

**RDMS**

# Remote Data Management System

Remote data management systems (RDMS) are versatile tools that leverage geotechnical instrumentation, increasing their usefulness and expanding their range of applications. Using an RDMS enhances:

- Management of large datasets for large-scale monitoring systems. GKM Consultants' RDMS hosts data to a secure server for access and analysis by technicians, engineers and consultants;
- Data security and traceability of data over the lifetime of a project;
- Worksite safety by providing real-time alarms;
- Project management through visualization of relevant data.



## Why use an RDMS?

RDMS have several advantages over traditional data collection methods. In a typical RDMS, data is acquired automatically from data loggers, such as GKM Consultants' DL Series, and uploaded to a server, removing the need to send staff to the worksite regularly to perform manual readings or to collect data from the stand-alone DL Series. The RDMS provides real-time monitoring and plotting, which are not possible with manual collection. Furthermore, an RDMS gives the users access to their data remotely at all times from any Internet-connected computer or system.

## How does it work?

In most projects, data is automatically collected from the data loggers through a cellular or satellite modem and uploaded to our servers. The software processes the data and makes it available to end users. The users connect remotely to the server to visualize data, run analyses or download the data to a desired format.

## Example applications

### ☑ Tunneling

Tunneling in urban areas is a delicate task because any shifting and settling could threaten surrounding structures. Using a properly designed RDMS, instruments such as inclinometers and multi-point extensometers can continuously monitor soil movement and generate alarm emails to be received by engineers and project managers.

### ☑ Environment measurements

RDMS can be used to make data and graphs available to the public to show the real-time values of sound or air quality surrounding major worksites.

### ☑ Mining operations

Large underground mines are often instrumented with a large number of instruments to follow operations and improve safety. RDMS can be used to plot critical measurements in real time. Engineers use this interface to make informed decisions and produce detailed reports.

## Technical features

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### ✔ Unlimited access

Data can be accessed over the Internet at any time from any location on any computer, tablet or smartphone.

### ✔ Time graphs

Time graphs are the basic tool required by most RDMS users. Users can plot their data against time to see long- or short-term trends.

### ✔ Alarms

Email and SMS alarms are configured into the RDMS to provide an extra layer of security, which would be unattainable with manual collection. Checks are performed on every acquired data set and on calculated values against alarm thresholds. Engineers are alerted in real time if any of the parameters are out of the acceptable range. Users take advantage of this real-time monitoring to plan the required actions. In addition, alarms are configured to warn the server administrator or users if any of the data loggers stop responding or uploading its data.

### ✔ Calculations

The RDMS automatically performs calculations on the acquired data and plots the results. In this way, conversion from raw data to engineering units is centralized on the RDMS.

### ✔ User access and contact groups

User access and contact groups are managed with an array of options to give users the tools they require to perform their work. Privileges and access rights are scaled according to the role of each user and can be managed on an individual or group basis.

## Options

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### ✔ On-site hosting

We offer the possibility of hosting the RDMS platform on the client's server. This is sometimes required in remote sites where Internet connections are either not reliable or non-existent.

### ✔ Real-time displays and dashboards

Data can be visualized in real time and displayed on maps and plans with visual alarm indicators.

### ✔ Burst data

High-speed events can be plotted and interpreted, improving processing of data such as event-triggered vibration measurements.

### ✔ Displacement graphs

Displacement graphs are specialized tools often required to display data acquired from instruments such as thermistor strings and in-place inclinometers. Using our displacement graph module, users acquire insight on the data collected from these instruments.

### ✔ GIS

Instrumentation networks can be overlaid over GIS (geographic information system) layers to show the relationships between the acquired data and the geographical locations of the project.

## Technical information

Each project is unique. Please contact us to discuss your requirements at 1 450 441-5444 or by email [info@gkmconsultants.com](mailto:info@gkmconsultants.com).