



Marine Life Sensing Technologies for an Operational Marine Biology Network

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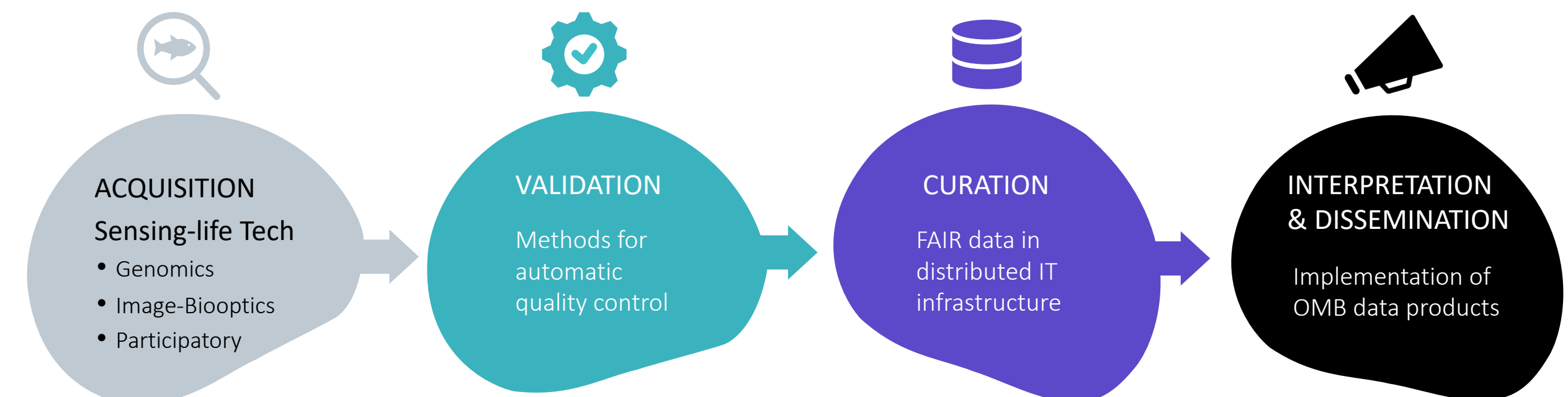
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The challenge: new observational requirements for marine life monitoring

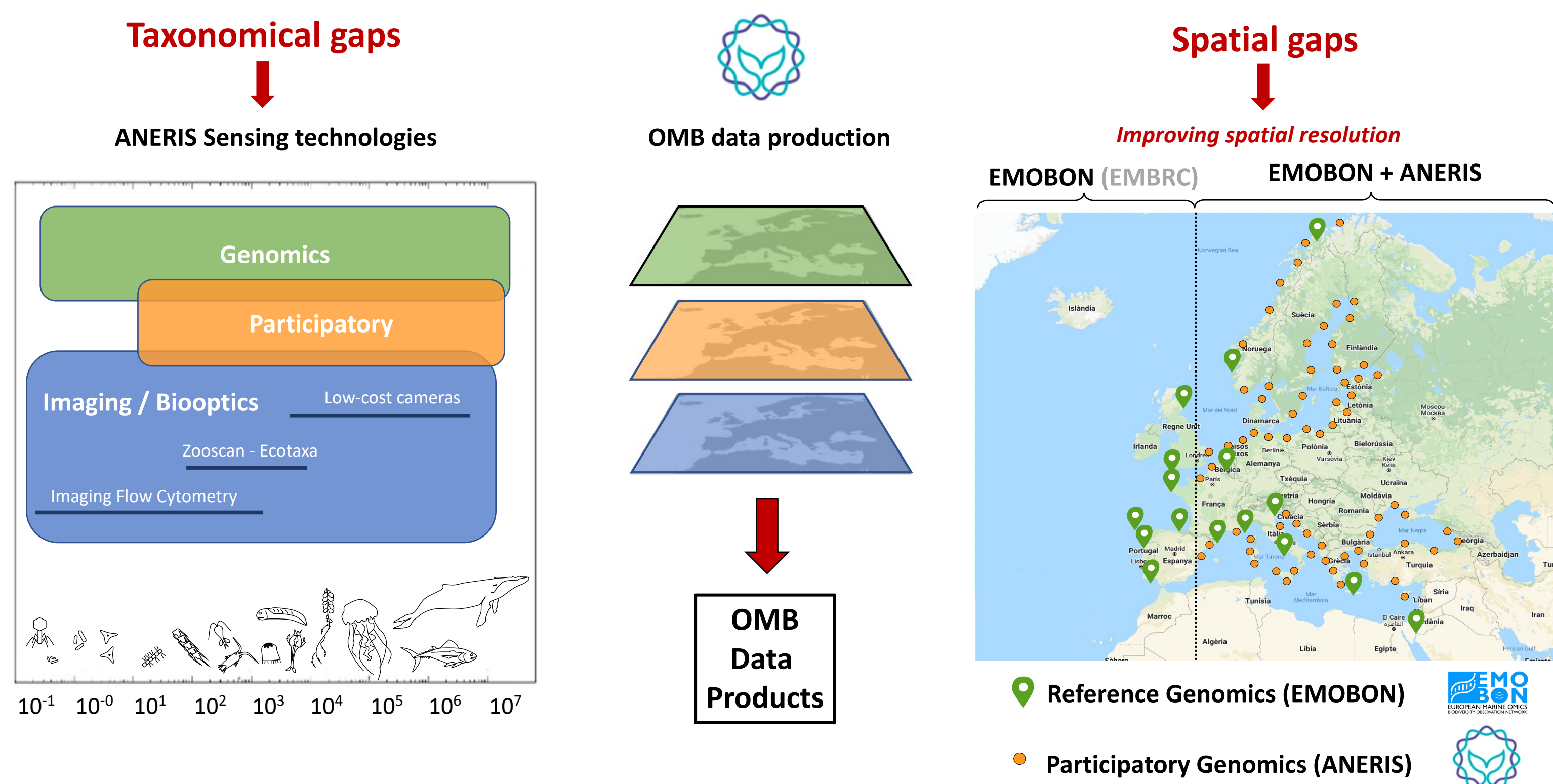
The **ongoing biodiversity crisis** may result in much of the ocean's biodiversity being lost or deeply modified without even being known. **Biological observations need to improve radically** to serve our understanding of marine ecosystems and biodiversity under multiple climate and anthropogenic-related impacts.

The proposed solution: Implementing Operational Marine Biology (OMB) systems

The ANERIS project, addresses these observational challenges by proposing the concept of **Operational Marine Biology (OMB)**, understood (in analogy with the Operational Oceanography) as a **systematic and long-term routine measurements** of the ocean and coastal life, and their rapid interpretation and dissemination



ANERIS OMB services and Case Studies for concept validation



Concept validation in 4 Case Studies

CS1. High-temporal resolution marine life monitoring in Marine Research Infrastructures

Target OMB products: Continuous high-resolution time series of (1) cytometric indexes describing the plankton community, (2) imaging-based indexes (size, shape...) describing those communities, (3) taxonomic composition, resulting from automated classifiers controlled by humans

CS2. Improved spatial and temporal resolution of marine life monitoring based on genomics

Target OMB products: A set of indicator maps for species diversity, intraspecific genetic variation and non-indigenous species occurrence based on the extended monitoring network

CS3. Large scale marine participatory actions (bioblitzes, BioMARathons)

Target OMB products: Seasonal maps of species occurrences with special focus on threatened and alien/invasive species

CS4. Merging imaging and genomic information in different monitoring scenarios

Target OMB products: The expected OMB products here will be the most experimental ones, trying to produce information of marine /coastal fauna and flora across the European coastline/ identification of biodiversity hotspots and climate refugia spots that should be prioritised in conservation actions

Example of service improvement: from collaborative to hybrid (AI-human) data validation

