

Mineby Data

This data has been used by kind permission of:
Atomic Energy Canada Ltd

software@appliedseismology.com



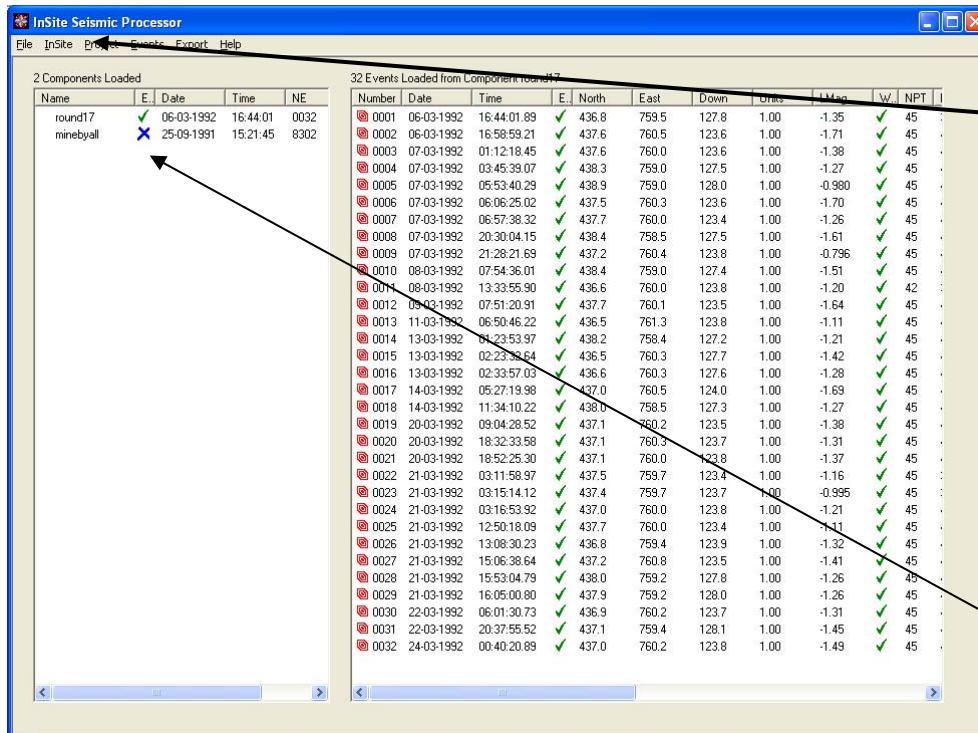
Demo Features

- This demo uses Microseismic data with waveforms. It is designed to give you an overview of the Waveform Visualiser using instrument views.
- The data is from AECL's Mineby Experiment.
- The following slides give you some options to try in the software.

It's a good idea to ...

- ... run through the "SKB Prototype" demo presentation first as this gives a more thorough overview of the Location Visualiser.
- ... run through the "TSX Cluster" demo presentation first as this gives a more thorough overview of the Waveform Visualiser.

Data Visualiser I



The InSite menu allows you to switch between the available visualisers.

In this example the Component “round17” contains waveforms for the events, but “minebyall” just contains processed locations.

Location Visualiser I

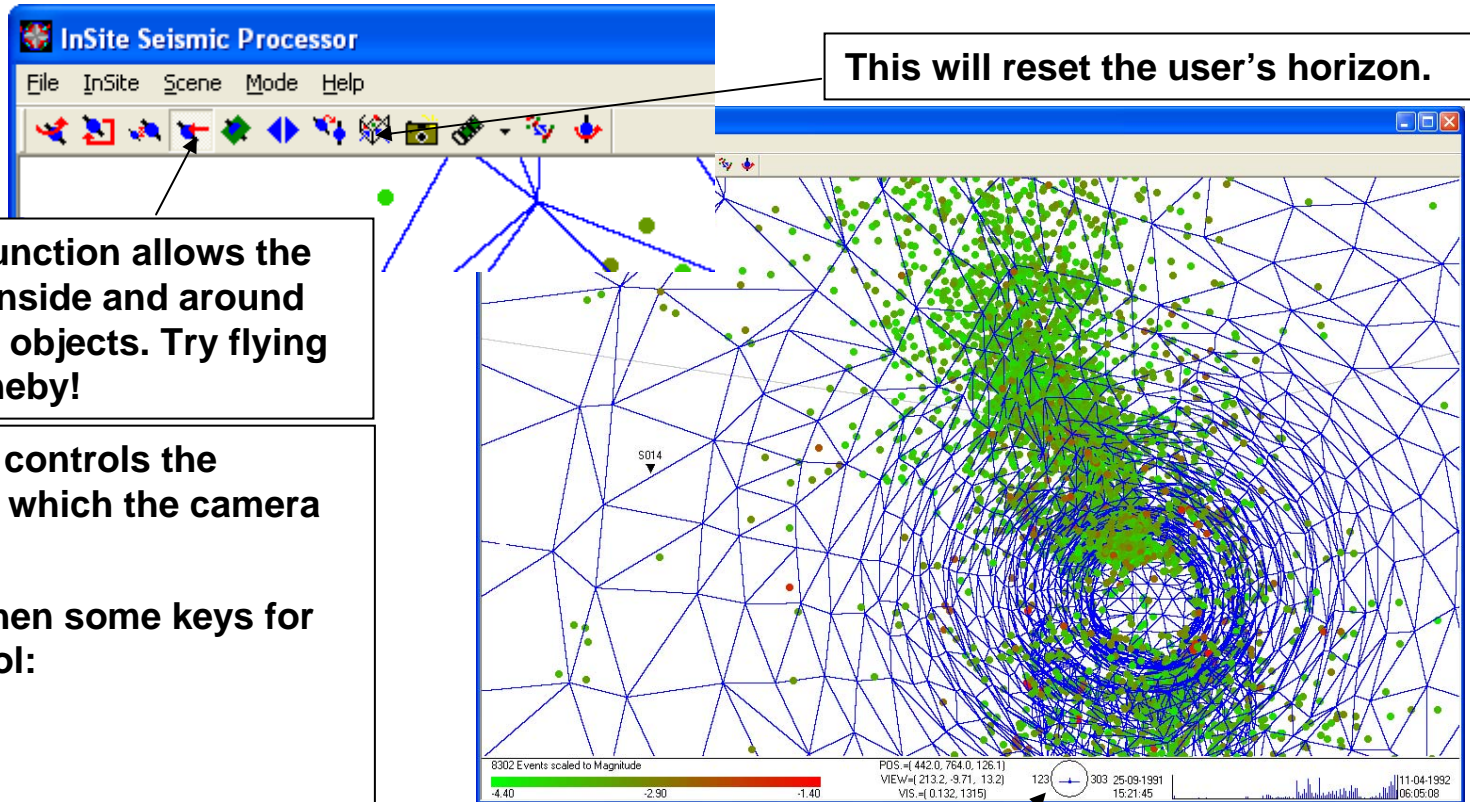
InSite allows the user to change the amount of perspective on the view.

The screenshot shows the 'InSite Seismic Processor' window with a 3D wireframe model of a seismic source. The model is a blue wireframe structure extending from a central point towards the right. A white wireframe box is visible on the left. The software interface includes a menu bar (File, InSite, Scene, Mode, Help) and a toolbar. A 'Scene Properties' dialog box is open, showing the 'Camera' tab. The 'Perspective on view' slider is set to 40% (FOV = 59 deg.). The 'Manually Set the Camera' section includes fields for CDA (NED) = (431.164 , 757.358 , 125.369), Distance of Camera to CDA = 13.152, and Camera View (Azimuth, Plunge) = (219.169 , 4.9446). A status bar at the bottom displays coordinates and other data.

This page also allows the user to accurately set the camera's view.

More perspective gives the viewer greater feeling of depth AND allows the user to better use the "Fly" function.

Location Visualiser II



This will reset the user's horizon.

The "Fly" function allows the user to fly inside and around the scene's objects. Try flying into the Mineby!

The mouse controls the direction in which the camera is pointing.

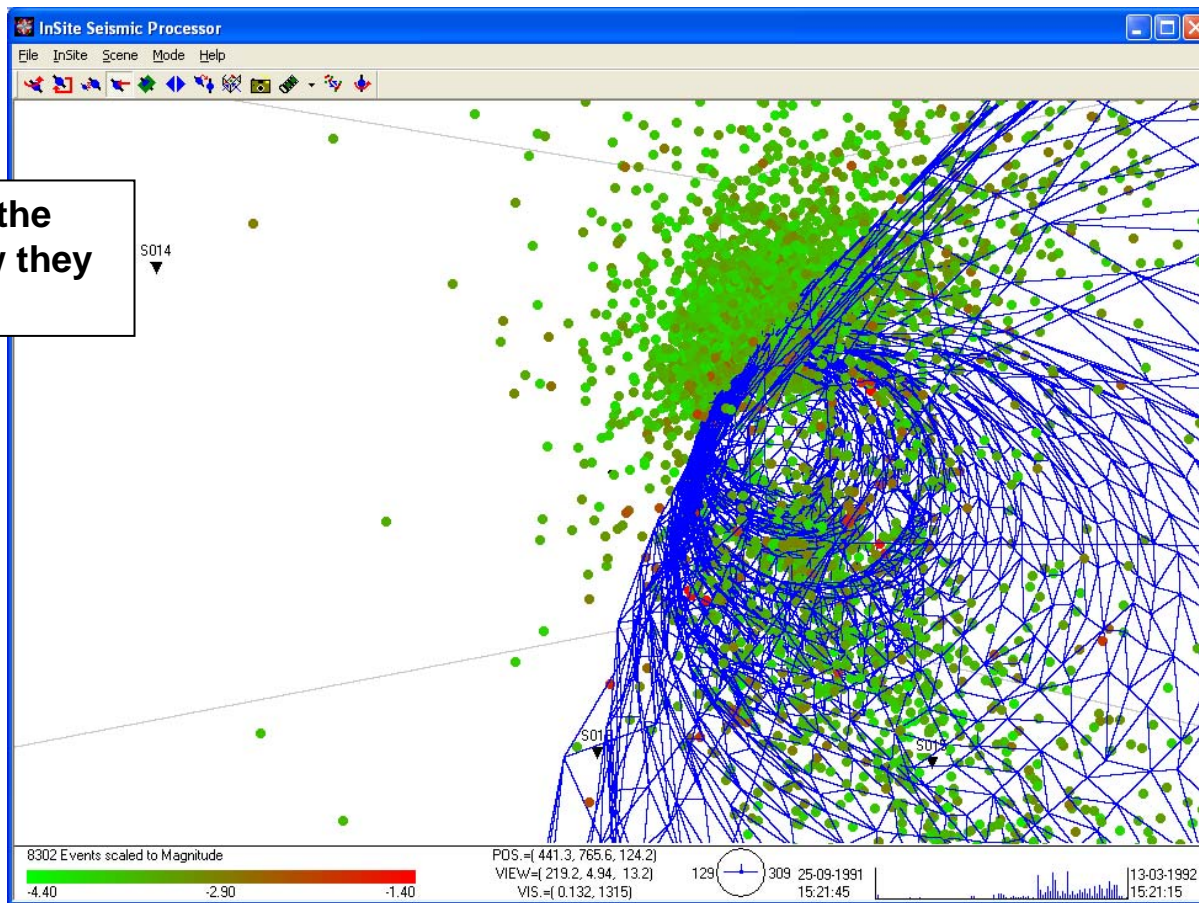
There are then some keys for flight control:

- S - Forward
- X - Backward
- A - Slide left
- D - Slide right
- Q - Pitch anti-clockwise
- W - Pitch clockwise
- F - Slide up
- V - Slide down

The orientation marker describes how the camera is orientated in space.

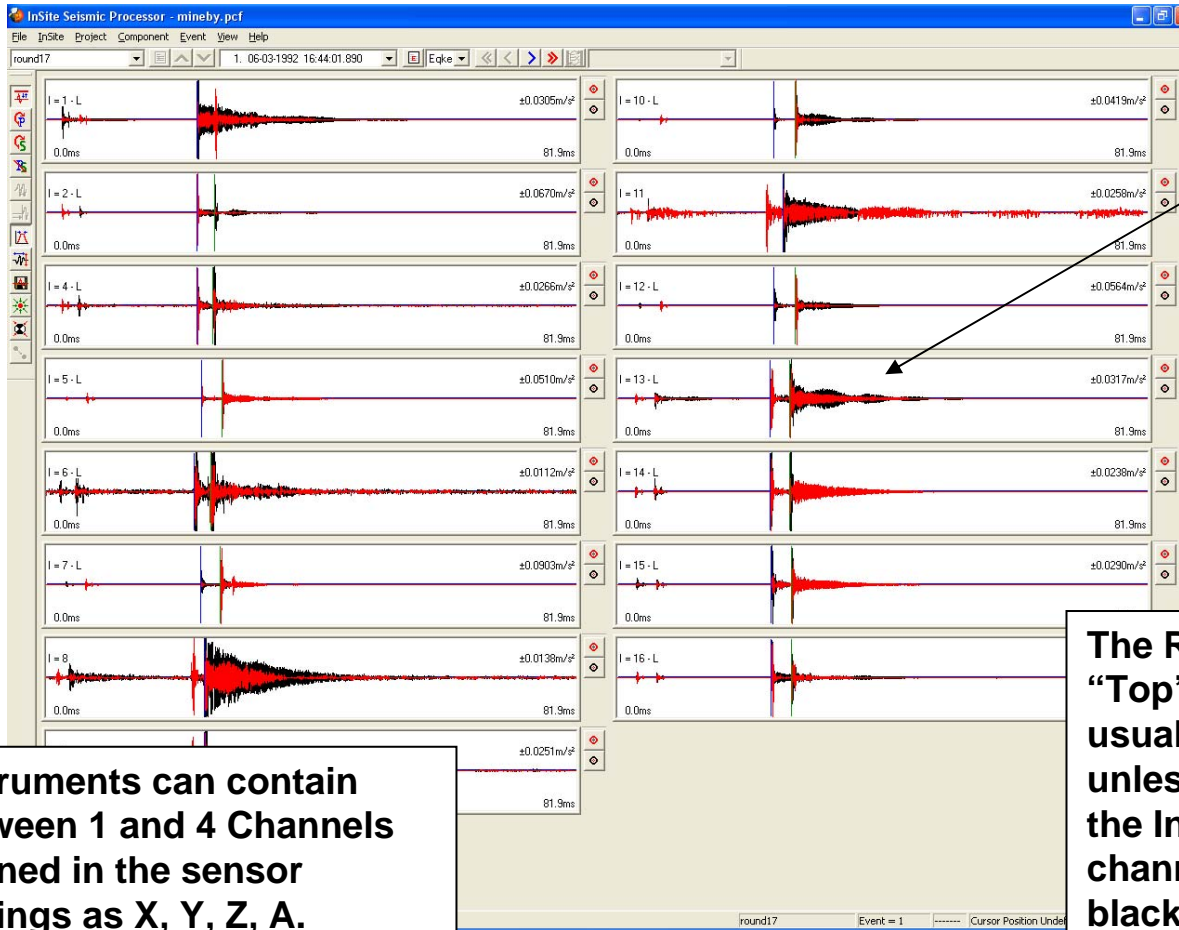
Location Visualiser III

By careful manipulation the user can get any 3D view they like in the Scene



Waveform Visualiser I

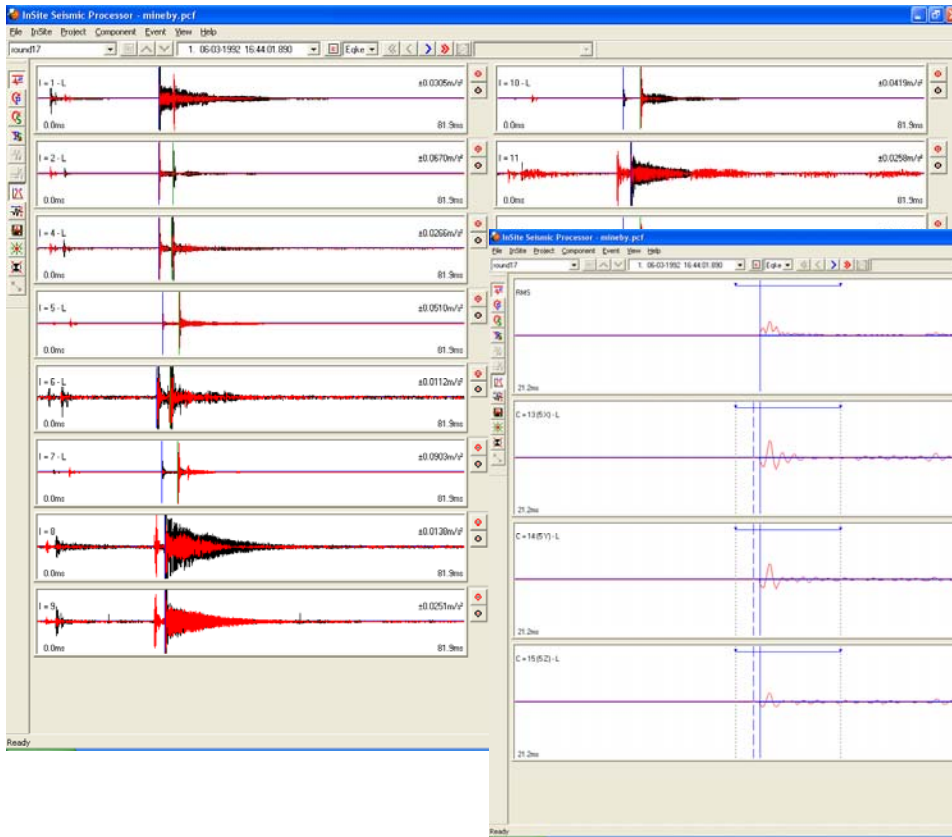
In this example, triaxial sensors have been used. The channels are plotted by their “Instruments” rather than as individual “Channels”. This can be toggled on/off in the Project Properties.



Instruments can contain between 1 and 4 Channels defined in the sensor settings as X, Y, Z, A.

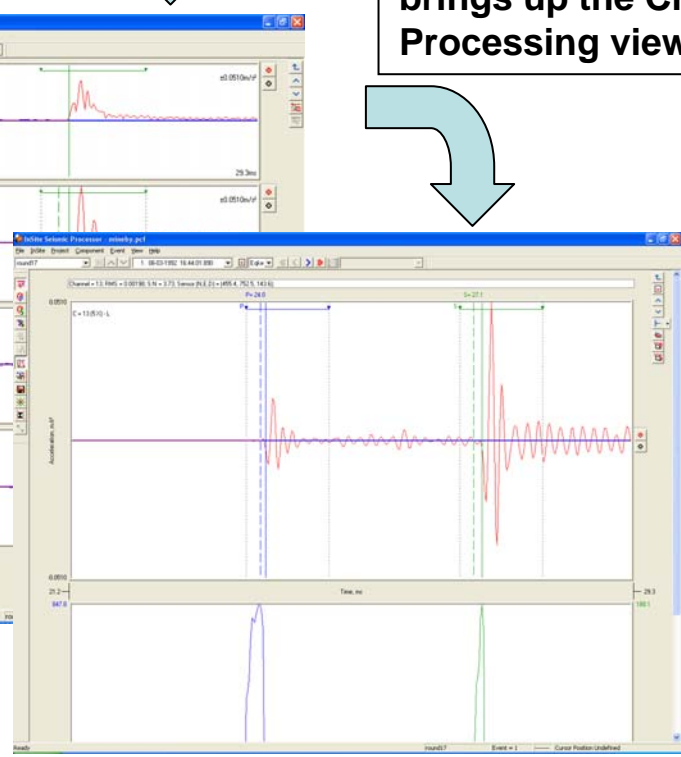
The Red waveform is the “Top” channel. This is usually the X channel unless it doesn’t exist on the Instrument. The other channels are plotted in black behind this.

Waveform Visualiser II



Double clicking on a waveform takes the user into the Instrument Processing view.

Double clicking again brings up the Channel Processing view.



Waveform Visualiser III



The top view is the Root-Mean-Square (RMS) waveform for this instrument.

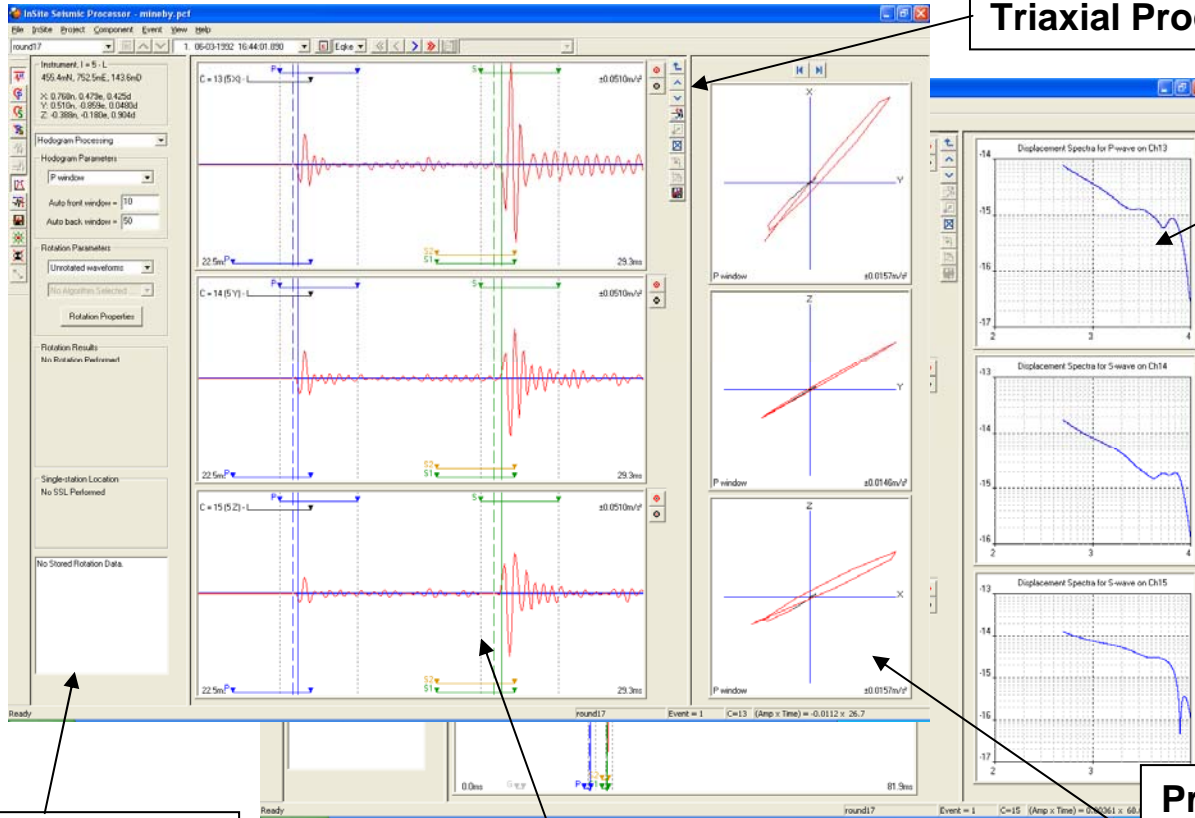
The waveform arrival picks and the scaling functions are linked together for the channels on the instrument.

Try re-picking and re-locating some of the Round 17 events....

Advanced Waveform Module I

To access the Triaxial mode and view the Advanced Waveform Module click on this button in the channel processing bar

Advanced Waveform Module II



Triaxial Processing Bar

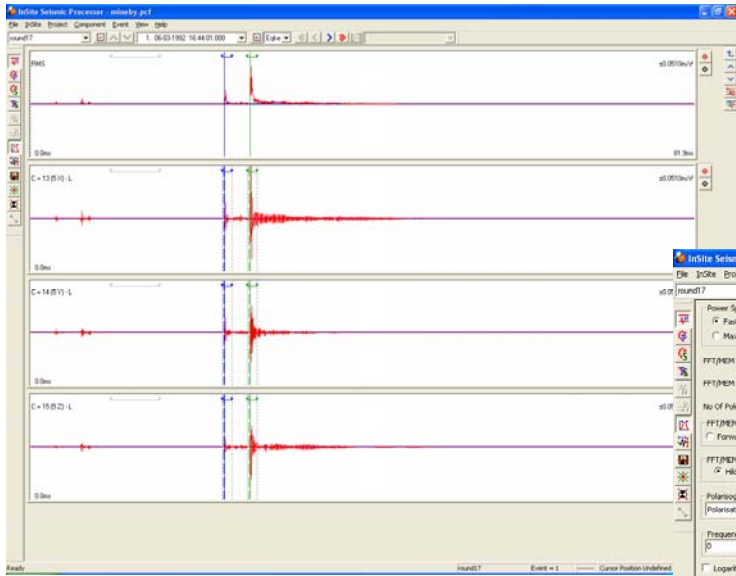
Processing Panel in Frequency Mode

Configuration and Results Panel

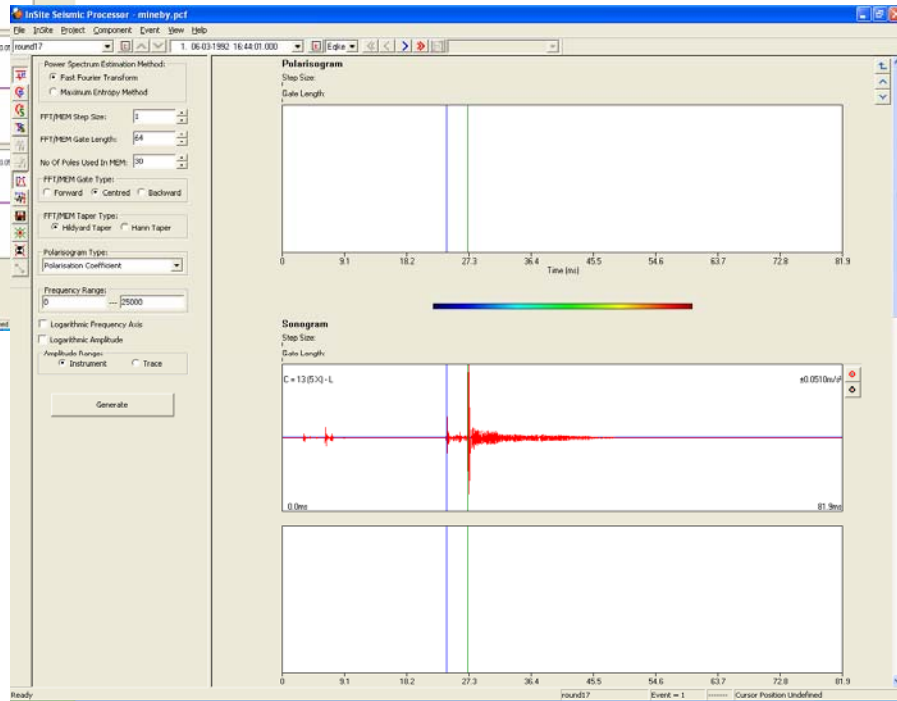
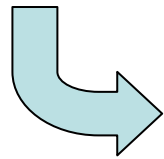
Waveform Panel

Processing Panel in Hodogram Mode

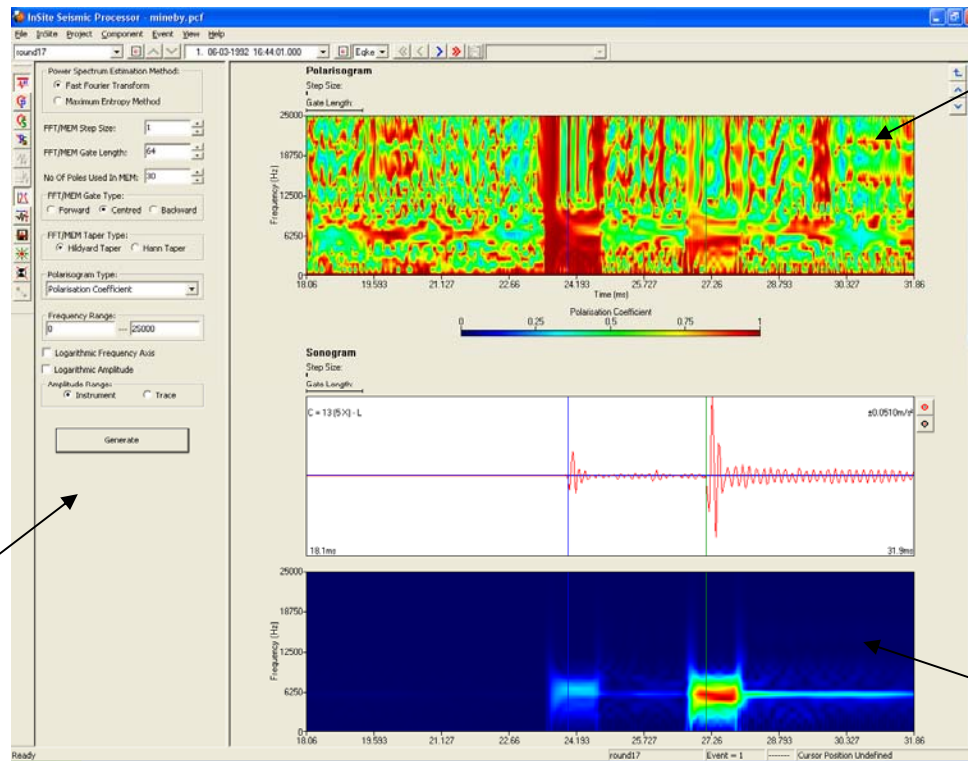
Advanced Waveform Visualiser III



To access the Advanced Instrument and view sonograms and polarisograms click on this button in the channel processing bar



Advanced Waveform Visualiser IV



Polarisogram

Scroll down for sonogram of Channel 14 and Channel 15

Sonogram for Channel 13

Configuration Panel

Advanced Waveform Visualiser V

Power Spectrum Estimation Method:

- Fast Fourier Transform
- Maximum Entropy Method

FFT/MEM Step Size:

FFT/MEM Gate Length:

No Of Poles Used In MEM:

FFT/MEM Gate Type:

- Forward
- Centred
- Backward

FFT/MEM Taper Type:

- Hildyard Taper
- Hann Taper

Polarisogram Type:

Frequency Range:

Logarithmic Frequency Axis

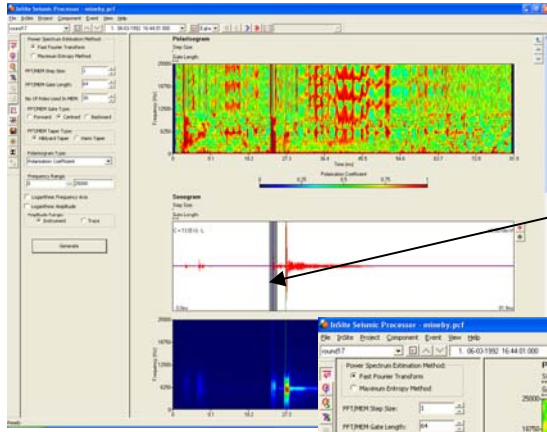
Logarithmic Amplitude

Amplitude Range:

- Instrument
- Trace

Configuration panel contains controls for manipulating the display and processing functions

Experiment with different settings and press 'Generate'. to see how the graphs change



Highlight a region on any waveform view for closer inspection

