



The training course on

VELOCITY MODELING

TRAINING COURSE ON **Velocity Modeling**

ABOUT THE COURSE

The purpose of this course is to introduce the student to velocity modeling, velocity handling and domain conversion functionality in Petrel.

It takes the user through the preparation stage of data used for velocity estimation and modeling. This includes quality control and edit of checkshot data used in sonic calibration and quality control of time surfaces and well tops used for defining velocity intervals.

Furthermore, the available velocity modeling approaches are discussed, including well velocity estimation, the nature and modeling of seismic velocities, surface based and 3D grid based seismic velocity modeling, as well as user defined velocity functions. After the velocity modeling phase, domain conversion of various objects and how to model structural uncertainty is covered

COURSE CONTENT

- Preparation of well data
- Velocity model setup and output
- Velocity extraction and modification
- On this session, the participants will first learn how to quality control checkshot data and define velocity intervals based on well tops. Then, they will learn about various sonic calibration procedures, the Simple velocity model functionality, the main elements of the Advanced velocity model process, the available velocity functions and the corresponding inputs and outputs created by the Advanced velocity model process. The last part of this session will also cover to the methodologies for extracting and editing velocity data used for updating velocity models.
- Depth error analysis and correction
- Surface-based seismic velocity modeling
- 3D grid-based seismic velocity modeling
- This session will cover the depth error correction and handling of depth error residuals, as well as how to set up a depth correction model. The participants will not only learn about loading and quality controlling seismic velocities (stacking velocities), but also about performing Dix conversion using stacking velocities. Then, they will model velocity surfaces, use the velocity surfaces to build velocity models and then set up a seismic-guided well velocity model.
- Finally, the 3D grid-based seismic velocity modeling module will be introduced for the participants to model stacking velocities as an average velocity and an interval velocity property in a 3D grid, derive the scaling/correction factor for both velocity types using well velocities and correct the seismic velocities by the time-varying

scaling/correction factor. Then, they will use the corrected dataset for velocity modeling.

- 3D grid-based seismic velocity modeling
- 3D volume - seismic velocity modeling
- User-defined velocity functions
- Domain conversion
- In this final session, after completing Module 6, the participants will first learn how to alternative methods for velocity modeling, using 3D volume - seismic velocities or user-defined functions.
- One of the key objectives in building a velocity model is to be able to convert an object from one domain to another, usually from a time domain to a depth domain. Therefore, in the last part of the course, the participants will learn about domain conversion and quality control of converted objects

WHO SHOULD ATTEND

- Development and exploration geologists, geophysicists, petroleum engineers, managers, reservoir engineers and technical personnel with prior experience in Petrel..
- Others who is interested in

TIME AND VENUE

- Duration: 04 days
- Estimated time: 4th Quarter, 2022
- Venue: Ho Chi Minh City

INSTRUCTOR

Experienced working in the Oil & Gas industry, specialized in seismic interpretation, structural map generation, seismic attribute application and Time-Depth conversion. Eager to exchange G&G knowledge and experience, especially in seismic attribute and AVO/Inversion application.

FEE

25.000.000 VND/participant (included teaching fee, marterial, classroom, teabreak, tax). This training course will be held with at least 10 participants.