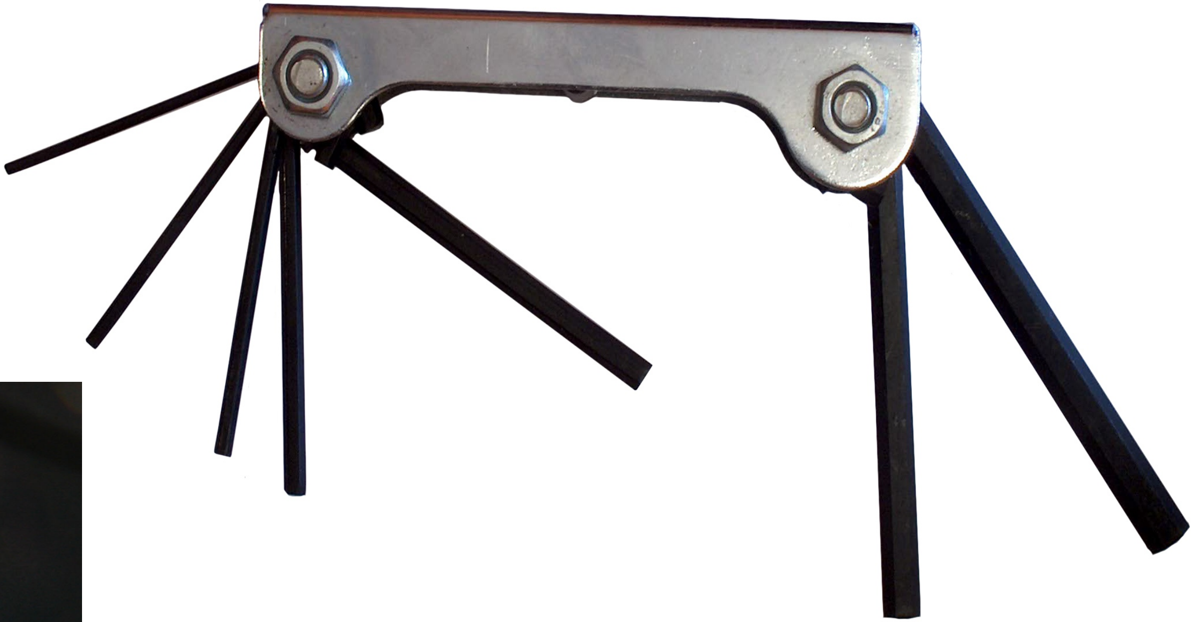


Epsilon Comparison Language
Model Independant Diff
N dimensions distance based matching

.. other ?



Are we
Done yet?

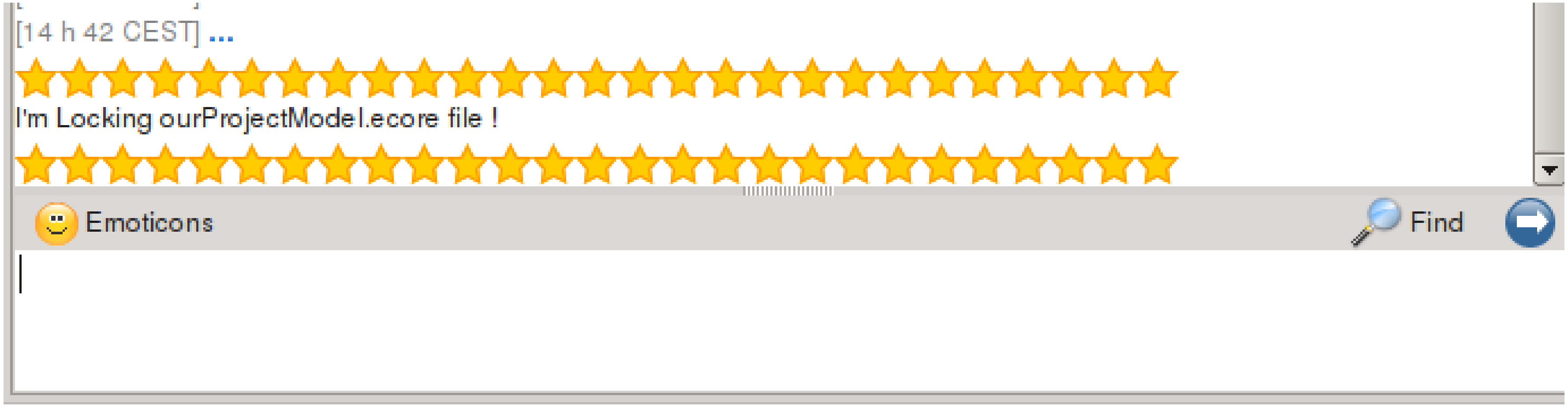


)

Team Strategies

Pessimistic locking

The GLOBAL Lock



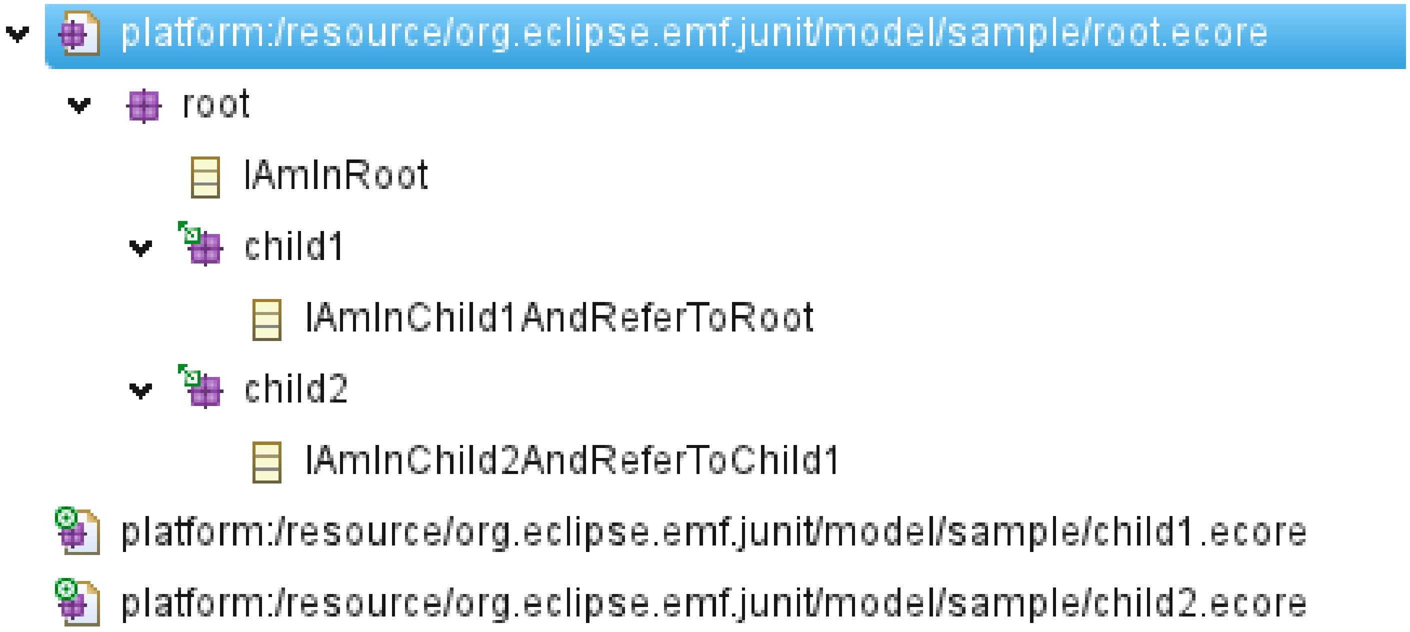
[14 h 42 CEST] ...

★★★★★★★★★★★★★★★★★★★★★★★★★★★

I'm Locking ourProjectModel.ecore file !

★★★★★★★★★★★★★★★★★★★★★★★★★★★

Splitting models into several files



platform:/resource/org.eclipse.emf.junit/model/sample/root.ecore

root

IAmInRoot

child1

IAmInChild1AndReferToRoot

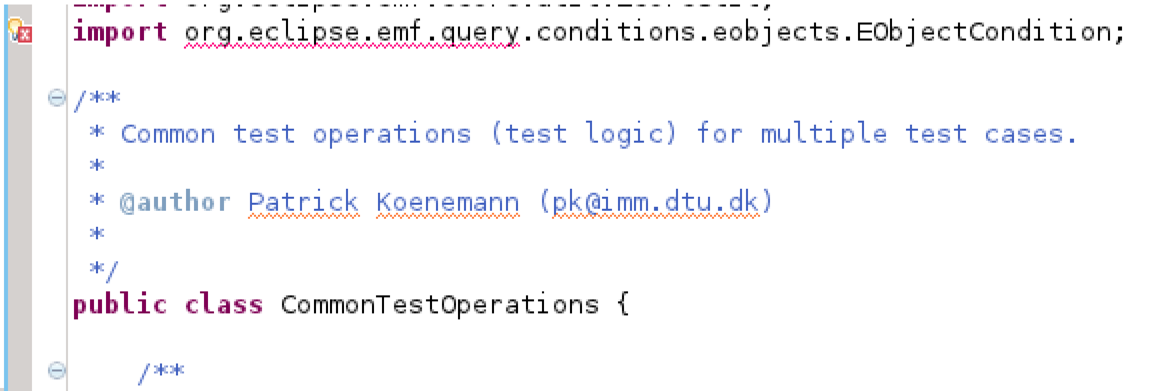
child2

IAmInChild2AndReferToChild1

platform:/resource/org.eclipse.emf.junit/model/sample/child1.ecore

platform:/resource/org.eclipse.emf.junit/model/sample/child2.ecore

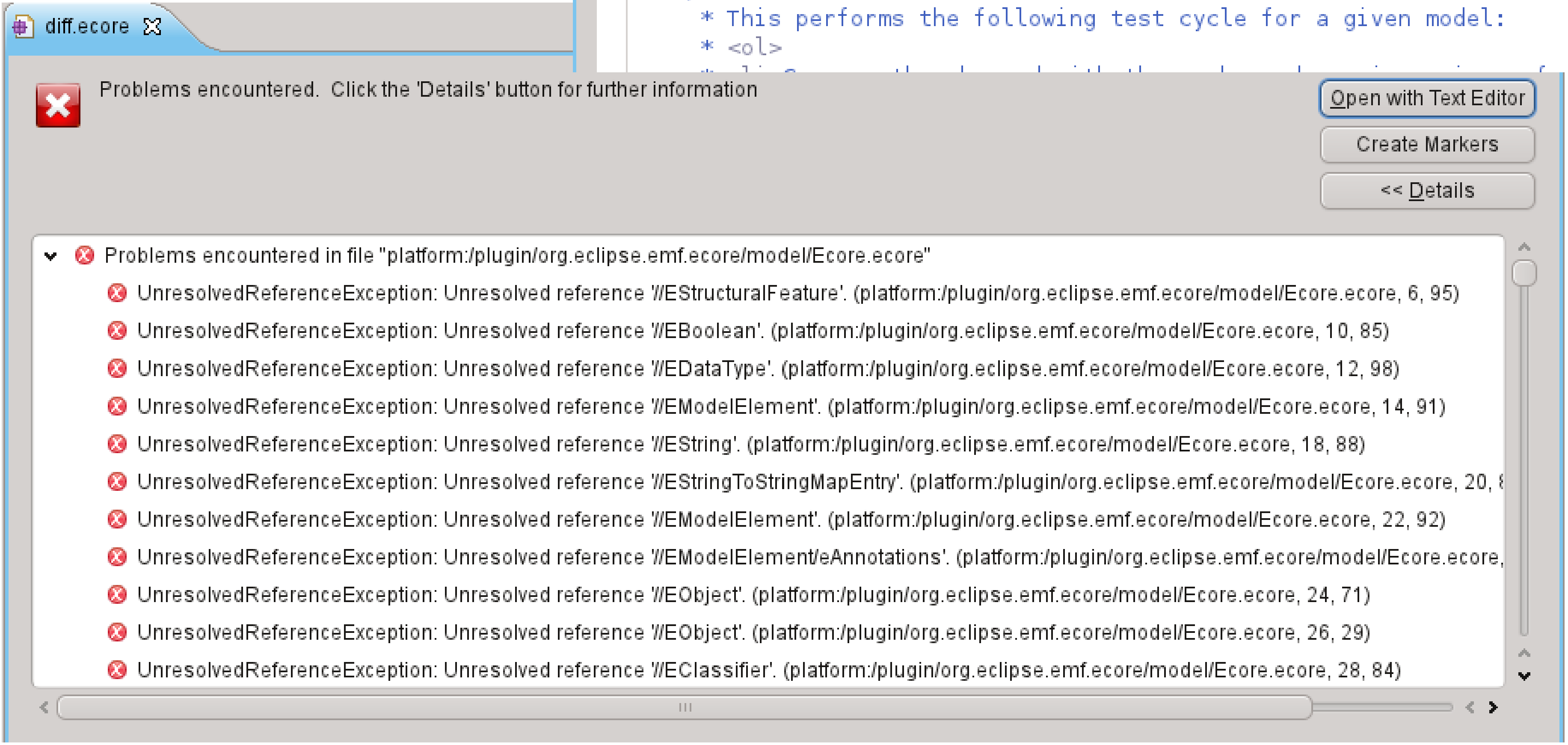
Tool support for **broken** models



```
import org.eclipse.emf.query.conditions.eobjects.EObjectCondition;

/**
 * Common test operations (test logic) for multiple test cases.
 *
 * @author Patrick Koenemann (pk@imm.dtu.dk)
 *
 */
public class CommonTestOperations {

    /**
     * This performs the following test cycle for a given model:
     * <ol>
```

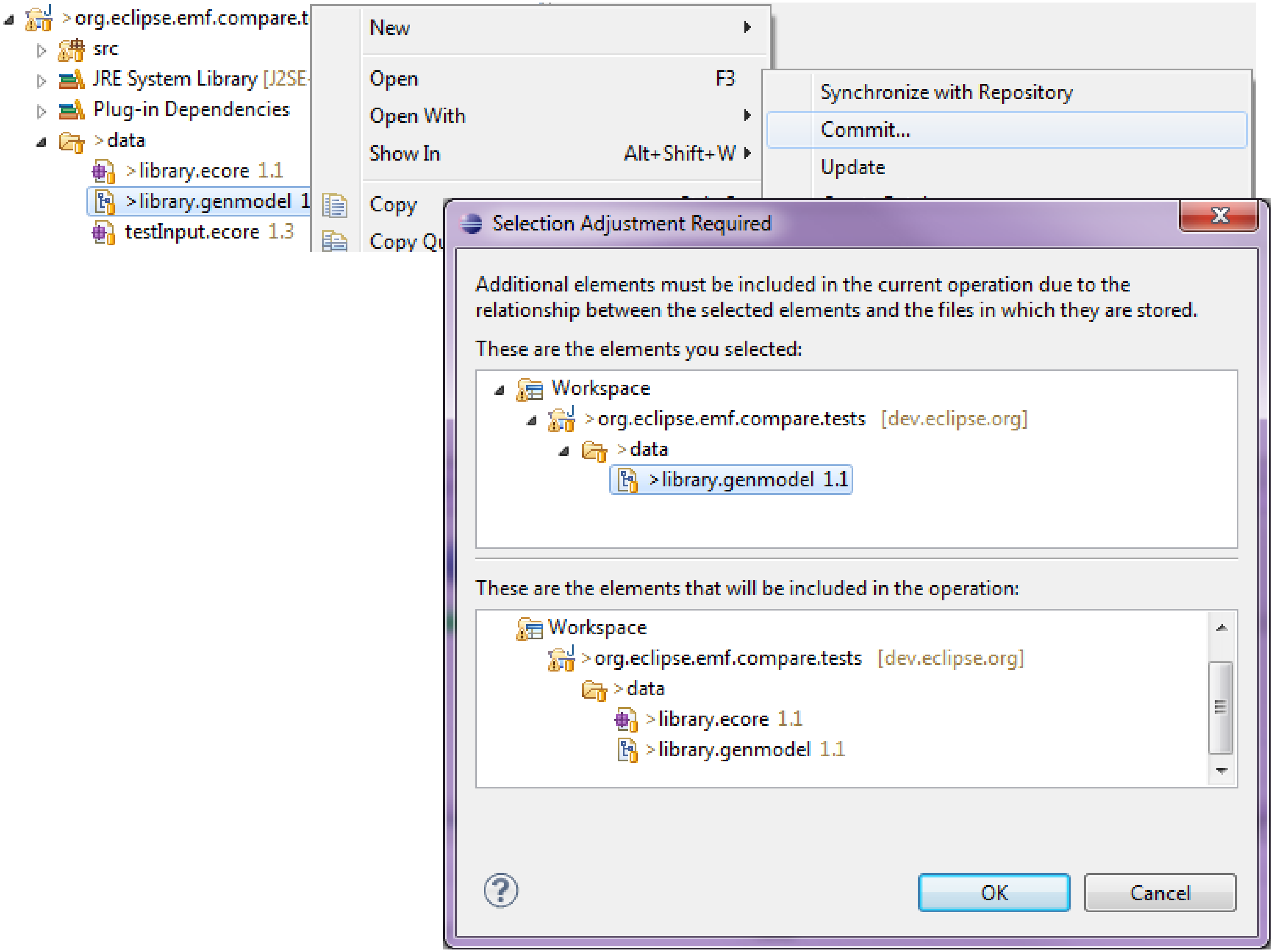


Problems encountered. Click the 'Details' button for further information

```
Problems encountered in file "platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore"
    UnresolvedReferenceException: Unresolved reference '//EStructuralFeature'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 6, 95)
    UnresolvedReferenceException: Unresolved reference '//EBoolean'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 10, 85)
    UnresolvedReferenceException: Unresolved reference '//EDataType'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 12, 98)
    UnresolvedReferenceException: Unresolved reference '//EModelElement'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 14, 91)
    UnresolvedReferenceException: Unresolved reference '//EString'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 18, 88)
    UnresolvedReferenceException: Unresolved reference '//EStringToStringMapEntry'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 20, 
    UnresolvedReferenceException: Unresolved reference '//EModelElement'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 22, 92)
    UnresolvedReferenceException: Unresolved reference '//EModelElement/eAnnotations'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore,
    UnresolvedReferenceException: Unresolved reference '//EObject'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 24, 71)
    UnresolvedReferenceException: Unresolved reference '//EObject'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 26, 29)
    UnresolvedReferenceException: Unresolved reference '//EClassifier'. (platform:/plugin/org.eclipse.emf.ecore/model/Ecore.ecore, 28, 84)
```

Enough ?

Consistent
File Operations

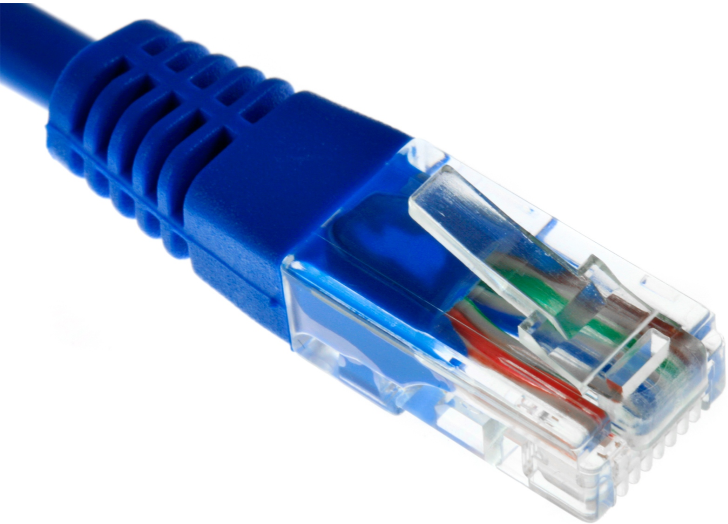


Additional elements must be included in the current operation due to the relationship between the selected elements and the files in which they are stored.

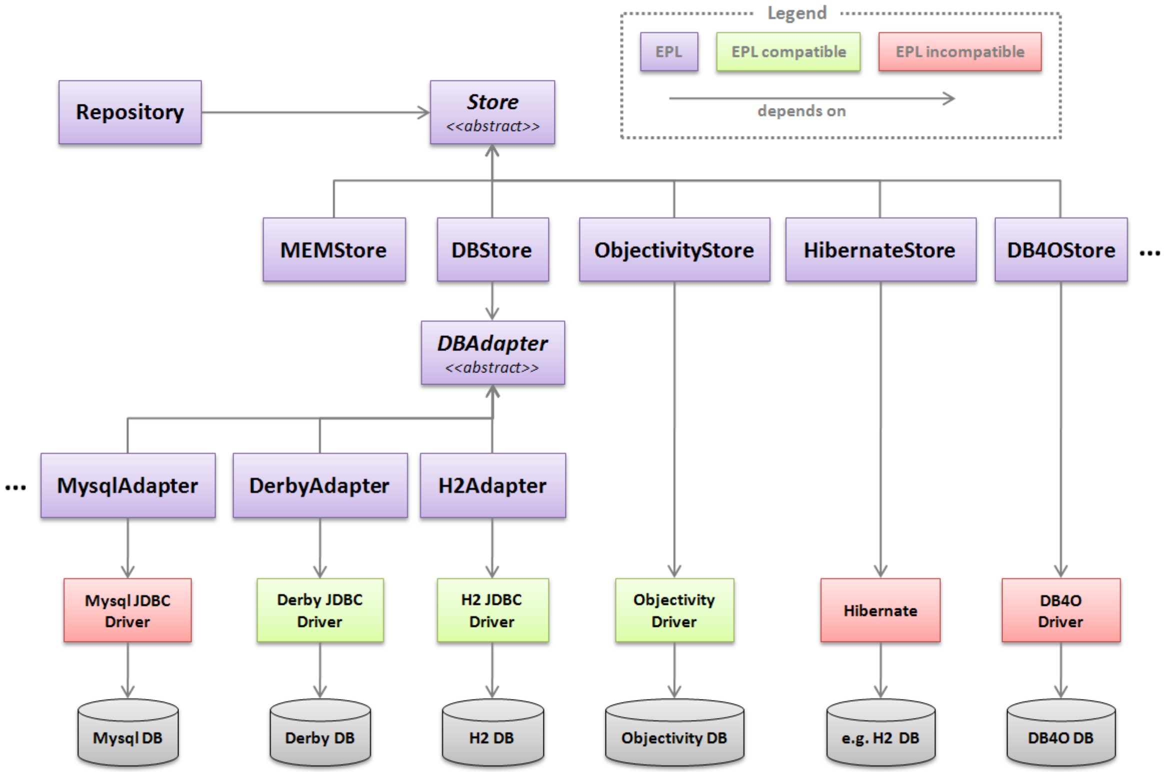
These are the elements you selected:

These are the elements that will be included in the operation:

Live update



CDO model repository



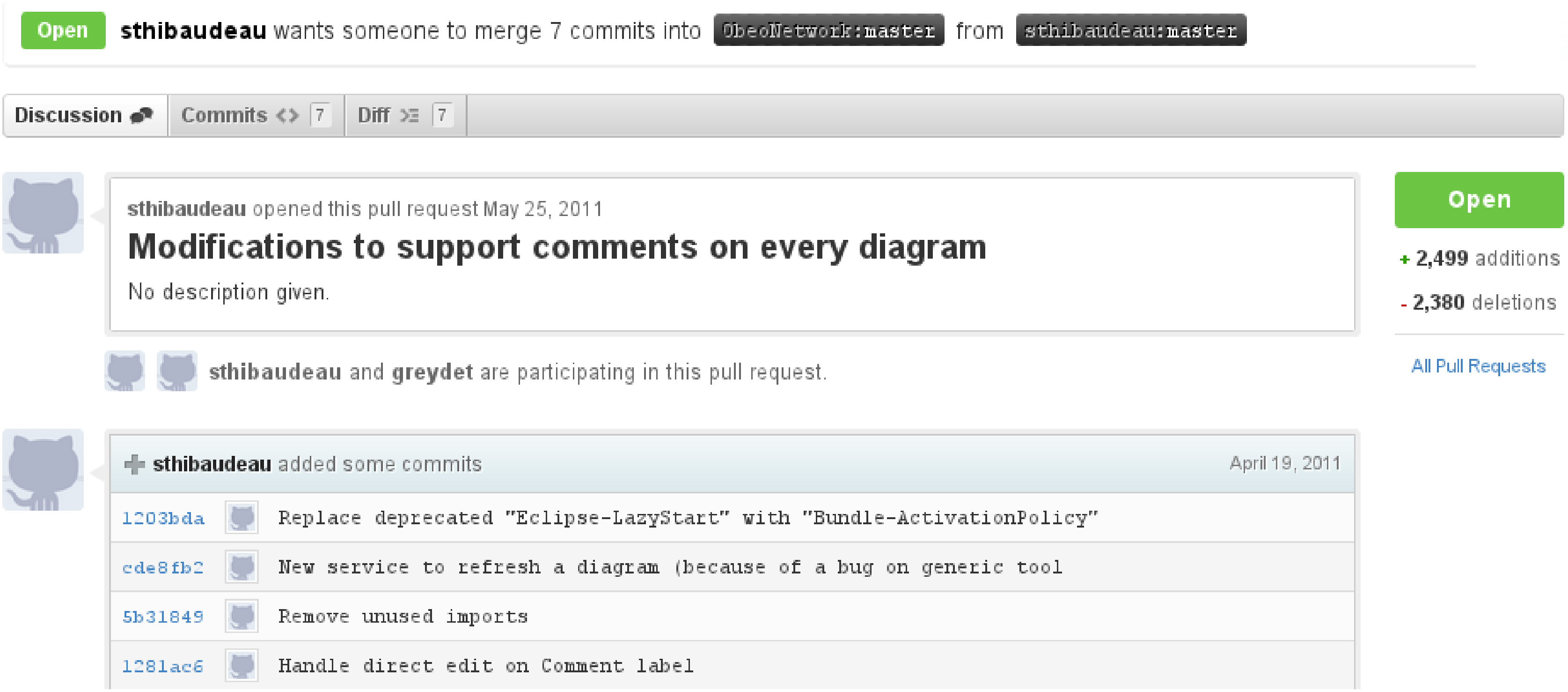
fine-grained pessimistic locking

a New **Deal**

It's not only about concurrent access,
it's about collaboration !

collaborative **Processes**

github SOCIAL CODING



Open **sthibaudeau** wants someone to merge 7 commits into `ObeoNetwork:master` from `sthibaudeau:master`

sthibaudeau opened this pull request May 25, 2011

Modifications to support comments on every diagram

No description given.

sthibaudeau and **greydet** are participating in this pull request.

Open

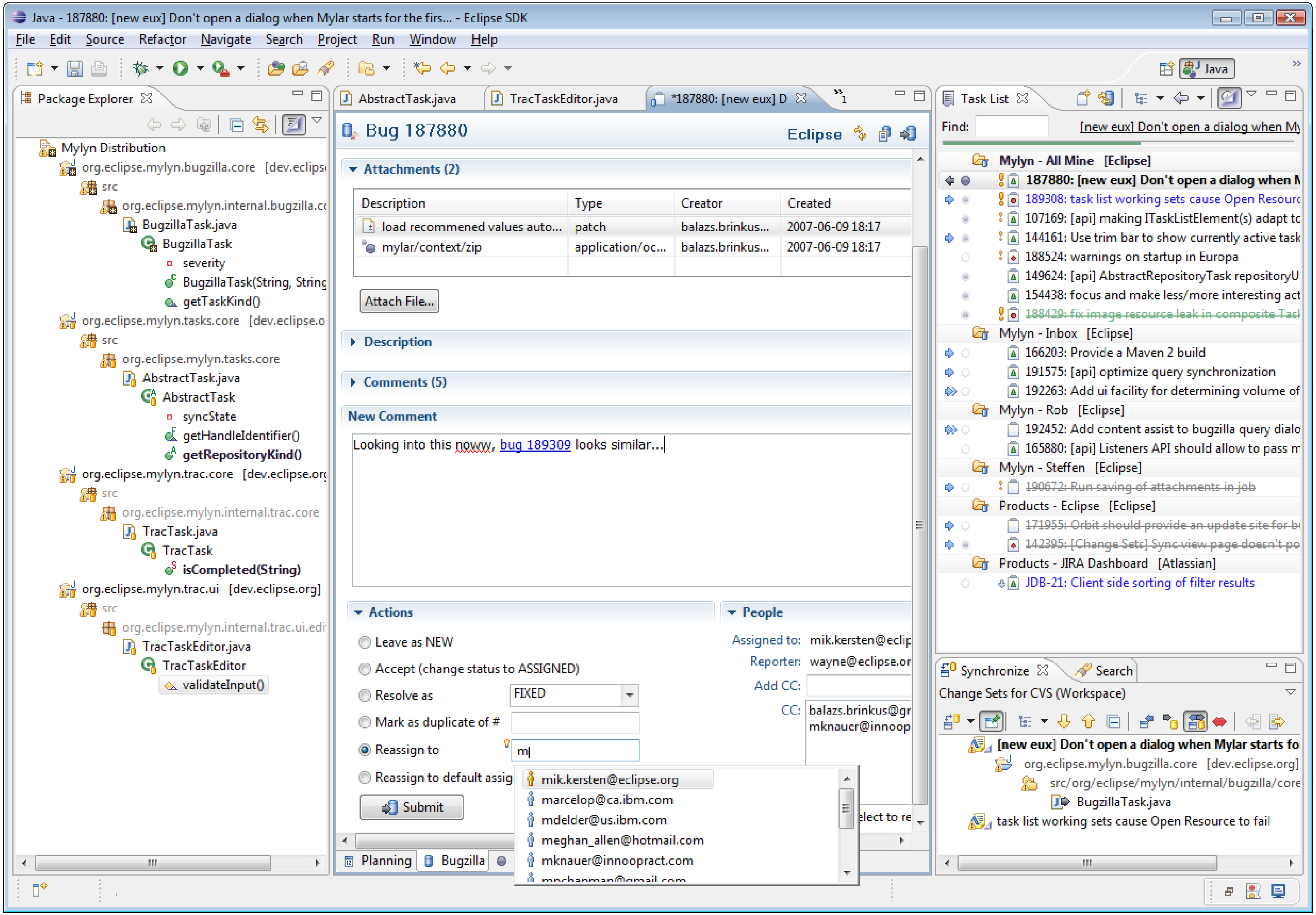
+ **2,499** additions

- **2,380** deletions

sthibaudeau added some commits — April 19, 2011

```
1203bda  Replace deprecated "Eclipse-LazyStart" with "Bundle-ActivationPolicy"
cde8fb2  New service to refresh a diagram (because of a bug on generic tool
5b31849  Remove unused imports
1281ac6  Handle direct edit on Comment label
```

Task-Focused **Interface**



Java - 187880: [new eux] Don't open a dialog when Mylar starts for the firs... - Eclipse SDK

Package Explorer

- Mylyn Distribution
  - org.eclipse.mylyn.bugzilla.core [dev.eclips
    - src
      - org.eclipse.mylyn.internal.bugzilla.c
        - BugzillaTask.java
          - BugzillaTask
            - severity
            - BugzillaTask(String, String
            - getTaskKind()
  - org.eclipse.mylyn.tasks.core [dev.eclipse.o
    - src
      - org.eclipse.mylyn.tasks.core
        - AbstractTask.java
          - AbstractTask
            - syncState
            - getHandleIdentifier()
            - getRepositoryKind()
  - org.eclipse.mylyn.trac.core [dev.eclipse.or
    - src
      - org.eclipse.mylyn.internal.trac.core
        - TracTask.java
          - TracTask
            - isCompleted(String)
  - org.eclipse.mylyn.trac.ui [dev.eclipse.org]
    - src
      - org.eclipse.mylyn.internal.trac.ui.edi
        - TracTaskEditor.java
          - TracTaskEditor
            - validateInput()

Bug 187880

Attachments (2)

Description	Type	Creator	Created
load recommened values auto...	patch	balazs.brinkus...	2007-06-09 18:17
mylar/context/zip	application/oc...	balazs.brinkus...	2007-06-09 18:17

Description

Comments (5)

New Comment

Looking into this noww, bug 189309 looks similar...

Actions

- ○ Leave as NEW
- ○ Accept (change status to ASSIGNED)
- ○ Resolve as FIXED
- ○ Mark as duplicate of #
- ● Reassign to m
- ○ Reassign to default assig

mik.kersten@eclipse.org
marcelop@ca.ibm.com
mdelder@us.ibm.com
meghan_allen@hotmail.com
mknauer@innoopract.com
mpchapman@gmail.com

People

Assigned to: mik.kersten@eclip
Reporter: wayne@eclipse.or
Add CC:
CC: balazs.brinkus@gr
mknauer@innoop

elect to re

Task List

Find: [new eux] Don't open a dialog when My

- Mylyn - All Mine [Eclipse]
  - 187880: [new eux] Don't open a dialog when M
  - 189308: task list working sets cause Open Resourc
  - 107169: [api] making ITaskListElement(s) adapt tc
  - 144161: Use trim bar to show currently active task
  - 188524: warnings on startup in Europa
  - 149624: [api] AbstractRepositoryTask repositoryU
  - 154438: focus and make less/more interesting act
  - ~~188429: fix image resource leak in composite Tasl~~
- Mylyn - Inbox [Eclipse]
  - 166203: Provide a Maven 2 build
  - 191575: [api] optimize query synchronization
  - 192263: Add ui facility for determining volume of
- Mylyn - Rob [Eclipse]
  - 192452: Add content assist to bugzilla query dialo
  - 165880: [api] Listeners API should allow to pass m
- Mylyn - Steffen [Eclipse]
  - ~~190672: Run saving of attachments in job~~
- Products - Eclipse [Eclipse]
  - ~~171955: Orbit should provide an update site for b~~
  - ~~142395: [Change Sets] Sync view page doesn't po~~
- Products - JIRA Dashboard [Atlassian]
  - JDB-21: Client side sorting of filter results

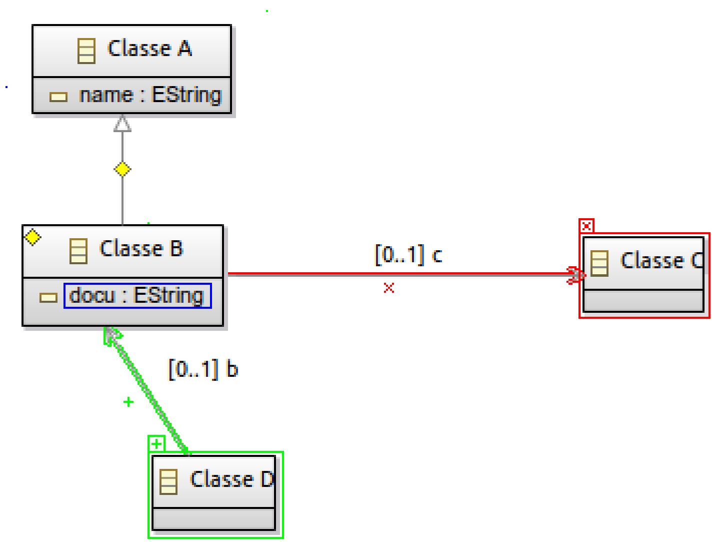
Synchronize

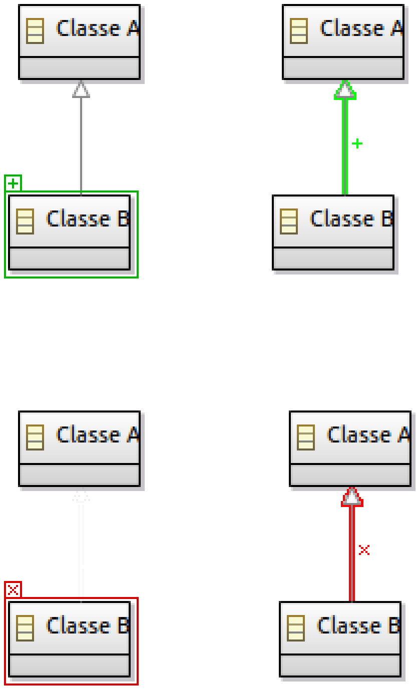
Change Sets for CVS (Workspace)

- [new eux] Don't open a dialog when Mylar starts fo
  - org.eclipse.mylyn.bugzilla.core [dev.eclipse.org]
    - src/org/eclipse/mylyn/internal/bugzilla/core
      - BugzillaTask.java
- task list working sets cause Open Resource to fail

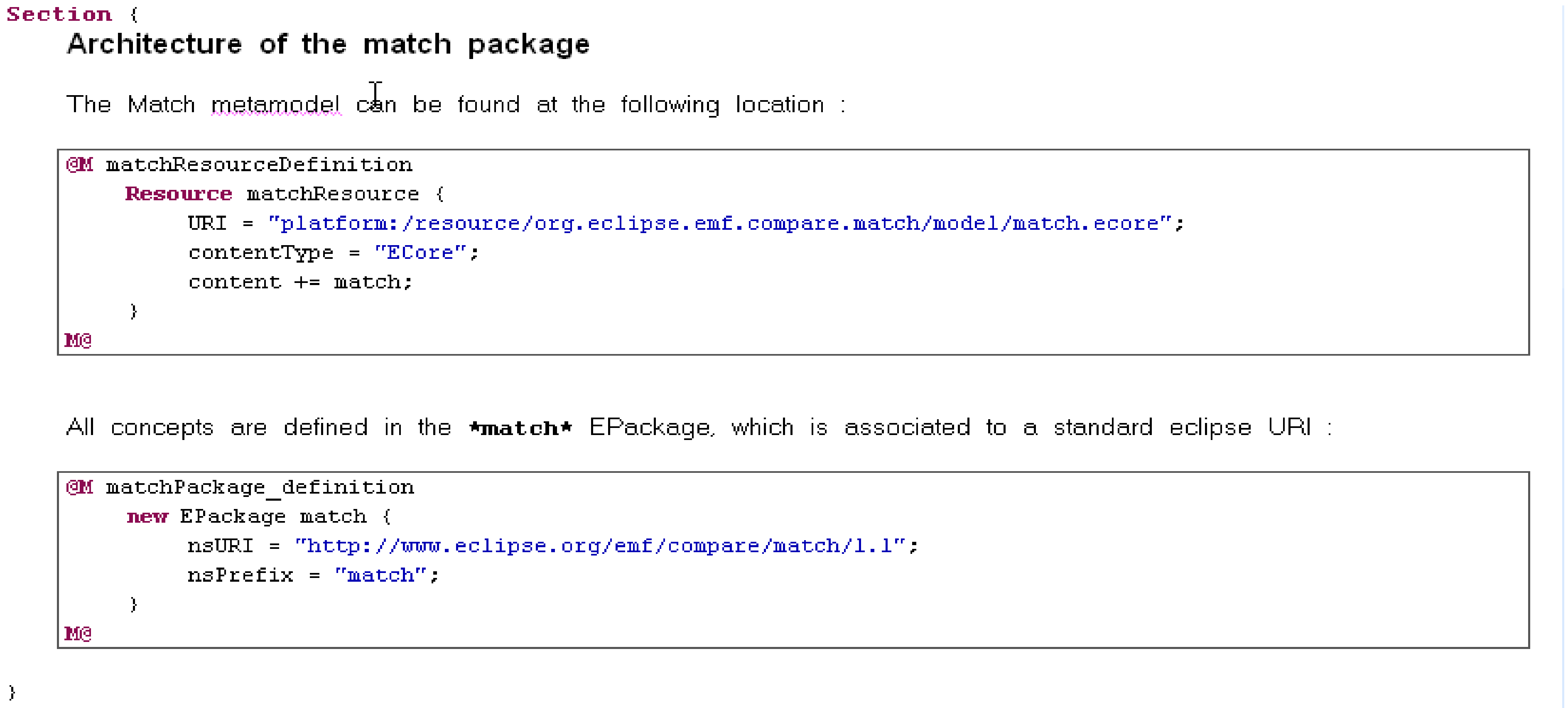
representations

Integration





Knowledge sharing



```
Section {
    Architecture of the match package

    The Match metamodel can be found at the following location :

    @M matchResourceDefinition
        Resource matchResource {
            URI = "platform:/resource/org.eclipse.emf.compare.match/model/match.ecore";
            contentType = "ECore";
            content += match;
        }
    M@

    All concepts are defined in the *match* EPackage, which is associated to a standard eclipse URI :

    @M matchPackage_definition
        new EPackage match {
            nsURI = "http://www.eclipse.org/emf/compare/match/1.1";
            nsPrefix = "match";
        }
    M@

}
```

Mylyn/Intent

the **Premisces**

Mylyn

- Task Focused UI for models
- Review integration
- « Intent » first release
- GitHub support

EMF Compare

- diagram comparison
- consistency among file operations

CDO

- Fine grained lock
- Live update

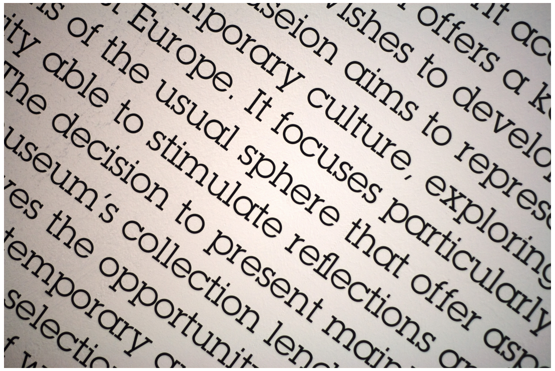
EGit

- Logical Model Support

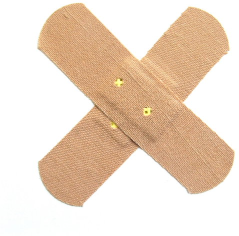
in a **nutshell**

☑

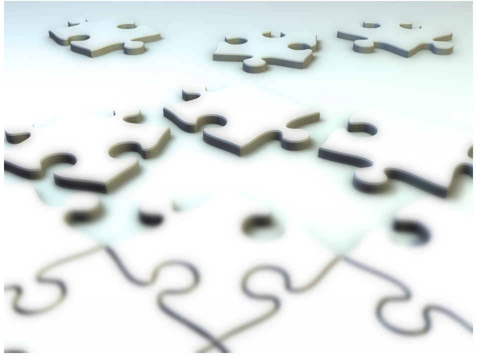
Concurrent & Distributed Accesses

☑ 

Textual Representations

☑ 

Diff, Match, Patch

☑ 

Model Splitting

☑ eclipse modeling PROJECT

IDE and SCM integration

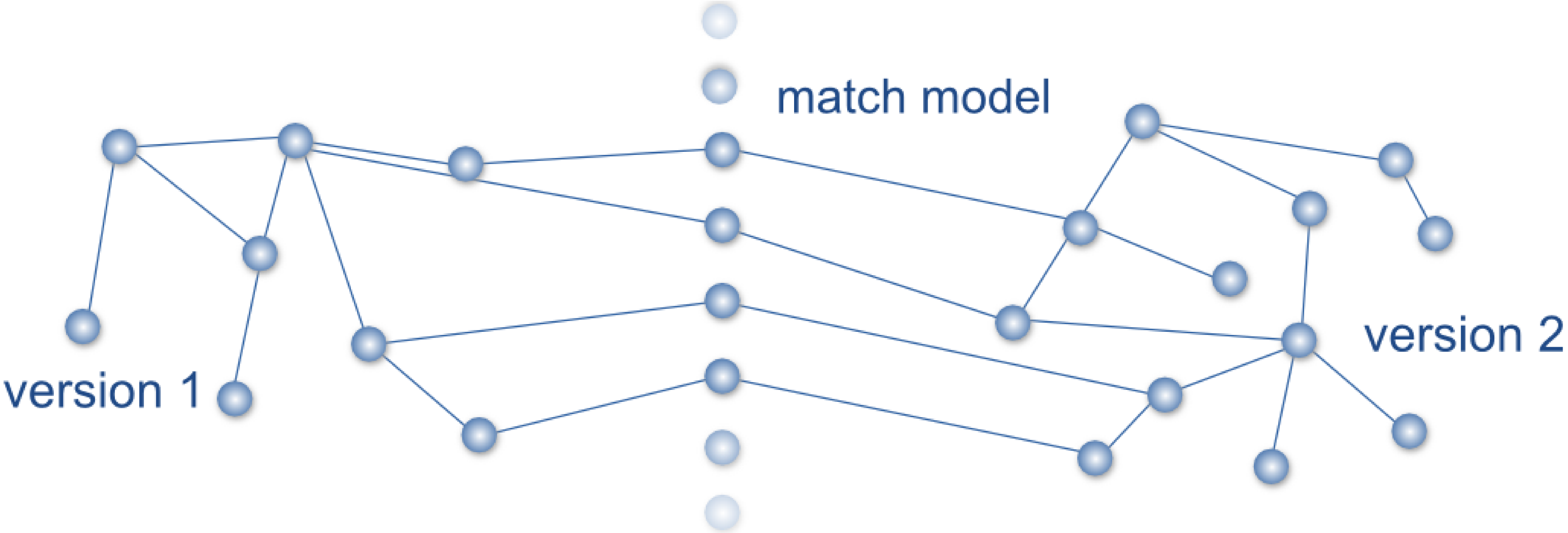
●●●

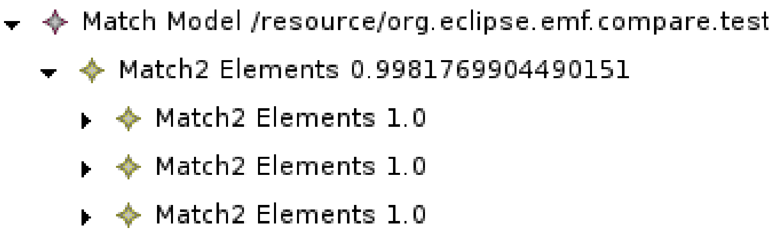
beyond

Terra Incognita

CC BY-SA 2.0 picure by Max Brauwn http://www.flickr.com/photos/maxbraun/

Who is Who ?





```
Match Model /resource/org.eclipse.emf.compare.test
  Match2 Elements 0.9981769904490151
    Match2 Elements 1.0
    Match2 Elements 1.0
    Match2 Elements 1.0
```

Matching **Strategies**

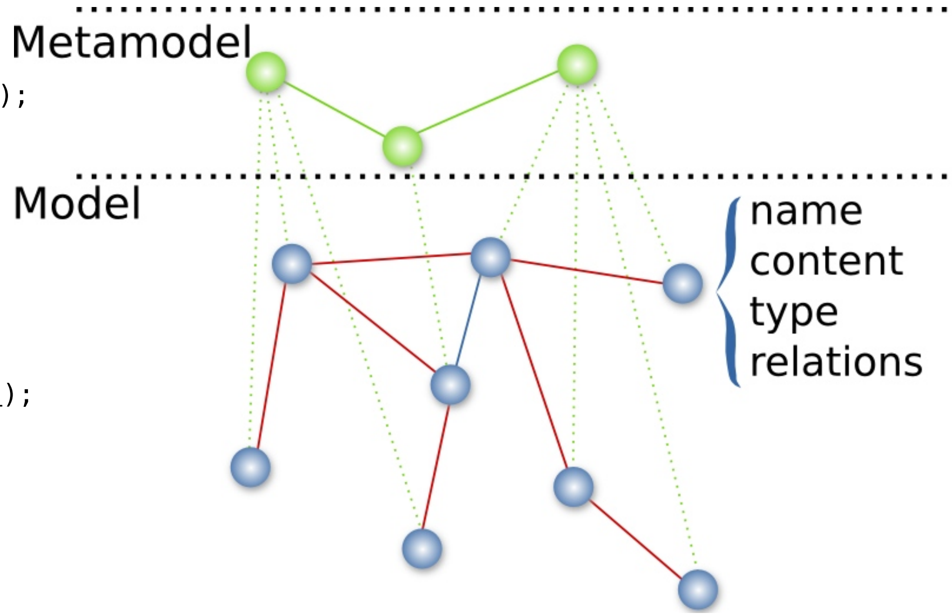
XMI-ID

```
options.put(MatchOptions.OPTION_IGNORE_XMI_ID, Boolean.FALSE);
MatchModel match = MatchService.doContentMatch(left,right options);
```

ID-Attribute

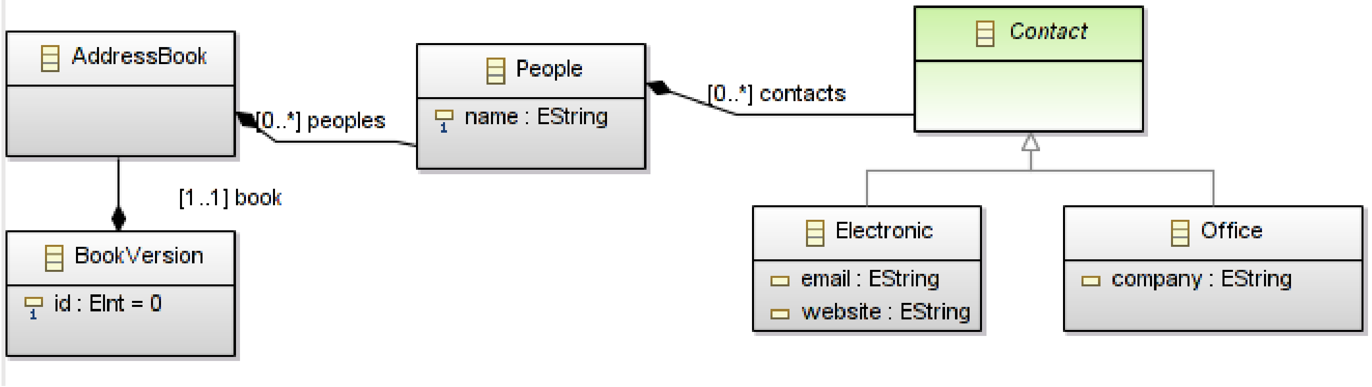
```
options.put(MatchOptions.OPTION_IGNORE_ID, Boolean.FALSE);
MatchModel match = MatchService.doContentMatch(left,right options);
```

GenericMatchEngine



defaults are XMI-ID, then ID-attributes and then reflective

Your **own** matching strategy

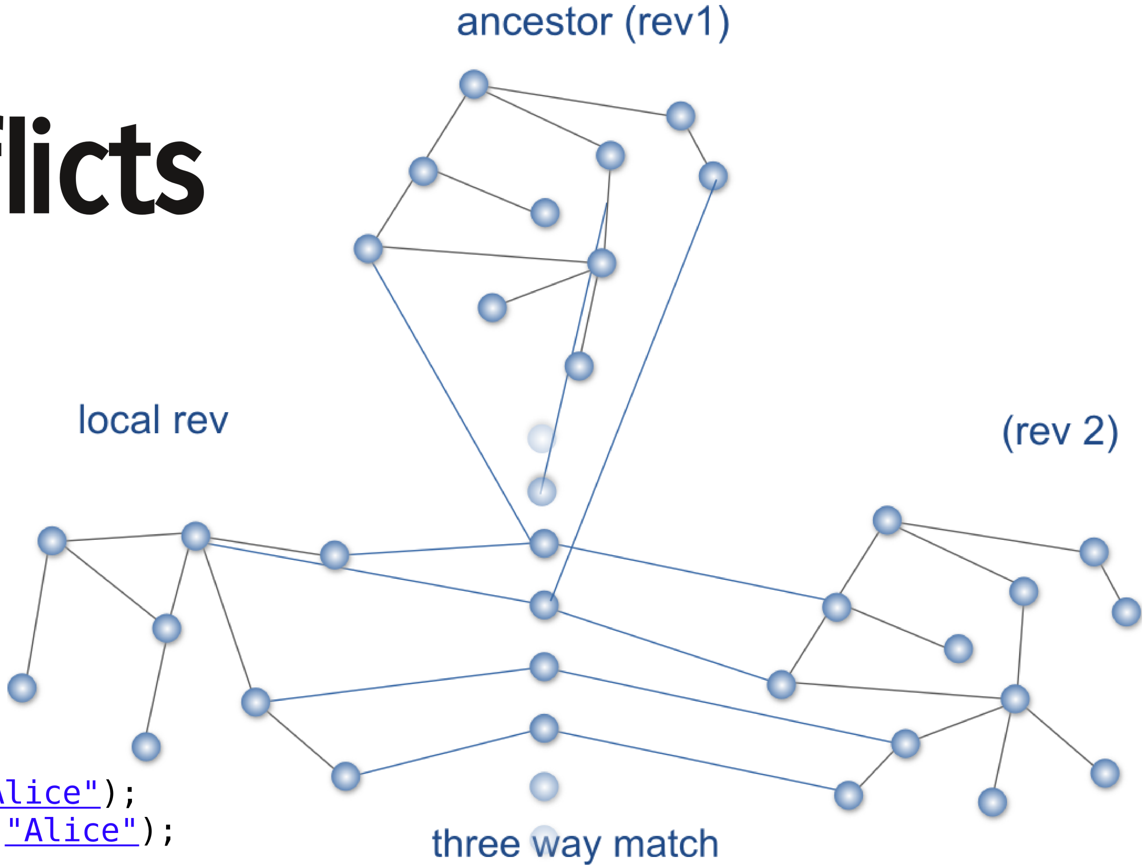


```java
public class AddressBookMatcher extends GenericMatchEngine {

/**
 * {@inheritDoc}
 */
@Override
protected boolean isSimilar(EObject obj1, EObject obj2) throws FactoryException {
/*
 * If we've got a People, only check the name similarity.
 */
if (obj1 instanceof People || obj2 instanceof People)
return nameDistance(obj1, obj2) > 0.8;
/*
 * Contacts are similar if : the associated people is similar + their content is quite the same.
 */
if (obj1 instanceof Contact && obj2 instanceof Contact) {
EObject obj1Parent = obj1.eContainer();
EObject obj2Parent = obj2.eContainer();
if (obj1Parent instanceof People && obj2Parent instanceof People)
return isSimilar(obj1Parent, obj2Parent) && contentDistance(obj1, obj2) > 0.5;
}

/*
 * If it's something we don't know about, then use the generic behavior.
 */
return super.isSimilar(obj1, obj2);
}
```

Detecting conflicts



```
final People alice = createAlice();
v1Book.getPeoples().add(alice);

v2LocalBook = EcoreUtil.copy(v1Book);
v2RemoteBook = EcoreUtil.copy(v1Book);

People aliceLocal = v2LocalBook.getPeople("Alice");
People aliceRemote = v2RemoteBook.getPeople("Alice");

aliceLocal.setBirthday("07/05/84");
aliceRemote.setBirthday("07/07/84");

MatchModel match = new AddressBookMatcher().contentMatch(v2LocalBook, v2RemoteBook, v1Book,
noOptions());

DiffModel delta = DiffService.doDiff(match, true);
List<DiffElement> conflicts = new ArrayList<DiffElement>();

for (DiffElement diff : delta.getDifferences()) {
if (diff.isConflicting()) {
conflicts.add(diff);
}
}

assertEquals("We should have a conflict on Alice's birthday", 1, conflicts.size());
}
```