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“Testing the Waters and Making the Grade”

Abstract: Mr. John Breslin, SmartBay Ireland

SmartBay Irelands National Marine Test & Demonstration Facility – progress, challenges & lessons learned

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SmartBay Ireland manages a National marine test and demonstration facility in Galway Bay which supports the collection of marine data and the trial, demonstration and validation of novel marine sensors and equipment, including $\frac{1}{4}$ scale ocean energy conversion devices. The rationale for establishing a not-for-profit company to manage and operate the facility will be explored and discussed.

The presentation will follow the progress of a number of trial and validation projects including: the collection of a background acoustic dataset at the test site; the trial and validation of a novel elastomeric mooring system; the validation of data from a prototype Inertial Measurement Unit; the Cork ‘Smart’ buoy project; and the deployment of an Ocean Energy Device.

Existing SmartBay marine monitoring infrastructure will be described, including data buoys, data acquisition systems and the planned cabled permanent observatory. This observatory will have dedicated ports for a variety of sensors and equipment such as a high definition video, a sea laboratory, oceanographic sensors and a subsea acoustic array; there will also be unused ports for validating novel marine sensors, experimental techniques and analytics. Progress and challenges on the design and installation phase of the cabled observatory project will be addressed.

Challenges and solutions on the integration of sensors and acquisition of data, wireless data communication and data visualisation will be presented. The challenges of managing “big data”, specifically data from hydrophone arrays and HD cameras will be discussed, together with lessons learnt regarding permitting and licencing.