LIRA-SAPR 2020

Modern software package for analysis and design of building and mechanical engineering structures of different purposes

Installation Guide

LiraLand Group, 2020

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Contents

The LIRA-SAPR 2020 package contents

The LIRA-SAPR package you have purchased contains the following components:

☑ A DVD with the software for Windows. Comments on installation of the software are presented in the corresponding sections of this guide.

☑ A hardware protection key (dongle). For installation, please refer to the corresponding section of this guide.

> ⚠ **Important.** The LIRA-SAPR Hardware Protection Key is an integral part of the program. Lost Protection Keys are not replaceable.

☑ Documentation set:

The software license agreement.

Tutorial (electronic document).

> **Note.** The package contents may differ.

The LIRA-SAPR hardware protection key

General data

LIRA-SAPR 2020 comes either with local or network hardware protection key for USB port.

Description of configuration set for the software you purchased is stored in the hardware key (dongle). The LIRA-SAPR hardware protection key is an integral part of the program.

It is mandatory that your hardware key be properly installed at all times when LIRA-SAPR is running. The light indicator on the key should come on and not flicker. If the key is missing or improperly installed, you will not be able to continue your work or even launch LIRA-SAPR.

If you believe that your protection key is faulty or damaged, please contact your local LIRA-SAPR reseller or LIRA SAPR company for a replacement.

For information about installing the LIRA-SAPR hardware protection key, please read instructions in the corresponding sections of this guide.

Types of hardware keys

LIRA-SAPR 2020 comes with the following types of hardware protection keys: Guardant Code (local key) or Guardant Sign Net (net key) for USB port.

Figure 1. Guardant hardware key (dongle)

> **Note.** The network protection key is very similar to the local hardware protection key. However, its different working method means that the two keys cannot be interchanged.

Remote modification of software configuration set

Remote programming of the hardware key enables you to modify configuration set of LIRA-SAPR software quickly and easily. In this case you will still be able to work with the program. To get the remote update of the key memory, use the **KeyUserInfo** utility located in the base LIRA-SAPR directory. Comments on work with **KeyUserInfo** utility are presented in the corresponding sections of this guide.

System Requirements

Software

Microsoft Windows 7/8/10.

Microsoft .NET Framework 4.5.2 (is installed together with LIRA-SAPR 2020).

Internet Explorer 9/10/11.

Hardware

Processor

An Intel Pentium 2 GHz or another compatible CPU.

> **Note.** In order to achieve higher speed, LIRA-SAPR requires a higher compatibility level. Intel Core i7 4 GHz (or compatible) is recommended.

Random Access Memory (RAM)

Min RAM recommended for the OS in use is required, 2 GB or more is recommended.

Hard disk space

About 2.2 Gb free hard disk space is required for a full installation of LIRA-SAPR 2020. For work with the program, free hard disk space is required according to model complexity but 2 Gb as a minimum.

Monitor

A 324-bit video display adapter and a 19″ or larger monitor are recommended a suitable monitor are required. For OpenGL library to work properly, video adapter should provide hardware acceleration for graphics. LIRA-SAPR 2020 supports standard OpenGL 1.1. For graphics that works based on Direct X technology, it is necessary to have video adapter with support of Direct X11.

> **Note.** The quality of the images and the speed at which the screen is refreshed depends on the type and quality of the display card.

DVD-ROM drive

Necessary for installation of LIRA-SAPR 2020 from DVD.

Ports

To work with LIRA-SAPR 2020, your computer should have at least one free USB port to connect the LIRA-SAPR hardware protection key. Type of hardware protection key is selected when you purchase LIRA-SAPR program.

Peripheral devices

A mouse or any Windows compatible pointing device is required.

Installing LIRA-SAPR 2020

Installation procedure

Insert the LIRA-SAPR DVD in the DVD-ROM drive. To start the installation, launch the ***SetupLiraSAPR2020.exe*** file from the root directory of LIRA-SAPR DVD.

The Installer Wizard will be opened in the language defined for the operating system (OS).

Important. Guardant hardware protection key should be attached to the corresponding port when the installation is complete.

Note. If the Autorun feature is disabled, you can also install LIRA-SAPR 2020 if you click *SetupLiraSAPR2020.exe* file from the directory *./Installations/LIRA_SAPR* that is located on the installation DVD LIRA-SAPR 2020.

When you start installation procedure, you will see dialog box (see Figure 2) where it is possible to select the language for installation procedure. You can choose **Russian, Ukrainian** or **English**.

To cancel installation procedure at any stage, click **Cancel**.
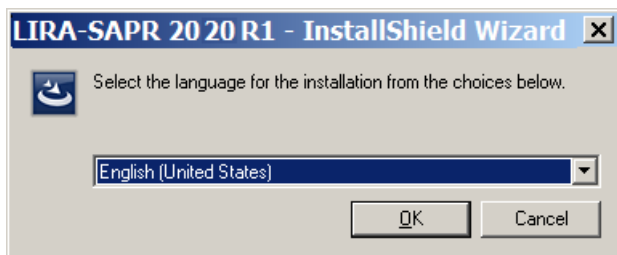

Figure 2. 'Select Setup Language' dialog box

When you choose the language and click **OK**, the **Installer Wizard** dialog box opens (see Figure 3).

⚠ **Important.** If LIRA-SAPR 2020 has already been installed on your computer and you run *Setup.exe* again, Installer Wizard suggests that you delete your copy of LIRA-SAPR 2020.

⚠ **Important.** If you obtain new release of LIRA-SAPR 2020 and you have previous release of the program already installed on the computer, then Installer Wizard suggests that you delete your version of LIRA-SAPR 2020. When previous release is deleted, installation of the new release is done automatically.

When preparing for the installation of LIRA-SAPR 2020, the Installer Wizard checks whether MS .NET Framework 4.5.2 component is installed on your computer. If not, it will be installed together with LIRA-SAPR software.

Installation procedure for Microsoft.NET Framework 4.5.2 takes much time and requires a reboot.

When MS .NET Framework is installed, the Installer Wizard continues installation of LIRA-SAPR 2020 (see Figure 3).
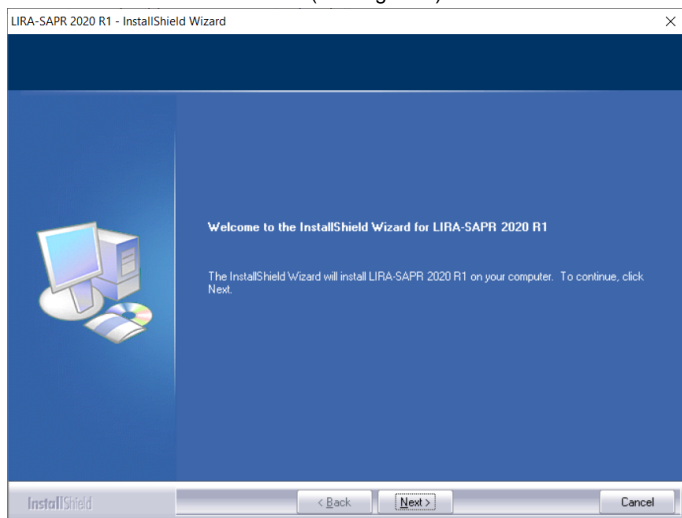

Figure 3. The Welcome message of Installer Wizard

When you click **Next**, the **License Agreement** dialog box opens (see Figure 4). Read and accept the License Agreement and click **Next**.
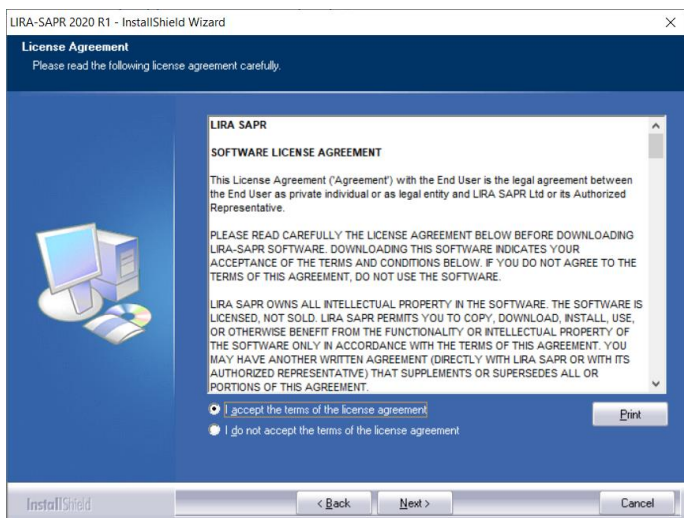
Figure 4. 'License Agreement' dialog box

Important. The *Next* button will become available only when you select the option **I accept the terms of the license agreement**.

Note. To print the license agreement, just click the *Print* button.

In the **Choose Destination Location** dialog box (see Figure 5) you can define the directory where LIRA-SAPR 2020 will be installed by default. To do this, click **Browse** and indicate a path to the directory.

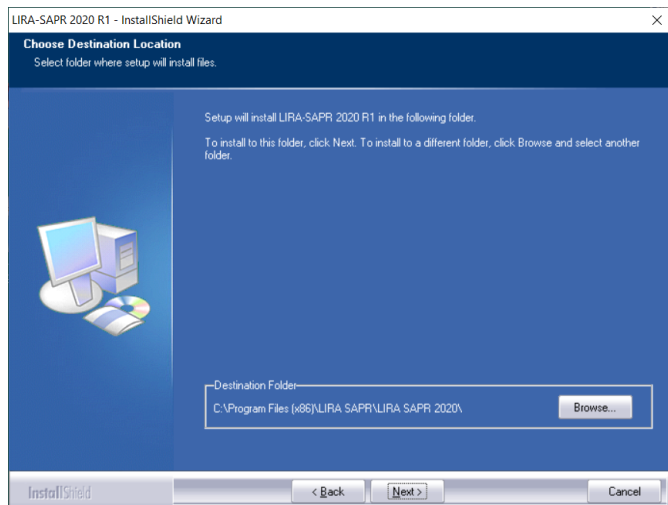*Figure 5. 'Choose Destination Location' dialog box*

In the **Select Features** dialog box you can select the features you want to install.
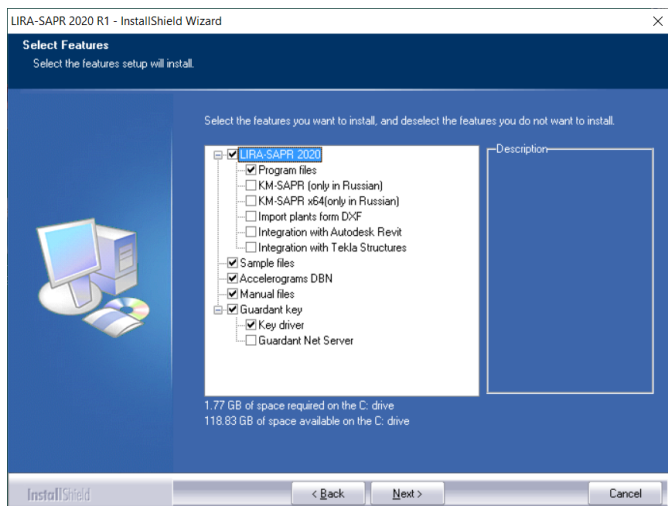
Figure 6. 'Select Features' dialog box

In the next dialog box (see Figure 7) you can begin installation of the program.

Figure 7. 'Ready to Install the Program' dialog box

In the **Setup Status** dialog box (see Figure 8) you will see the status of the setup.

Figure 8. 'Setup Status' dialog box

When files are copied to computer hard disk, Installer Wizard requires path to directories where files with input data and analysis results of LIRA-SAPR 2020 should be saved (see Figure 9).

Figure 9. 'Specify path to directories' dialog box

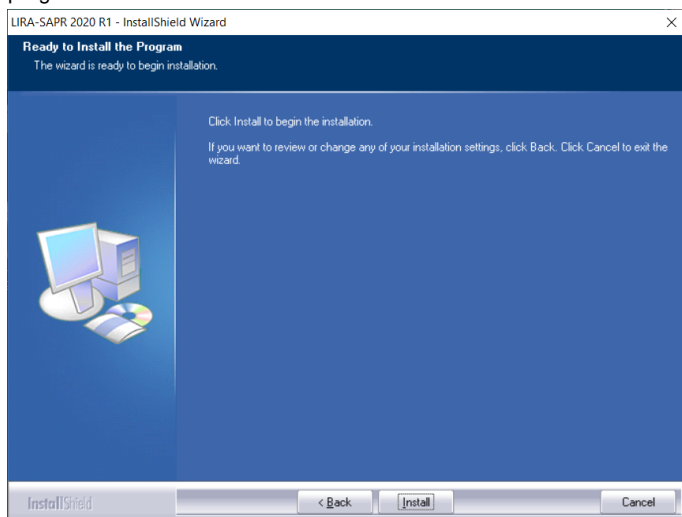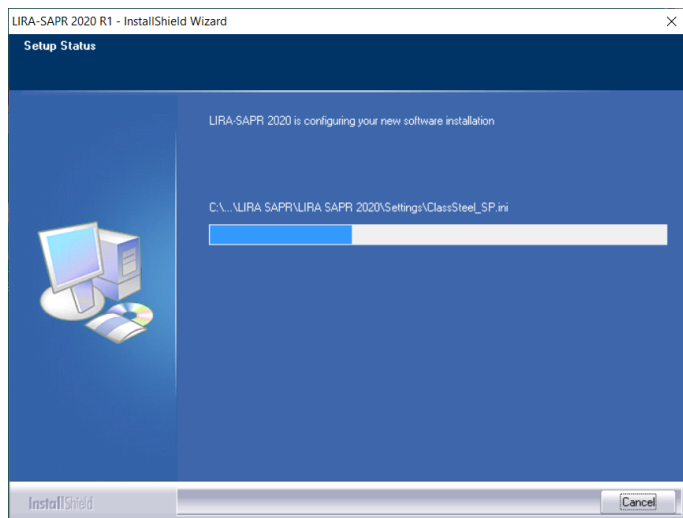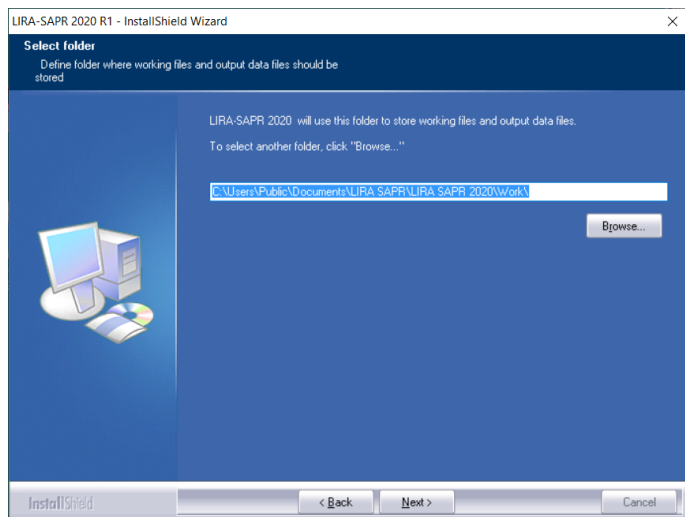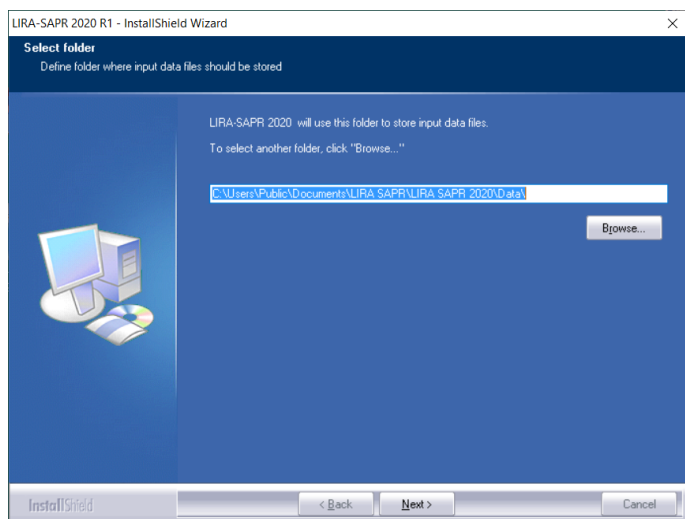Then the Installer Wizard will adjust settings for **SAPFIR** program. The whole **SAPFIR** program will be installed as well as **SAPFIR-Structures** and **SAPFIR-RC** modules.

> **Note.** By default, **LIRA-SAPR 2020** will be installed with **Ribbon interface** where the working area will be organized with tabbed toolbars. After installation of the program, it is possible to change the interface type to **Classic interface** where the working area will be organized with menus and toolbars.

When the installation is complete, all settings are modified and shortcuts are created, the Installer Wizard suggests installation of the hardware key driver (see Figure 10) (if you previously selected **Guardant key** item).
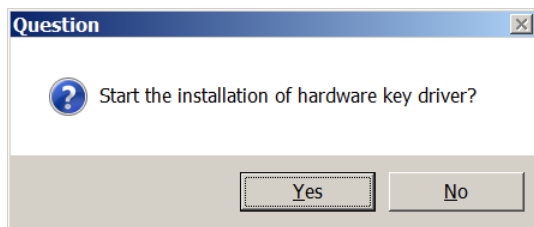
Figure 10. Installer Wizard requests installation of hardware key driver

> **Note.** If you accidentally cancel installation of Guardant hardware key driver, it could be done after installation of LIRA-SAPR 2020. To install the driver, start appropriate installation program from the base LIRA directory (by default, it is *C:\Program Files\LIRA SAPR\LIRA SAPR 2020*) or from the *./Installations/Guardant* directory on DVD disk.

> ⚠️ **Important.** If the hardware key driver is not installed, LIRA-SAPR 2020 will not be able to work with the hardware protection key.

When the Guardant key driver is installed, the Installer Wizard informs you that LIRA-SAPR 2020 is installed on your computer (see Figure 11).
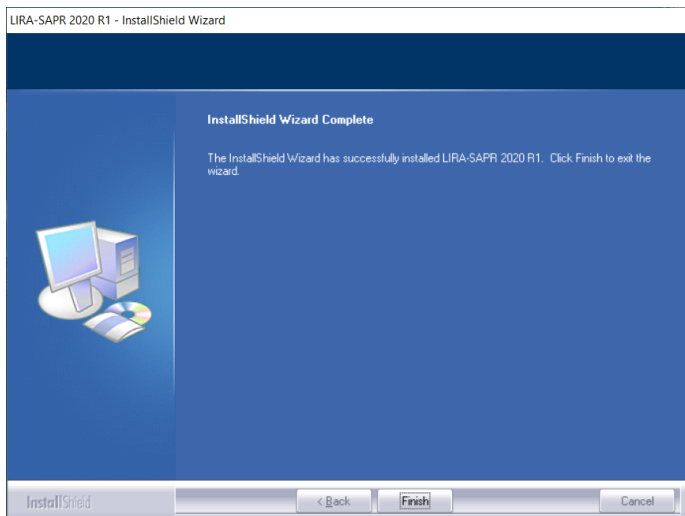
Figure 11. 'InstallShield Wizard Complete' dialog box

Attach the hardware key to the USB port. Then Windows Wizard will automatically install new peripheral equipment and the indicator light on the key will come on.

When you install the key driver, you can work with LIRA-SAPR 2020.

Special features of installing KM-SAPR

KM-SAPR is utility program (add-on) that runs in AutoCAD environment. KM-SAPR can run only if AutoCAD is installed on the computer where KM-SAPR is started.

Important. KM-SAPR does not support AutoCAD LT.

Note. KM-SAPR cannot work with several versions of AutoCAD simultaneously.

To install KM-SAPR, in the **Select Features** dialog box (see Figure 6), select KM-SAPR check box. When the files are copied, the **Version of AutoCAD** dialog boxes open (see Figure 12 and 13).

Figure 12. 'Version of AutoCAD for KM-SAPR' dialog box
(Please note that KM-SAPR module is available only in Russian)

Figure 13. 'Version of AutoCAD and IntelliCAD' dialog box
(for KM-SAPR and Import of floor plans DXF)

Special features of installing 'Import floor plans'

In LIRA-SAPR 2020 it is possible to import construction lines, walls, slabs, columns and beams from DXF files. For LIRA-SAPR 2020 to import these objects, in DXF file they should be presented in appropriate way and belong to the layer with predefined name.
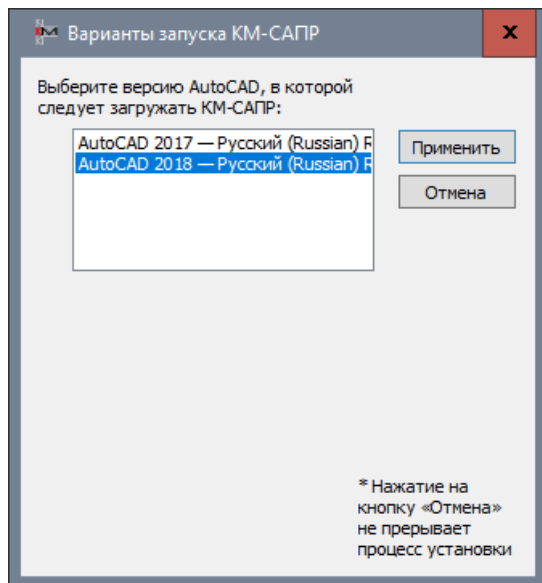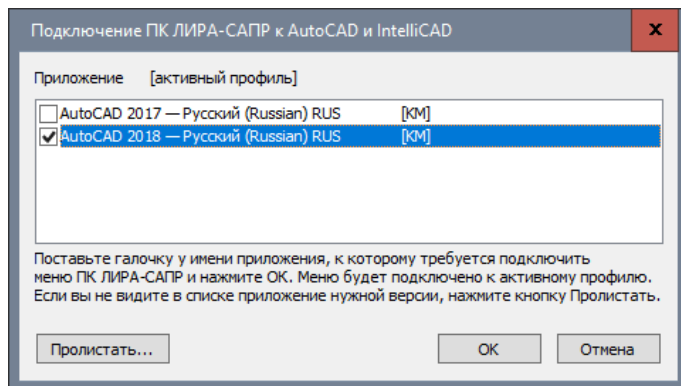
Installer Wizard of LIRA-SAPR 2020 integrates its own LIRA menu to programs that support AutoLISP (such as AutoCAD or IntelliCAD). The commands of LIRA menu help the user to generate floor plans.

To install 'Import floor plans' feature, in the **Select Features** dialog box (see Figure 6), select 'Import floor plans DXF' check box. When the files are copied, the **Version of AutoCAD and IntelliCAD** dialog box opens (see Figure 12).

> **Important.** 'Import floor slabs' feature does not support AutoCAD LT.

> **Note.** 'Import floor slabs' feature can work with several versions of AutoCAD and IntelliCAD simultaneously.

Special features of installing 'Integration with Revit Structure'

In LIRA-SAPR 2020 it is possible to import structural models from Revit Structure 2008…2020 and visualize selected reinforcement in Revit.

To install the 'Integration with Revit Structure' feature, in the **Select features** dialog box select appropriate option. It is also necessary to close all open copies of Revit Structure program.

In some cases manual installation may be necessary.

To install manually Revit Structure versions 2008/2009/2010/2011, perform the following steps:

1. Close all opened copies of Revit Structure program.

2. Open *Revit.ini* file in order to edit it.

By default, this file is located in the base Revit Structure directory, for example, "*C:\Program Files\Autodesk Revit Structure 2011\Program*"

3. Find [ExternalCommands] section. If this section does not exist, then to the end of Revit.ini add the line [ExternalCommands] that will open this section.

4. In this section find the line ECCount=%0, then increase value %0 by 1. If this line does not exist, then add the line ECCount=1.

5. In this section, add the following lines:

ECName%1=Export to LIRA-SAPR

ECClassName%1=SsmRP.ExportToLira

ECAssembly%1=LIRA_PATH\SsmRP%2.dll

ECDescription%1=Export of analytical model RevitStructure to LIRA-SAPR

where %1 – number of the added command,

LIRA_PATH – path to the installed LIRA-SAPR program,

SsmRP%2.dll – module that contains this command according to the following table:

Revit version	Module
Revit Structure 2008	\Bin\SsmRP.dll
Revit Structure 2009	\Bin\SsmRP9.dll
Revit Structure 2010	\Bin\SsmRP10.dll
Revit Structure 2011	\Bin\SsmRP11.dll
Revit Structure 2010, 64-bit	\Bin\x64\SsmRP10.dll
Revit Structure 2011, 64-bit	\Bin\x64\SsmRP11.dll

6. Save the modified file Revit.ini

Example of Revit.ini file modification for Revit Structure 2011:

```
[ExternalCommands]
ECCount=1
ECName1= Export to LIRA-SAPR
ECClassName1=SsmRP.ExportToLira
ECAssembly1=C:\Program files\LIRA SAPR\LIRA SAPR 2020\Bin\SsmRP11.dll
ECDescription1= Export of analytical model RevitStructure to LIRA-SAPR
```

To install manually Revit Structure / Revit 2012 / 2013 / 2014 / 2015 / 2016 / 2017 / 2018 / 2019 / 2020, perform the following steps:

1. Create text file in UTF-8 with name 'SsmRP.addin' and the following content:

```
<?xml version="1.0" encoding="utf-8"?>
<RevitAddIns>
<AddIn Type="Command">
```

```
<Assembly>C:\Program Files\LIRA SAPR\LIRA SAPR 2020\Bin\SsmR
P%3.dll</Assembly>
<ClientId>80BB17C2-2E40-44fd-8FA5-841D44402020</ClientId>
<FullClassName>SsmRP.ExportToLira</FullClassName>
<Text> Export to LIRA-SAPR </Text>
<Description> Export of analytical model RevitStructure to LIRA-
SAPR</Description>
<VisibilityMode>AlwaysVisible</VisibilityMode>
<VendorId>LIRA</VendorId>
<VendorDescription>LIRA     SAPR     Ltd.,     www.liraland.ru
</VendorDescription>
</AddIn>
</RevitAddIns>
```

If the installation directory differs from **C:\Program Files\LIRA SAPR\LIRA SAPR 2020**, then you should mention the necessary directory in the 'SsmRP.addin' file.

SsmRP%3.dll – executable module according to the following table:

Revit version	Module
Revit Structure 2012	SsmRP12.dll
Revit Structure 2013	SsmRP13.dll
Revit Structure 2014	SsmRP14.dll
Revit Structure / Revit 2015	SsmRP15.dll
Revit Structure / Revit 2016	SsmRP16.dll
Revit Structure / Revit 2017	SsmRP17.dll
Revit Structure / Revit 2018	SsmRP18.dll
Revit Structure / Revit 2019	SsmRP19.dll
Revit Structure 2012, 64-bit	x64\SsmRP12.dll
Revit Structure 2013, 64-bit	x64\SsmRP13.dll
Revit Structure 2014, 64-bit	x64\SsmRP14.dll
Revit Structure / Revit 2015, 64-bit	x64\SsmRP15.dll
Revit Structure / Revit 2016, 64-bit	x64\SsmRP16.dll
Revit Structure / Revit 2017, 64-bit	x64\SsmRP17.dll

Revit Structure / Revit 2018, 64-bit	x64\SsmRP18.dll
Revit Structure / Revit 2019, 64-bit	x64\SsmRP19.dll
Revit Structure / Revit 2020, 64-bit	x64\SsmRP20.dll

2. Move this file to the directory:

for Vista/Windows 7/8/10:

C:\ProgramData\Autodesk\Revit\Addins\2012\

For Revit 2013/2014/2015/2016/2017/2018/2019/2020 and Revit Structure 2013 / 2014 / 2015 / 2016 / 2017 / 2018 / 2019 / 2020 it is necessary to replace 2012 with 2013, 2014, 2015, 2016, 2017, 2018, 2019 or 2020 in the directory name.

Special features of installing 'Integration with TEKLA Structures'

New technology 'Tekla Structures — LIRA-SAPR — Tekla Structures' is introduced. It allows the user to generate the model in Tekla Structures, then import it to LIRA-SAPR, carry out static and dynamic analyses, select sections of elements and reinforcement, export analysis results to Tekla Structures and further obtain detail drawings (for reference, in Russian - drawings KMD) and CNC.

When you install LIRA-SAPR 2020, it appears as add-in application to Tekla Structures version 21.0, 21.1, 2016, 2017, 2017i, 2018, 2018i, 2019, 2019i, 2020.

To install 'Integration with Tekla Structures' option, in the list of available features (see Figure 7), select appropriate item. It is also necessary to close all open versions of Tekla Structures program.

> **Important.** You could install 'Integration with Tekla Structures' only in case Tekla Structures program is installed on your computer.

Special features of installing net version of LIRA-SAPR

When you install net version of LIRA-SAPR 2020 on computer of administrator, n the **Select Features** dialog box (see Figure 6), select **Guardant Net Server** component. Make sure that **Key driver** component should also be selected. If the Guardant Net Server is not selected during installation, then it may be installed manually from installation DVD **LIRA-SAPR 2020** (see directory *.\Installations\Guardant*).

When you install net version of LIRA-SAPR 2020 on other workstations, it is not necessary to install additional components. **Key driver** component is not obligatory.

If the local network (where the net version of the program functions) is not adequate and (or) contains too many computers, then when you start the program it may take some time to search for the key. To speed up the search procedure in wide networks, modify the *GNCLIENT.INI* file located in the directory where program data is usually stored on workstation, for example: *C:\Users\Public\Documents\LIRA SAPR\LIRA SAPR 2020\Settings.*

(Documents/Public documents...).

In this file specify IP-address or network name of computer where Guardant Net Server is installed:

[server]

ip_name = 192.168.1.1

In this case it is supposed that the NET key is inserted to computer with IP-address 192.168.1.1.

> **Important.** Manual for the work with Guardant Net Server is presented in the *./Installations/Guardant* directory on DVD disk or in the *./Guardant* directory located in the base LIRA directory (by default, it is *C:\Program Files\LIRA SAPR\LIRA SAPR 2020*).

Uninstalling LIRA-SAPR 2020

To uninstall LIRA-SAPR 2020, on the taskbar, click the **Start** button, and then select **Control panel**, and double-click the **Add or Remove Programs (Programs and Features)** icon. In the list of currently installed programs select LIRA-SAPR 2020 and click **Change/Remove**. In the dialog box presented in Figure 14 click **OK**.

In this case all files and programs installed with LIRA-SAPR 2020 will be removed. Files of projects created in LIRA-SAPR 2020 as well as files of analysis results are not removed.
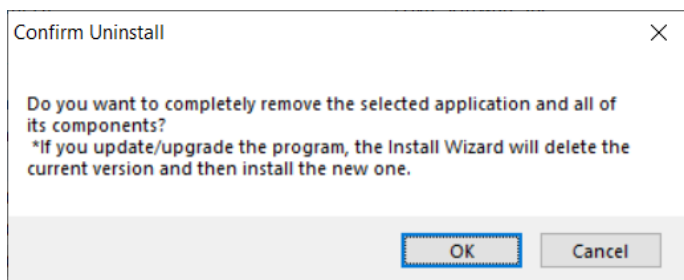
Figure 14. 'Confirm uninstall' message box

Note. When started, the Installer Wizard checks whether LIRA-SAPR 2020 is installed. If LIRA-SAPR 2020 is already installed on computer, Installer Wizard suggests that you delete the software (if there are new components in the current Installer). When previous version is deleted, new release of the program will be installed automatically.

Important. You can re-install LIRA-SAPR 2020 again when you remove (uninstall) it.

How to work with KeyUserInfo utility

KeyUserInfo utility is meant to obtain information about the hardware protection key connected to your computer and for remote update of the key memory.

Start **KeyUserInfo.exe** utility when the hardware key is connected to the computer. The **Information about the hardware key** dialog box will be presented on the screen (see Figure 15). In this dialog box you will find detailed information about the key, list of programs available for the key and configuration of every allowed program in detail.
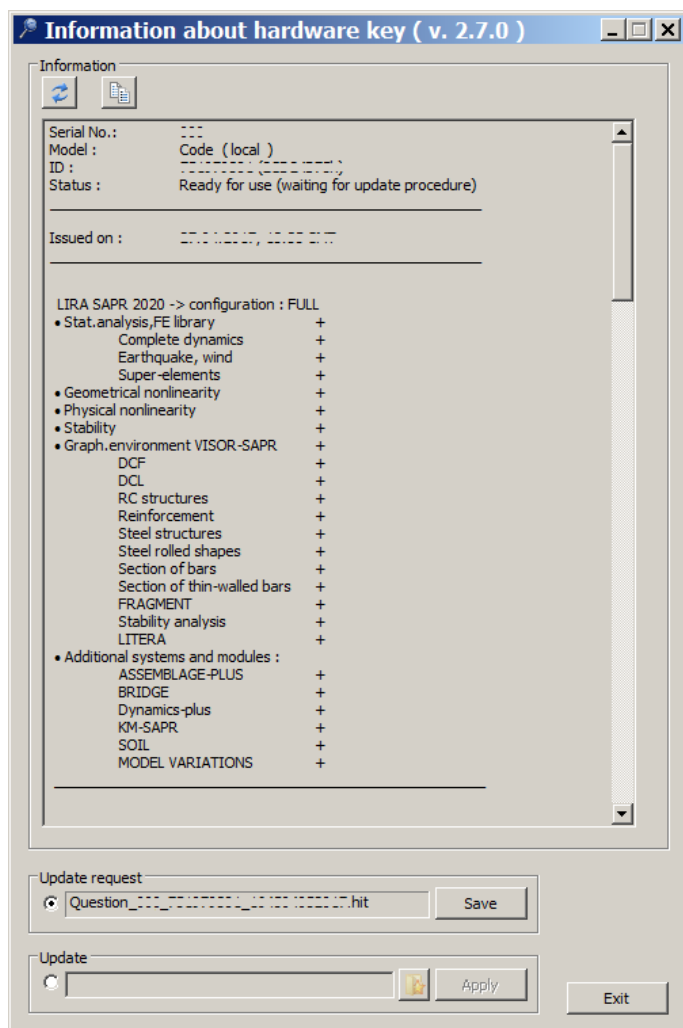
Figure 15. 'Information about hardware key' dialog box of the KeyUserInfo utility

> **Note.** If the hardware key is not connected to the computer or more than one key is found, then the key cannot be initialized.

To edit configuration of the programs, in the **Information about hardware key** dialog box (see Figure 15), perform the following steps:

- Prepare and send an update request;

- Receive update file and update the key data.

These steps are used for remote update of key memory and end-users are not recommended to perform them without special instructions.

Preparing the hardware key to update procedure

> **Important.** This action should be performed only after special instructions of our representatives or our company.

To prepare the hardware key for remote update of the key memory, in the **KeyUserInfo.exe** utility dialog box, select the **Select mode of preparing update request for the key** option that is located in the **Update request** area and then click **Save**. In the **Generate update request file** dialog box (see Figure 16), select directory where you want to save the file with update request and click **Save**.

Then send this file with your contact data to our representatives or our company.

> **Important.** Only one update file corresponds to a certain file of update request. That's why, when you save the update request file, it is necessary to wait for the update file itself.

> **Important.** The **Select mode of updating the key** option (located in the **Update** area in the **KeyUserInfo** utility box) will automatically become active as soon as update request file is generated.
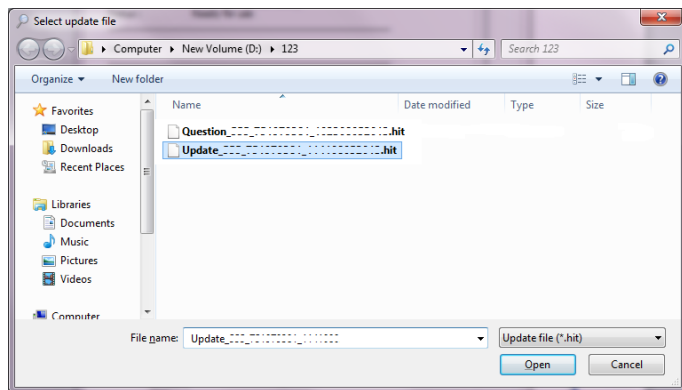
Figure 16. 'Generate update request file' dialog box
of the KeyUserInfo utility

Updating memory of the hardware key

Important. This action should be performed only after special instructions of our representatives or our company.

KeyUserInfo.exe utility and the update file that contains all necessary modifications are used to modify configuration of your hardware key. This update file you will obtain from developers by e-mail.

Insert the hardware key to the port and start the **KeyUserInfo.exe** utility. In the **KeyUserInfo.exe** utility box (see Figure 15), select the **Select mode of updating the key memory** option that is located in the

Update area, and then click the **Select update file** button [icon]. In the **Select update file** dialog box (see Figure 17), select the directory where you saved the update file for the key. Then select the received file from the list and click **Open**.

Then, in the **KeyUserInfo.exe** utility window (see Figure 15), click **Apply** button located in the **Update** area.

Figure 17. 'Select update file' dialog box

Note. It is recommended to use automatically generated names for request file and update file because the key ID is mentioned in both these file names. This information helps you quickly identify the pair of necessary files (request and update) and the hardware key connected to the computer.

Important. When the **Select mode of updating the key** option is selected, the **Select update file** button located in the **Update** area in the **KeyUserInfo** utility box will be inactive until the request for key update is generated.

If the hardware key is authorized successfully, you will get a message 'Key memory successfully updated'. Then, click the **Read the key** button located in the **Information** area of the **KeyUserInfo.exe** utility.

If the key memory was not updated or necessary programs do not work properly, contact your local reseller or our company.