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GeoGraphix® and Discovery™ on OpenWorks® 2019.1

LMKR is pleased to announce the release of the GeoGraphix® and Discovery™ on OpenWorks® 2019.1 software.

This release includes GVERSE® NOW, a web-based single launch platform for GeoGraphix and GVERSE applications.

This document also provides important information regarding the system requirements and valuable resources that will allow you to get the most out of the GeoGraphix 2019.1 release.

Note: New users or users upgrading from other versions of GeoGraphix need a valid LMKR license. The LMKR License Management Tool (LMT) must be installed to configure the license. Download the latest LMT from the LMKR Support Portal > [Downloads](#) page. See the “LMKR Licensing” section of the Installation Guide for Release 2019.1 for more information.

Note: If working in a network environment, in order for all computers to work together on shared projects, ALL computers (clients and servers) must be updated to the same version of the software. It is intentional that computers with different versions of GeoGraphix software cannot and should not be connected with each other.

GeoGraphix 2019.1 is an integrated product suite that incorporates shared data management and geological, petrophysical, and geophysical interpretation software. It utilizes a Sybase (SAP SQL Anywhere) database in GeoGraphix Discovery mode, or accesses the OpenWorks®/SeisWorks® (Oracle) database in Discovery on OpenWorks mode.

This release consists of the following:

GVERSE® FieldPlanner

- This application intelligently populates wells over an entire field based on defined hazards, lease areas, and constraints. It uses an advanced optimization algorithm to lay out hundreds of wells in minutes. It works with you by taking into account surface hazards, existing wells in the area, and lease boundaries to maximize lateral length in the zone.

GVERSE® Geophysics

- New, intuitive and easy-to-use seismic interpretation system with powerful 3D visualization and interpretation capabilities. GVERSE Geophysics enables geoscientists to execute end-to-end workflows for basic interpretation and more advanced geophysical tasks.

GVERSE® Geomodeling

- An integrated environment for modeling that incorporates existing mapping and cross section features of smartSECTION® with a newly built 3D View. It takes your smartSECTION interpretations to a whole new level with 3D modeling, while also enabling you to fully utilize the existing smartSECTION features.

Pro 3D

- Enables interpreters to get the most from their data by quickly creating powerful and informative base maps, fence diagrams and seismic backdrops. Using the Pro 3D window you can show IsoMap® structural surfaces, cultural layers, wells, seismic data, cross sections and fence diagrams in the 3D Scene.

Field Planning

- The advanced field planning tool is designed to reduce the time required for efficient field development. It provides the ability to create, save, analyze and manage multiple field plan scenarios before committing them to the database. Designed for horizontal well plans, the Field Planner includes determination of the optimum location and orientation of wells. These proposed wells can all be visualized by creating a layer for display in GeoAtlas™.

Data Manager™ includes ProjectExplorer™, Coordinate System Manager™, WellBase™, SeisBase™, QueryBuilder™, LandNet™, LeaseMap™, and ZoneManager™.

- The GeoGraphix and Discovery on OpenWorks project and data management engine

GeoAtlas™

- The map display and montage environment working on ESRI MapObjects

IsoMap®

- The gridding contouring engine, featuring 10 powerful gridding algorithms

XSection™

- A fully integrated geological interpretation tool and cross section display tool

PRIZM™

- An interactive petrophysical and log analysis system

smartSECTION®

- Map view for viewing GeoAtlas layers and defining cross sections for picking tops and faults for structural and sequence stratigraphic analysis

Discovery™ 3D

- The 3D scene viewer that uses the most recent video and X-Box tools to display seismic and geologic data in three dimensions

pStaX™

- The post stack processing module for enhancing seismic character and detecting anomalies related to geologic features

SCAN™

- The patented semblance calculation for enhanced fault interpretation

LogM Advanced Synthetics™

- The geophysical application used for interactively editing well logs and evaluating synthetic trace character response

LogM Modeling™

- The 2D forward seismic waveform, ray tracing and structural modeling tool to predict seismic response away from the well

STRUCT™ Model Entry

- The comprehensive forward seismic structural modeling tool that is used to determine the seismic response of complex geologic structures in areas where there is little or no well control

Discovery™ on OpenWorks®

- Enables the GeoGraphix software to access OpenWorks and SeisWorks projects, and uses the OpenWorks and SeisWorks data within the GeoGraphix framework

Xchange Tools

WellXchangePlus™

- Transfer well information to or from two GeoGraphix projects, or between GeoGraphix and OpenWorks

SeisXchange™

- Transfer seismic data between Geophysics and SeisWorks

GridXchange

- Transfer of map point sets and grids from GeoGraphix to OpenWorks

Note: SeisBase, LandNet, LeaseMap, LogMModelBuilder (LogM Modeling), LogM Well Editor (LogM Advanced Synthetics), Field Planner, and Advanced 3D Visualization (Pro 3D) are not available in the current version of Discovery on OpenWorks.

New Feature – GVERSE NOW



LMKR is pleased to announce the release of GVERSE NOW, a web-based launch platform for all GeoGraphix and GVERSE applications. GVERSE NOW provides instant access to GeoGraphix and GVERSE support, documentation, white papers, training schedules, webinars, software downloads, and release and user group announcements. The main purpose of GVERSE NOW is to put the entire range of LMKR resources at your fingertips - so you get the support and information you need - when you need it. We've also integrated iEnergy® Core into the launcher. iEnergy® Core gives you access to in-depth discussions of industry standards and trends.

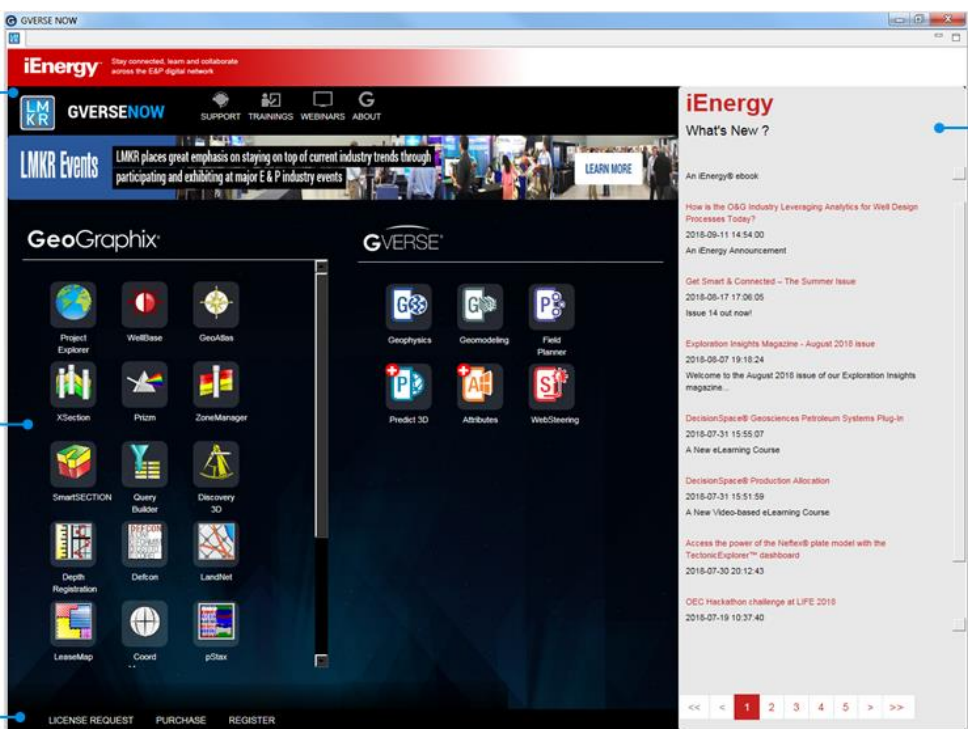
To launch GVERSE NOW:

- From the **Start** menu, select **All Programs > GVERSE NOW > GVERSE NOW**.

Or

- Double-click **GVERSE NOW**  on your desktop.

In the GVERSE NOW window, the GeoGraphix applications display under the GeoGraphix menu and GVERSE applications display under the GVERSE menu. To launch an application, simply click on the required application icon.




Quick Links
Instant access to GeoGraphix and GVERSE support, documentation, white papers, training schedules, webinars, software downloads, and release and user group announcements.

GeoGraphix & GVERSE Menus
Single interface to launch GeoGraphix and GVERSE applications.

Useful Links
Access License Request, Purchase and Register.





iEnergy® Core
Provides access to in-depth discussions on industry standards and trends.

Note: To run GVERSE applications, ensure that the application is installed on your machine. The GVERSE applications that are not installed are marked with a red plus sign .

The following section provides a brief description of the GVERSE NOW interface.

Quick Links

Quick links are available in the top pane.

Item	Name	Description
	Support	Opens the LMKR online support portal.
	Trainings	Opens the LMKR Trainings page.
	Webinars	Opens the LMKR Webinars page.
	About	Opens the LMKR website.

GeoGraphix and GVERSE Menus

Single launch platform is available for both GeoGraphix and GVERSE applications.



Useful Links

Useful links are available at the bottom.

Item	Description
License Request	Opens the LMKR License Management page. You can request a new license, transfer an existing license to another computer or upgrade the existing license.
Purchase	Opens the GVERSE ESTORE page. Here, you can find, order and pay for GVERSE products and services.
Register	Opens the LMKR Registration page allowing you to register for the LMKR Support Portal.

iEnergy® Core

iEnergy® Core is available to the right. It lists announcements, new features, magazines, eLearning courses, and latest innovations from Halliburton.

iEnergy
What's New ?

An iEnergy® ebook

How is the O&G Industry Leveraging Analytics for Well Design Processes Today?
2018-09-11 14:54:00
An iEnergy Announcement

Get Smart & Connected – The Summer Issue
2018-08-17 17:06:05
Issue 14 out now!

Exploration Insights Magazine - August 2018 issue
2018-08-07 19:18:24
Welcome to the August 2018 issue of our Exploration Insights magazine...

DecisionSpace® Geosciences Petroleum Systems Plug-In
2018-07-31 15:55:07
A New eLearning Course

DecisionSpace® Production Allocation
2018-07-31 15:51:59
A New Video-based eLearning Course

Access the power of the Neflex® plate model with the TectonicExplorer™ dashboard
2018-07-30 20:12:43

OEC Hackathon challenge at LIFE 2018
2018-07-19 10:37:40

<< < 1 2 3 4 5 > >>

System Requirements

In the following sections, you will find hardware and software system requirements for this release of GeoGraphix and Discovery on OpenWorks:

- GeoGraphix Workstation
- GeoGraphix Project Server

System requirements can vary considerably, depending on your computing environment and software objectives. Please contact your Sales Representative or Customer Support if you have questions or need more information about system requirements.

Important Notes:

- New users or users upgrading from other versions of GeoGraphix also need valid LMKR licenses. Please contact COS@lmkr.com to request a license.
For information on license requirements for GVERSE applications, refer to their respective release notes and installation documents on the LMKR Support Portal > Knowledge Center > [Release Notes and Installation Guides](#) page.
The LMKR License Management Tool (LMT) must be installed to configure the license. Download the latest LMT from the LMKR Customer Support Portal > [Downloads](#) page. See the “LMKR Licensing” section of the Installation Guide for Release 2019.1 for more information.
- Discovery on OpenWorks is compatible with OpenWorks for Windows 5000.10.6.03 and SeisWorks 5000.10.
- Refer to the LMKR Customer Support > Knowledge Center > [System Requirements](#) page for up-to-date information on system requirements for all GeoGraphix and GVERSE applications.

Workstation:

System Requirements

We recommend using the latest Microsoft service packs and security patches. The following table lists the operating systems which are supported.

Supported Operating System	RAM	CPU
Windows® 7 Professional x64 Windows® 7 Enterprise x64 Windows® 7 Ultimate x64 Windows® 10 Professional x64 Windows® 10 Enterprise x64	8 GB Minimum 16+ GB recommended	Pentium i5/i7 or any Quad Core Processor

Note 1: GVERSE Geophysics and GVERSE Geomodeling specifically require Windows platform update package KB2670838 installed on the machine, in case the operating system is Windows 7.

Hardware Requirements

We recommend the following Hardware to run the GeoGraphix applications:

Application Support Level	Required Operating System	Required Hardware
All Discovery Applications including Discovery 3D and advanced 3D visualization (Pro 3D), and GVERSE Geomodeling	Refer to the supported Operating Systems Requirements mentioned on the previous page.	<i>Graphic Card Requirements:</i> <ul style="list-style-type: none">• 2 GB VRAM Minimum• 4 GB VRAM Recommended• DirectX 11 capable hardware. (see Note 2 below)
GVERSE Geophysics	Refer to the supported Operating Systems Requirements table mentioned on the previous page.	Minimum <ul style="list-style-type: none">• 2.4 GHz 64-bit processor• 8 GB RAM <i>Graphic Card Requirements:</i> <ul style="list-style-type: none">• Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 430 with 1GB VRAM. DirectX is not shipped with GeoGraphix 2019.1. You must download and install it separately.• 1,366 x 768 screen resolution Recommended <ul style="list-style-type: none">• Quad 3.2 GHz 64-bit processor• 32 GB RAM• Solid state hard disk <i>Graphic Card Requirements:</i> <ul style="list-style-type: none">• Any DirectX 11.1 capable card comparable with Nvidia® GeForce GTX 1060 with 6GB VRAM. DirectX is not shipped with GeoGraphix 2019.1. You must download and install it separately.• 1920 x 1080 screen resolution

Note 1: Microsoft DirectX End-User Runtime (June 2010) is required to run Discovery 3D, advanced 3D visualization (Pro 3D), GVERSE Geomodeling, and GVERSE Geophysics.

Note 2: To run Discovery 3D, advanced 3D visualization (Pro 3D), and GVERSE Geomodeling, it is recommended that an NVIDIA DirectX 11 compatible card be used. We recommend using the latest video drivers and MS updates for your system.

Additional Requirements and Recommendations

- DVD - ROM required for media installation. You do not need this if you have downloaded the installation from the **LMKR Support Portal** > [Downloads](#) page.
- DCOM/Firewalls configured to allow remote access. Only necessary if sharing projects. For DCOM configuration recommendations, refer to the **LMKR Support Portal** > **Knowledge Center** > [White Papers](#) page.
- Microsoft .NET Framework 4.5.1 runtime is required.

Software Prerequisites

This release has several prerequisites that are required to run the software, as well as prerequisites that are used to enhance the software. The prerequisites can be downloaded from the LMKR Support Portal.

Microsoft .NET Framework 3.5

This is specifically required if you are using smartSECTION on a Microsoft Windows® 10 operating system. The Microsoft .NET 3.5 can be downloaded from Microsoft's website and then installed. It is also available in the 3rd Party installers shipped with Discovery 2019.1.

MATLAB Runtime R2018a (9.4)

GVERSE Field Planner requires MATLAB Runtime R2018a (9.4).

The MATLAB Runtime R2018a (9.4) software can be downloaded from MATLAB's website and then installed. It is also available in the Downloads section of the LMKR Support Portal.

Microsoft .NET Framework 4.5.1

Discovery 2019.1 must have Microsoft's .NET 4.5.1 installed. The Microsoft .NET 4.5.1 can be downloaded from Microsoft's website, and then installed. It is also available in the 3rd Party installer shipped with Discovery 2019.1.

ESRI ArcGIS Runtime Engine

New functionality within GeoAtlas related to geo-referenced images and CAD files requires the ESRI ArcGIS 10 Engine with ESRI ArcGIS 10.2.x or 10.3.x or 10.4.x or 10.5.x. ESRI ArcGIS license must be configured by running **ArcGIS Administrator** with administrative rights, and selecting the **ArcGIS Engine Runtime (Single Use)** option in the wizard. If the ArcGIS Engine is not installed, a message box will appear but the setup will continue.

Microsoft DirectX 11 End-User Runtimes

Discovery 3D, Pro3D, smartSECTION, GVERSE Geophysics and GVERSE Geomodeling require Microsoft's DirectX 11 June 2010 End-User Runtimes to work properly. The Discovery 3D application works only on the Windows 7 (64-bit) or higher operating system. Discovery 3D is not installed unless the computer has Windows 7 (64-bit) or higher. Further Discovery 3D requires a DirectX 11 compatible display card. DirectX 11 June 2010 End-User Runtimes can be installed by downloading the Discovery Third Party Installer.

Platform Update for Windows 7

GVERSE Geomodeling and GVERSE Geophysics specifically require Windows platform update package KB2670838 installed on the machine, in case the operating system is Windows 7.

Microsoft Internet Explorer 10 or 11

Microsoft Internet Explorer 10 or 11 must be installed in order to launch GVERSE NOW.

Optional Software Requirements

The following table lists the software requirements for using different tools available in GeoGraphix.

Tools	Software Requirements
Spreadsheet import utility in WellBase, SeisBase, and LeaseMap	Excel 2007, 2010, 2013 or 2016 (32 or 64 bit) In case the macros are not working in Excel, ensure the gxdb.xla file is present in the relevant Microsoft Office Library installation folder.
Selected Help files	Adobe Reader
For Discovery on OpenWorks, GridXchange, and SeisXchange	OpenWorks for Windows 5000.10.6.03 – Basic or Full (recommended) Install available on Landmark’s LSM. (See Notes on the next page), and SeisWorks 5000.10 (for seismic workflows)
ESRI geo-referenced images and ESRI CAD file import in GeoAtlas	ESRI ArcGIS Runtime Engine 10.2.x or 10.3.x or 10.4.x or 10.5.x (included in the 3rd Party Installer).
For LOGarc™ Version 4.1.0.3 access in smartSECTION	To use the LOGarc™ feature, the LOGarc™ Version 4.1.0.3 software must be downloaded from IHS LogTech Canada, LTD and a valid account must be in place. You must have administrator rights to the computer on which you will load the software.

Note for Discovery on OpenWorks: The OpenWorks Full installation requires Hummingbird Exceed. The Oracle client installation in use with the OpenWorks Full installation requires that the “Administrator” option be selected. The “Administrator” option type includes the SQL Plus and the Oracle Database Utilities components, which are needed to run Discovery on OpenWorks, as part of the total OpenWorks package.

Note: Hummingbird Exceed is not required for the OpenWorks Basic installation. If the OpenWorks Basic installation is used, the Oracle client installation can use the “Administrator” option, which will include all of the needed components. Or, the Oracle client installation for the OpenWorks Basic installation can use the “Custom” installation type. However, the following components must be installed with the “Custom” installation type:

- Oracle Database Utilities 12.1.0.2
- SQL *Plus 12.1.0.2
- Oracle JDBC/THIN Interfaces 12.1.0.2
- Oracle Net 12.1.0.2

You may experience the following error related to Oracle installation:

The SQLLoader.exe error may generate when working with Filters in GeoGraphix due to a missing Oracle DLL file. This is a known issue of Oracle 12.1.0.2 where oranfsodm12.dll is not shipped with the installer.

Workaround: After Oracle installation, create a copy of the oraodm12.dll file, rename it as oranfsodm12.dll, and then place the renamed file in the BIN folder of both 32-bit and 64-bit Oracle installations.

GeoGraphix Project Server:

System Requirements

We recommend using the latest Microsoft service packs and security patches. The following table lists the operating systems which are supported.

Supported Operating System	RAM	CPU
Windows® Server 2008 R2 Standard x64 Windows® Server 2008 R2 Enterprise x64 Windows® Server 2012 R2 Standard x64	32 GB Minimum 64+ GB Recommended SSD Drives Recommended	Intel Xeon Processor or Equivalent Quad 2.4GHz 64-bit or better

Additional Requirements and Recommendations

- DVD-ROM is required for media installation.
- DCOM/Firewall must be configured to allow remote access. For DCOM configuration recommendations, refer to the LMKR Support Portal > Knowledge Center > [White Papers](#) page.

Server performance is subject to a large number of variables. It is impossible to give specific recommendations here, but these are some guiding principles to use. In general, multi-user performance of a GeoGraphix project server is best when the server is dedicated to GeoGraphix and not shared with other applications, especially database applications or intensive file-system applications. In addition, consideration should be made for the number of GeoGraphix users and the size and number of concurrently accessed projects. At some point, having multiple project servers becomes a better solution than having all users on one server. Generally, somewhere between 10 and 20 users is when a second server might be suggested.

Networking

Networking performance depends on the number of users trying to access a server simultaneously, as well as the bandwidth requirements for those users. Recommendations for server bandwidth typically specify server connectivity at a higher bandwidth than an individual user. For instance, users running at 100 Mbit should be accessing a server running on a 1-Gbit backbone. If users are at 1 Gbit, consider running multiple 1-Gbit connections or a single higher-bandwidth connection on the server.

Database Cache

A large database cache is an important factor to consider when dealing with multiple users accessing large databases. The database engine is capable of addressing a practically unlimited amount of cache memory. The best way to size the memory is to estimate the memory requirements for other running applications and allow the database cache to dynamically allocate any remaining free memory. The engine will only allocate what it needs when using dynamic allocation up to the maximum specified.

It is highly recommended that you let the database engine use as much cache memory as it requires on the host server. Increasing database cache memory is the quickest and most effective way to improve database- related performance on large network projects.

On a workstation, it might be appropriate to reserve 1 to 2 GB for the OS and file system cache and 2 to 4 GB for other running applications. On a dedicated project server, not much memory needs to be reserved for other applications. The ideal maximum varies by the project size, the number of users, and other load considerations. But as a general rule, the higher you can set the maximum, the better.

Storage

A great deal of GeoGraphix's access patterns on a server deal with file I/O. Database access, raster images, and seismic data are examples of files that benefit substantially from a fast disk sub-system. Server environments also place a high importance on data integrity and reliability. At a minimum, consider using a RAID 5 (stripe-set with parity) array. As the size of disks increase, you may also want to consider a hot swap drive and/or RAID 6 (striped with dual parity). Using a controller card with its own cache can also help improve performance.

Network Attached Storage (NAS), Storage Area Networks (SAN), and Other Non-Windows Storage Solutions

There are two typical methods used for accessing external storage devices from a project server: iSCSI and CIFS.

- iSCSI allocates a block of storage on the external device and makes it appear to be a physical disk on the project server. This has the advantage of a 100% compliant file system. However, since the external device sees the allocation as one big file, it can make backing up and restoring of individual files using the external device's capabilities more difficult. Standard backup and restore procedures from the server will still work.
- Using CIFS for external storage devices depends greatly on the vendor's implementation of the CIFS protocol used by the Windows platform. In general, a 100% compliant implementation of CIFS for a performant system is required. In particular, vendor's implementation of the "File Change/Notify" functionality has been problematic. Devices based on Windows Storage Server should be 100% compatible since it shares its components with Windows. Implementations based on UNIX/Linux are where problems occur due to the fact that the kernel level support is not present. Due to these uncertainties with CIFS implementations LMCR does not technically support CIFS.

Compatibility with OpenWorks Software

The Discovery™ on OpenWorks® (DOW) software directly links a GeoGraphix application to the data in an OpenWorks® project, and provides a shared project environment for interpretation applications. Landmark Software has delivered the OpenWorks and DOW software for Release 5000 and will continue to provide updates and enhancements to these products. When planning your uptake of Release 5000 and verifying your workflow, you should consider version compatibility between the OpenWorks software and the Discovery on OpenWorks software.

In the compatibility table below, the table indicates the level of compatibility of previous releases and of upcoming scheduled and planned releases. This table will be updated as new releases are planned. The objective is to provide closely coupled compatible versions of the software to allow you to more easily take up current releases.

LMKR performs full release testing for those combinations indicated as Release, R, in the table, but may not exercise full release testing on other version combinations. For these iterative releases, LMKR performs compatibility testing between the OpenWorks and DOW software (indicated as Compatibility, C, in the table). See the table below for the level of testing for each version combination. Although LMKR does not anticipate any integration issue, in these cases it is recommended that customers also verify compatibility in their own environment.

LMKR supports the versions listed as Release in the table. However, while LMKR has completed compatibility testing, LMKR/GeoGraphix Support may not be able to fully support the versions listed as Compatibility in the table. When customers request support for a Compatibility environment, LMKR/GeoGraphix Support works on a best effort basis to troubleshoot any issues, and if an issue needs additional attention, LMKR/GeoGraphix Support reports such issues to LMKR Research & Development. The LMKR/GeoGraphix Support Team cannot guarantee any resolution service levels associated with issues from a compatibility environment.

Combinations which have not been tested, either in the full release or in a compatibility environment, are indicated by U (untested). P indicates the indicated versions are probably incompatible, as the OpenWorks version has a newer development kit (devkit) than that of the indicated DOW version. Blank cells in the table indicate that OpenWorks and GeoGraphix are incompatible and will not operate together.

For the most current version of this information and an overview of suggested compatibility test paths, please refer to the LMKR Technical Support Solution Document KBA-65218-F9D7D5.

Compatibility Matrix

Discovery on OpenWorks

OpenWorks Version	OW License 5000	DOW License 5000.02									
	GeoGraphix Version	2019.1	2017.3	2017.2	2017.1	2016.1	2015.1	2015.0	2014.0	2013.0	2012.0.0
	OW 5000.10.6.03	R	R	R	R	C	U	U			
	OW 5000.10.3.02	C	C	R	R	C	U	U			
	OW 5000.10.1.05					R	R	R			
	OW 5000.8.3.01					R		C	R		
	OW 5000.8.1.1									R	
	OW 5000.8.0.0										R
	OW 5000.0.3.5										C

Legend

R = Release level full testing

C = Compatibility level basic testing

U = Untested

P = Probably incompatible since OW and GeoGraphix are running different OW devkits.

A blank cell indicates that OW and GeoGraphix are incompatible

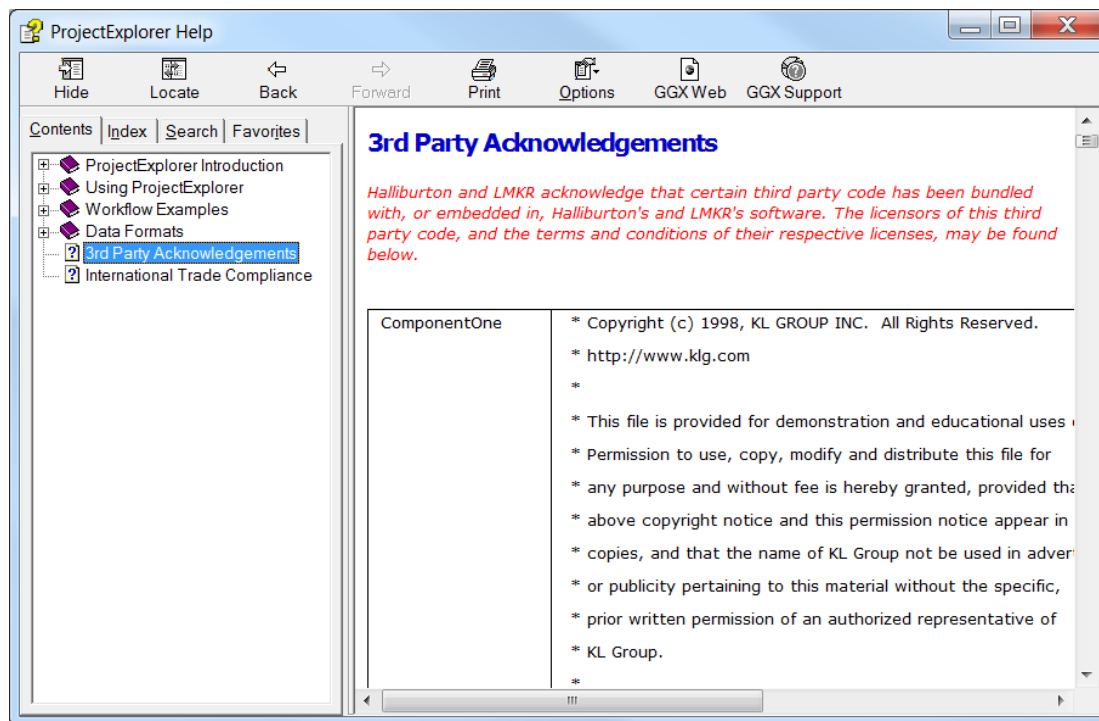
Third Party Applications

LMKR uses various third-party applications in the development of its software.

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 GeoGraphix Help files:

1. Open your help files.
2. In the list of topics on the left, locate the **3rd Party Acknowledgements** topic and click to open the topic.

A list of third party applications and their details display.



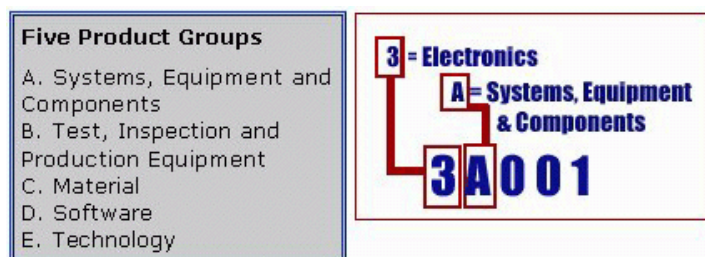
International Trademark Compliance

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 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

CCATS (Commodity Classification Automated Tracking System) - the tracking number assigned by the U.S. Bureau of Industry and Security (BIS) to products formally reviewed and classified by the government. The CCATS provides information concerning export/re-export authorizations, available exceptions, and conditions.

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 [EAR Website](http://www.bis.doc.gov).

The ECCN number, License Type, and the CCATS Numbers for this product are included in the table below. Also included is the date the table was last updated.

Product/Component/R5000	ECCN Number	License	CCATS Number	Last Updated On
GeoGraphix	--	-	-	-
LMKR License Manager	5D002C.1	ENC	G055172	6/19/2007

Contacting LMKR Support

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

Helpful Links

Name	Website Address
LMKR home page	http://www.lmkr.com
LMKR Support Portal	http://support.lmkr.com

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