Microseismic Monitoring of Hydraulic Fracturing - Waveforms

ITASCA
Consulting Ltd

Microseismic Geomechanics: Increased understanding; reduced risk

InSite Lite

ITASCA Consulting Ltd

- InSite™ 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

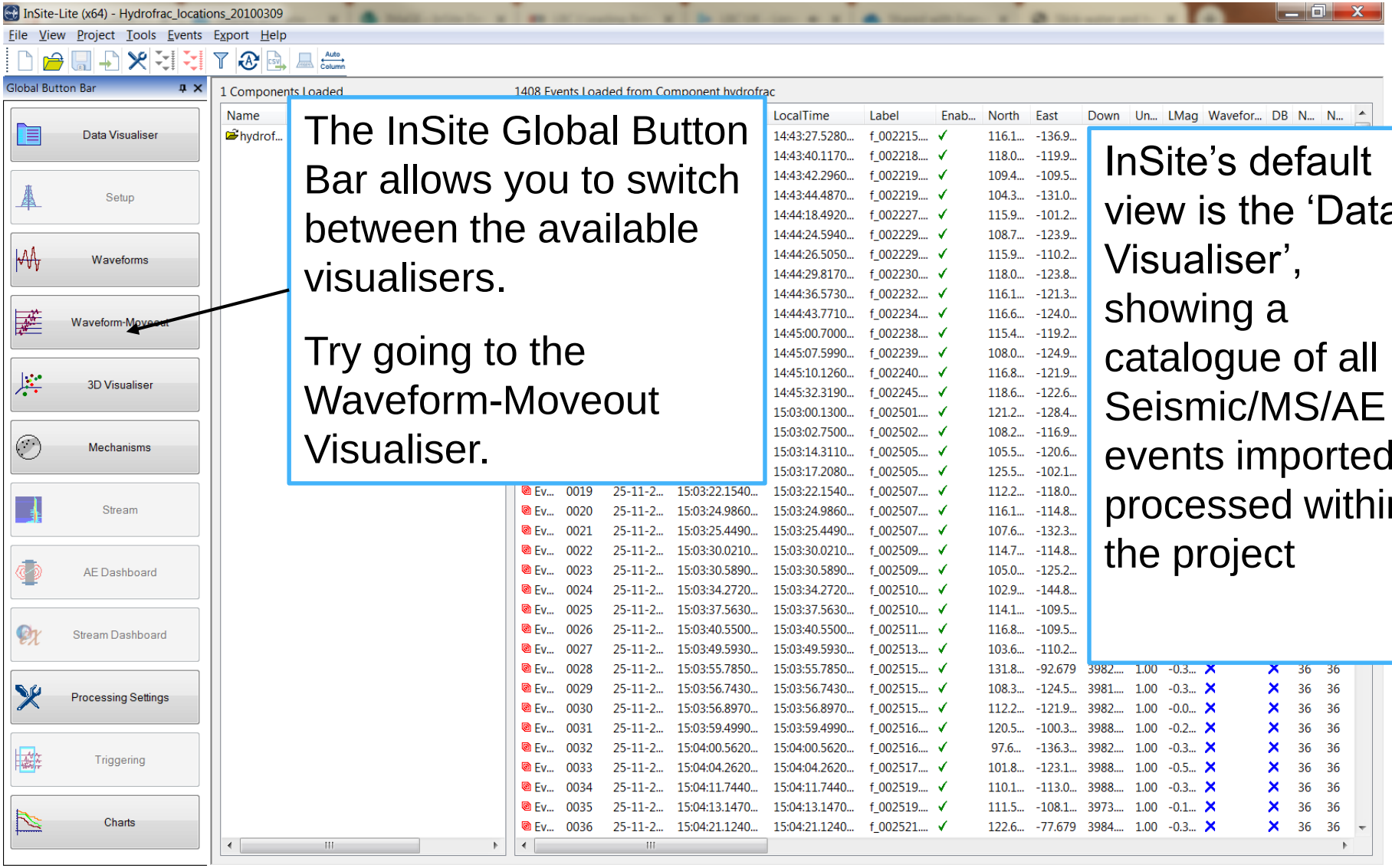
- This example uses a small sample of Microseismic (MS) waveform data recorded during the Hydraulic Fracturing of a tight-gas sand reservoir in the Bossier formation in the Dowdy Ranch field

- The full MS record, shown as only locations, can be found in the HydraulicFracture_locations example

- This example is designed to give an overview of the features and functionalities of InSite's Waveform Visualiser.

- The following slides give you some options to try in the software.

Navigation: Data Visualiser



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

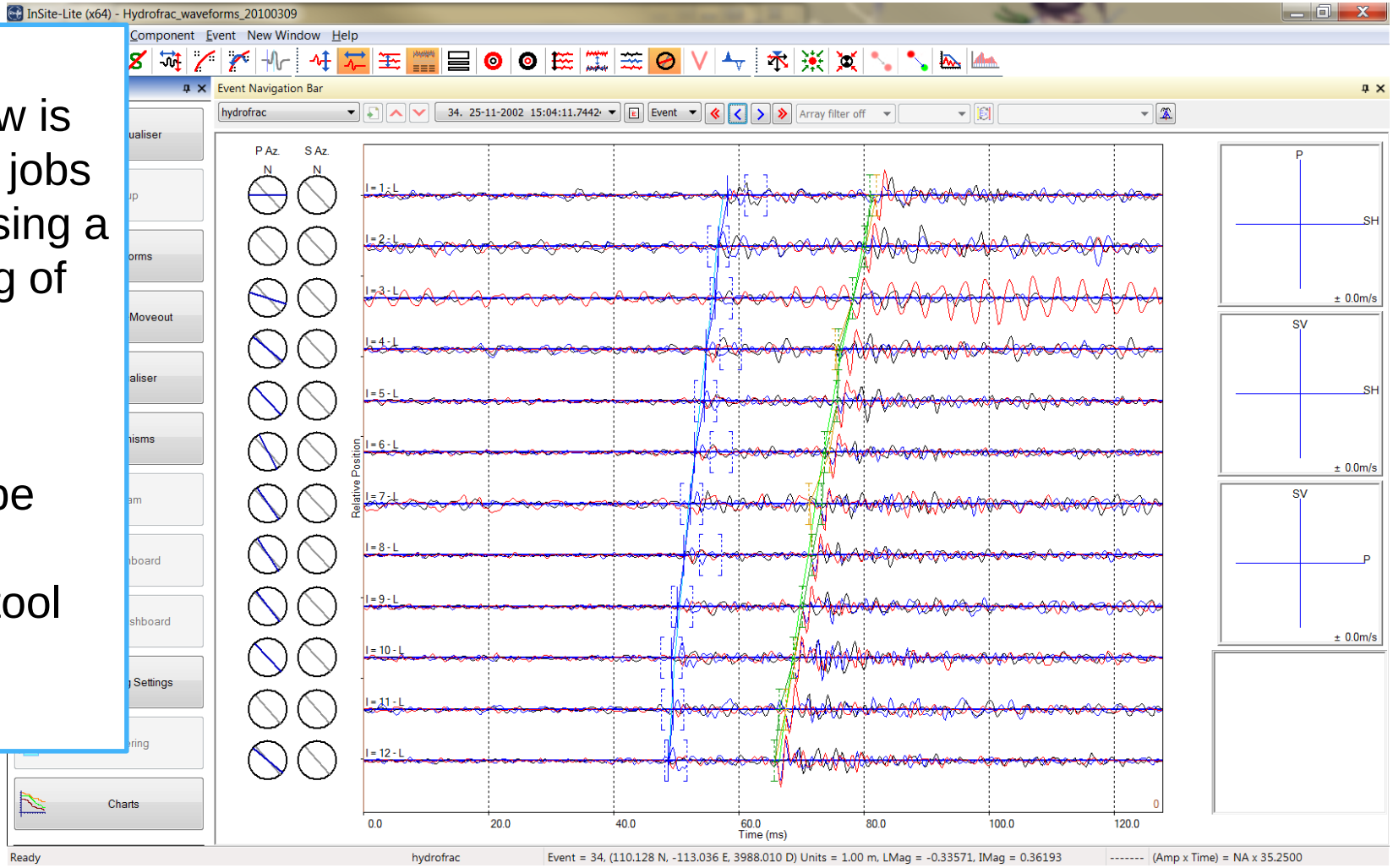
Try going to the Waveform-Moveout Visualiser.

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

Waveform-Moveout Visualiser I

Waveform-Moveout view is indicated for jobs monitored using a vertical string of tools.

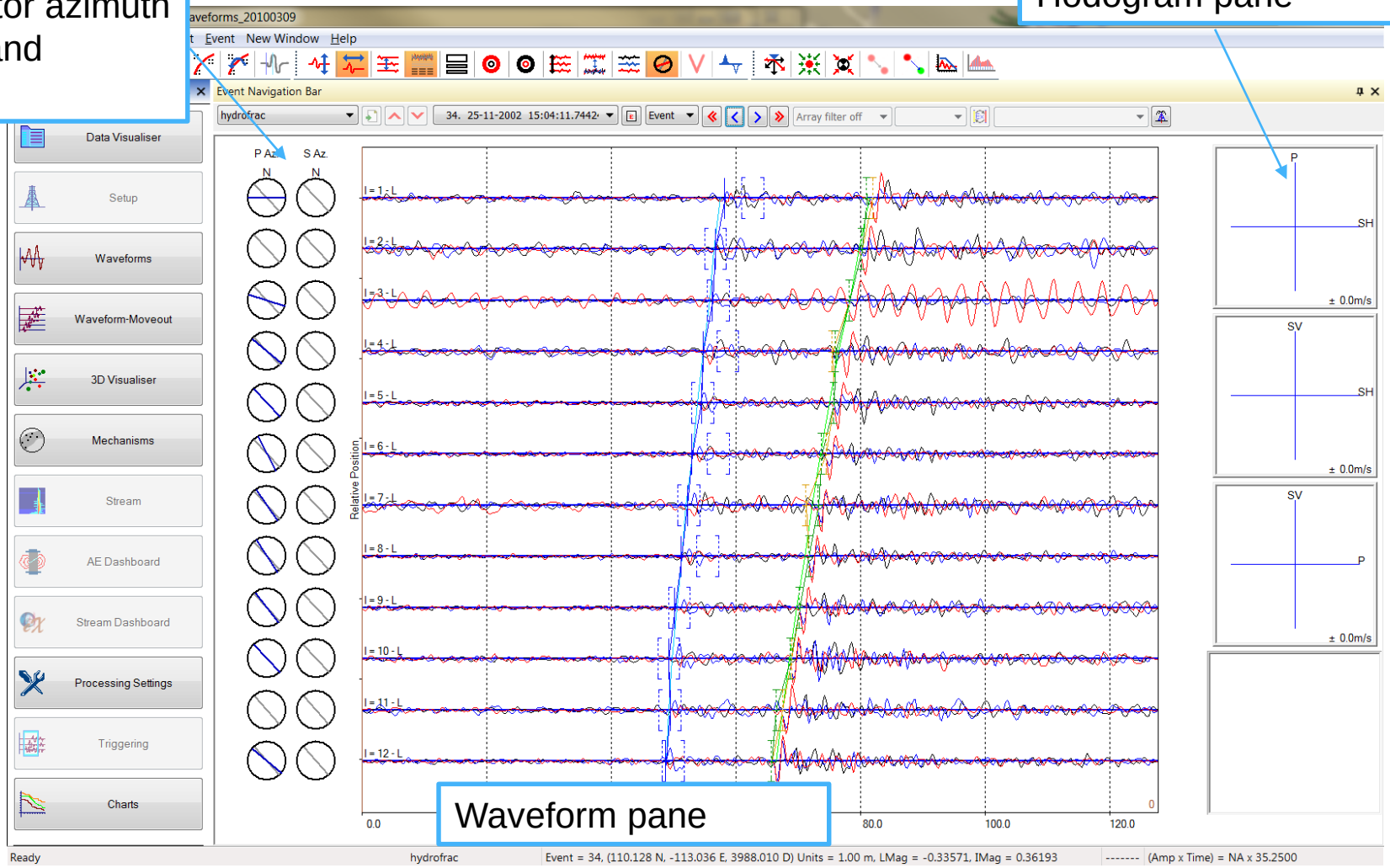
Traces can be displayed grouped by tool or split into channels



Waveform-Moveout Visualiser II

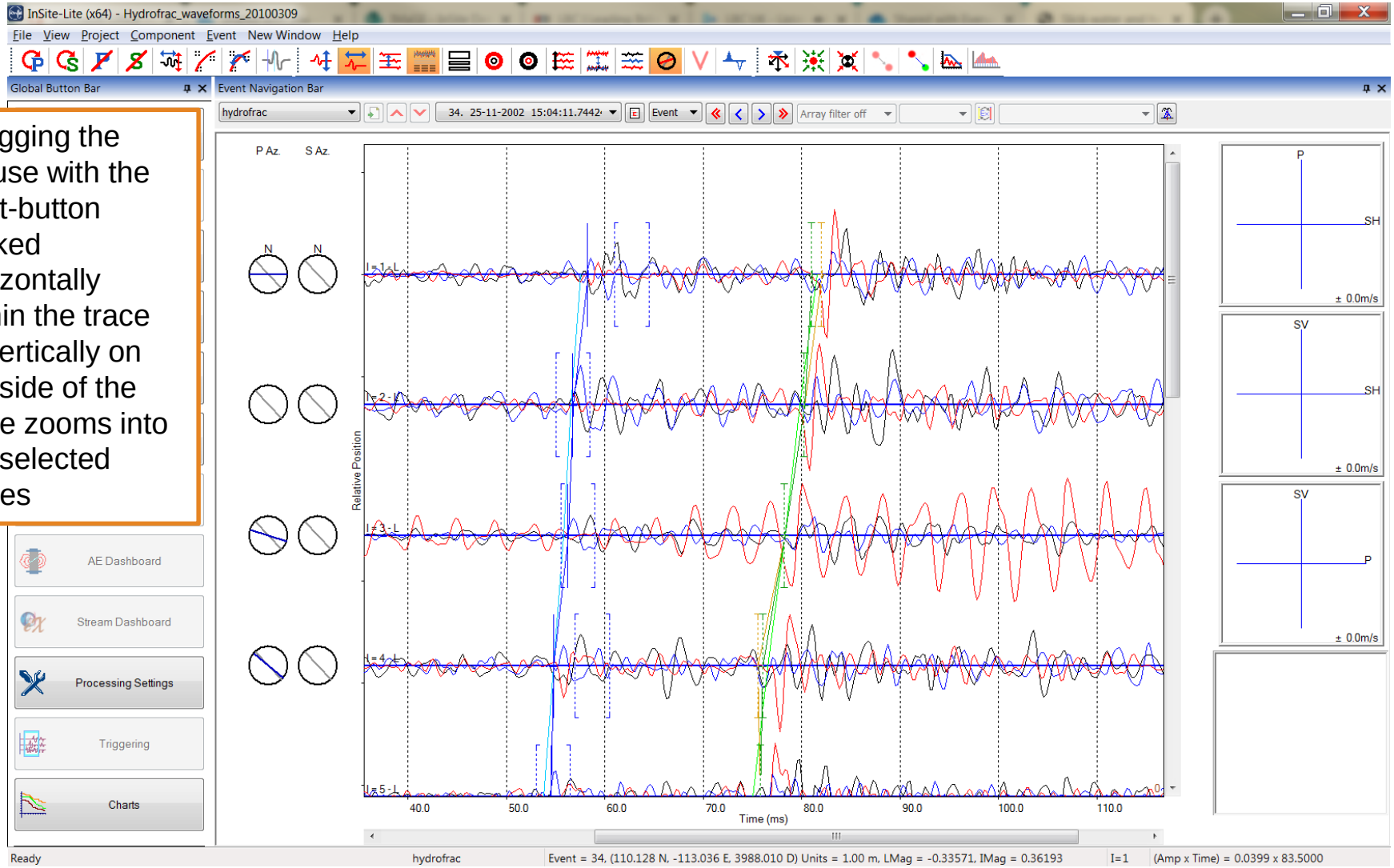
Source vector azimuth (observed and theoretical)

Hodogram pane



Waveform-Moveout Visualiser III

Dragging the mouse with the right-button clicked horizontally within the trace or vertically on the side of the pane zooms into the selected traces



Waveform-Moveout Visualiser IV: Triaxial view

Right-click on an instrument brings out the Instrument triaxial view