PRESS RELEASE
Aachen, den 06.04.2018

Werkzeugmaschinenlabor WZL der RWTH Aachen University

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IOTA for real-life industrial applications

grandcentrix and WZL of RWTH Aachen join forces

The Laboratory for Machine Tools and Production Engineering WZL of RWTH Aachen University is currently researching the "Internet of Production" - the core of the Industrial Internet of Things, which paves the way into a future era of production.

The Internet of Production (IoP) describes a real-time, secure availability of information at any time and any place. Generated information is formed into a multilateral and high-volume digital shadow of production. Pattern recognition follows through precise and continuous data analysis. Pattern recognition enables predictive decision support as a second step on the way to controlled production. Systematic learning from the data creates the considerable additional benefit of the Internet of Production. Agile, highly iterative product development becomes just as possible as the fast, error-free implementation of a change request in series production. The competitive advantage of aggregated information in real time enables new dimensions of adaptation and agility in implementation.

In this context, the suitability of current technologies for transferring and implementing the vision of the Internet of Production into industrial practice is evaluated. "The multidimensional Directed-Acyclic-Graph (DAG) technology developed by the non-profit IOTA Foundation based in Berlin represents a more promising component of a novel machine-to-machine communication whose suitability for an industrial application is to be independently developed and tested by our researchers," said Dr.-Ing. Daniel Trauth, chief engineer at the Chair of Manufacturing Technology and Head of the Machine Learning in Production Engineering working group at the WZL.

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Compared to blockchain-based systems, DAG ("Tangle") technology offers the possibility of transporting and storing data points in a tamper-proof, manufacturer-independent and fast manner. In contrast to classic blockchain technologies, IOTA knows no transaction fees and thus enables business models that require the exchange of nanopayments, i.e. the loss-free settlement of very small amounts.

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Specifically, an industrial fineblanking system at the Chair of Manufacturing Technology will be used as an example to investigate how individual process states, production steps and component properties can be mapped digitally in a distributed supply chain network. This will enable customers of fineblanking technology to trace the production history for the first time.

In future, the WZL will rely on a cooperation with grandcentrix GmbH, one of the most modern system houses for Internet of Things productions and smart products. This cooperation makes it possible to realize the vision of the Internet of Production with the know-how and methods of a successful IT company.

grandcentrix brings technical coaching, architecture and the experience from numerous major Internet of Things projects as well as best practices in industrial, agile product development to the table. The joint development team currently has one of the most attractive labs for the development of digital, networked products in Cologne. grandcentrix supports the free IOTA network itself with some of the most powerful IOTA nodes and has direct contact to the IOTA core developers through its commitment on the board of directors of the IOTA Foundation.

"Behind IOTA is the great vision of an open, royalty-free, transactional backbone for the Internet of Things. Anyone who deals intensively with the idea of data marketplaces and machine-to-machine economies knows that centrally organized platforms will never pave the way for networked business models. In order to actually tap the far-reaching potential of the Internet of Things, a new kind of decentralized platform is simply needed. In our tenth year at grandcentrix we are exclusively focused on the networking of hardware and software. We are delighted to be able to bring these technologies into industrial application in cooperation with the renowned RWTH Aachen University." Ralf Rottmann, Managing Partner grandcentrix and Member of the Board of Directors IOTA Foundation

The project starts in April 2018.

Werkzeugmaschinenlabor WZL der RWTH Aachen

For more than 100 years, the Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University has stood for forward-looking research and successful innovations in the field of production technology. Under the direction of the four professors Christian Brecher, Fritz Klocke, Robert Schmitt and Günther Schuh, the WZL conducts research in six areas - manufacturing technology, machine tools, production engineering, gear technology, production metrology and quality management - on the future-oriented design of production in high-wage countries. Together with industry partners from various sectors, the WZL develops solutions for a wide range of production-related topics in both publicly funded and bilateral projects. These activities will be consolidated on the RWTH Aachen Campus in the Cluster Production Technology. **www.wzl.rwth-aachen.de**

grandcentrix GmbH

grandcentrix GmbH is the leading system integrator for Internet of Things (IoT), Industrial Internet of Things ("Industry 4.0") and Smart Products for large-scale productions. With over 150 experts from the fields of Ideation and UX Design, Electronics and Embedded Development, Cyber Physical Systems Security, Device Connectivity, IoT Platform Development, Analytics and Machine Learning, Web and native App Development, System Integration, Maintenance and Operation grandcentrix brings digital transformation to the market. **www.grandcentrix.net**
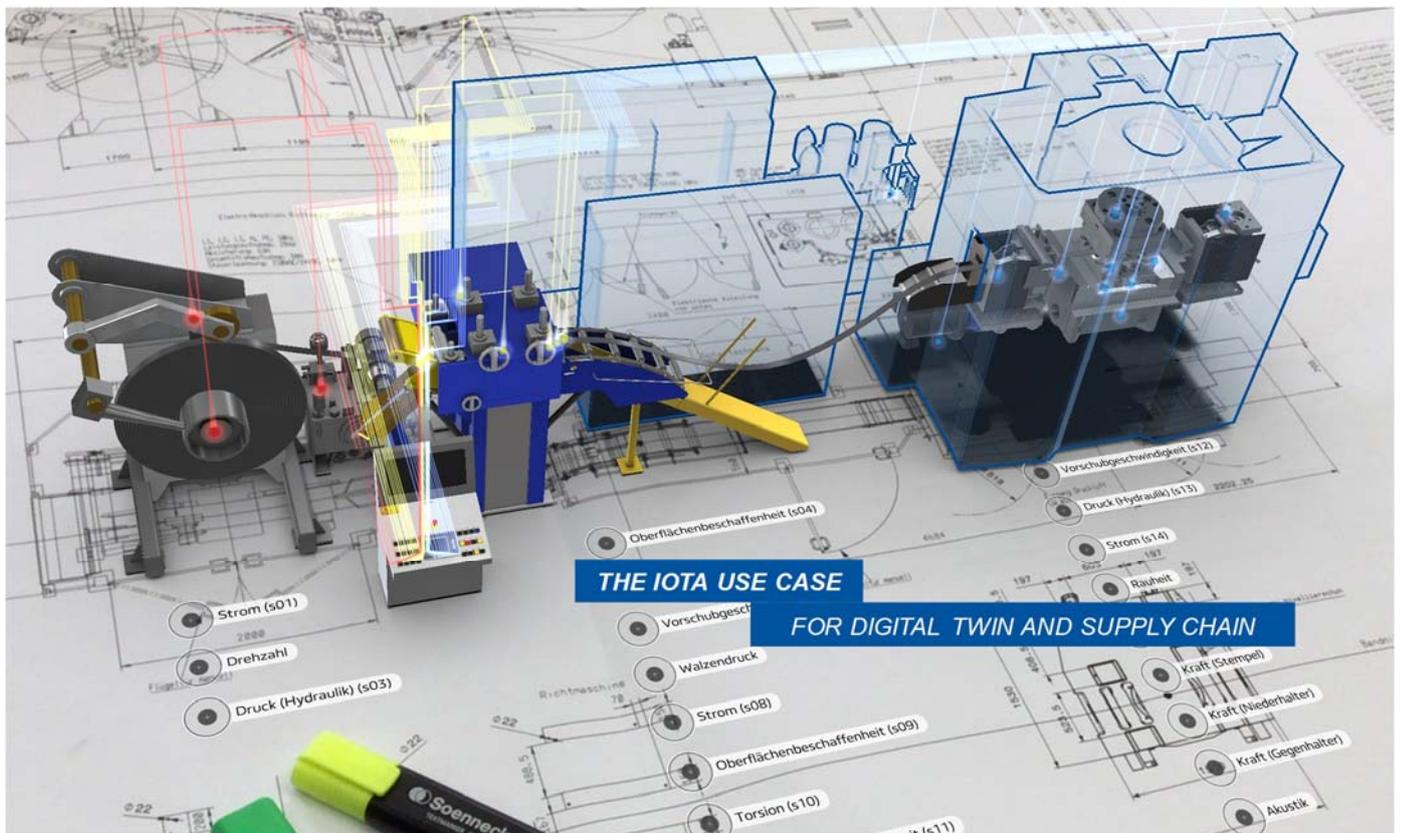
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Attachment

Digital shadow of production of our industrial fineblanking system - © WZL