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SEACAMS2: Geophysical research to identify appropriate sites for the development of Marine Energy Test Areas (META) in Milford Haven

AIMS: To develop an improved understanding of the physical sub-tidal environment in Milford Haven and surrounding exposed coastal areas (bathymetry, sediment composition, underlying stratigraphy) on various temporal and spatial scales to assist Marine Energy Wales and developers identify optimum sites for Marine Renewable Energy infrastructure testing.

RATIONALE: This research project will provide the marine renewable energy (MRE) sector in South Wales with new, high resolution, geological models detailing the nature and composition of the sub-tidal environment in Milford Haven, including its geomorphology, sedimentology and underlying geology.   The data collected during this project will identify patterns of temporal and spatial variability of seabed sediments within the estuary and outlying areas and identify sites which are most susceptible to change through natural processes such as storm events or through anthropogenic activities associated with the installation of MRE related infrastructure. It is anticipated that this research project will greatly assist the MRE sector by contributing invaluable new knowledge towards supporting MEW's ambition to develop a new, sustainable and cost-effective test facility in and around the Milford Haven area.
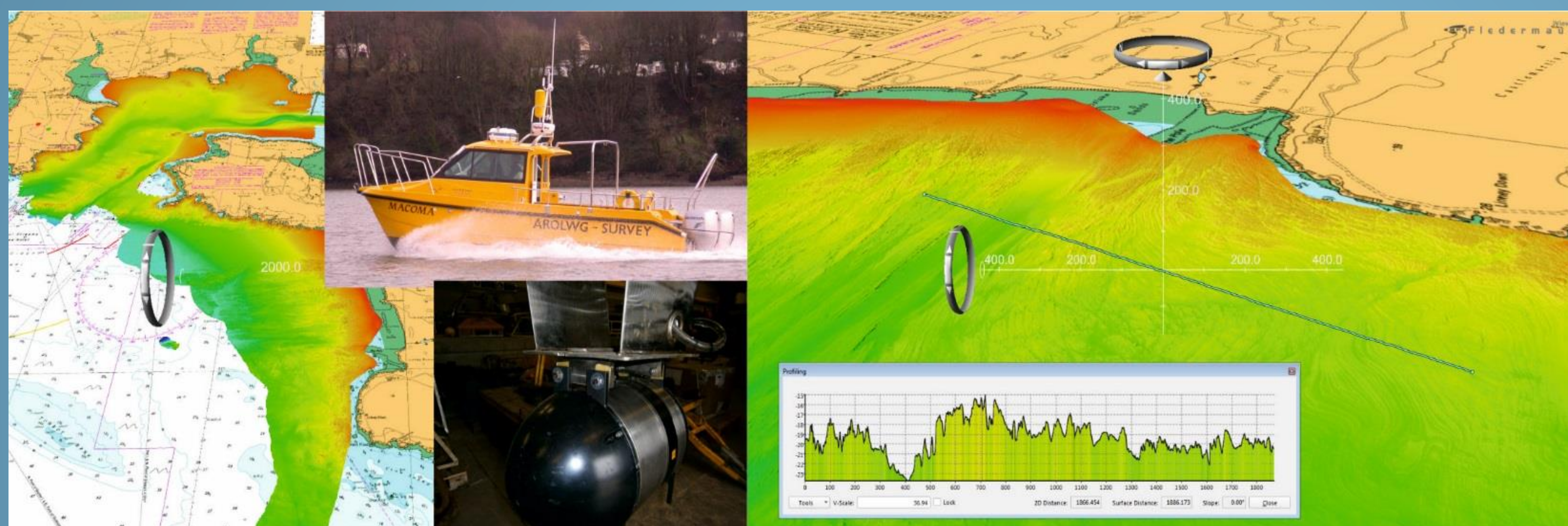
A bathymetric model (0.5m^2) of MBES data from Milford Haven, Bangor University's inshore survey vessel 'Macoma', our Teledyne Reson SeaBat transducer and an output from a bathymetric model of the seabed geology off Freshwater West.

METHODS:

- High resolution multibeam sonar (MBES) data has been collected by the SEACAMS team over a period of several years from areas of interest within and adjacent to Milford Haven. Additional historical data sets obtained by external organisations have also been sourced.

- Data will be analysed to identify appropriate sites for possible future MRE related deployments and associated infrastructure testing.

- Additional multibeam, sub-bottom and sediment grab surveys to be undertaken during 2018/19 within areas of interest, including Milford Haven, Freshwater West, Westdale Bay, Gateholm Bay, Bullslaughter Bay, Broadhaven and Freshwater East will support further research on temporal and spatial changes within the sub-tidal environment.

OUTCOMES:

- Generation of new data geological sets associated with seabed bathymetry and composition, variability over seasonal timescales, impact of storm events, sediment variability, underlying geological characteristics and information on potential interactions between future MRE related infrastructure deployments and dominant marine physical processes.

- This information in report and scientific publication formats will be crucial in assisting Marine Energy Wales to progress a viable and effective Marine Energy Test Area initiative and contribute to future associated research activities.

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