





Headwave™

Data Driven

Headwave is a leading supplier of software solutions for interactive visualization, quality control and conditioning of seismic data, bridging the gap between processor and interpreter. Bringing together processing and interpretation at different stages in the E&P value chain enables better decisions. E&P professionals must work through cycles quickly while ensuring the analysis is thorough and utilizes all of the expensively acquired information. This challenge is increased by the separation that often exists between processing and interpretation workflows. The Headwave software is unique in that it handles ever increasing seismic volumes produced from acquisition, data processing, imaging, velocity modeling, interpretation and reservoir characterization. The software also provides a collaborative environment that connects the people involved in decision-making, enabling quicker validation and thus quicker turnaround.

UNLOCK YOUR PRESTACK. Seismic interpretation is typically performed on post-stack volumes. Interpreters have little access to the wealth of information that is contained in the prestack gathers such as information about quality of velocities, amplitude changes with offset, angle or azimuth, amplitude and frequency preservation, noise content and general quality of the processing and the data. Headwave provides a unique solution to the challenge of visualizing, enhancing and interpreting potentially multi-terabyte sized prestack seismic datasets on a standard workstation or laptop. Headwave provides a set of algorithmic plug-ins and displays that enable users to design and follow interactive, real-time workflows in attribute generation, seismic post processing, gather enhancement and AVO analysis. Headwave's products focus on making all relevant data and prestack workflows easily accessible for interpreters.

DATA DRIVEN. Headwave leads the oil and gas software industry in the use of GPGPU (general-purpose computation on GPUs/graphics cards). GPU stream processing allows interactive data enhancement by operating on a 'pull' rather than a 'push' basis. Legacy processing operations require an entire dataset to be 'pushed' through a chain of algorithms before the results can be viewed on a subset of the data. Headwave's interactive processing allows users to drive data enhancement from the 3D/2D data displays. Only the data necessary to populate the views is 'pulled' through the chain of algorithms. This real-time processing is performed virtually in graphics memory without the need to write data to disk before viewing it. This risk-free level of interactivity allows basic processing tools, such as sub-stacking, muting, velocity editing, amplitude balancing, frequency decomposition, etc., to become powerful investigation tools for the interpreter.

- ▶ Headwaive is a leading supplier of software solutions for interactive visualization, quality control and conditioning of seismic data, providing a unique solution to the problem of accessing, manipulating and operating large pre-stack seismic datasets on a standard workstation or laptop. Headwaive provides a set of algorithmic plug-ins and displays that enable users to design and follow interactive, real time workflows in attribute generation, seismic post processing, gather enhancement and AVO analysis. By using the Headwaive SDK, customers can implement their proprietary algorithms in a highly interactive environment empowered by Headwaive's focus on GPU acceleration technology.

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