

Adriana Maria Constantinescu, GeoEcoMar Romania, Andrew Tyler, University of Stirling, Stirling, UK, Steve Groom, Plymouth Marine Laboratory, Plymouth, UK, Adrian Stanica, GeoEcoMar Romania, & DANUBIUS-PP Consortium

DANUBIUS-RI: International Centre for Advanced Studies on River-Sea Systems – Observation Node, link between EO and in-situ measurements

Abstract: DANUBIUS-RI, the International Centre for Advanced Studies on River-Sea Systems, is a distributed research infrastructure (RI) integrating studies of rivers and their catchments, transitional waters such as estuaries, deltas and lagoons, and their adjacent coastal seas. The overall aim is to support the sustainable management of River-Sea Systems by (1) providing access to facilities, methods and tools, as well as samples and data; (2) bringing together relevant expertise to facilitate interdisciplinary research, advance process and system understanding and enhance stakeholder engagement; and (3) enabling the development of integrated management and policy-making in River-Sea Systems. In 2016, the European Strategy Forum for Research Infrastructures (ESFRI) included DANUBIUS-RI in its roadmap highlighting the need for a research infrastructure at the freshwater – marine interface.

Achieving healthy River-Sea Systems requires the integration of state-of-the-art methods and techniques, including Earth Observations and on-site arrays of sensors. The Observation Node is one of the key components of DANUBIUS-RI and is hosted by the University of Stirling and Plymouth Marine laboratory in the United Kingdom. Its main aim is to integrate Earth Observation and in-situ data for the integrated study of River – Sea System. It develops: i) In situ sensor networks; ii) Real-time observations; iii) Studies of water quality, emergent pollutants, biogeochemical cycles; v) It has tterrestrial coverage. It is responsible for i) standardization of field measurement equipment (in situ stations) and sampling in supersites, ii) calibration; ii) training.

The work is supported in several European projects: H2020 CERTO, MONOCLE CoastObs and CCI Lakes. These projects are developing: multi-scale observation networks of sensors, improved algorithms to address the lack of harmonisation by undertaking research to produce harmonised water quality data from each service and extend Copernicus to the large number of stakeholders operating in River-Sea Systems.

"