RoQC Tools

Plug-ins for Petrel[†]

Advanced data management tools

Manage your data rather than just reporting on it!

Release Notes

Nov 2018

1. **About RoQC Data Management AS**

RoQC Data Management AS is a company registered in Tau, Norway that specializes in Data Management consultancy and develops Data Management software for Landmark and Schlumberger G&G environments.

RoQC Data Management AS was founded in 1998 and has clients all over the world.

The sister company **RoQC Data Management LLC** registered in Houston, Texas, USA started in 2011 and specialises in Data Management & Project Management.

RoQC also develops and sells an advanced data management software package called RoQC Tools. These tools have been developed in close cooperation with some of the world's largest, and smallest, oil companies. RoQC Tools exist for both the Landmark OpenWorks environment and Schlumberger's Petrel & Studio Manager environments.

RoQC's success is due not only to its unmatched experience base and its ability to merge geological and computing skills with E&P experience, but also to its ability to rapidly develop tools tailored to individual clients needs.

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4. Product Information

RoQC Tools module for Petrel

Product version:

RoQC Tools for Petrel   2018.16.13

Release date: Nov 2018

Petrel version: 2018

Country of origin: Norway

ECCN: EAR99 origin Norway

Public key token: ebf4237475de9287

5. Introduction

RoQC Tools for Petrel is a Petrel plug-in that enables you to manage your data in Petrel. The central tool is Audit Report which provides you with a quality check on many of your data items. Directly from the Audit Report interface you can start modules that help you fix the data quality issues highlit by the report. For example if you were looking at the report of duplicate Global Well Logs you can, directly from Audit Report, open the 'Well Log Manager' module and fix the problems.

RoQC Tools make it possible to manage your Petrel data, improving your data quality, and dramatically reducing your decision risk.

These release notes cover all the modules in the plug-in. Details specific to any particular module are highlit as only being relevant to that module.

6. Plug-in Menu Location

Click on 'Home' on the selector bar then on 'Perspective' → 'Data Management' Then make the Quality Control tab active, and the RoQC Tools will show as shown below.

7. New Features

The new functionality included in the 2018.16.13 release of RoQC Tools for Petrel was: -

Bug Fix
[PET-489] - Well Log Manager - logs below TD crash
[PET-493] - Interpretation mgr - duplicates error
[PET-495] - Audit History duplicates in settings lists
[PET-497] - Audit History - Fix default well audit order
[PET-501] - GENERAL - react to the well identifier setting
[PET-510] - Audit Report - reports (printing) (honor the column layout, etc)

[PET-536] - Audit History - cant create setup

New Feature

[PET-160] - Audit Report - Add TOC and speedometers to Report

[PET-181] - Audit_report - scan for unlikely min-max amplitude in seismic cubes

Improvement

[PET-200] - Audit Report - Add Seismic CRS audit

[PET-205] - Audit Report - add seismic faults with no points audit

[PET-456] - Audit Report - upgrade to MVVM

[PET-465] - CLONE - GENERAL - Performance profiling new MVVM apps

[PET-478] - Strat Cleanup - Improve workflow when event/horizon not equal zone name

[PET-486] - Audit Report - if vital audits are dropped dont write to audit history DB

[PET-488] - Audit Report - new audit for duplicate UWIs /duplicate wellbore names

[PET-500] - Audit Report - new audit - well top orphans

[PET-504] - Audit results view - link audits to plugins

[PET-505] - include exclude wellbores to be audited

[PET-512] - update indexer to handle new audit layout

[PET-513] - SQL interface to audit history (redo)

[PET-515] - Connect 'Show Results' menu filtering to GUI

[PET-518] - Progress Bar

[PET-514] - Audit Report - Statistic and criticality are configurable for audits

[PET-519] - Scaling across multiple resolutions and scale factors

[PET-522] - Audit Report - new audits for duplicate attributes

[PET-528] - Audit Report - Add 'exclude wells' to all well audits

[PET-535] - Audit Report - Well tops invalid depths - read the Z datum from the project

[PET-524] - Checkshot Manager – improve SRD corrections for onshore wells

[PET-538] - Audit Report - Checkshot audits- read the Z datum from the project

The new functionality included in the 2018.16.12 release of RoQC Tools for Petrel was: -

Bug Fix

[PET-411] - GENERAL - continue updating the Print/Report function

[PET-441] - NPD Sync - New Petrelproject, error message in NPD Sync

[PET-444] - Well Top Manager - Update to current standards. (binding lists)

[PET-445] - Fix Well Headers - Update to MVVM

[PET-446] - Checkshot Manager - New binding list base class

[PET-447] - NPD Sync - Active status of buttons not in sync with data selection

[PET-448] - Trajectory Manager - the count is incorrect

[PET-449] - Big delays when adding new nodes to a slave bindinglist that is bound to view

[PET-453] - General - Prevent multiple instances of the same plugin from launching

[PET-467] - General - Tie setting states for ribbon comboboxes to combobox value, not repositoryeditor

[PET-468] - Trajectory Manager - Name list not being updated when project data loaded

[PET-470] - Strat Cleanup - Improve performance of Strat Chart events

[PET-471] - NPD Sync - Compare dialog on a 4k screen with scaling

[PET-472] - General - Plugin form position saving/restoring between sessions

[PET-473] - NPD Sync - Compare errors on data reloading

Improvement

[PET-392] - Well Top Manager - add display of user attributes

[PET-429] - Well Top Manager - store orig_interpreter when moving to OFFIC

[PET-430] - Well Top Manager - Change update OBS_no to match SIS match rules

[PET-452] - General - Improve caption setting and custom filtering efficiency

[PET-461] - GENERAL - upgrade to DevExpress 18.

[PET-462] - GENERAL - Performance profiling new MVVM apps

[PET-463] - Trajectory Manager - Improve Well filter

[PET-466] - Strat Cleanup - Add cascade deletes

[PET-469] - Trajectory Manager - Improve the upgrade and renaming workflow

[PET-476] - Strat Cleanup - Rename surface dialog filtering enhancement

[PET-477] - Strat Cleanup - Set parent for marker dialog

The new functionality included in the 2018.16.11 release of RoQC Tools for Petrel was:-

Bug Fix

[PET-412] - Checkshot Manager - incorrect counts

[PET-417] - GENERAL Change to vector control images skin

[PET-433] - CLONE - GENERAL - continue updating the Print/Report function

New Feature

[PET-424] - General - Document MVVM pattern

Improvement

[PET-299] - KPI - WEB interface to project KPIs

[PET-326] - Interpretation Manager - add re-parenting of horizon to new survey - NOT DONE - cant keep GUID

[PET-418] - Checkshot Manager - update to MVVM

[PET-419] - Interpretation Manager - Update to MVVM

[PET-422] - GENERAL - add tool-tips to menu functions

[PET-425] - GENERAL - improve the highlight colours

[PET-432] - Strat Cleanup - update to MVVM

[PET-434] - Checkshot Manager - Get Bindinglist model objects from ribbon repositoryitemeditors rather than a string

[PET-436] - GENERAL - Simple generic (in the C# sense) popup list and manager for double click (eg logs)

The new functionality included in the 2018.16.10 release of RoQC Tools for Petrel was:-

Bug Fix

[PET-397] - GENERAL - Ensure compliance with the new standards (new apps)

[PET-398] - Well Top Manager - Encorporate Fix obs no and fix missing interp.

[PET-410] - Audit report - Object reference not set

New Feature

[PET-360] - Trajectory Manager - new tool

[PET-400] - NPD Sync - Option to identify UWI NPD field

[PET-401] - NPD Sync - Filter after rename

[PET-402] - Project Tag Manager - Update TLS protocol to 1.2

[PET-403] - NPD Sync - Create trajectory

[PET-404] - NPD Sync - Flag CRS name mismatches

[PET-409] - Upgrade DevExpress to 17.2.7

Improvement

[PET-380] - NPD Sync - Selective sync

[PET-381] - NPD Sync - Set coordinate tolerence

[PET-389] - Trajectory Manager - improvements

[PET-393] - Trajectory Manager - pop-up message when nothing to do

[PET-394] - GENERAL - Review application data model

[PET-395] - GENERAL - Review application modelview

[PET-396] - GENERAL - Review application view standards

[PET-399] - GENERAL - Binding list custom attributes

[PET-405] - NPD Sync - Respond to all borehole creation, deletion, updating events.

[PET-407] - GENERAL - Petrel Unit Testing Project

The new functionality included in the 2018.16.9 release of RoQC Tools for Petrel was:-

Bug Fix

[PET-359] - GENERAL - improve the report formats

[PET-373] - General - Rewrote the Statistics reading class

[PET-375] - Audit Report - Settings dialog label overlap

[PET-376] - General - Get Petrel version from assembly

[PET-377] - General - Create shared plugin base classes

[PET-382] - Audit Report - add tolerance to well tops duplicate depths audit

[PET-384] - Tag Manager - Strange Newtonsoft error

[PET-387] - Project Tag Manager - some users cannot see tagged projects

New Feature

[PET-361] - NPD Web - new application

[PET-372] - Well Top Manager - new app to manage data_sources

[PET-379] - General - Make installers Petrel version specific

Improvement

[PET-322] - MVVM - Data Model

[PET-323] - MVVM ViewModel base class

[PET-324] - MVVM - View bindings and feedback from mvvm context.

[PET-370] - Tag Manager - Saving web connection user/password is awkward

The new functionality included in the 2018.16.8 release of RoQC Tools for Petrel was:-

Bug Fix

[PET-363] - GENERAL - installer version number bug

[PET-364] - Seismic Manager - 'flatten' Excel output

[PET-365] - Audit Report - Tidy-up settings dialogue

[PET-368] - Studio Deletion Manager - show interface in demo mode

[PET-371] - GENERAL - Export & Print not appearing on screen

Improvement

[PET-362] - Interp Manager - add horizon size

[PET-366] - GENERAL - User reorder columns and save setup

[PET-369] - GENERAL - more informative error messages

The new functionality included in the 2018.16.7 release of RoQC Tools for Petrel was:-

Bug Fix
[PET-353] - GENERAL - improve GridView/TreeList restore
[PET-355] - GENERAL - Add double-click' option to context menu
[PET-358] - Audit Report - crashing on missing seismic data
Improvement
[PET-264] - Audit History - Add ability to extract text from project list
[PET-325] - GENERAL - AutoFilterRow needs to filter on Display text not underlying value.
[PET-351] - GENERAL - add counts (selected and total) to trees/grids
[PET-354] - Well Log Manager - update to new gridview codebase
[PET-356] - GENERAL - Improve select all checkbox behaviour
[PET-357] - GENERAL - all objects have link to Petrel input tree

The new functionality included in the 2018.16.6 release of RoQC Tools for Petrel was:-

Bug Fix
[PET-328] - Strat Cleanup - Duplicate horizon names being incorrectly flagged
[PET-329] - General - Font scaling and overlapping text in grids and trees
[PET-338] - Audit History - project path shouldnt be case sensitive
[PET-340] - Seismic Manager - reparent 2D lines is deactivated
[PET-341] - Seismic Manager - Moveable cubes count
[PET-342] - Seismic Manager - file size filtering
[PET-343] - Seismic Manager - retain history when externalizing seismic
[PET-346] - OW Strat Converter - red highlight missing
[PET-347] - OW Strat Converter - not finding all age errors

Improvement
[PET-327] - GENERAL - grid cell contents copyable
[PET-330] - GENERAL - auto filter reflect column type
[PET-331] - GENERAL - Context sensitive images on right-click menu
[PET-334] - Fix Obs Number - add interpreter to grid
[PET-335] - fix Obs Number - add delete function
[PET-337] - Strat Cleanup - associate strat chart with well top collection(Don't)
[PET-339] - Audit History - add remove audits function
[PET-344] - Seismic Manager - display all the GUIDs
[PET-345] - Audit History - Add 'seismic' default setup
[PET-350] - Intrpretation Manager - add new fields to Duplicates display

The new functionality included in the 2018.16.5 release of RoQC Tools for Petrel was:-

Bug Fix
   [PET-301] - Audit Report - fix the 'illegal surface names' count
   [PET-319] - Seismic Manager - bug in duplicate 2D seismic
   [PET-328] - Strat Cleanup - Duplicate horizon names being incorrectly flagged
   [PET-329] - General - Font scaling and overlapping text in grids and trees

Improvement

[PET-297] - Checkshot Manager - change active checkshot
[PET-298] - Seismic Manager - Unlinked seismic files
[PET-300] - Audit Report - add exclusion from Audits
[PET-302] - Intrp Manager - add count to grids no attributes
[PET-303] - Interp Manager - filters are missing from the tabs
[PET-305] - Seismic Manager - change file size to 2 decimals
[PET-307] - Strat Cleanup - Bigger font in tables
[PET-310] - Audit History - add "select db" functionality
[PET-311] - Seismic Manager - Global index search - batch
[PET-312] - Audit History - remember screen layout
[PET-313] - Audit History - how to plot zero seismic
[PET-314] - Audit History - numerical score
[PET-315] - Audit History - Colour Lables red when Audit not run
[PET-316] - Seismic Manager - add clear extraction DB function
[PET-317] - Checkshot Manager - click top left corner of the table to select all cells
[PET-320] - Seismic Manager - New project selector in the batch app
[PET-321] - General - Create standard abstracted GridControls, GridViews, and TreeLists using our preferred configuration
[PET-327] - GENERAL - grid cell contents copyable
[PET-330] - GENERAL - auto filter reflect column type

The new functionality included in the 2018.16.4 release of RoQC Tools for Petrel was:-

Bug Fix
[PET-265] - Seismic Manager - recover from a dead petrel process
[PET-290] - Seismic Manager - not handling sub-folders
[PET-292] - Seismic Manager - cant delete volumes used in Models
[PET-296] - Seismic Manager - reload error on duplicate seismic
New Feature
[PET-291] - Petrel Batch Manager - new app
Improvement
[PET-286] - Seismic Manager - Should not attempt extract with zero projects
[PET-288] - Seismic Manager - display/filter by survey or sub-folder
[PET-289] - Seismic Manager - hide compatible cubes already 'in place'
[PET-293] - Interp Manager - grids no attributes
[PET-294] - Interp Manager - Horizons no grids
[PET-295] - Interp Manager - Horizons no attributes

This release includes the following tools:-

Audit Report

Audit Report lists not only errors and potential errors, but also things which may be useful in checking the quality of the data. If "**Statistics**" is selected, Audit Report also generates two types of metrics -

one for Data Quality and the other quantifying Data Completeness. There are direct links from many of the issues highlit by Audit Report to the modules that will allow you to fix the problem.

Audit Report is used for running the indexer and it will add RoQC Data Quality attributes to the indexes – which can be seen and manipulated in the Search filter interface.

Audit History

The Audit History tool provides a simple mechanism for displaying the data quality of many projects – for example before and after a data cleanup.
The Petrel project(s) and the "Before" and "After" dates are chosen by the user, the program then will automatically generate a spider chart for each of the selected projects.

Well Log Manager

Well Log Manager is used to manage logs – for example to consolidate duplicate GWL's into one version. You chose which version you want to keep and 'move' all of the logs attached to the other versions to the version you want to keep. The unwanted GWL framework will then be removed. With Well Log Manager you can manage any GWLs - not just duplicates.
The Fix Well Logs tab is used to identify logs which have duplicate or decreasing depths. Logs with duplicate depths can be fixed (the values at the same depth are averaged) or deleted.

Fix Missing Interpreters

Incorporated into Well Top Manager.

Fix Well Headers

Fix Well Headers is used to assign UWI's/Operators/spud dates to Wells that are currently missing a UWI/Operators/spud date. A missing UWI is not critical for a single Petrel project, but it is critical if the wells will be used in Studio, more than one Petrel project or in other systems (UWI is mandatory in most systems). Fix Well Headers can also be used to assign operators or spud_dates to wells. All of the input can be done either by direct input or from a *.csv file. There is complete control over whether the data already in Petrel is over-written or not.

Fix Observation Numbers

Incorporated into Well Top Manager.

OW Strat Converter

OW Strat Converter converts an OpenWorks stratigraphic column in *.sce format and loads it to Petrel as a Stratigraphic Chart. Logic checks are run on the data before loading it and bad data is flagged. The Stratigraphic data can be edited before it is loaded. Colours defined in the *.sce format file are also imported.

Strat Cleanup

Strat Cleanup lists all of the 'Illegal' surface names in the Petrel project and lets you rename them to 'Legal' surface names. A 'legal' surface name is one that is defined in one or more of the Stratigraphic Columns that are defined in the Petrel project.

CheckShots Manager

CheckShots Manager allows you to add missing records to the checkshots – one at SRD and one at seabed. You can also find all of the checkshots that appear to be in OWT and fix these to TWT. Wells that are missing checkshots and those that have checkshots but where they are not set as active can be found and fixed.

Seismic Data Manager

Seismic Data Manager provides a very rapid way of exporting internally realized seismic and relinking it to the Petrel project – including all of the meta data (vintage,color ramp, etc).
You can also move and relink external seismic and identify missing seismic etc.
2D reparenting, unattached seismic files, duplicated seismic, projects using seismic files and indentification of orphan seismic files is also covered.

NPD Sync

NPD Sync is used to download well header information from the NPD (Norsk Petroleum Directorat), and then populate Petrel with this information.

Well Top Manager

Well Top Manager is used to manage well tops – for example to manage 'versions of the truth' in this mode you can easily build and manage an Official or Corporate set of well tops.

Trajectory Manager

Trajectory Manager is used to bulk upgrade Explicit trajectories to MD.INCL.AZIM, or to bulk rename any trajectories.

Interpretation Manager

Interpretation Manager provides a simple mechanism for finding and deleting duplicate horizon interpretations or finding/merging horizon interpretations that are split/incorrectly stored.

Studio Deletion Manager

Deletion Manager provides a mechanism for synchronizing deletions that have been made in Studio into the open Petrel project.

8. Data Manipulation

Audit Report and Audit History are a 'query only' tools and will not make any changes to Petrel data. The other RoQC Tools are data management tools that directly change native Petrel data.

Depending on what the user chooses to do, the tools may manipulate the following domain objects:-

- Borehole
- Global Well Logs
- Well Logs
- Well Tops
- Stratigraphic Charts/Columns
- Checkshots
- Seismic 2D and 3D collections (does not change the data but moves the objects to a new location)
- Seismic 2D and 3D files
- Trajectories
- Find/Indexer

9. Custom Domain Objects

RoQC Tools does not create any Custom Domain Objects or custom data in the Petrel user's project. However, Audit Report does add QC attributes to IndexRow in Find/Indexing and user attributes to the Petrel project.

10. Petrel Version

This version of RoQC Tools is built against Petrel 2018 and supports all versions of Petrel 2018. NOTE: There are separate versions of RoQC Tools for Petrel 2017.

11. Third Party Libraries

RoQC Tools includes the following third party libraries:-

- DevExpress v18.1

12. Licensing

Both Schlumberger licenses (base license feature name is OCEAN_ROQ_PROQ-B1. The Tag feature names indicate the number of Tags purchased (OCEAN_ROQ_PROQ1-B1, OCEAN_ROQ_PROQ2-B1, OCEAN_ROQ_PROQ5-B1, OCEAN_ROQ_PRO10-B1, OCEAN_ROQ_PRO50-B1)) and the RoQC tags are required for RoQC Tools to run with all features activated.

Licenses can be obtained from Schlumberger.

The Schlumberger license is loaded just as any other Petrel plugin license (add the provided license file to the license directory that the SIS License Tool is reading from). The RoQC Tags and are automatically generated and can be assigned to Petrel projects using the RoQC Tagging Tool (see the Project Tag Manager Help to learn how to do it).

In addition, a basic Petrel Core license will be required in order to open Petrel and a data set to work on. As a minimum, a Petrel Core license is required: G-Core, RE-Core or Combined (G-Core and RE-Core).

The license covers the following modules under the RoQC Tools for Petrel plug-in:-

- Audit Report
- Audit History
- Fix Well Headers
- Well Log Manager
- Strat Cleanup
- OW Strat Converter
- CheckShot Manager
- Seismic Data Manager
- Interpretation Manager
- NPD Sync
- Well Top Manager
- Trajectory Manager
- Studio Deletion Manager
- FIND/INDEXER Extension (fully intergrated under Petrel Search panel)

Without a license in place, and tag on the Petrel project, RoQC Tools will run in demo mode – you can use the tools and see what they do, but you cannot save any changes to Petrel.

13. List of Known Issues

None

14. Support

Information on RoQC Tools and data management workflows is available on www.roqc.com.

Support is available from support@roqc.com.