

## GeoSIG Solution Centre Dam Monitoring

### What can be monitored?

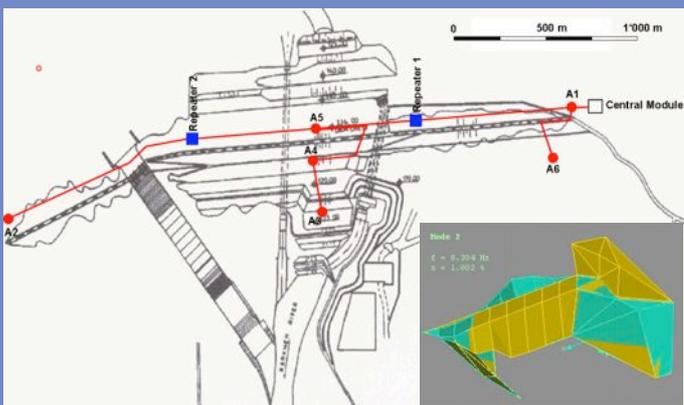
- ✓ Dams

### What are the Features and Benefits?

- ✓ Reliable data about the dam's behaviour
- ✓ Reliable data about the foundation and abutment motions
- ✓ Assist in taking specific decisions for safety measures
- ✓ Study behaviour of the dam against predictions to confirm design assumptions
- ✓ Ensure sustainability and safety of the structure
- ✓ Detect early signs of failure
- ✓ Assess structure's safety following a major event
- ✓ Reduce maintenance costs
- ✓ Achieve compliance with local regulations

### Professional Advice and Support from concept to deployment

Our professional and experienced consultants are ready to provide you with the best impartial advice and support from the outset. Our knowledge of dams, having more than 200 installations worldwide coupled with an in-depth understanding of our instruments will provide you with an unparalleled advantage to achieve the best results for your monitoring requirements on time and on budget.



Dynamic measurements beyond and above static ones are critical requirements in dam monitoring as earthquakes can cause permanent damage with serious consequences. Timely and precise measurements of pre-defined parameters will provide the data to understand the behaviour of the structure and monitor the rate of change. A combination of other static monitoring options such as deformation, displacement leakage and pore water pressure can be used to further provide an indication of the performance of the structure.

As well as the local regulations outlining the requirements for the monitoring instruments; other factors such as the type of the dam, its height and length, its proximity relative to density of population in nearby towns and cities, foundation type, seismicity of the area and reservoir and spillway capacity are amongst important considerations when specifying a dam's instrumentation.

Contact us for a comprehensive consultation and discussion on your Dam Monitoring requirements.

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## OUR SERVICES

Advice

Consulting

Technical Proposal

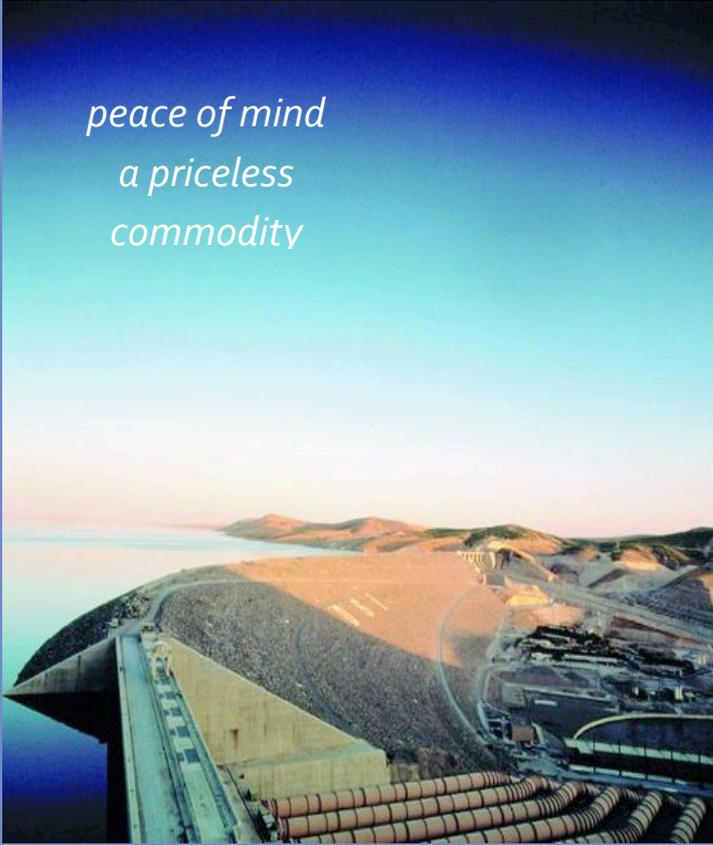
Financial Offer

Planning

Installation

Training

*peace of mind  
a priceless  
commodity*



### **What can be measured?**

There are a multitude of options for monitoring the changes in a dam. Each project will have its own unique requirements. The structural engineers will dictate such requirements for which our experts can then provide the appropriate package.

### **The most widely used packages for Dam Monitoring:**

1. **Vibration:** Structural health, behaviour and modal analysis
2. **Strain:** Fatigue and curing related effects
3. **Displacement:** Joints, cracks and differential settlements of foundations
4. **Water Level:** Reservoir water level
5. **Water Pressure:** Hydrostatic and pore pressure
6. **Leakage:** Leakage / Seepage localisation
7. **Environment:** Solar radiation, humidity and temperature

*We provide useful advice and a unique integrated approach that can help you achieve your*

## **Dam Monitoring Requirements**

### **Kit Example**



### **Typical Dam**

For seismic monitoring of a typical dam, a simple installation with the following equipment will be required:

1. 5 off GMSplus Seismic Recorder
2. 5 off AC-23 Accelerometer
3. 1 off GMS-GPS GPS Receiver
4. 5 off GMS-ICCM Interconnection Set
5. Cable and Software

**Contact us for the cost of a Turnkey Solution**

### **Analysis Capabilities**

A typical setup as above will provide valuable information about the behaviour and status of the dam. Thresholds for acceptable changes in the structure's monitored values can be set to provide automatic notifications. After a natural disaster, at an instance valuable information about changes in the structure's behaviour can be provided. Safety decisions about the dam and alerts to the local population can be made based on credible data and analysis.

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