

smartFactory^{KL}[®]

Newsletter 3/2020

Ladies and gentlemen,

SmartFactory Kaiserslautern has been in existence now for 15 years. We celebrated by going on the air on September 17 with our new format, SmartFactory-KL LIVE. As we are inseparably linked with the term Industrie 4.0, the show was called: From Industrie 4.0 to *Production Level 4*.

In the future, we will broadcast SmartFactory-KL LIVE on the **3rd Thursday of the month at 1:00 pm** on [Youtube](#). You can tune in live and ask questions or view the broadcast at a later time. People who are interested in this technology are our target audience. Topics to be discussed will focus on SmartFactory-KL, our demonstrators, and research projects. Sometimes we will delve deeply into an issue, sometimes we'll stay within the realm of general knowledge.

Our guest for the October broadcast on October 15, 2020 will be Prof. Wahlster. (German language only).

In this sense: We'll see you later!



Prof. Dr.-Ing. Martin Ruskowski, Chairman of the Executive Board of Technologie-Initiative SmartFactory KL e.V.

SmartFactory-KL LIVE

15 years of the Technology Initiative SmartFactory KL are a good reason to celebrate. In our first live broadcast, we took a journey back to the beginnings of Industrie 4.0 and then on to our update *Production Level 4*. We welcomed prestigious guests to the Kaiserslautern studio, which is now set up once a month in our Living Lab. Guests in the dialog were Hartmut Rauen, Deputy General Manager of VDMA, Gunther Koschnick, Managing Director of ZVEI Automation department, Prof. Martin Ruskowski, Chairman of the Board at SF KL, Head of DFKI Innovative Factory Systems dept., and also Head of the Institute of Manufacturing Technology and Production Systems (WSKL) at TU Kaiserslautern. Also participating was Prof. Detlef Zühlke, founder of SmartFactory-KL and Managing Director of SmartFactory EU. After the discussion round, we presented our demonstrator to the guests. The representatives of the two associations appeared to be impressed and confirmed our self-designation as: Factory visionaries.

A recording of the broadcast is available at:
youtu.be/wFGhVDYMqcc



Jeden 3. Donnerstag im Monat von 13 – 14 Uhr
Sie wollen LIVE Fragen stellen? Email an: info@smartfactory.de

smartFactory

Einladung

zum Livestream der SmartFactory®
YouTubeshow: SmartFactory®

17.9.2020 | 13:00 bis 14:00 Uhr

15 Jahre SmartFactory® – von Industrie 4.0 zu *Production Level 4*

Gäste: Hartmut Rauen (VDMA) | Gunther Koschnick (ZVEI) |
Prof. Detlef Zühlke (SmartFactory®) | Prof. Martin Ruskowski (DFKI,
SmartFactory® TU Kaiserslautern)

Grußworte von: Ministerpräsidentin Malu Dreyer | Wirtschaftsminister
Dr. Volker Wissing | Prof. Arnd Pöschel-Helfer (Präsident der TU Kaiserslautern)



Our demonstrator video

We planned to introduce the first *Production Level 4* demonstrator to the world at the Hannover Messe (Trade Fair) 2020. The corona pandemic led to the cancellation of the fair. We made the quick decision to make a film about the demonstrator. It shows the use cases, explains the technical innovations such as system architecture and AI levels, and opens a view into the future of autonomous production, e.g. with Gaia-X. The film can be viewed now at:

youtu.be/0igJ1VzHCKw



We joined in the nation-wide "Digital Day" last June with a LIVE broadcast. Research assistants Jens Popper and Patrick Bertram discussed the demonstrator and individual technical features. You can watch the recording at: youtu.be/AH8tEfAHqIU

In mid-July, the Hannover Messe hosted its first Digital Days, a 2-day, digital trade fair event. More than 10,000 visitors were registered and we were also there with a LIVE connection to the SmartFactory-KL. Prof. Martin Ruskowski and Jesko Hermann, project manager for demonstrator 2020 construction, guided the audience around the demonstrator. This broadcast is also available for your viewing on our Youtube channel

@SmartFactoryKL: youtu.be/yqnMcFoVpmM

WERNER – Platform for Innovation



You want to expand your business model to include the concepts of Industrie 4.0, AI (Artificial Intelligence) and other innovative technologies as well as operate with digital matchmaking? Simple. Use WERNER. The innovative, Mittelstand 4.0 (SME 4.0) Competence Center Kaiserslautern platform is established to support you with an extensive technology catalog. WERNER focuses on three areas: Industry 4.0, business models, and cooperation as it explains the advantages that digitalization can bring to your company. Also, it shows you how to use the Business Model Configurator to reposition your business model for success in the market. WERNER can also put you in touch with potential project partners and our AI trainers. Additionally, you can perform the AI Readiness Check and find suitable events that match your interests.

You can try out WERNER here: werner.dfki.de/ (German language only).

LEA – Learning and action platform



The learning and action platform (LEA) at the Mittelstand 4.0 (SME 4.0) Competence Center Kaiserslautern offers medium-sized companies a fast and application-oriented overview of relevant digitization subjects. Users can learn about the various aspects of the digital transformation – AI, digital business models, or location-independent working in the digital age – in several exciting and versatile online courses. The platform is unique because of the multimedia content: in addition to explanatory videos, checklists, and interviews with experts, LEA provides an extensive download area where up-to-date information is available. All lesson units can be completed individually and flexibly.

Direct link to LEA: lea.ita-kl.de/dmz/
(German language only).



White paper "Safety requirements for digital machine representation 2020" (German only)

We have worked closely with association member TÜV SÜD since 2018 to develop an answer to the question: How can modular Industrie 4.0 production plants be safety-certified? Our latest white paper shares approaches for the transfer of these safety requirements to digital machine representation.

You can download the white paper online from our web page:
smartfactory.de/wp-content/uploads/

Research Projects



InCoRAP

Ongoing since Jan. 1, 2020, this project studies human-robot interaction in factory environments. The robot is able to consider expected human intentions and uses these in determining its upcoming actions. InCoRAP uses not only the operator's movements to recognize intent as in previous approaches, but also other information such as the current task being performed. This requires a comprehensive model of the environment, which includes information from a large number of sensors as well as process data, e.g., from an integrated ERP system. InCoRAP is the foundation for our development of the worker assistance with MS HoloLens, which we plan to present as a use case for our newest demonstrator in 2021.

Link: www.dfki.de/en/web/research/projects-and-publications/



DIGITBRAIN

DIGITBRAIN

This EU project launched in July 2020 with a term of 3.5 years. In total, 36 partners are cooperating to provide SMEs with simple access to digital twins. A digital twin is the virtual representation of a product, system, or process that simulates real physical characteristics in real time. A digital simulation enables optimization of the production processes as well as predictions of machine failure or service requirements. In this respect, there is some overlap with the content of the InCoRAP project. The research findings flow into the predictive maintenance use-case planned for the demonstrator at the Hannover Messe 2021.

digitbrain.eu/



DIMOFAC

The name of this EU project is an acronym for Digital Intelligent MODular FACtories. The aim is to integrate plug-and-produce components in a closed-loop life cycle management system to facilitate the continuous adaptation, improvement, and optimization of fast and flexible production. Reconfigurability is achieved by implementing a digital twin and a digital thread link for the product and process data flow for each module. This also provides the connection with the management systems in accordance with RAMI4.0 and ensures seamless, secure communications over the entire product life cycle in the plant. The technology based on a common information model will be integrated and tested in the Production Level 4 demonstrator environment at SmartFactory-KL. www.dfki.de/en/web/research/projects-and-publications/



Interesting Links

Agent-based systems in manufacturing. Interview with Prof. Ruskowski and background article in a new atp magazine
www.atpinfo.de/aktuell/

Interview with Prof. Wahlster, former CEO of DFKI
www.dfki.de/en/web/news/

15 years of SmartFactory Kaiserslautern
www.dfki.de/en/web/news/



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