



**Your reliable and
competent partner for
complex sensor systems.**

HARBOUR AND COAST PROTECTION



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Overview

To protect harbour entries and coastal areas as well as for monitoring national waters, STL developed a high sensitive 24/7 observation and monitoring system, which allows an optimized responding time against any unwanted asymmetric threats. With the harbour and coast protection system of STL, the Navy will have the general capability to detect unknown threats by passive measurement of the signals of an invader. The observation can be conducted for surface and subsurface surveillance. The advantage of the passive detection is that an invader will not recognize he is under monitoring and observation. This increases the moment of surprise and is a big advantage for the naval staff.

All this is made possible through an optimal use of available high technologies. Our 3rd generation system is based on STL's high resolution data acquisition, highly sensitive preamplifiers in combination with UEP electrodes, very low noise magnetic field sensors, acoustic sensors with highest accuracy, together with state-of-the-art underwater and computer technology

Multi influence sensor safety chain

The core of the system are the multi influence sensors, which are connected to a safety chain. The size of the area that can be protected is completely customizable and depends on the number of used multi influence sensors and distance between them, influenced by water depth. Furthermore, the multi influence sensors itself are also available in various configurations. The standard versi-

on is sensitive to magnetic fields, fully equipped, however, they are able to measure the following signals:

- Magnetic fields
- Electric fields
- Acoustic signals
- Seismics
- Pressure
- Temperature
- Conductivity
- Current

This makes the system very flexible and adaptable for each customer's specific requests. It also allows system upgrades afterwards, like additional numbers of sensors or the sensitivity for additional signals.

List of detectable objects

Depending on the system configuration used, the following potential threats and objects can be detected:

- Surface ships in any form and size
- Submarines
- Divers and swimmers
- Torpedos
- Autonomous underwater vehicles (AUV's)

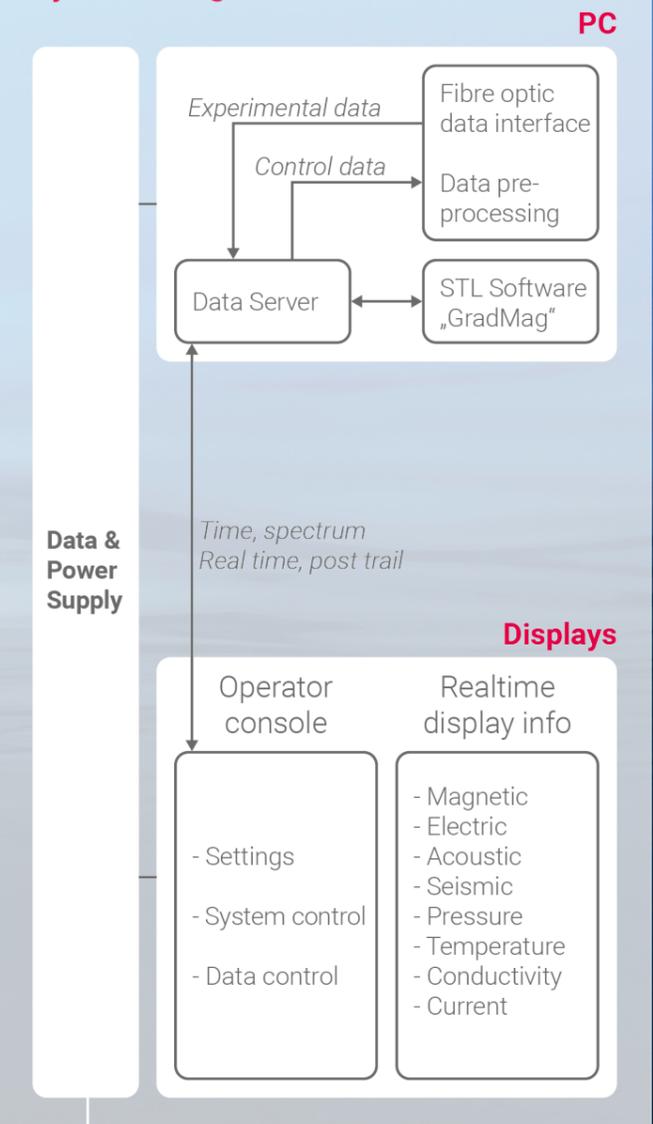
Additional advantages

- Permanent or temporarily monitoring system
- System redundancy available
- Low maintenance costs
- No data loss via hybrid cable
- Data storage

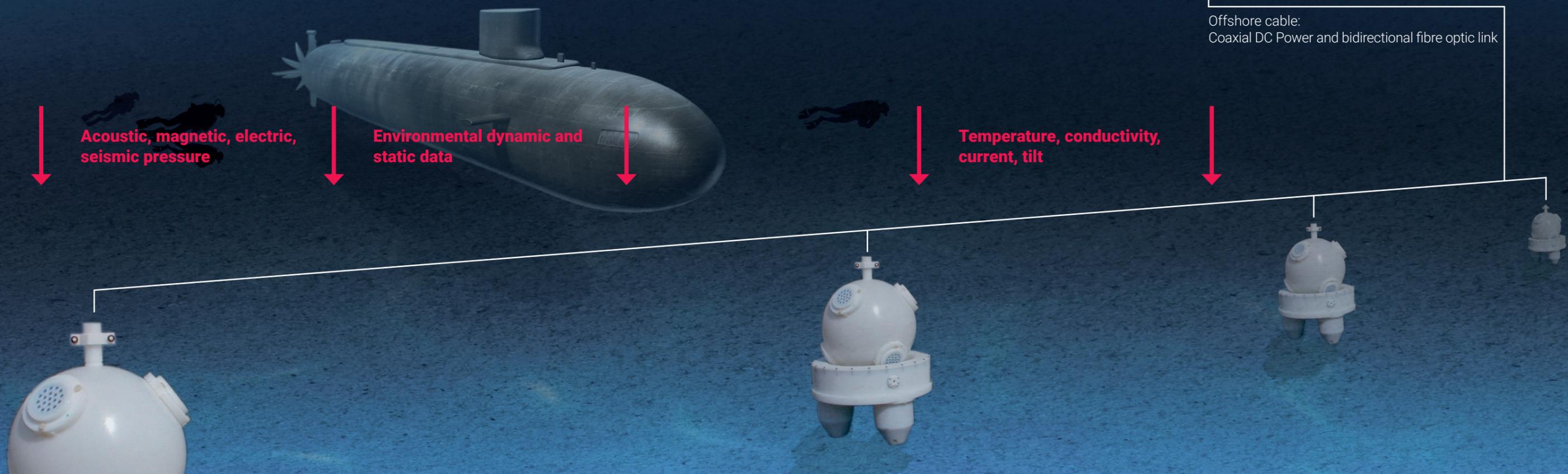
Harbour and coastline safety chain



System configuration



Offshore cable:
Coaxial DC Power and bidirectional fibre optic link



About STL

STL is specialized in solving complex and demanding technical challenges by high technology system approaches used for naval and industrial applications. STL excels in the ability to combine specific requirement of discerning customers with various sensor influences, field generating systems and sophisticated data processing using STL's flexible sensor modules in combination with analysis tools. Special know how is accumulated in the area of magnetic and electric field measurement systems and data analysis by using ultra precision digital data acquisition systems and mathematical algorithms.

Core competence of the company is the technical solution of any demanding measurement task. This is realized by using precise generation, measurement and analysis of magnetic fields, electrical fields and other signature parameters by innovative system concepts including COTS and special purpose sensors with adapted data acquisition and current sources.

STL delivered key-technology in several projects for marine customers. Close to 800 highly reliable flux-gate sensors and the data processing technology are STL's contribution to the Earth Magnetic Field Simulator in Lehmbeck, Germany. Furthermore two land based degaussing ranges in Germany have been upgraded with STL's sensor technology. Several nations are using STL's mobile Multi Influence Signature Measurement System (MIMS) for either harbour protection and/or ship signature measurement.

In 2012 STL has been awarded the contract to provide a modern Overrun Deperming and Measurement Range for an Asian Navy. Additional references can be found on our homepage.

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