AE monitoring of CNL's (formerly AECL) TSX experiment: clay bulkhead

ITASCA
Consulting Ltd

Microseismic Geomechanics: Increased understanding; reduced risk

InSite Lite

- InSite[TM] Lite is the free version of Itasca Consulting Ltd.'s InSite Seismic Processing software suite, provided with limited functionality and features.

- The examples shown here are taken from ICL and its partners projects.

- InSite's proprietary project (*.pcf) files contain all the configuration, event information and links to waveforms necessary to run a project in InSite. Double-clicking on the .pcf project file launches the InSite software application.

- The InSite project waveform data (*.esf) files include the results from the data processing. These files are imported for the project (.pcf file) through the data import management tool in InSite. Please note that not all of the available example projects are provided with example waveform data.

- For information on the operation of the InSite software, please refer to the product help files.

- For information on purchasing the full version of the InSite software, please contact us at support@itasca.co.uk

Example Features

- This example uses AE location data with waveforms. It is designed to give you an overview of the 3D and waveform Visualisers.

- The data is from two example clusters of AE events located around the clay bulkhead of CNL's (formerly AECL) TSX experiment. Monitoring was carried out using an array of 16 uniaxial sensors.

- 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.

Navigation: Data Visualiser

The InSite Global Button Bar allows you to switch between the available visualisers.

Try going to the 3D Visualiser.

The other visualisers will be empty as no data exists for them in this project.

InSite's default view is the 'Data Visualiser', showing a catalogue of all Seismic/MS/AE events imported or processed within the project

3D Visualiser I

The example has already imported the geometry of the bulkhead, created as a dxf file. InSite's 3D visualiser allows displaying the events with different colour and sizes scales in a 3D scene.
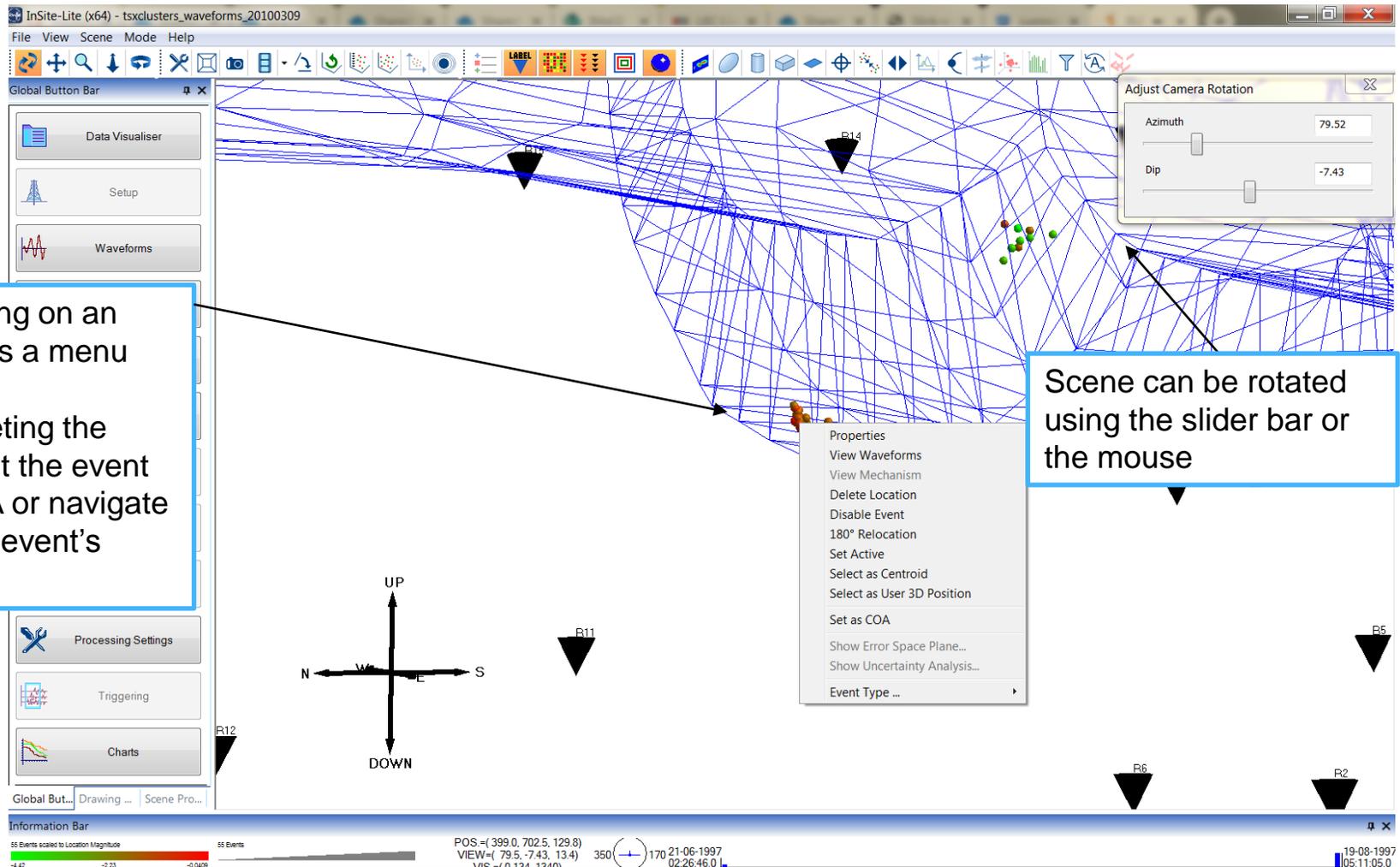
Right-clicking on an event opens a menu that allows editing/deleting the location, set the event as the COA or navigate to view the event's waveforms

Scene can be rotated using the slider bar or the mouse

Waveform Visualiser

Waveform view shows individual instrument or channel traces together with the processing result.

This view is indicated for sensor arrays arranged in a 3D or 2D geometry.
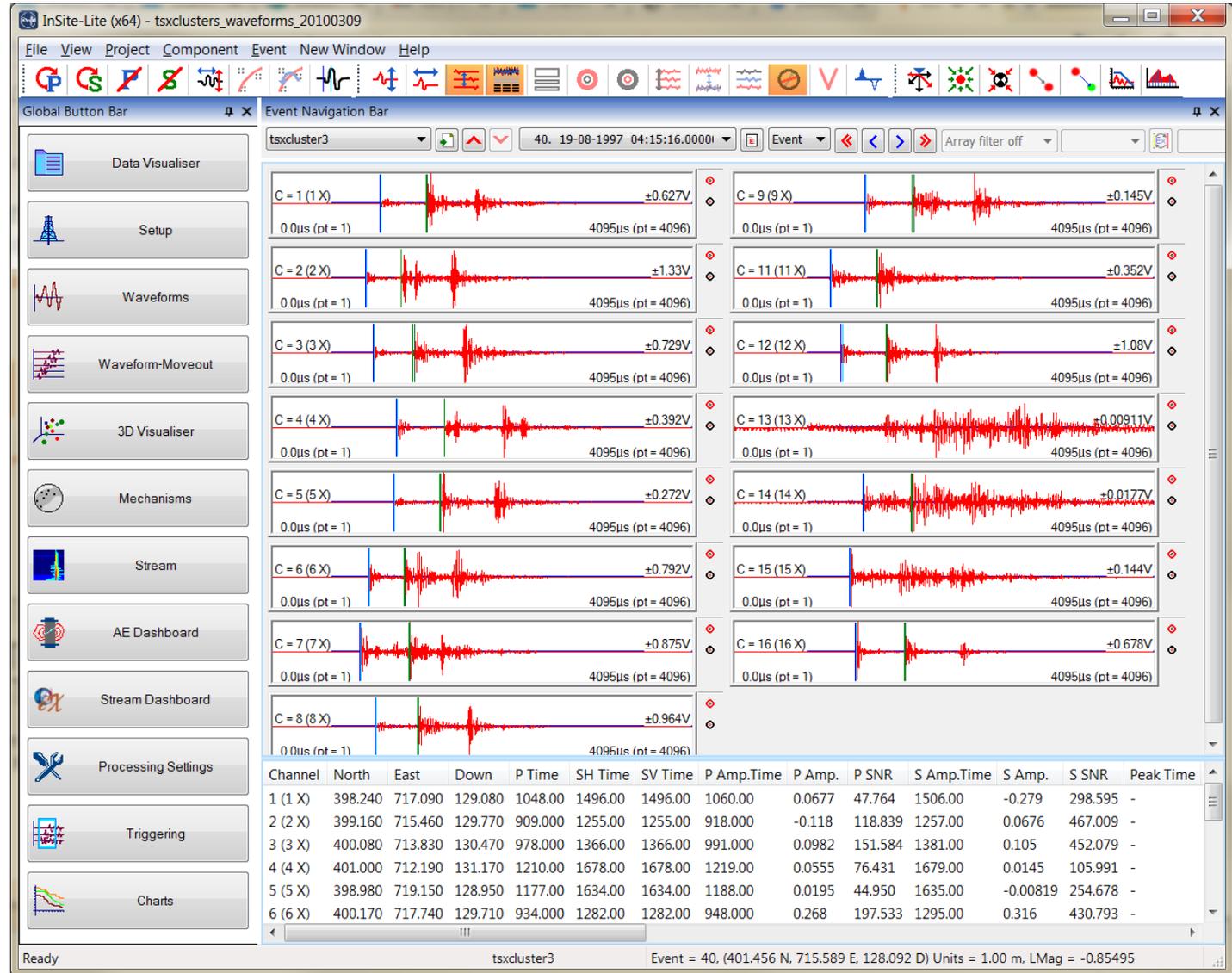
Waveform visualiser: channel view

Right-clicking on one trace brings the channel view. This view displays the recorded trace, processed arrival picks and the picking function (AF) used in the auto-picking
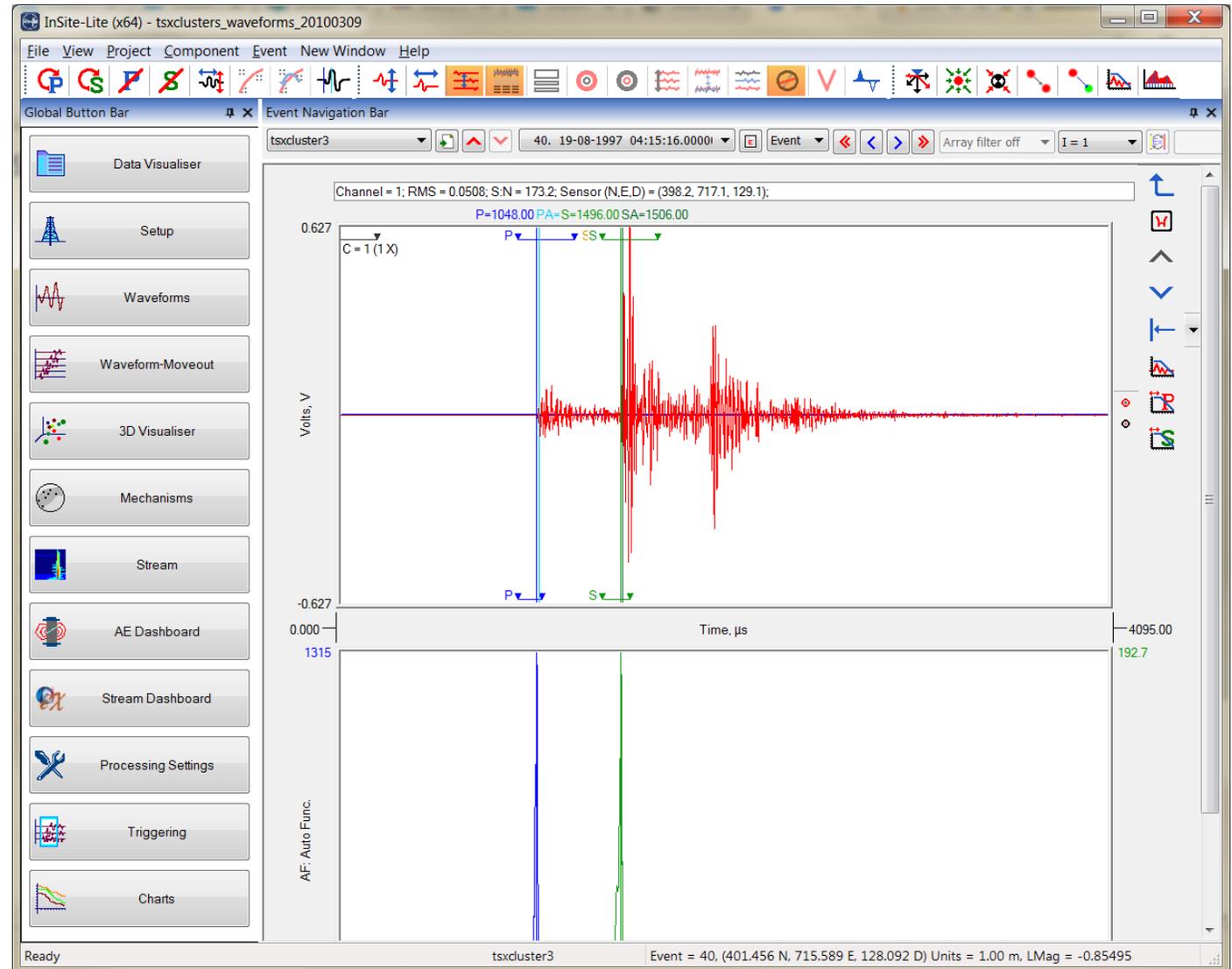
Waveform visualiser: FFT

The right-hand bar in the channel view allows navigating through the different sensors and displaying the FFT of the full trace, the section of trace around the P-wave pick or the section of trace around the S-wave
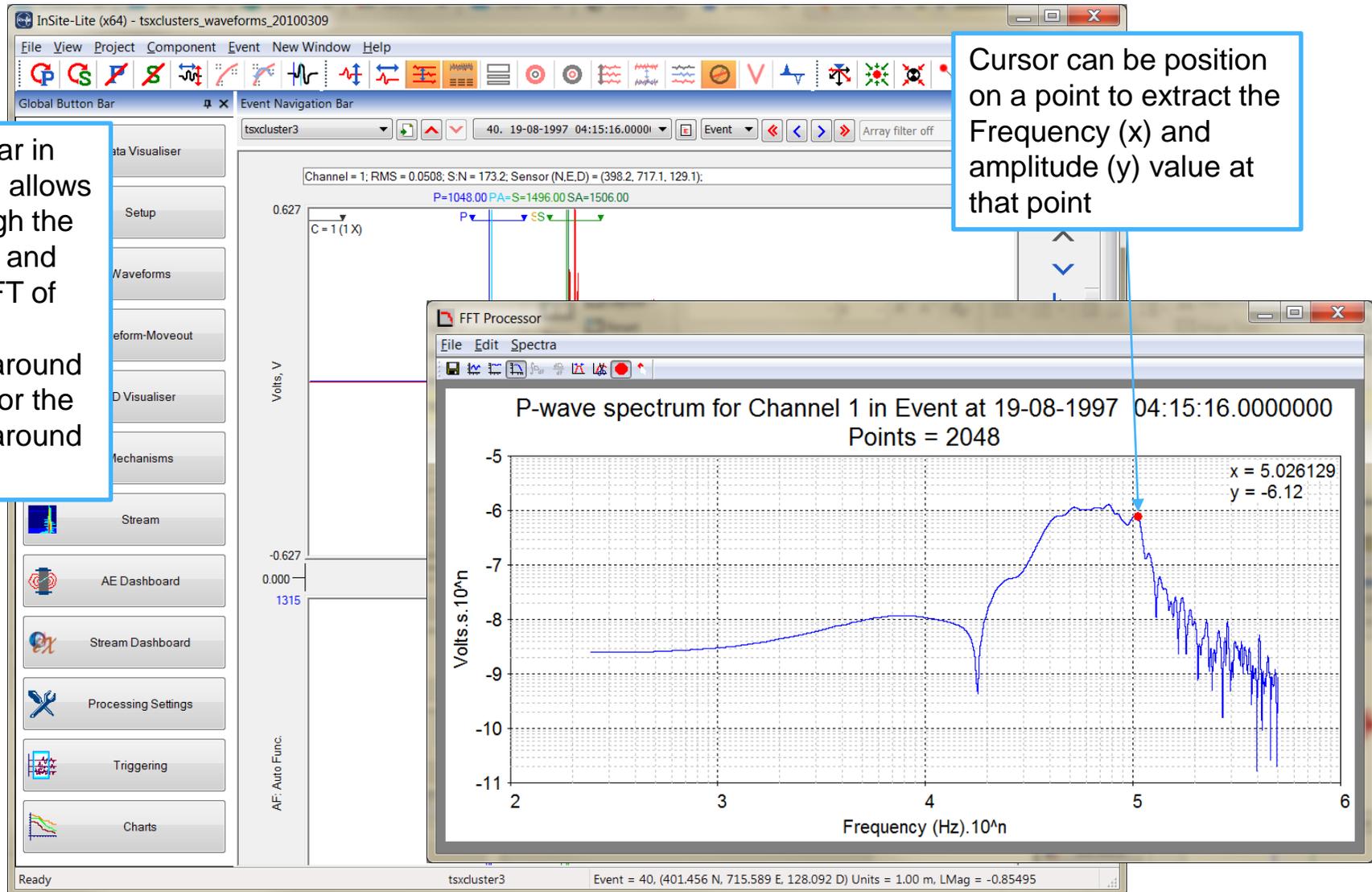
Cursor can be position on a point to extract the Frequency (x) and amplitude (y) value at that point