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R+I Factory Research Initiative Launched in Cottbus

Science Minister Manja Schüle launches the artificial intelligence and microelectronics initiative. The Federal Ministry of Research is funding the project with €15 million under the Structural Development Act. The first module, AI-DISCO, is researching a platform for distributed AI.

On Monday, October 14, 2026, the Research and Innovation Factory AI & Microelectronics was officially opened in Cottbus as a long-term structure for research in artificial intelligence and microelectronics. The initiative begins with AI-DISCO, the first approved module, which has been underway since February 2026. Through early 2030, seven research and industry partners will investigate a platform for energy-efficient, distributed AI processing. The Federal Ministry of Research, Technology and Space (BMFTR) is funding AI-DISCO with €15 million under the Structural Development Act; the project is led by IHP – Leibniz Institute for High Performance Microelectronics.

Federal Minister of Research, Technology and Space Dorothee Bär explains the project's significance for Germany as a technology hub:

"Here in Cottbus, a model for modern technology policy is taking shape. Over the long term, the Research and Innovation Factory will build expertise in artificial intelligence and microelectronics—from Industry 4.0 to medicine—and thus make an important contribution to the technological sovereignty of Germany and Europe. With its first module, AI-DISCO, the initiative is researching ways to use AI across decentralized, interconnected nodes rather than on mainframe computers. This combines technological advancement with structural development: the funding strengthens Lusatia as an innovation hub while creating strategic capabilities for Germany's industrial base. Projects like this bring our High-Tech Agenda Germany to life. By developing our own energy-efficient AI chips, we aim to reinforce Germany's position as the No. 1 semiconductor manufacturing location."

Brandenburg's Minister of Science, Research and Culture, Dr. Manja Schüle, opened the initiative together with Prof. Dr.-Ing. Gerhard Kahmen, Scientific and Technical Managing Director of IHP. For the state, the initiative also contributes to structural transformation in Lusatia:

"AI-DISCO is creating something in Cottbus that goes far beyond a single research project: the project aims to combine artificial intelligence and microelectronics and develop sensors that can perform computations themselves. This makes industrial systems faster, more energy-efficient and less dependent on remote data centers. I find it particularly exciting that the researchers are using neuromorphic computing, that is, chips modeled on the human brain. We are deliberately placing cutting-edge research and high technology at the heart of structural transformation in Lusatia. What is being

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built here is not a consolation prize for a former coal region, but a location where tomorrow's technologies are developed—with European ambitions. If sensors are able to think independently in the future, people should know where they learned to do so: in Lusatia."

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Prof. Dr.-Ing. Gerhard Kahmen explains what this means for the location: "Bringing microelectronics and artificial intelligence together opens up applications that neither discipline can achieve on its own—in manufacturing, in edge-cloud systems and in chip design itself. To do this, we are pooling our expertise in the R+I Factory. With its thematic focus, the R+I Factory makes an important contribution to further sharpening the profile and visibility of Cottbus as a research and development hub."

Specifically, the partners are researching edge nodes whose AI processing is based on neuromorphic circuits and draws on findings from neurobiology. They are also investigating federated learning methods, in which the cloud pretrains the nodes rather than collecting all data, as well as the security and resilience of distributed systems. Because the nodes often run on batteries, energy is the scarcest resource. The technology is being tested in several application areas. In energy systems, spatially distributed sensors are intended to detect deviations in the operation of wind and solar power systems earlier, without sending all measurement data to a data center. Other fields include Industry 4.0, medical technology and agriculture, 6G communications, smart cities and critical infrastructure.

ABB illustrates the benefits expected by industry partners using automation technology as an example:

"In automation, decisions are made in fractions of a second. If analysis does not take place until the data reaches a data center, it is too late. That is why AI-DISCO's approach—having AI compute directly within the system—is particularly relevant to us."

Dr. Martin Handreg, Automation Manager, ABB

For Cottbus, the initiative also means growth: AI-DISCO brings two new research institutions to the city—the Leibniz Institute for Neurobiology (LIN) and the German Research Center for Artificial Intelligence (DFKI). At the same time, the R+I Factory expands the cooperation network at the Lusatia Science Park and Brandenburg University of Technology Cottbus-Senftenberg, whose president, Prof. Dr. Gesine Grande, spoke at the launch event.

The consortium partners are IHP – Leibniz Institute for High Performance Microelectronics as consortium leader, Brandenburg University of Technology Cottbus-Senftenberg, DFKI – German Research Center for Artificial Intelligence, Fraunhofer Institute for Photonic Microsystems IPMS, LIN – Leibniz Institute for Neurobiology, and the companies ABB and ENERTRAG.

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Dr. Sebastian Meyer, head of the ISS division at Fraunhofer IPMS in Cottbus, explains:
“At its Cottbus site, Fraunhofer IPMS combines semiconductor expertise in ferroelectric memory devices with its own intelligent sensor technologies, including ultrasonic and spectral sensors, to create energy-efficient AI hardware. Together with partners such as ABB and ENERTRAG, we are testing this hardware in demonstrators for industry, agriculture, medical technology and smart cities.”

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About the R+I Factory

The Research and Innovation Factory AI & Microelectronics (R+I Factory) is a modular research and innovation initiative at the intersection of artificial intelligence and microelectronics in Lusatia. Under its umbrella, research institutions and companies pool their work on intelligent systems and the hardware on which those systems run; additional modules will be added gradually.

About Fraunhofer IPMS

The Fraunhofer Institute for Photonic Microsystems IPMS is one of the leading research institutions for electronic and photonic microsystems. At its Integrated Silicon Systems (ISS) division in Cottbus, Fraunhofer IPMS develops intelligent sensor technology, microelectronics and AI-based systems for applications in industry, energy, the environment and medical technology. Its research combines scientific excellence with a consistent focus on technology transfer and makes a significant contribution to structural transformation in Lusatia.

Through close collaboration with Brandenburg University of Technology Cottbus-Senftenberg and partners from research and industry, Fraunhofer IPMS strengthens the development of an internationally visible innovation ecosystem at the Lusatia Science Park and helps establish the region as a leading high-tech hub for sensor technology and artificial intelligence.

About IHP

IHP – Leibniz Institute for High Performance Microelectronics in Frankfurt (Oder) conducts research on silicon-based solutions for micro- and nanoelectronics. IHP covers the entire value chain, from basic research to application-oriented prototypes and small-series production. Its research focuses on new materials and devices, semiconductor technologies, and ultra-high-frequency circuits and systems for applications including communications, industry, mobility, aerospace, security and medicine. The institute operates its own clean-room infrastructure under industry-oriented conditions and gives research and industry partners access to qualified, world-leading BiCMOS technologies. IHP is a member of the Leibniz Association and employs more than 400 people. It receives joint institutional funding from the federal government and the state of Brandenburg.
www.ihp-microelectronics.com

Images



Computing where the data is generated: The AI-DISCO platform analyzes sensor data directly on site—in manufacturing, energy supply, agriculture, hospitals and critical infrastructure. Only essential information is sent to the cloud, which supports shared learning across the nodes. Illustration: IHP, created with Google Gemini <https://cloud.ihp-microelectronics.com/index.php/s/9rq92weSt9ePEEk>



Seven partners under one roof: At the launch of the R+I Factory, the participating institutions and companies received plaques symbolizing their partnership. From left to right: Prof. Dr.-Ing. Gerhard Kahmen (IHP); Dr. Pierre-Yves Bourguignon, Head of Data Science, ENERTRAG; Dr. Martin Handreg, ABB; Dr. Sebastian Meyer, Fraunhofer IPMS; Prof. Dr. Miloš Krstić, AI-DISCO Overall Project Manager, IHP; Mike Reichardt, DFKI; Prof. Dr. Gesine Grande, President of BTU Cottbus-Senftenberg; Prof. Dr. Frank W. Ohl; and Minister Dr. Manja Schüle. Photo: ©IHP GmbH / Frederic Schweizer LINK: <https://cloud.ihp-microelectronics.com/index.php/s/nnC Cpk65EZL9EyG>

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At the push of a button: Brandenburg's Minister of Science, Research and Culture, Dr. Manja Schüle, and IHP's Scientific and Technical Managing Director, Prof. Dr.-Ing. Gerhard Kahmen, launch the Research and Innovation Factory AI & Microelectronics in Cottbus on September 14.

Photo: ©IHP GmbH / Frederic Schweizer LINK: <https://cloud.ihp-microelectronics.com/index.php/s/jsY5nYN8WWi2ZbF>