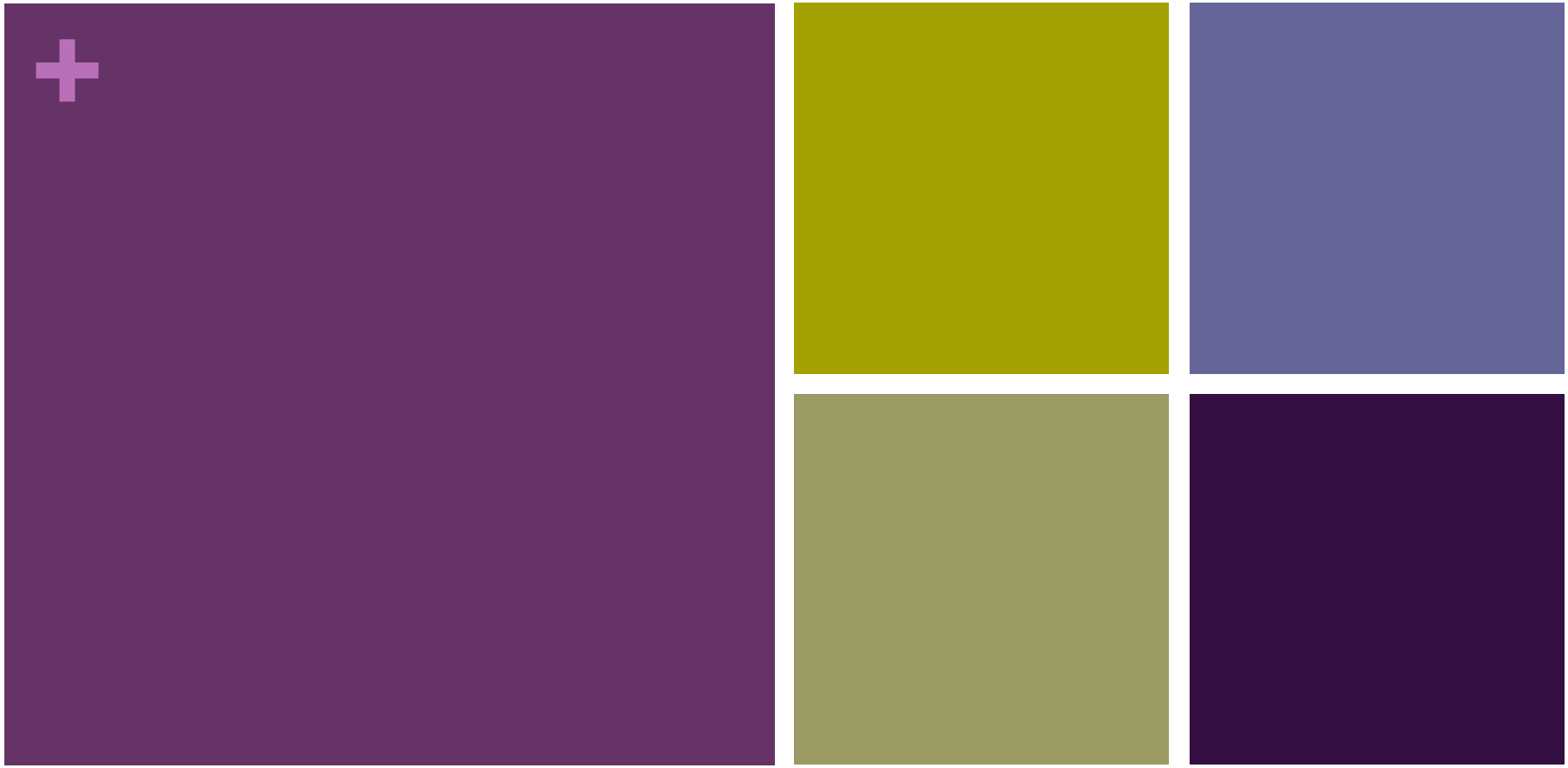

MOMOCS
MDE for the Modernization of Complex Systems

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MOMOCS

- Model-driven Modernization of Complex (Software) Systems
- 2-year STREP project (from September 2006)
- Partners
  - TXT eSolutions (Italy)
  - Johann Wolfgang Goethe-Universitat (Germany)
  - Politecnico di Milano (Italy)
  - Softeam (France)
  - Telefonica Investigacion y Desarrollo (Spain)
  - D'Appolonia (Italy)
  - Atos Origin (Spain)
  - Siemens (Germany)
  - SIGS-DATACOM (Germany)

Modernization

- Many software elements available
  - Important assets for many companies
- Many systems are becoming more and more aged
  - They cannot be substituted completely
  - They are expensive and critical
  - They must be MODERNIZED
- Many factors
  - Technical, strategic, political, economic … reasons

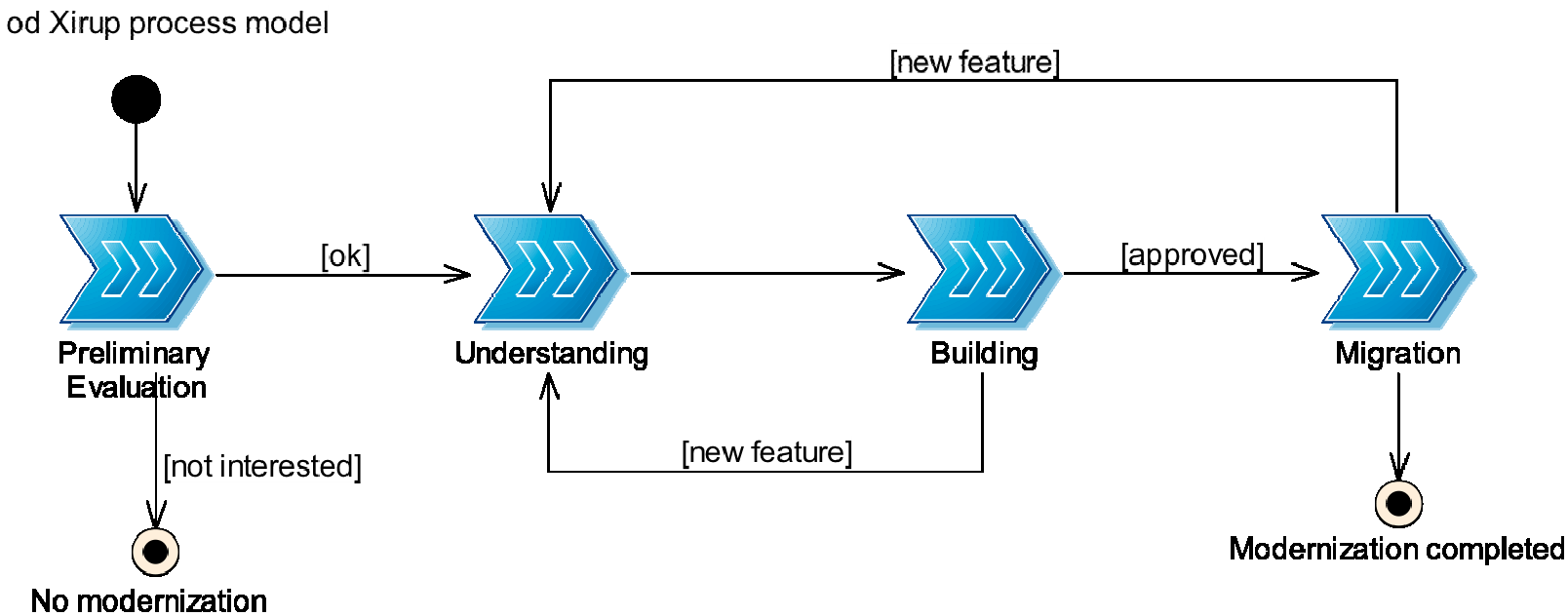
Is this really new?

- Modernization
  - Maintenance, evolution, porting, …
  - Now we need a more holistic approach to the problem
    - Important assets must be preserved
- Models and model-driven approaches
  - Around for years
  - Boosted by UML, MOF, and OMG
  - MDA works top-down
    - We move bottom-up

XIRUP

- eXtreme end-User dRiven Process
- Holistic modernization process
  - Along with heuristics and supporting tools
  - From modernization requirements to modernized systems
  - Heavily based on an integrated meta-model
- Model-based approach
  - Existing systems are rendered as models
  - Semi-automatic transformations work on models
  - Models are used to produce the new parts

… in a nutshell



The scope of KDM (from KDM spec v. 1.0.0)

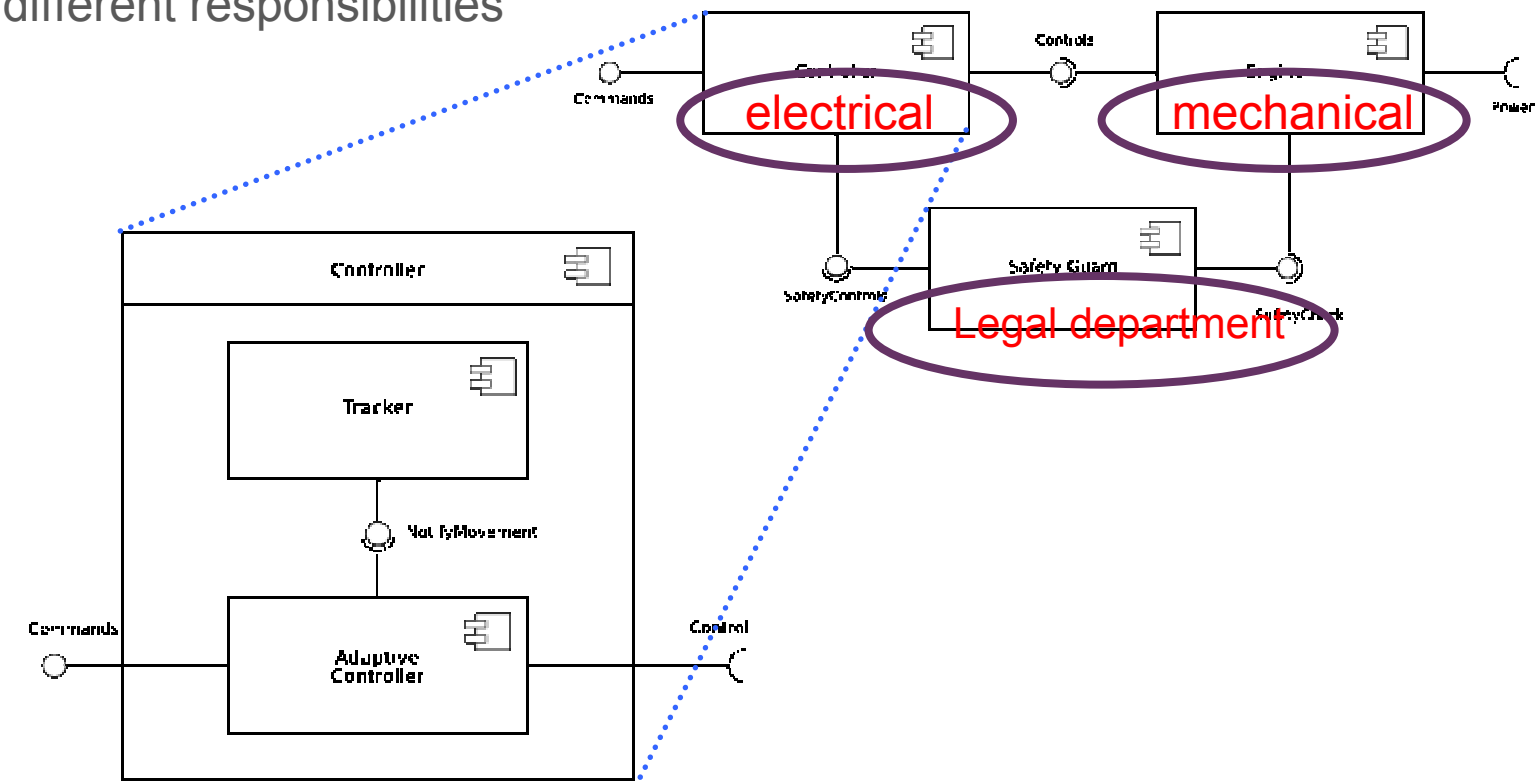
- Defines a meta-model for representing existing software assets, their associations, and operational environments
- Provides a common repository structure that facilitates the exchange of data contained within individual tool models
- Represents the physical and logical assets at various levels of abstraction
- Provides a common interchange format that will allow interoperability between existing modernization and software assurance tools
- Is a MOF model

XIRUP meta-model

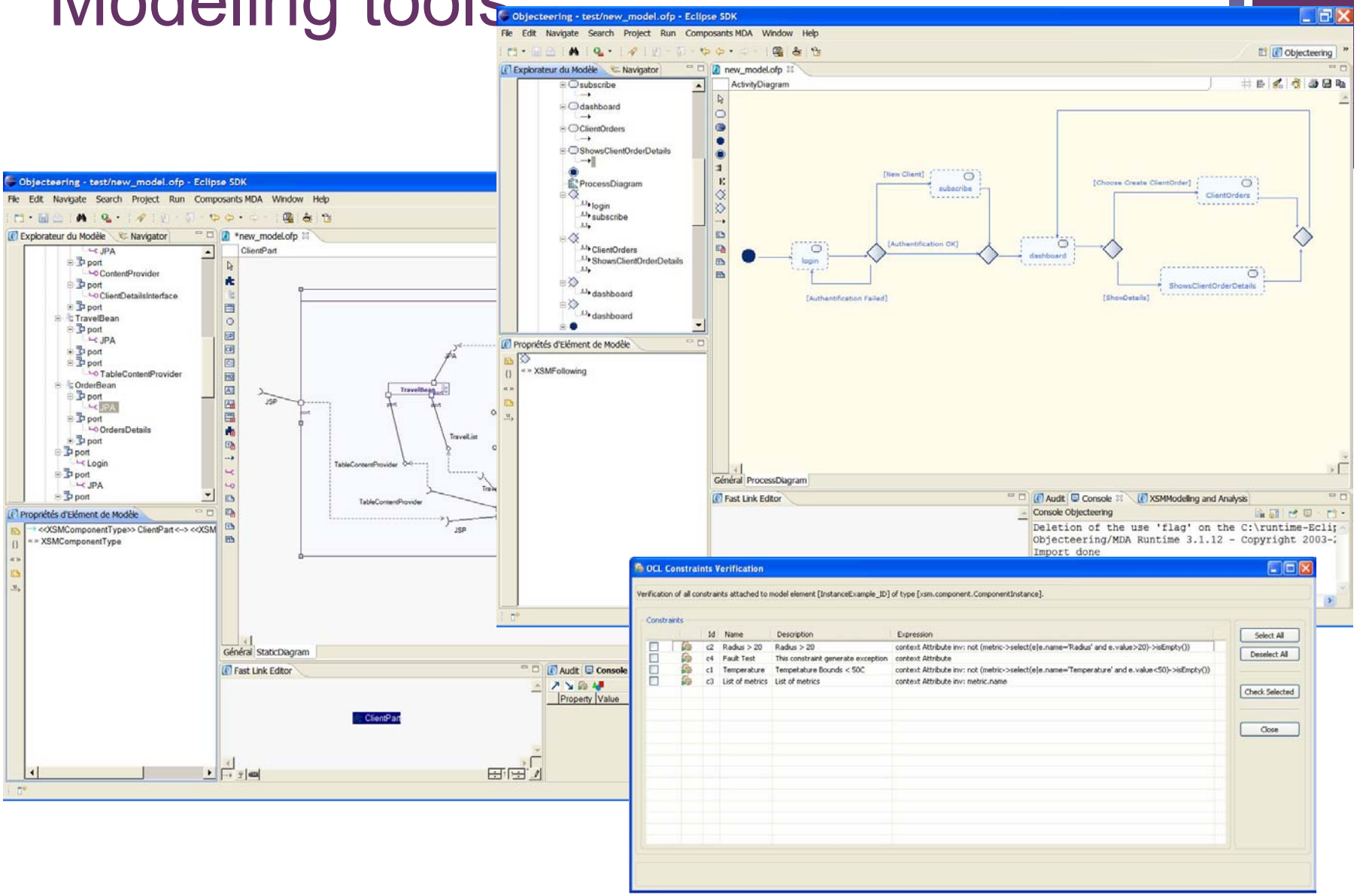
- Existing meta-models
  - Cope only with software artefacts
  - Do not support agile and component-based modelling
- XIRUP meta-model
  - Describes the collection of things within the domain of modernization of complex systems
  - Supports the evolution and modernization of complex systems
  - Allows different types of engineers to focus on aspects of the system
  - Scales and copes with complex systems
  - Is extensible and adaptable

Momocs metamodel

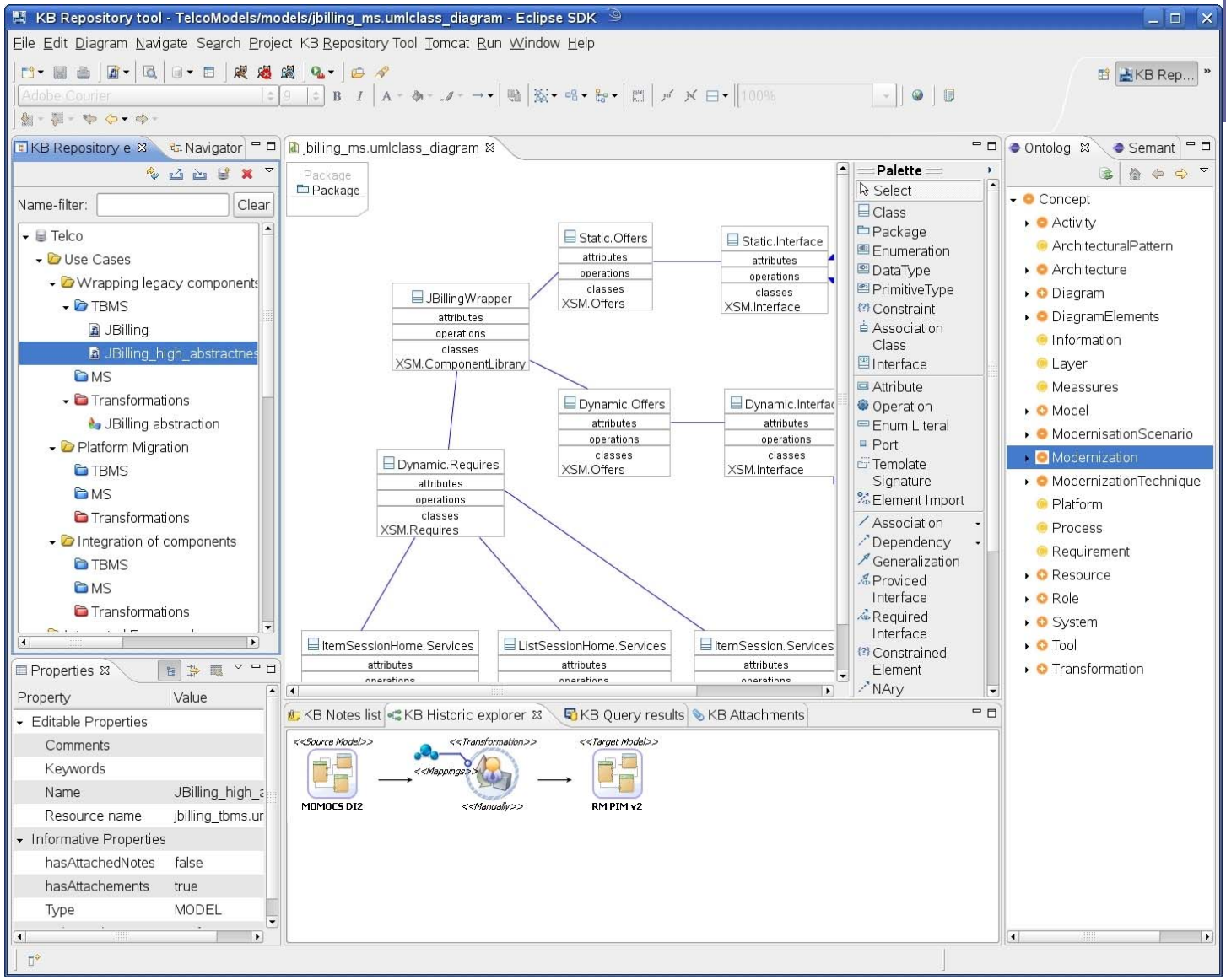
- The complexity is managed:
  - By using an Architectural view on the system
  - At different levels of abstraction
  - With different responsibilities



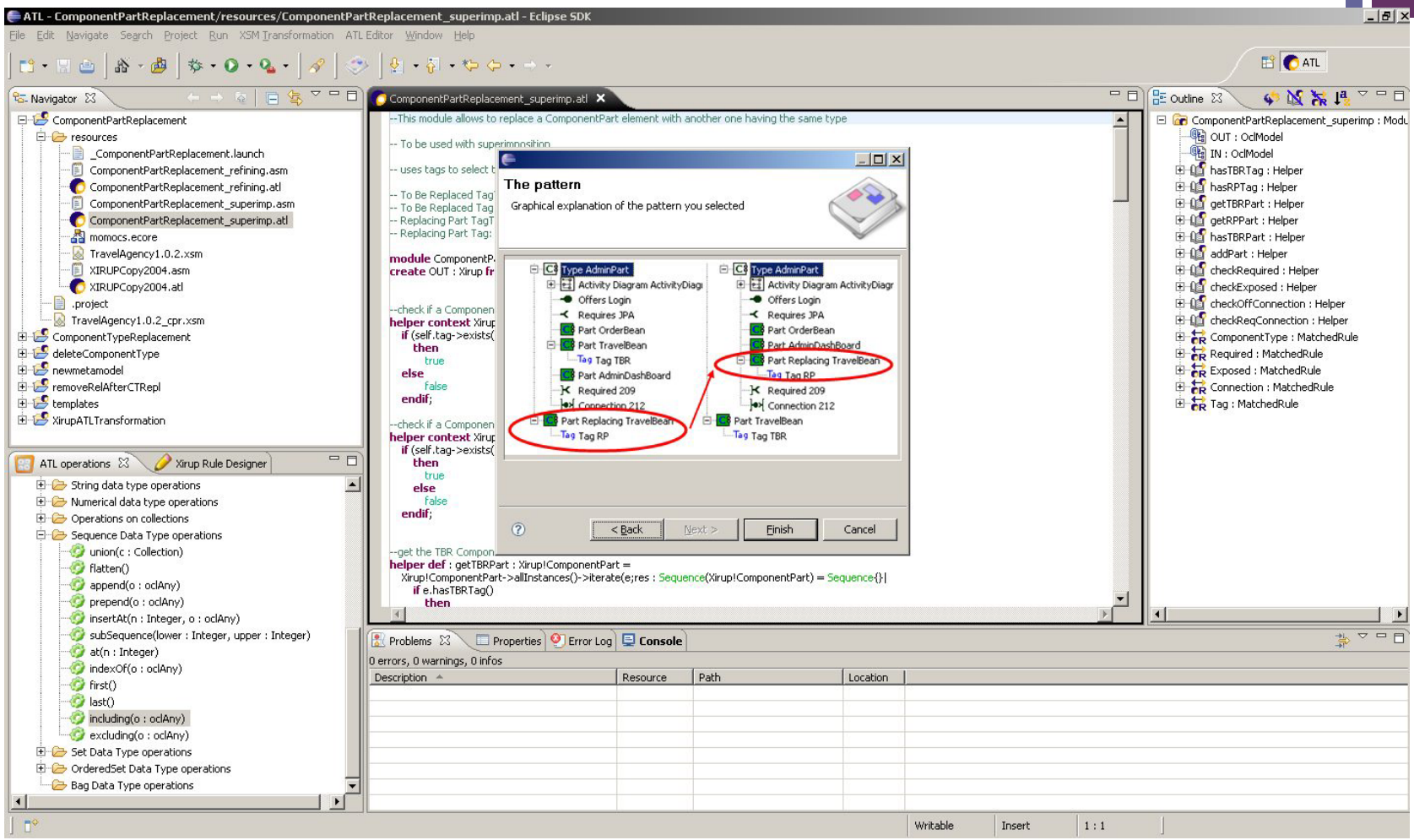
Modeling tools



KB Repository



Modernization patterns



Conclusions and future work

- First release of supporting tools available
  - First feedback on the way
- More integration among the different parts
  - After initial feedback from the consortium
  - Further refinement of supplied features
- Future work
  - Further generalization
  - Automatic import functionality for different technologies
  - Liaisons with OMG

Questions

- MOMOCS project
- Alessandra Bagnato
  - c/o TXT e-solutions
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