# WellCAD v5.1 · Release · Fact sheet

March 2015

Highlights

· New **Image & Structure Interpretation (ISI) Workspace** add-on module.

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· New **Cross Section** viewer integrated in docking control bar.

· New planar **Structure Overlay** for 3D Log.

· New **Waveform** viewer integrated into docking control bar.

· New presentation of the **Log History** and editable **Comments** column added.

· New process to compute **Rock Quality Designation** (RQD) from structure picks.

· New process to extract color components **(RGB, HSV, CIELab).**

· New ASCII data export for Litho, Strata and Comment Logs in **PETREL** compatible format.

## Image & Structure Interpretation Workspace
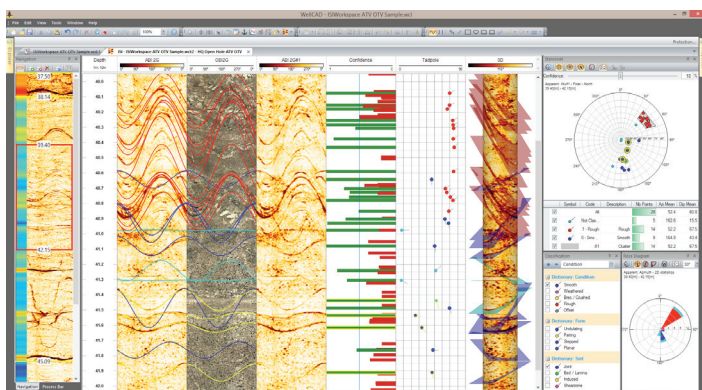
The Image & Structure Interpretation (ISI) Workspace is a new add-on module for WellCAD incorporating and extending the functionality of the current Image module. ISI is a single, build-for-purpose workspace combining structure picking, classification, correction and interpretation into a single workflow. It is fully integrated into WellCAD using the data from a borehole document.

ATV, OTV, 3D Corescan and FMI type images can be analysed. A sophisticated auto picking algorithm developed by The Centre for Exploration Targeting at The University of Western Australia assists in finding and picking structures – fast and objective.

THE UNIVERSITY OF WESTERN AUSTRALIA
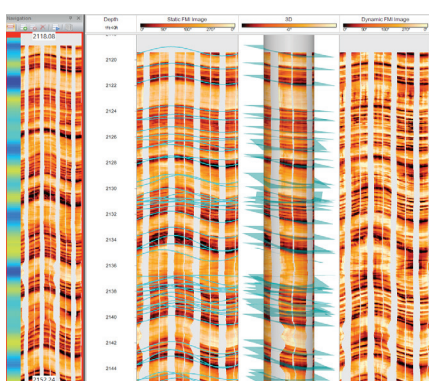
Features

· Full image analysis producing a **Image Complexity Map** which can be used as base for automated zonation.

· **Automated or interactive zonation** allows structuring the workload and enhancing performance and control.

· A **Navigation Bar** provides an overview of image, image complexity map and zones.

· Picking of **planar, linear and free hand structures simultaneously** in multiple images.

· **Auto Pick** assisted fitting of planar features including partial picks and aperture determination.

· **Real time** conversion from **Apparent** to **True** picks.

· A **Confidence Value** is assigned to each pick allowing **Pick Quality Control**.

· An **Interactive Stereonet** is dynamically linked to the structure repository and allows a variety of grid options the display of corrected & uncorrected picks, selection of categories to be displayed, clustering of populations and pick reclassification.

· A **Rose Diagram** dynamically linked to the pick repository provides azimuth and dip distribution information as the picking continues.

· **Find similar or most representative picks** algorithms enhance the interpreters control of the data and allow optimization of the picking results.

· Templates assist the user to initialize the workspace effectively for a previously saved context.

· A **Process Bar** provides all applicable processes and processing parameters in a docking control bar which can be integrated into the user interface.

Cross Section Viewer

- A **dynamic cross section viewer** displaying traveltime or multi finger caliper data from Image Logs has been added.
- The cross section display is updated while moving the cursor over the Image log.
- The viewer is hosted in a docking control bar for easy integration into the WellCAD user interface.
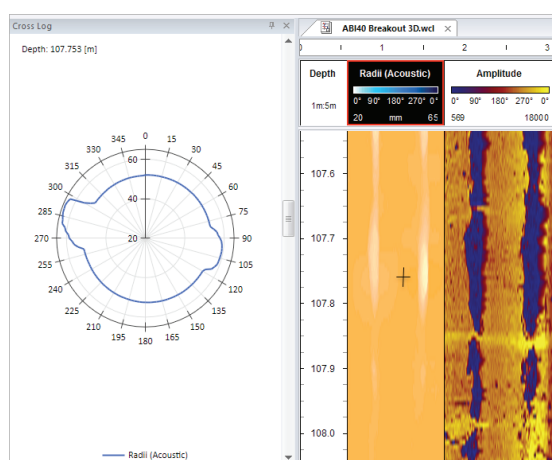
3D Log Structure Display

- Planar structures can now be displayed within the 3D Log. Simply choose a Structure Log providing the uncorrected picks in the 3D Log properties.
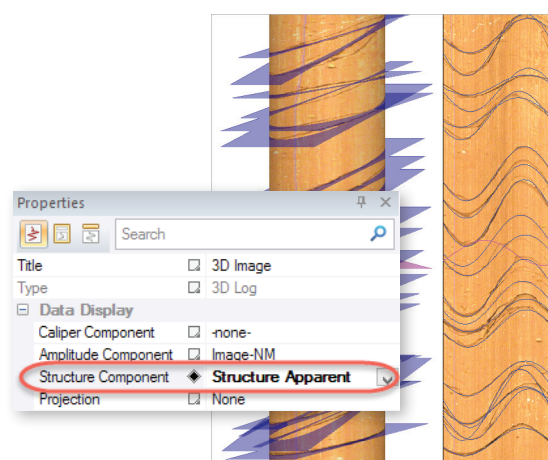
Structure to text conversion

A new log conversion option for the Structure Log has been added. To see text labels with Azimuth and Dip values of each structure pick, its classification or simply an index convert the Structure Log to a Marker Log (Edit > Convert Log To).
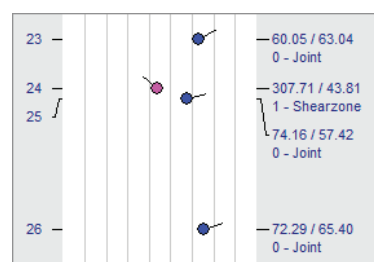
Waveform Viewer

- A real time viewer for waveforms stored in FWS Logs has been added.
- Waveforms from multiple data sources (i.e. FWS Logs) at the depth derived from the cursor or scroll bar position are shown and updated in real-time.
- The viewer is hosted in a docking control bar for easy integration into the WellCAD user interface.
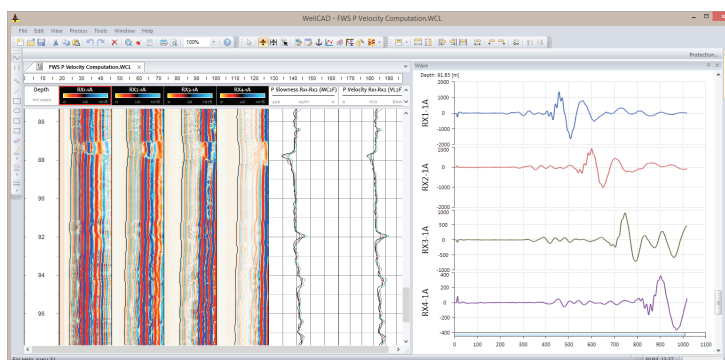
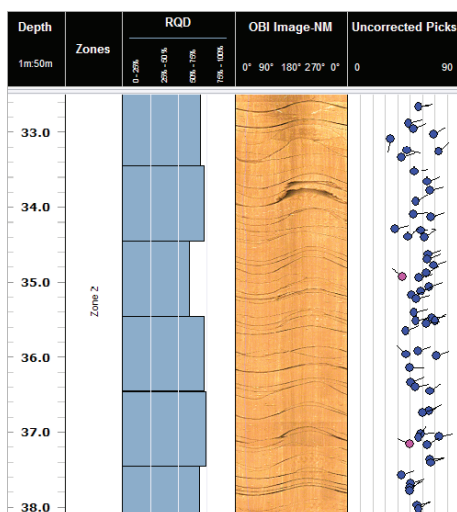# WellCAD v5.1 ▪ Release ▪ Fact sheet

Log History Bar

▪ The log history is now hosted in a docking toolbar in order to be easily integrated with the WellCAD user interface

▪ An additional column for user comment has been added. While the entries to log history are made automatically with each action performed on a log the Comment column allows users to enter additional information manually.


RQD (Rock Quality Designation) Process

▪ The **Rock Quality Designation (RQD)** is a measure of the degree of fracturing of a rock mass. It is expressed as a percentage of intact rock mass within a reference depth interval (usually the sum of drill core segments 10cm or more in length within 1m of drill core).

▪ A new process to compute RQD values from selected structure pick categories of a Structure Log has been added.
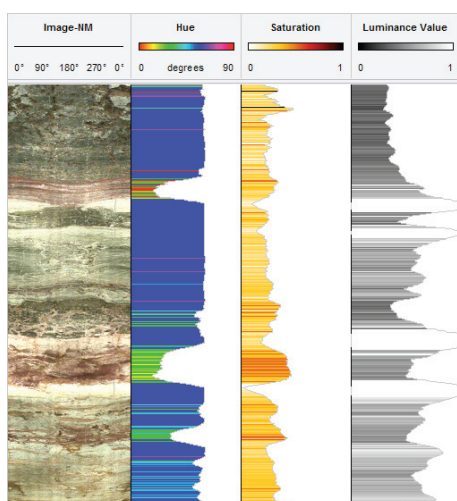
Color Component Extraction

▪ A new process to **extract** and **convert color components** from RGB Logs (e.g. core photos, OTV images) has been added.

▪ Supported colour models are RGB (Red, green, Blue), HSV (Hue, Saturation, luminance Value), YUV (PAL) and CIE L*a*b* (Lightness, red/green and yellow/blue components).

▪ Color component curves or images can be created. This way chromatic change can be integrated with stratigraphic, geochemical, wireline or other geologic data.

Support of Unicode Character set

▪ WellCAD now fully supports the Unicode Character set which allows for multilingual text being used in WellCAD.

PETREL Compatible ASCII Export

▪ A PETREL specific ASCII export will be available in WellCAD v5.1 allowing the export of Comment, Stratigraphy, Lithology and Interval logs in a PETREL compatible single depth format.

▪ During export a lookup table for pattern and symbol code conversions is used.

ASCII Import of Time Series Data

▪ An import for long time series data (e.g. temperature and pressure monitoring in water wells) has been implemented.

▪ Multiple files (e.g. from different depth stations) can be loaded simultaneously.
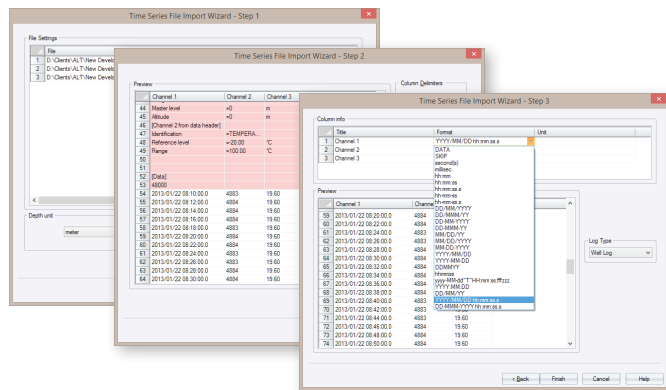
Conversion of Alpha/ Beta and Strike / Dip angles into Azimuth / Dip and vice versa

▪ New Structure Logs can now be created from data sets of Alpha/Beta and Strike/Dip angle. The conversion to Azimuth and Dip will be done within WellCAD.

▪ It is also possible to convert Azimuth/Dip angles into Strike/ Dip respectively Alpha/Beta angles within WellCAD before using them further.
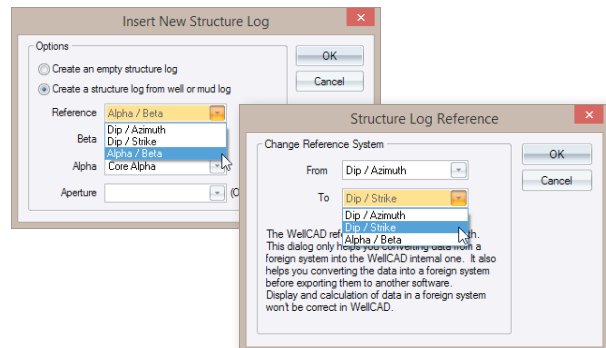
HeadCAD Static Table Properties

Deviation Data Table

Depth [m]	TVD [m]	Azimuth [deg]	Tilt [deg]	Northing [m]	Easting [m]	Closure [deg]	Closure Dist [m]
50.00	41.80	58.85	13.69	5.04	6.86	42.77	8.54
100.00	89.81	72.05	16.16	10.07	18.23	58.94	20.92
150.00	137.42	81.19	19.11	13.13	32.97	67.30	35.56

▪ Extended formatting options are now available for the static table item in HeadCAD.

▪ The background color of header, odd and even rows can be set as well as the line styles for the frame, horizontal and vertical lines.