REMOTE DATA MANAGEMENT FOR UNDERGROUND WORKS MONITORING

Tunneldata is a **web application for comprehensive monitoring data management** of underground constructions.

This **tool integrates the data collected** according to the Monitoring Plan for real-time assessment of tunnel behavior, ground deformations, surface settlements and movements of existing buildings and infrastructures.

Tunneldata is a **technical support for the whole process of monitoring data management:** acquisition, analysis and alarms.
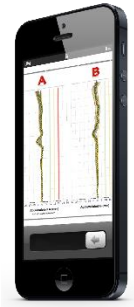
Moreover, it is a useful tool for decision makers because it summarizes and includes all the relevant information.

Its flexibility and versatility allow:

- Running with any internet browser without software downloading or installation.
- Individual access by user and password using any device with internet connection.
- Users can administrate reading and writing permits.
- Database (SQL or My SQL) server can be chosen between these options:
  - **Cloud:** virtual server provided by OFITECO, who will make updates, backups and IT support.
  - **In-house:** OFITECO will install a server in client's desired location. Tunneldata can be also integrated on its computing environment.

Moreover, Tunneldata is complementary with several engineering services provided by OFITECO, such as design and implementation of the monitoring system, manual and automatic readings, safety inspections, monitoring reports, infrastructure reviews and equipment maintenance.

OUTPUTS:

- ✓ **User-friendly graphical GIS interface.**
- ✓ **Acquisition and real-time processing** of geotechnical, structural and environmental data from all type of sensors and dataloggers as well as survey data from total stations and levels.
- ✓ **Incorporation of manual readings** collected by portable devices or files importation.
- ✓ **Planning and tracking** of manual readings and maintenance. Assignment of personnel and resources.
- ✓ **SCADA display:** sensor's view and readings, superimposed on GIS drawings.
- ✓ Flexible configuration of graphs, tables, images and reports.
- ✓ **Alert and warning** manager. Several thresholds can be defined.
- ✓ **Programmable calculation engine** suitable for all sensors and equipment brands and manufactures.
- ✓ Data reduction and correction of complex sensors such as inclinometers
- ✓ **Progress of works module.** Allows the monitoring of the works from the application for tunnels and stations, including TBM, C&C, conventional, excavation, etc.
- ✓ Tunneldata can receive Tunnel Boring Machine **(TBM) information and operation parameters**.