Version Control for Models: From Research to Industry and Back Again

[Keynote]

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1. ABSTRACT

Version control for models, including model diff & merge, is not only a crucial prerequisite for a wide-spread adoption of model-based engineering in industry, it also is and has been a popular and very active research topic since more than ten years. Several important algorithms and approaches emerged in the past to support the identification of differences among model versions, as well as to merge them into a new version. Many of those ideas have also been successfully transferred and implemented in proprietary and open-source modeling tools used in industry.

During the last few years, especially Eclipse-based open-source modeling tools, including support for version control built on Papyrus, EMF Compare, and EGit, gained significant attention and evolved into an industry-ready platform for building modeling tools in several domains. With this increasing industrial usage, however, the involved open-source technologies are challenged in different aspects ranging from the requirement for full customizability, performance with very large models to usability supporting users with strongly varying backgrounds.

In this talk, we report on our experiences gained from moving from research in the area of model diff & merge to applying and enhancing open-source technologies, such as EMF Compare, EGit, and Papyrus for industrial use. We discuss engineering and research challenges that we faced when working with industrial users and how we approach them. Several of those challenges are still open though and require a strong collaboration of researchers, technology providers, and industrial users. Open-source platforms and technologies are a great opportunity to enable such a collaboration. This is also one of the key motivations behind the Papyrus Industrial Consortium, which was founded to foster collaboration among academia and industry in the area of open-source modeling tools based on Papyrus, EMF Compare, and EGit.

2. BIOGRAPHY

Philip Langer is senior software architect and general manager of EclipseSource Services GmbH. He has more than eight years of experience in developing modeling tools based on Eclipse technologies and is an active committer on a number of EMF-based technologies. Besides, he is architecture board member of the Papyrus Industrial Consortium, where he leads the development of collaborative modeling tools to facilitate diff/merge of models within Papyrus UML, SysML, and UML-RT. Philip authored more than 50 articles in scientific journals, conferences, and workshops in the area of model-based engineering and received the Award of Excellence by the Austrian Government in 2012 for his PhD thesis on model versioning and model transformation at the Vienna University of Technology.