**INTRODUCTION**

**Survey Capabilities**

At Tridel, we deliver end-to-end survey solutions that support the safe design, construction, and operation of marine and coastal infrastructure. Our expertise spans hydrographic, topographic, geophysical, geotechnical, and UXO surveys, along with specialized marine borehole services. The combination of advanced technologies with our expertise, provide accurate, reliable, and actionable data that empowers clients to make informed decisions.

From mapping the seabed to assessing subsurface conditions and ensuring operational safety, Tridel is your trusted partner for precision-driven survey solutions.

**Hydrographic Surveys**

Tag line: *Delivering accurate seabed intelligence for safe and sustainable marine development.*

Tridel specializes in high-precision hydrographic surveys that map and monitor seabed features, coastal areas, and waterways. Using advanced multibeam echo sounders, side-scan sonars, and GNSS positioning systems, we deliver accurate bathymetric data that supports safe navigation, port development, dredging, and offshore engineering projects in compliance with IHO standards.

**Topographic Surveys**

Tag line: *Transforming landscapes into precise digital models for smarter planning and design.*

Our topographic surveys provide detailed mapping of onshore terrain, coastal zones, and intertidal areas. By integrating drone-based LiDAR, photogrammetry, and ground surveying techniques, we produce high-resolution models that support infrastructure planning, coastal management, and environmental assessments with utmost accuracy.

**Geophysical Surveys**

Tag line: *Revealing the unseen beneath the seabed to power confident engineering solutions.*

Tridel conducts state-of-the-art geophysical surveys to investigate subsurface conditions beneath the seabed. Using techniques such as sub-bottom profiling, magnetometer studies, and seismic reflection, we provide clients with critical insights into stratigraphy, sediment layers, and geological hazards, enabling informed engineering and construction decisions.

**Geotechnical Surveys**

Tag line: *Building strong foundations with reliable seabed and soil intelligence*

Our geotechnical survey services provide essential information on soil and seabed strength, composition, and bearing capacity. Through borehole drilling, cone penetration testing (CPT), and sampling, we support offshore and coastal engineering projects with reliable data for foundation design, cable/pipeline routes, and marine infrastructure.

**UXO (Unexploded Ordnance) Surveys**

Tag line: *Ensuring safety first by detecting and mapping hidden underwater threats*

Tridel offers UXO survey and detection services to ensure safe offshore and nearshore operations in areas with a history of conflict or military activity. Using magnetometers, side-scan sonar, and advanced geophysical sensors, our team identifies and maps potential UXO hazards, mitigating risks for construction, dredging, and subsea installation projects.

**Marine Boreholes**

Tag line: *Extracting vital geotechnical data to unlock offshore engineering success.*

We provide marine borehole drilling services to obtain high-quality soil and rock samples from beneath the seabed. These boreholes are vital for assessing ground conditions for ports, offshore wind farms, subsea pipelines, and other marine infrastructure. Our expertise ensures precise data collection even in challenging offshore environments.

**Environment Monitoring**

We deliver end-to-end environmental monitoring solutions designed to provide accurate, science-backed data for sustainable development and regulatory compliance. Our multidisciplinary expertise and advanced technologies allow us to capture, analyse, and report on key environmental parameters across marine, terrestrial, and atmospheric domains.

Tagline: "“Connecting technology with environmental stewardship for a sustainable tomorrow.”

**Met-Ocean Monitoring**

Our Met-Ocean monitoring services and solutions provide real-time measurements of meteorological and oceanographic parameters such as tides, waves, currents, winds, and sea surface temperature. With state-of-the-art sensors and data platforms, we help clients design, operate, and maintain marine infrastructure safely while supporting navigation, offshore energy, and coastal zone management.

Tagline: *“Understanding the ocean to empower safer operations.”*

**Atmospheric & Underwater Noise Monitoring**

We offer comprehensive monitoring of both atmospheric and underwater noise to understand and mitigate acoustic impacts on ecosystems and communities. From industrial and construction-related airborne noise to vessel and offshore scientific operations generating underwater sound, our monitoring solutions help assess compliance with regulations, safeguard biodiversity, and ensure sustainable development practices.

tagline: *“Measuring sound to protect ecosystems and communities.”*

**Air Quality Monitoring**

Our air quality monitoring services track and analyse pollutants such as particulate matter, greenhouse gases, and other emissions. Using advanced sensors and modelling tools, we provide actionable insights that support regulatory reporting, public health assessments, and the development of cleaner, more sustainable operational practices.

Tagline: *“Clear insights for cleaner air.”*

**Water Quality Monitoring**

We specialize in monitoring surface and marine water quality parameters including salinity, turbidity, dissolved oxygen, nutrients, and contaminants. Our monitoring programs are tailored for ports, coastal developments, and industrial projects, ensuring data-driven decisions that protect aquatic life and comply with environmental standards.

Tagline: *“Safeguarding aquatic health through precision monitoring.”*

**Groundwater Monitoring**

Our groundwater monitoring solutions assess aquifer health, groundwater quality, and recharge rates. By combining field sampling, sensor networks, Realtime data transmission and hydrogeological expertise, we deliver critical information for sustainable water resource management, infrastructure planning, and environmental risk mitigation.

Tagline: *“Sustaining vital resources beneath the surface.”*

**Ecology Monitoring**

We conduct ecological surveys and monitoring programs to understand biodiversity, species distribution, and habitat health. From terrestrial flora and fauna to marine ecosystems, our ecological assessments provide baseline data, track changes over time, and help clients minimize ecological footprints while meeting conservation and regulatory requirements. Our bio-geoinformatics platform "eSpecia"  is a world standard in ecology monitoring.

Tagline: *“Tracking biodiversity for a balanced future.”*

**Offshore Wind Farms**

**Tagline:** *“*Where Ocean insights meet clean energy solutions.”

Harnessing offshore wind requires more than engineering—it demands accurate insights into the ocean’s dynamics, seabed conditions, and environmental sensitivities.  
Our expertise lies in providing **end-to-end surveying and monitoring solutions** that support the planning, construction, and maintenance of offshore wind farms. From detailed hydrographic and geophysical surveys to environmental baseline assessments, we deliver data that minimizes risk and ensures regulatory compliance.

By combining cutting-edge technology with decades of marine experience, we help developers **make informed decisions, safeguard ecosystems, and accelerate the journey toward clean energy.**

**Mathematical Modelling**

**Tagline:** *“Turning data into foresight.”*

In today’s complex marine environment, raw data alone isn’t enough. Our advanced **mathematical and numerical modelling services** transform data into actionable intelligence.  
We specialize in modelling tides, currents, sediment transport, and coastal processes, providing predictive insights that enhance project design and environmental planning.

Whether it’s simulating the long-term effects of an offshore installation, forecasting shoreline changes, or assessing climate resilience, our models help clients **visualize scenarios, reduce uncertainty, and optimize outcomes.**

By blending scientific rigor with practical application, we deliver models that are not only accurate but also decision-ready.