

Customer Success Story

**LemonTree for Product
Family Engineering
for preh car connect**



Automotive

preh car connect

EN

 **LieberLieber**

LieberLieber Software: LemonTree for Product Family Engineering

The rapidly-growing automotive supplier Preh Car Connect GmbH is re-establishing its software development on the Product Family Engineering methodology. Preh engineers, already longtime Enterprise Architect users, were recently introduced to LemonTree from LieberLieber. The new concept was unveiled in a joint presentation and is nothing short of ambitious.

Vienna/Dresden – Product Family Engineering (PFE) helps companies more easily reuse or issue new versions of software they have already created. The resulting variants differ in their functional scope, but the basic components of the software are used again and again. Computer scientist Tim Michaelis, software architect at Preh Car Connect: “As our company continues to see strong growth and the implementation of numerous series projects, we can effectively use components of our own software again and again. So far, however, this has only been possible through the laborious manual copying of software architecture models. Together with LieberLieber, we are now working on a project that will automate such processes. LemonTree is an important building block for us in order to be able to implement these development steps faster and more easily.” At Preh Car Connect, a total of approx. 1,200 employees work at eight locations worldwide. The headquarters and central development site of the company is located in Dresden. For more than 20 years, the company has been developing and producing high-quality infotainment systems for well-known OEMs such as the Volkswagen Group.



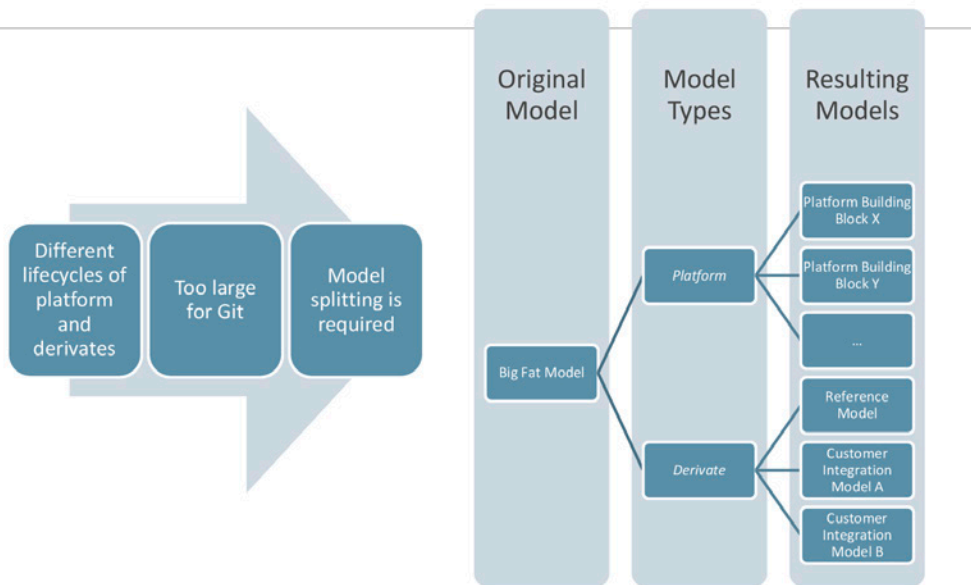
Computer scientist
Tim Michaelis
software architect at
Preh Car Connect

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All images (except Roman Bretz): Preh Car Connect

WHAT IS MISSING?



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Presentation at TdSE 2017 – LieberLieber CTO Roman Bretz and Tim Michaelis presented the new concept at the “Tag des Systems Engineering 2017” conference (TdSE 2017, engl.: “Systems Engineering Day 2017”), held from November 8-10 in Paderborn, Germany. The presentation, entitled “Model Versioning in Product Family Engineering with Enterprise Architect and LemonTree,” highlighted how cost and innovation pressures are the key drivers for the changeover to a PFE approach. Roman Bretz: “At the TdSE 2017 conference we introduced our concept for distributed work on various model versions while always keeping the 'basis software platform' consistent. The main idea behind it is the application of already-existing approaches that are well established in the area of source code configuration management.” The growing necessity to tighten development cycles requires close cooperation of all customer project and platform development stakeholders. The situation wherein complex products made up of many components are managed by special teams that previously worked on a common model has brought forth completely new challenges at the model level. To establish the so-called “basis software”, which forms the core of the individual product lines, as an independent platform and to adapt and expand it into individual customer projects is not possible within the standard functionality of today’s modeling tools.



Roman Bretz
CTO at LieberLieber

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Taking steps toward Product Family Engineering – A study published in 2017 by the German management consultancy Unity AG (see box) describes various stages of expansion in PFE. Although there is a clear move away from integration to anticipation in software engineering, in a practical sense this reorientation is still in its infancy. Michaelis: “PFE represents a big change to us in the company, to which the support provided by tools such as LemonTree is important. It helps us to more precisely track changes in the project models.” The introduction of this new method places Preh squarely among the pioneers in the automotive industry, achieved with the help of LieberLieber experts. Bretz: “We are proud to bring our know-how into this project. It’s a perfect fit with our company philosophy, which is to apply only state-of-the-art methods in practical model-based software and systems engineering scenarios.” As verified by the aforementioned study (p. 22), in this field there is certainly still enough to do: “In digital transformation, model-based systems engineering is the basis for mastering the complexity of vehicle development. The model-based approach promotes standardization. Distributed development, variant management and cross-domain mechatronic development processes are becoming more effective and efficient.”

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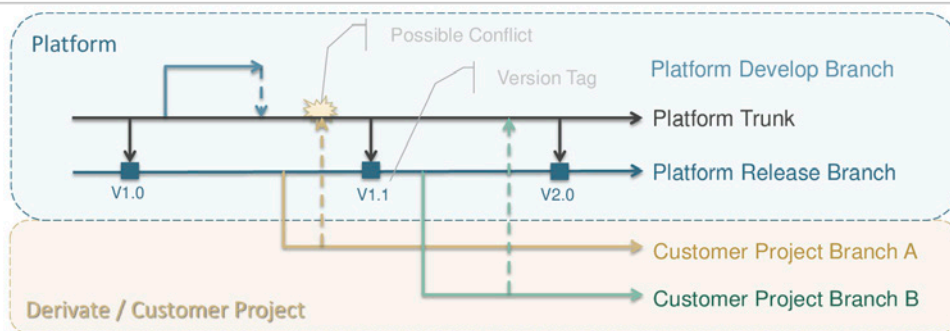


STUDY: AUTOMOTIVE INDUSTRY IN TRANSITION

In its study entitled “The Digitization of Product Creation – The Automotive Industry in Transition,” Unity AG sheds light on the digitization of product development in the automotive industry: “To summarize, all these challenges point to two aspects: complex, networked contexts and high rates of change. Both will not be manageable with current development methods. Instead, it is important to establish new and consistent model-based processes on a cross-disciplinary system engineering foundation.” (p. 12). In regards to model-based PFE, the article states: “Model-Based Product Family Engineering promises to escape this dilemma. Overriding goals are the control of the variance and the shortening of the time to market. At the same time, improvements in individual components are to be reflected in many different products... In addition, the model-based approach ensures both the consistency of development work and the singularity of the development effort.” (p. 23)

Schulze, S.-O./ Steffen, D./ Wibbing, P./ Wigger, T.: OPPORTUNITY: Die Digitalisierung der Produktentstehung – Die Automobilindustrie im Umbruch, UNITY, 2017

PLATFORM ASSET LIFECYCLE



Source Code Management fits perfectly

Versions management	Branching and merging	Tagging versions	Distributed and concurrent work on same asset	Conflict resolution
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ABOUT THE PREH GROUP

Preh Car Connect GmbH is a member of the Preh Group. A globally-established automotive industry supplier and automation specialist, the Preh Group has over 6,000 employees with an annual turnover of well over one billion euros. Preh was founded in 1919 in Bad Neustadt an der Saale, Germany, and since 2011 has been part of the Joyson Group. The development and manufacturing capabilities of Preh include, in particular, HMI systems for passenger cars and commercial vehicles, infotainment and connectivity solutions as well as e-mobility control units. Preh represents the Automotive Electronics division within the Joyson Group of Companies based in Ningbo, China, founded in 2004 by Jeff Wang. Joyson is one of the world's 100 largest automotive suppliers.

www.prehcarconnect.com



ABOUT LIEBERLIEBER SOFTWARE

We are a software engineering company. The know-how of our employees lies in model-based software and system design based on tools such as Enterprise Architect from Sparx Systems.

Our customers are companies that place particular importance on the quality of their software and systems development. They wish to maintain a constant overview of their complex development scenarios while ensuring that security-relevant requirements are clearly represented in models.

For this task we provide our own special tools, such as LemonTree and Embedded Engineer. In addition, we offer a range of useful tool integration services to help make our customers' development processes more productive.

Get more information at www.lieberlieber.com



Ask for a free Trialversion
or Web-Demo:
welcome@lieberlieber.com

LemonTree® Fresh Model Versioning