The ANSS Station Information System: A Centralized Station Metadata Repository for Populating, Managing, and Distributing Seismic Station Metadata

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Introduction
Maintaining and archiving accurate station metadata is critical for seismic network operations. The Station Information System (SIS) is a repository of managed metadata for seismic sensors. It implements a web-based user interface that enables manipulation of metadata. The system can track the installation, maintenance, and removal of equipment from sites. SIS also computes the overall gain of a data channel by combining the response of the underlying hardware components. In turn, users can distribute this information in standard formats such as FDSN StationXML and dataless SEED. SIS manages field equipment that does not produce seismic data streams, such as power, telemetry, or GPS - to give the network operator the most complete view of site work. Originally developed by the Southern California Earthquake Data Center to manage the metadata needs of the Southern California Seismic Network, SIS has been modified in the past 2 years to service the needs of multiple regional seismic networks as a result of ANSS funding.

SIS Infrastructure
The user interface (UI) is written in python and uses the Django web framework. The UI accesses an Oracle database.

Station Metadata Formats
http://files.anss-sis.scsn.org/production
SIS publishes the metadata in 3 formats
- Dataseed
- FDSN StationXML
- ExtStationXML

Enter Equipment into SIS
SIS stores a wide variety of equipment. The data model is generalized to allow for the creation of new equipment models and categories by the user.

Assign Response to Seismic Equipment
SIS stores the metadata about seismic equipment into the ORACLE database. The user can then view and maintain the data in a web based environment.

Configure Logger to Produce Data Channels
Confusing information about which loggers produce which data channels from the FDSN StationXML and dataseed SEED. SIS also has the capability to compute the overall gain of a data channel by combining the responses of the underlying hardware components. In turn, users can distribute this information in standard formats such as FDSN StationXML and dataless SEED.

Maintain Station Metadata by Recording Field Actions
Entering equipment into SIS
- Enter equipment into SIS
- Configure logger to produce data channels
- Assign response to seismic equipment

View Information in SIS
- Enter equipment into SIS
- Configure logger to produce data channels
- Assign response to seismic equipment
- View Information in SIS
- Maintain Station Metadata by Recording Field Actions
- Configure Logger to Produce Data Channels
- Assign Response to Seismic Equipment
- Enter Equipment into SIS

Learn More about SIS
SIS Wiki: http://maui.gps.caltech.edu/SISTrac
Request an Account: sis-help@gps.caltech.edu
SIS Listserv: https://mail.cisn.org/mailman/listinfo/anss-sis
Batch Load into SIS using ExtStationXML format
http://maui.gps.caltech.edu/SISTrac/wiki/SIS:Loader

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