Attribute Generation
A Paradigm Geoscience Data Service

How can we help you?

At Paradigm® we are committed to providing oil and gas companies with the highest quality of service, to help them gain deeper insight into the subsurface and maximize the value of their assets. As part of our services offering, we are happy to announce the availability of boutique seismic attribute generation services.

We will take your poststack seismic volumes, in SEG-Y or Paradigm Epos® survey format, and process them into a suite of attributes that will help maximize your understanding of the subsurface. We will then deliver them back to you in Epos format for easy loading into your Paradigm suite, or in SEG-Y format.

Seismic attribute generation, as well as our other service offerings, can be of particular interest for companies that would like to see the value of our technology prior to purchasing it for themselves.

Paradigm Attribute Generation Solutions

- Coherence Cube®: The original and still best patented algorithms for the delineation of stratigraphic and structural features
- Structural: Dip, Dip Azimuth, Discontinuity, Lightscape
- Curvature: A high-resolution approach to detecting and revealing high-resolution ‘curvature’ of reflectors in seismic volumes. A useful adjunct to Coherence Cube volumes.
- Complex Trace: Signal Envelope; Envelope Derivative; 2nd Derivative of Envelope; Instantaneous Phase; Cosine of Instantaneous Phase; Instantaneous Frequency; Instantaneous Acceleration; Weighted Mean Frequency; Thin Bed Indicator; Instantaneous Bandwidth; Amplitude-Weighted Instantaneous Phase; Amplitude-Weighted Instantaneous Frequency; Average Frequency
- Spectral Decomposition: Gabor-Morlet wavelet-filtered and ‘frequency-cube’ volumes
- Dip-Steered Enhancement: Structurally guided smoothing

Example of a typical project

For a project in Australia, the Paradigm Geoscience Data Services team delivered two Coherence Cubes generated on adjacent volumes totaling 4800 square kilometres of data. From receipt of data through parameter sensitivity testing to delivery of results, the project was turned around in less than a week.

▲ Results of Coherence Cube processing on the two volumes mentioned above. For one survey, the Coherence Cube is draped on the input seismic volume; for the other, only Coherence Cube is shown. Clear continuity of the structural trends is seen across the join between the two volumes, illustrating the robustness of the Coherence Cube algorithm. The results of pulses of tectonic activity separated by unconformities can be clearly seen in the input, and importantly, in the output Coherence Cubes, showing both ‘hard’ and ‘soft’ connectivity of fault structures between sequences.