

SEABIRD: System for Environmental Assessment of Bird/Bat Interactions with Real-Time Detection

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CHALLENGE

Knowledge of bird and bat interactions with offshore wind technologies over multiple scales is a critical knowledge gap.

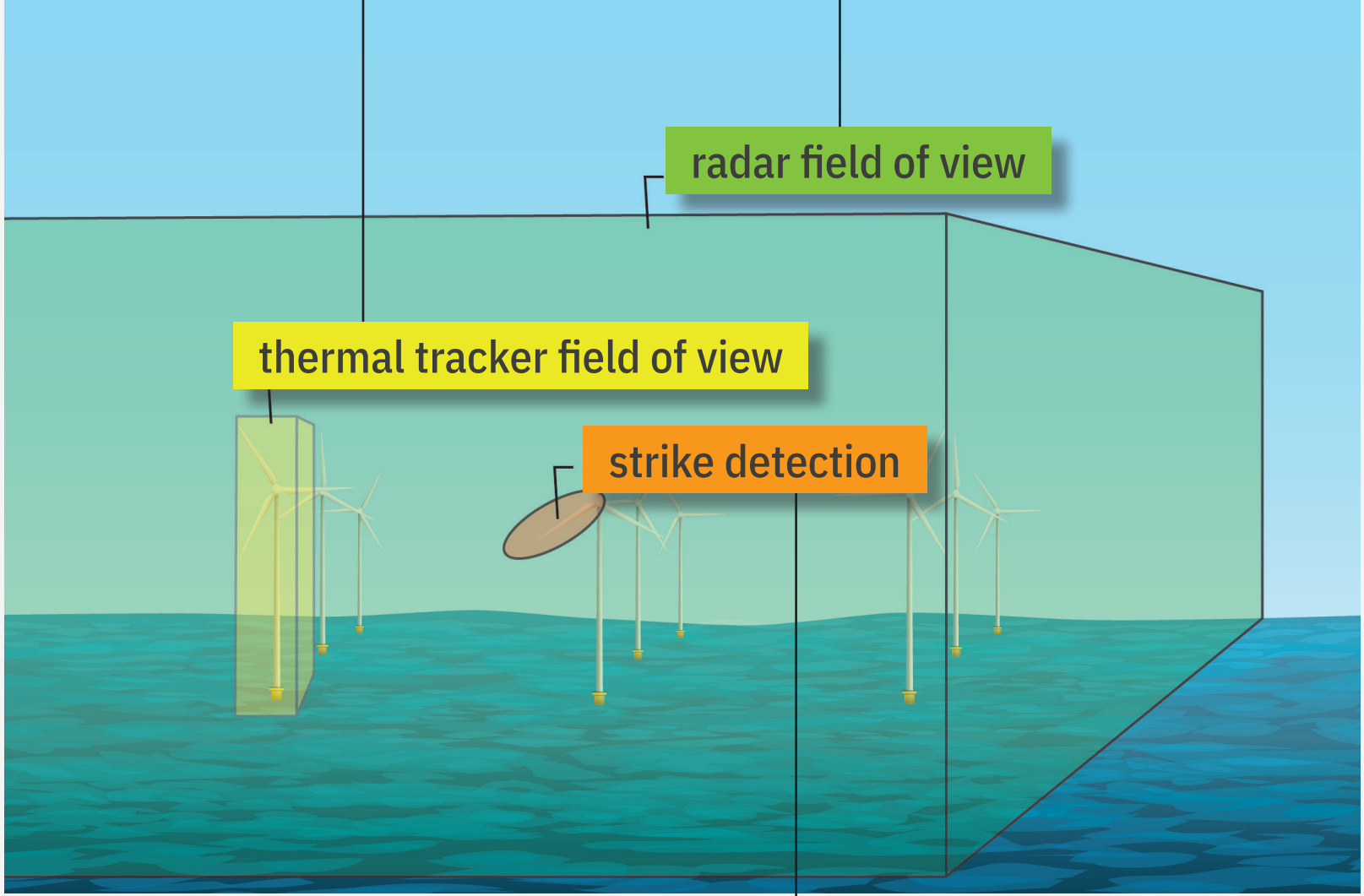

SOLUTION

Technological innovations in bird and bat monitoring will reduce uncertainties regarding wildlife impacts and minimize non-technical project risks prior to offtake.

PROJECT SUMMARY


MESOSCALE

ThermalTracker-3D (TT3D) imagers provide flight trajectory with feature extraction for species-level identification based on shape, size, and flight behavior.



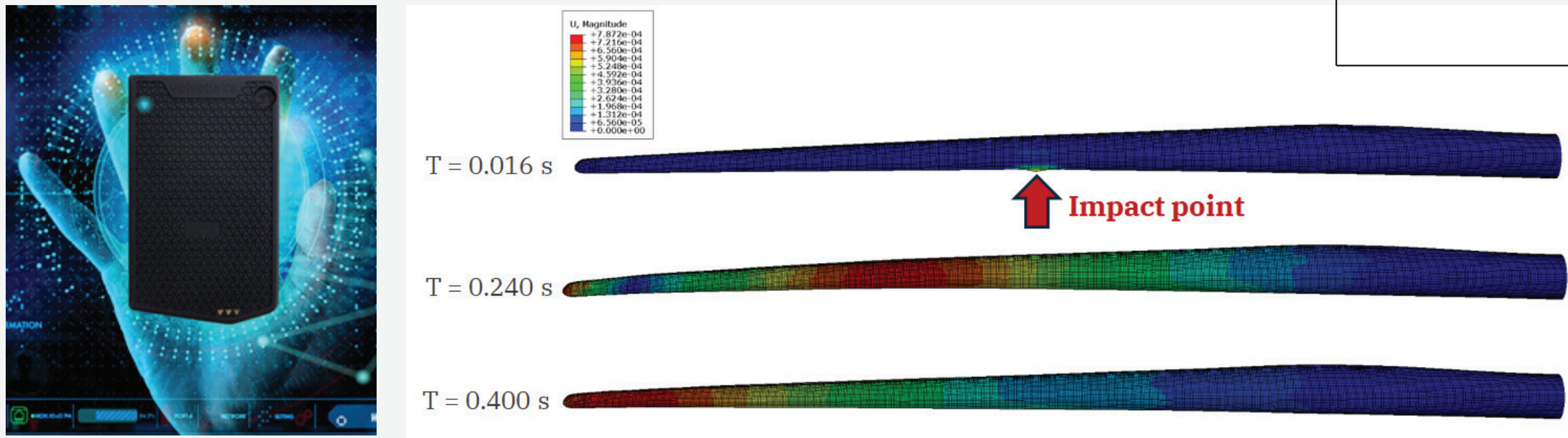
MACROSCALE

Marine S-band, pulsed Doppler 3D radars provide presence/absence, relative abundance, passage rate, flight height, and flight direction to 2–3 km range at 360° and 6–8 km range at 90°.



MICROSCALE

Structural health monitoring system to detect and characterize blade strike events; informed by models, calibrated and validated on actual blades.



FUTURE DIRECTIONS

Real-time radar

MACROSCALE



Real-time TT3D

MESOSCALE



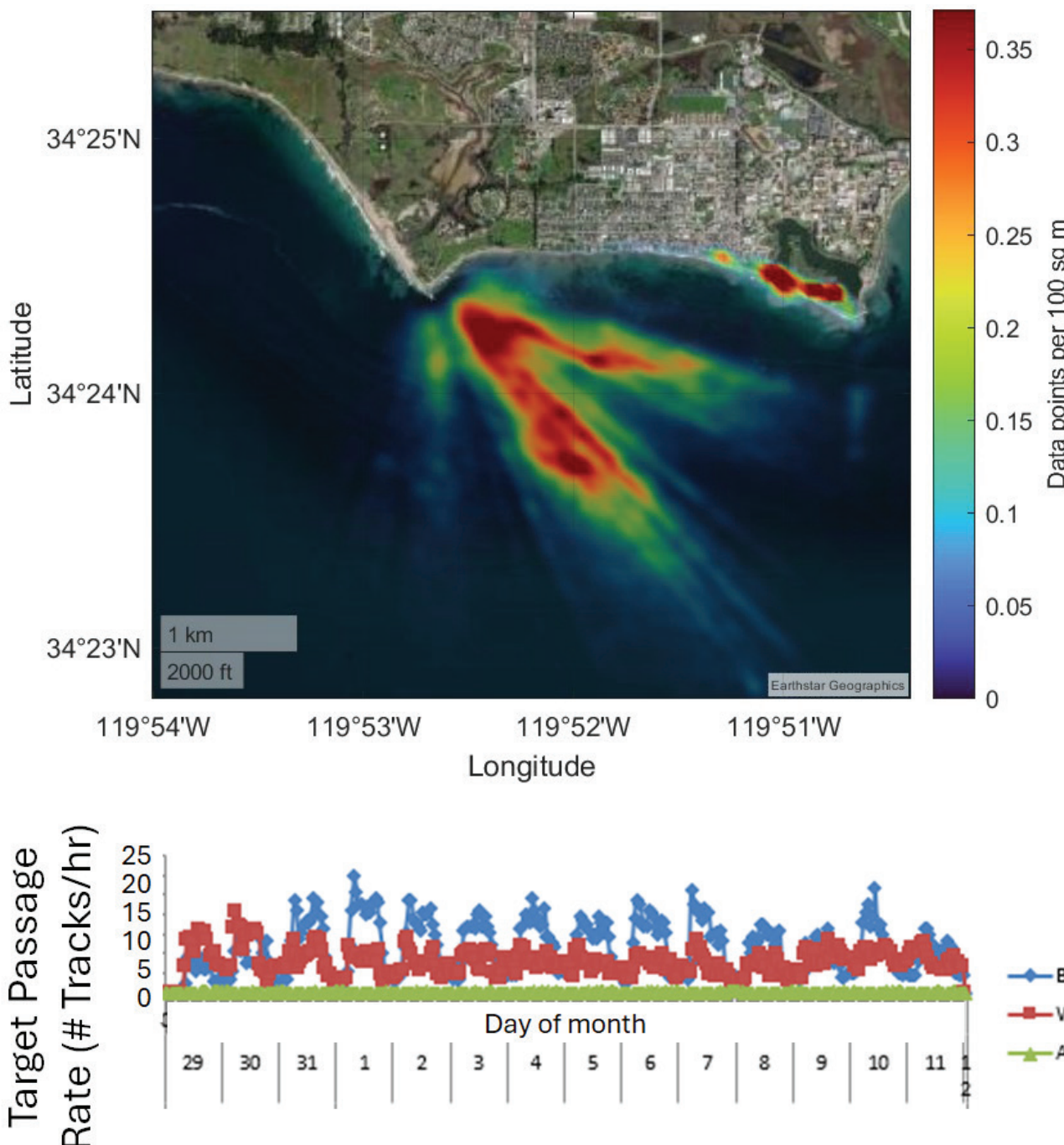
Real-time collision detection

MICROSCALE



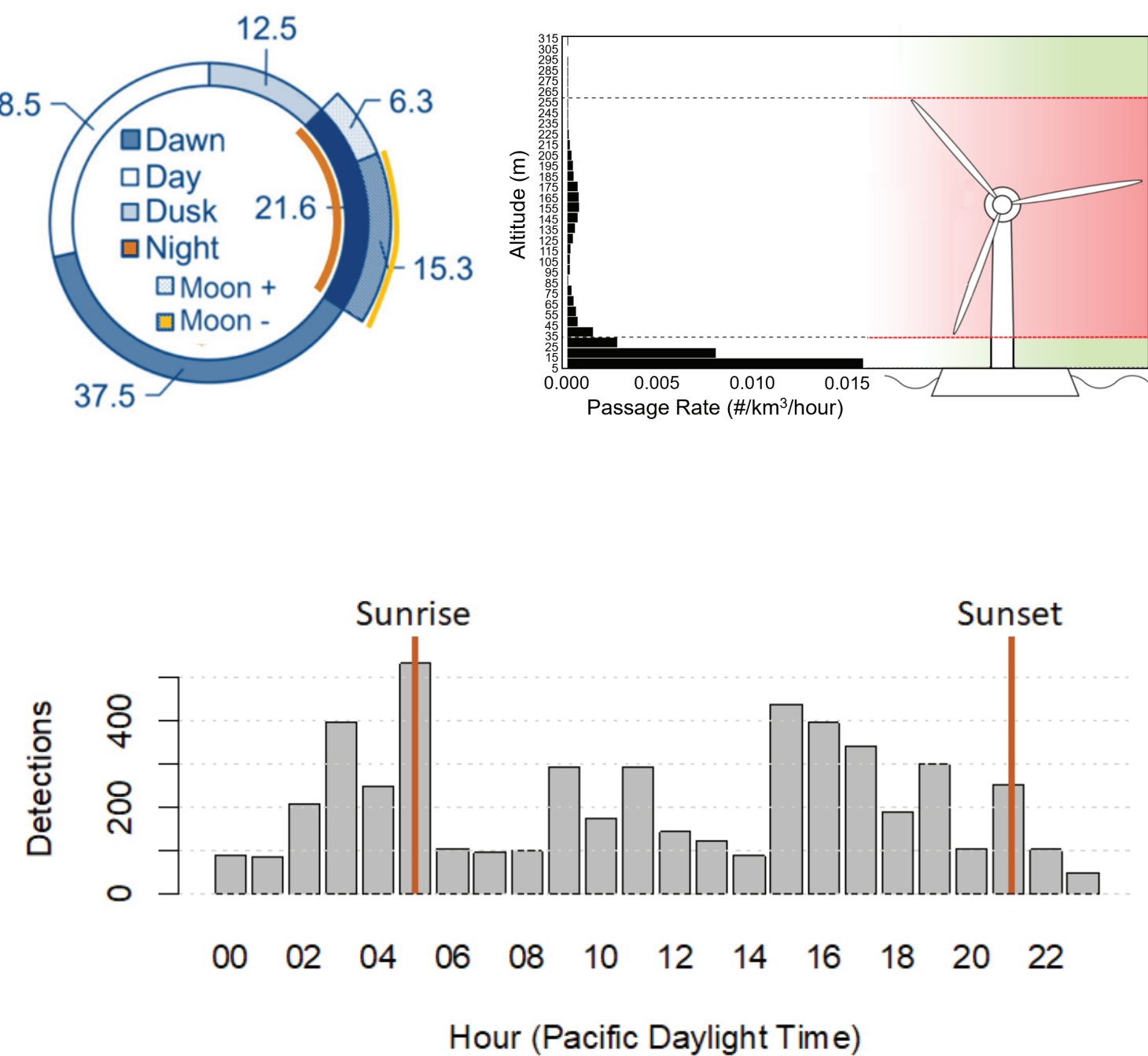
Long-term radar data

Areal density and hourly passage rate of targets derived from long-term radar data



Long-term TT3D data

Daily distribution, flight height distribution, and hourly detections of targets derived from long-term TT3D data



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