Motivation

The high complexity of modern software makes it unavoidable to develop software with the help of graphical, model based editors. Software models serve not only as documentation or as a rough system overview. They are also the fundament to generate an executable system.

The larger the application the more persons are involved in the design and development process. Simultaneous changes on a model are very common. With these concurrent changes conflicts can occur.

There is a need of interpersonal communication to solve emerging questions and avoid misunderstandings. Especially in the early stage of software development diversities might occur easily because the semantics of models can be interpreted in different ways.

To avoid such problems the communication within the team should be supported as much as possible. With good communication support it should be possible to obtain a consolidated solution of the problem in a collaborative way.

Goal

• To extend the basic idea of an editor for conflict resolution to an editor for collaborative development [1]
• To enable interactive model-driven software development for the Eclipse Modeling Framework

Design Approach

• Use the Eclipse Modeling Framework as a solid basis
• Platform independent
• Result: ToSCMoDD, ("Tool for Synchronous Collaborative Model Driven Development")

Tool Analysis

We had a look at the tools: DAWN [2], CAMEL [3], CDO [4] and SLIM [5]. We compared them and added the most useful features to the requirements list of our design approach.

Implementation

• Focused on enhancing CDO, the most promising tool
• Added a feature that enables the user to merge a source branch point to a target branch point
• Challenge: No changes to the core of CDO

Conclusion

Currently there is no released version of a fully functional collaborative editor. Only beta versions of such tools are available. We extended one of these tools with the merge feature.

References