

**Deneudt Klaas**

VLIZ - Flanders Marine Institute

*Author(s): Klaas Deneudt<sup>1</sup>, Jan Reubens<sup>1</sup>, Jonas Mortelmans<sup>1</sup>, Elisabeth Debusschere<sup>1</sup>, Carolien Knockaert<sup>1</sup>, Lennert Tyberghein<sup>1</sup>, Stefanie Dekeyzer<sup>1</sup>, Francisco Hernandez<sup>1</sup>, Jan Mees<sup>1</sup>*

*Affiliation(s) :*

*<sup>1</sup>Flanders Marine Institute, Belgium*

## ***Building an innovative and multidisciplinary marine biodiversity observatory for Lifewatch***

To support the marine biodiversity and ecosystem dynamics research community in Belgium, the Flanders Marine Institute (VLIZ) is setting up a local marine biodiversity observatory. This marine observatory aims to apply innovative techniques to generate long term data series that can support marine biodiversity studies on plankton, benthos, fish, birds and mammals. State of the art sensors are acquired and deployed in the field to gather high resolution data on occurrence and behavior of marine organisms and their environment. The observatory combines the installation of sensor networks at selected locations with monthly surveys on the Belgian Part of the North Sea using the Simon Stevin research vessel. The assembled infrastructure includes a flow cytometer for phytoplankton characterisation, video plankton and zooscan for zooplankton imaging, acoustic telemetry devices for fish detection, web cams and GPS trackers for bird observation and tracking, acoustic hydrophones for mammal detection, etc.

This contribution describes the screening and selection of available and applicable technology, the work on establishing the data flow from sensor to the user, translating the raw sensor output to intelligible information, initial design and further optimisation of the observatory and the efforts undertaken to serve the data and infrastructure to the users.

The construction and operation of this observatory is part of the Flemish contribution to the Lifewatch ESFRI, which is funded by the Hercules foundation, now part of Research Fund - Flanders (FWO).

*Keywords: Observatory, Biodiversity, North Sea, Technology, Infrastructure, Data*