



CTO S.A.

CENTRUM TECHNIKI OKRĘTOWEJ S.A.

field
tests
laboratory

We provide our Clients with:

- ✓ highest quality,
- ✓ technical consulting,
- ✓ short deadlines,
- ✓ over 40 years' experience.



More information at:
www.laboratoria-badawcze.pl
www.cto.gda.pl

The Field Tests Laboratory
Ship Design and Research Centre S.A.

Szczecińska 65
80-369 Gdańsk, Poland

tel.: +48 58 511 62 28
rs@cto.gda.pl

We invite you to cooperate!

SEA
TRIALS

The activities of Ship Design and Research Centre (CTO S.A.) contributes to increasing innovation of ships and off-shore constructions worldwide. In recent years the activity area was significantly expanded and diversified with the introduction of the research services intended for other industries, especially the industrial implementation of the high-tech solutions.



EXPERIENCE

CTO S.A. has over 40 years' experience in the field of the ship design and measurements. In particular, The Field Tests Laboratory often proposes and recommends solutions to eliminate or minimize the adverse structure behavior based on the tests results and analyses.

Experience and knowledge of highly skilled professionals, combined with the modern measurement and research equipment, allows to solve the most complex engineering problems.

The tests are carried out with use of the innovative measurement systems to provide the services execution on the highest level.

Having the status of Research and Development centre CTO S.A. is obliged to reinvest most of the income in the technical innovations and out breaking technologies and solutions to ensure the customers receive at the highest customer satisfaction level.

The Field Tests Laboratory is a multi-disciplinary facility working, not only on a wide range of research and development programs, but also provides services in measurements, diagnostics and technical consulting in:

- ✓ Underwater Radiated Noise and in Harbor Radiated Noise measurements,
- ✓ measurements of the ship's acoustic signature,
- ✓ measurements of the noise in the accommodation and working areas,
- ✓ ship's EEDI coefficient determination,
- ✓ measurements of the fuel consumption rate,
- ✓ measurements of the ship speed and maneuverability,
- ✓ measurements of the power, torque and RPM on the propulsion shaft,
- ✓ measurements of torsional, flexural and longitudinal vibration of the ship propulsion,
- ✓ measurements of local vibration of the accommodation spaces and the ship equipment,
- ✓ modal tests and analyses of the hull's construction and the ship's superstructure,
- ✓ measurements of the illumination in the accommodation and working areas,
- ✓ measurements of the pressure pulses induced by the propeller,
- ✓ cavitation detection,
- ✓ weighting and bollard pull tests up to 200t,
- ✓ ship's design optimization from the vibrational and acoustical point of view,
- ✓ troubleshooting and expertise.

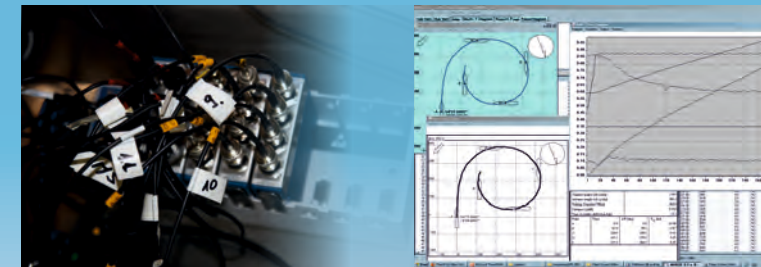
Tests are carried out respecting the Quality System in compliance with the ISO 9001 standard.



The Field Tests Laboratory provides highest quality of its services in accordance with European standards and Classification Societies regulations.

The system for the measurement of ship speed and maneuverability is based on the Leica Geosystem DGPS device, offers the major benefit in possibility to execute the tests around the world. The system is capable to determine the ship's position, course and velocity with the top level accuracy. It also provides continuous record of a ship's position, course as per gyrocompass, rudder deflection angle, torque and propeller shaft speed. In addition, it enables to measure of the fuel consumption rate.

Propulsion shaft power measurements are carried out by the professional equipment based on the Hottinger Baldwin Messtechnik, Kyma and Binsfeld Engineering telemetric systems. Portable computers coupled with A/C cards and our own highly specialised software provide enhanced performance for data recordings and analyses. Within vibration tests domain both in ship's sea trials and propulsion systems the most specific are propeller shafts' torsional vibration tests.



Local and general vibration tests of structures, as well as measurements providing the determination of the dynamic structure characteristics, are based on the sinusoidal and impacts excitations. The equipment availability for vibration inducing, measurements and analyses, enables executing the tests at the highest possible quality level.

Additionally, the extensive service includes measurements of noise, structure-borne sound, acoustic rate of noise generators and acoustic insulation of ship's divisions. Addressing the needs of the customers under the latest regulations we are also providing the Underwater Radiated Noise and in Harbor Radiated Noise measurements.