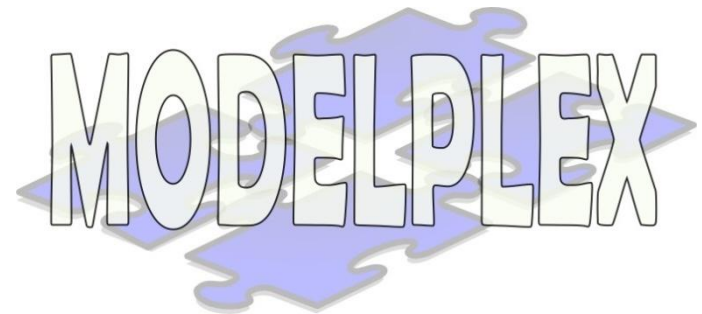


Reuseware Tutorial 2:

Cross-cutting Model Composition



Composing Models With Reuseware

- Reuseware is...
 - A language independent modularisation approach [1]
 - A framework: Reuseware Composition Framework [2]
- Common concepts for different composition systems for arbitrary languages
 - Easy specification of new composition techniques and porting of techniques from one language to another
 - Reuse of composition tooling
 - Tailor tooling for composition system and language
- Support features of aspect-oriented systems
 - Support homogeneous crosscuts (and quantification)
 - Support heterogeneous crosscuts

[1] On Language-Independent Model Modularisation, Transactions on Aspect-Oriented Development, 2008

[2] <http://reuseware.org>

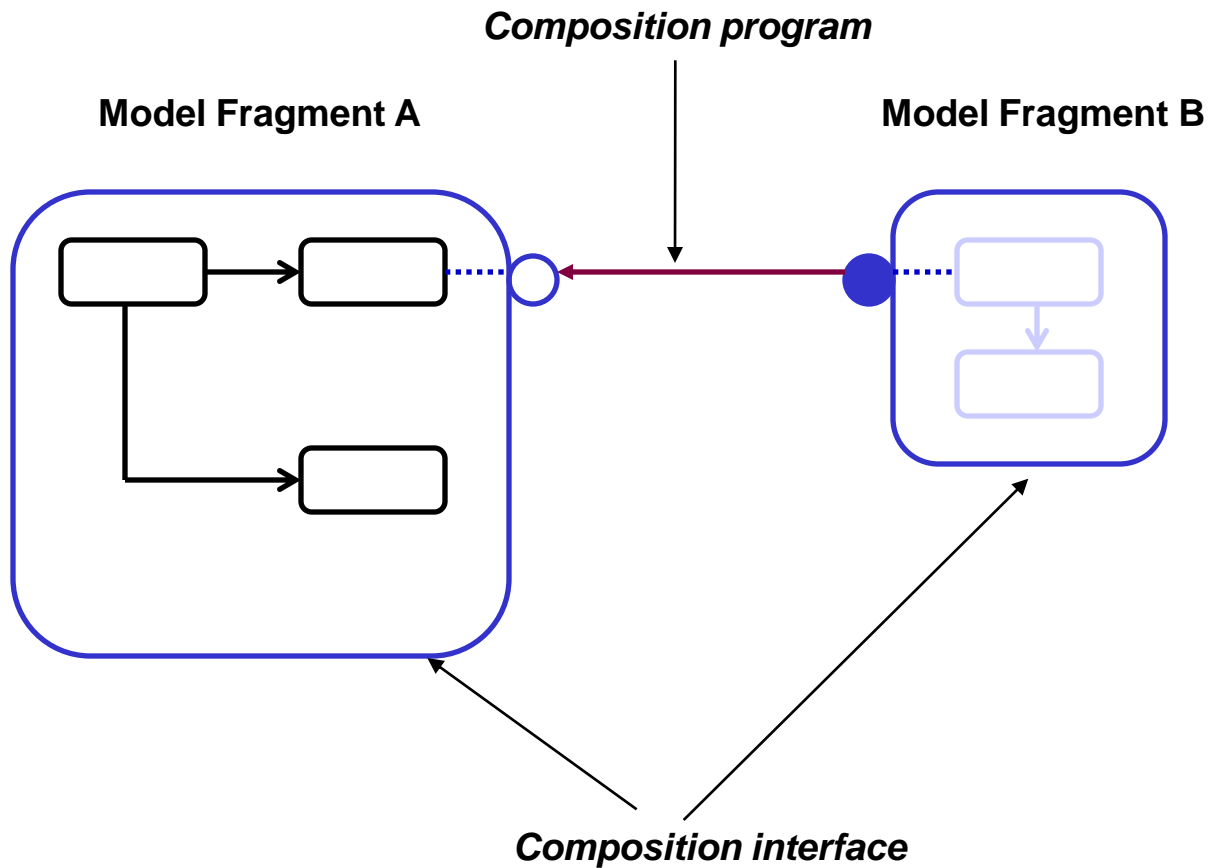
Reuseware - Core Concepts

- **Model Fragments**
 - (Partial) models that may contain variation points
 - Offer a *Composition Interface*
 - *Composition Interface* consists of *Ports*
 - *Ports* point at elements of the model fragment that can be accessed for composition
 - One *Port* can point at several elements at arbitrary places in the model fragment (heterogeneous crosscut)
 - Similar Ports can be joined to one *HomogeneousPort* (homogeneous crosscut)
- **Composition Programs**
 - Define *composition links* between Ports
 - Are executed to produce a composed model where model fragments are woven at the elements pointed out by the linked Ports

Reuseware - Core Concepts

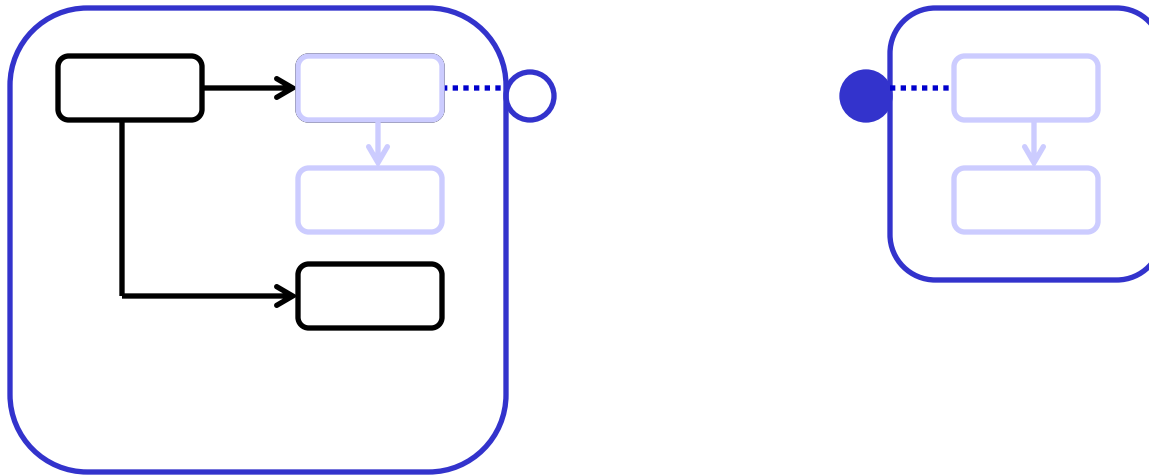
- **Composition Systems**
 - Define modularisation concepts (e.g., modules, packages, aspects)
 - Define relations between modularisation concepts (e.g, an aspect relates to a core)
- **Reuse extensions (for a particular language)**
 - Define how modularization concepts defined in a composition system are realized in a concrete language
 - Define which ports are related to which model elements of a model fragment

Reuseware - Core Concepts



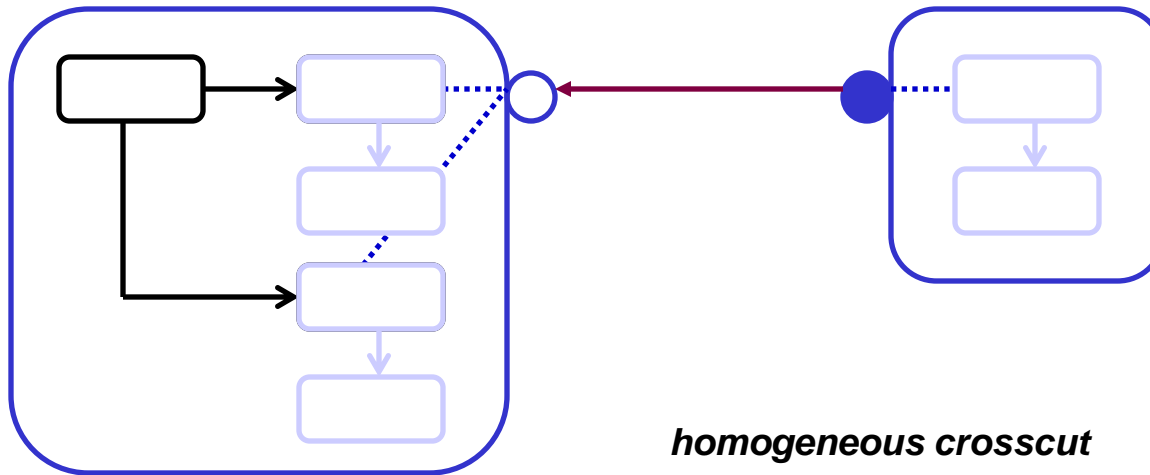
Reuseware - Core Concepts

Model composed from A and B

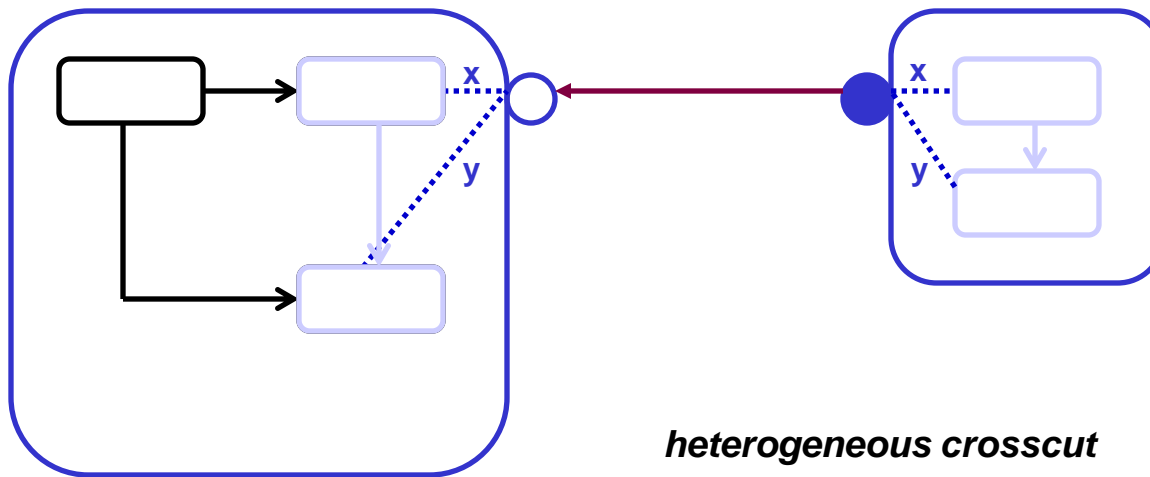


Composed model

Reuseware - Core Concepts

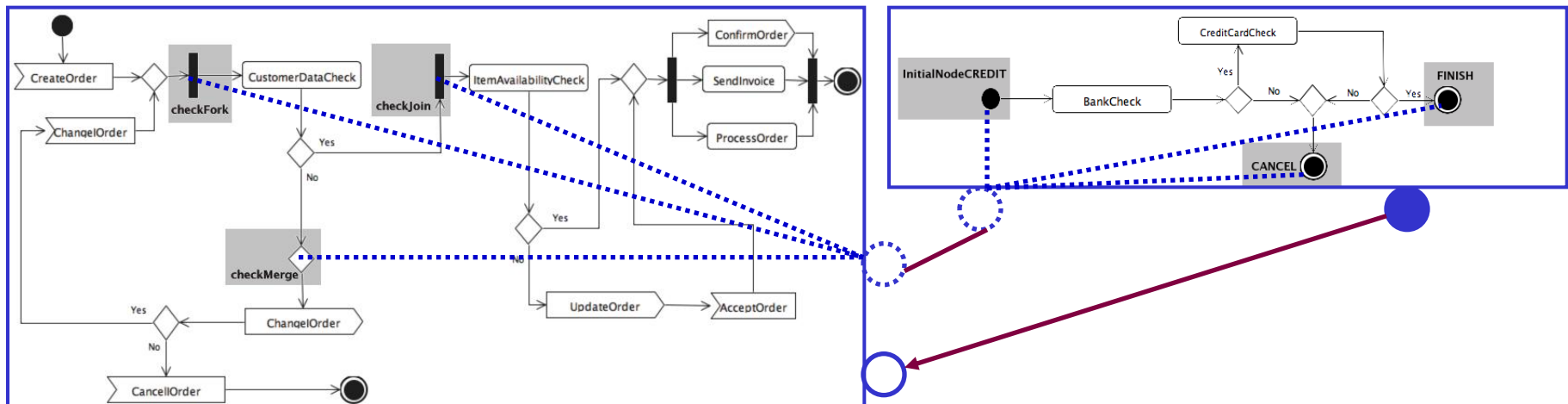


Reuseware - Core Concepts



Reuseware Example: Activity Diagram Composition

Composition of two activity diagram model fragments



Reuseware Example: Activity Diagram Composition

Composed activity diagram

