

DIGITALIZATION OF AGRICULTURE, EXPERIENCE, PROBLEMS, DATA PROCESSING

**DIGITALISATION IN THE BIOECONOMY SESSION #3:
SAFEGUARDING PROGRESS: CRITICAL EMPHASIS ON CYBER
SECURITY AND DATA PROTECTION IN ADVANCING THE
BIOECONOMY**

**ANETA ŁOBODZIŃSKA, DRONE SPACE VALLEY
27.02.2024**



ANETA ŁOBODZIŃSKA

Owner of 2 drone related companies. Coordinator of drone pilot training center offering EU certificates and specialized courses. Author of many unmanned systems market analysis and official opinions. Unmanned Systems Cluster Coordinator. Member and coordinator of many R&D projects. Academic teacher at the Rzeszów University of Technology. EU Drone expert.



GRZEGORZ ŁOBODZIŃSKI

A manufacturer of specialized engineering solutions, including: drones, mobile robots, ground stations. Founder of 5 companies operating in the drone industry, both hardware and software production, services, training, events. Author of revolutionary tools for the analysis of agricultural and forest crops using drones. Manager of many R&D and implementation projects.

FOTOBACC
warsztat produktowy



centrum usług
dronowych

Drone Space Valley



e-uprawy



Centrum
Naukowo-Technologiczne
Systemów Bezzałogowych



Klaster
Systemów Bezzałogowych



Drone
- container -

Digitization of agriculture potential

- CROP INSPECTION
- DOCUMENTATION OF DAMAGE
- FARM OPTIMIZATION
- ANALYSIS OF PLANT VIABILITY
- SPRAYING FIELDS
- MANAGEMENT DECISIONS
- YIELD PREDICTION
- ESTIMATING HUNTING DAMAGE
- ORTHOPHOTOMAP
- ANALYSIS OF MULTISPECTRAL IMAGES
- MONITORING THE OCCURRENCE OF PARASITES
- MODELING CULTIVATION GROWTH
- INVENTORY OF FOREST ANIMALS
- SEARCHING FOR FIRE SPOTS, DETECTING MICRO-FIRES
- VACCINE DROP ON FOXES
- MANY OTHERS

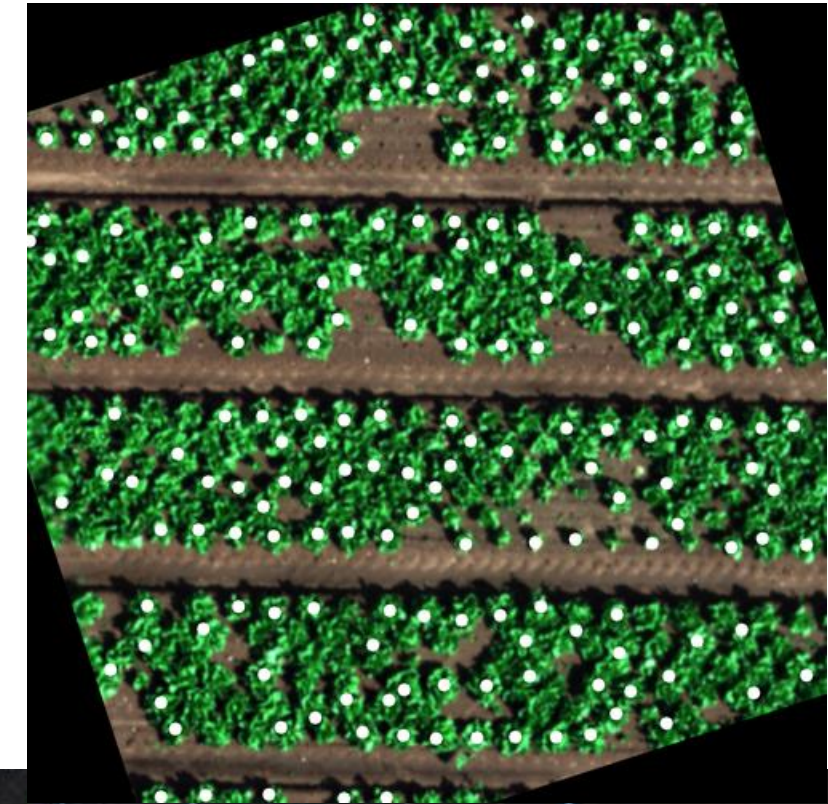




Drones - new level of agriculture digitalization



Drones in precision agriculture

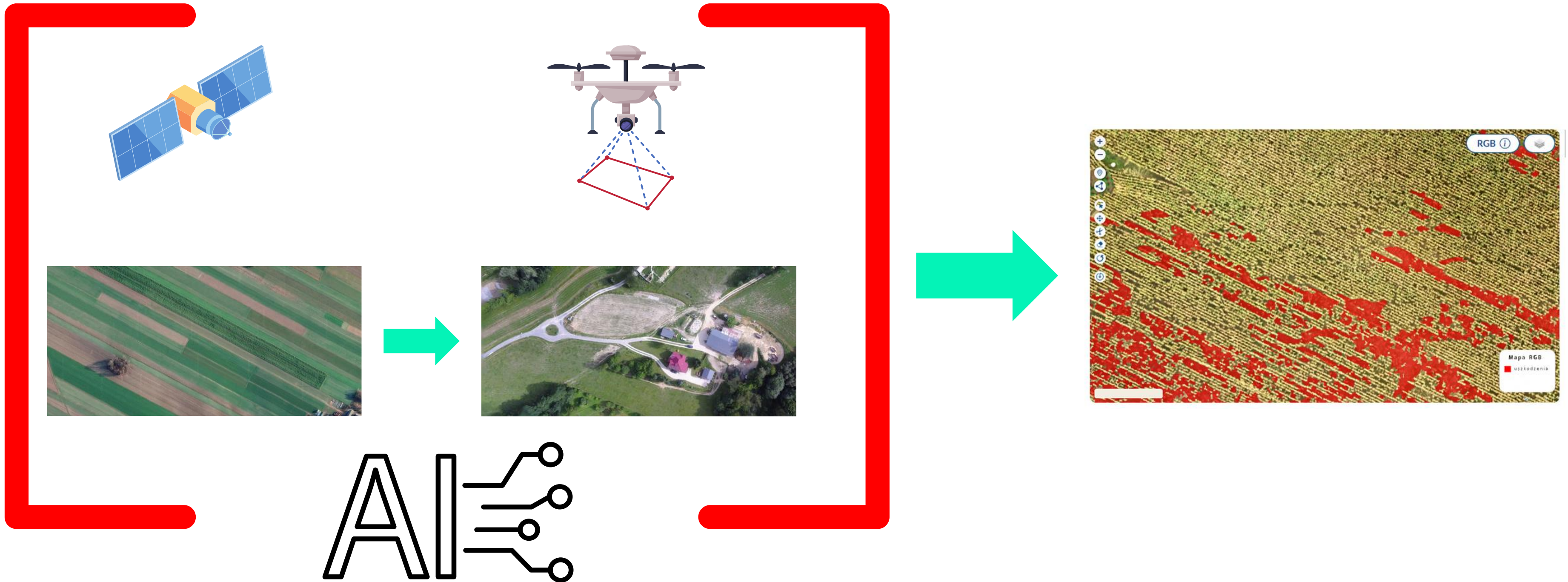


The development of robotization in agriculture has recently accelerated strongly. It is thanks to robotics and artificial intelligence that many problems that the agricultural sector is facing today can be solved.

The screenshot shows a software interface for precision agriculture. It features a navigation bar at the top with options: 'e-uprawy', 'start', 'pola', 'naloty', 'analiza', and 'pomoc'. The main content is divided into several sections:

- Powiadomienia**: A list of notifications, each starting with 'Dodano nalot' and 'Szczegółowy opis', dated '02.02.2023'.
- Ostatnie analizy / mapy**: A list of recent analyses, including 'Raport straty | ROL 068' and 'Analiza nawodnienia | ROL 068'.
- Kalendarz**: A calendar for January 2023, showing dates from 1 to 31. Green dots indicate specific events or data points on certain dates.
- Podsumowanie**: A summary section with a 'Kategoria' (Category) list containing 'Pola', 'Naloty', and 'Uprawy'. It also includes a 'Pola' (Fields) section with a list of metrics: 'Ilość dodanych pól', 'Pola aktualnie obsadzone', 'Pola nieobsadzone', 'Średnia ilość nalotów przypadających na pole', 'Średnia powierzchnia pola', and 'Całkowita powierzchnia obszarów'. A pie chart is displayed next to these metrics.

Next level of digitalization?



WHAT ARE THE PROBLEMS?



Drone regulations
RODO
Image protection
Geographical zones



Storage capacity
Data sharing security
Amount of processed data
Reliability of results

How can we solve them?

- Using data encryption to protect information from unauthorized access.
- Implementation of user authentication and authorization mechanisms.
- Using data minimization techniques, such as anonymization or pseudonymization.
- Monitoring and auditing the operation of artificial intelligence-based systems.
- Implementation of privacy and data protection policies in accordance with applicable regulations, such as RODO.



The background is a dark, starry space scene with a faint galaxy visible. Several large, overlapping teal circles are scattered across the frame. A thin teal border surrounds the entire content area.

THANK YOU!

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