Stormm

hytech imaging & Observatoire PELAGIS
UAR 3462 CNRS La Rochelle Université

Aerial image acquisition service for digital monitoring of avifauna and marine megafauna

The Stormm service has been designed to meet the challenges of digital monitoring of avifauna and marine megafauna, whether to help improve the state of knowledge or to meet the environmental requirements linked to the installation and operation of offshore wind farms. To achieve this, Stormm provides an image acquisition service (Stormm-Survey) and an expert image analysis service (Stormm-Analysis).

Stormm-Survey is based on the Stormm® optical system. Once the images have been acquired, Stormm-Analysis provides a database of aerial photos ready for expert identification, as well as ergonomic and upgradable analysis tools.

With Stormm-Survey, get a reliable imaging service, including:

an optical system for environmental monitoring

Precise, wide swath

Robust to glint conditions at the sea surface

Flexible, with 30-minutes installation on various aircraft models, and use at high or low altitude (with or without observer)

optimal acquisition conditions

Continuous weather monitoring

Complete operations management

Team of operators on-call

Reactive set up thanks to the operation of several aircrafts and Stormm® systems

Data traceability

images meeting identification requirements

Precise: spatial resolution < 2 cm

High quality: optics and sensors adapted to identification at sea

High fidelity: image characteristics maintained regardless of flight altitude

Reliable: systematic image quality control

With Stormm-Analysis, benefit from tailor-made identification support, focused on your environmental expertise, including:

time-saving

on identification tasks by providing an image database with targets pre-detection (extraction of individuals and objects of interest)

easier identification

with an ergonomic (image navigation, labeling tool, identification assistance features), and upgradeable (custom features can be added) plugin

cost control and interoperability

without dependence on proprietary software, thanks to the plug-in based on the open-source QGIS software

hytech imaging

Contact us

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More info

www.hytech-imaging.fr

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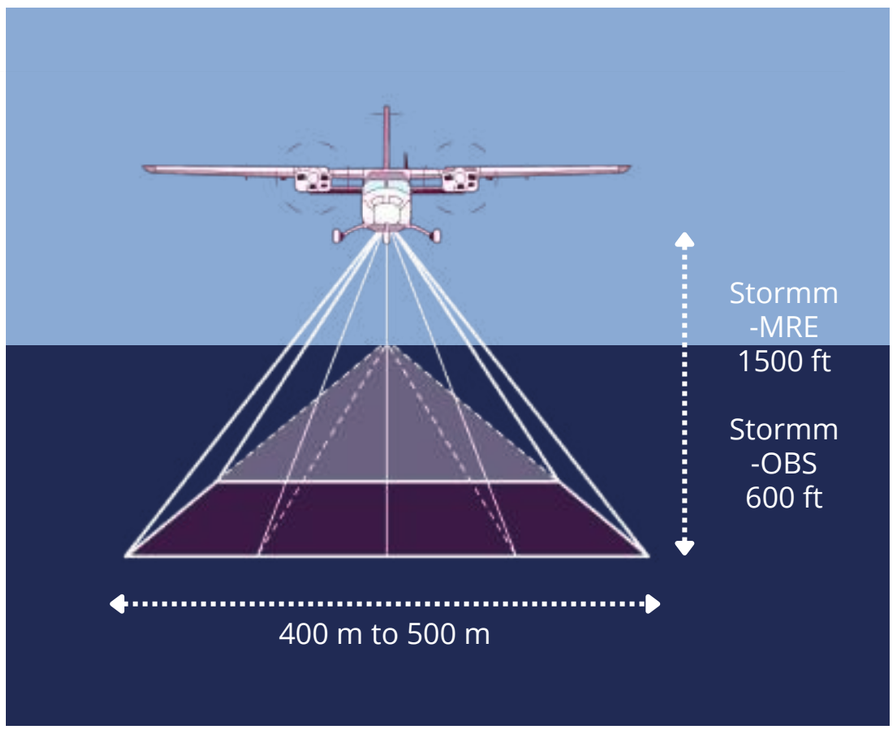
Stormm can be operated at high altitude (Stormm-MRE configuration) or at low altitude with observers (Stormm-OBS configuration), while maintaining a wide swath (400 to 500 m) and a very high spatial resolution (1 to 2 cm). Stormm covers large areas in a limited number of flying hours and meets the specifications of the SAMM aerial monitoring protocol for marine megafauna.

The Stormm® optical system is the result of a close collaboration with the Pelagis Observatory, which regularly uses the system for the national SAMM and international SCANS campaigns. Stormm is also contributing to MIGRATLANE, the national project leaded by the French Biodiversity Agency aimed at monitoring birds in the north-east Atlantic arc, and to the OWFSOMM national project leaded by France Energies Marines, dedicated to the intercalibration of monitoring protocols.



References

52 flights
within the SAMM
and SPEE campaigns
since 2019, still going on

4600 km
covered in 15 flights
for the SCANS campaigns
in 2022

24 flights
over 4 sites in the frame of
the MIGRATLANE project
from 2023 to 2026

4 MRE sites
sites surveyed during
14 sessions for the
OWFSOMM project
in 2022 and 2023

Partners

PELAGIS UAR 3462 - ULR - CNRS
La Rochelle Université
cnrs

Supports

OFB Office Français de la Biodiversité
France Energies Marines

Acquisition parameters for high and low-altitude configurations

Acquisition parameters	Stormm-MRE	Stormm-OBS
Nominal acquisition altitude	1500 ft / 450 m	600 ft / 180 m
Nominal ground speed	120 kts / 220 km/h	90 kts / 165 km/h
Swath across track	500 m	400 m
Spatial resolution	< 2 cm	< 2 cm
Amplitude of the glint avoidance system	+/- 17°	+/- 25°
Acquisition frequency in continuous mode	1 à 1,25 Hz	1 à 1,25 Hz
Acquisition frequency in burst mode	/	3 Hz
Data storage capacity	8 h	8 h
Images format :	JPEG	JPEG

Caracteristics	Stormm-MRE/-OBS
Dimension	53 cm x 55 cm x 23 cm
Weight	40 kg
Power consumption	< 250W

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