

DRACCAR-MMERMAID

Monitoring marine megafauna through an integrated approach towards an observatory network

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CONTEXT

The increasing number of Offshore Wind Farms (OWF) raises key environmental and societal issues as for their impacts on wildlife. Marine megafauna species, such as fish, seabirds and marine mammals, are at the heart of concerns. These species represent the high end of food webs, play key roles in ecosystem functioning and are also of socio-economic and cultural importance. They may be influenced by OWF, in their distribution, abundance and behaviour in relation to potential direct effects but also to a large array of ecological underlying effects. **It is therefore essential to develop an integrative and long-term approach to improve our understanding of OWF effects on the marine environment.**

OBJECTIVE

To provide an integrative framework of advanced monitoring methods for efficient and relevant environmental impact assessments, using cutting edge technologies and methodological developments

SCIENTIFIC CONTENTS

- Identifying and use of complementary instruments to monitor simultaneously different marine megafauna compartments around an offshore structure
- Development of algorithms for automated detections
- Characterisation of the use of an OWF structure and surrounding areas by marine megafauna.
- Study of the spatial-temporal dynamic of the food web around an OWF structure
- Assessment of the cumulative impacts of anthropogenic activities and climate change on the ecosystem's structure and functioning at the local and regional levels.
- Elaboration of road map toward a monitoring network (standardisation of protocols and data acquisition)



TECHNOLOGIES



STAGES OF THE VALUE CHAIN



EXPECTED RESULTS

- Knowledge on marine megafauna ecology in close vicinity of an OWF under construction.
- Development of a cutting-edge continuous *in situ* monitoring approach
- Integrated and robust sampling strategies to monitor simultaneously several compartments of marine megafauna.
- State-of-the-art deep learning algorithms for videos, sonar and passive acoustic data to move toward automated data processing.
- Advanced ecosystem models at local and regional scales
- Innovative and replicable approach as a steppingstone toward a national observatory network at sea.

PARTNERS



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