

smartFactory^{KL}



Kaiserslautern, 05.05.2023

Press Release

One thing is certain: After Hannover Messe is before Hannover Messe



- SmartFactory-KL: Focused on the key enabling technologies for future production
- Topics like sustainability and Manufacturing-X were the crowd magnets

The number of visitors to the SmartFactory-KL (SF-KL) exhibit stand doubled on account of the [asset administration shell \(AAS\)](#) and the safety use case called "[Operational Safety Intelligence](#)." The content of topics related to the production of the future held a notable appeal. "We wanted to achieve two communication goals at the Hannover Messe. First, we wanted to convey a vision of what production will look like in the next five to fifteen years. Then, we wanted to introduce the audience to the major key enabling technologies that will be required," said Dr. Ingo Herbst, Head of Communications and press spokesperson at SF-KL. "What's important is the context. The potential of technologies like administrative shells, data platforms, and artificial intelligence is best appreciated in an overall vision of future manufacturing," added Prof. Martin Ruskowski, CEO of SF-KL. SmartFactory-KL calls this vision [Production Level 4](#).

Pushing Performance
Since 1945

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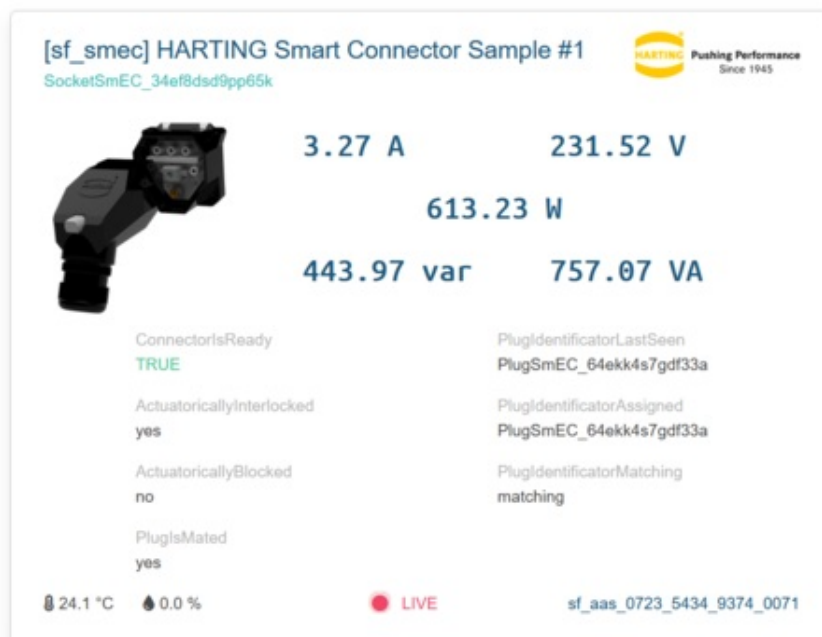

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The asset administrative shell at the Hannover Messe

A touchscreen displayed the administrative shells of the plug connectors from two suppliers, as well as that of the model truck produced at the stand. The information starts at the top level with generally understandable data on material composition, carbon footprint, and energy consumption. Also, by drilling down to deeper branches, more technical data becomes available. "I could not begin to count how many people I introduced to the administrative shell," said Ruskowski. "It was the first time many of them had ever 'seen' an administrative shell and, to those interested, it was quickly clear why this is a key technology."



Operational Safety Intelligence

A revolutionary safety use case was also presented. The intelligent safety system reacts flexibly depending on the hazard situation. Production can be slowed down in stages or stopped completely. The AI system analyzes human behavior in the danger zone and adjusts the machine reactions. "The advantage of this system is that production is only interrupted in extreme cases. At first, the machines just work slower while the AI continues to analyze the risk," said Ruskowski. If the risk disappears, production ramps back up again. Members of the association (B&R Automation, TÜV SÜD, and PILZ) developed this use-case in the "Safety & Control" working group at SF-KL.



fltr: Prof. Martin Ruskowski, Prof. Wolfgang Wahlster and Henning Kagermann, Dr. Ingo Herbst
Photo: Julian Hörndlein

Manufacturing-X is everywhere

"The spirit of optimism surrounding Manufacturing-X could be felt everywhere. This became very clear in my talks with Industrie-4.0 founders [Wolfgang Wahlster und Henning Kagermann](#) on Monday, as well as with [Hartmut Rauen from VDMA](#), and [Michael Finkler from proALPHA](#) on Tuesday," said Ruskowski. The initiative is seen as a development in the right direction. The Electronic.net headline read: "[Manufacturing-X – the avalanche is now rolling](#)". "More and more companies understand that data platforms and shared production are the future of the shop floor. At the trade show, we demonstrated exactly how this can work at production station_KUBA. We also have the demonstrator ecosystem in Kaiserslautern that shows this as well, but is much more complex," concluded Ruskowski. His [Keynote](#) delivered at the Industrie 4.0 Conference Stage also covered this topic.



fltr: Prof. Martin Ruskowski, Hartmut Rauen, Michael Finkler
Photo: Julian Hörndlein

Major milestones for the future at the Hannover Messe

Doubling the number of visitors in attendance is an important signal. "We interpret this as a new beginning," said Ingo Herbst. "However, changes in business are currently happening everywhere and this will also be felt at trade fairs: How exactly, time will tell. But, we certainly plan to be back at Hannover in 2024!"

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About SmartFactory-KL

SmartFactory-KL is the name of a research and industry network with three pillars of support – the non-profit association, [Technologie-Initiative SmartFactory KL \(SF-KL\)](#), plus two scientific research institutes ("[Innovative Factory Systems](#)" at [DFKI](#) and "[Machine Tools and Control Systems](#)" at the [RPTU campus Kaiserslautern](#)). Prof. Dr. Martin Ruskowski has been responsible for organization and content since 2019. He serves as chair of the association's management board as well as the faculty chair and head of the DFKI research department. SmartFactory-KL brings stakeholders from industry and research together in a unique Industrie 4.0 network to facilitate collaboration in the joint development and implementation of future production concepts for the factories of the future. The manufacturer-independent demonstration and research platform enables industry representatives and researchers to conduct joint testing of innovative production technologies in a realistic factory environment.

In 2019, the partner network revisited the concept of Industrie 4.0 and that resulted in the upgrade now known as [Production Level 4 \(PL4\)](#) (only in german). In 2020, SmartFactory-KL introduced the world's first [PL4 demonstrator](#) (only in german). Since then, the association has participated in the European [GAIA-X](#) network with its [smartMA-X](#) research project. The demonstrator plays a major role as a testbed in the European effort.

In 2021, SF-KL presented the concept of [Shared Production](#) (only in german) – implemented for the first time as a skill-based, PL4 manufacturing ecosystem in Kaiserslautern. This represents a major advance in production, enabling completely revolutionary manufacturing architectures that are individually configurable via digital platforms. The PL4 ecosystem currently consists of three production cells, one of which – the production island "KUBA" – was exhibited for the first time at the [2022 Hannover Messe](#) (only in german). Many key enabling technologies such as AI operations, digital twins, operational safety intelligence, and industrial edge cloud applications have been implemented to date. SF-KL and DFKI are technology leaders in the [TWIN4TRUCKS](#) projects launched on the first of September 2022. Daimler Truck is lead manager for that project. The aim is to optimize commercial vehicle production at the Würth plant.

In 2016, the [German Federal Ministry for Economic Affairs and Energy \(BMWi\)](#) appointed SF-KL lead manager of the [Mittelstand 4.0 Competence Center \(SME4.0\)](#) (only in german) Kaiserslautern, which supported the digitalization efforts of SMEs until 2021. Since 2021, that work continues as the [Mittelstand-Digital Zentrum Kaiserslautern](#) (only in german) with SmartFactory-KL providing continuity as lead manager.

www.smartfactory.de

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