IHS KINGDOM 2016

IHS Geoscience Software
New Kingdom Icon and Product Names

- Kingdom now has a **new, sleek logo** that aligns with the **IHS brand**
- 2d/3dPAK and EarthPAK are now simply **Kingdom Geophysics** and **Kingdom Geology**
Well Explorer

- **New dashboard** for viewing/working with wells.
- **Flexibility** with how you want to QC/organize your data.
- Providing a new design for **managing geological information** by removing fragmented workflows.
- An intuitive design that enables geologists, engineers, geo-technicians and geophysicists to **find relevant and valuable information**.
Well Explorer

- **Customization options** for displaying multiple data types at a time
- **User defined** workspaces to easily recall templates
- Numerous fields added to data model to consume relevant information from providers
Well Explorer – Rasters

New import options for raster data. Calibration information saved in project database to reduce data management problems

New interface for calibrating and interpreting formation tops and pay intervals

Utilities for managing large volumes of raster data
Well Explorer - Editing Information

- All information is copy/paste enabled for ease of use with Microsoft Excel workflows
- Standard filtering and sorting for information in table view
Well Explorer - Importing Ascii Information

- New ASCII import allows for streamlined loading processes.
- Easily import delimited information with the ability to save templates for common vendor data and formats.
Well Explorer - Customizable Views for Data

- **New tools** for understanding data in formats other than table view
Well Explorer - Compute Functions

- **Additional compute functions** to aide in regional interpretation and QC efforts
- Several **additional options** for log computes and cumulative and average production calculations
Improved Multi-Author Support

More efficient sharing of interpretations across entire asset team

- **Leverage existing interpretations** without having to copy other authors’ FM Tops
- **Setup Author Priority** to define who’s interpretation you want to access
- Edit another author’s top **automatically creates** that top for your author
- **Easily copy** another Author’s Surface Parameters without having to copy the actual FM Tops
Streamline Mapping

**Optimizing** repetitive map construction and display tasks

- Each grid will now **retain the map parameters** and display preferences
- **Single button** to regenerate map
- **Quickly refresh** maps to reflect new well data or new interpretations and the grid and contours update
Generate Maps more Efficiently

- Each grid retains its grid parameter to **easily regenerate the map** as new data or interpretations are added.
- **Define** how each grid is to be displayed with contours automatically generated as an option.
- **New Grid display settings** on Create Grid dialog.
Dynamic Map Update Options

More control over grid parameters and display preferences

- Each layer supports different display modes – with contours automatically generated as an option
- Build individual model layers at different grid increments for greater detail
- Restrict individual grids by polygon or to data extents
Well Planning

Design wells through all phases of development

• Integrated in the interpretation environment

• Design and edit in any view – 3D, map, and section

• Build well paths that honor engineering parameters such as dogleg severity

• Plans are easily updated as interpretations are modified
Compute Grid / Well Intersections

**Quickly generate** prognosis report for proposed wells

- **Compute formation tops** at grid or horizon intersection against planned or actual wells
- **Supports multiple** grids and horizons in a single run
- **Quickly communicate** the depths formations should be encountered in proposed wells to driller
- **Easily copy** to a spreadsheet or report
- **Save setting to a template** to recalculate tops as interpretation changes are made
Unit Fill on Sections

Improved unit fill displays

- **Unit fill surfaces** on cross sections, correlation sections and in 3D view
- Fill between any grids or horizons built in depth or time
- Honors fault surfaces
- Automatic and Manual modes
- Provide a **wide range of lithology patterns** to use
- **Synchronize** across all views
Flatten on Grids

- **Unravel stratigraphic complexities** more efficiently with additional flattening capabilities

- Flatten section on grid, top or horizon
Enhanced Section Vertical Display Range

Define the vertical range of sections by:

- Grids
- Formation tops
- Horizons
- Well elevation or TD
- Depth
Interactive Fault Cut Interpretation

Interpret fault cuts on sections and 3D view

- **Interactively pick faults** along the well
- Add fault throw to model vertical separation
- Allows fault gaps on stratigraphic sections
Integrated Fault Surfaces

Dynamic fault surface modeling

• Fault surface models can be built with fault segments, fault cuts and control point sets

• Integrates both the geophysical and geological interpretations into a consistent surface

• Fault surface dynamically updates as interpretations are made
New Well Display Options

New log track options

- Added new track for displaying rasters or image logs over the wellbore (Track 0)
- Shift the track position to easily align raster depth track over wellbore
- Save log settings as templates
- Log setting templates can be setup for individual wells or many
- Allows for customized display for each well
Raster Log Improvements

Improved raster display and performance

- Display rasters along deviated wellbores
- Improved raster image display quality
- Dynamically scale as section in zoomed in and out
Raster Log Improvements

Improved management, display and manipulation

• Support for log scale header and footer posting
• Display 100’s of wells with raster and digital log curves
Improved Well Display

Enhanced Log Settings

• More interactive construction of well templates

• Formation top and fault cut displays can span well tracks

• Dynamically grow text with Expand on Zoom

• More control on depth scale posting

• Addition of symbol track
Improve Culture Display in 3D

Propose well locations more efficiently with **new culture display** capabilities

- Interactively drag culture layer up/down through volume
- Display culture at top or base of volume
- **Drape culture** on individual surfaces
- Preferences persist from session to session
Drape Grid on Grid/Horizon in 3D

Easily view any property grid on structure grids and horizons

- All grids are available to be draped in 3D
- Useful for understanding thickness, facies, porosity, TOC, etc, any variations across structure
Improved Well Log display in 3D

**Better control** and display of well logs and interpretation data

- More controls on how to display well logs
- VuPAK specific log templates so you can create well displays more efficiently
- Make formation top picks on logs
Seismic Interpretation Improvements

**Pick unconformities easier** with the new Seeker constraints

- Limit Seeker autopicking by selecting interpreted surfaces
- Select top and/or bottom surfaces
- Horizons and grids
- Mix and match surface selection
- QC your results with the new “Surface” Pick Status
Coordinate System Updates

Kingdom now provides the ability to create customized projection system definitions including:

- Projected Coordinate Systems
- Geodetic Coordinate Systems
- Horizontal Datums
- Datum Transformations
- Ellipsoids

Users can now also **pre-define Datum Transformations** to be used by Well Explorer, Import/Export, Direct Connect, and Kingdom Data Management.
Usability Improvements for Trace Calculations

- All progress bars are merged into the main dialogs to **reduce the real estate** space taken by Kingdom dialogs.

- The dialogs can now be minimized when the computation process runs.
GeoSyn

Integration improvements

• Bring in seismic data directly from Kingdom
• Integrate 1DFM interface with fluid replacement in GeoSyn
• Option to use Kingdom Zoom

New functionality

• Wave equation option for synthetic models
VelPAK Wizard

The Wizard is a **brand new tool** that enables the user to depth convert a layer in the model quickly and efficiently using a variety of standard depth conversion methods. Extensive context help screens assist the user in understanding the methods available.

- More complex depth conversions may still be performed using the Workflow system or by driving VelPAK manually, but the Wizard forms an excellent **introduction to depth conversion techniques** and the capabilities of the software.

- The users choices in the Wizard are saved, so the Wizard may be *replayed* to update the model should minor changes to the model data be made, without further user intervention.
VelPAK Wizard

Common depth conversion techniques supported by the Wizard include:

- Determining velocity/depth/time relationships through cross-plotting
- Curve fitting to well velocity logs using regression and numerical optimisation (Vo,Kz functions etc.)
- Calibrating seismic velocities to well velocities for direct depth conversion
- Pseudo-well velocity log generation
- Kriging well velocities with external drift grids
VelPAK Integration

A **new data exchange tool** has been developed to simplify the selection of data for the VelPAK model.

The import procedure now saves time by:

- Building the layer definition as data is selected
- Ensuring the data conforms to a consistent area of interest
- Supporting Dynamic Depth Conversion layer definitions
- Importing seismic volumes other than stacking (RMS) velocity volumes

Export can now save pseudo-wells, pseudo-tops, pseudo-velocity logs and time-depth curves back to the main project database. Pseudo-wells can add significant value to the Dynamic Depth Conversion in areas of poor well coverage but good seismic velocity data.
Seismic Inversion

An enhanced macromodel building tool for Simulated Annealing Inversion provides a more interactive and intuitive way of generating the low frequency model as an input to the SA Inversion.

- As parameters are changed, the macro model dynamically updates to reflect those changes, resulting in a more accurate volume, and therefore an enhanced inversion result.
- Numerous performance enhancements have also been made to both Colored and Simulated Annealing Inversion, and the parameters have been simplified for a more efficient workflow.
Kingdom 2016

• Advancing Geology

• Providing a truly integrated interpretation platform

• Scalable solution to meet your interpretation challenges

• Supported by advanced science that is easy to use