

## RoQC Tools

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### Plug-ins for Petrel<sup>†</sup>

Advanced data management tools

Manage your data rather than just reporting on it!

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## Release Notes

Aug 2017

## 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.

## **2. Copyright © 2016 RoQC Data Management AS. All Rights Reserved**

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## 4. Product Information

### RoQC Tools module for Petrel

Product version:

RoQC Tools for Petrel	2016.16.4
Release date:	Aug 2017
Petrel version:	2016
Country of origin:	Norway
ECCN:	EAR99 origin Norway
Public key token:	ebf4237475de9287

## 5. Introduction

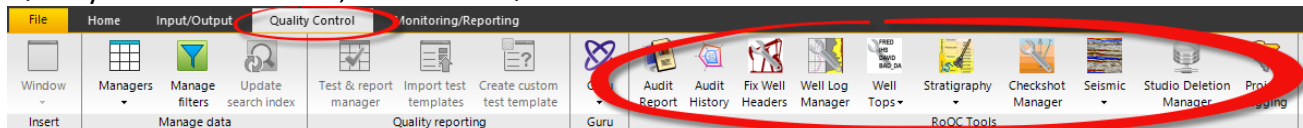
RoQC Tools for Petrel is a Petrel plug-in that enables you to manage your data in Petrel. The central tool is Audit Report which provides you with a quality check on many of your data items. Directly from the Audit Report interface you can start modules that help you fix the data quality issues highlighted 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 of the modules in the plug-in. Details specific to any particular module are highlighted 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 2016.16.4 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

The new functionality included in the 2016.16.3 release of RoQC Tools for Petrel was:-

## Bug Fix

- [PET-268] - Well Log Manager - logs below TD error when v. small offset
- [PET-270] - Well Log Manager - inappropriate 'no data found' message
- [PET-273] - Fix Checkshots – can't select TDR
- [PET-275] - Strat Cleanup - selected line should be darker blue
- [PET-279] - FW: Fwd: Re: Global 2D well logs
- [PET-282] - Fix Checkshots - correct message when 'fixing' not zero at SRD
- [PET-284] - Checkshot Manager - decrease precision on 'zero at SRD' test

## Improvement

- [PET-178] - Seismic Manager - Keep original name default behavior
- [PET-248] - Fix Checkshots - handle -ve values above SRD
- [PET-251] - Audit History - add Petrel Version
- [PET-263] - Audit History - Add ability to start Petrel from Audit History
- [PET-269] - OW strat converter - add ability to ignore ",":
- [PET-271] - Fix Checkshots - add collection name
- [PET-272] - Fix Checkshots - right click options
- [PET-274] - Fix Checkshots - add global Set Active Checkshot option
- [PET-276] - Intrp manager - delete horizons with no grids
- [PET-277] - TDR Management
- [PET-278] - Fix Checkshots - add SRD value to details screen
- [PET-281] - Seismic Manager - improve speed of Duplicate Seismic
- [PET-283] - Checkshot Manager - changed Fix Checkshots name to Checkshot Manager
- [PET-285] - Intrp manager - delete grids with no attributes

## User Question

- [PET-260] - Seismic\_manager - check what happens with exporting internal 8bit 2D

The new functionality included in the 2016.16.2 release of RoQC Tools for Petrel was:-

## Bug Fix

- [PET-226] - Seismic Data Manager - Missing navigational data crash
- [PET-244] - Seismic Manager - Misleading license message
- [PET-246] - OW Strat Converter - Handle invalid SCE with wrong number of tabs
- [PET-252] - Audit History - today's audit not showing
- [PET-254] - Audit History - various issues

## Improvement

- [PET-238] - Fix Checkshots - make 'no active checkshots' more versatile
- [PET-242] - Seismic Manager - Search filter is all numerical operators
- [PET-245] - Seismic Manager - error when comma in file name
- [PET-247] - Fix Checkshots - Need way to reset active TDR for any/all wells
- [PET-259] - Seismic\_manager - add paste path into 'destination directory'
- [PET-262] - OW strat\_converter - add inport colours

#### New Feature

- [PET-266] - Studio Delete Manager - synchronise Studio deletes to Petrel

The new functionality included in the 2016.15.11 release of RoQC Tools for Petrel was:-

#### Bug Fix

- [PET-244] - Seismic Manager - Misleading license message
- [PET-246] - OW Strat Converter - Handle invalid SCE with wrong number of tabs
- [PET-252] - Audit History - today's audit not showing
- [PET-254] - Audit History - various issues

#### Improvement

- [PET-242] - Seismic Manager - Search filter is all numerical operators
- [PET-245] - Seismic Manager - error when comma in file name
- [PET-247] - Fix Checkshots - Need way to reset active TDR for any/all wells
- [PET-259] - Seismic\_manager - add paste path into 'destination directory'
- [PET-262] - OW strat\_converter - add inport colours

The new functionality included in the 2016.15.10 release of RoQC Tools for Petrel was:-

#### Bug Fix

- [PET-228] - Seismic Manager - 3D internal not showing on internal filter.
- [PET-229] - Audit Report - Project close not followed by a project open
- [PET-237] - Missing DevExpress dlls

#### Improvement

- [PET-227] - Seismic Manager - Disable control on each tab until data is loaded.
- [PET-230] - Checkshot Manager - Activate checkshot after samples are replaced if checkshot was active.
- [PET-231] - Seismic Manager - raw to sgy should convert blanks to dashes when creating external name.
- [PET-232] - Checkshot Manager - Add active checkshot filter to be able to re-activate already active checkshots.

[PET-233] - General - Keep track of open and close projects because of callbacks and the ref project opening.

[PET-234] - Checkshot Manager - preserve first two and last in decimate

[PET-235] - Fix Missing X - only write to marker collection history once per operation

[PET-236] - Audit Report - read create user and create date once per marker collection

The new functionality included in the 2016.15.9 release of RoQC Tools for Petrel was:-

## Bug Fix

[PET-189] - Audit History - Export & Print header missing for less than 3 projects

[PET-203] - General - SIS acceptance test fixes

[PET-204] - General - fixes after SIS acceptance test

[PET-208] - Audit Report - Changed 'Faults with no Points' to 'Well Faults with No Points'

[PET-216] - Project Count not always accurate

[PET-217] - DateTime strings aren't culture aware

[PET-220] - Audit Report - Save Report (Excel and PDF) cause a crash

[PET-224] - Open seismic files in Explorer

## New Feature

[PET-165] - Seismic Manager - identify 3D volumes that belong to same survey geometry

[PET-166] - Interpretation Manager - Horizon duplication manager

[PET-206] - Seismic Manager - Duplicate Seismic Files (Project)

[PET-207] - Seismic Manager - Duplicate Seismic Files (Global)

[PET-211] - Seismic Manager - show projects linked to seismic files

[PET-212] - Seismic Manager - show seismic files not linked to projects

[PET-221] - Global Seismic Selection

## Improvement

[PET-57] - Strat\_cleanup - add "delete surface names with no well tops"

[PET-140] - Seismic\_manager - 2D /3D seismic duplicate check .. md5 hash

[PET-175] - Release Notes - Update Help files & install guide

[PET-202] - Seismic Manager - Gen1 improvements

[PET-197] - Seismic Manager - Add more attributes to displays

[PET-198] - Seismic Manager - Set default to delete the source after move

[PET-201] - Seismic Manager - Duplicate Seismic Files (Project)

[PET-209] - Seismic Manager - Cube/Survey Compatibility

[PET-219] - Tag Manager - Add demo mode functionality

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 highlight 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

Fix Missing Interpreters is used to assign interpreters to Well Tops that currently have no interpreter. This situation arose with older versions of Petrel and could create problems when transferring the well tops to Studio or to other systems.

### 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

Fix Observation Numbers is used to assign observation numbers to well tops that are missing an observation number or have an incorrect (out of sequence) observation number – these must be fixed before the data is transferred to Studio, or other systems.

### 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

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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 identification of orphan seismic files is also covered.

### 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
- 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.

## 10. Petrel Version

This version of RoQC Tools is built against Petrel 2016 and supports all versions of Petrel 2016. NOTE: There are separate versions of RoQC Tools for Petrel 2015.

## 11. Third Party Libraries

RoQC Tools includes the following third party libraries:-

- DevExpress v17.1

## 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
- Fix Missing Interpreters
- Fix Observation Numbers
- Strat Cleanup
- OW Strat Converter
- CheckShot Manager

- Seismic Data Manager
- Interpretation 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](http://www.roqc.com).

Support is available from [support@roqc.com](mailto:support@roqc.com).