

## ID9- SMARTBAY: THE DEVELOPMENT AND IMPLEMENTATION OF AN ADVANCED MARINE TECHNOLOGY PLATFORM ON THE WEST COAST OF IRELAND

ALAN BERRY<sup>156</sup>, PAUL GAUGHAN<sup>158</sup>, CAITRIONA NIC AONGHUSA<sup>157</sup>

**Abstract** - This paper is about the development, implementation and operation of SmartBay - a subsea cabled observatory and supporting infrastructure to stimulate the development of marine technology in Ireland. Blue Growth is the long term strategy of the European Union to support sustainable growth in the marine sector and offers great potential for innovation.

The development of Ocean Technologies currently presents a number of challenges globally in terms of costs, reliability and longevity of infrastructure in the development of Renewable Energy, Blue Biotechnology, Water, and Environmental Monitoring & Management as well as more established markets such as Oil and Gas, Shipping and Security and Fishing and Aquaculture. We discuss the rationale behind the development of SmartBay in terms of addressing these challenges and focus particularly in the area of marine renewable energy technology development

The design and installation phases of SmartBay are discussed. Costs were minimised, whilst maximising the range of features and applications that the infrastructure can

provide to scientific and commercial users. The scientific subsea instrument node is also described in detail, along with the advanced supporting cyber-infrastructure that ensures the data is collected, processed archived and displayed as per end user requirements. The facility provides access to state of the art marine assets and resources for Researchers, Designers, Innovators and Entrepreneurs within Ireland and the EU and is a unique catalyst in the attraction of inward investment and venture capital investment.

The SmartBay infrastructure platform centres on a core technology or service, the provision of high quality, time-series marine data. This is essential for a broader, interdependent ecosystem of businesses to develop and supply complementary value-added products and applications to wide multidisciplinary set of users. SmartBay's role as a key technology node in broader European initiatives Ocean Observation initiatives like the European Multidisciplinary Seafloor and water column observatory (EMSO), which has been established as a European Research Infrastructure consortium (ERIC) is also discussed.

