

# Klaipeda Breakwater



## Project Summary

Name: Klaipeda Breakwater Structural Monitoring

Date: June 2014

Client: The Klaipeda State Seaport Authority (KSSA)

Contractor: Getelit

Consultant: UAB Smart Office



## Overview

Klaipeda, which is located on the coast of Baltic Sea harbour and 300km away from the capital city Vilnius, is the only port in Lithuania, and therefore is the only gateway to the sea.

Due to its unique location, it is critical to keep the port servicing all the time as well as handle the growing volume of international trade which followed Lithuania's membership of the European Union.

Extension of the port is required to enable it to handle bigger ships and therefore the southern and northern port jetties are being extended, reaching 1300m and 1400m respectively. The entrance channel is being dredged to a depth of 14.5m.

Port construction began here in 1835!

## Monitoring

During the construction stage of the proposed extension, a monitoring system was proposed in order to monitor the existing cracks on the breakwater and tilting on the four existing towers and also the water level changes in the breakwater.

Geosense proposed its Wi-SOS 400 wireless system with VW Crackmeters, MEMS Tilt Sensors and VW Piezometers.

All data is transmitted wirelessly from sensor to gateway. It is then available to download manually if required and accessible remotely through user-friendly web-based software displaying the real-time data.

The wireless solution proved to be ideal for the project as it meant cables did not have to be run on the breakwater in a public area.

## Products used

- ~ **VW Crackmeter**  
Used to monitor existing cracks on the breakwater.
- ~ **MEMS In-Place Tiltmeters**  
Used to monitor tilt throughout the building.
- ~ **VW Piezometer**  
Used to measure the water level changes in the harbour.
- ~ **Wi-SOS 400**  
Wireless Sensor Observation System for single sensors including tiltmeter, crackmeter and vw piezometer allowing data to be transmitted wirelessly to a central Gateway.
- ~ **VW2106 Readout Unit**  
Used to take readings manually to check the sensors prior the installation.



# GEOSENSE