dtbird® dtbat®

AUTOMATIC & REAL-TIME PROTECTION

Bird Monitoring & Reduction of Collision Risk with Wind Turbines

MAY 2025

Bird Monitoring & Reduction of Collision Risk with Wind Turbines

DTBird® is an automatic system that monitors bird activity in real-time, and detects any bird flying during the day or night all year round.

DTBird® System can be installed in Wind Turbines (WTGs), Meteorogical Towers and other facilities on & offshore.

In operating Wind Farms, DTBird® System includes specific modules that take automatic actions to rduce the collision risk of birds with the WTGs: DTBird® Collision Avoidance Module and DTBird® Stop Control Module, in addition, DTBird® Collision Control registers bird collisions.

DTBird® **efficiency** in detectability and collision risk reduction has been tested by independent environmental consultancies, research institutions and bird protection organizations.

DTBird® features and operational specifications are available to the public in the download section of DTBird® website.

Modules

DTBird® has 4 modules available:

Detection

Automatic and real-time detection of flying birds by AI during the day or night.

Collision Control

Video and audio recording of high collisions (with the blades, tower and nacelle) and injured birds that fly away.

Collision Avoidance

Emission of Discouraging Sounds adjusted to bird collision risk and legal requirements.

Stop Control

Automatic triggering of signals to stop and restart the WTG based on real-time collision risk.

Videos of every bird flight, environmental data, WTG operational parameters and DTBird® actions are recorded and uploaded daily to an online Data Analysis Platform (NEST), available through the internet. It also provides automatic statistics that summarize service profiles, bird flights, actions, and bird collisions detected.

DTBird® Systems are customized for every wind farm depending on WTG characteristics, target species, local weather and collision risk migration actions selected. New models offered are: F4, F6, F8, A4, A6, A8, A10, A12 and Autonomous PTZ.

Check the Catalogue!

Detection Module

Features

- **Installation sites:** WTGs (with steel and/or concrete tower), meteorological tower and orther facilities (on & offshore).
- **Detection sensors:** Daylight and Thermal cameras.
- **Surveillance area:** Up to 360° horizontal and 90° vertical.
- **Detection distance:**

BIRD SPECIES (WINGSPAN)	MAX DETECTION DISTANCE		
	MODELS F4-A4	MODELS F8-A8	AUTONOMOUS PTZ 15° Lens angle
Golden Eagle (2 m)	400 m	800 m	980 m
Northern Gannet (1,7 m)	300 m	620 m	760 m
Red Kite (1,5 m)	280 m	550 m	670 m
Atlantic Puffin (0,5 m)	90 m	180 m	220 m

- **Daily service period:** Continous monitoring during the day and/or night.
- **Bird detectability:** > 76%.*
- **Detection within blades.**

Observations:

* Sensitivity 76% - Annual average value, which can very by up to ±10% depending on configuration settings, filters and software improvements.

DTBird Autonomous PTZ model (55° to 15° horizontal lens angle).

Latest DTBird models: FALCO (above) & ALBATROSS (below).

Collision Avoidance Module

Features

- **Installation sites:** WTGs (with steel and/or concrete tower).
- **Dissuasion units:s** 4 to 10 speakers per WTG installed at several heights, covering the whole Rotor Swept Area.
- **Sound features:**
  - Discouraging sounds to birds flights in High Collision Risk/Rotor Swept Area.
  - Trigger in real time: milliseconds after detection of flight collision risk.
  - Power adjusted to legal requirements and bird sensitivity.
  - Sound emission covering the whole Rotor Swept Area.
- **Collision risk reduction:** Already reported.*

Recorded Data

- Discouraging Sounds time data: Init time and total length.
- Video and sound recordings of bird flights and Discouraging Sounds.

DTBird Collision Avoidance Module Speakers installed on the WTG tower. 4 to 10 Speakers can be installed per WTG.

Observations:

* H.T. Harvey & Consultants for the *Renewable Wind Wildlife Institute* (REWI) in 2018 reported the deterrence response rate for Golden Eagles is 52%-83%, for Buteos is 36%-76%, and for all Raptors is 39%-78%.

ECOCOM in 2016 reported a reduction in flight time in the risk area of the rotor between 61%-87%. it triggers avoidance behaviour in 88% of cases where the bird is on a collision course with the WTG.

Stop Control Module

Features

- **Interface with WTG:** DTBird® system hardware and software compatible with all WTG manufacturers.
- **Automatic Stop trigger:** Linked to real-time flight detection at the collision risk distance. **Collision risk distance:** Configured according to WTG complete rotor Stop time and Target Species flight features in the installation site.
- Up to four **shutdown programs** according to model selected: minimum, basic, standard and high protection.
- **Stop duration:** Linked to real-time flight detection in collision risk.

Recorded Data

- Stop time data: Init time, end time and total time transpired.
- Video recordings of bird flights and the whole Stop.

Collision Control Module

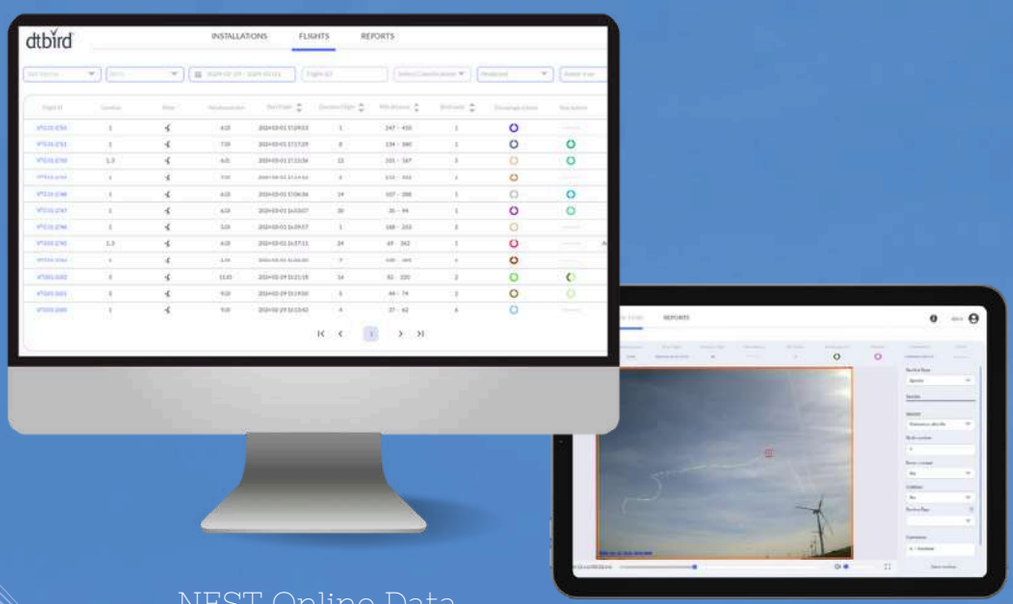
Features

- **Installation sites**: WTGs towers and/or offshore Transition Pieces.
- **Detection sensors**: Daylight and Thermal cameras.
- **Daily service period:** Continuous monitoring during the day and night.
- **Surveillance area:** according to DTBird model.
- **Register of potential collisions in > 96% of flights detected**.
- **DTBird models with Collision Control Module**: F4, A4, A8, A10, A12 and Thermal.
- Optional **continuous video recording**.

Nest Platform

Features

- **Online access 24/7** to videos, wind speed, WTG operational parameters and system actions.
- **Integrated video zoom.**
- **Downloadable Statistics** for selected time periods.



NEST Online Data Analysis Platform.

DTBird flight video record.

DTBird® System: a Worldwide Reference for Bird Protection at Wind Farms

Since 2009 | 16 Countries | + 500 Units installed

DTBird® & DTBat® features are demanded by environmental administrations of an increasing number of countries. **+500** DTBird® & DTBat® units have been installed at over 110 existing / projected, onshore / offshore wind farms in **16 countries** (Austria, Belgium, China, France, Germany, Greece, Italy, Norway, Poland, Spain, Sweden, Switzerland, Taiwan, The Netherlands, the United Kingdom and the United States). DTBird® is operating at WTG **since 2009.**

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