

Press Release

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The MobiRobAI Project – an Innovative Approach to Robotics and Artificial Intelligence

Frankfurt (Oder). The MobiRobAI project, launched in October 2024, is the next step in building innovative technological capabilities in the border regions of Poland and Germany. It is the result of cooperation between the Space Research Centre of the Polish Academy of Sciences (in short, CBK) in Zielona Góra and the IHP - Leibniz Institute for High Performance Microelectronics in Frankfurt (Oder). The project budget is 0.82 Mio. €, 80 percent of which is funded by the INTERREG Brandenburg-Poland 2021-2027 program. The project aims to develop real-time control solutions for robots and manipulators. This work is a continuation of the SpaceRegion project, where these solutions were to be used in space applications. In the case of MobiRobAI, the focus is on possible applications on Earth. Another goal of the project is to establish a broad network of cooperation with industry, academia and public administration. An important outcome of this project will be the establishment of a space technology partnership.

The MobiRobAI project is based on the close research cooperation between CBK and IHP and the experience gained from previous common initiatives, for example in the SpaceRegion project. The CBK is responsible for the robot control and navigation methods, the integration of software and hardware, and the connection of the manipulator to the platform. IHP aims to develop the image recognition methods and a plan for implementing an industrial prototype. The partners work together on component selection, system integration and testing. The synergy of expertise in space robotics and artificial intelligence will create a solution with broad commercial potential. The project also has the potential to attract local industry and create demand for skilled personnel. In addition, students and PhD students from the University of Zielona Góra and BTU Cottbus-Senftenberg, as already involved in the project through the UZ Space Engineering Circle, will have the opportunity to participate in prototype testing and network with industry representatives.

MobiRobAI is a continuation of activities in the development of control algorithms, visual navigation and artificial intelligence. Although the project is based on space technology solutions, its main objective is to adapt them for use on Earth. The project will create a prototype of a mobile manipulator with increased autonomy, capable of collecting objects (e.g. rock samples on Mars or fruit on Earth) and cleaning solar panels. The key elements of the implementation are: Transfer of space technologies to terrestrial applications, comprehensive prototype development process according to the implementation methodology, creation of a basis for further development and application of the technology.

"The implementation of the project will contribute to the creation of a strong cross-border research and development center in the field of robotics and artificial intelligence, which may become one of the key points of technological development in Europe in the future," says Prof. Krzysztof Piotrowski, project leader on the IHP side.



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Visualisation of the prototype of the MobiRobAI mobile manipulator. © 2025 IHP GmbH. Image generated using MidJourney. All rights reserved.

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About IHP:

The IHP is an institute of the Leibniz Association and conducts research and development of silicon-based systems and ultrahigh frequency circuits and technologies including new materials. It develops innovative solutions for application areas such as wireless and broadband communication, security, medical technology, industry 4.0, automotive industry, and aerospace. The IHP employs approximately 400 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25 μm SiGe BiCMOS technologies, located in a 1500 m² DIN EN ISO 14644-1 3 certified clean room.

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