



SUBSEA 3D LASER SURVEY

Utec StarNet, in partnership with Seatronics and 2G Robotics, offers high-precision, high definition subsea laser surveys. Using the latest equipment and experienced multi-skilled survey engineers Utec can help clients safely and efficiently generate 3D datasets of subsea assets to support construction and maintenance projects.

THE PROJECT

Subsea 7 required a combined LBL, gyro and bathymetric metrology between a dimensionally controlled subsea structure and the termination point of an adjacent 10" pipeline flange. Utec was required to complete a localised subsea laser scanning survey around the 10" pipeline flange to establish the relative positional offset, heading and inclination differences between the 10" pipeline flange and the neighbouring four pipeline termination points.

Combining the two metrologies would allow the four additional closing pipeline flanges orientation and position to be calculated.

SCOPE OF DELIVERY

To facilitate this survey, high definition 360° laser scans were completed at multiple locations around the five flanges, each scan capturing both the key flange pipeline components and the control spheres attached to two pipeline saddles. All data was acquired in real-time by survey engineers on board the vessel with each individual scan position requiring approximately 30 minutes to complete, with a 15-20 minute scan duration for the data collection phase.

Using the control spheres as common reference points within each scan, the multiple scans required were registered together into a single, unified 3-Dimensional point cloud data set of the entire survey area including all sides of the pipeline termination points.

The flanges and pipelines within the dataset were then accurately 3D modelled and the required relative orientation and positioning results obtained.

THE RESULT

Our innovative use of this advanced technology, coupled with traditional survey techniques and our wealth of experience of metrology using subsea point cloud data resulted in a highly accurate data set positioned in real-world coordinates.

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