



Fugro Establishes a Single Platform for Monitoring Soil Conditions during a Highway Development

Vista Data Vision[®] Provides High-quality Visualization and Full Control over Data Security

OPTIMIZING NEW HIGHWAY CONSTRUCTION IN GERMANY

The last phase of construction on the Autobahn 26, a highway in northwestern Germany, will connect the road near Hamburg with the A7, Germany's longest autobahn and the longest national highway in Europe. This 20-kilometer major roadway is being built through old swampland with very weak, settlement-prone soil.

Fugro, a leading geodata specialist, was awarded the geotechnical monitoring contract to measure the soil's consolidation and deformation behavior and optimize embankment work. Their role began in 2021, during the pre-construction phase, in which the ground was overloaded to accelerate the settlement process and provide insights into the optimal timing for construction. If construction proceeded too quickly, the integrity of the highway could be compromised, with further settlement resulting in a bumpy road surface that would drive up future repair costs. If construction moved too slowly, project costs would rise due to the delay.

A SINGLE, SHARED DATA INTERFACE

The A26 project involves a high number of sensors and 50 data loggers deployed across the 20-kilometer site. Along with using over 200 push-in piezometers to measure pore pressure, Fugro manually gathers hydrostatic measurements of embankment settlement and vertical deformation readings from a number of inclinometers.

It was essential for Fugro to provide its primary client with all data from the various monitoring instruments on one platform. The company also needed to easily share this data with its internal team and with other project stakeholders, including construction companies doing the earthwork and engineering companies validating the geotechnical parameters. Fugro sought a platform that would give them a high degree of control, allowing them to easily provide all the measurements needed for the project.

EXCEPTIONAL CUSTOMIZATION AND CONTROL

Fugro determined Bentley's Vista Data Vision data visualization and management application could seamlessly and securely integrate automated and manual readings into a single online interface. The application's intuitive, user-friendly custom development features allow Fugro's team members to easily build data presentation dashboards and websites, which streamlines workflows and saves significant resource hours. Vista Data Vision can also quickly respond to client requests or project needs, giving Fugro the hands-on control needed for the fast-paced, evolving project. They can avoid seeking external support for simple requests, which can lead to delays, and add and change sensors or other inputs as the project changes.

Lastly, Vista Data Vision provides full control of data privacy and security, which was critical to Fugro and its stakeholders. The project is currently in the construction phase and is expected to be complete at the end of 2024.

PROJECT SUMMARY

ORGANIZATION

Fugro

SOLUTION

Geotechnical Engineering

LOCATION

Near Hamburg, Germany

PROJECT OBJECTIVES

- ◆ To measure the soil's consolidation and deformation behavior and optimize embankment work on a highway project.
- ◆ To determine the optimal timing for highway construction.

PROJECT PLAYBOOK

Vista Data Vision

FAST FACTS

- ◆ A26 is a new highway that will link northwestern Germany to the A7, the country's longest autobahn.
- ◆ Fugro was awarded the geotechnical monitoring contract to measure the soil's consolidation and deformation behavior and determine the optimum construction timing.
- ◆ The project required a simple way to share geotechnical data from many automated and manual sensors in a single interface.
- ◆ Vista Data Vision's data presentation software provided a robust, customizable solution that gave Fugro the control and data security this project required.
- ◆ The application's intuitive, user-friendly custom development features allow Fugro to easily build data presentation dashboards and websites.
- ◆ Fugro can avoid seeking external support for simple requests, which prevents delays.