UNCERTZ is a comprehensive software solution for geostatistical time-to-depth conversion, reservoir volume estimation, spill-point distribution analysis and uncertainty analysis. It provides sophisticated new methodologies and integrates different sources of uncertainty for relevant risk analysis.

UNCERTZ smart user interface makes it particularly easy to learn and use while its powerful algorithms allow for quick delivery of final depth maps that honor well data. UNCERTZ is provided as a plugin to Isatis.neo (Isatis new generation software) to be released early 2019.

**KEY POINTS**

- Layer-cake approach
- Sequential or simultaneous conversion of multiple layers
- Modeling control with depth or velocity information
- Bayesian framework for fine trend tuning
- Fault modeling with uncertainty analysis on locations
- Integration of several sources of uncertainty
- Depth uncertainty quantification and analysis
- Easy construction of various depth volume scenarios that let you test several hypotheses in one single run
- Fully automatic and data-driven parameter setting
- State-of-the-art and intuitive graphic user interface

**BENEFITS**

- 4-in-1 integrated software solution for depth conversion, spill points distribution analysis, volumetric analysis (GRV/STOOIP calculation) and uncertainty analysis
- Fast delivery of depth maps that match well depth and are consistent with seismic time and velocities
- Depth consistency between layers
- Minimization of error propagation
- Geologically valid output surfaces
- Better informed decisions through structural and accurate volumetric sensitivity studies
- Time saving thanks to the workflow and powerful algorithms
- Easy to learn and use
**Depth modeling**

**UNCERTZ uses well markers and seismic time horizons or velocity maps to generate thorough depth maps with uncertainty quantification.** This is achieved through a multivariate Kriging with External Drift (KED) approach. Also available, the Bayesian framework which enables fine trend control and benefits from prior knowledge of the trend when well data is sparse.

**Conversion is made layer by layer (sequential approach), or simultaneously on a set of conformable horizons (joint approach), minimizing error propagation.**

The geostatistical approach ensures that the mapped depths match the well depth marker values. Discontinuities related to faults are also honored through Kriging with External Drift.

**Uncertainty modeling**

**UNCERTZ allows for accurate uncertainty quantification** through geostatistical simulations. A family of images that represents a range of plausible depth values is produced, from which different key scenarios (P10, P50, P90) may be derived.

**Several sources of time uncertainty** (including picking uncertainty) may be taken into account in the modeling process. **UNCERTZ also considers fault location uncertainty** for a more accurate exploration of the uncertainty space.

**Geology compliant surfaces**

**UNCERTZ depth conversion has a post-processing phase** that prevents surface overlap in the output. The software produces intersection maps per realization and probability maps.

**Model validation**

Estimated depth quality control is achieved through cross-plots and several powerful statistics. Cross validation lets you compare the real marker values with their estimated analogous to quickly test which parameters might prove better for your case-study. No need to wait for time consuming depth conversions to be aware of the expected quality of your model.

**Spill point and volumetric analyses**

**UNCERTZ is prepared to quickly perform Spill Point Analysis on a target selection for all realizations.** Different outcomes are possible, including probability map to be inside or below the reservoir, distribution curve and histogram of spill point depth or volume.

**Various scenarios (low, mid, high case) can be built for volumetric sensitivity studies** by integrating fluid contacts and static and dynamic information (porosity, formation volume, recovery factor, Net to Gross ratio). The following quantities are computed: gross volumes of oil/gas/above spill point zones, distribution curve and histogram of recoverable reservoir volume.

**Scenario building**

With **UNCERTZ**, you may define several scenarios and run them all in a single click. This lets you quickly perform depth and volume sensitivity analysis to input data, computation methodology and/or parameters.