

# PRODUCT SHEET



## InterWell™

Seismic inversion, characterization,  
time-depth conversion

**InterWell™ is a seismic inversion, characterization and time-depth conversion software for reservoir and exploration geophysicists, available in Windows and Linux. It handles a large range of data types and customizable workflows, from data conditioning to quantitative property estimation in depth.**

For regional exploration and reservoir development, InterWell™ allows to extract the maximum value from your seismic data, as an integration tool between seismic, well and regional geological knowledge.

Among many capabilities, InterWell™ is able to transform the raw seismic amplitudes into elastic properties, then to traduce them into petrophysical properties. During this process, the signal is usually enhanced, leading to a cleaner global image, increasing the quality of any subsequent seismic attribute.

Daily used by quantitative interpretation experts in Beicip-Franlab consulting service, InterWell™ is an efficient, easy-to-use and reliable software.

### Database and conditioning

InterWell™ supports the well data conditioning, modeling from raw log the theoretical elastic response compatible with all available seismic inversion technologies. The seismic data conditioning, including Normal MoveOut, stacking of the gathers, residual NMO correction and more, is available to prepare your seismic data for the available workflows.

### Seismic inversion

Result of decades of R&D from IFPEN, InterWell™ core technology relies on model-based grid-based multi-channel inversion with the same Bayesian formalism and joint inversion approach for all algorithms :

- Multi-well wavelet estimation and multi-cube well calibration with a hybrid deterministic-statistical procedure;
- Prior model building from well log data and seismic velocities according to the stratigraphy (horizons and deposition modes) or guided by the dip of seismic events;
- High Performance Computing with optimized algorithms for simultaneous inversion.

From the standard inversions (post or pre-stack simultaneous inversion) to the most advanced technologies (4D, multi-component, inter-bed multiple modeling), InterWell™ inversion capabilities make it one of the most complete inversion software in the market.

Based on an industrial partnership with CERENA (Lisbon), the post-/pre-stack GeoStatistical Inversion produces high resolution simulations to capture the uncertainties on the sub-surface elastic model and on the final reservoir properties.

### Matrix and fracture characterization

Pioneer in matrix and fracture characterization, Beicip-Franlab gathers in InterWell™ all its know-how in a complete and reliable characterization software.

To evaluate either rock properties, lithology or fluid distributions, a large range of applications for matrix characterization is included, powered by machine learning. They cover, without being limited to :

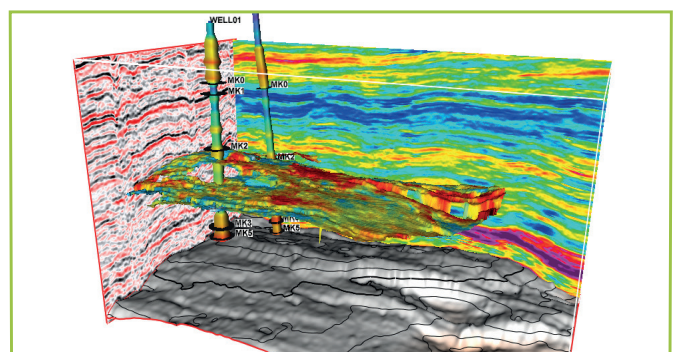
- Trace classification (supervised and unsupervised);
- Continuous property volume estimation;
- Highly customizable Bayesian lithology prediction;
- Geobody extraction and its analysis.

Benefiting from Beicip-Franlab experience in integrated fracture studies, the multi-attribute fracture characterization workflow includes more than 20 attributes, to be conditioned and combined to provide a synthesis of your fault/fracture network from the raw or previously enhanced seismic dataset.

### Time-depth conversion

Explore and combine different velocity data sources, from well data (time-depth laws, markers, DT logs) and seismic velocity to build the most informed velocity model. Either using maps, log extrapolation or formulas, InterWell™ provides a flexible workflow for constructing the velocity model adapted to your data and your geological context.

The efficient and semi-automatic calibration workflow allows the model to perfectly fit with the well data, to provide the most robust time-depth conversion.



InterWell™ 3D view: Seismic data in section, P-impedance in section and computed along the well trajectories, with an interpreted horizon, and the top part of a geobody colored with porosity values.