



## Wavelets and Seismic Velocities

### MODULE

#### About the Skill Module

This skill module explains why the vertical resolution of the seismic data is a critical issue and how the resolution is controlled by the propagating wavelet that is generated by the acquisition parameters. The skill module also discusses the recorded wavelet and its phases and the data display polarity and display conventions. Also explained is how velocity can be estimated by the seismic image construction and used as an approximation to derive a depth converted geologic model from time imaged seismic or a depth image seismic. It covers how to directly measure depth versus vertical seismic travel time through Check Shot Surveys and Vertical Seismic Profiles and how vertical seismic profiling can be extended to 2, 3, and even 4 dimensions to tie the other direction of velocity to the seismic image.

[See example Geophysics eLearning module](#)

#### Target Audience

Geoscientists, engineers, team leaders, geoscience technicians, asset managers, and anyone involved in using seismic data that needs to understand and use this data at a basic level or to communicate with others that use it

#### You Will Learn

You will learn how to:

- Identify why the vertical resolution of the seismic data is a critical issue
- Explain how the resolution is controlled by the propagating wavelet that is generated by the acquisition parameters
- Identify the recorded wavelet and its phase
- Describe the data display polarity and display conventions
- Identify seismic imaging velocities and how they are used to construct the seismic image
- Describe how imaging velocities are derived from the stacking process
- Describe velocity spectrum and how it applies to stacking and migrating the data
- Explain the relationship between depth and time and the ambiguity between the two domains
- Recognize overpressure in the seismic data
- Identify the jargon associated with anisotropy
- Recognize how a vertical seismic profile directly measures the time to depth relationship at various depths in a well bore and how that facilitates tying it into seismic

## Product Details

Categories: Upstream

Disciplines: Geophysics

Levels: Basic

Product Type: Individual Skill Module

Format: On-Demand

Duration: 8 hours (approx.)

**\$395.00**