

IMCA Revises Subsea Metrology Guidance



Subsea metrology procedures are expanding rapidly to provide ever-higher-accuracy solutions, so the publication by the International Marine Contractors Association (IMCA) of a revised version of 'Guidance on Subsea Metrology' (IMCA S 019 Rev. 1) is both highly relevant and timely.

The objective of subsea metrology is to determine accurately the relative horizontal and vertical distance between subsea assets, as well as their relative heading and attitude. Most commonly this is for pipeline connections and the document uses this work as an example throughout. The information determined by subsea metrology is then used by pipeline engineers to design a connecting piece to join the assets together.

It is often the case that the connecting pieces are the last sections of the pipeline to be fitted and one of the final steps before first hydrocarbon production. For this reason, it is important that subsea metrology surveys are carried out in a timely and accurate manner. If the connecting pieces are not to the required specification and/or do not fit correctly, they can have a significantly reduced life span or can cost days of a construction vessel's time whilst awaiting repairs to the spool.

Metrology Techniques

These are long baseline (LBL) acoustics, both diver taut wire and digital taut wire, photogrammetry, inertial navigation systems (INS), SLAM techniques and laser scanning. IMCA S 019 covers the basics of subsea metrology, engineering requirements, the different methods and technologies, and some of the advantages and limitations of each technique.

LBL acoustic systems and techniques are covered in more detail as these systems are generally the most adaptable and most widely used in the industry today. IMCA's technical director Richard Benzie notes that the pace of technical change and ongoing development of deep water fields means that other subsea metrology methods are being developed, including photogrammetric metrology, INS metrology, SLAM techniques and laser scanning, all of which are covered in the new document.

[IMCA S 019](#) is available online free of charge for members and at GBP75.00 for non-members.