CARTIER : A TOOL FOR AUTOMATIC TEST MODEL SYNTHESIS

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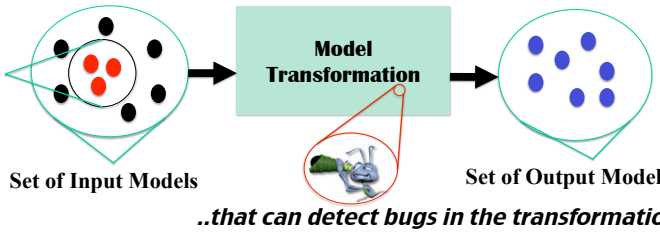
The Problem

What are the test models ...



..that can detect bugs in the transformation ?

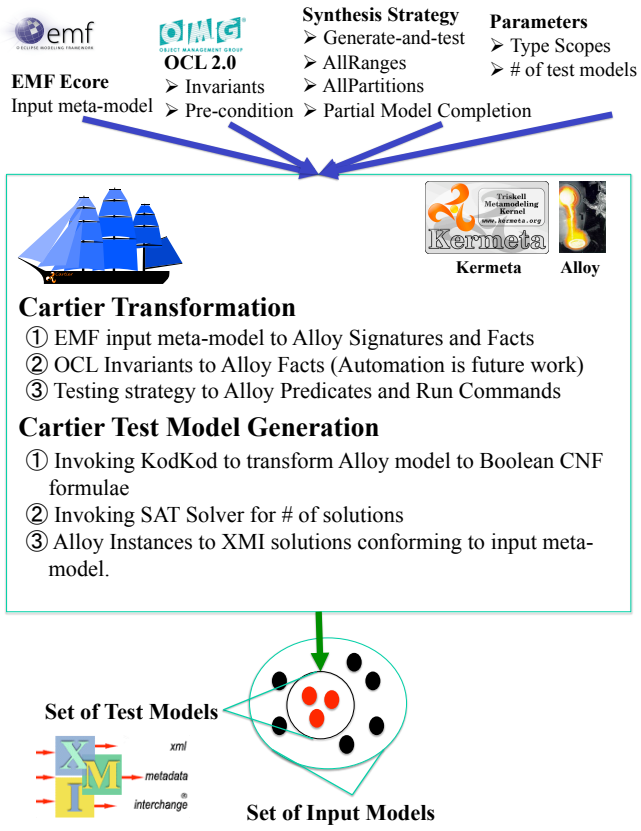
The Challenges

- Test models are inter-connected graph of objects
- Test models must conform to heterogeneous sources of knowledge
- Manual specification is tedious or impossible due to complexity of creating a large number of conforming test models

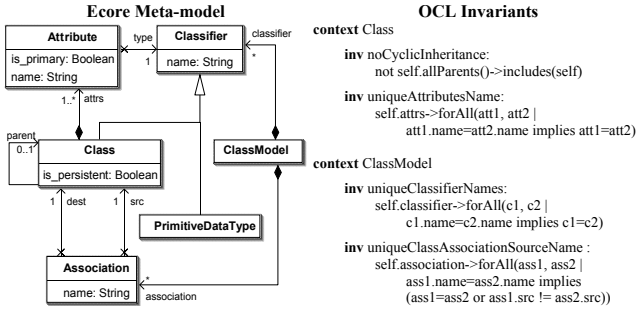
The Solution

Cartier: A systematic methodology and tool to automatically synthesize test models

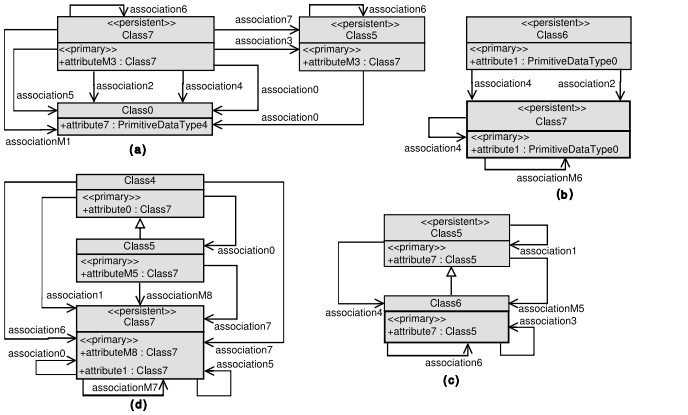
Cartier Architecture



Representative Case Study



Input meta-model for Simple UML Class Models to RDBMS Models



Some generated UML class models…

Conclusion

- Cartier generates small models that can detect bugs as shown in the representative case study
- We demonstrate how knowledge from different sources can be combined in Cartier using extensibility features of Kermeta
- We conform to major standardization efforts such as EMF, XMI, and OCL

References

[1] Sen, S.; Baudry, B. & Mottu, J. On Combining Multi-formalism Knowledge to Select Test Models for Model Transformation Testing, *IEEE International Conference on Software Testing,* **2008**
[2] Sen, S.; Baudry, B. & Mottu, J. Automatic Test Model Generation Strategies for Model Transformation Testing, *IEEE International Conference on Model Transformation,* **2009**
[3] Bezivin, J.; Rumpe, B.; Schurr, A. & Tratt, L. Model Transformations in Practice Workshop, October 3rd 2005, part of MoDELS 2005, *Proceedings of MoDELS,* **2005**

Download: http://www.irisa.fr/triskell/Softwares/protos/Cartier