Towards Interoperable Ocean Observations :

Demonstrating Cross-Infrastructure Integration in the South Adriatic

V. Cardin[1], R. Martellucci[1], C. Dentico[1], E. Mauri[1], F. Paladini de Mendoza[2], A. Nogarotto[2]

[1]Istituto Nationale di Oceanografia e di Geofisica Sperimentale – OGS, Sgonico (TS)

[2]Istituto di Scienze Polari, CNR, Messina

3[2]Istituto di Scienze Polari, CNR, Bologna

vcardin@ogs.it

Within Work Package 5, Activity 5.20 is dedicated to demonstrating the advantages of cross-infrastructure data integration, combining both Eulerian and Lagrangian observations to generate a comprehensive spatial and temporal overview of key ocean variables. By merging datasets such as temperature, salinity, and oxygen from multiple research infrastructures (including stand-alone moorings, surface buoys, shipboard measurements, Argo surveys, etc.) the activity aims to provide integrated and multidisciplinary insights that advance our understanding of open-sea processes. This integrated approach not only improves scientific knowledge but also strengthens the capacity to develop effective strategies for ocean conservation and sustainable management. A prototype system has been developed to showcase these benefits, highlighting the added value of harmonising observations across infrastructures.

The South Adriatic test site, long recognised for its continuous time series and strategic role in regional circulation studies, was selected as the reference area for this activity. Under ITINERIS, the site has been enhanced with additional instruments and new sensors, further expanding its monitoring capacity. This multidisciplinary campaign was designed and implemented in line with the objectives of Task 5.20 and Deliverable 5.16, and brought together major European research infrastructures (RIs) including EMSO, Euro-Argo, ICOS, and Eurofleets.

The adoption of best-practice methodologies in this cross-infrastructure campaign enabled the alignment of observational strategies and facilitated seamless data integration. Results from the South Adriatic case study demonstrate how coordinated efforts across RIs strengthen interoperability, enhance data quality, and maximise scientific return. Ultimately, this initiative illustrates the potential of collaborative, multi-platform ocean observation to address critical scientific and societal challenges within the framework of European marine research.

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