

PSNC role in digital transformation of the agriculture sector in Poland

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Agriculture is currently undergoing a rapid digital transformation from mechanization to automation and the use of artificial intelligence or online decision support systems (e.g. in fertilization, integrated pest management). Agriculture 4.0 technologies are currently being introduced - smart farms based on a very high degree of automation and robotization. The concept of Agriculture 4.0 is based primarily on the analysis and processing of large amounts of data collected using the Internet of Things, drones, robots or satellite data, which are often used by artificial intelligence to make decisions. Therefore, an infrastructure that supplies data on an ongoing basis is indispensable. Also one of the key aspects with a large number of data sources is to ensure data interoperability.

PSNC has been working for several years with key partners in agriculture to support digital transformation in agriculture in Poland. One of the key initiatives in this area is the eDwin project, which built a network of agrometeorological stations throughout Poland and prepared and made available to farmers an online decision support platform in integrated plant protection in the form of a Virtual Farm. The AI4EOSC project will use the eDWIN infrastructure to develop improved predictive models for plant protection based on AI models. In the Demeter project, the PSNC collaborated on the development of the AIM - Agriculture Information Model, and on the integration of agriculture and beekeeping. As part of the Agrobank PSNC initiative, it has developed a support system for selecting seed varieties. As part of the ICOS project, PSNC is working together to create a new generation of agricultural robots that fully communicate with the smartphonearms infrastructure. All these activities aim to create an integrated advisory platform and digital environment for the farmer.

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