

Dual Head Multibeam Survey With NORBIT WINGHEAD®

Trondheim, Norway March 2021



Introduction

- > NORBIT WINGHEAD[®] Multibeam System
- Benefits of Dual Head Configuration
- ➤ Installation
- ➢ Results
- > Summary





- In this case study we highlight the benefits of using the NORBIT WINGHEAD[®] integrated survey system in a dual head configuration.
- Sensors used:
 - Dual Head NORBIT WINGHEAD[®], featuring integrated Applanix OceanMaster GNSS/INS system.
 - NORBIT Sound Velocity Profiler.







WINGHEAD benefits:

- First cylindrical ultra-high resolution bathymetry sonar on the market. —
- 0.5 x 0.9° beam widths at 400kHz.
- HD beamformer providing 2048 beams per ping. —
- High performance integrated GNSS/INS systems.
- Integrated sound velocity probe.
- Small form factor and low power consumption. —
- Designed for rapid mobilization on *any* platform.





- Operating the NORBIT WINGHEAD in a dual head configuration offers several benefits compared to single head:
 - For pipeline surveys, coverage on the pipe is increased by tilting the sonars inwards and optimizing the sonar's field of view, ensuring that both sides of the pipe are imaged.
 - Increased sounding density and smaller bin sizes, with up to 2048 beams per ping, plus added data redundancy and averaging capabilities.
 - Increased swath coverage, by tilting the sonars outwards and directing more energy to the outer swath, allowing large swathes of seabed to be mapped more quickly.





- The highly integrated solution enables small form-factor and rapid deployment.
 - All sensors are interfaced to small topside units, where data is time stamped by the integrated GNSS.
 - The sonars and surface SVP are interfaced to the topside units via single deck cables.
 - Compatible with the NORBIT PORTUS pole, a lightweight carbon fiber mounting solution suitable for small and medium-sized survey vessels.
 - The GUI features an integrated INS setup wizard, as well as monitoring functions, to simplify the setup.
 - The survey system interfaces to an on-board computer via Ethernet connection for data acquisition.





- Each sonar generates 1024 beams per ping, giving a combined 2048 soundings per ping.
 - More hits on targets (enhanced definition) aids feature detection.
 - Smaller bin sizes.









- The NORBIT WINGHEAD dual head system offers ultra-high resolution bathymetry data with 0.5° beam widths at 400kHz.
 - Compact, easy-to-mount hardware with minimal cables for rapid mobilization.
 - Increased sounding density (2048 beams per ping) and smaller bin sizes.
 - Added data redundancy and averaging capabilities.
 - Increased angular swath coverage.
 - Reduced survey time.







