



PLATFORM MOTION ANALYSIS AND TESTING LABORATORY

THE EXPERTISE

GTT is one of the few companies in the world to have an integrated research and test laboratory for fluid dynamic testing under real operating conditions using motion simulators (hexapods). The company has been developing expertise in motion modelling and simulation for over 10 years. GTT is recognized worldwide in this field. It has been extending testing to all types of non-liquid motion.

Testing is done on a continuous basis, 24 hours a day, by a team of engineers and technicians who are highly qualified in digital and experimental modelling and measuring and in the processing of physical signals.



Hexapod during a test

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HOW DOES IT WORK?

The hexapods put into motion (swell, vibrations, air pockets, etc.) equipment with a wide range of sensors which enable real-time analysis of the behaviour of loads based on parameters provided by the client. They provide:

- **High precision motion:** the hexapods enable the simulation of harmonic and irregular motion based on the six degrees of freedom (rotation and movement on three perpendicular axes). A measurement system checks the position of the simulator's

six cylinders, ensuring the accuracy of the motions configured for totally reliable results.

- **Simultaneous measurements:** the sensors and high-performance data acquisition systems simultaneously measure dynamic pressure and various environmental parameters including the temperature of the load and atmospheric pressure.
- **Instantaneous feedback:** several on-board cameras capture real-time images which can be synchronised based on the parameter(s) selected.
- **Tests can be reproduced** less expensively.



Payload instrumentation

THE EQUIPMENT

- Four hexapods (one Mistral, two Sirocco, and one Aquilon) with a capacity of one to six tons and angular amplitudes of more or less 45°.
- A control room for hexapod management.
- 1000 high-resolution dynamic pressure sensors.
- Seven high-resolution cameras, each equipped with a monochrome sensor, 1280 x 1024 pixels and 50 fps.

- A fast camera operating at a frequency of 4000 fps with resolution of 800 x 600 pixels.
- A station dedicated to managing the chemical stability of fluids in motion equipped with a very high-precision densimeter to measure specific gravity, density and the concentration of liquids and gases (repeatability standard deviation of 1.10^{-6} g/cm³).



Control room

10 engineers and technicians

100 tests over 10 years

15,751,260 km ocean journeys simulated by the Sirocco hexapod since 2004

CERTIFICATION:
The laboratory has been certified **ISO 9001:2015**, by Lloyd's Registered Quality Assurance since 2013.

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