

Automatic Test Case Generation for Verification and Validation (V&V) of OSLC-based Adaptors



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INTRODUCTION
Open Services for Life Cycle Collaboration (OSLC) provided an integration approach which promises to integrate various life cycle activities in an efficient manner. OSLC provides a set of specifications (e.g., Change Management, Quality Management, Requirements Management) that can be realized as an adaptor to integrate the life cycle tools and enables information sharing between heterogeneous life cycle tools (e.g., Simulink, Bugzilla).

The V-development model advocates the use of testing for each developed artefact. In the context of OSLC-based adaptors, testing should be performed in order to verify and validate (V&V) the developed adaptors with respect to the OSLC specification for which the adaptor is realized for.

Manual testing of the developed OSLC-adaptor can be really time consuming and error-prone. The idea is to automate the test case generation in order to avoid manual testing effort as much as possible and make the OSLC-based adaptors as efficient as possible for integration and information sharing.

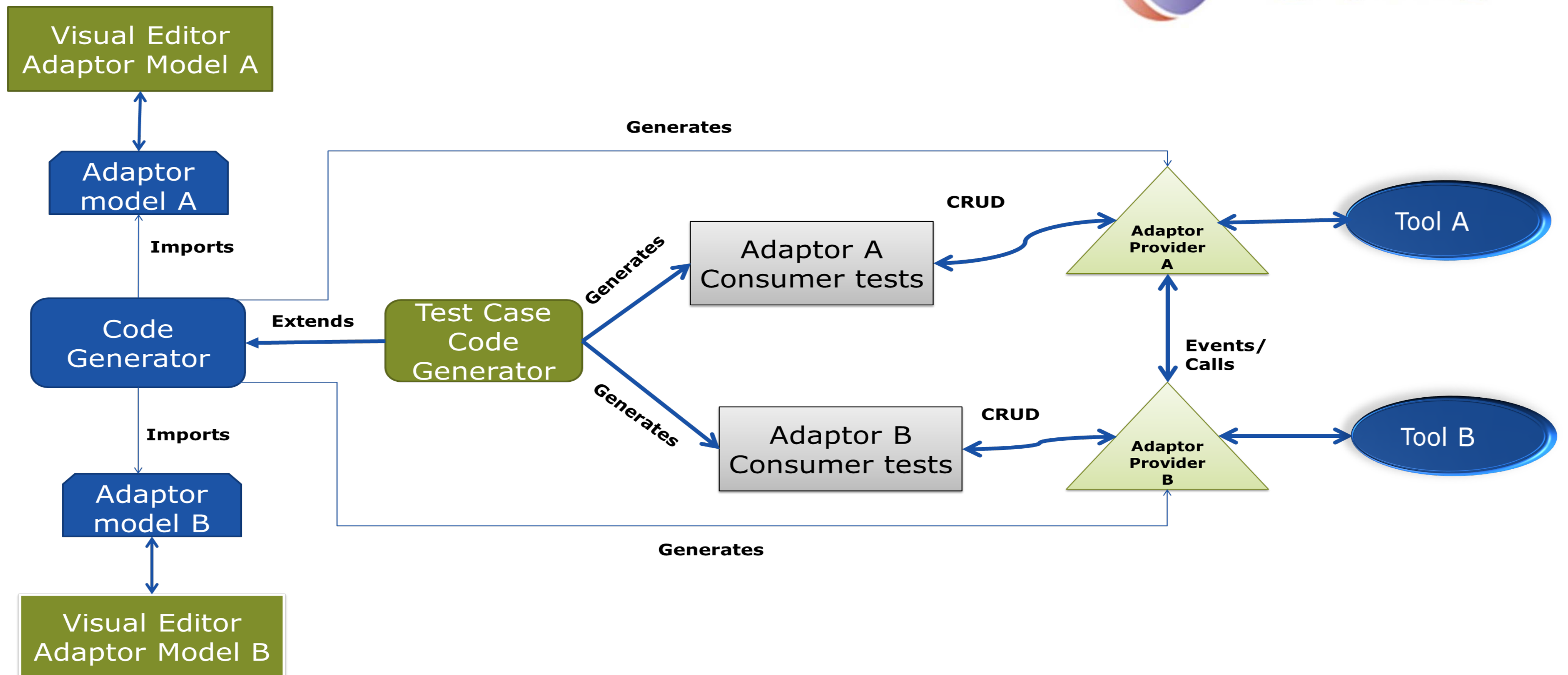
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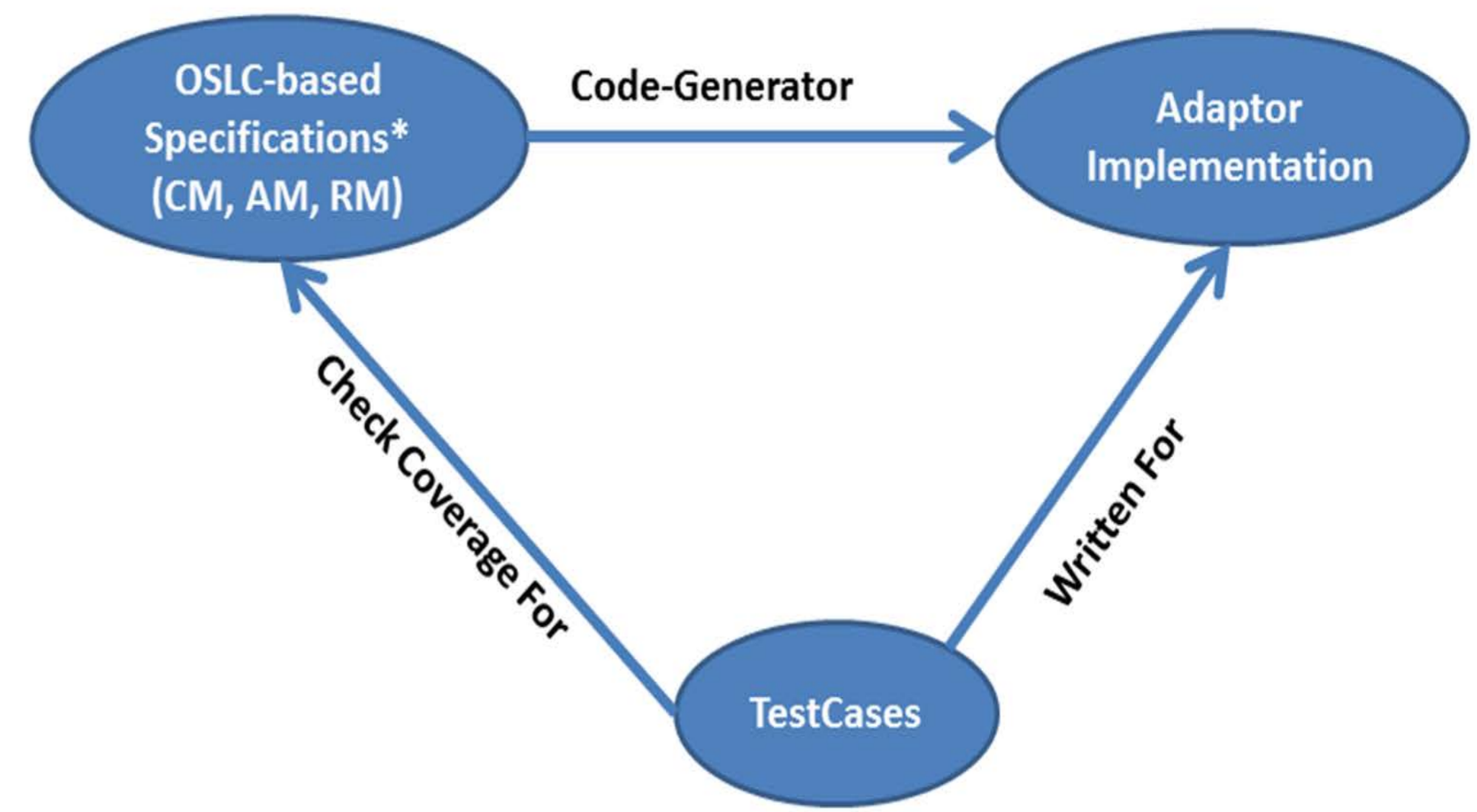
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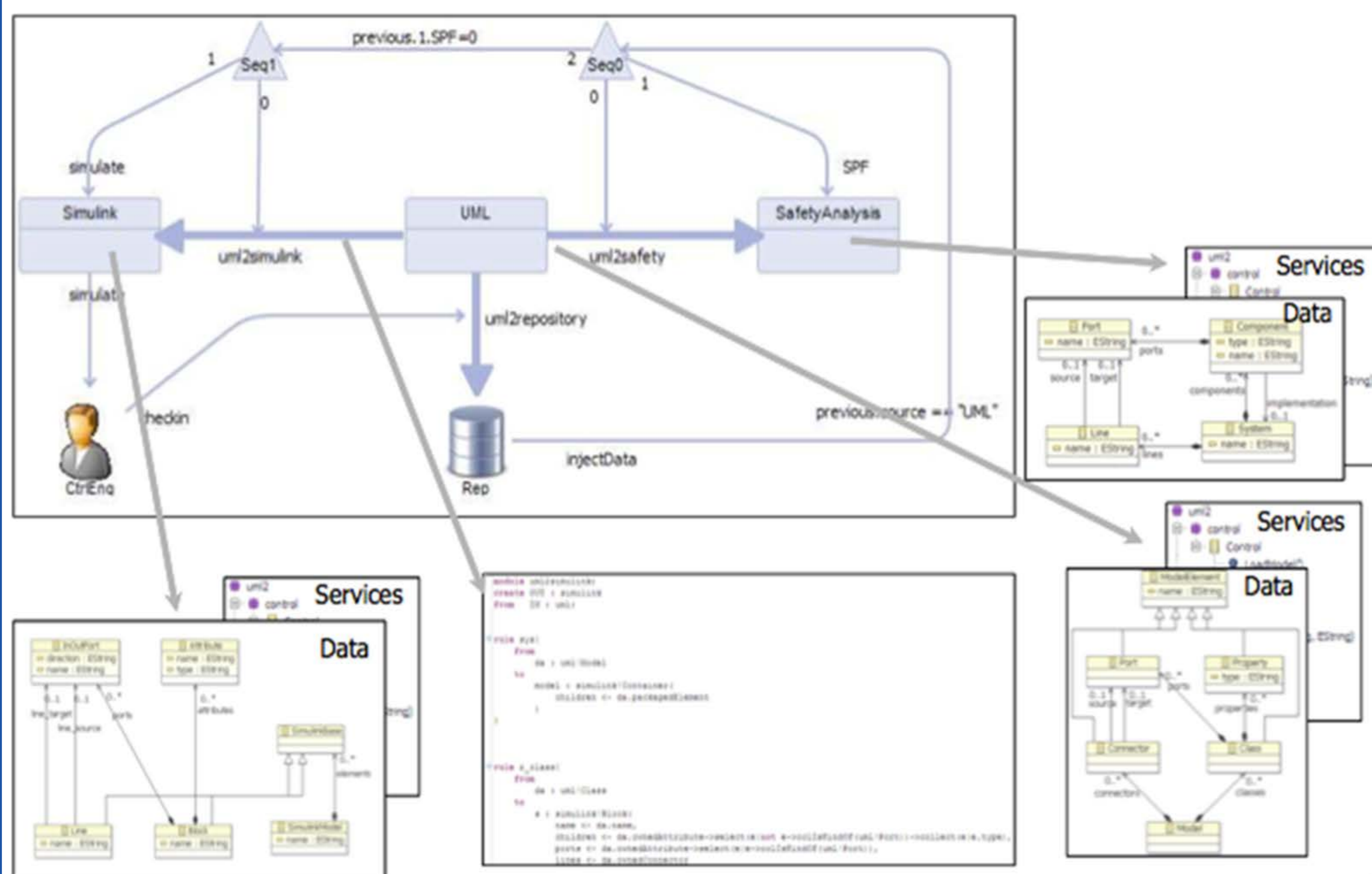


Automatic Test Generation

- OSLC-Specification Coverage
- Functional tests (CRUD: Create, Read, Update and Delete)
- Automatically generate test suite per adaptor
- Testing Events between generated OSLC- Based Adaptors



*: Specifications are captured in a EMF-based Meta-model



A DSL & DE for Tool Chain Development

Project Overall Goals

- Automatic test case generation
- Semantic relations between tools/views
- Graphical/Visual editor for Adaptor Models
- Configuration management
- Automatic mapping/Sync between tools in the tool chain

State of the Art (SOTA)

- A model-based solution for development of tool chain following the V-development
- Initial efforts were made (MBAT and iFest Projects)
- ✓ A DSL and development environment for tool chain development
- ✓ A code generator for developing the OSLC-based adaptor

