DAEMON system & software – Automated Landslide Monitoring

Development status

Phase 3

Technology validation and implementing it in real environment. Testing the technology outside of the laboratory and its adjustment to external conditions.

IP protection status

Software licence

Partnering strategy

Collaboration, licensing

Institution

The Institute of Rock Structure

Challenge

Slope deformation monitoring is a very valuable tool for understanding the geological processes causing slope movements. Understanding the dynamics of landslides through geomonitoring is essential for predicting their reactivation in the future, which can lead to the timely implementation of preventive measures that can be crucial for the protection of strategic structures, infrastructure and public health. However, for effective determination of hazardous conditions, not only continuous measurement (monitoring) but also immediate processing of measured data is needed. However, geomonitoring generates significant volumes of data that cannot be efficiently processed manually.

Description

The product automates the measurement, processing and interpretation of geoelectric monitoring data of active landslides. It consists of a communication interface for remote access to the monitoring system and software for automatic processing of data files. The project is based on many years of experience with manual data collection and processing, which needed to be transferred to the development of automated processing. To date, there is no software on the market that addresses this, and custom development would be too expensive. The aim was therefore to develop both a functional solution for power supply and communication with the monitoring system ("functional sample") and "software" for automated data processing. Both of these objectives have been met and the DAEMON system's functional sample already performs its control and communication function directly at the site where the long-term monitoring takes place and sends the data to a remote storage (server), while the DAEMON software processes the measured data automatically.

and Mechanics of the Czech Academy of Sciences

Commercial opportunity

The DAEMON system is commercially usable mainly by companies focused on engineering geology, geotechnology and geophysics. Potential use is also possible, for example, as part of an early warning system for integrated rescue services. The product can be offered as a functional unit, however, it also works separately (only the communication interface or software can be purchased). The software can be tailored to the end user's specific needs (monitoring of slope stability, dam seepage, groundwater migration, landfill seepage, etc.).