GEOROBOT
AUTOMATIC 3D DEFORMATION MONITORING SYSTEM

HIGHLIGHTS:

- Fully Automatic Measurements and Data Analysis
- Extensive Alarming Options
- Simple Hardware Setup and Intuitive Software
- 3D Measurements (using Prisms, up to 1km) or 1D Measurements (Reflectorless, up to 200m)
- KRONOS Link for Extensive Filtering, Data management & Data Analysis
GENERAL DESCRIPTION

Automatic measurements of 3D displacements are required wherever objects and landscapes are under threat and need to be monitored, but where manual single measurements fall short because of the required measuring frequency or an inaccessible location.

This is often the case in the inner city, e.g. when subways are built or where unstable slopes must be monitored.

The GEODATA GeoRobot system consists of modular hardware which is fitted to the monitoring task and easy-understandable software which is used for measurement configuration and data management.

WORKING PRINCIPLE

The measurements to the observation points are carried out at arbitrary intervals from total stations which are mounted on fixed positions.

The total station is controlled by the monitoring Software EUPALINOS which is installed either on an industrial PC close to the total station (local use) or on a remote PC to control multiple stations. Consoles or pillars are used to accommodate the instruments.

If necessary, they can be re-located and controlled by free stationing in the course of the measurements.

Instability of observation points is strictly compensated via a balancing calculation, optionally also taking into account the distance scale. In this way, given a suitable survey configuration, meteorological data need not be measured.
SYSTEM COMPONENTS

- Motorised Total Stations: LEICA TCA1800 or newer or Sokkia NET
- TS capable of performing reflector less measurements for 1D displacement measurements
- Geodata Monitoring Prisms for 3D Monitoring
- Industrial PC with Power Supply Unit
- Data Transfer Unit: Cable (up to 200m) or Wireless Data Transmission
- EUPALINOS Software for Data Acquisition and Processing
- Optional: KRONOS Database Software for complete monitoring evaluation
MULTI STATION NETWORK

If required, multiple total stations can be combined in a network to monitor widely dispersed areas. In this case the data from the individual measuring stations are transmitted to a central server via (radio) LAN or ISDN and administered in a database. The data is also independently stored on the specific control computer of the individual measuring stations.

MONITORING - REPORTING - ALARMING

Depending on the customer’s needs, we offer automatic reporting as well as extensive alarming functionality which ranges from notifications via email or SMS to audio-visual alarming with horns or lights, etc. Naturally, alarm observation parameters cover not just absolute deviations but also observation of changes within a certain period of time (change of gradient).

Depending on the configuration, output of diagrams and the triggering of various alarm procedures are handled locally by the EUPALINOS software, or centrally by the KRONOS database system.