



## Providing Web Interfaces to the NSF EarthScope USArray Transportable Array

Frank Vernon (1), Robert Newman (1), and Kent Lindquist (2)

(1) IGPP, UCSD, La Jolla, CA, USA, (2) Lindquist Consulting, Inc., 59 College Rd. Suite #7, Fairbanks, AK, United States.

Since April 2004 the EarthScope USArray seismic network has grown to over 850 broadband stations that stream multi-channel data in near real-time to the Array Network Facility in San Diego. Providing secure, yet open, access to real-time and archived data for a broad range of audiences is best served by a series of platform agnostic low-latency web-based applications. We present a framework of tools that mediate between the world wide web and Boulder Real Time Technologies Antelope Environmental Monitoring System data acquisition and archival software. These tools provide comprehensive information to audiences ranging from network operators and geoscience researchers, to funding agencies and the general public. This ranges from network-wide to station-specific metadata, state-of-health metrics, event detection rates, archival data and dynamic report generation over a station's two year life span. Leveraging open source web-site development frameworks for both the server side (Perl, Python and PHP) and client-side (Flickr, Google Maps/Earth and jQuery) facilitates the development of a robust extensible architecture that can be tailored on a per-user basis, with rapid prototyping and development that adheres to web-standards.

Typical seismic data warehouses allow online users to query and download data collected from regional networks, without the scientist directly visually assessing data coverage and/or quality. Using a suite of web-based protocols, we have recently developed an online seismic waveform interface that directly queries and displays data from a relational database through a web-browser. Using the Python interface to Datascope and the Python-based Twisted network package on the server side, and the jQuery Javascript framework on the client side to send and receive asynchronous waveform queries, we display broadband seismic data using the HTML Canvas element that is globally accessible by anyone using a modern web-browser. We are currently creating additional interface tools to create a rich-client interface for accessing and displaying seismic data that can be deployed to any system running the Antelope Real Time System. The software is freely available from the Antelope contributed code Git repository (<http://www.antelopeusersgroup.org>).