

B-FINDER - automatic bats & birds mortality monitoring for wind power

#15806

Michał Przybycin, Józef Mrowca-Ciułacz

EMPEKO S.A. , Mleczowa 3A, 61-680 Poznań, Poland, info@b-finder.eu



automation, bats, birds, monitoring

Summary

This paper presents breakthrough automation technology for wildlife post-construction monitoring based on sensors. B-finder technology enables automatic bats & birds fatality monitoring for onshore & offshore project. Results of 12-months tests of prototype are presented.

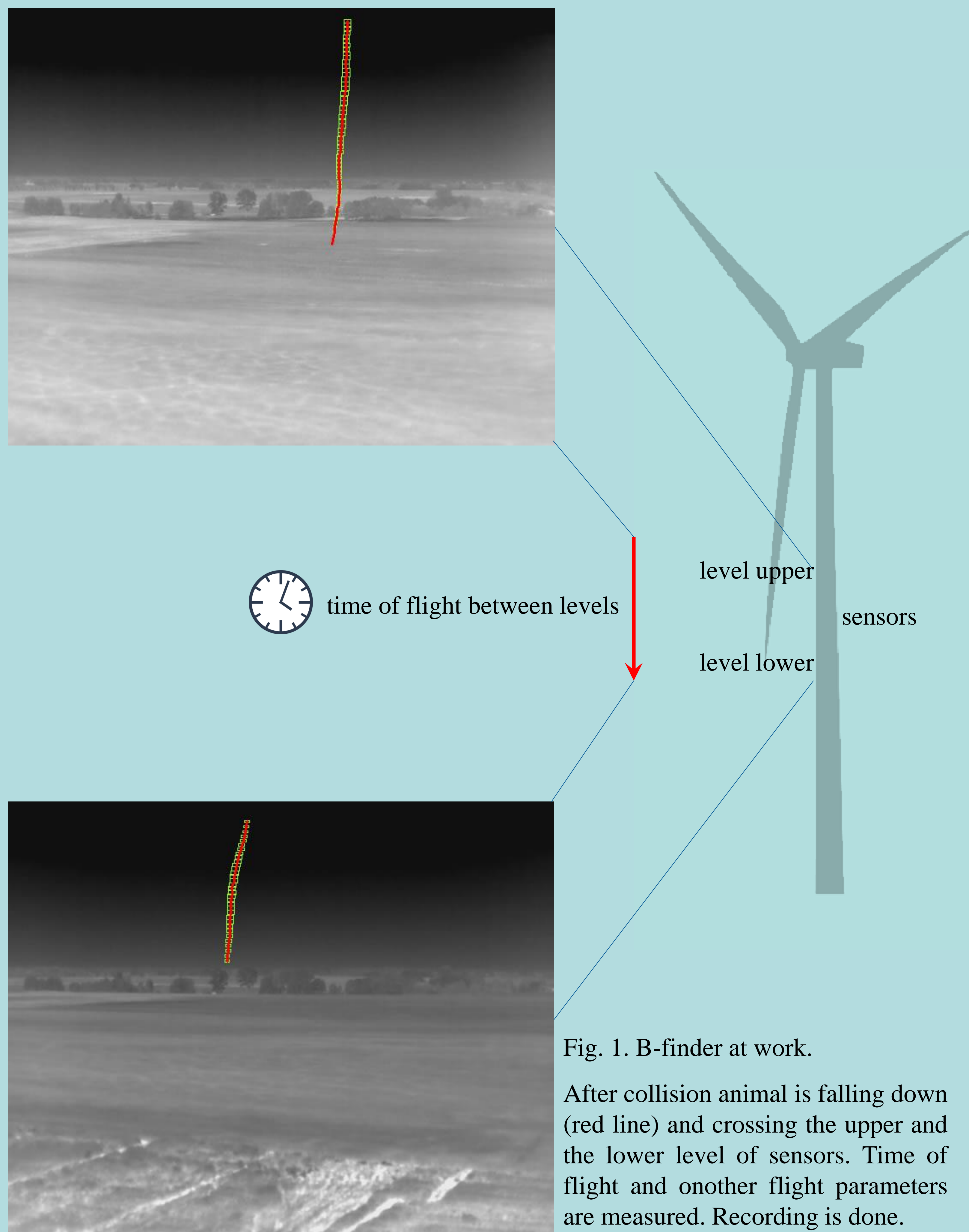
Post-construction bats & birds collision monitoring for offshore projects

Post-construction fatality monitoring methods are based on searching on the ground. Offshore projects need alternative methods of monitoring. Environmental specialists [1-3] are calling for technical innovation in this area.

B-finder system enables the wind industry to monitor the collisions in real time, like they are. Every single bat or bird fatality case can be on-line reported immediately. The automation based on sensors enables transparent monitoring, justice for every single wind tower. B-finder is onshore and offshore ready. B-finder system make the mortality monitoring efficient, comparable between projects, transparent and easy.

How it works?

The basic principle of B-finder is the sequence of recording animal's flight across sensors levels. The flight down of some death or injured animals has different parameters than alive ones. The algorithm differences them and reports only collisions.



Automation of monitoring

Post-construction mortality monitoring for offshore locations can be provided only as an automated process. B-finder is developed in Europe and the 1-year long prototype-test is finished November 2018. First results show high potential of this system for post-construction mortality monitoring for onshore and offshore projects.

B-finder system characteristics:

- Automation
- 24/365 day and night, every weather conditions operation
- Direct data access and online reporting
- 92-100% efficiency of bats & birds fatality monitoring
- Global standard
- Onshore and offshore ready
- High quality data for operators, regulators and investors
- CSR tool
- Counting of collisions instead of temporary stopping operation
- No prediction, no uncertainties, just real data

The thermal camera sensors technology enable detection of smallest European species in the range of 50-100m and the bigger species in the range >100m from the tower.



Fig. 2. B-finder unit: left - internal rack cabin, right - external sensors.

Rack cabin is located inside the wind tower and external sensors on two or three different heights of wind tower.

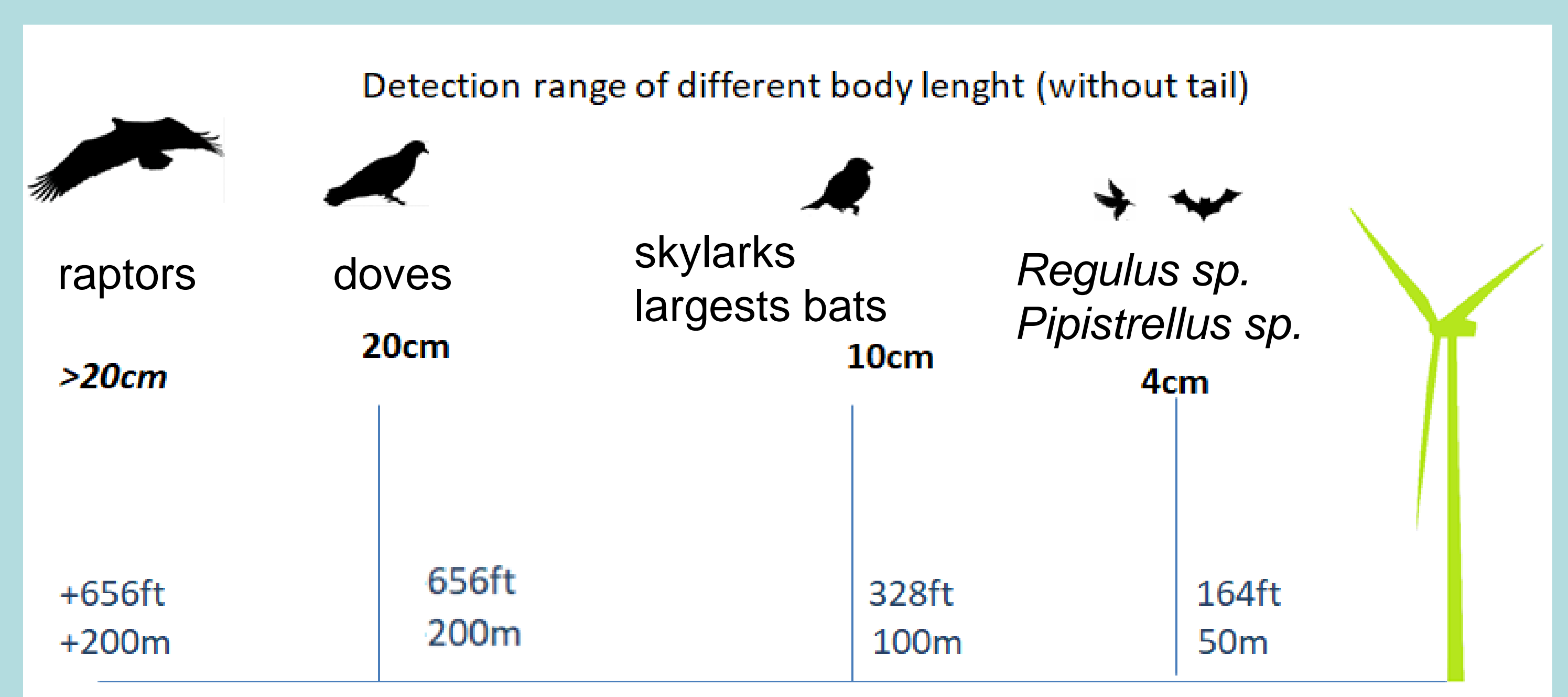


Fig. 3. B-finder range for different species.

References

- [1] Rydell J., Engström H., Hedenström A., Larsen J.K., Pettersson J., Green P. 2012. Report 6511. The effect of wind power on birds and bats. SEPA.
- [2] Brabant, R., Vanermen N., Eric W., Stienen M., Degraer S. 2015. "Towards a cumulative collision risk assessment of local and migrating birds in North Sea offshore wind farms". Hydrobiologia 756(1):63.
- [3] Pelletier, S.K., Omland K., Watrous K.S., Peterson T.S.. 2013. Information Synthesis on the Potential for Bat Interactions with Offshore Wind Facilities – Final Report. U.S. Dept of the Interior, Bureau of Ocean Energy Management, Headquarters, Herndon, VA. OCS Study BOEM 2013-01163. 119 pp.