

***Stronger Together: Developing the framework for a sustainable National Research Infrastructure EirOOS (Irish Ocean Observing System) as an effective component of the European Ocean Observing System (EOOS).***

Ireland occupies a unique location in the northeast Atlantic, one of the world's largest carbon sinks and the area most vulnerable to changes in Atlantic circulation. Ireland has been involved with European ocean observation projects from FP6 through to H2020 leading to the development of ocean and climate observing systems from the coast to open ocean. However, infrastructure gaps remain which impact the capability to address scientific questions of national and global importance. Ireland's longstanding scientific interaction at a European level coupled with significant state investments in Ocean observation infrastructures has led to the development of EirOOS (Irish Ocean Observing System).

We demonstrate how EirOOS has developed at a National level into a key Research Infrastructure to further develop scientific and technical research capacity in sea level science, ocean circulation, and carbon sequestration in order to understand the connection between Ireland's coastal seas and the Atlantic ocean. The data infrastructure underpinning EirOOS is discussed and how it links the disparate elements of the distributed infrastructure together through harmonisation and interoperability of its data platforms.

The multi-level Interaction and cooperation between EirOOS and other key marine European Research infrastructures like EMSO, EuroArgo and JERICO RI in terms of developing cohesive and impactful Science, User and Business cases for EirOOS, thus ensuring it is delivering services and outputs defined by its stakeholders is discussed. Finally, the role of EirOOS as an effective and sustainable component in a distributed European Ocean Observing System with a description of the framework for integration is considered.