

Case Study

Dam Monitoring
23 Dams Project
South Korea

GeoSIG
swiss made to measure

In Cooperation With
GeoSIG Partner



Background

Korean Water Resources Corporation (K-water) was established in 1967; it implements national water resources management policies regarding multipurpose dams, water supply dams and regional water supply systems in South Korea. As part of its crisis management of dam facilities regarding earthquake, K-water developed DEMS (the Dam Earthquake Monitoring System) in 2006 to integrate and operate a network of seismic devices, as well as for the safe management of the dams. K-water structured the DIIS (Dam Integrated Information System) to facilitate maintenance and management works for the facilities. K-water completed the installation of seismic equipment for all 23 dams in 2008.

Challenge

The scope of the comprehensive 23 dams project required instrumentation to record seismic motions and other ambient dynamic activity in order to continuously monitor dam structural safety within the context of a safe operating dam environment.

Solution

This project was executed in close cooperation with our local partner, EJtech Co. Ltd (www.ejtech.net), who has offered top-level engineering services since its founding in 1994. EJtech specialises in soft-ground monitoring, structural behavior monitoring, civil engineering, ground investigation, geotomography, measurement automation and network systems, among others — utilising the most advanced IT and robot technology.

Once the data has been processed it is assessed and compared as dam behaviour against seismic design criteria applicable to dam operations. The project facilitated the development and improvement of dam emergency and safety measuring equipment within the context of increased awareness and contributed to the regional seismic data management systems.

The K-water DEMS is an optimized system structured by collecting the seismic data from each dam on exclusive cable connection for real time earthquake sensing and prompt earthquake notice for wavelength data collection and monitoring, maximum acceleration analysis and expression. When an earthquake occurs (0.01g or more), the personnel in charge of dams nationwide are notified with the earthquake warning SMS to set the action plan by checking the damages to the dam after the earthquake and undertaking emergency inspections.

Another Solution using GeoSIG instruments and a capable Partner effectively showing that quality and reliability can also be cost-effective.

Product links

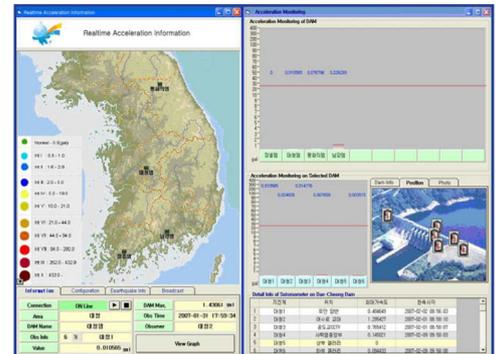
- [AC-23 accelerometer](#)
- [GNC-CR seismic recorder](#)
- [CR-5P seismic recorder](#)



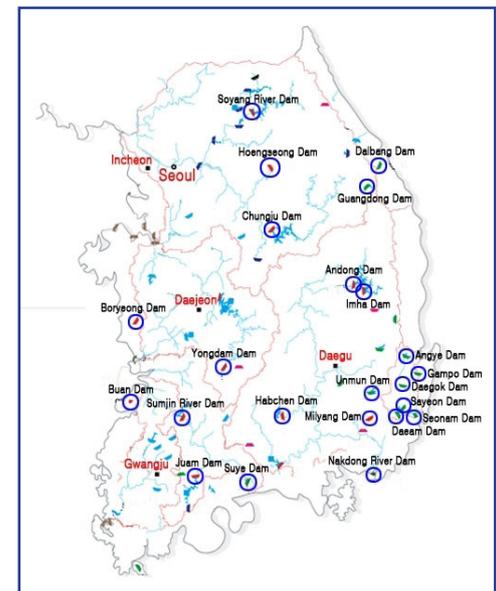
AC-23 accelerometers

GNC-CR seismic recorder

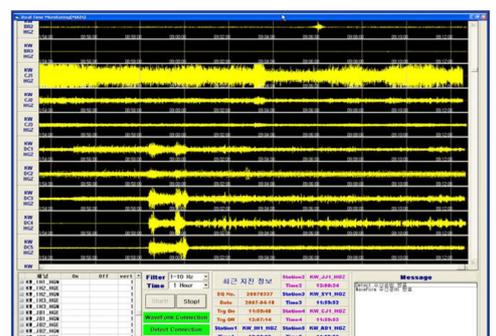
CR-5P seismic recorder



DEMS integrates a network of seismic devices, and works with DIIS.



The 23 dams included in DEMS.



A full range of data is available.



The 23 dams are part of DEMS, and have seismic devices integrated.