

The Deep QI add-on uses data models trained with best-in-class machine learning algorithms and a physics-based rock physics knowledge platform to predict, repair, calibrate and understand data trends. This tool accelerates and improves analysis of regional information due to its flexibility in handling data sets of varied size, volume and completeness.

### Benefits



Access **cutting edge new technology** - get the benefit of machine learning on classification and regression workflows in RokDoc, without the need to be an expert in ML



Capture and **maximise value of corporate knowledge** – rapid deployment of asset specific Deep NN's through the RokDoc interface

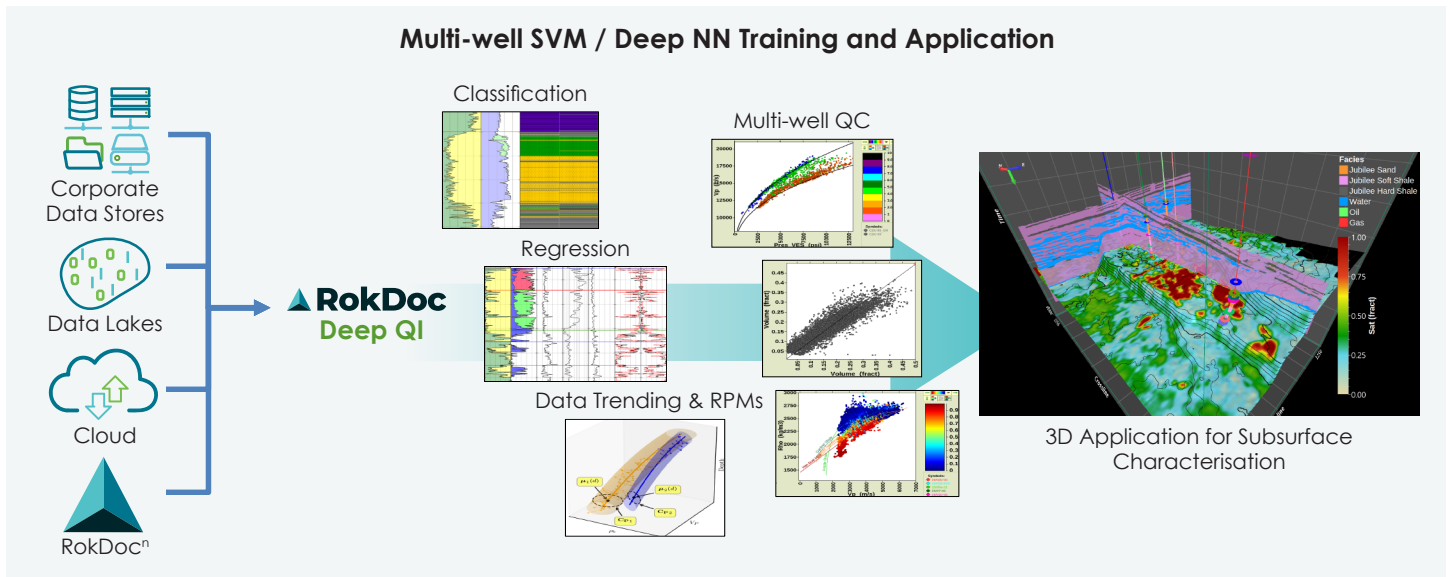


**Reduce time spent** on repetitive tasks - QC, complete and restore earlier interpretation or create new interpretation using all available well log data and previous knowledge



**Improve confidence** through rigorous QC – Leverage existing RokDoc functionality to assess and QC outputs from ML driven workflows

### Workflow

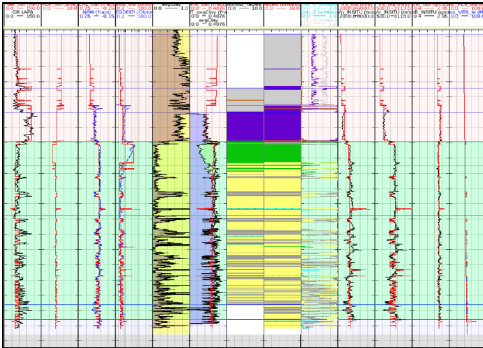


### Platform Add-ons

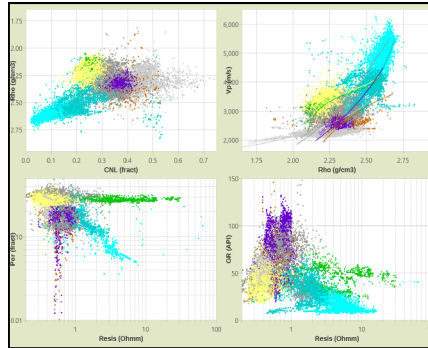
	<b>Add-ons</b>	<p><b>Deep QI</b></p> <p>Capture, aggregate, condition and analyze large volumes of data to maximize value. Key features include: Automated rock physics model selection and calibration to evaluate multi-well petrophysical and elastic measurements. Train and deploy machine learning data models to repair missing/damaged data and predict 3D properties.</p>
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## Technical Features

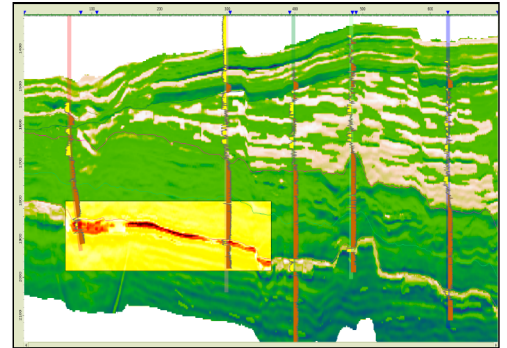
- Well based training. Well and 3D volume applications for:
  - Support Vector Machine (SVM)
  - Random Forest
  - XGradient Boost
  - Multi-In/Multi-Out Deep Neural Network
- Automated Rock Physics Modeling and calibration with extensive library of diverse geology models (varied sands, shales, and carbonate support).
- QC and calibration tools to capture and convey results effectively
- Multi-variate training for post-inversion property prediction
- Log generation for synthetic seismic comparison
- Cutting-edge 3D property prediction from inversion results and auxiliary 3D data
- Easy propagation of petrophysical interpretation
- Shorten Ji-Fi workflow cycle with RPML-derived rock physics trends
- Evergreen ML functions based on industry standardized libraries



Outputs of RPML: Trend prediction, calibration and log QC



Petro-elastic facies QC plot with automatically calibrated rock physics models



3D prediction of petrophysical properties (Vclay, porosity, saturation) using multi-output DNN

## 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
- OpenSpirit

Visit [www.ikonscience.com](http://www.ikonscience.com) or email [info@ikonscience.com](mailto: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)

