# Accurate and Predictive Reservoir Models

StatMod® performs single stack geostatistical reservoir characterization to produce multiple predictive fine scale reservoir models that are consistent across all pertinent geoscience domains. This degree of cross-domain consistency ensures that reservoir models are realistic and maximizes the value of all measured data and prior information. In addition, these reservoir models remain accurate away from the available well control where reliability of conventional stochastic models typically suffers. **StatMod** is useful where acoustic parameter like P-Impedance are sufficient to distinguish the facies of interest.

- Produces accurate and predictive reservoir models that are consistent with all data and knowledge available in the field

- Generates highly detailed multiple realizations to provide a reliable basis for quantitative measure of uncertainties associated with data, models and thin beds

Facies Model
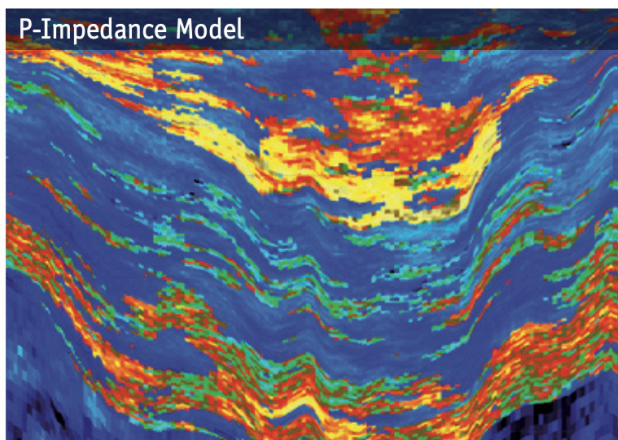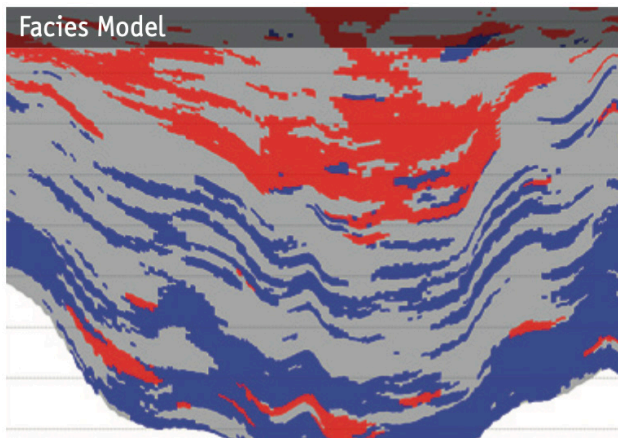
P-Impedance Model

Joint inversion of Facies and P-Impedance solves the most critical uncertainty in stochastic reservoir modeling. It ensures preservation of sharp boundaries and continuity/discontinuity of facies that directly impact the flow behavior of reservoir models.

Key features and benefits

- Joint inversion of facies and acoustic impedance properties

- Invert in depth through the use of velocity model

- Advanced multi-level facies association and ordering

- Advanced use of Constant, 1D, 2D and 3D facies proportions

- Intuitive 1D and 3D facies probabilities trend editor

- Flexible variogram modeling

- Backus upscaling of elastic properties for enhanced calibration with seismic

- Advanced geophysical options (Laterally varying wavelet and S/N)

- Automated quality controls for single and multiple realizations

- Support for multi-core and multi-machine processing for maximum productivity

- Quick property setup available to speed up job preparation

- RockRank tool with flexible cutoff criteria to select P10, P50 and P90 models

- Efficient and accurate transfer of results into corner point grids (CPGs) to facilitate reservoir simulation

GeoSoftware™

www.GeoSoftware.com
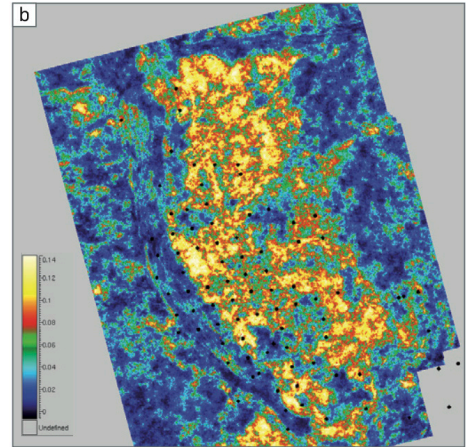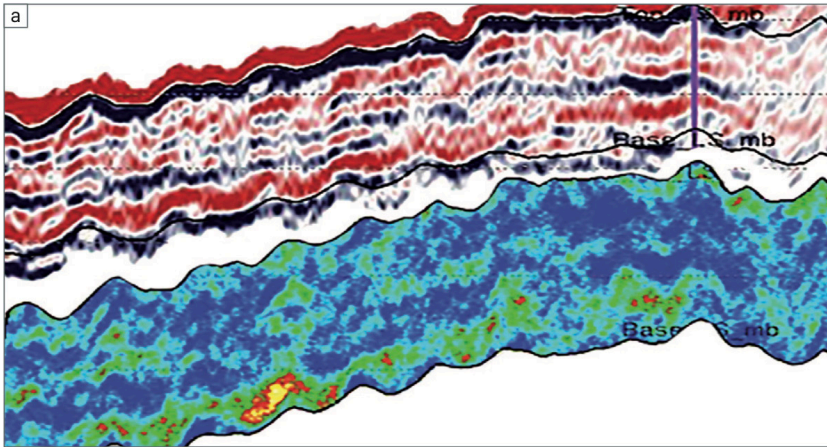
StatMod: Solution for tight carbonate reservoir.

(a) The seismic section (top) shows strong wavelet effects at the boundaries of the carbonate layer and the surrounding clastic layers. Where are the prospects? The inverted mean Porosity (below) from StatMod shows three distinct sub-layers within the carbonate interval. The prospects are now easily distinguishable.

(b) Having accurate porosity maps with high level of detail has allowed the drilling plan to be changed from a regular grid to drilling high porosity targets.