RokDoc Geoprediction Suite

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Industry Challenges

Requirement to make quantitative predictions with incomplete data

- Hydrocarbon resources are becoming harder to locate
- Low commercial discovery rates
- Mature basins approaching end of life
- Multiple datasets across multiple assets
- Lack of cross-discipline integration

Reduce drilling costs & improve efficiencies in a lower for longer era

- Time wasted and errors made transferring data across multiple software packages
- Workflows are time consuming and inefficient
- Analogues under-utilized
- Too few pre-drill scenarios tested
- Risk and uncertainty poorly understood

Non-productive time costs industry $10+billion/yr

- Significant risk and uncertainty with well plan designs
- Reactive approach to wellbore instability and mudweight window
- Reduction in staff and knowledge base
- Environmental and financial fall out from spills

Benefits

Intuitive

Improve interpretation accuracy for hydrocarbon prospectivity

- Comprehensive library of rock physics solutions for all play types
- Rich selection of fit-for-purpose models across core disciplines
- Best in class algorithms extract unsurpassed detail from seismic
- Establish and deploy play based interpretation strategies

Fast

Efficient & effective cross-discipline workflows and solutions

- Single easy to use platform
- Recipe based workflows embedded in easy to use GUIs
- Automated QC procedures
- Powerful uncertainty and risk analysis
- Cross-discipline/data workflows for exploration through to production

Reliable

Explore, capture & communicate geological & geophysical uncertainty

- Analyze, QC and calibrate core, log, VSP, seismic and engineering data
- Integrate multiple data types and capture uncertainties
- Extract maximum value from data
- Quickly and easily evaluate 'what-if' scenarios to understand influences affecting QI and drilling predictions

RokDoc Modules

| RokDoc Platform		
	Rock Physics Module	Industry leading rock physics, 2D modeling and well to seismic tie solution delivering easy to use solutions for both generalist and expert quantitative interpretation practitioners. Seamlessly combine core, log and seismic data into predictive models that can be used to characterize the seismic response in both conventional and unconventional settings, reducing interpretation cycle times and enhancing the accuracy and robustness of subsurface interpretations. Rapid model construction and assessment delivers better than ever understanding of subsurface uncertainty.
	Reservoir Characterization Module	Combine 3D and 4D seismic data with powerful rock physics enabled geostatistical and data driven modeling workflows to determine the spatial and temporal rock and fluid distributions from exploration to production settings. Incorporate and validate multiple geocellular models from external sources to develop and optimize engineering models for production forecasting and simulation. Operate in time and depth simultaneously, and perform probabilistic descriptions of the subsurface using powerful post processing tools and workflows for the effective communication of risk.
	Pressure Prediction Module	Analyze direct and indirect (mudweights) pressure measurements to establish the subsurface pressure distribution and geological bases for the development of overpressure through geological time. Assess drilling data, image logs and lab data and perform dynamic and static measurement calibration to determine stress regimes and interpret historical drilling and production performance. Combine geopressure and geomechanical models with 3D elastic properties to understand risk and estimate and forecast drilling and production performance at undrilled leads and prospects across the drilling portfolio.

Technical Features

- Direct connectivity to Petrel* and other 3rd party software using Open Spirit connector

- Batch loading of core, well, seismic and engineering datasets

- Rich QC and editing of data via log and cross-plotter functionality

- Single, matrix, rose and user defined cross-plotting with well viewer interactivity

- Comprehensive log prediction function for petrophysical and elastic log data

- Extensive library of rock physics, geopressure and geomechanical models for conventional and unconventional resources

- Absolute and relative rock physics workflows for inversion feasibility

- Extensive log/facies upscaling, including blocking for full wavefield synthetics

- Rapid 0D through 4D modeling capabilities and comprehensive sim-2-seis workflows

- Sophisticated seismic-well calibration and 3D rock physics driven property prediction using industry award-winning algorithms

- Powerful well planning combining image log analysis, direct/indirect pressure and stress-based interpretations

- Fast multi-scenario workflows to interpret drilling events/experience, communicate drilling risk and optimally plan complex wells

- Create robust, predictive 3D analytical geomechanical models combining geological, geophysical and engineering data
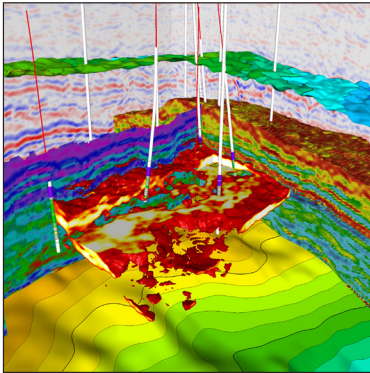
3D view of oil probability geobody from 3D pre-stack seismic data
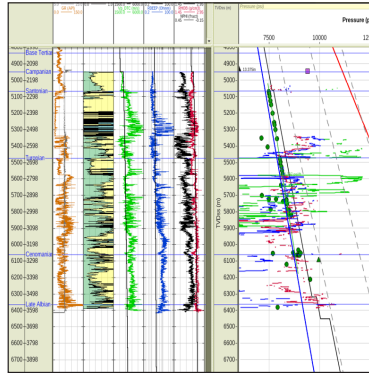
Geological interpretation of drilling events, mudweights and pore pressures
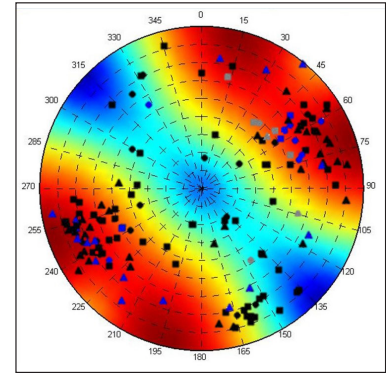
Stereonet showing mudweight and fracture permeability

Supported Data Types

- Raw well logs
- Composite, processed well logs
- Interpreted well logs
- Image Logs (surface sets, DITF)
- Discrete value sets
- Checkshot data
- Directional surveys
- Formation tops / markers
- Core data (PoroPerm, Elastic)
- SCAL (Capcurves)
- Litho / chronostratigraphy schemes

- Mud logs
- Pressure data (MDT, RFT etc)
- Integrity data (FIT, LOT etc)
- Drilling event data
- Breakouts
- VSP (zero offset/walk-around)
- Post-stack seismic
- Pre-stack seismic
- Horizons
- Corner Point Grids (CPG's)
- Polygons

Data Import Formats

- LAS
- DLIS
- ASCII
- XLS
- JPEG
- TIFF
- SEG-Y (REG/IRREG)
- ECLIPSE.EGRID
- ECLIPSE.GRDCL
- SGRID

- WVL
- WAV
- WAVE
- Import from secondary project
- Import from external project
- Petrel* Interconnector
- Open Spirit

Visit www.ikonscience.com or email info@ikonscience.com to discover more and request a demo.

System Requirements

RokDoc is supported on the following operating systems:
64bit Windows: Windows 7, Windows 10
64bit Linux: RHEL 6, RHEL7

Processor / hard disk requirement:
Preferred: dual quad core processor / SSD
Minimum: quad core processor / fast rotational speed HDD

System Memory (RAM) requirement:
Preferred: 64GB
Minimum: 8GB (16GB practical minimum for RokDoc 3D / ChronoSeis)

Graphics card requirement:
Preferred: NVIDIA Quadro K5200 (desktop) / NVIDIA Quadro K5100M (laptop)
Minimum: NVIDIA Quadro K4200 (desktop) / NVIDIA Quadro K3100M (laptop)

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*Mark of Schlumberger