RELEASE NOTES



Release Notes GVERSE Connect 2019.3.1

*Mark of Schlumberger





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Introduction

LMKR is pleased to announce the release of the GVERSE® Connect 2019.3.1 Plug-in. This document provides an introduction to the Connect plug-in features and benefits. It also lists the system requirements necessary to install and run the plug-in.

What is GVERSE Connect?

The Connect plug-in enables well, seismic and surfaces to come together into an integrated interpretation environment. This plug-in facilitates the direct exchange of data between GeoGraphix® and Petrel* E&P software platform. It enables an efficient exchange between two industry-leading E&P technologies and provides users the ability to use the "best fit" technologies for their job without the concern of data migration issues and related delays. The Connect plug-in is part of the GVERSE application suite by LMKR (https://gverse.com/).

LMKR GVERSE consists of geoscience and engineering solutions focused on workflow optimization and enhancing productivity of teams working on diverse geological and geophysical projects. These applications help cut the processing time required for interpretations resulting in fast, easy to use scalable tools that are inter-operable with other known geoscience software suites; enabling a connected multi skilled workforce.

The Connect plug-in uses Ocean Software Development Framework to bridge between the applications.

Main Features

The main features of the plug-in are as follows:

- Data transfer in either direction for the following data types is supported:
 - Well data including headers, directional surveys, well tops, log curves, velocity surveys and faults.
 - Horizons and faults from the seismic interpretation.
 - XYZ surfaces generated in either application.
- Seismic 2D lines data transfer from Petrel to GeoGraphix.
- Supports well filters (GeoGraphix) and saves searches (Petrel), which helps users limit the data transfers to the required wells only.
- A comprehensive logging mechanism captures the different types of logs to keep track and audit all data and data types transferred between the applications.
- The choice of overwrite or skip for each data type, is an efficient way of enabling the user to keep only the selected data synchronized between two applications.
- Allows users to effectively use Source lists and SCM lists to organize data while transferring to GeoGraphix. This makes it easy for users to identify and retrieve the same data for transfer back to Petrel.

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Benefits

Using this plug-in, data can be transferred to an empty project (in either vendor's system) or to an existing project that the user would like to append or update. The transfer rules are configurable to allow necessary adjustments according to the data management policies of the organization.

- Increased User Productivity: For organizations that using both Petrel and GeoGraphix, the data transfer time will be exponentially faster than using manual data transfer methods.
- Optimized Reservoir Characterization: By combining the strengths of both software solutions into
 one interpretation, an optimized characterization of the reservoir can be produced.
- Reduced Costs: GeoGraphix provides an affordable, comprehensive and performant solution for daily interpretation needs and compliments the nature of Petrel's high science, higher cost solution for reservoir modeling. Rightsizing the software solution to the user's needs, while enabling full data interoperability, provides an opportunity to dramatically reduce licensing costs and associated annual maintenance and support fees.
- Quick Adoptability: Easy and fast transfer of well data into GeoGraphix enables the user to take
 advantage of GeoGraphix's geophysical, geological, petrophysical and map production capabilities,
 for faster, efficient and more accurate interpretation.

What's New in 2019.3.1

One-Click Seismic Transfer

Transfer of all seismic lines and vintages available in a Petrel project to any GVERSE Geophysics interpretation in a single click. Line geometry, trace data and any mistie and datum adjustments applied to the seismic are added automatically to the target GVERSE Geophysics interpretation.

Compatibility with Latest Petrel and GeoGraphix Versions

Work with the latest Petrel (2019.X & 2020.X) and GeoGraphix (2019.X) versions.

System Requirements

The following sections list the system requirements for the Connect 2019.3.1 plug-in.

Software

The software that must be installed on the system running the plug-in are as follows:

- GeoGraphix Discovery 2019.3.1
- Petrel 2019.5 through 2020.3
- LMKR License Management Tool 2019.3 for Connect license
 The LMKR License Management Tool (LMT) must be installed to configure the Connect license.
- Microsoft® Visual C++ Runtime 2013
- Adobe Reader for selected help files (optional)

Operating System

To run the plug-in, you need one of the following operating systems installed on your system:

- Windows® 7 Professional x64
- Windows® 10 Professional x64
- Windows® 7 Enterprise x64
- Windows® 10 Enterprise x64
- Windows® 7 Ultimate x64

Note: It is recommend to use the latest Microsoft® service packs and security patches.

Hardware

The hardware requirements for the plug-in are the same as the Petrel hardware requirements.

Licenses

The following licenses are required to run the plug-in:

- GeoGraphix Discovery 2019.3.1 license
- Petrel 2019.5 through 2020.3 license
- GVERSE Connect 2019.3 license

The following product/feature licenses are required to import/export the IsoMap surfaces, and horizons and faults:

- IsoMap license for surfaces
- GVERSE Geophysics license for horizons and faults

Note: Refer to the GVERSE GeoGraphix Customer Support Portal (https://gverse.com/support/) for upto-date information on the requirements.

Fixed Bugs

The following bugs were fixed in this release.

ID	Fix Description
213436	Depth faults in Feet when transferred from Petrel to GeoGraphix were converted to Millimeters. This issue has been fixed.
214646	Well logs transfer failed on switching Petrel project after carrying out a successful transfer. This issue has been fixed.
214349	Datum conversion was not applied on velocity data for wells when transferring data from GeoGraphix to Petrel. Velocity data is now adjusted to Petrel's Project Reference Datum.
214706	Data was read from incorrect columns when transferring horizons marked on 2D lines only to Petrel. Data is now read from the correct columns when transferring horizons in all cases.

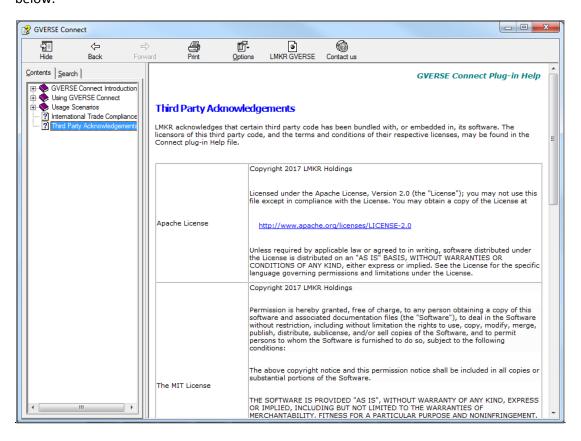
214708	Faults transferred to Petrel with time units set to seconds instead of milliseconds did not display correctly in Petrel. Appropriate conversion factor was applied, and the issue is now fixed.
214792	Surfaces exported in ZMap format from Petrel could not be displayed in GeoAtlas. Discarded unexpected null values encountered in ZMap files and all surfaces can now be displayed in GeoAtlas.
214832	Time surfaces transferred from Petrel had incorrect unit conversion applied. Conversion factors were corrected or removed, and issue is now fixed.
214924	Depth horizons did not show up as available for transfer to Petrel. This issue has now been fixed and both time and depth horizons are now available for transfer.
214933	In cases with a display unit mismatch in Petrel and GeoGraphix projects, horizons and faults were not correctly transferred. The addition of a new "Z Unit Conversion" option in preferences allows the user to specify the correct units for transfer and surfaces can be transferring without unit conversion issues.
215037	Contour and Data files generated by GeoAtlas were transferred to Petrel but could not be viewed. These types are not supported, and an error message is now displayed instead of transferring non-viewable surfaces to Petrel.
215045	When transferring depth surfaces from Petrel, unit conversion was applied twice to the same surface. This issue has been fixed.
215105	Seismic survey selection was not working correctly when transferring horizons to a Petrel project with multiple 3D surveys. This issue has now been fixed.
215247	Horizon transfer to Petrel failed when transferring horizons marked on multiple 2D lines. This issue has been fixed.
215410	Checkshot reference elevation was not updated in WellBase when transferring wells from Petrel. This issue has been fixed.
215428	TVD for formations and faults not updated in WellBase when transferring well data from Petrel. This issue has been fixed.
215621	Activating an AOI in GeoGraphix caused data transfer from Petrel to fail. This issue has been fixed, and data can be transferred with AOI applied.
209383	Different CRS for source and destination projects crashed the application. Appropriate error messages are displayed an application does not crash.
-	Various other bug fixes, stability and performance improvements.

Third Party Applications

LMKR acknowledges that certain third party code has been bundled with, or embedded in, its software. The licensors of this third party code, and the terms and conditions of their respective licenses, may be found in the Connect plug-in Help file.

To access the third party license agreements:

- In the Connect plug-in dialog, click
 The Help window displays.
- 2. In the **Contents** pane, locate the **Third Party Acknowledgements** help topic as shown in the image



International Trade Compliance

This application is manufactured or designed using U.S. origin technology and is therefore subject to the export control laws of the United States. Any use or further disposition of such items is subject to U.S. law. Exports from the United States and any re-export thereafter may require a formal export license authorization from the government. If there are doubts about the requirements of the applicable law, it is recommended that the buyer obtain qualified legal advice. These items cannot be used in the design, production, use, or storage of chemical, biological, or nuclear weapons, or missiles of any kind.

The ECCNs provided here (if applicable) represent LMKR's opinion of the correct classification for the product today (based on the original software and/or original hardware). Classifications are subject to change. If you have any questions or need assistance please contact us at support@lmkr.com.

Under the U.S. Export Administration Regulations (EAR), the U.S. Government assigns your organization or client, as exporter/importer of record, responsibility for determining the correct authorization for the item at the time of export/import. Restrictions may apply to shipments based on the products, the customer, or the country of destination, and an export license may be required by the Department of Commerce prior to shipment. The U.S. Bureau of Industry and Security provides a website to assist you with determining the need for a license and with information regarding where to obtain help.

The URL is: http://www.bis.doc.gov.

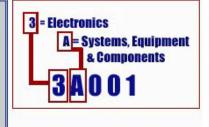
Definitions

ECCN - Export Control Classification Number - The ECCN is an alpha-numeric code, e.g., 3A001, that describes a particular item or type of item, and shows the controls placed on that item. The CCL (Commerce Control List) is divided into ten broad categories, and each category is further subdivided into five product groups. The CCL is available on the <u>EAR Website</u>.

The following illustration is a sample:

Five Product Groups

- A. Systems, Equipment and Components
- B. Test, Inspection and Production Equipment
- C. Material
- D. Software
- E. Technology



The ECCN number (if applicable) and License Type for this product are included in the table below. Also included is the date the table was last updated.

Product/Component/R5000	EAR Number	License	Last Updated On
GVERSE Connect	EAR99	EAR	11/23/2015

Contacting GVERSE GeoGraphix Support

We are committed to providing the highest level of technical customer support in the industry. With an average tenure of more than thirteen years, our highly trained and experienced staff of technical analysts is comprised of geoscientists, engineers, land professionals, petrophysicists, and system specialists.

Please refer to our Customer Support timings mentioned below to ensure that you have access to our support analysts assigned to your region. When getting in touch with GVERSE GeoGraphix support, please remember that real-time support will not be available during bank holidays or after office hours. If you do get in touch with GVERSE GeoGraphix Support outside of work hours, please leave a voice message with a brief description of the issue that you are facing. Your voice message will be used to automatically create a support case for you. This will enable our analysts to attend to your issue and provide you with a resolution as soon as possible

North & South America	Europe, Middle East & Africa		
Monday – Friday	UK:		
8 am – 6 pm CST*	Monday – Friday		
Toll Free (US/Canada):	8 am – 5 pm*		
+1 855 449 5657	+44 20 3608 8042		
Colombia:	UAE:		
+57 1381 4908	Sunday – Thursday		
	(Dubai GMT+4)		
United States:	8 am – 5 pm*		
+1 303 295 0020	+971 4 3727 999		
Canada:			
+1 587 233 4004			
*Excluding bank holidays	*Excluding bank holidays		
Asia Pacific & Australian Continent	Southwest Asian Countries		
Malaysia:	Pakistan:		
Monday – Friday	Monday – Friday		
(Kuala Lumpur GMT+8)	(Islamabad GMT+5)		
9 am – 6 pm*	9 am – 6 pm*		
+60 32 300 8777	+92 51 209 7400		
*Excluding bank holidays	*Excluding bank holidays		

Helpful Links

Name	Website Address
GVERSE Website	https://gverse.com
GVERSE GeoGraphix Support Portal	https://gverse.com/support/
Petrel - Schlumberger Information Solutions	http://www.software.slb.com/products/platform/Pages/petrel.aspx