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## How to Deal With Your IT Legacy? Reverse Engineering with MoDisco...

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# How to Deal With Your IT Legacy? Reverse Engineering with MoDisco...



Hugo Brunelière  
Frédéric Madiot

INRIA / AtlanMod team  
Mia-Software

# Overview

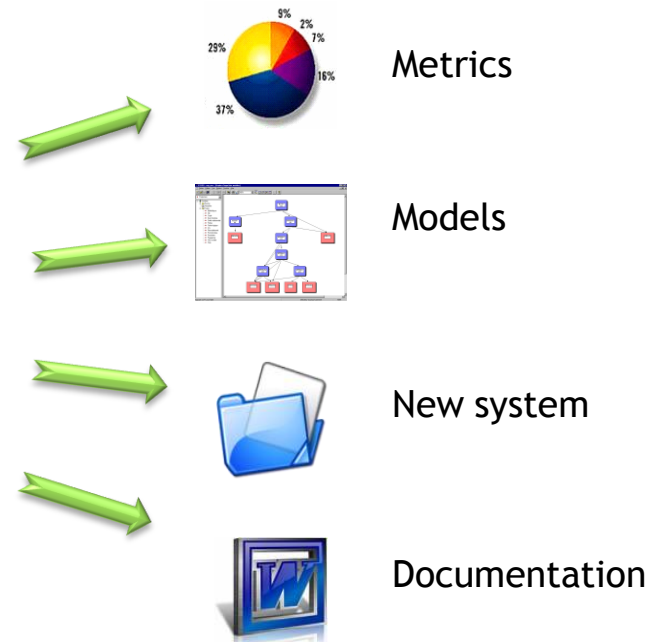
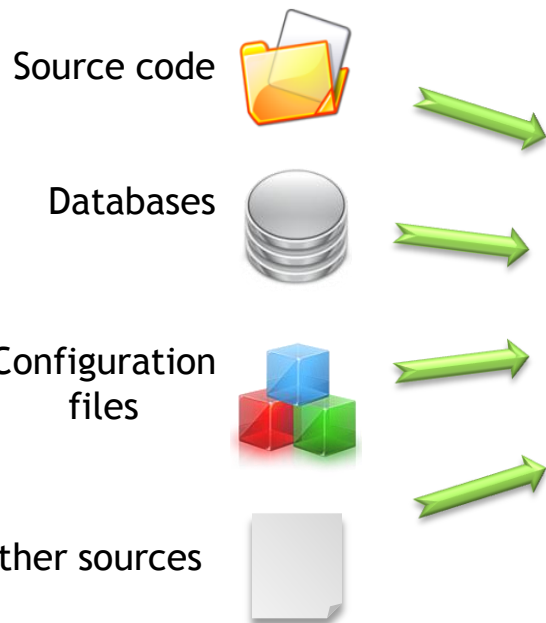


a **Model-Driven** platform  
for **Software Modernization** projects

Support multiple  
Legacy Technologies

Support multiple  
Modernization Scenarios

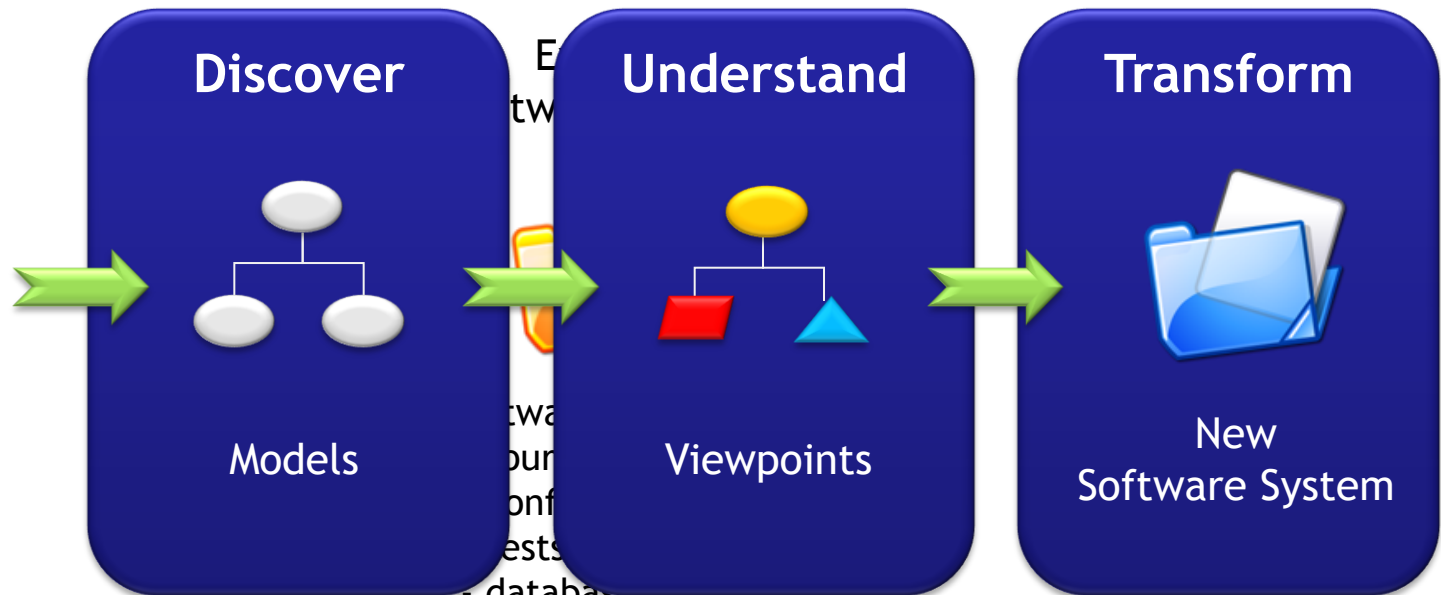
Support multiple  
Outputs



# Approach

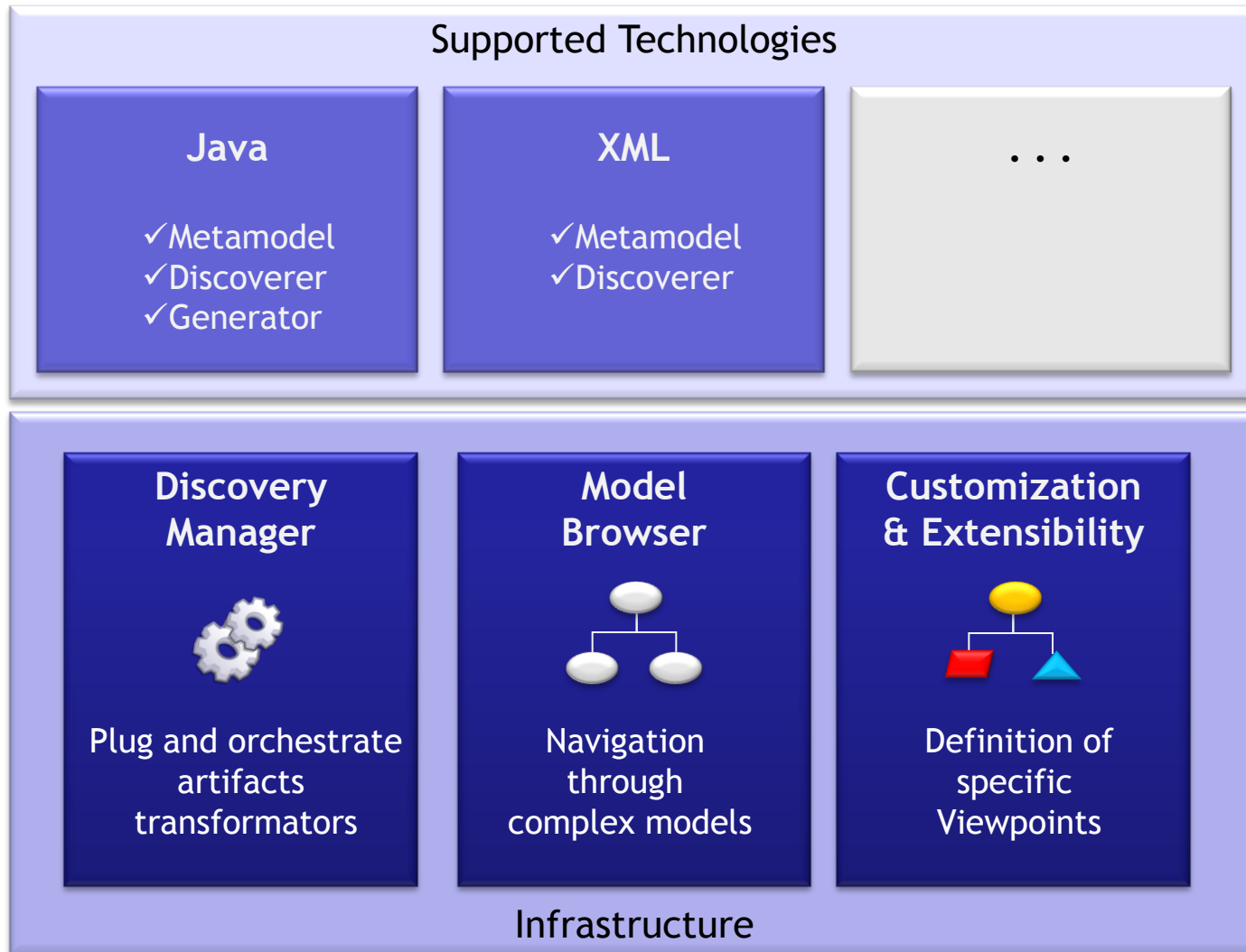


**Models** to represent and manipulate  
**artifacts** of existing systems



E  
tw  
wa  
our  
onf  
ests  
- database  
- ...

# Architecture



# Legacy applications in Java ?



*From the moment one writes a line of code, it becomes legacy, and that legacy accumulates (Grady Booch)*

## - Samples



- LinkedIn > 1M lines of java code
- Texas Health (TIERS application) > 2.5M lines of java code
- CruiseControl > 5M lines of java code
- Eclipse (Galileo) > 24M lines of java code
- SAP (NetWeaver) > 24M lines of java code (255k classes)

## - Continuous evolution

- JDK versions x Frameworks x Design Patterns



# Complex models ?



## Java metamodel :

- 126 types
- 173 references

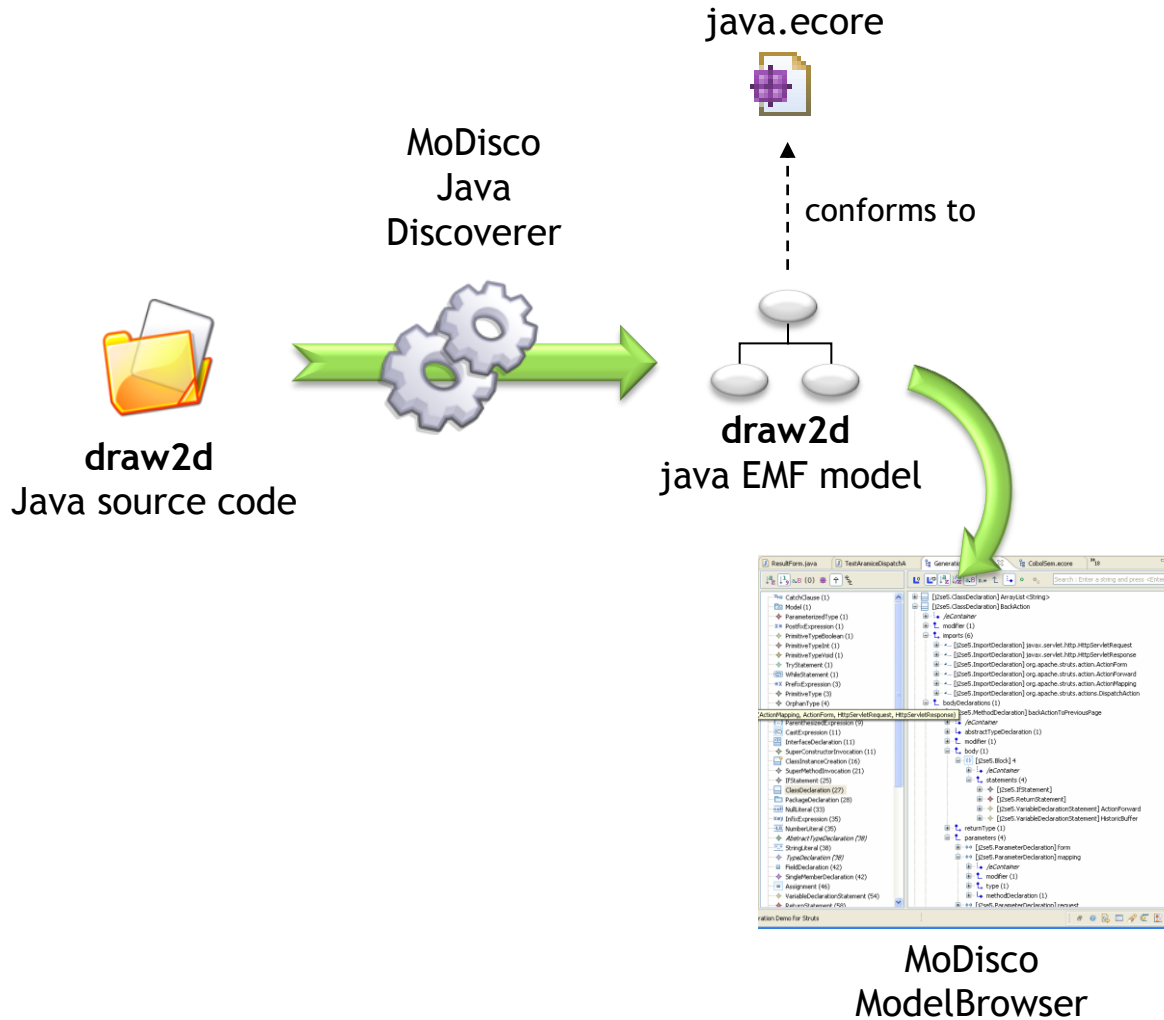
## Example :

Java model of **draw2d** :

- org.eclipse.draw2d
- org.eclipse.draw2d.tests

447 Java classes  $\Rightarrow$  **144 374** nodes !

# MoDisco Demo





# Find Patterns in your Models !



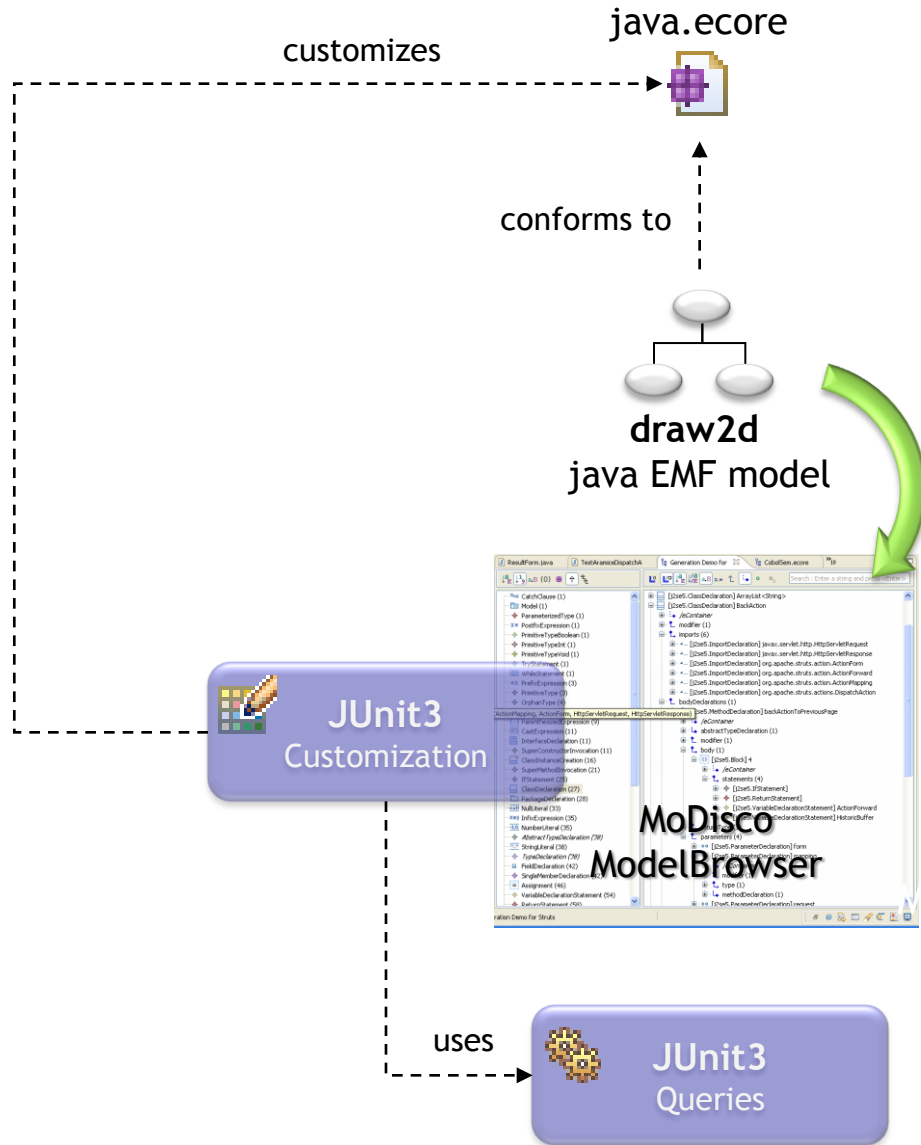
Define and dynamically plug  
your own  
**Facets & UI Customizations**

## Example

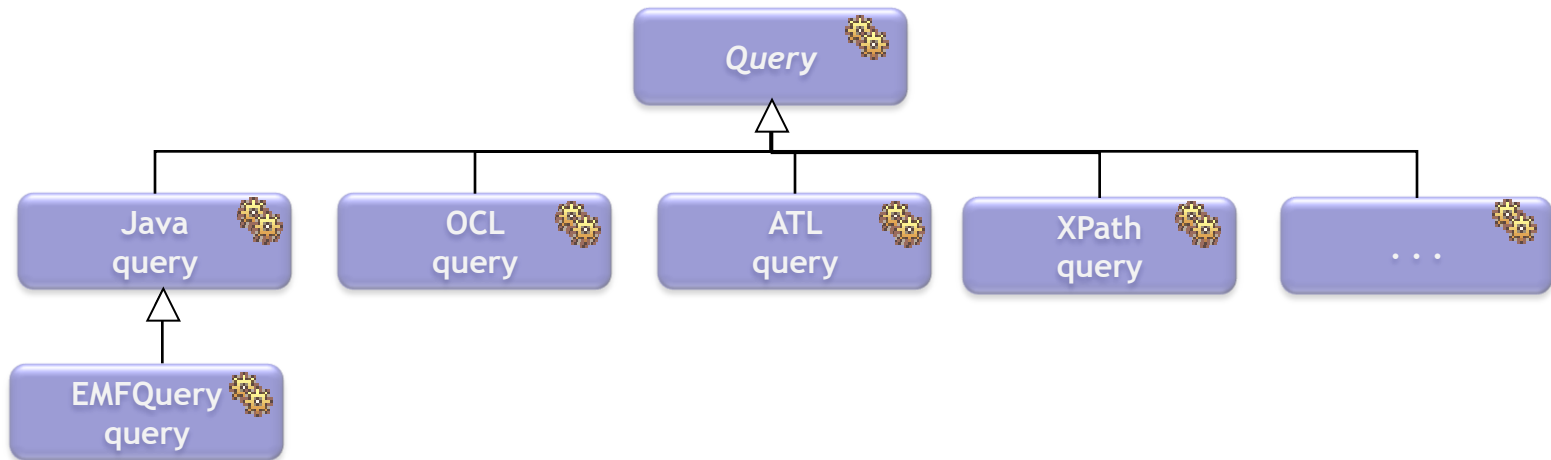
Decorate the Java model of  
**org.eclipse.draw2d.tests**  
To highlight **JUnit** patterns:

- Test suite
- Test case
- Test

# MoDisco Demo

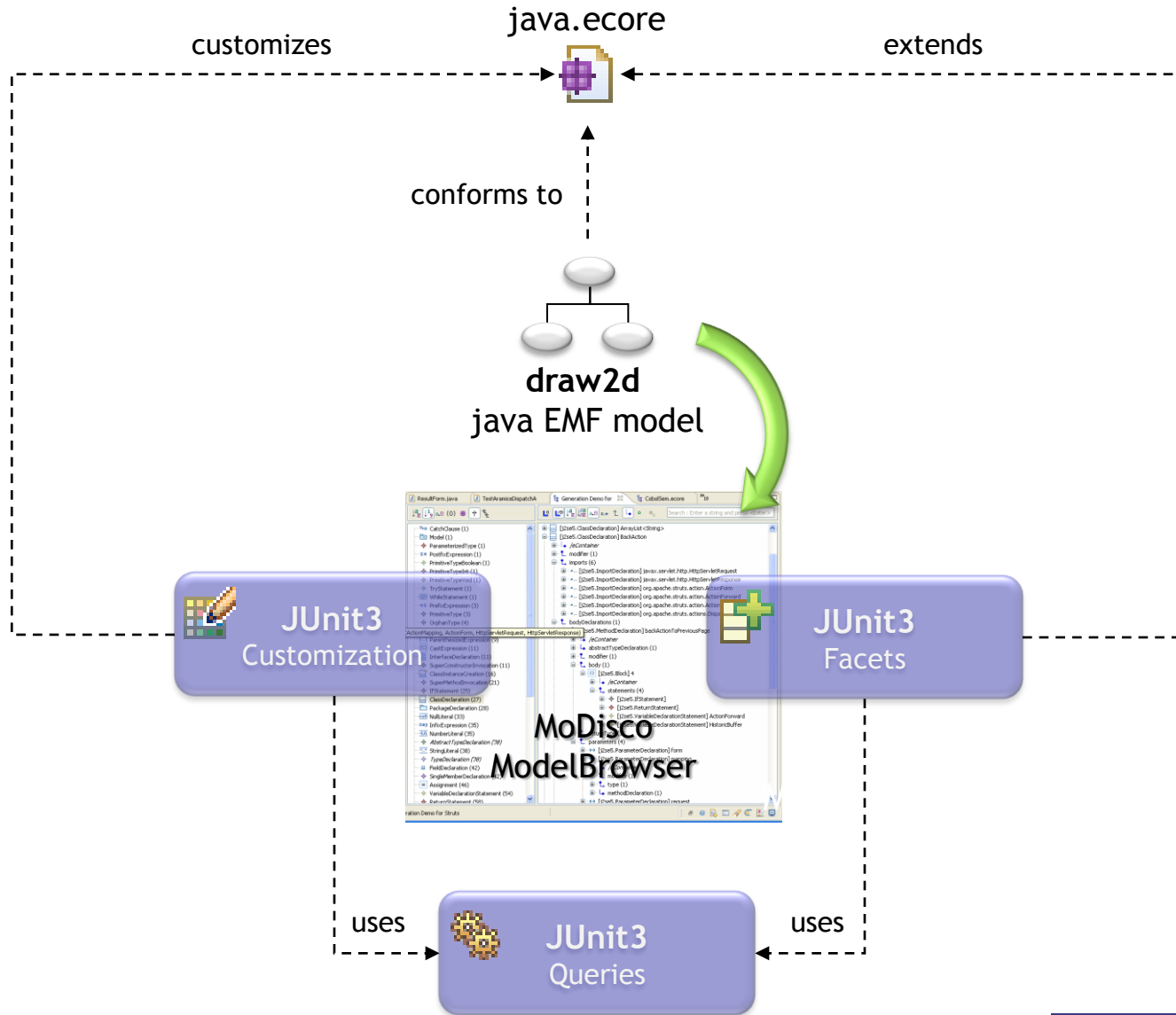


# MoDisco Demo

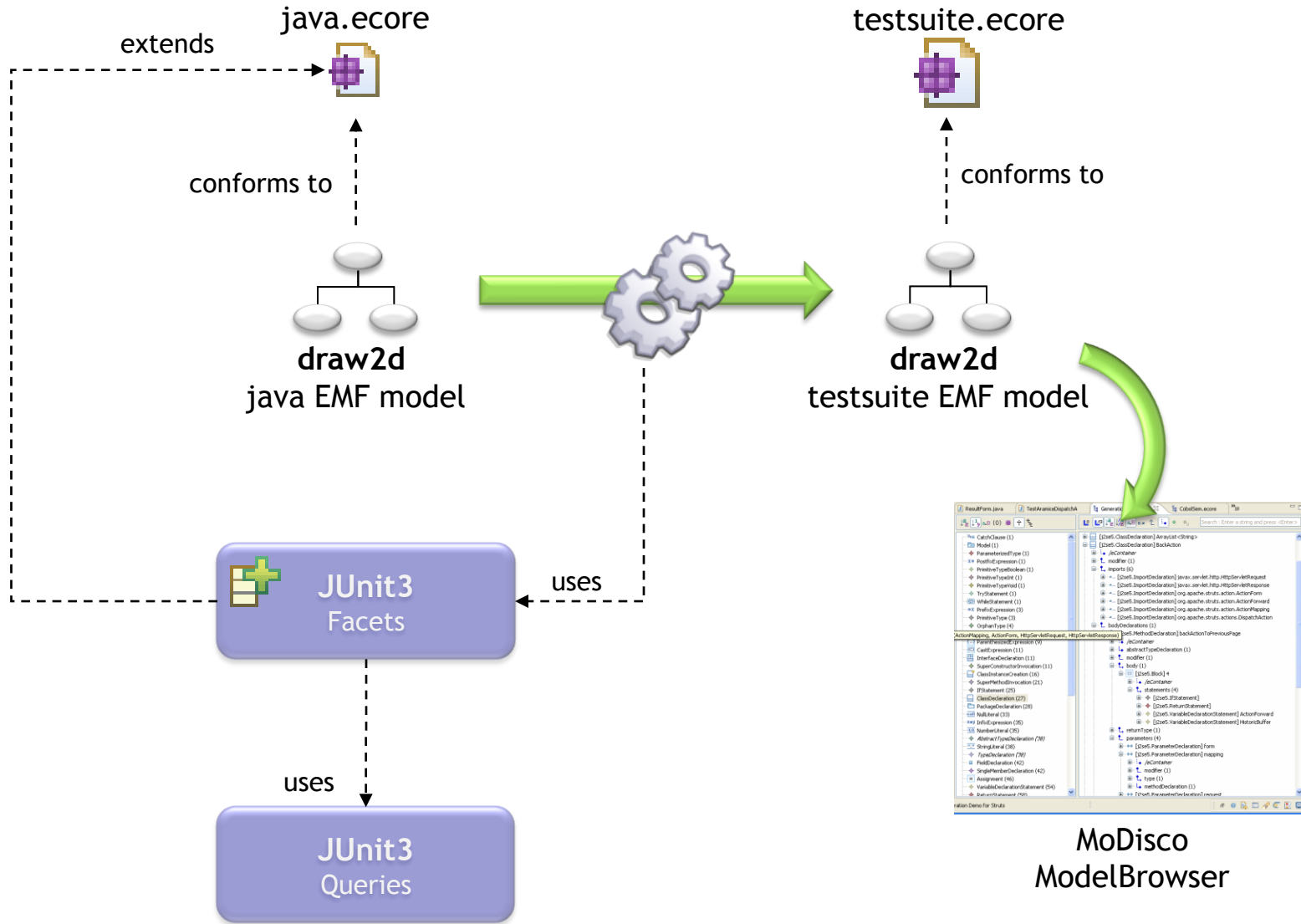




# MoDisco Demo



# MoDisco Demo

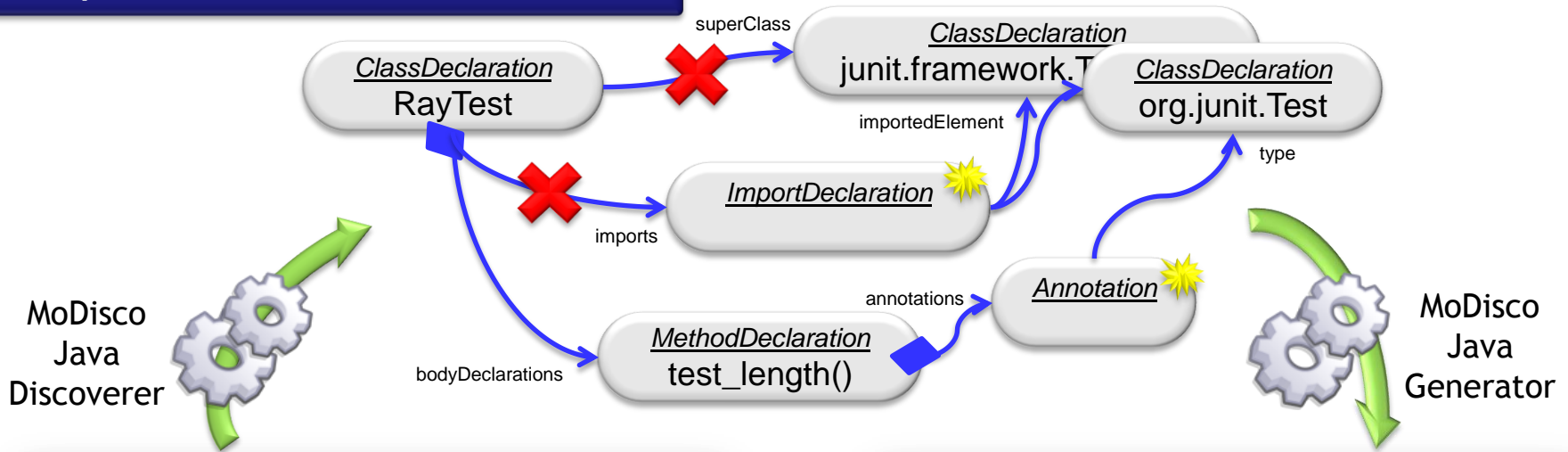


MoDisco  
ModelBrowser

# Transform and Regenerate ...



## Example : from JUnit3 to JUnit4



```
package org.eclipse.draw2d.test;

import junit.framework.TestCase;
import org.eclipse.draw2d.geometry.Ray;

public class RayTest extends TestCase {

    public void test_length() {
        testLengthValues(3, 4, 5);
        testLengthValues(0,
            Integer.MAX_VALUE,
            Integer.MAX_VALUE);
    }
}
```



```
package org.eclipse.draw2d.test;

import org.junit.Test;
import org.eclipse.draw2d.geometry.Ray;

public class RayTest {

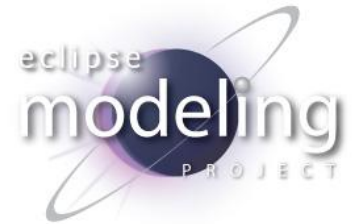
    @Test
    public void test_length() {
        testLengthValues(3, 4, 5);
        testLengthValues(0,
            Integer.MAX_VALUE,
            Integer.MAX_VALUE);
    }
}
```



# Who is involved in MoDisco ?



- The MoDisco team
  - 6 committers
    - 1 from INRIA
    - 5 from Mia-Software
  - Several regular active contributors
- Supported by the OMG (ADM TF)
  - Reference implementations of standards from the
  - Architecture Driven Modernization Task Force
    - KDM (Knowledge Discovery Metamodel)
    - SMM (Software Metrics Metamodel)
- Supported by the European Commission
  - Project initiated by INRIA in the context of
  - the MODELPLEX IST-FP6 European Project





## Questions ?

[www.eclipse.org/gmt/modisco](http://www.eclipse.org/gmt/modisco)

### MoDisco Downloads



MoDisco	Eclipse	Java
0.8	3.6 (Helios)	5.0
0.7	3.5 (Galileo)	5.0

### Latest Releases

>> [0.7.1 \(2009/10/12\)](#)  OK ✓

### 0.8.0 Stable Builds

>> [0.8.0M6 \(2010/03/16\)](#)  OK ✓

>> [0.8.0M5 \(2010/02/01\)](#)  OK ✓

>> [0.8.0M4 \(2010/01/19\)](#)  OK ✓



## Questions ?


[www.eclipse.org/gmt/modisco](http://www.eclipse.org/gmt/modisco)

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