



CASE STUDY

# Seamless Landslide Monitoring at Malakasa on the Greek National Highway



**PROJECT TYPE:** Landslide monitoring

**COUNTRY:** Greece

**INDUSTRY:** Infrastructure

**MAIN PRODUCTS:**

- 1 Ackcio Gateway (BEAM-GW)
- 2 Ackcio Digital Node (BEAM-DG)

# CHALLENGE



**In 1995, one of the most significant landslides in Greece occurred at Malakasa, just 40 kilometers outside Athens, on the Greek National Highway between Athens and Thessaloniki.**

Following the completion of extensive drainage and restoration works in 2011, aimed at ensuring the safety of the National Highway, the highway operator Nea Odos has undertaken its monitoring since then.

In August this year, Geosysta Ltd, a leading engineering consultancy in the geotechnical sector, conducted drilling and installed VW piezometers to monitor water pressure at several boreholes in the area, and the results are combined with manual portable inclinometer readings retrieved at specified time intervals.

To enhance landslide monitoring capabilities, in October 2023, Neotek supplied and installed Greece's first ShapeArray at a critical 40-meter deep borehole with a total of 80 segments/sensors at 0.5-meter intervals. This Measurand SAAV allows for continuous monitoring of landslide inclination and settlement, providing crucial information for the safety of the highway.

Due to the site's remoteness, the size of the landslide, and the challenging terrain, a wireless telemetry system was deemed necessary for receiving measurements.

# SOLUTION

**Neotek selected the Ackcio Beam system to provide uninterrupted access to real-time data, ensuring the highway operator could respond promptly to any changes in landslide behaviour.**

The installation process, involved drilling, sensor installation, and the implementation of the Ackcio wireless telemetry system. The Measurand SAAV was connected to an Ackcio Digital Node which wirelessly transmitted data to the Ackcio Gateway (BEAM-GW). The complete process lasted no more than three hours.

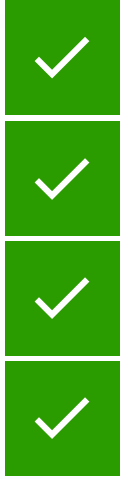
This choice of Ackcio's solution eliminated the need for extensive cabling across the terrain, which would have incurred additional costs in materials and workmanship. The low power consumption of the gateway made it suitable for sustained operation with a small solar panel. Continuous monitoring and 24/7 access to measurements were deemed critical for public safety.



As Nea Odos continues to prioritize public safety along the Greek National Highway, the Ackcio solution stands ready to accommodate other monitoring sensors, such as piezometers, offering flexibility for future enhancements to the landslide monitoring project.



# RESULTS



**24/7 access to critical measurements**

**Reliable, stable readings from a remote site**

**Improved risk management**

**Increased safety**



# BENEFITS



Elimination of cable-related costs



Easy configuration and installation



Seamless continuous monitoring



Low power consumption with solar panel



# TESTIMONIAL

*Once again, Ackcio's support was invaluable from choosing the right product in regard to the technical specifications for the project at hand, sharing technical insights and valuable experience to a quick delivery time. The ease of configuration and installation of the Ackcio's products saves us and our customers' valuable time, while monitoring becomes the simplest task at hand, allowing all efforts to focus on data evaluation and decision-making.*

— **Katerina Xystri**  
Sales Director  
NEOTEK



**ABOUT NEOTEK** Founded in 1969, NEOTEK is a Greek company actively specializing in the supply and technical support of instrumentation involved in scientific research and industrial applications in the fields of civil, mechanical, geotechnical, structural and seismological engineering.



**ABOUT ACKCIO** Ackcio builds reliable wireless data acquisition systems for industrial monitoring applications. The company automates monitoring processes and provides remote, intelligent data to enable increased safety and efficient risk management in mission-critical industries, including construction, infrastructure, mining, and rail. Ackcio's flagship solution, Ackcio Beam, is an industrial data acquisition platform that uses a patented long-range wireless mesh network to monitor sensors accurately and reliably in both above-ground and underground environments. Ackcio is headquartered in Singapore and supports clients across the world. In 2021, the company was included in Forbes Asia's inaugural '100 to Watch', a list of small companies and startups on the rise across Asia Pacific.

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