TECHNICAL SPECIFICATIONS

EasyTrace
Well Log Analysis

Software Presentation

EasyTrace™ is an advanced 1D well data analysis, editing and processing solution for geophysics, petrophysics, geology and reservoir engineering.

EasyTrace™ can be used in diverse workflows, such as, well log interpretation, seismic reservoir characterization, electrofacies & rock-typing, gross environmental deposition, source rock evaluation.

Lastly, via a direct data exchange link, EasyTrace™ can be used in connection with Interwell™ seismic inversion and reservoir characterization software, TemisFlow™ basin modeling software (TOC estimation), FracaFlow™ fracture modeling software (Fracture AVAz).

Functionalities

PETROPHYSICAL COMPUTATION
- Shale volume calculation
- Porosity calculation
- Water saturation calculation

PRINCIPAL COMPONENT ANALYSIS (PCA)
- Projection on principal factors
- Log data filtering using the selected components

ELECTROFACIES DETERMINATION
- Electrofacies analysis with probabilistic non-supervised approach
- Fast-track non-supervised log clustering
- Electrofacies analysis with a supervised approach for integrating core facies or petrophysical facies
- Porosity / permeability modeling per facies
- Facies log smoothing using probabilistic relaxation techniques

ROCK-TYPING
- Rock-typing from classification of capillary pressure curves, Leverett functions, or pore throat size distribution, based on curve shape pattern recognition algorithm.
- Quantitative assessment of consistency between rock-types and lithofacies / electrofacies
- Water saturation height modeling

TOC ESTIMATION
- Assessment of source rocks organic content from conventional logs: computation of a continuous log
- Interactive pole position move for calibration

PORE PRESSURE PREDICTION
- Normal velocity trend modeling with linear or power law
- Estimation of pore pressure using Eaton's method

ROCK PHYSICS
- Mineral database with Voigt-Reuss-Hill mixture
- Fluid database with Batzle-Wang estimation and Reuss formula for mixture
- Hashin-Shtrickman bound for petro-elastic parameters
- S velocity estimation by Greenberg-Castagna method
- Biot-Gassmann Fluid Substitution

SIGNAL SIMULATION
- Generation of a complete set of wavelets from analytic or user-defined characteristics
- Interactive wavelet definition through display and editing of phase and frequency content

SONIC LOG CORRECTION
- Sonic log calibration in the depth domain using checkshots or VSP's
- Sonic log calibration in the time domain using seismic markers
- Time-to-depth conversion

LOG PROPERTY SIMULATION
- Property calculation from lithologies
- Density estimation from P velocity and lithology
- P velocity estimation from density and lithology
- S velocity estimation from lithology, density and effective porosity

AVO / AVA ANALYSIS AND MODELING
- AVO curves: Shuey, Aki & Richards, Zoeppritz
- Corrected or plane wave CDP gathers
- Ability to take into account the anisotropy of the media
- Analysis of imported CDP gathers
- Gradient and intercept display (Rho) and cross plot

FRACTURE AVAZ MODELING
- Fracture parameters management
- Mori-Tanaka or self-consistent homogenization
- AVAz curves and maps generation
- Velocity, reflectivity and synthetic seismogram computation

VERTICAL SEISMIC PROFILE INVERSION
- Management of first break points for depth/time conversion; snap options
- Weight zone edition, cost function monitoring
- VSP inversion with or without a priori impedance log

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Data Management

DATA IMPORT/EXPORT

- LAS 2.0 and 3.0 import
- Multi-well ASCII import for well heads, markers, logs, cores data (SCAL & CCAL)
- Binary well import
- SEG-Y and SEP import for seismic data
- Cultural data (.leg)
- Images (.jpg, .gif, .png, .bmp, .xpm)

DATA EDITING

- Log re-sampling (e.g. regular to irregular, regular to interfaces)
- Log blocking
- Graphical or numerical log editing
- Dynamic traces management to follow new traces generation
- Multi-wells compute to propagate computations from well to wells
- Table management for statistics analysis and use in specialized modules

BASIC PROCESSING AND COMPUTATIONS

- Mathematical and logical calculator
- Statistics for quantitative logs or proportion for lithology logs
- Signal processing: derivation, integration, convolution, inter-correlation, Fourier transform, etc.
- Synthetic seismic trace generation (acoustic and elastic)
- MD <-> TVD law estimation, MD <-> TVD conversion
- Interval, cut-off, Elastic moduli computation, etc.
- Velocity, acoustic and elastic impedance and RC computation
- Trace smoothing (kernel, polynomial, least square) and filtering (frequency)

PRINTING

- Print preview
- Print to file: PDF or SVG

Data Display

- Histograms and cross-plots
- (Multi-)trace display with many graphic settings capabilities
- Interactive displays
- SCAL data display with the ability to put them on log tracks
- Correlation graph with horizontalization functionality
- Base map
- Graphs backup management
- Graphs style management

Extensions and Customization

- Links with OpenFlow Suite™ and InterWell™ for data exchange
- Ability to extend the calculator with user-defined functions in Fortran/C
- Software customization using a resource file

System Requirements

- **Operating Systems**:
  - PC 64 bits Windows 7, Windows 8, and Windows 10
  - Linux 64 bits RedHat 5/6/7
- **RAM**: 4 GB or more
- **CPU**: X86-64 processors
- **Graphic board**: NVIDIA recommended
- **Licensing**: FlexLM 11.13.1.3 server

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