

Shipwreck and Quay Wall Survey

Jakarta, Indonesia

Partner Training for PT Hidronav Tehnikatama

The survey described in this case study was made in connection with a NORBIT Partner training program, conducted by NORBIT engineers from Singapore and Norway

This training aimed to equip NORBIT's Partner PT Hidronav Tehnikatama to serve as NORBIT's exclusive partner in Indonesia, handling sales, technical services, and warranty support.

Certified participants were those who completed the course and demonstrated proficiency, ensuring that NORBIT customers receive appropriate sales support from qualified personnel.





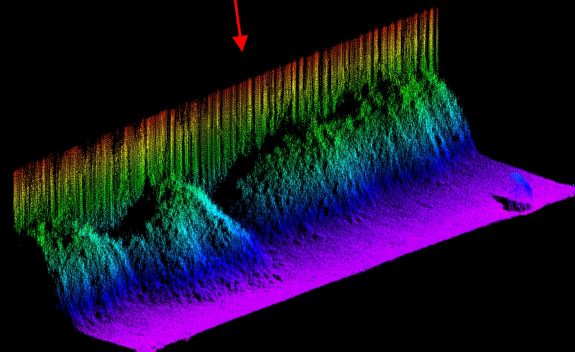
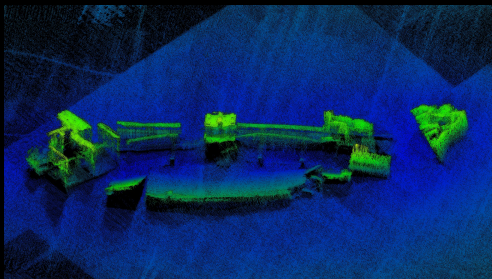
As part of the course syllabus, a field survey was conducted in Tanjung Priok, Jakarta Bay, on 29th August 2024, using the NORBIT WINGHEAD i79h multibeam sonar.

The survey covered a submerged wreck and a heavily sedimented quay wall section.

Utilising the portable NORBIT PORTUS Pole, the installation and system configuration took just over an hour.

The shipwreck was located approximately two nautical miles northeast of the port, at a depth of less than 10m.

The quay wall, constructed on the eastern side of the port in 2014, showed significant sediment build up at its base, as captured by the high-resolution WINGHEAD i79h dataset.



The NORBIT WINGHEAD i79h sonar is the first cylindrical ultra-high resolution curved array bathymetric system, designed for rapid anywhere, anytime mobilisation featuring the highest standard industry-leading integrated GNSS/INS positioning. With a compact ultra-high resolution curved array broadband multibeam sonar offering tight integration with GNSS/INS (Applanix Oceanmaster) that is designed for use in the most demanding operational environments such as under bridges or in rough sea conditions.

Multibeam Sonar with Integrated Inertial Navigation System & Integrated NTRIP Client

Backscatter Outputs (Intensity, Sidescan, Snippet Sidescan, Snippets, Water Column)

Roll Stabilisation

Multidetect & Pipeline Mode

Integrated Sound Velocity Probe

1024 Dynamically Focused Beams

FM & CW Processing

Exceeds IHO Exclusive Order & USACE New York



WINGHEAD
Sonar Family



NORBIT WINGHEAD i79h

Installation at PT.JPPI Shipyards, Indonesia.

Sonar was mounted at the port side of the vessel with both Antenna 1 & Antenna 2.

Installation & configuration took just over an hour using the NORBIT PORTUS Pole.

Fugro Marinestar corrections were interfaced with the system in real time.

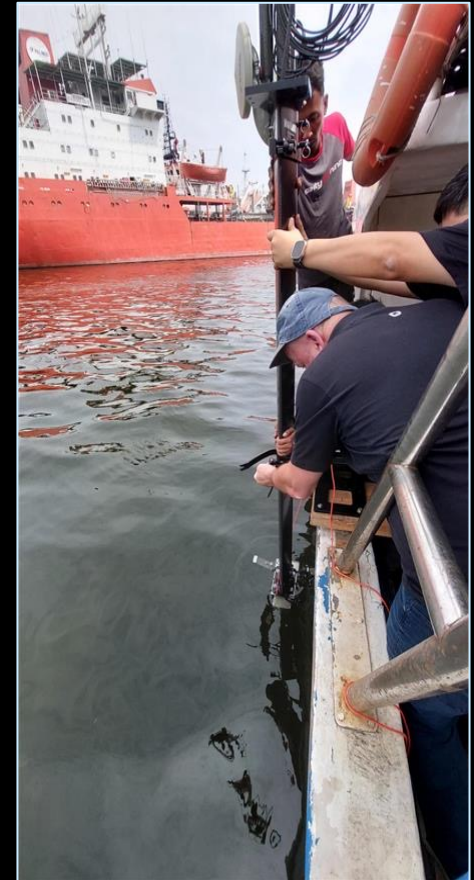




Figure 1: Survey Vessel



Figure 2: NORBIT PORTUS Pole

Vessel Spec:

Length Overall (LOA): 16m
Breadth Overall (BOA): 3.2m
Gross Tonnage: 110 tons
Net Tonnage: 80 tons
Height: 5.6m
Draft: 1.5m

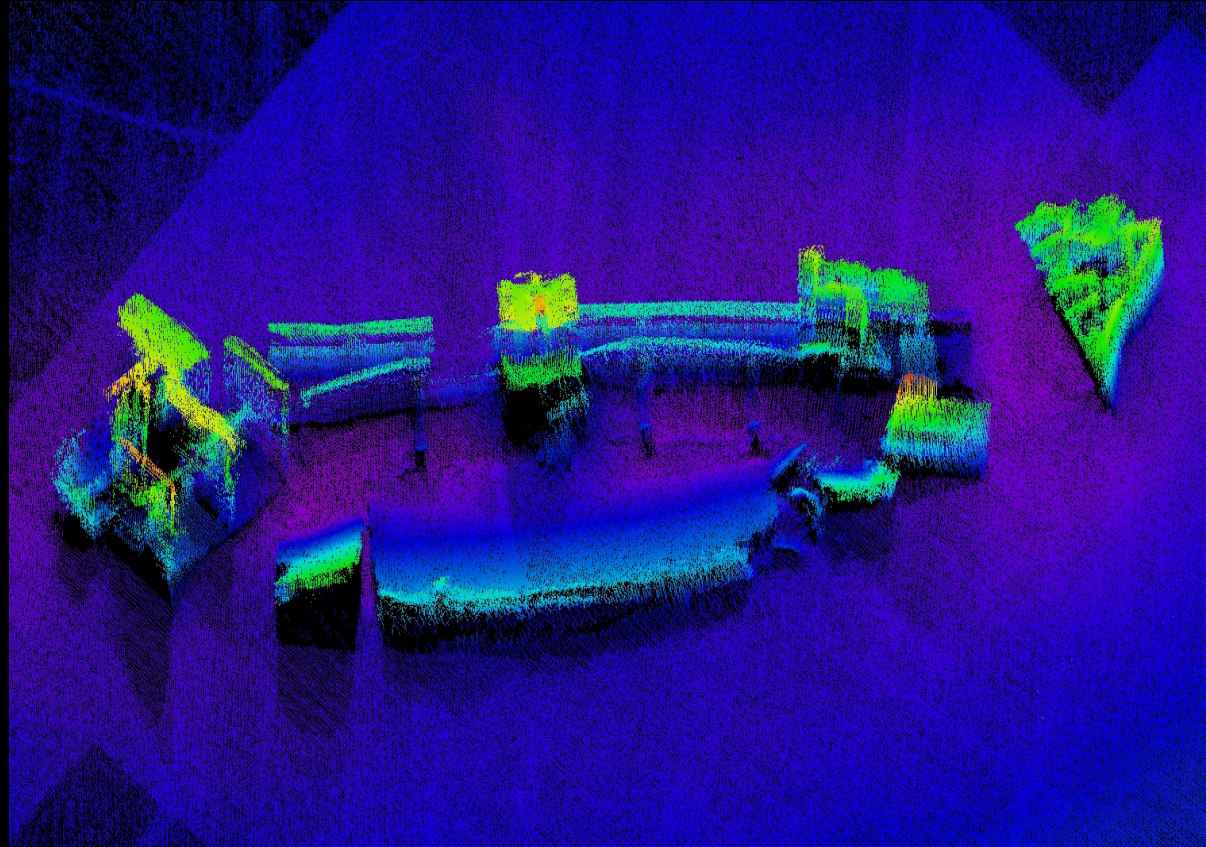


Figure 3: Processed Data of Shipwreck

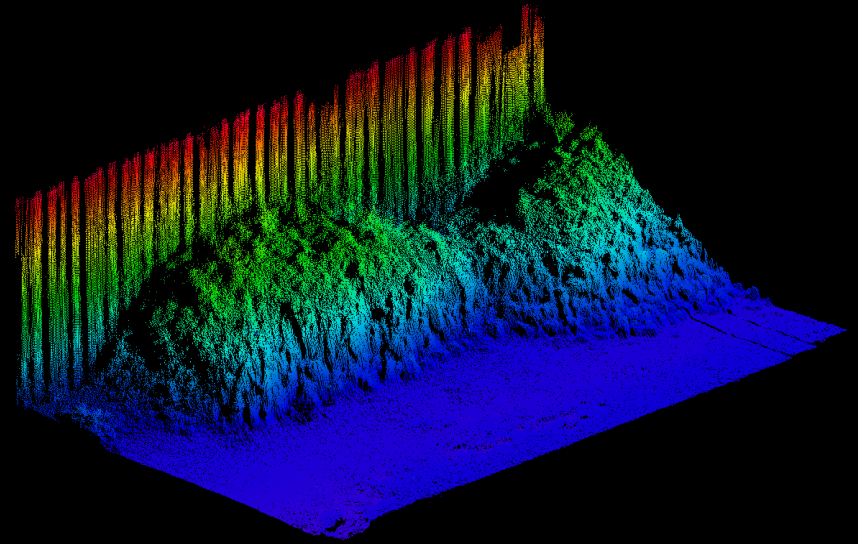


Figure 4: Quay Wall Above Sea Level (Photo) & Quay Wall Below Sea Level (by NORBIT WINGHEAD i79h)

The WINGHEAD i79h multibeam sonar was able to detect the partly disintegrated half buried wreck in high resolution to generate an overall point cloud for visualisation.

With the WINGHEAD i79h swath angle of 210° it was possible to electronically beam steer the swath angle towards sea level above the WINGHEAD i79h draft to scan the whole quay wall from sea level to seabed, without any mechanical tilting of the MBES head.

