

Steve Groom Plymouth Marine Laboratory, UK and many other co-authors (Too many to list)

CERTO Project Progress

Abstract: Water quality is a key worldwide issue relevant to human consumption & food production, industry, nature and recreation. The European Copernicus programme includes satellite sensors designed to observe water quality, and services to provide data and information to end-users in industry, policy, monitoring agencies and science. However, water quality data production is split across three services, Copernicus Marine, Climate Change, and Land, with different methods and approaches used and some areas, notably transitional waters, not supported by any service.

The CERTO project aims to address this lack of harmonisation by undertaking research and development necessary to produce harmonised water quality data from each service and extend Copernicus to the large number of stakeholders operating in transitional waters. CERTO will focus on methods to classify waters, using satellite observations, together with the most comprehensive existing in situ data sets and additional data gathering within the project. Methods will be improved to remove the atmospheric signal, particularly problematic in near-coastal and transitional waters, as well as to flag waters where the bottom is visible. CERTO will also evaluate optical water quality Indicators, as specified by the broad group of end-users engaged in the project from industry, monitoring agencies and science communities. CERTO will investigate cross-cutting Indicators that may be used across coasts, transitional and inland waters including large rivers (monitored through the Water Framework and Marine Strategy Framework Directives). The project will contribute to DANUBIUS the European research infrastructure in River-Sea Systems, and international communities such as Group on Earth Observation (GEO) AquaWatch and Blue Planet, the Lagoons for Life initiative as well as supporting the United National Sustainable Development Goals.

The main output of the project will be a prototype system that can be “plugged into” the existing Copernicus services, used on developing Data and Information Access Services (DIAS), or in popular open-source software used widely by the community (SNAP). CERTO will also produce the evidence needed by the “entrusted entities” that run the Copernicus services as to the improvements, potential to increase the user community, possible downstream services and wider impact of the prototype

CERTO will achieve its objectives by uniquely bringing together the leaders of the water quality data production in the three Copernicus Services, five SMEs involved in research and innovation and downstream water quality services, the Climate-KIC that leverage a pan-European partnership and a community of innovators and entrepreneurs, as well as four research intensive institutes/ universities, together with leaders of end-user relevant communities either in the team or as advisors."