OWFSOMM

Offshore wind farm surveys of marine megafauna: standardisation of tools and methods for monitoring at farm scales

DURATION: 36 months | LAUNCH: 2020 | Total budget: €1,447 K

CONTEXT

Digital methods for monitoring marine megafauna from the air have undergone significant technical developments in recent years. Surveys based on these techniques will soon be used for the environmental monitoring of various French offshore wind projects. Given the economic stakes involved, it is necessary to demonstrate the technical relevance of these methods while guaranteeing commensurability with existing data from manned aerial surveys. **Additionally, environmental platforms, such as multisensory buoys, are being increasingly deployed to monitor marine megafauna. However, data fusion combining multiple sources data is not yet developed and represents an important milestone for automated future surveys.**

TECHNOLOGIES

STAGES OF THE VALUE CHAIN

Preparatory studies | Design | Manufacturing | Installation Construction | O&M | Dismantling

OBJECTIVES

- To provide an operational roadmap for conducting a robust inter-calibration of marine megafauna aerial surveys at ORE farm scale by using historical and novel technologies.
- To improve the efficiency of multiple sensors in detecting, identifying and characterising marine megafauna by using an AI tool.

SCIENTIFIC CONTENT

- **Inter-calibration methodology** between digital and human-based aerial surveys
- **Development of AI solutions** to enhance identification and estimation of targets (birds, marine mammals) coupling multimodal data (radar, acoustic)
- **Technical recommendations** for marine megafauna monitoring in ORE project to ensure inter-operability of datasets
- **Cost-effectiveness analysis** of sampling strategies using different acquisition methods

EXPECTED RESULTS

- **Modeling tools and guidelines** to enable inter-calibration of aerial monitoring methods at ORE farm scales
- **Novel methods for data fusion** based on deep learning will be developed to combine information coming from multiple data sources
- **Methodological and practical guidance** will be developed to facilitate and harmonise the megafauna survey, in terms of method selection and definition of spatial and temporal sampling

PARTNERS

Université Bretagne Sud · UMR IRISA · FRANCE ENERGIES MARINES

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