

Towards a Proper Integration of Large Refactorings in Agile Software Development



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Refactoring

- Refactoring is key part of many agile software development methods
- Refactoring belongs to the daily business of programmers
- Small refactorings (Rename Method, Extract Interface,...) are well understood and often supported by IDEs
- **But...**

Large Refactorings

- In medium- to large-sized projects more complex refactorings occur
 - Refactorings that need more than hours or days to complete
 - Refactorings that restructure central parts of an application
- This can happen even in the presence of merciless refactoring in the small

Why are they more complicated?

- They ...
 - ... are not realizable within one integration step
 - ... need a lot more time
 - ... are difficult to split up into small steps
 - ... are non standard refactorings
 - ... can affect huge parts of the system
 - ... contain the risk of getting lost
 - ...

Consequences

- Teams avoid large refactorings
 - Keep living with the smell
- They stop the normal development
 - To do the refactoring in a special time frame
- They do large refactorings in separate branches
 - Potentially high merge efforts
 - Risk of never finish the refactoring
- System broken for a long time
 - Because steps need a long time

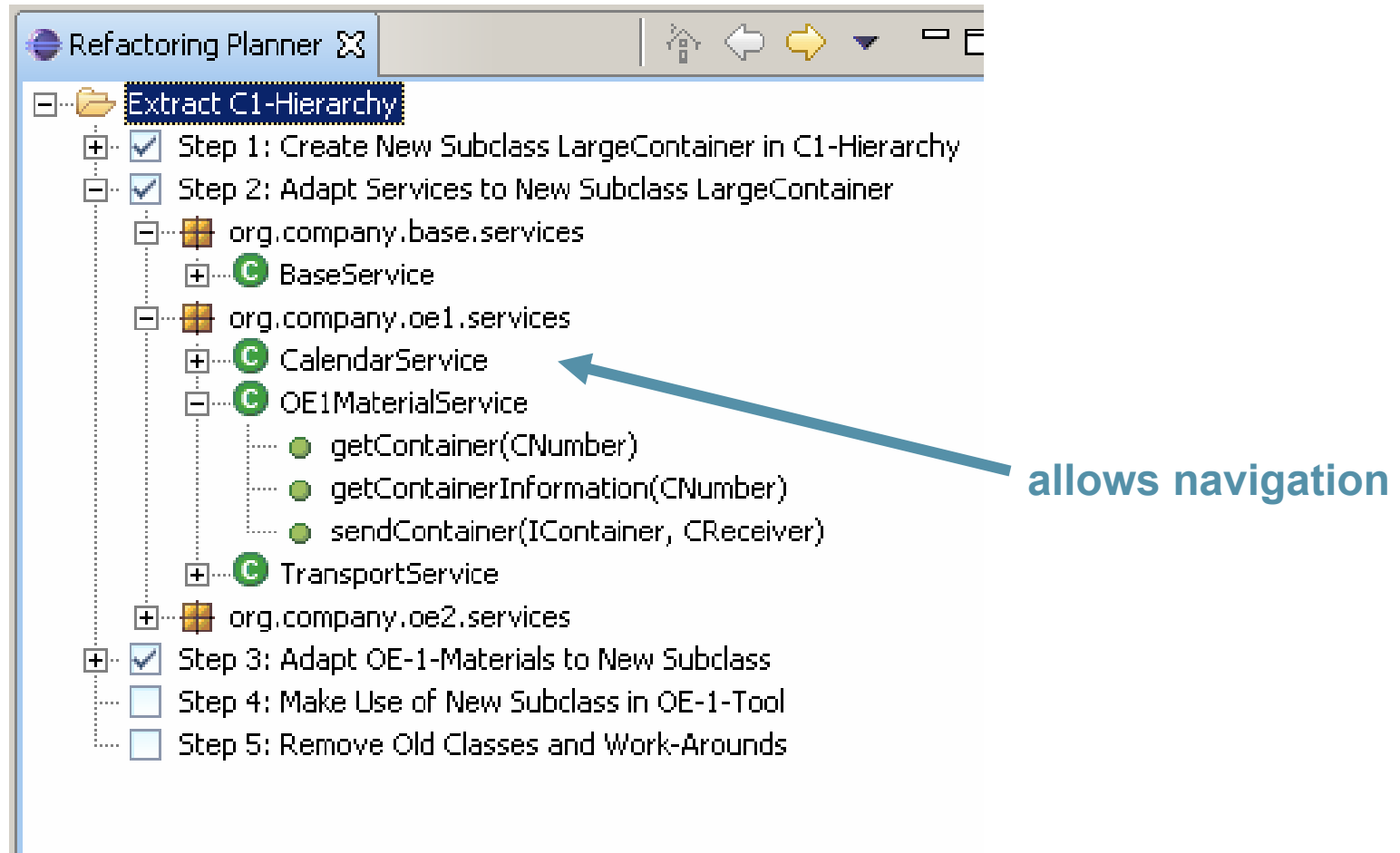
Towards an Integration

- My goal:
 - Allow teams to integrate large refactorings into the daily (agile) development

First steps

- Split the refactoring into small steps
 - Provide help for problematic refactorings, like inheritance hierarchy refactorings
- Make the refactoring route explicit
 - Discuss and write up a short plan that contains the steps of the refactoring

Tool Support for Electronic Refactoring Plans



(Mockup)

Next Steps

- Tool support:
 - Together with Marko Schulz (ask him for a quick demo of the current prototype)
- Mechanics for inheritance hierarchy refactorings
 - They allow you to restructure changes to the inheritance hierarchy step by step
 - The steps do not depend on the size of the system
 - <http://www.martinlippert.com/>

Thank you for your attention !!!

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