INSTITUTE OF OCEANOGRAPHY AND ENVIRONMENT

Co-funded by the Erasmus+ Programme of the European Union

Research and experimental facilities at UMT

Joint research, research training, academic mobility between MARE Partners

Partner: Universiti Malaysia Terengganu

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Acoustic Doppler Current Profiler

Key Features:

1. Available in three profiling ranges: 20m, 50m, 100m
2. Bottom or boat-mounted
3. Real-time and bottom-tracking options
4. Data rates up to 16 Hz
5. Supports multiple concurrent sampling strategies
6. Records raw data for future processing—analyze over different time scales as study objectives and features in the observed data may require.
7. Off-the-shelf battery option
8. Wireless data download
9. Setup via wireless browser interface—no software required
10. Setup tool to ensures robust sampling strategy despite complex variables

Hardware security features, including: captured o-rings, separate electronics and battery chambers, self-contained transducer design

Side Scan Sonar

Key Features:

1. Very high resolution and long range images
2. Lightweight, one-person portable—ideal for small open boat operations
3. Special software features for target analysis
4. Complete turnkey system ready for field use
5. Cost-effective ownership and operation
6. Selectable dual-frequency operation (445 kHz and 900 kHz)
7. Phosphorescent finish
8. Laptop and wireless LAN compatible

CTD-Rosette Water Sampler

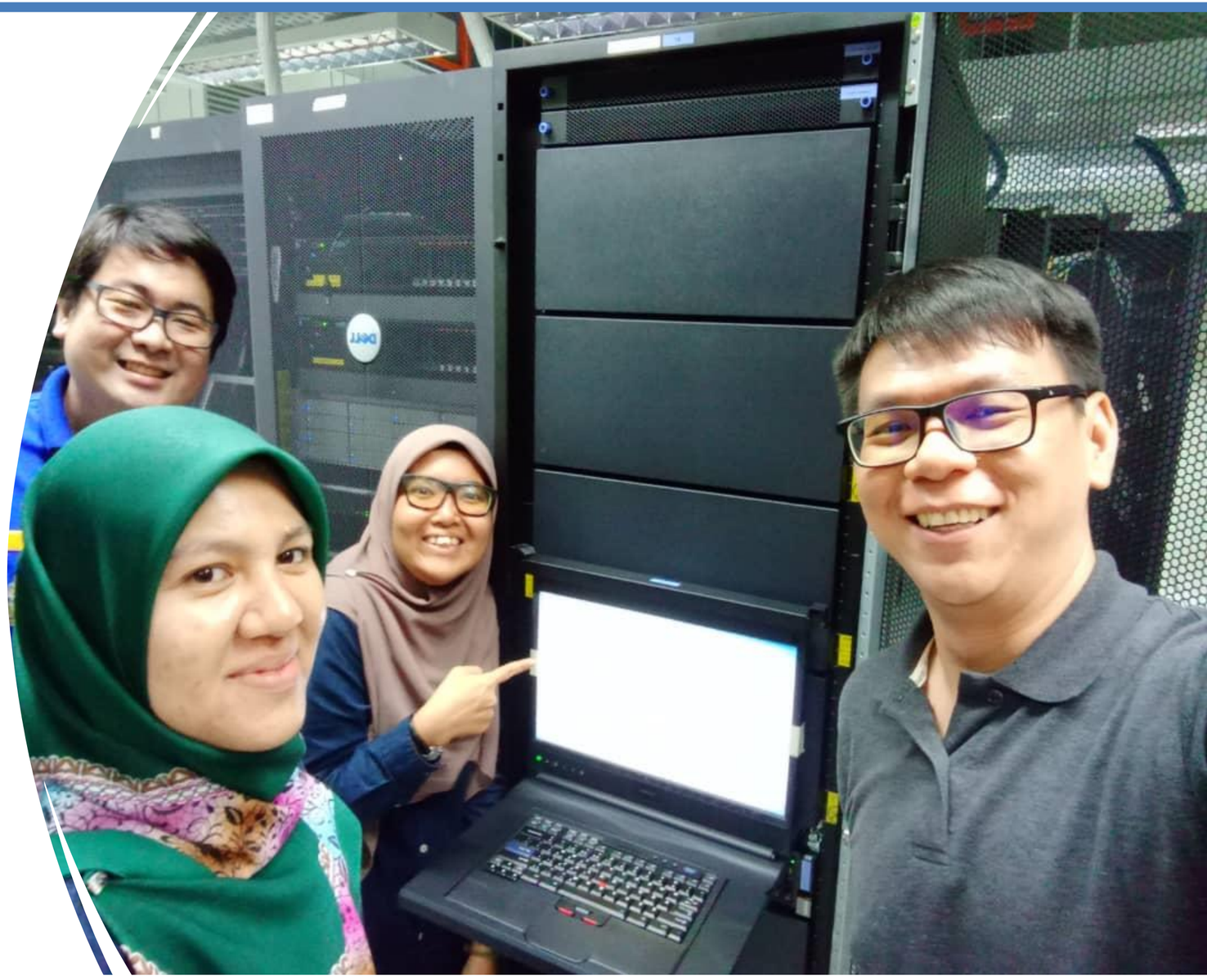
Key Features:

The CTD measures conductivity (which helps determine salinity), temperature, and depth. This particular CTD runs profiles of the water column (surface to bottom) and along the way, collects discrete water samples (at specific predetermined depths) using the rosette of niskin bottles. Each bottle can collect a water sample. The transmissometer measures the number of particles in the water and the oxygen sensors tell us how much dissolved oxygen is present. Both of these instruments go onto the CTD rosette and give us a profile of the water column.

INOSurf

Key Features:

INOSurf is a high-performance computing (HPC) system owned by the Institute of Oceanography and Environment (INOS), Universiti Malaysia Terengganu (UMT). INOSurf is the first HPC in UMT to process data and perform complex calculations at a higher speed. HPC is generally important in science, engineering, technology, and business operations that support comprehensive research and advanced problem-solving through modelling, simulation, analysis, and concurrent uses of computing resources. The development of INOSurf is truly timely with the Malaysian Cohort project and the numerous multi-omics projects being conducted in INOS.



DELFT Software

Key Features:

Wind, waves and currents shape our coasts. Climate change and rising sea levels add further to this pressure. To enable us to live safely along our shores, we need effective coastal and marine management. Moreover, these coastal processes do not present the only threat. We must also protect ourselves against river and pluvial flooding, while on the other hand we need that water for transport, irrigation, energy, cooling, recreation, environmental protection and as a source of drinking water. Consequently, design and management procedures become more complex and require an integrated approach. In response to this challenge, Deltares has developed a powerful modelling suite called the Delft3D Flexible Mesh Suite, focusing primarily on coastal, estuarine, river, rural and urban environments.