Operational radar and optical mapping in monitoring hydrodynamic, morphodynamic and environmental parameter for coastal management

Results in Brief

Efficient system for depth monitoring

The newly developed Bathymetry Assessment System (BAS) combines satellite images and a limited number of echo soundings for efficient depth monitoring in shallow seas.

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Coastal management processes focus on preserving the coast environment while supporting its economic value that is related to human intervention activities. Effective management and monitoring of European coastal water resources heavily relies on informed policy measures based on tools to carry out these measures. Therefore, timely, accurate and reliable information on coastal regions can significantly contribute to efficient decision making.

Urged by this, the project OROMA focused on developing of a cost-effective integrated monitoring tool for assessing coastal erosion and water quality in near real time. Additionally, the project work generated a set of tools for mapping the status of

coastal regions with the aid of electronic media and validated the developed tools in close co-operation with potential, actual end-users.

One of these tools is the already commercialised Bathymetry Assessment System (BAS) for efficient depth monitoring in shallow waters by employing satellite images and a limited number of echo soundings. On the basis of microwave and optical satellite images, the tool can build up depth maps using a limited number of echo soundings.

Currently available technology involves interpolation of single beam echo soundings with a transect distance of typically 200m for creation of area covering maps. Unlike this, the BAS can offer maps of the same accuracy with an increased distance between transects up to 600m. The innovative system can be employed in bathymetric monitoring of shoals in shallow seas. One of these is the Wadden Sea along the North Sea coast and one of the largest European estuarine areas.

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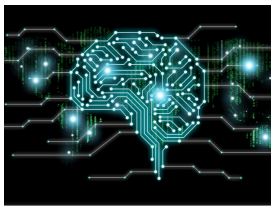

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