

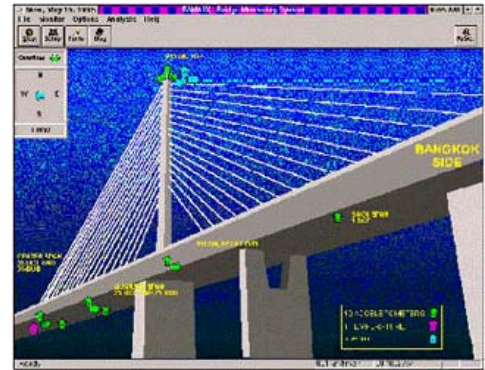
Oasis

On-Line Alerting of Structural Integrity and Safety

OASIS is a hardware and software system for real-time, on-line monitoring of structures for continuous evaluation of structural integrity.

OASIS performs four vital functions:

- Remote, real-time alerting using on-screen imaging and audible alarms
 - Doubles as an event-triggered, high dynamic range, high speed accelerograph
 - Remote control and display of system functions through direct feedback, "hands on," Windows environment
 - Long-term health monitoring
- Improved public safety through better management decisions due to:**
- Reduced response time through fast communication and intelligent processing
 - Better information with on-line analysis of structural status
 - Visual displays create better understanding of critical problems



SENSORS & DATA RECORDERS

EpiSensor ES-T (Tri-axial) ES-U (Uni-axial)

Force Balance Accelerometers for Seismic monitoring, shallow & Deep bore holes sensing

The latest line of earthquake sensors - EpiSensor force balance accelerometers is now available from Kingdom Pty Ltd. Model FBA ES-T is a triaxial surface package useful for many types of earthquake recording applications. The unit consists of three EpiSensor force balance accelerometer modules mounted orthogonally in one small convenient package. With full-scale recording ranges of ± 0.25 to $\pm 4g$ (user selectable) the EpiSensor provides on-scale recording of earthquake motions even at near-fault locations and in a wide variety of structure types. The significantly improved bandwidth of DC to 200 Hz allows engineers and scientists to study motions at higher frequencies while maintaining the very important DC response that allows simple field calibration and reduces post-processing confusion. Output circuitry is also significantly enhanced. Four types of outputs can be field-selected by the user: $\pm 2.5V$ single-ended output for use with traditional earthquake recording instruments; $\pm 10V$ single-ended or $\pm 20V$ differential output for use with 24-bit digital recorder and other 24-bit digital recorders currently on the market. EpiSensor force balance accelerometers are also available in uniaxial (the FBA ES-U) and borehole (the FBA ES-SB shallow and FBA ES-DH deep) packages.



K2

High Sensitivity Digital Recorder

The K2 is a full featured Digital Recorder designed with the end user in mind. Technical advances and innovative engineering have increased performance and flexibility of this recorder to offer a dynamic range ~ 114 dB. The high dynamic range and superior resolution offer significant advantages for applications where signal fidelity and data integrity are vital.



In order to provide the greatest flexibility in data storage, retrieval and communications, two fully compliant PCMCIA card slots are provided that support a wide variety of nonproprietary memory cards, hard disks and modems. This allows users to easily configure the K2 for their specific applications. Developed for Microsoft Windows™, QuickTalk® and QuickLook® software provides a user-friendly environment, making system setup, communications and rapid data analysis quick and easy.

Q330HR

High Resolution Seismic Data Acquisition system.

The Q330HR acquisition system represents a new standard for ultra-high resolution recording, at low power! The Q330HR's typical dynamic range is 148dB, at power consumption $< 2W$, including recording media that stores up to 20 Gbyte of ready-to-use data. The Q330HR also outperforms world's best-performance digitizer, the Q730B (Borehole), independently tested by Sandia National lab, for needs of the US Nuclear Monitoring Verification Program.

Aspen

Distributed open-architecture Environmental Monitoring System

Aspen is a distributed open-architecture system designed to provide a comprehensive set of environmental monitoring data and processed information. **Aspen** uses the latest developments in sensors, digitizers, communication and computer networking technologies as well as recent findings in earth sciences research. It is ideal for monitoring seismic events from local, regional, national and global networks and arrays. The concept of open architecture is central to the **Aspen** environment because it will not only support your current requirements but also can be easily adapted to meet your future needs.

Aspen Field Station

At remote sites, the **Aspen** Field Station consists of the transducers, data-logger and the communication interface. The data-logger converts analog signals from the transducers to digital format and time stamps the data using the GPS receiver for all channels. The communication interface transfers continuous and/or on-demand data to the designated **Aspen** Data Centers using standard duplex serial interface or standard TCP/IP Level 4 protocol over radio, telephone or satellite communication links.

Aspen Data Center

The **Aspen** data center consists of an Access Server and the **Antelope** Software Package. The Access Server merges all incoming and outgoing data streams and forwards them to the data Local Area Network (LAN) from which they are distributed to the appropriate workstations using a TCP/IP socket connection.

The **Antelope** Real-Time System provides full functionality for seismic network and array operations and control. This includes real time data acquisition to nonvolatile disk ring-buffer, interactive control of field equipment, system state of health monitoring, and real time automated data processing (detection, picking, seismic event association, seismic event location, archiving). It also offers interactive and batch processing, information system functions, automated distribution of raw data and processed results, batch mode seismic array processing and a powerful development tool kit for extending and customizing the system.

Sierra

Earthquake and Seismic Monitoring System

Sierra provides rapid information for earthquake mitigation by monitoring seismic events from local, regional and national networks and arrays. **Sierra** is based on the *Altus* recorders to digitize and transmit data over full duplex telemetry links and a PC-based data acquisition and on-line processing system. The system runs under Microsoft *Windows* to provide a user-friendly environment, making system setup and data display quick and easy. **Sierra** offers the advantage of recording seismic events to the *Altus* recorder's removable PC memory card when the trigger criteria are met, providing a backup system for the network. The *Altus* recorder can also be connected to a triaxial force balance accelerometer to provide information about strong ground motion.

Sierra Field Station

At remote sites, the **Sierra** Field Station consists of seismometers and/or accelerometers, an *Altus* recorder and a communication interface. The *Altus* recorder converts analog signals from the transducers to digital format and time stamps the data for all channels using the GPS receiver. All of *Altus* recorders (Etna, K2 or Everest) can be installed at field stations. The communication interface transfers continuous data to the **Sierra** Data Center using standard duplex serial interface over radio, telephone or satellite communication links.

Sierra Data Center

The **Sierra** data center consists of the Data Concentrator, the Real-time data acquisition and processing system, and the off-line analysis system.

Condor

Nuclear Power Plant Monitoring System

The most comprehensive earthquake monitoring solution for nuclear and conventional power plants -- including seismic-event data recording, retrieval, analysis and notification via hardware alarms and hard-copy reports -- all in one system.

The Condor is the world's most advanced and cost-effective system for monitoring seismic activity at nuclear and other power plants. Carefully designed for maximum effectiveness and ease-of-use, as well as for lowest cost of operation and maintenance, the Condor System quickly responds when a seismic event occurs to help the plant operators to make the most informed decisions possible. Featuring comprehensive event-analysis and alarm-notification capabilities, the Condor System drastically reduces the time required for proper data analysis following a seismic event. Condor ensures high reliability by utilizing dual-redundant components for every critical part. The recorder portion of the system is based on the industry standard Etna - more than 4,000 of which are successfully in use around the world.