

PRESS RELEASE

July 27, 2017 || Page 1 | 3

German government and Fraunhofer drive forward plans to implement Industrie 4.0 on an international scale

- **German researchers are in the process of establishing the Industrial Data Space, a virtual construct for secure data sharing based on standardized communication interfaces.**
- **Its key feature is data sovereignty: it allows users to monitor and maintain control of their proprietary data, by enabling them to decide who has the right to access these data and for what purpose.**
- **The research project, for which the German Federal Ministry of Education and Research has granted funding of five million euros, is now moving on to its second phase, which aims to see this architecture adopted internationally.**

Data represent a resource of growing strategic importance to businesses in every sector of the economy. But this places data owners in a quandary, because the higher the value of their data, the greater the need for protective measures that conflict with the data-sharing imperatives of an economy based on increasingly complex data-based services and new digital business models. To resolve this dilemma, twelve Fraunhofer Institutes have spent the past two years working on a solution they call the Industrial Data Space. They recently completed the first phase of the project, in which a reference architecture model for a secure data space has been defined, based on the latest IT technologies, and the first cross-sector use cases have been implemented. Now this pre-competitive research project, for which the German Federal Ministry of Education and Research (BMBF) has granted funding of five million euros, is ready to move on to its second phase.

“Germany must secure itself a position at the cutting edge of system-related innovations. Right here and now, we have a compelling opportunity for Germany to take the lead in the digital transformation of industry by creating a de facto standard that has every chance of being adopted throughout Europe and even worldwide,” says Prof. Reimund Neugebauer, President of the Fraunhofer-Gesellschaft. “Data sovereignty is the key to success for many businesses. Our initiative provides the ideal data security framework.”

“Companies operating in Germany and throughout Europe can rest assured that the Industrial Data Space is a concept that will keep their data safe. And if we can establish the concept as an international standard, German industry will be the first to benefit,” says German Federal Minister of Education and Research Prof. Johanna Wanka.

Editorial Notes

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The next project goal is to carve out a position for the Industrial Data Space in relation to and in interaction with other reference architectures, such as those being developed by the Industrial Internet Consortium in the United States or the Japanese Industrial Value Chain Initiative – because, in today’s global supply chains, the flow of data is not restricted to a single country and companies therefore need integrated, cross-border solutions.

“The Industrial Data Space concept has met with considerable interest in many workshops and forums held in connection with Germany’s G20 presidency. Data sovereignty made in Germany is a popular concept,” comments Prof. Boris Otto, head of research for the Industrial Data Space initiative and director of the Fraunhofer Institute for Software and Systems Engineering ISST. “We are currently in discussions with partners in many countries, including Argentina, China, India, Japan, Mexico and the United States, with the goal of establishing the Industrial Data Space architecture on an international basis.” To ensure interoperability with the many different digital standards in use around the world, the project teams are developing technological blueprints for data sovereignty solutions. Fraunhofer researchers are working closely with the Industrial Data Space Association to apply their results in the form of use cases for partner companies.

About the Industrial Data Space initiative

The Industrial Data Space initiative was launched in late 2014 by the Fraunhofer-Gesellschaft, with the support of industrial partners and government agencies. Its purpose is to establish a reference architecture model for the Industrial Data Space and promote its use on an international scale. The initiative comprises a research project and a user association. The research project is managed by the Fraunhofer-Gesellschaft and funded by the German Federal Ministry of Education and Research as the pre-competitive stage of a longer-term project to establish the Industrial Data Space as an international standard. The initiative’s launch was followed in January 2016 by the creation of the Industrial Data Space Association, a non-profit organization tasked with representing users’ interests and standardizing the results of the research project. The association presently counts 74 companies based in 13 different countries among its members, and its international range is continuing to grow. Alongside well-known German groups such as Bosch, Deutsche Telekom, Siemens and Volkswagen, its members also include the Huawei Corporation in China and the Netherlands Organization for Applied Scientific Research TNO. The activities of the Industrial Data Space initiative are conducted in close collaboration with the Plattform Industrie 4.0, an alliance of representatives from politics, industry, associations, science and trade unions.

More information: www.industrialdataspace.org



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PRESS RELEASE

July 27, 2017 || Page 3 | 3
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