New Domain, Less Pain: Integrated Specification of Model Edit Operations

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Agenda

About us

Software Engineering Group, University of Siegen

Main research area: Model Driven Software Development

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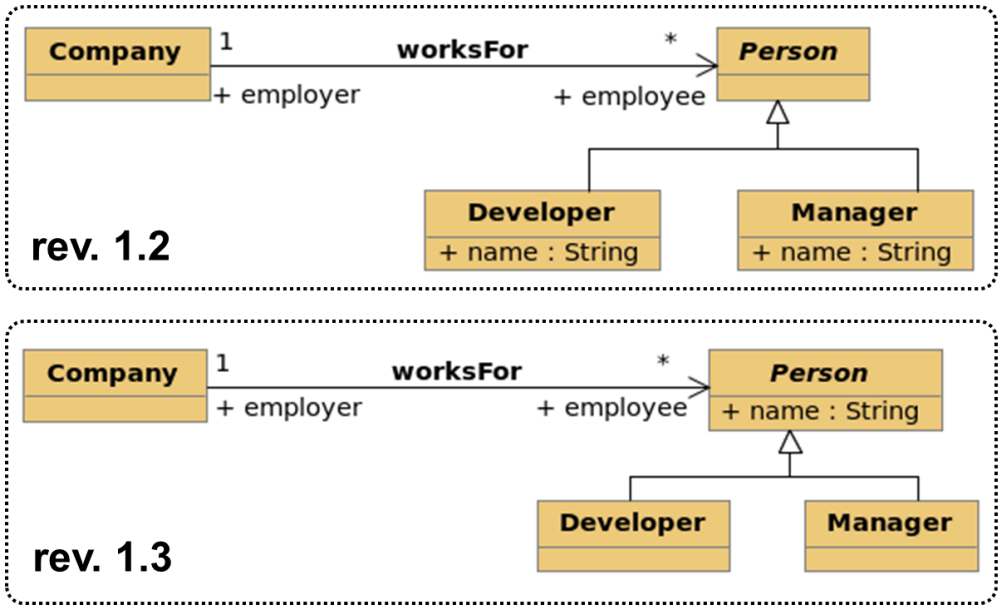
Section 1

Introduction

Edit Operations...

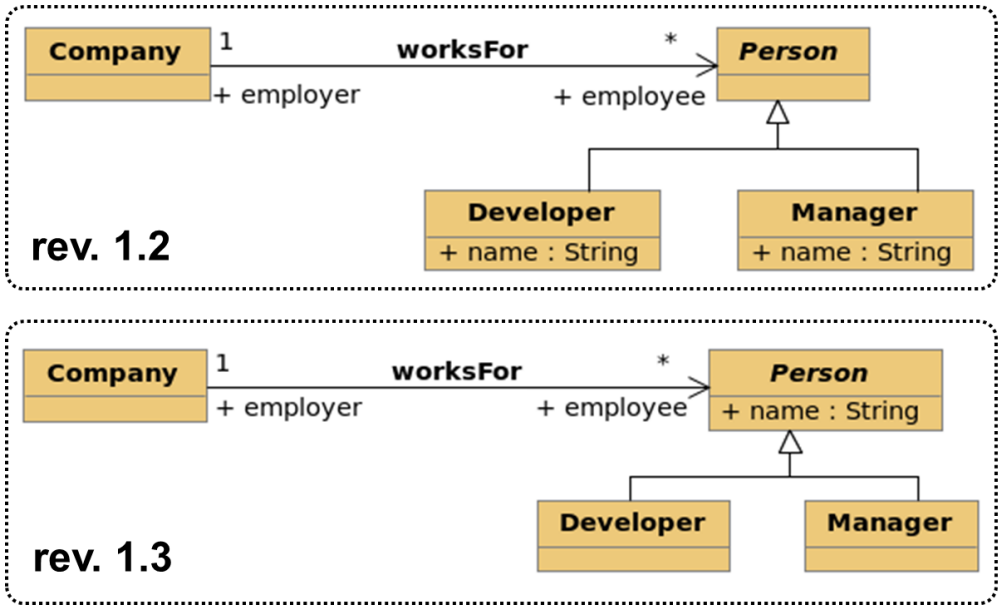
- ...define **Building Blocks** of (common) changes
- ...are specified as a **rule**, defining:
  - (Parameterizable) Context
  - Changes to apply
  - Application Conditions
- ...can be used for:
  - Differencing
  - Patching
  - Merging
  - Refactoring
  - ...

Use Case: Model Evolution



Refactoring:
Pull up attribute

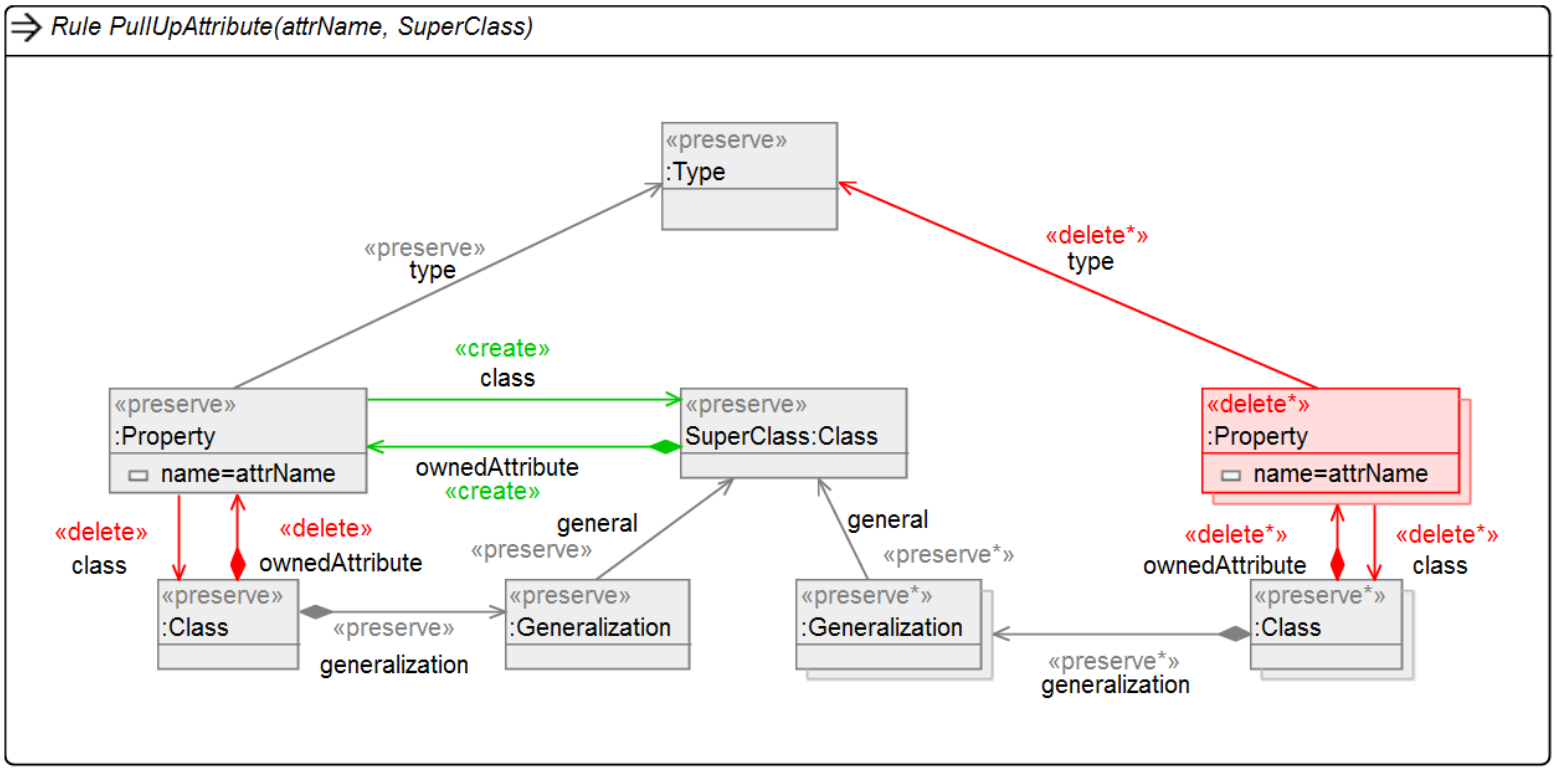
Used Edit Operation



Refactoring:
Pull up attribute

Edit Operation

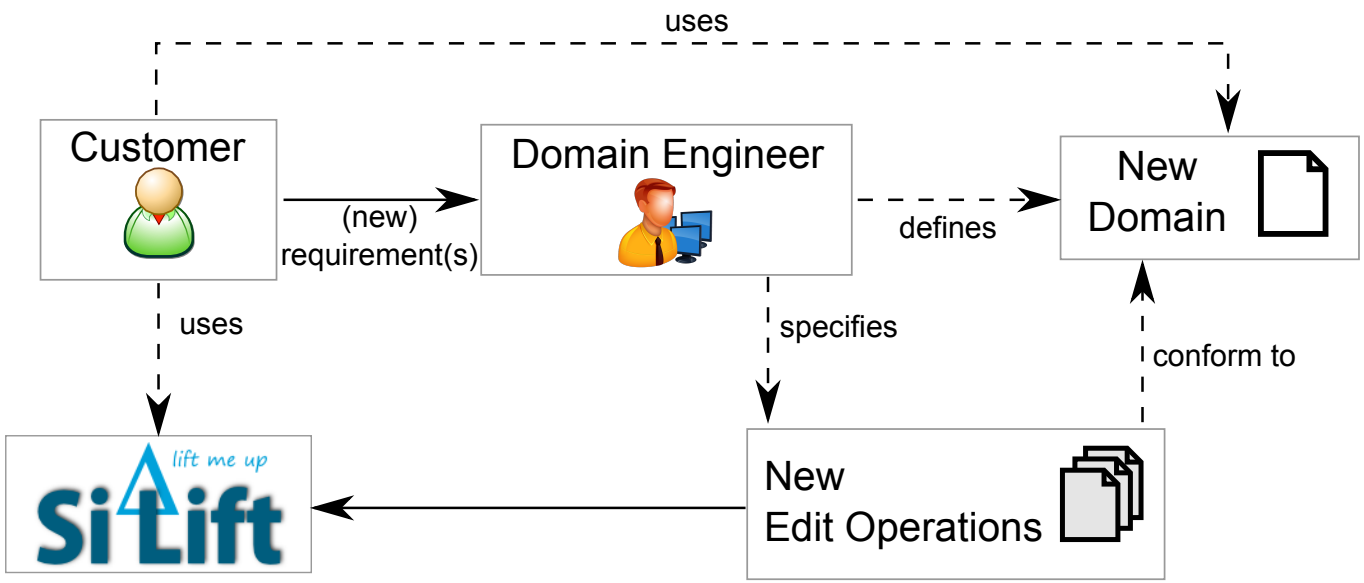
Edit Operation - Implementation



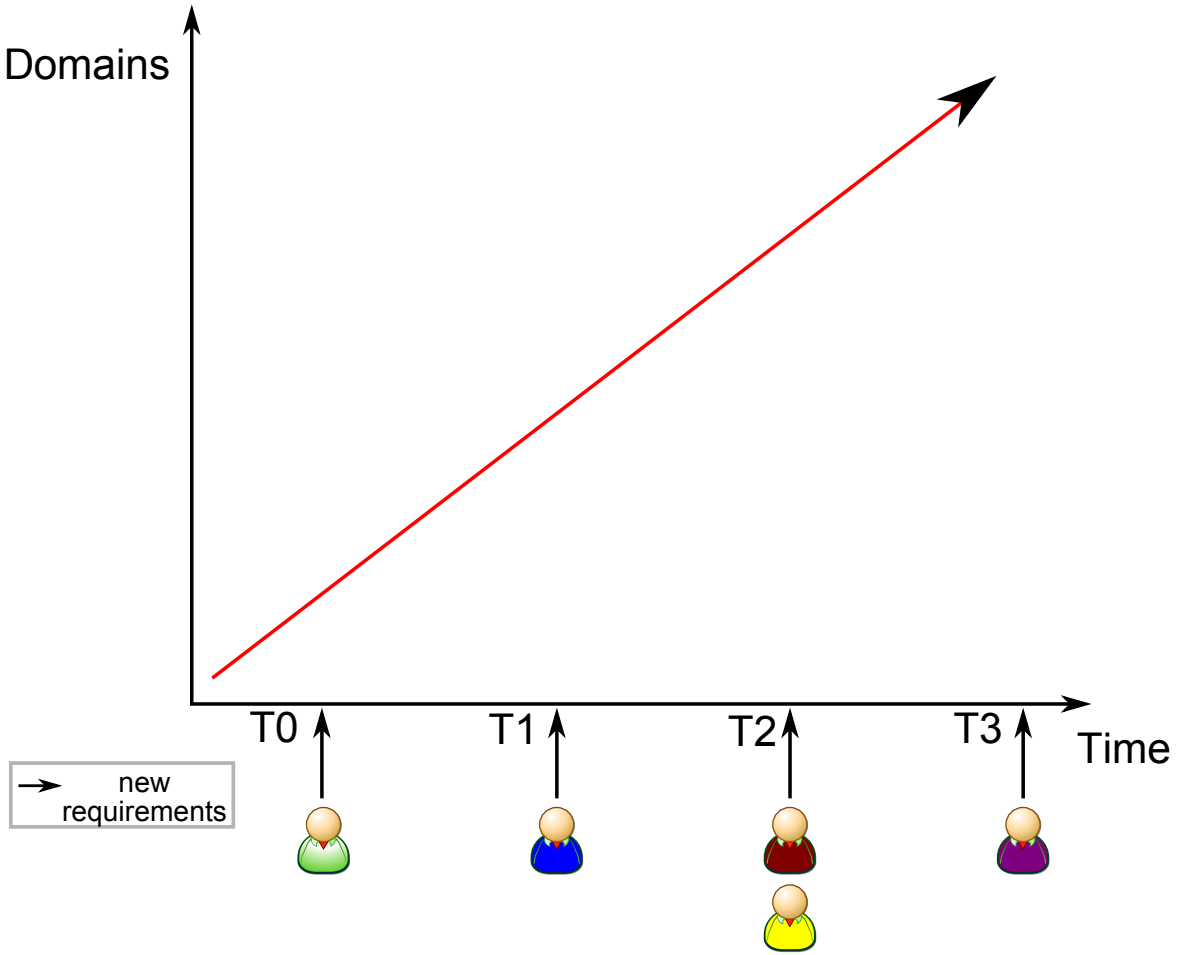
Section 2

Motivation

Roles in Development Process



New Domain - New Pain



New Domain - Less Pain

Support the Domain Engineer:

- Offer a framework for defining and using edit operations (see [1])
- Tight Eclipse Integration(Wizards, Dialogues, Views, . . .)
- Generate a **basic** set of edit operations **automatically** (see [2])
- **Validate** edit operations according to tool mechanisms
- Build derived artifacts **automatically**
- Offer automatic **Quickfix** if available

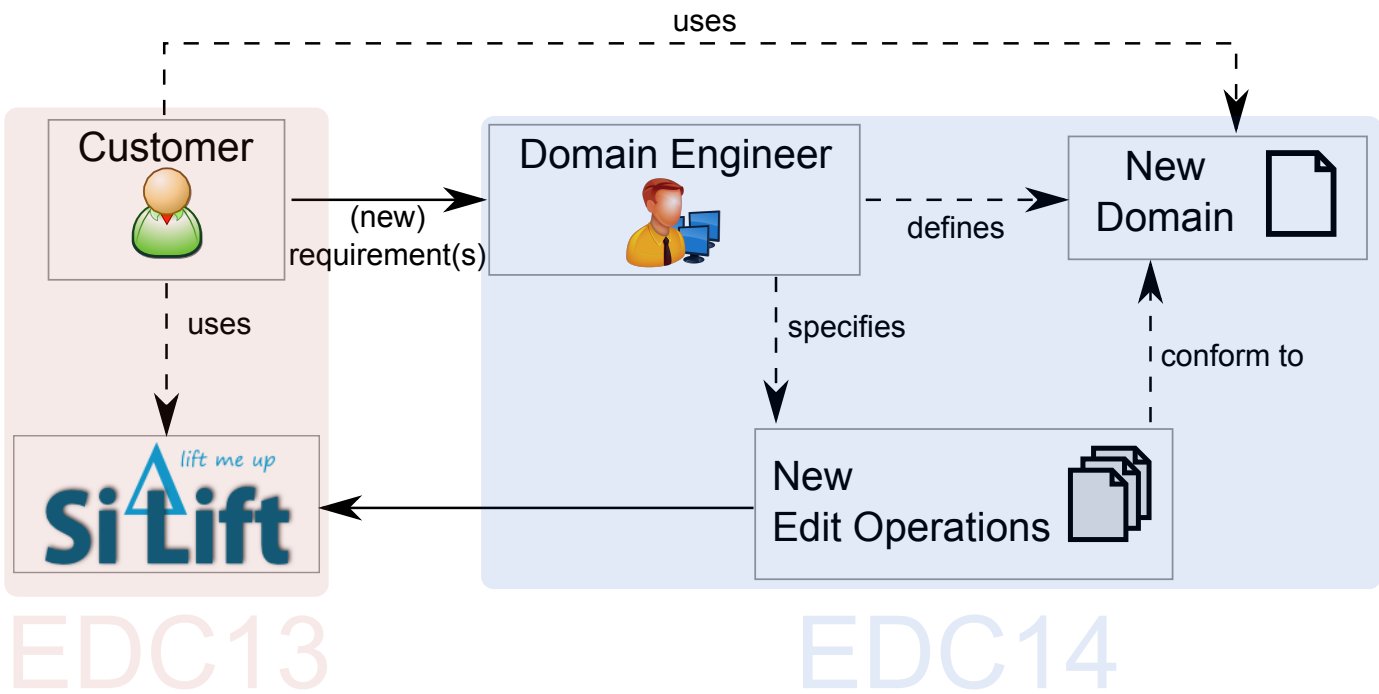
[1]T. Kehrer, U. Kelter, and G. Taentzer, "Consistency-preserving edit scripts in model versioning",in ASE 2013

[2]M. Rindt, T. Kehrer, U. Kelter, "Automatic Generation of Consistency-Preserving Edit Operations for MDE Tools",in Models 2014

Section 3

Tool Demo

Overview


uses
Customer
(new)
requirement(s)
Domain Engineer
defines
New
Domain
uses
specifies
conform to
lift me up
SiLift
New
Edit Operations
EDC13
EDC14

Tool Demo

Let's do it!

Section 4

Summary

Summary

- Edit Operations as **Building Blocks**
- Can be used in many scenarios:
  - Differencing
  - Patching
  - ...
- New Domain: New Pain
- Integrated Specification:
  - Eclipse-based Technologies
  - Editors/Projects
  - Generated basic Edit Operation set
  - Builder for derived artefacts
  - Validation + Quickfixing

▷ **New Domain - Less Pain**

Contact/More information

Download

Test for yourself:

- Used Tools (including Library Domain): `http://pi.informatik.uni-siegen.de/Projekte/SiLift/updatesite-edc14/`
- Example Instances + Edit Operations (as Projects): `http://pi.informatik.uni-siegen.de/Projekte/SiLift/downloads/edc14_example.zip`

Web

- `http://pi.informatik.uni-siegen.de/Projekte/SiLift`

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Personal

- Now ;-)