Antelope

Environmental Monitoring Software

Antelope Environmental Monitoring Software is a commercial-off-the-shelf data acquisition, analysis, and management software designed to provide a comprehensive set of environmental monitoring data and processed information in real-time. With growing data volumes and aggressive service level expectations, Antelope maximizes the potential of your IT organization while delivering real-time enterprise computing.

Antelope runs under Linux & Mac OS X environment. It is finely engineered, as an all-in-one package, through state-of-the-art technology and scientific advances, making it ideal for real-time monitoring of seismic events from local/regional, national and global networks. It, also, includes arrays for monitoring explosions, nuclear tests, and induced events from oil/gas exploration. Antelope takes full advantage of the extensive support services provided by Linux/UNIX environments and standard TCP/IP network utilities over multiple physical interfaces.

Antelope consists of two major sub-systems:
- **ARTS**, the Antelope Real-Time System
- **ASIS**, the Antelope Seismic Information System
- **Bighorn**, real-time structural health monitoring

The current generation of Antelope provides full functionality for seismic network and array operations, command and control, including real-time data acquisition from field digitizers, interactive control of field equipment, system state-of-health monitoring (SOH), real-time automated data processing (detection, rapid event association, event location, and 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 toolkit for extending and customizing the software. The Antelope Seismic Information System uses the relational database (RDBMS) formalism and the CSS 3.0 schema for information organization. Bighorn use time-domain filters to calculate in real-time strong-motion response spectra. The integrated alert processing issues demand spectra exceedances as soon as they occur providing now-casting capability on possible damages.

Antelope runs on RHEL, CentOS, and Mac OS X. In addition to providing specific functionality for seismic monitoring systems, Antelope offers a robust and versatile substratum of generic functions that can be used to support other non-seismic monitoring applications.

The latest release includes GIS capability and an AI event detector.

Outside of Japan

FEATURES

- Distributed real-time data acquisition and processing capability
- Unique data neutral and entirely data-driven architecture
- Lowes processing latency, suited for earthquake early warning systems (EEWS)
- Tie-in capability of virtually any seismic network in the world
- Distributed real-time system SOH monitoring and command & control capability
- Comprehensive automated seismic event information including an AI event detector
- Network size independent - software scales with hardware
- Writes data in real-time to a non-volatile disk ring buffer
- Size of ring buffer limited only by the maximum file size of OS
- Real-time system uses client/server TCP/IP paradigm
- Supports all telemetry links with standard TCP/IP Level 4 protocol over multiple physical interfaces including standard duplex serial interfaces
- A unique set of online and off-line processing tools
- Information system interfaces and functionality
- Offers RDBMS tools for rapid access to earthquake information
- Provides a rich development toolkit (e.g., Python, Perl, C, and C++)
- Highly configurable and adaptable to any monitoring system requirements
- 64-bit open-architecture modular design concept throughout
- Used by the largest seismic networks and major data centers in the world today*