



3D Modelling (3DM)

Quantify the geometry of subsea components

3DM uses advanced photogrammetry to quantify the geometry of subsea components.

3D modelling data collection can be performed using trained offshore personnel for maximum quality, or remotely by providing equipment and virtual training to standard ROV/ Inspection personnel.

We can measure overall component dimensions; linear and angular offsets; radius of curvature; cross-sectional areas; depths, widths and heights and volume of material. Our models can be exported for finite element analysis (FEA).

The 3DM track record to date includes:

- Wellheads
- Trees
- Manifolds
- BOPs
- Risers
- TLP tendons
- Flanges
- Anodes
- Jacket structures
- Mooring components
- Pipelines

Applications

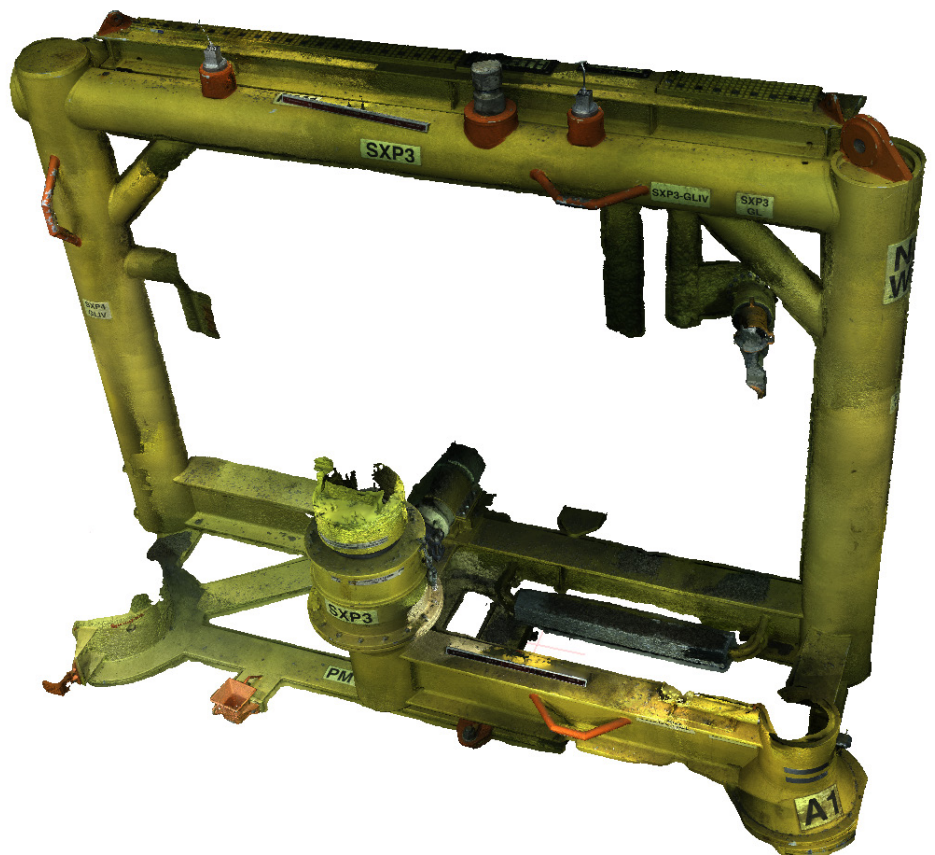
Digital twinning
Damage assessment
Engineering analysis
(FEA, residual strength)
Metrology

Features

3DM is non-destructive
Data is collected with components in-situ and operating.
Flexible subsea deployment by work-class or inspection-class ROVs, divers or rope access techs.
Useful for incident response including identification, evaluation, assessment and repair.

Results

Accurate to better than +/- 0.2%
Geometric 3D model exported in many file types, including for Finite Element Analysis.
Report analyzing 3D models including required geometry analysis (point to point measurement, cross-sectional area, out of roundness, angular alignment, deflection, etc).



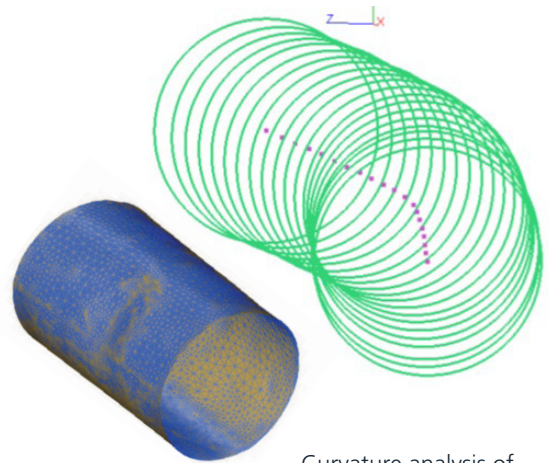
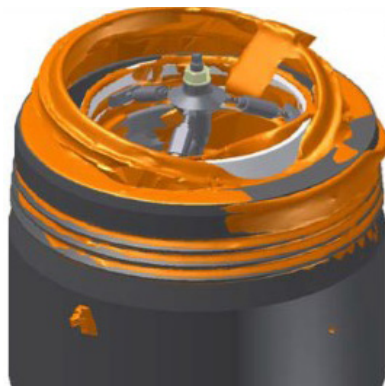
3D Modelling Service

Specifications

Recording format	21MP digital camera, with auxiliary 4K and HD video recording HD over Ethernet or 3G-SDI, SD over composite
Communications	Ethernet control and live downloading Serial control and composite video
Depth rating	6000m
Lighting	LED Strobe Lighting with 32,000+ lumens strobe output
Weight in water	4kg
Weight in air	7kg
Options	Serial control, composite video, and data storage on camera for offline download



Damaged wellhead and repair section based on 3D model



Curvature analysis of high-pressure pipeline



Corroded chain link model for geometry analysis, FEA and 3D printing