Fact Sheet
Company Information and products

Company Information: ProTecBird GmbH

ProTecBird is a German AI technology company specializing in environmental protection related to birds. The company combines ornithological expertise with technical know-how to serve a rapidly growing market. The technology startup was founded in November 2021 in Husum.

ProTecBird offers innovative product solutions based on Artificial Intelligence (AI) for the renewable energy, aviation, and industrial sectors:

- Protection of birds from collisions with wind turbines to support the acceleration of renewable energy expansion on land and at sea.
- Monitoring as well as precise detection and counting of birds and bird movements within the rotor area of onshore and offshore wind turbines
- Increasing flight safety by protecting aircraft during takeoff and landing from bird strikes.
- Protection of industrial buildings, power plants, offshore installations, and football stadiums from contamination and damage caused by birds.

From Startup to Scale-Up

In 2024, ProTecBird successfully transitioned from a startup to a scale-up company. Under the leadership of CEO Thorsten Heinzen, the company, with a rapidly growing team of now 20 highly qualified full-time employees and 35 freelancers, has laid the foundation for rapid growth. In addition to highly demanded, market-ready product innovations, an efficient industrial organization was established, and expansion into international markets was successfully initiated. Industry leaders in wind energy, aircraft manufacturing, airport operations, industry, and Bundesliga football stadium operators have already been acquired as customers for the AI-based products.

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Successful System Development of the AVES Wind® Family

With our AI-based portfolio AVES WIND®, we have gained renowned onshore and offshore customers across Europe in the field of event-based shutdown and monitoring, including Ignitis, Enefit Green, Utilitas, EWZ, and Leitwind. Since 2022, around 300 systems have been commissioned. We are ISO 9001 certified and hold EU patents currently undergoing the approval process. Our focus lies in building strong partnerships with leading industrial and technology companies such as Rheinmetall and Axis.

ProTecBird has successfully validated the AVES Wind® Anti-Collision System (ACS) in the field. The system provides fully automated, real-time detection, identification, and tracking of bird species using AI models — during the day, at dusk, at night, and under challenging weather conditions. It is designed for deployment in demanding environments.

AVES Wind® ACS has been successfully validated and certified in Germany in accordance with the official requirements of the specialist convention proposal *"Testing Framework for Anti-Collision Systems" (MEKUN 2024)*. The system achieved over 95% detection and identification rates for red kite and white-tailed eagle. In addition, the system identifies bird species and determines their flight speed to calculate the required reaction time, enabling the wind turbine to reduce its rotational speed to a safe 2 rpm in time.

Our focus is on intelligent system design through the networking of systems and the use of industrial grade, proven serial hardware only. This includes a highly robust PTZ camera from Sweden and an AI computer developed for autonomous driving. The military-grade tracking software and triangulation module enable real-time tracking and precise calculation of birds' flight speed, altitude, direction, and distance.

By utilizing existing wind turbine infrastructure and plug-and-play magnetic installations, installation costs are kept low. We also prioritize maintenance friendliness, allowing defective components to be replaced quickly to minimize downtime. The scalable solution can be expanded with new software and hardware modules, reducing operating costs and ensuring long-term system reliability with minimal maintenance effort. Our systems achieve 95% availability over a two-year period. ProTecBird offers a comprehensive maintenance contract for both hardware and software, including daily customer support.

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Products of the AVES Family

AVES Wind® Anti-Collision System
With the AVES Wind® Anti-Collision System, wind turbines can be selectively switched to idle mode to protect large birds such as red kites or white-tailed eagles. The system is based on a highly integrated camera setup, detection and tracking software, and AI technology for reliable species identification.

AVES Wind® Monitoring
The AVES Wind® Monitoring stereoscopic camera system enables detailed monitoring and analysis of bird migration within the effective range of individual onshore and offshore wind turbines.

AVES Wind® High Precision Counter
The AVES Wind® High Precision Counter uses state-of-the-art AI technologies to detect and count bird movements with high precision. Specifically developed for offshore wind farms, this system enables the efficient and reliable fulfillment of regulatory requirements.

AVES Analytics
AVES Analytics provides a powerful platform that supports wind farm operators and managers in efficiently analysing and visualizing large datasets. Using advanced tools, data collected from the AVES product family—including the AVES Wind® Anti-Collision System**,** AVES Wind® Monitoring, and AVES Wind® High Precision Counter—can be consolidated. This enables well-founded decision-making and delivers comprehensive insights.

AVES Airport®
Using cutting-edge AI-based technology, we protect aircraft during takeoff and landing from bird strikes. AVES Airport® is designed to automatically detect birds and sustainably deter them from runways during both day and night operations.

AVES Industry® / AVES Stadium®
Protection of industrial, agricultural, and energy facilities as well as stadiums and sports venues from bird strikes, feeding damage, and contamination caused by birds. Thanks to precise sensors and AI-based tracking software, it is possible to deter both individual birds and entire flocks effectively.

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