www.metrica-isv.gr





APPLICATION NOTE / MARINE / YACHTING

MEASUREMENTS FOR DRY DOCKING PROCEDURES ON M/Y

👰 Overview

The main scope of the measurement series was the geometrical inspection of M/Y deformations during the docking process and the geodetic guidance to establish the afloat condition of the yacht in the graving dock (after the end of docking actions).

Challenges

- Tight schedule for fieldwork and office work
- Complex geometries

🔮 Benefits

- Accurate and fast geometrical inspection of afloat and drydocking conditions
- Actions for the proper placement of the yacht if needed
- Minimizing serious hull deviations that could disturb further alignment procedures on vessel propulsion systems

INDUSTRIAL TOTAL STATION LEICA TDRA6000

The Leica TDRA6000 is one of the most accurate total stations ever designed for industrial use. This Leica Geosystems Total Station automatically target both CCR and tape targets and can even measure without targets maintaining a typical reflectorless accuracy of 1mm. Optimized for use within 300 meters and combined with the Leica Geosystems PowerSearch module, the Leica TDRA6000's tracking performance is simply unbeatable.







Image from Spatial Analyzer



Measurements with Leica TDRA6000

👶 Methodology

The monitoring of afloat and docking conditions took place by measuring a series of retro-reflective targets. Our team placed seventeen (17) marks on the bulwark and ship side corridors. The dense distribution was mainly focused above the vessel's propulsion system (from the engine room to the propeller). Targets had been pre-aligned to the common coordinate system (CCS).

All marks were measured from the vessel's aft position on both sides (SB and Port) for visibility reasons.

The positional accuracy had a standard deviation better than $\sigma xyz = \pm 0.5$ mm. Using Industrial Total Station Leica TDRA6000 our team ensured the proper shooting angles to the targets. The geodetic measurements were thoroughly planned not to disrupt the docking process and to have a direct result of the actual values of deformation and relevant corrections. It should be referred that dry docking was checked after the ship had been settled on basements and crane support had been removed.





Position of control points

Instrumentation / software Leica TDRA6000 Industrial Total Station Spatial Analyzer s/w

Deliverables

Technical Report with measurement procedures description and measurement results