

Press Release

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Sustainable, pesticide-free cultivation of sugar beet in the Uckermark region

Joint project „zUCKERrübe“ researches autonomous, environmentally friendly cultivation methods

Frankfurt (Oder). Within the framework of the WIR! initiative of the German Federal Ministry of Education and Research (BMBF), a new joint project called "zUCKERrübe" (sugar beet) aims to enable sustainable and pesticide-free cultivation of field crops using the example of sugar beet in the Uckermark region. For this purpose, field robots, UAS technology (UAS = unmanned aerial system) and artificial intelligence (AI) methods as well as the interaction of these components are to be investigated.

One milestone of the two-year project and funded with 540000 EUR will be the development of a new weed control technique to integrate sugar beet cultivation into the crop rotation of sustainable agriculture. In addition, the possibility of transferring the new method to other environmentally friendly cultivated crops will be created.

The project consortium consisting of the Eberswalde University of Applied Sciences, Zauerzeug GmbH, Leibniz Centre for Agricultural Landscape Research (ZALF) e.V. and the Leibniz Institute for High Performance Microelectronics (IHP), which is supported in its work with a funding sum of 118000 euros by the BMBF.

In the development phase of the project, close cooperation with practical companies and regional processors plays a major role. This means that their needs and requirements can be taken into account from the beginning, thus ensuring practicality.

"In the project, IHP will dedicate itself to the development of AI-based image analysis on low-resource hardware platforms for determining weed infestation and relative location of the hoeing robot. To this end, we will develop various hardware accelerators so that drones will be able to use AI algorithms for image analysis in the future, despite their small computing capacity. This will allow hacking robots and drones to be used in areas with poor cellular reception because weed detection will be done on drones and not on cloud servers," says Dr. Marcin Brzozowski from IHP.



BMBF project „zUCKERrübe“



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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 350 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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