INSTALLATION GUIDE

Predict3D

Multi-attribute inversion solution

2015.1

Powered by

LUMINA

GVERSE™ ara

GEOSCIENCE & ENGINEERING SOLUTIONS

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Introduction

LMKR is pleased to announce the release of the GVERSE™ Predict3D™ 2015.1 software. The Predict3D[1] software is a multi-attribute inversion solution based on spectral decomposition and state-of-the-art optimization techniques developed over the years by Dr. John Castagna of LUMINA. The Predict3D software predicts high-resolution reservoir properties using multi-attribute analysis by combining seismic and well data. This software predicts rock properties in between, and away from existing well control, by using well information as a guide to compute the best combination of seismic attributes. It also uses the Minimum Support Optimization algorithm to select the minimum number of attributes that offer the best prediction of the desired reservoir property. The predictions are applied on a trace by trace basis along the entire seismic survey resulting in a 3D volume of reservoir properties. The Predict3D software is part of the GVERSE application suite by LMKR (http://www.lmkr.com/gverse).

LMKR GVERSE consists of geoscience and engineering solutions focused on workflow optimization and enhancing the productivity of the 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.

This document guides you through the installation and license configuration processes of the Predict3D software. It also lists the system requirements necessary to install and run the software.

Evaluation Version

The Predict3D application is available to users as an evaluation version or as the full version. The evaluation version imposes the following restrictions:

- The evaluation version has a short expiration window (typically 30 days, although this may vary from customer to customer). The application cannot be used after the expiration date.
- Evaluation version users are limited to using seismic files with no more than 2500 traces. There is no such limit on the full version of Predict3D.

The evaluation version has a separate license. The license feature is called LMKR_GVERSE_PREDICT3D_EVAL and must be configured using the LMKR License Management Tool (LMT).

[1] Powered by LUMINA

System Requirements

The following sections list the system requirements for the Predict3D software.

Software

The software that must be installed on the system running the Predict3D software are as follows:

- Microsoft® .NET 4.5
- GeoGraphix Discovery 2015.1.x or 2016.1.x is required for integrated mode only
- MATLAB Compiler Runtime 8.2
- LMKR License Management Tool 2016.1 for Predict3D license
  The LMKR License Management Tool (LMT) must be installed to configure the Predict3D license.

Operating System

To run the Predict3D software, you need one of the following operating systems installed on your system:

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

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

Hardware

The hardware requirements to run the Predict3D software are as follows:

- Any Intel or AMD x64 processor supporting SSE2 instruction set
- Minimum 1024 MB RAM is required. 2048 MB is recommended

Licenses

The following licenses are required to run the Predict3D software:

- GVERSE Predict3D 2015.1 license

Note: Refer to the LMKR Customer Support Portal (http://support.lmkr.com/) for up-to-date information on the requirements.

Installation

This section guides you through the installation and uninstallation processes of the Predict3D software.

Installing GVERSE Predict3D

Prior to installation, please make sure that supported version of GeoGraphix is installed on the system.

Note: Please also note that in order for the GVERSE software to appear in the GeoGraphix menu or toolbar, it must be installed after the GeoGraphix installation.

To install the Predict3D software:

1. Download the Predict3D and the MATLAB Compiler Runtime 8.2 setups from the **LMKR Support Portal - Downloads** page (http://support.lmkr.com/).

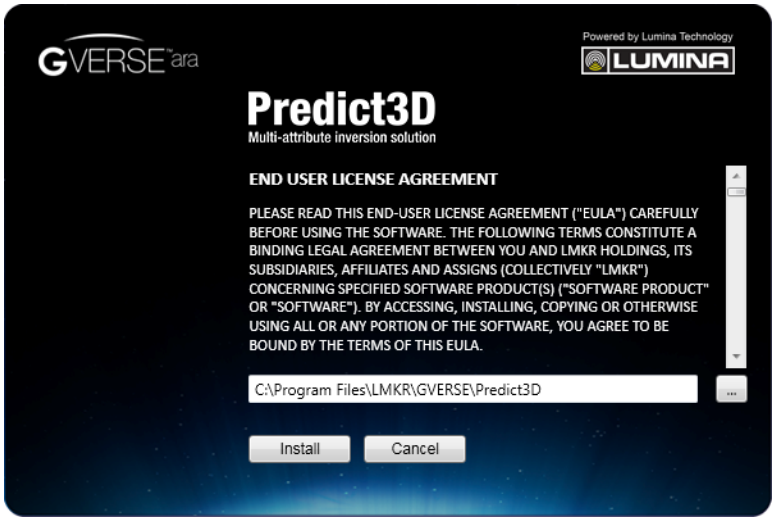
   Note: After downloading both the setups, ensure that they are in the same directory. If the setups are not in the same directory, you will get an error message during the Predict3D installation, and the installer will exit without installing anything.

2. Navigate to the location where you downloaded the Predict3D installation setup.
3. Double-click the Predict3D software setup executable file (EXE).

   The Installation Wizard dialog displays.

4. Click **Next**.

The End User License Agreement dialog displays.

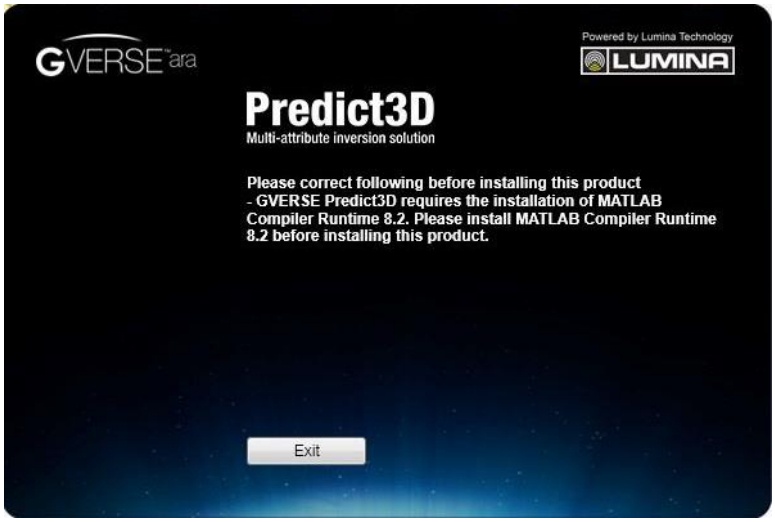


5. If you agree to the license agreement, click **Install**.

   Note: If the **User Account Control** message appears, please verify that the **Program Name** is **LMKR Predict3D Installation Package** and the **Publisher** name is **LMK Resources Inc.,** and then click **Yes**.

Predict3D requires MATLAB Compiler Runtime 8.2 to run.

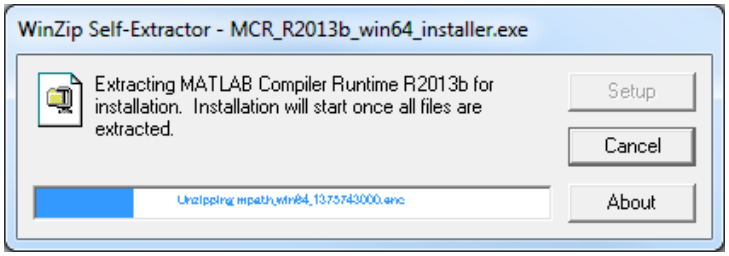
- If MATLAB is already installed, then click here.
- If MATLAB is not already installed, and if both setups (Predict3D and MATLAB Compiler Runtime 8.2) are not in the same directory, you will get the following error message:



- If MATLAB is not already installed and both the setups are in the same directory, then MATLAB will automatically be installed at this stage. Follow steps **6** through **13** for the MATLAB installation process.

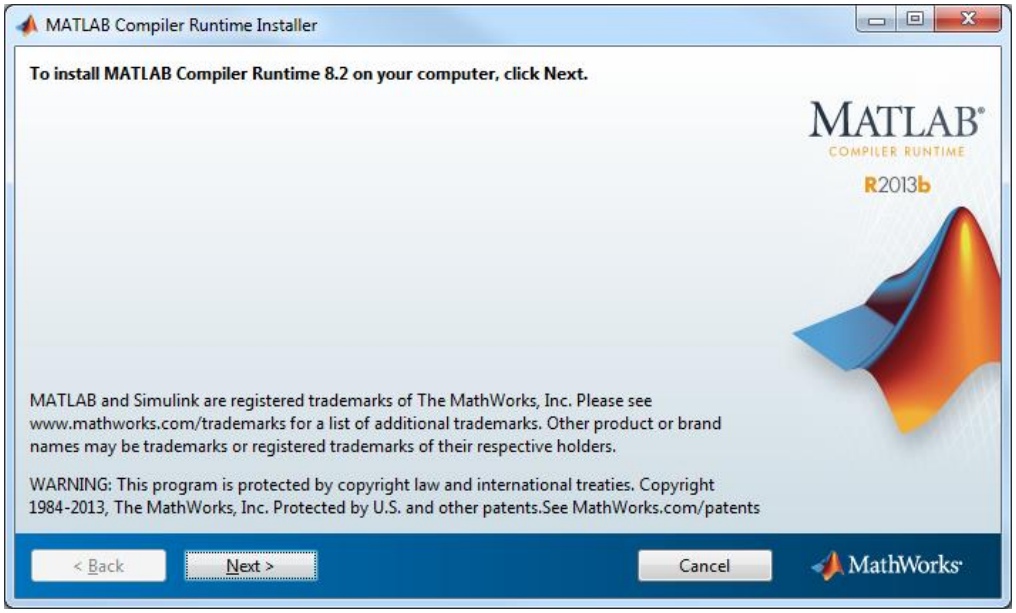
6. (Optional) If a **User Account Control** message appears, verify that the **Program Name** is **MCR_R2013b_win64_installer.exe**, and then click **Yes**.

7. The WinZip Self-Extractor dialog displays.



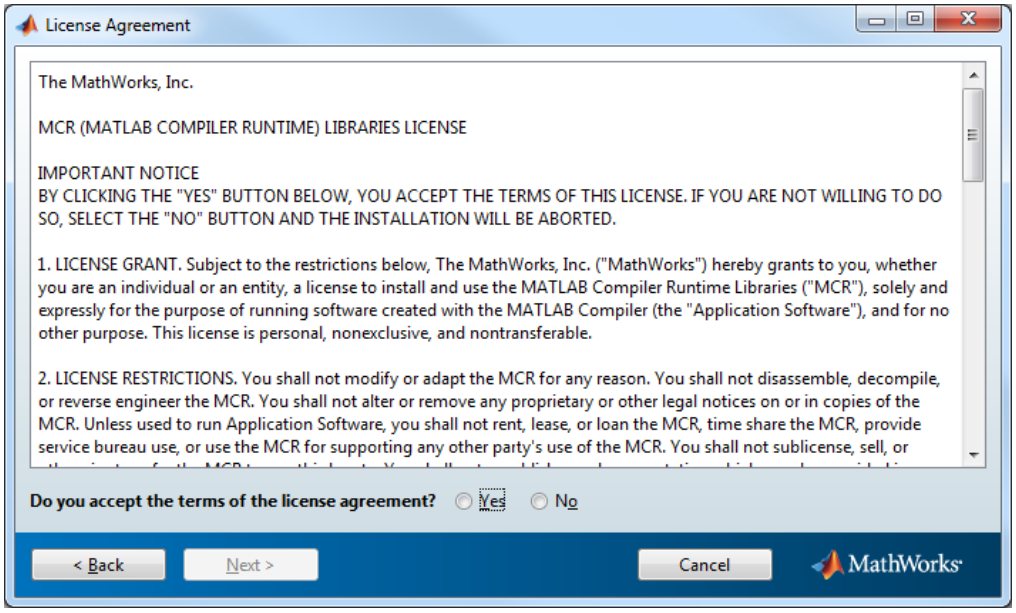
Note: Once launched, do not interrupt the MATLAB Compiler Runtime 8.2 installation to avoid errors in the installation process.

After the MATLAB Compiler Runtime installer has been extracted, the MATLAB Compiler Runtime Installer dialog displays.

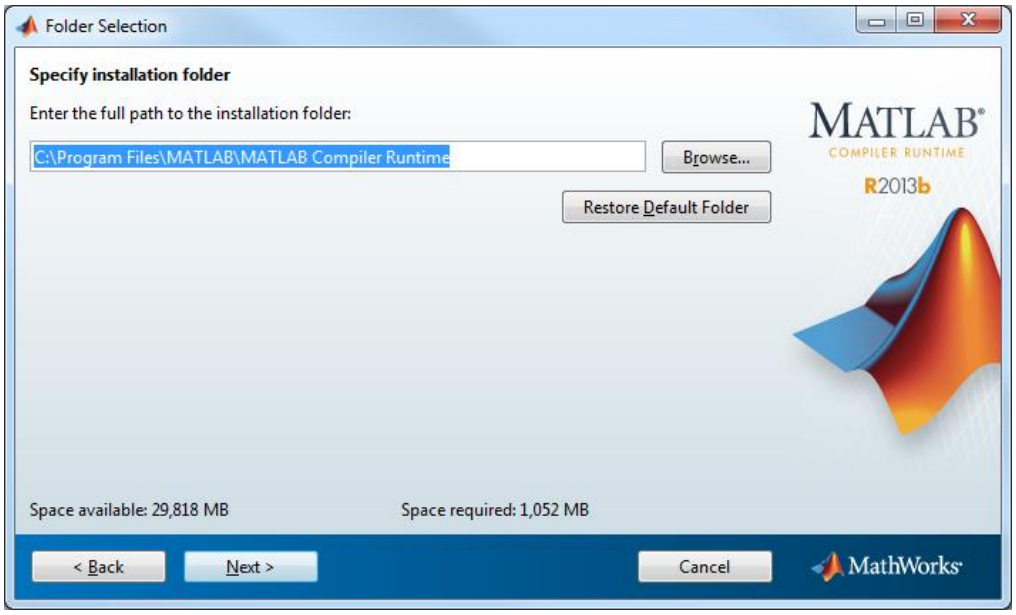


8. Click **Next** to proceed with the installation.

9. The License Agreement screen appears.

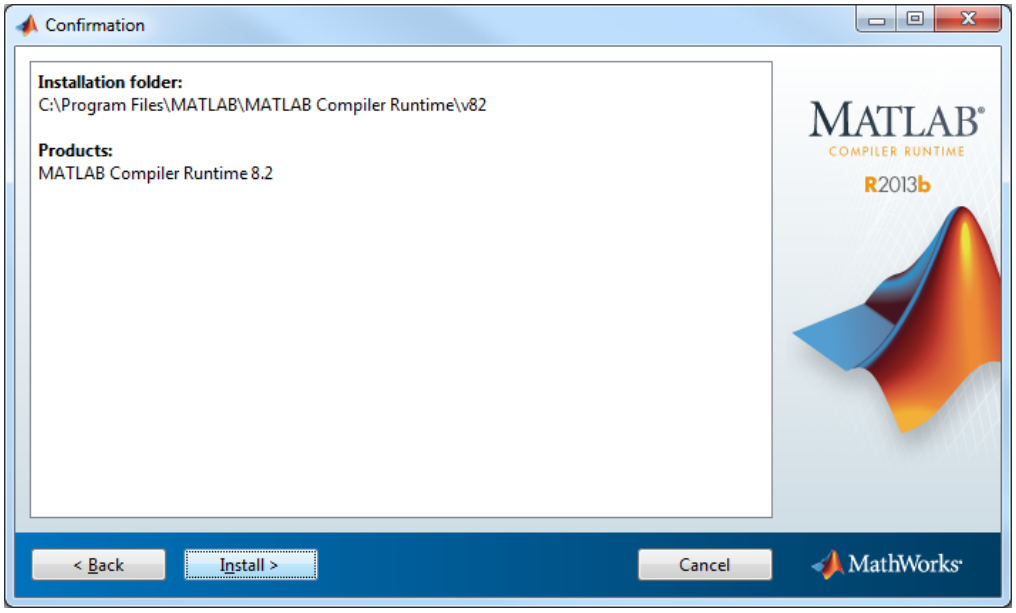


10. Review the license agreement.
11. Select **Yes** to enable the **Next** button, and then click **Next**.
    The Folder Selection dialog displays.

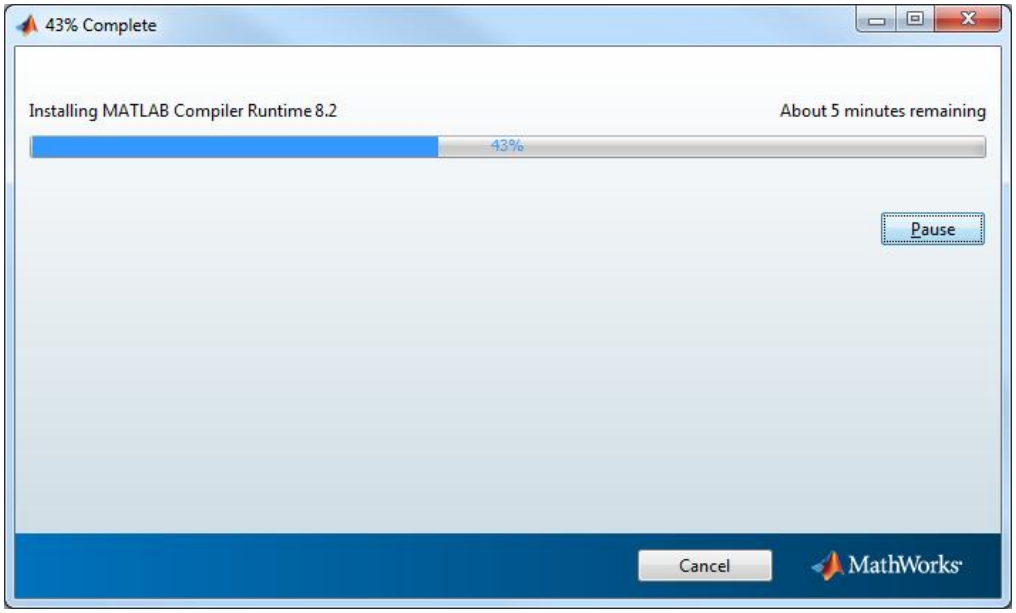


12. Specify the location to install the MATLAB Compiler Runtime 8.2.
    By default, it is installed at Drive:\Program Files\MATLAB\MATLAB Compiler Runtime\. You may select a new destination by clicking Browse and selecting a new installation folder.
13. Choose the location, and then click **Next.**

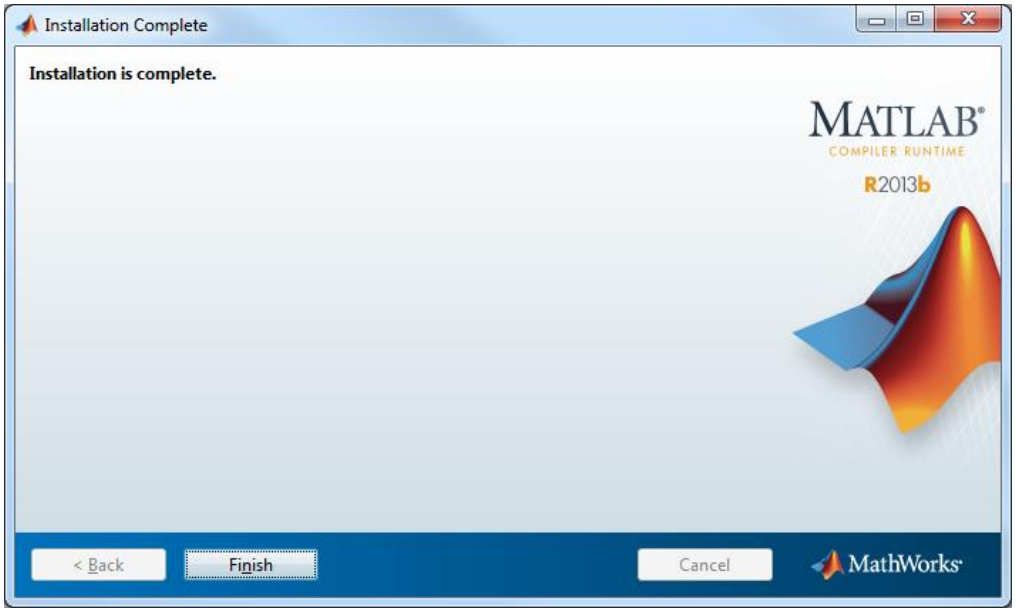
The Confirmation dialog displays**.**



14. Click **Install** to start the installation.
    The installation starts. A progress bar indicates the progress of the installation process.

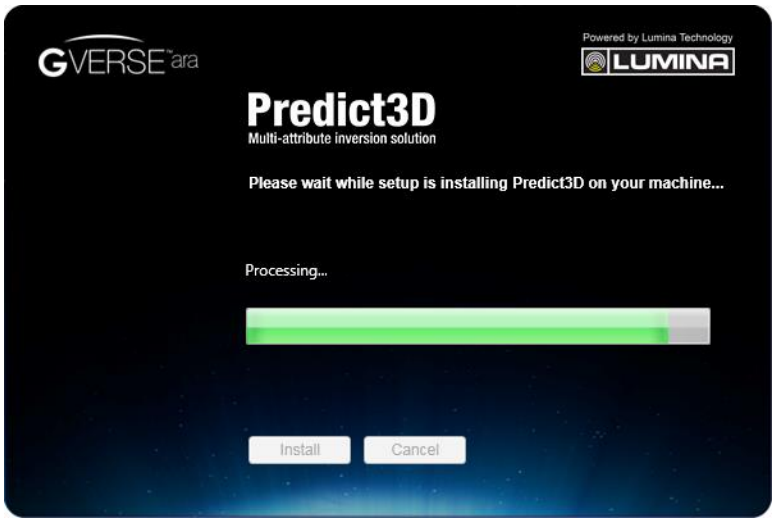


Once the installation is complete, the following dialog displays.



15. Click **Finish**.

You return to the Predict3D installer screen. The Predict3D installer will continue to install the remaining files and components. The Predict3D dialog displays the installation progress.



When the installation finishes, the Exit dialog displays.

16. Click **Exit** to complete the installation.

Uninstalling GVERSE Predict3D

To uninstall the Predict3D software:

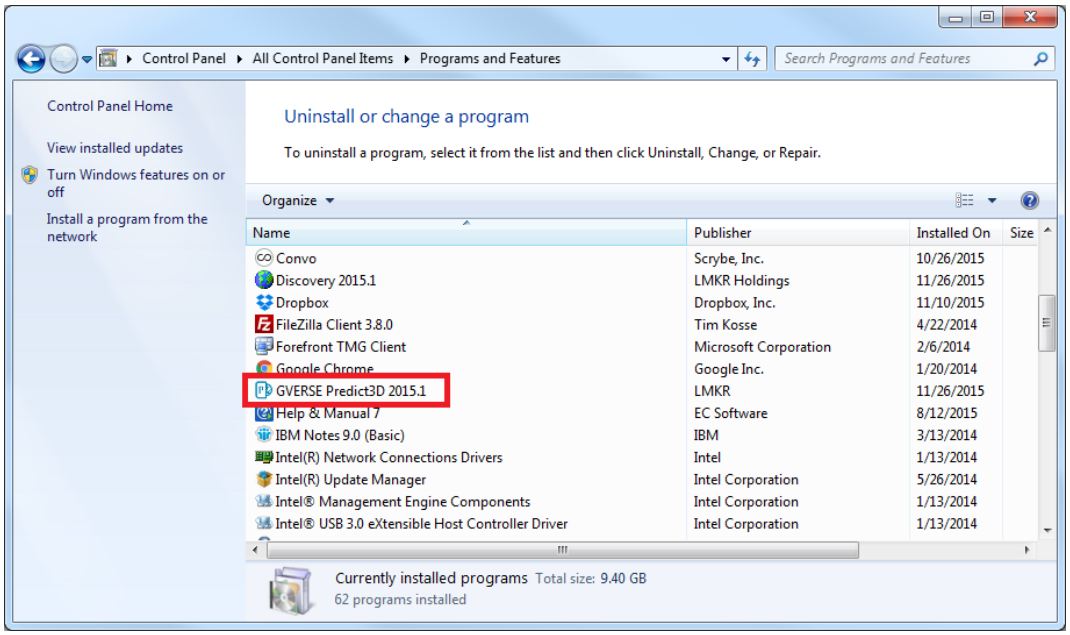
1. From the **Windows Start** menu, select **Control Panel**.

   The Control Panel window displays.

2. From **Programs**, select **Uninstall a Program**.

   The Programs and Features window displays.

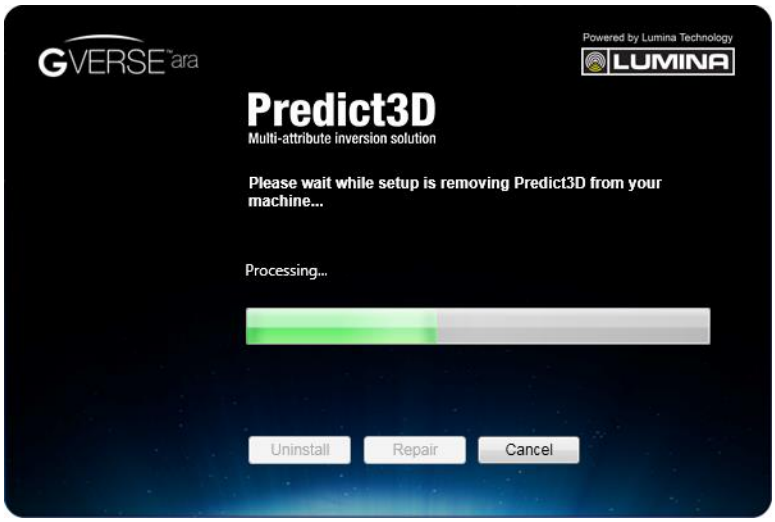
3. In the list of applications, double-click **GVERSE Predict3D 2015.1**.



The dialog to uninstall the Predict3D software displays.

4. Click **Uninstall**.

   The uninstall process initiates and the dialog displays the uninstallation progress.



   Once the Predict3D software is uninstalled from your system, the 'Uninstallation complete' message displays.

5. Click **Exit** to finish the uninstallation.

Licensing

To run the Predict3D software, you need a valid license. Please contact COS@lmkr.com to request a license. Once you receive the license, use LMT to configure it for a single system or to set up a network license on a server. This can be done either before or after the Predict3D software installation.

If a license file is not configured, then the software does not open and an error message displays. In this case, you must configure the license using LMT, and then re-launch the Predict3D software.

This section provides basic information on how to configure the Predict3D software license using LMT. For detailed information on how to install LMT and configure the Predict3D software license, please refer to the LMT installation document.

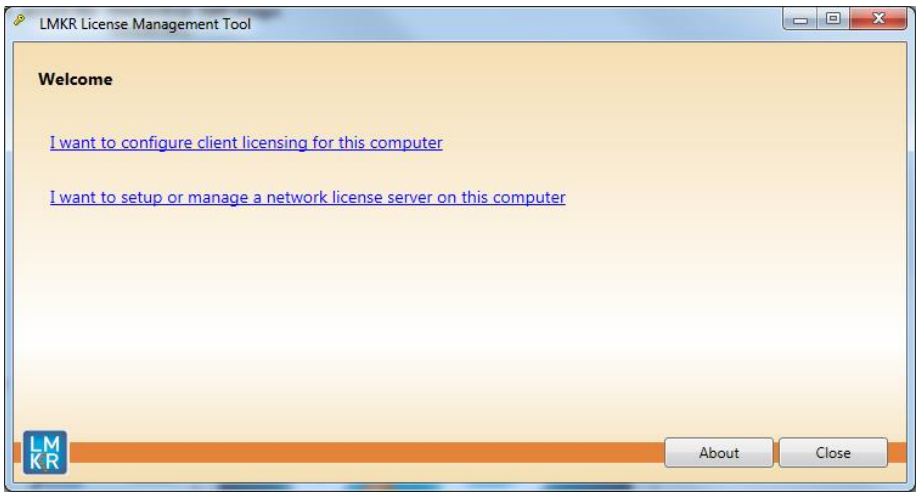
Configuring the License

A license is required to run the Predict3D application. Without a valid license users will not be able to launch the application. The license feature is called LMKR_GVERSE_PREDICT3D and the evaluation version license is called LMKR_GVERSE_PREDICT3D_EVAL, and must be configured using the LMKR License Management Tool. The LMKR_GVERSE_PREDICT3D and LMKR_GVERSE_PREDICT3D_EVAL license feature is machine specific and the same license will not work on multiple machines.

To configure the Predict3D software license:

1. Obtain your license file from COS@lmkr.com.
2. Download LMT from the **LMKR Support Portal - Downloads** page (http://support.lmkr.com/).
3. Install LMT. Once installed, launch LMT from **Start**>>**All Programs**>>**LMKR**>>**Licensing**>> **License Management Tool**.

   The LMKR License Management Tool Welcome dialog displays.



4. In this dialog, you can either:

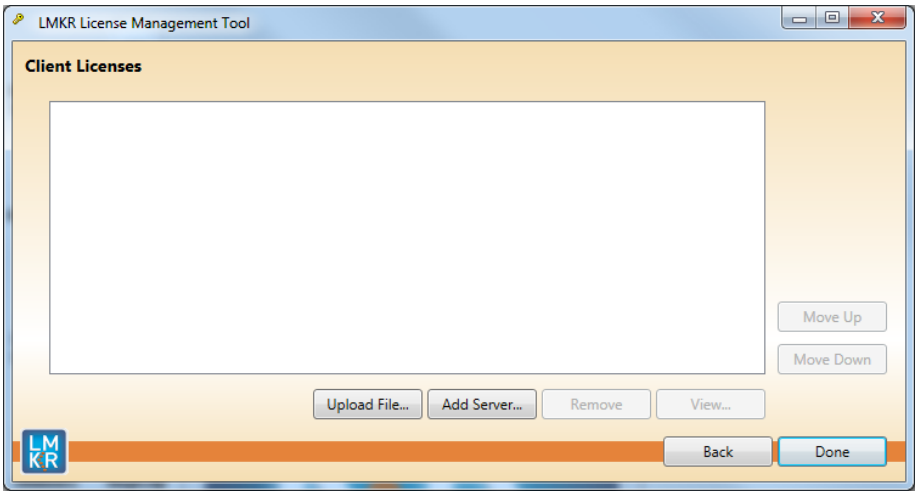
   - Click **I want to configure client licensing for this computer** to configure a client side license on the current system.

   Or

   - Click **I want to setup or manage a network license server on this computer** to setup a license server.

Configure a Client Side License

After clicking **I want to configure client licensing for this computer**, the Client Licenses dialog displays.



5. In this dialog, you can either:

   - Click **Upload file** to select a standalone client license file.

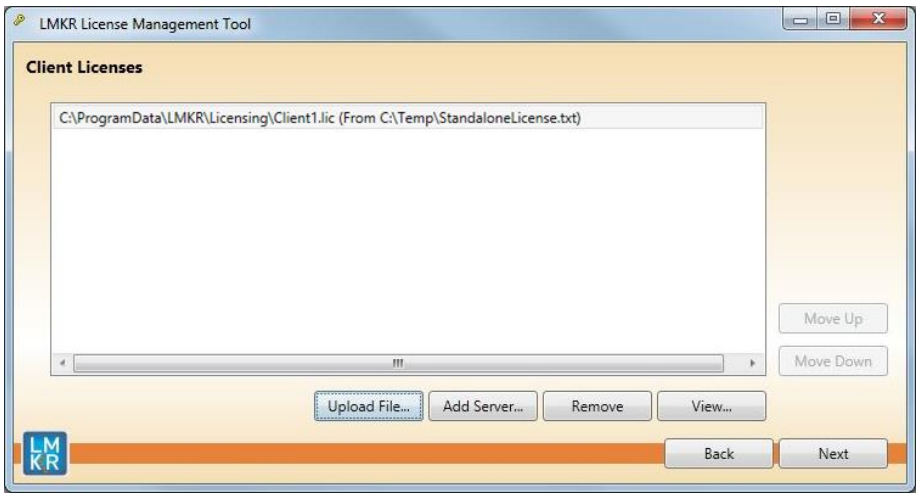
   Or

   - Click **Add Server** to connect to an existing license server.

Select a Standalone Client License File

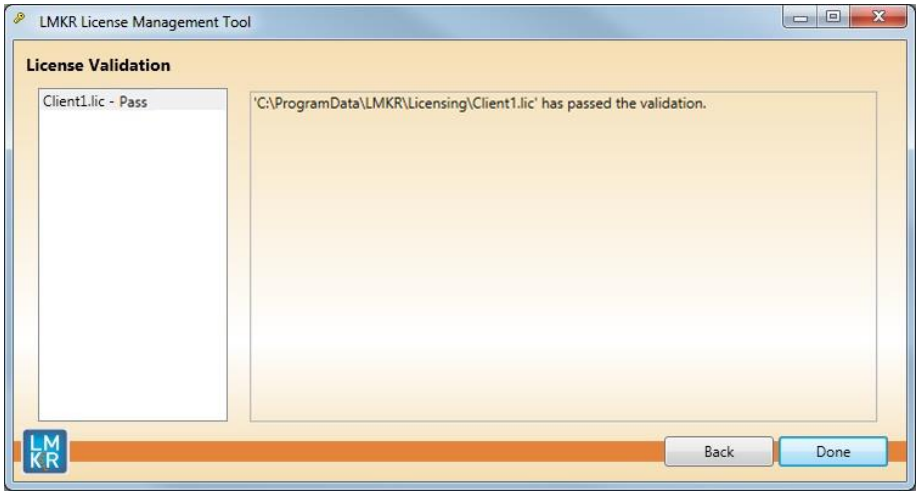
6. Click **Upload File,** browse to select the license you received from LMKR, and then click **Open**.

   The selected license displays.



7. Click **Next**.

   On successful license configuration, the 'Pass' message displays as shown in the image below.

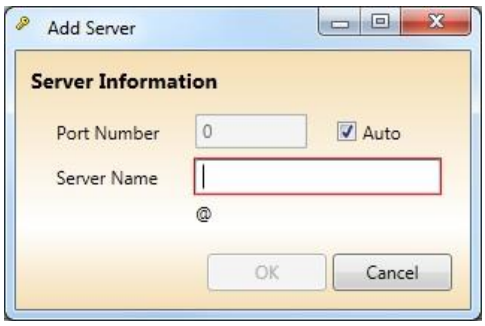


   Note: If an error occurs, please contact support@lmkr.com for assistance.

8. Click **Done** when finished.

6. Click **Add Server**.

   The Add Server dialog displays.



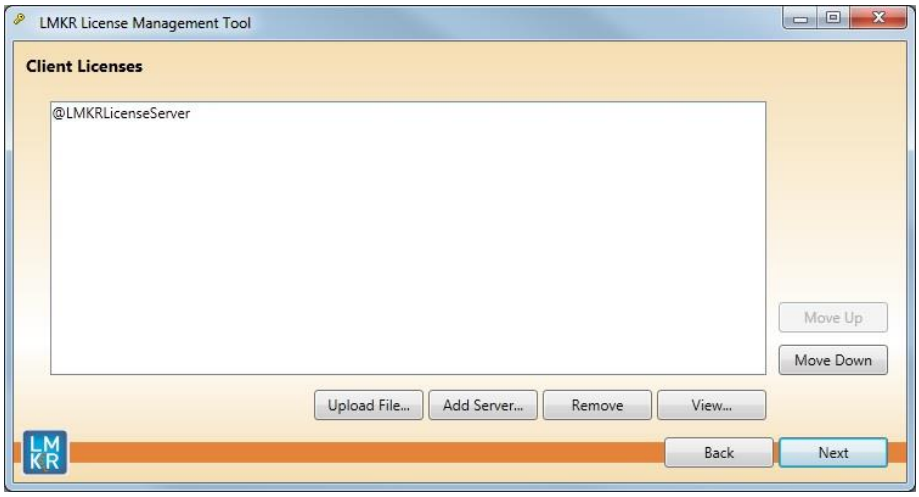
7. In this dialog, specify the following:

   - **Port Number:** If a specific port is required, clear the **Auto** check box, and then enter the port number that matches the port number being used by the LMKR license server (contact your network administrator for more information).
   - **Server Name:** Enter the name or the IP address of the license server.

   Note: By default, the Auto option is selected where the port is automatically detected. This option is used only when the license server uses a port from within the block of ports specific for Flexera FLEXnet Licensing ranging from 27000 to 27009.

8. Click **OK**.

   The selected LMKR license server displays in this dialog.

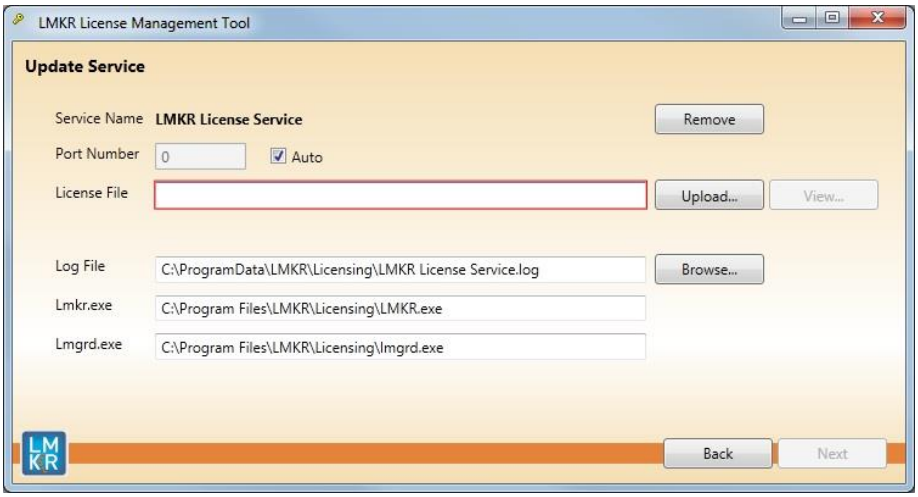


9. Click **Next**.
10. Click **Done** when finished.

Setup a License Server

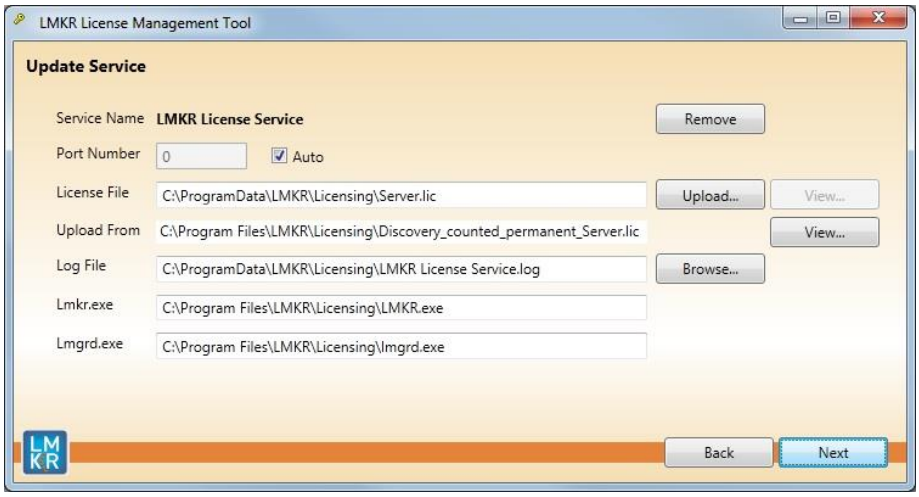
This is only performed on the system running the LMKR license server.

After clicking **I want to setup or manage a network license server on this computer**, the Update Service dialog displays.



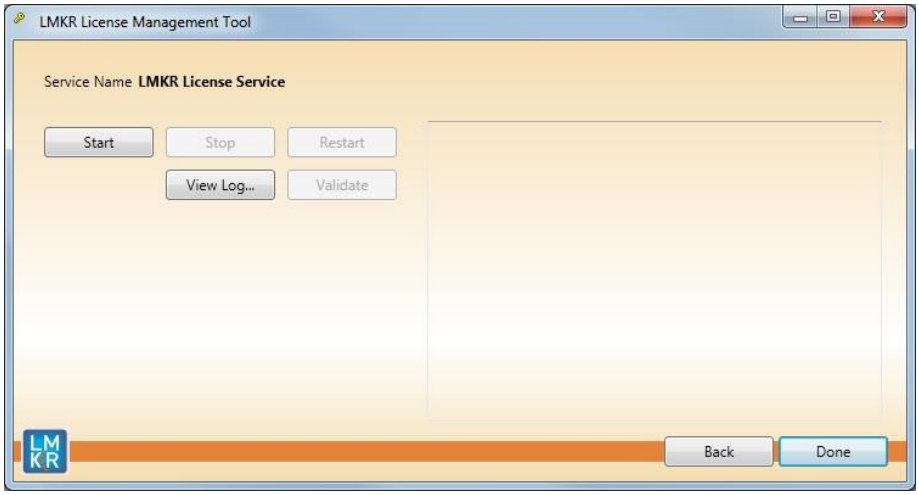
5. In this dialog, specify the following:

   - **Port Number:** If a specific port is required by your network administrator, clear the **Auto** check box, and then enter the port number.
   - **License File:** Click **Upload** to upload a new license file. The license file that is uploaded is renamed as Server.lic. This file is saved in the C:\ProgramData\LMKR\Licensing folder.
   - **Log File:** Click **Browse** to select a location to save the log file.



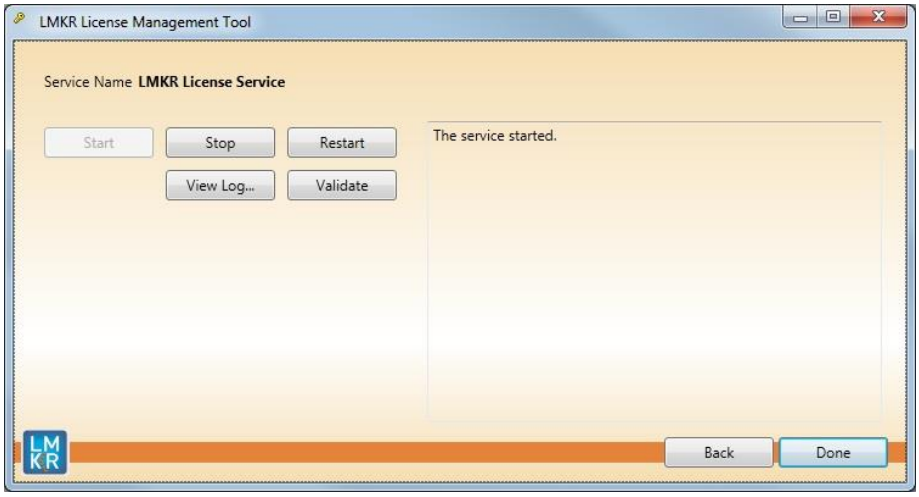
6. Click **Next**.

The LMKR License Server is then installed as a Windows Service.



7. Click **Start** to initiate the **LMKR License Service**.

   The 'The service started' message displays on the dialog.



   Note: If an error appears, contact support@lmkr.com for assistance.

8. Click **Done** when finished.

Third Party Applications

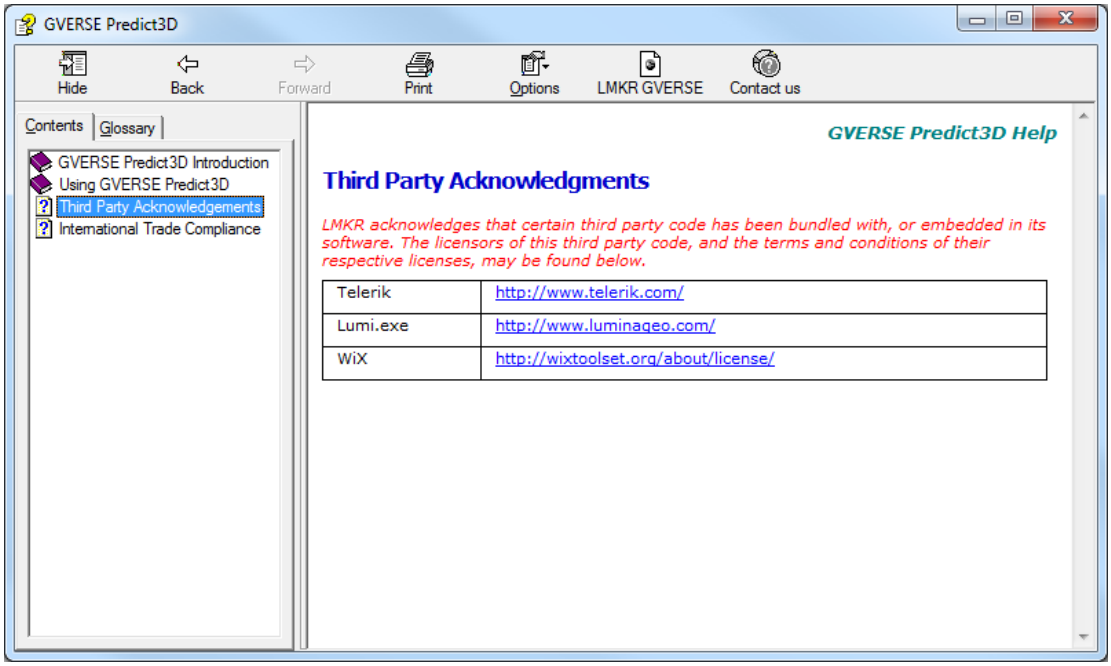
LMKR acknowledges that certain third party code has been bundled with, or embedded in, its software. The licensors of this third party code, and the terms and conditions of their respective licenses, may be found in the Predict3D software Help file.

To access the third party license agreements:

1. From the Predict3D **Help** menu, select **View Help**.

   The Help window displays.

2. In the **Contents** pane, locate the **Third Party Acknowledgements** help topic as shown in the image below.



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 available) 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.

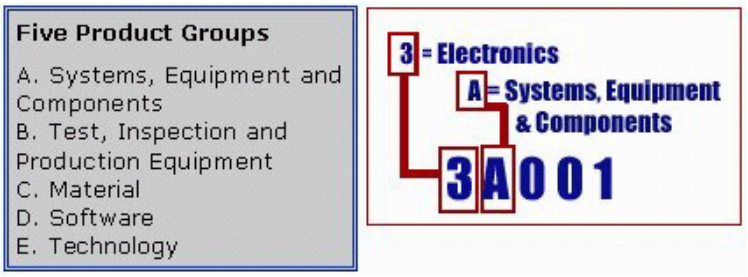
Under the U.S. Export Administration Regulations (EAR), the U.S. Government assigns your organization or client, as exporter/importer of record, responsibility for determining the correct authorization for the item at the time of export/import. Restrictions may apply to shipments based on the products, 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 EAR Website.

The following illustration is a sample:



The ECCN number (if available) 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 Predict3D	EAR99	EAR	11/23/2015

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**
Monday – Friday 8am-6pm CST Toll Free (US/Canada) : +1 855 GGX LMKR (449 5657) Colombia : +57 1381 4908 United States : +1 303 295 0020 Canada : +1 587 233 4004 *Excluding bank holidays	UK Monday - Friday 8am - 5pm +44 20 3608 8042 *Excluding bank holidays UAE Sunday - Thursday (Dubai GMT+4) 8am - 5pm +971 4 3727 999 Egypt Sunday - Thursday +0800-000-0635 *Excluding bank holidays
Asia Pacific & Australian Continent	**Southwest Asian countries**
Malaysia Monday - Friday (Kuala Lumpur GMT+8) 9am - 6pm +60 32 300 8777 *Excluding bank holidays	Pakistan Monday - Friday (Islamabad GMT+5) 9am - 6pm +92 51 209 7400 *Excluding bank holidays

Helpful Links

Name	Website Address
LMKR Homepage	http://www.lmkr.com
LMKR GVERSE	http://www.lmkr.com/gverse/
LMKR Support Portal	http://support.lmkr.com
Lumina Geophysical Homepage	http://www.luminageo.com