IMMERSE: Improving Models for Marine EnviRonment SErvices

Description

The overarching goal of the IMMERSE project is to ensure that the Copernicus Marine Environment Monitoring Service (CMEMS) will have continued access to world-class marine modelling tools for its next generation systems while leveraging advances in space and information technologies, therefore allowing it to address the ever-increasing and evolving demands for marine monitoring and prediction in the 2020s and beyond. In response to the future priorities for CMEMS, IMMERSE will develop new capabilities to:

- enable the production of ocean forecasts and analyses that exploit upcoming high resolution satellite datasets,
- deliver ocean analyses and forecasts with the higher spatial resolution and additional process complexity demanded by users,
- exploit the opportunities of new high performance computing (HPC) technology
- allow easy interfacing of CMEMS products with detailed local coastal models.

These developments will be delivered in the NEMO ocean model, an established, world-class ocean modelling system that already forms the basis of the majority of CMEMS analysis and forecast products. Hence the pathway from the research in IMMERSE to implementation in CMEMS will be simple and seamless, as the model code developed will be directly applicable in CMEMS models. NEMO has a long track record of producing and maintaining a stable, robustly engineered code base of the type that is needed for operational applications, including CMEMS. The IMMERSE consortium combines world-class expertise in ocean modelling, applied mathematics and HPC, established software engineering processes and infrastructure, and in-depth knowledge of the CMEMS systems and downstream CMEMS systems. Thus IMMERSE is exceptionally well placed to deliver the operational quality model code required to meet the emerging needs of CMEMS, and maintain it into the future.

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