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Technology / Agriculture

SMART FARMING WITH DRONES AND AI

FlyNex and Pheno-Inspect combine their solutions to digitalize and automatize work processes in agriculture. AI-based image capturing with drones and analysis open up new opportunities for sustainable, digital farming with a simultaneous increase of yields.

Hamburg, 10/14/2021 – Within the next months, as the soil gets cooler and the air gets humid, plant diseases and pest plants will be a hassle for many farming organizations. Growers need to observe the spread of diseases to take countermeasures, and plant breeders need to develop new, more tolerant varieties resistant to diseases that affect yields. Using high-resolution drone imaging combined with Artificial Intelligence, the detection of, e.g., leaf spot disease symptoms can proceed faster and even automated.

Smart Farming, meaning the optimization of work processes with digital solutions and data, is considerably growing. Field robots for sowing seeds, drones for surveying, or automated feed distribution for cows are no longer unusual. However, the potential of drones in this sector has not yet been exploited. Because of that, the tech-startups FlyNex and Pheno-Inspect worked on a solution for identifying plant diseases as soon as possible, mapping different plant species in the field, scoring plant conditions, etc.

FROM DRONE TO DASHBOARD

The main goal of bringing tech to agriculture in this case: Drones are taking high-resolution images of field areas with a special camera. Image data will be analyzed by the AI-powered software of Pheno-Inspect to detect, e.g., plant diseases, weed, number of grains, etc., in a short time. The farm receives a "live map" of the condition of the respective areas on their own map.

Compared to the typical process, where workers perform this task by actually walking through the field and identify or count by "hand", farmers could benefit from time and cost savings, especially from a higher yield. Early detection of plant diseases or pest plants by drones allows faster and earlier countermeasures. Thus, the loss of the output is significantly reduced.

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AUTOMATED AND INTEGRATED DATA MEASUREMENT

The deployment of drones has a key long-term advantage. Once a flight mission is planned on the FlyNex Enterprise Suite and the flight pattern is recorded, the specific routes can be repeated as often as needed. The devices fly automatically and create desired imagery for the AI-engine of Pheno-Inspect. By automating the scan of large areas with drone images in high resolution or even with multispectral sensor technology, precise data can be collected and analyzed in just a few hours. This is crucial, for example, for active ingredient management and ultimately for continuous yield increases. For the first time, drones allow it to deploy automated image AI on a large scale, providing agriculture with essential information quickly and cost-effectively.

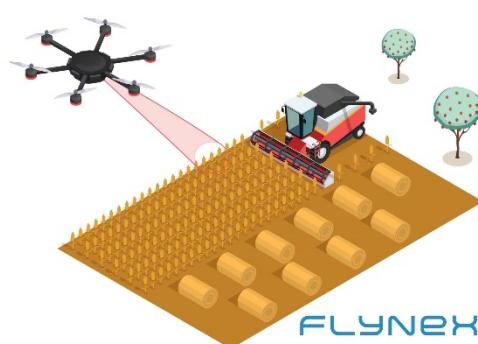
"The widespread use of drones and AI technology in agriculture is no longer a vision of the future. Not least, this is due to increasing challenges such as climate change and a fast-growing demand. Without the support of technology, agriculture cannot keep up. Secondly, the tangible benefits of cost and time savings are obvious," said Andreas Dunsch, CEO and co-founder of FlyNex.

With the leading commercial drone project management software in Europe, FlyNex enables companies and organizations worldwide to use unmanned aerial systems for effective data collection. Every step of the data collection process can be managed on the platform, from the initial planning over flying to evaluating the captured image and measurement data with 3rd-party software like the one from Pheno-Inspect.

The German start-up Pheno-Inspect provides state-of-the-art image processing software optimized for the agricultural sector for the fully automatic evaluation by using Artificial Intelligence. The algorithm can adapt to each use case individually and be made available to any farmer worldwide.

More information and a free demo of the solution can be found at <https://www.flynex.io/agriculture/>.

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About FlyNex

FlyNex, based in Leipzig, Hamburg, and San Francisco, is the most widely used software solution for commercial drone projects in Europe. Via its cloud platform, FlyNex covers the entire commercial application range for data acquisition by unmanned aerial systems. Companies can thus integrate drones into their processes with just a few clicks and, for example, reduce inspection costs by up to 90%.

Founded in 2015, FlyNex is successfully used as a drone management solution by well-known companies and technology leaders in the construction, real estate, energy, and aviation industries. In addition, FlyNex participates in Europe-wide innovation projects for the successful integration of drones, such as for medical transport, smart air traffic management, or air cab navigation.

For more information about FlyNex visit <https://www.flynex.io/press/>

About Pheno-Inspect

Pheno-Inspect was founded in January 2020 and developed state-of-the-art image processing software for the agricultural and plant breeding sector. With the automated evaluation of image data, the status and performance of crops in the (experimental) field can be digitally captured. "Digital experts", based on Artificial Intelligence, analyze and semantically interpret RGB, multispectral or hyperspectral image data of crops. This data can come from various sources, such as drones, smartphones, or mobile cameras. Pheno-Inspect offers data analysis conveniently as a cloud service or develops special software for use in real-time applications.

Contact

Laurent Schüller, Head of Marketing

l.schueller@flynex.de

+49 341 / 33176-370