

# MES USER CONFERENCE 2016

October 6-7, 2016

Berlin

10 YEARS OF QUALITY - IDEAS FOR TOMORROW

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## Word of Welcome from our CEO

Welcome to the second MES User Conference!

MES celebrates its 10<sup>th</sup> anniversary this fall. For us, this means 10 years of developing our software tools for quality assurance in model-based development, the MES Test Center testing software models for our customers, and our MES Academy experts supporting our clients in projects and training workshops. This is a time for us to look back, to assess where we stand today, and to develop visions of what the future holds. Therefore, to celebrate this anniversary, we gave this year's MES User Conference the title: "10 YEARS OF QUALITY - IDEAS FOR TOMORROW".

This year's program is very promising. Customers, scientists, and partners have gathered here to review past years, to present new challenges and their solutions, and to propose visions for the future. We look forward to interesting discussions.

We will present the latest developments of our software tools, as well as our goals – set according to your feedback –, and propose our ideas for the future.

We are excited and look forward to the next two days, to discuss and exchange ideas, to look towards the future, and to celebrate our 10<sup>th</sup> anniversary with you here in Berlin.



Dr. Heiko Dörr  
Berlin, October 2016

## Thursday, October 6, 2016

8 a.m.	Registration and coffee
10 a.m.	Welcome Address Dr. Heiko Dörr (CEO - Model Engineering Solutions GmbH)
	<b>BLOCK I: PROCESS &amp; QUALITY MANAGEMENT</b>
10:30 a.m.	AVL Model-based Embedded Software Development Platform. An Example of Tool-supported Process and Quality Improvement Dominique Louarn-Pioch (AVL Software and Functions GmbH)
11:00 a.m.	Quality Assurance in Software Development Based on the Example of BMW i3 Alexander Siller (BMW AG)
11:30 a.m.	MES Quality Commander® (MQC): Keep Track of Projects and Processes in the Face of Increasing Complexity Anja Stoll (Model Engineering Solutions GmbH)
11:45 a.m.	Lunch
	<b>BLOCK II: MODEL TESTING</b>
1:00 p.m.	Tool Classification Made Easy – The Making of an ISO 26262 Tool Classification Kit Dr. Mirko Conrad (samoconsult GmbH)
1:30 p.m.	Establishing Model-based Software Development - A Retrospect Dr. Heiko Zatocil (Siemens AG)
2:00 p.m.	Shaping Solutions for Next-gen Challenges in Testing Automotive Software Dr. Hartmut Lackner (Model Engineering Solutions GmbH)
2:30 p.m.	Accelerating and Safeguarding your Test Projects - What a Test Tool Should Do for You Martin Hill (Model Engineering Solutions GmbH)
2:45 p.m.	Coffee break and exhibition
	<b>KEYNOTE</b>
3:15 p.m.	Model-Driven Service-Oriented Systems Engineering: Opportunities & Challenges Prof. Dr. Holger Giese (Hasso-Plattner-Institut)
4:00 p.m.	The Automotive MBD Market in Japan Masaru Hagiwara (BTC Japan)
4:30 p.m.	Consulting for Model-based Development in Compliance with ISO 26262 – And Beyond Dr. Thomas End (Model Engineering Solutions GmbH)
4:45 p.m.	Evening program and dinner

## Friday, October 7, 2016

9 a.m.	The Future of Model-based Development Dr. Heiko Dörr (CEO - Model Engineering Solutions GmbH)
	BLOCK III: STATIC ANALYSIS
9:30 a.m.	TargetLink News About Guidelines and Checks Carsten Rustemeier (dSPACE GmbH)
10:00 a.m.	Enhancement of Model Quality Through Measurable Guidelines Alexander Dolpp (Mercedes-Benz Research & Development North America, Inc)
10:30 a.m.	MES Model Examiner® DRIVE Application at its Best – Support of Shared Model Reviews Anna Trögel (Model Engineering Solutions GmbH)
10:45 a.m.	Are Today's Guidelines Sufficient for the Future? Sophia Kohle (Model Engineering Solutions GmbH)
11:00 a.m.	Coffee break
	BLOCK IV: SYSTEM DESIGN
11:15 a.m.	Thinking of Tomorrow in <b>Today's</b> Model-based Heat Pump Software Development Matthias Stursberg (Vaillant GmbH)
11:45 a.m.	Model-based Systems Engineering – Challenges and Benefits Dr. Jan Meyer (Hella KGaA Hueck & Co.)
12:15 a.m.	Software Metrics For Visual Programming Languages Isabel Hungar (Volkswagen AG)
12:45 a.m.	Architectural Design Support with MES M-XRAY® Ferry Bachmann (Model Engineering Solutions GmbH)
1:00 p.m.	Lunch
2:15 p.m.	Efficient Process for Development of Safety Critical SW Applications Thanks to MBD Pierre Pilaz (JTEKT Europe S.A.S.)
2:45 p.m.	How to Meet Upcoming Challenges for Quality Assurance Dr. Hartmut Pohlheim (CTO - Model Engineering Solutions GmbH)
3:00 p.m.	Closing Session Dr. Heiko Dörr (CEO - Model Engineering Solutions GmbH)
3:30 p.m.	End of meeting

## Tool Classification Made Easy – The Making of an ISO 26262 Tool Classification Kit

*by Dr. Mirko Conrad (samoconsult GmbH)*

### Abstract:

The ISO 26262 Classification Kit for MES Test Manager® (MTest) is a convenient solution for tool classification developed in collaboration between MES and samoconsult GmbH. The talk provides insights into the 14 months long evolution of this tool classification kit, the choices that were made during the development process and the final result. In particular, we'll illustrate (1) how MTest was extended after an initial tool classification in order to reduce the burden on the tool user's side and (2) what activities need to be done when using the kit in an automotive software development project.



### Dr. Mirko Conrad

Dr.-Ing. Mirko Conrad serves as managing director of samoconsult GmbH, an independent provider of consulting and engineering services in the areas of functional safety and (model-based) system and software engineering. Mirko Conrad started his professional career at Daimler-Benz / DaimlerChrysler, where he developed and introduced methods and tools for model-based development and testing of ECU software. At MathWorks he had led the tool vendor's worldwide development activities in the area of functional safety. He also was responsible for creating and maintaining tool qualification kits for multiple industries. Mirko Conrad actively participated in the standardization of ISO 26262, DO-178C and the MISRA-AC guidelines. He oversaw the qualification / certification of 10+ software tools. Mirko Conrad holds a PhD in engineering and a MSc in computer studies from TU Berlin. He also serves on the management team of the special interest group for Automotive Software Engineering of the German Computer Science Society (GI-ASE) and teaches functional safety at TU München.

## Enhancement of Model Quality Through Measurable Guidelines

*by Alexander Dolpp (Mercedes-Benz Research & Development North America, Inc)*

### Abstract:

Mercedes-Benz Research and Development North America (MBRDNA) develops e-drive software for electrified powertrains within the Daimler product portfolio. The e-drive software is designed to be modularized and facilitates application of the same software on different vehicle platforms. Small variations in the system requirements for the target application lead to variants of certain software components within the system. Hence, challenges at the level of requirement management, SW integration, testing of delta content as well as management of calibration sets for the different variants arise. MBRDNA uses an integrated Life Cycle Management method to handle the complexity. MBRDNA utilizes a model-based software development environment to ease development and enable agility in the realization of this emerging powertrain technology. In order to avoid software design errors early on, guarantee optimal generated code and comply with the relevant safety standard according to ISO26262, the Daimler internal modeling guidelines are applied and are part of the automated Model Quality Assurance processes. To further increase the quality of the models, internal guidelines regarding model complexity exist but have been difficult to measure in the past. The transition from a subjective evaluation of complexity to a tool based methodology to objectively assess the complexity of the code, as well as a company-wide standardization of guidelines for model complexity, is currently ongoing. A major challenge is the definition of meaningful model complexity matrices for existing legacy content. Alexander Dolpp will explain tools, methods and processes which allowed Mercedes-Benz Research and Development to handle past challenges and what steps will be taken to deal with growing complexity in the future.

### Alexander Dolpp

Alexander Dolpp is the Director of E-Drive Software at Mercedes-Benz Research and Development North America in Redford, Michigan. In his role, he oversees model based controls, configures cores SW, implements safety per ISO26262 and tests SW for power electronics and control of electric motors. Mr. Dolpp has almost 20 years of automotive experience, built up over the course of various automatic transmission, hybrid and plug-in programs. He is a proven leader with a strong focus on powertrain product development and program management. He joined Mercedes-Benz through the University of Cooperative Education in Stuttgart, Germany and holds a Diploma degree in Electric Engineering.





## Model-Driven Service-Oriented Systems Engineering: Opportunities & Challenges

*by Prof. Dr. Holger Giese (Hasso-Plattner-Institut)*

Abstract:

Model-Driven Service-Oriented Systems Engineering: Opportunities & Challenges



### Prof. Dr. Holger Giese

Prof. Dr. Holger Giese studied technical computer science at the University Siegen. He received his engineering degree with excellence in October 1995. In February 2001, he received a doctorate in Computer Science at the Institute of Computer Science at the University of Münster with summa cum laude. Until 2006, he was an assistant professor for object-oriented specification of distributed systems in the Software Engineering Group of the University of Paderborn. He became a Full Professor for System Analysis and Modeling at the Hasso Plattner Institute for Software Systems Engineering in February 2008. His research focuses on model-driven development for software-intensive systems. This includes the model-based specification of flexible systems with collaborations and components, approaches to the formal verification of these models, and approaches to the synthesis of models. He also looks at the transformations of models, code generation concepts for structure and behavior for models and, in general, the problem of the integration of models in model-driven development. He was one of the PIs of the project B1 for Software Design Techniques of the Collaborative Research Center 614 "Self-Optimizing Concepts and Structures in Mechanical Engineering", funded by the Deutsche Forschungsgemeinschaft. The project studied methods and tools for the development of self-optimizing systems and thus combines the two fields Mechatronics and Computer Science by means of a modeling language for real-time systems supporting discrete and continuous behavior and their online reconfiguration, with particular attention to safety and dependability. Currently he is a member of management board and chair of the working group on foundations of the EU ICT COST Action IC1404 on Multi-Paradigm Modelling for Cyber-Physical Systems approaching Cyber Physical Systems (CPS) that integrate physical, software, and network aspects with Multi-Paradigm Modelling (MPM) that proposes to model every part and aspect of a system explicitly, at the most appropriate level(s) of abstraction, using the most appropriate modelling formalism(s).

# Software Metrics for Visual Programming Languages

## The Automotive MBD Market in Japan

by Masaru Hagiwara (BTC Japan)

### Abstract:

It is generally accepted that Model-based development (MBD) is a de facto standard for software development for both OEMs and suppliers in the Japanese automotive market, which is similar to Europe and USA. MBD was historically introduced in Japan under the influence of market trends from Europe and USA, and it becomes worldwide mainstream for software development nowadays. On the other hand, an original and unique development process has been used in Japan for a long time, where its own long technical development history exists. Examples are the development of Shinkansen train, home electronics or automobiles, and even the technology imported from outside of Japan has not been used ordinary in the original shape, but it has been mixed with Japanese own development process. In context of this history, also the MBD process in the Japanese automotive industry shows some specific characteristics. For instance, simulation based development, which is based on Simulink models and simulations, is simultaneously coordinated with concrete requirements, which are described by timing charts, state flow charts, various graphs and natural language. This process contributes to having better and more suitable requirements. In addition, it needs to be considered that both the Japanese management and engineering have the tendency to strive for a perfect quality, which does not only satisfy functional requirements and safety requirements but also gives complete test results. Due to this mentality a kind of modification of the MBD process is pragmatically required. In order to realize such a perfection and integrity in the field of MBD process, a high quality auto-code generator, much more optimized model and code guidelines and most importantly advanced testing and verification methods and tools must be developed and applied for all development processes. It is not difficult to imagine that a large amount of cost is required to realize all of them. In my keynote speech, I will introduce the efforts of OEMs and suppliers in Japan to realize the above mentioned goals and to what extent these goals have been realized.

### Masaru Hagiwara

1983:

FSI Japan Co. LTD. Sales Engineer of Semiconductor Processing Systems

1986:

Klockner Moeller Japan, LTD. Engineering Group Leader for PLC and PLC based industrial network systems

1988:

K.Mecs. Co. LTD. Engineering Manager

2007:

Representative Manager, BTC Japan Co. LTD.



*by Isabel Hungar (Volkswagen AG)*

Abstract:

In the development of complex programs, software metrics can help to identify potentially problematic components or issues with the software architecture. In the automotive domain, often Visual Programming Languages are used. Since such languages are not as often employed as traditional languages like C, there has only been limited work on specific programming guidelines and corresponding metrics for them. This talk presents an approach to fill this gap by transferring established software metrics to the domain of visual programming languages, staying consistent with programming guidelines.



## Isabel Hungar

Isabel Hungar was born in Kiel, Germany. She studied Computer and Communications Systems Engineering at the Technical University in Brunswick. Since 2012, she is a member of a team at Volkswagen developing management functions of Diesel engines with a focus on software architecture.

# AVL Model-based Embedded Software Development Platform An Example of Tool-supported Process and Quality Improvement

*by Dominique Louarn-Pioch (AVL Software and Functions GmbH)*

## Abstract:

AVL provides powertrain software control solutions from prototype to production to meet individual customer demands. For model-based design with MATLAB/Simulink, the AVL Powertrain Controls division has developed an integrated development platform called "AVLab". AVLab seamlessly bundles different tools together. MES MXAM is for instance part of this toolchain. The AVL solution ensures a continuity in the model-based development process, supporting each development step of the V-cycle, from modeling over testing to code generation. AVLab increases the efficiency and the quality of the model-based embedded software development by supporting a standardized component-based approach and therefore enabling the re-use of components. The AVL development platform ensures the traceability of all artifacts like requirements, test cases, models, data labels, and test results. The presentation gives an overview of AVLab, the AVL Embedded Software Model-based Development Platform, highlighting some key features and benefits.

## Dominique Louarn-Pioch

Dominique Louarn-Pioch is working as Process, Methods, and Tool Department Manager at AVL in the Powertrain Controls area. She is responsible for the definition, development, and maintenance of the development infrastructure (Processes and Toolchain) worldwide. Dominique works in the automotive industry since 1994. In 2008 she joined AVL Software and Functions in Regensburg. Previously she worked at Siemens Automotive, SiemensVDO, and Continental



## Model-based Systems Engineering – Challenges and Benefits

*by Dr. Jan Meyer (Hella KGaA Hueck & Co.)*

### Abstract:

The complexity of systems (system of systems) is increasing, which is evident in the automotive domain as well. The document-based approach which was often used for systems engineering is reaching its limit and new approaches are necessary. Model-based systems engineering is increasingly used in development processes to meet this challenge. This talk presents the necessary changes and the possibilities which can be achieved with the model-based approach by means of an automotive Electronic Control Unit (ECU) example, using the Systems Modeling Language (SysML). Furthermore, it will explain why a consistent and complete model is the basis for systems engineering and how automatic model checks can support this approach.



### Dr. Jan Meyer

Dr. Jan Meyer worked as a researcher from 2006 to 2011 at the Software Quality Lab (s-lab) of the University of Paderborn. He worked with different industrial cooperation partners on various research projects in the field of model-based and distributed systems and software engineering, especially in the automotive domain. Since 2011, he is working at HELLA KGaA Hueck & Co. in the Processes, Methods, and Tools Department (PMT). He is responsible for model-based system and software architecture using the modeling languages SysML, UML, and AUTOSAR, and also for real-time simulation.

## Efficient Process for Development of Safety Critical SW Applications Thanks to MBD

*by Pierre Pilaz (JTEKT Europe S.A.S.)*

### Abstract:

Electric Power Steering is one the most critical system in the car. Moreover autonomous Driving and Autosar are becoming state of the art for the new EPS system development. Those paradigms have strongly increased the software complexity of steering systems for the last 10 years. This presentation will explain how, from early prototype stage to mass production software development, JTEKT is using Model Based Design thanks to dSpace ecosystem tools (including MES and BTC) to succeed in those new challenges

### Pierre Pilaz

Pierre Pilaz is a manager of the SW design and production group in JTEKT Europe. His group is responsible of the internal development of the JTEKT applicative software for European electronic power steering project, from SW architecture and SW detail design, to SW integration by using MBD process



## TargetLink News About Guidelines and Checks

*by Carsten Rustemeier (dSPACE GmbH)*

### Abstract:

In today's embedded software development, efficient tool chains with well-coordinated tools play an increasingly important role. The Target Link Ecosystem provides a comprehensive collection of dSPACE tools and third-party tools for building powerful and efficient tool chains for model-based software development with TargetLink. With the MES tools M-XRAY and MXAM as part of the TargetLink Ecosystem, numerous requirements of the embedded software can already be checked at the model level. This presentation shows, among others, current and future developments concerning modeling guidelines and checks for TargetLink models.



### Carsten Rustemeier

Dipl-Math. Carsten Rustemeier studied techno-mathematics at the University of Paderborn and then worked as a research assistant at the Institute of Control Engineering and Mechatronics at the Heinz Nixdorf Institute of the University of Paderborn. Since April 2012, he is Product Engineer TargetLink at dSPACE GmbH.

## Quality Assurance in Software Development Based on the Example of BMW i3

*by Alexander Siller (BMW AG)*

### Abstract:

E-mobility makes high demands on its underlying development. Faster and more cost-effective processes are essential to keep pace with the competition. This applies not only to the hardware development of the energy storage or electric motors, but also to the embedded software of the e-drive system. The development of the BMW i3 included several new and partly unknown challenges. Reorganization on large as well as small scale, optimization of infrastructure, and a continuous process and product optimization were all prerequisites of meeting the expected quality standards within the framework of a tight schedule and budget. The necessary changes were the keys to success. However, changes include the risk of failing to achieve project goals in regard to software quality. The presentation describes how necessary changes were purposefully determined and guided by metrics and also how these metrics were subject to changes.

### Alexander Siller

Alexander Siller was born in 1973 in Sterzing, Italy. He studied Electrical Engineering at the Technical University in Munich where he acquired his Dipl. Ing. degree in 1997. He started his career and went on to work on model-based development, as project manager for safety critical modular software components and product manager for electronics at Knorr-Bremse Systems for Rail Vehicles in Munich. Since 2007 he is working for BMW in the development of power train focusing on process development, test strategies and software quality assurance





## Thinking of Tomorrow in Today's Model-based Heat Pump Software Development

*by Matthias Stursberg (Vaillant GmbH)*

### Abstract:

This case study explains how the new 150% model-based application software platform is developed for all future Vaillant Group heat pump systems. It especially focuses on software quality for the entire product lifecycle and the efficient parallelization of development activities. This holistic approach relies heavily on thorough, yet flexible requirements, software architecture and control algorithm foundations combined with full traceability and continuous process improvement.



### Matthias Stursberg

Matthias Stursberg studied Information Technology at the University of Wuppertal and works in electronics development at the heating systems manufacturer Vaillant GmbH in Remscheid since 2005. After several years as software engineer for embedded systems, he took on project management tasks, then worked as an expert of model-based software development. He is currently responsible for model-based ECU software development in the electronics division.

## Establishing Model-based Software Development – A Retrospect

*by Dr. Heiko Zatocil (Siemens AG)*

### Abstract:

Model-based software development with automatic code generation is a widely-used technique especially in the automotive industry. Thus, starting from scratch and selecting the tools, defining the workflows, establishing the processes etc. is not really a day-to-day business in well-established organizations. The presentation deals with the experiences which were gained during the last five years within an automotive start-up: from a blank sheet and plenty of ideas to a seamless and powerful tool-chain for a multi-serial-projects company.

### Dr. Heiko Zatocil

Heiko Zatocil was born Sept. 1979 in Nuremberg, Germany. He studied Electrical Engineering and received the Dr.-Ing. degree in 2009. From 2009 to 2010 he was with Baumüller Nuremberg. From 2010 to 2015 he was with the Siemens AG business unit eCar Powertrain Systems where he worked as a group leader and was responsible for the function development and the implementation of the model based software development. Since 2015 he is with Siemens AG Advanced Technologies where he works as a research engineer.



# Our MES Speakers

## Architectural Design Support with MES M-XRAY®

*by Ferry Bachmann (Model Engineering Solutions GmbH)*

### Abstract:

This talk will focus on two architectural aspects of MES M-XRAY®. First, complexity decomposition in Stateflow will be discussed with special regard to the new Stateflow metric of M-XRAY v. 3.0. Secondly, a new feature of the upcoming M-XRAY release will be presented: metrics for coupling and cohesion. Giving concrete examples, we will demonstrate how these metrics can evaluate the model architecture and reveal existing design flaws.

### Ferry Bachmann

Ferry Bachmann joined MES in 2014 as Product Manager and is responsible for the development of MES M-XRAY®, achieving considerable progress in model complexity definition. He also supports MES tool development in the automation of internal quality assurance by means of continuous integration and Jenkins.



## Consulting for Model-based Development in Compliance with ISO 26262 – And Beyond

*by Dr. Thomas End (Model Engineering Solutions GmbH)*

### Abstract:

The implementation of ISO 26262 requirements in model-based software development constitutes a major challenge for OEMs and suppliers. The MES Academy has expanded its expertise in developing safety-critical software during numerous consulting projects concerning model-based and ISO 26262-compliant software processes. This expertise enables us to present solutions that have proven themselves in practice, including the introduction, enhancement, and optimization of development processes for software and tools, and applications and concepts to optimize model-based software development. Customers of the MES Academy benefit from this expertise in the form of webinars, trainings, specially customized in-house training workshops, as well as process implementations. This presentation presents proven strategies of the MES Academy in general and on the basis of conclusive examples.



### Dr. Thomas End

Dr. Thomas End is Senior Software Consultant for automotive software at Model Engineering Solutions. He advises OEMs and suppliers in ISO 26262-compliant model-based software development and in definition and implementation regarding the development of integration processes. Dr. End lends his high expertise to the training workshops of MES Academy as well. He supports our clients in developing methods for early validation of their products and in defining their model-based software development processes.

## Accelerating and Safeguarding your Test Projects – What a Test Tool Should Do for You

*by Martin Hill (Model Engineering Solutions GmbH)*

### Abstract:

The talk focuses on the typical stages of a test process and their related testware artifacts, highlighting typical tasks and challenges. It discusses how a modern test tool can help the user through all test activities, how a speedup can be achieved and potential pitfalls avoided. It also addresses the subject of maintaining a bird's eye view of your test project. The talk closes with an outlook on what to expect from MES Test Manager® in the future.

### Martin Hill

Martin Hill is Product Manager for MES Test Manager® (MTest) and responsible for projects in the fields of quality assurance, modeling, and model checking as well. Mr. Hill studied aerospace engineering and now focuses on automotive model-based testing, as well as successfully managing test projects.



## Are Today's Guidelines Sufficient for the Future?

*by Sophia Kohle (Model Engineering Solutions GmbH)*

### Abstract:

Demands on software functionality in model-based development are permanently increasing. Selected modeling languages support developers with a growing number of features and modeling capabilities. However, this also leads to increasing possibilities for error. Guidelines should continue to support developers in complying with a unified modeling style. Taking all these aspects into account, this presentation focuses on key topics of modeling guidelines in the future.



### Sophia Kohle

Sophia Kohle is Product Manager for check and guideline development for MES Model Examiner® (MXAM). As product manager Sophia Kohle defines the strategic objectives for the development and advancement of model checks. Her current focus is on the latest and future versions of dSPACE modeling guidelines and guidelines to cover requirements of ISO 26262. Sophia Kohle also supports customer projects in which company-specific guidelines and checks are implemented in MES Model Examiner®.

## Shaping Solutions for Next-gen Challenges in Testing Automotive Software

*by Dr. Hartmut Lackner (Model Engineering Solutions GmbH)*

### Abstract:

In this talk we present current challenges in software testing and solutions provided by the MES Test Center. This includes how to put new methods for testing multivariable systems into practice. Furthermore, we present insights into testing the recently launched ENABLE-S3 research project, with a spotlight on safeguarding emerging advanced driver assistance systems to support the autonomous vehicle revolution.

### Dr. Hartmut Lackner

Dr. Hartmut Lackner is Head of MES Test Center since 2016. His motto: “Life is too short for manual testing”, indicates his commitment to automated testing. This topic has already accompanied him during his doctorate at the Humboldt University in Berlin, at the Fraunhofer Institute FOKUS, and as head of industrial research projects. As Head of MES Test Center, he advances the development of testing complex software models. Keeping our customers and their requirements in focus at all times, he and his team always deliver highest quality service.





## MES Quality Commander® (MQC): Keep Track of Projects and Processes in the Face of Increasing Complexity

*by Anja Stoll (Model Engineering Solutions GmbH)*

### Abstract:

It is an indisputable fact that the complexity of software projects keeps rising in correlation to the increasing functionality of automotive software. Convenient tracking of product and process quality has become mandatory, especially in the case of safety-critical software with a need for fast error detection. Consequently, the secret lies in the intelligent structuring and abstraction of all product and process data to build a smart walkthrough for quality monitoring – as demonstrated in this presentation of MES Quality Commander.



### Anja Stoll

Anja Stoll is Product Manager for MES Quality Commander® (MQC) within the framework of our agile product development with SCRUM. She is the interface to our customers and her experience is invaluable at the point where customer requirements and product development need to overlap. At MES she has already demonstrated her skills in this regard by managing related issues in developing a tool environment for model-based testing for a large automotive manufacturer.

## MES Model Examiner® DRIVE Application at its Best – Support of Shared Model Reviews

*by Anna Trögel (Model Engineering Solutions GmbH)*

### Abstract:

Today function developers are under enormous time pressure and have to meet high quality standards. According to ISO 26262 (6-4), they must justify any deviation from established safety measures and non-compliance with requirements. Therefore, it is even more important that individual tools support efficient workflows and adherence to strict quality processes within a comprehensive tool chain. This presentation will show you how the MES Model Examiner® not only provides automated examination/analysis and assistance in complying with modeling guidelines, but also support during necessary review activities: reviewing and justifying deviations, as well as reviewing guidelines which cannot be checked automatically.

### Anna Trögel

Anna Trögel is Product Manager for MES Model Examiner® (MXAM). As the very first colleague to join the MES Team, Anna Trögel has been driving the development of MES Model Examiner forward and has significantly influenced the look and functionality of MXAM DRIVE. Her comprehensive experience as quality manager greatly benefits the entire MES tool chain.



## Our Management Team

## Dr. Heiko Dörr

Heiko Dörr has been appointed CEO of Model Engineering Solutions (MES) in Berlin in January 2016 after years of experience as a managing partner. Knowing the use of model-based development from the very beginning, he strives to open new fields for its application. He ensures that the competences within the company are well-aligned to drive quality in all areas of the company into the right direction.



## Dr. Hartmut Pohlheim

Hartmut Pohlheim is the strong backbone of our technology development. He is CTO out of a firm conviction and manages customer projects as well as our in-house software development team under tremendous time and quality pressure. Our customers value his inexhaustible technical knowledge and his pragmatic, hands-on approach to challenging technology questions. Testers fear him for his zero tolerance policy when it comes to errors.





## The History of Soho House

The ominous structure at Torstrasse 1 in Berlin's Prenzlauer Berg district has stood empty for over a decade. The building with the austere facade didn't just bear witness to Germany's complex and violent history - it is a material testament to it. Having survived the Allied bombing campaign, Torstraße 1 has come to exemplify the cycle of appropriation and expropriation by Germany's changing regimes; regimes which not only altered the building's purpose but also the very name of the street name upon which it stands.



Founded in 1928 by Jewish merchants Hermann Golluber and Hugo Haller, the building's symmetrical exterior is a fine example of the architectural style of *Neue Sachlichkeit* (New Objectivity) popular in Germany at the time. Its address was Lothringer Straße 1. Originally named *Kaufhaus Jonass*, the nine story building served as a department store for the poor. It was located on the fringes of the *Scheunenviertel* (Barn Quarter), a neighborhood regarded up until World War II as a Jewish slum with a high proportion of Eastern European immigrants.

The store was based on a credit system, allowing the poverty stricken customers to make a 25 percent down payment upon purchase and pay the rest on an installment plan. A cafe was built on the roof terrace, giving the *Kaufhaus Jonass* a look that was anything but impecunious.

Only four years after its construction, owners Golluber and Haller brought two non-Jewish workers into the management in order to evade the building's confiscation by the Nazis. What appeared to be a successful plan soon went awry as the new managers ousted the owners, shut down the department store and subsequently sold the building to the NSDAP in 1942.

The Nazis, who regarded department stores in general as an essentially Jewish endeavor, quickly turned it into the administrative center of the *Reichsjugendführung* - an elite paramilitary division of the Hitler Youth.

At the end of World War II, the building was nationalized by the East German SED - an unopposed political institution born out of the unification of the Social Democratic Party (SPD) and the German Communist Party (KPD). The SED planned to use the building to house their Central Committee.

To mark the unification of the two parties, the house was given the name *Haus der Einheit* (House of Unification), which, in light of the erecting of the Berlin Wall some ten years later, seems almost poetically inappropriate.

Wilhelm Pieck, the first and only President of the GDR, had his offices here, as did the country's first Prime Minister, Otto Grotewohl. While their leadership was honored by two memorial plaques on the building's facade after their deaths, Lothringen Straße 1 had already been renamed Wilhelm Pieck Straße by 1951. Here, trials were held against both a real and imagined opposition. Predetermined verdicts were announced and death penalties declared. The collectivization of agriculture and the expropriation of plants and factories began here - measures which soon became themselves the haunting specters of communist economies.

In 1959, the former department store for paupers became the Institute for Marxism and Leninism, housing the files of the SED, the archives of the defunct KPD, and the offices of numerous other communist organizations.

After the fall of the Berlin Wall, these files were confiscated by the Federal Republic of Germany, who eventually donated them to the *Archiv der Parteien und Massenorganisationen der DDR*, a foundation dedicated to the research of the GDR's various political parties and organizations. The street was renamed Torstraße, and the building remained empty for years.

Fortunately, founders Golluber and Haller had already escaped Nazi Germany by 1939. Following German reunification, the owners' descendants were located at the behest of the Jewish Claims Committee and given back the property. However, it soon became clear that in its derelict state, the building's renovation would cost more than the property itself. The relatives looked for potential investors, but without success.

Finally in 2007, the British-German Cresco Capital Company bought the building and agreed to the terms of renovation laid out by Berlin's State Office for Historical Monuments. Today, the 80 year-old building has experienced a further reincarnation - this time as the first European house of the *Soho House Group*.

