KUKA System Technology

KUKA.OfficeLite 8.3

For KUKA System Software 8.3
For VW System Software 8.3

Issued: 15.07.2013

Version: KUKA.OfficeLite 8.3 V2 en (PDF)
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Other functions not described in this documentation may be operable in the controller. The user has no claims to these functions, however, in the case of a replacement or service work.

We have checked the content of this documentation for conformity with the hardware and software described. Nevertheless, discrepancies cannot be precluded, for which reason we are not able to guarantee total conformity. The information in this documentation is checked on a regular basis, however, and necessary corrections will be incorporated in the subsequent edition.

Subject to technical alterations without an effect on the function.

Translation of the original documentation

KIM-PS5-DOC
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1 Introduction

1.1 Target group

This documentation is aimed at users with the following knowledge and skills:

- Basic knowledge of KRL programming
- Knowledge of the robot controller system
- Basic knowledge of the Windows operating system

For optimal use of our products, we recommend that our customers take part in a course of training at KUKA College. Information about the training program can be found at www.kuka.com or can be obtained directly from our subsidiaries.

1.2 Industrial robot documentation

The industrial robot documentation consists of the following parts:

- Documentation for the manipulator
- Documentation for the robot controller
- Operating and programming instructions for the KUKA System Software
- Documentation relating to options and accessories
- Parts catalog on storage medium

Each of these sets of instructions is a separate document.

1.3 Representation of warnings and notes

Safety

These warnings are relevant to safety and must be observed.

- **DANGER** These warnings mean that it is certain or highly probable that death or severe injuries will occur, if no precautions are taken.
- **WARNING** These warnings mean that death or severe injuries may occur, if no precautions are taken.
- **CAUTION** These warnings mean that minor injuries may occur, if no precautions are taken.
- **NOTICE** These warnings mean that damage to property may occur, if no precautions are taken.

These warnings contain references to safety-relevant information or general safety measures. These warnings do not refer to individual hazards or individual precautionary measures.

This warning draws attention to procedures which serve to prevent or remedy emergencies or malfunctions:

- **SAFETY INSTRUCTIONS** Procedures marked with this warning must be followed exactly.

Notes

These hints serve to make your work easier or contain references to further information.
1.4 Terms used

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMD</td>
<td>Electronic Mastering Device</td>
</tr>
<tr>
<td>KRL</td>
<td>KUKA Robot Language</td>
</tr>
<tr>
<td>KLI</td>
<td>Line bus for the integration of the system in the cus-</td>
</tr>
<tr>
<td></td>
<td>tomer network (KUKA Line Interface)</td>
</tr>
<tr>
<td>KPP</td>
<td>KUKA Power Pack (drive power supply with drive controller)</td>
</tr>
<tr>
<td>KSP</td>
<td>KUKA Servo Pack (drive controller)</td>
</tr>
<tr>
<td>KUKA smartHMI</td>
<td>User interface of the KUKA System Software (KUKA smart Human-Machine Interface)</td>
</tr>
<tr>
<td>KUKA smartPAD</td>
<td>Teach pendant for the industrial robot</td>
</tr>
<tr>
<td>NTFS</td>
<td>File system for the Windows operating system (New Technology File System)</td>
</tr>
<tr>
<td>VMware software</td>
<td>Software with which virtual machines can be created and run</td>
</tr>
<tr>
<td>VRC</td>
<td>Interface for KUKA.Sim Pro</td>
</tr>
</tbody>
</table>

1.5 Trademarks

- **NTFS** is a trademark of Microsoft Corporation.
- **Step 7** is a trademark of Siemens AG.
- **VMware** is a trademark of VMware Corporation.
- **Windows** is a trademark of Microsoft Corporation.
- **WinZip** is a trademark of WinZip International LLC.
2  Product description

2.1  Overview of KUKA.OfficeLite

KUKA.OfficeLite is a work environment which allows users to practice handling the KUKA oder VW System Software on a PC. For this, an image of the system software is run in a virtual machine.

functions

The following functions of the system software are supported:

- Creation and simulation of programs
- Copying of machine data with a plausibility check
- Simulation of physical inputs
- Installation of technology packages
- Updating the system software

Constraints

KUKA.OfficeLite cannot be used to operate a robot.

The following functions of the system software are not supported:

- Diagnosis of the safety circuits
- Diagnosis of hardware modules, e.g. KPP, KSP, EMD on the Controller Bus
- Safety controller
- Operation of field buses, e.g. DeviceNet, EthernetIP, Interbus, PROFINET
- Integration of a smartPAD
- Load data determination
- Torque mode and force control
- Brake test
- EMD mastering
- Fast Measurement
- Network connection via the KLI

A network connection can be established by Windows via the virtual network card.

Technology packages can only be installed on the system software image if these run completely within the virtual machine and do not require any external communication.

The following technology packages cannot be used with OfficeLite:

- KUKA.SafeOperation
- KUKA.SafeRangeMonitoring
- KUKA.RoboTeam
- KUKA.ServoGun FC
- KUKA.ServoGun TC
- KUKA.RobotSensorInterface
- KUKA.TouchSense
- KUKA.ConveyorTech
- KUKA.EqualizingTech
- KUKA.LoadDataDetermination
The list refers to the technology packages available at the time of documentation. Further technology packages may be added in the future which may also be incompatible with installation on the system software image. It is therefore advisable to install technology packages only after consultation with KUKA Roboter GmbH.

**Performance**

By default, KUKA.OfficeLite does not execute processes in real time, but slightly more slowly than a real robot controller. The process time depends on the host system on which OfficeLite is installed and the utilization of the host system.

This does not affect the cycle time analysis. For example, a robot program simulated with OfficeLite runs more slowly than on a robot controller. The program run time measured with $TIMER is identical to the program run time on a robot controller, however.

**Example:** The simulation of a robot program in OfficeLite takes 3.5 minutes and a duration of 3 minutes is displayed in OfficeLite. On a robot controller, the execution of the program would take 3 minutes.

**Software components**

The following components are included in the scope of supply of KUKA.OfficeLite:

- KUKA System Software 8.3 or VW System Software 8.3
- Windows Embedded Standard 7 operating system on NTFS
- KUKA VRC Interface

The virtual system for running the software image is not included in the scope of supply of KUKA.OfficeLite. Only virtual systems from VMware may be used, e.g. VMware Player or VMware Workstation. It is the user’s responsibility to check which VMware software is suitable for use in the user’s company.

The VMware software can be obtained from http://www.vmware.com/de/. The license conditions must be observed, in particular the chapter “End User License Agreement” (EULA) governing the commercial use of VMware software.

**KUKA.Sim Pro**

In combination with KUKA.Sim Pro 2.2, KUKA.OfficeLite can be used as a virtual robot controller, e.g. for carrying out robot simulations and cycle time measurements. For the connection with KUKA.Sim Pro, KUKA VRC Interface must be installed on the virtual image on which KUKA.OfficeLite is installed.

KUKA.Sim Pro can be installed on the same host computer as KUKA.OfficeLite but not on the same virtual image as KUKA.OfficeLite. The connection is always established from KUKA.Sim Pro.

**WorkVisual**

Projects created with WorkVisual 3.0 can be transferred to the system software image, e.g. in order to simulate programs created in WorkVisual or configure the desired robot type.

WorkVisual can be installed on the same host computer as KUKA.OfficeLite but not on the same virtual image as KUKA.OfficeLite.

Further information about KUKA.OfficeLite in combination with KUKA.Sim Pro can be found in the KUKA.Sim Pro documentation.

Further information about transferring and activating WorkVisual projects is contained in the WorkVisual documentation and in the “Operating and Programming Instructions for System Integrators”.

Issued: 15.07.2013 Version: KUKA.OfficeLite 8.3 V2 en (PDF)
2.2 Intended use

Use  
KUKA.OfficeLite is exclusively intended for creating an image of the KUKA or VW System Software on a virtual system (VMware).

KUKA.OfficeLite may only be installed on a PC that meets the specified system requirements. This PC must not be a real robot controller.

Misuse  
Any use or application deviating from the intended use is deemed to be impermissible misuse. The manufacturer cannot be held liable for any damage resulting from such use. The risk lies entirely with the user.

Examples of such misuse include:

- Installation of the software on a real robot controller
- Using a virtual system other than VMware
3 Installation and licensing

3.1 System requirements

Hardware

- PC with dual-core processor (2 real cores – no hyper-threading)
- 4 GB RAM
- 15 GB free hard disk space

Software

- VMware software, e.g.:  
  - VMware Player ≥ 5.0
  - VMware Workstation ≥ 8.0
- Operating system for VMware: Windows 7 (64-bit)

Compatibility

- The PLC software STEP 7 must not be installed on the virtual image on which KUKA.OfficeLite is installed.

Recommendation

- Power save mode may interfere with the correct running of KUKA.OfficeLite. It is therefore advisable to deactivate the power save mode.

3.2 License types

The following license types are available for KUKA.OfficeLite and KUKA VRC Interface:

- **Single PC license**
  - The license is valid for a specific PC. The license cannot be transferred to a different PC.
  - This option is only supported in the case of PCs with a Windows operating system.

- **Server license**
  - The license is accessed from a server with a certain number of (floating) licenses. A corresponding license server must be available to manage the licenses provided by KUKA Roboter.
  - A user can call licenses on any client PC that has access via the network to the license server. It is also possible to borrow licenses for a limited time, so that OfficeLite can be used without a connection to the license server.
  - This option is only supported in the case of PCs with a Windows operating system.

3.3 Starting KUKA.OfficeLite for the first time

Description

- A license key is required for licensing KUKA.OfficeLite and KUKA VRC Interface. In order to be able to create the license request, the VMware image must be started by OfficeLite.

Preparation

- Unzip the ZIP archive with the VMware image from the double-layer DVD into the desired target directory on the host computer, e.g. with WinZip or 7-Zip.

Precondition

- VMware software is installed.

Procedure

1. Start the VMware software and click on **Open a Virtual Machine**.
2. Navigate to the directory into which the VMware image was unzipped. Select the OfficeLite file KR_C, VOL_RELEASE.vmx and click on Open to load it in the virtual machine.

3. Click on Play virtual machine. Windows is started.

4. The Windows start-up may take several minutes. The system software installation wizard is then opened.
   a. Select the desired language. Confirm with Next>.
   b. Information about the installation and copyright is displayed. Confirm with Next>.
   c. The system suggests a robot type. Confirm with Next>.
      Or: If the suggested type does not correspond to the desired type, select a different type. Then confirm with Next>.
   d. A summary of the setup settings is displayed. Confirm with Next>.

5. The virtual machine is automatically restarted and the activation wizard FLEXnet License Finder is opened.
   a. If a server license is to be used and a license server already exists: Continue with Next> and enter the server name. Continue with Next> and confirm with Finish.
      If there is a license server available, it is possible to start using OfficeLite directly.
   b. If a single PC license is to be used or if there is not yet a license server available:
      Click on Cancel to close the activation wizard and acknowledge the error message with OK.

6. Do not yet exit VMware. The subsequent procedure for licensing OfficeLite depends on whether a single PC license or server license is to be used.

3.4 Using KUKA.OfficeLite with a single PC license

3.4.1 Requesting a single PC license

Procedure

1. In the virtual machine, start the program FingerprintCreator.exe in the directory C:\KRC\UTIL\FLEXLM. KUKA Fingerprint Creator opens.

2. Enter the path for saving the fingerprint in the Select Output File box, or use the ... button to select the file location.

3. Click on the Create button. The KUKA Fingerprint *.KFP is created in the specified location.

4. Send the fingerprint file *.KFP with the following information by e-mail to simulation@kuka-roboter.de:
   a. KUKA reference number for the purchased software (found under Supplier Ref. No. on the Order Confirmation from KUKA)

The license key is requested. The license file *.LIC will be sent to you by KUKA Roboter.
3.4.2 Activating KUKA.OfficeLite with a single PC license

Precondition
- The license file *.LIC is present.
- The virtual network cards are activated.

Procedure
1. Start the VMware software and select the image KR C, VOL_RELEASE in the navigator of the virtual machine.
2. Click on Play virtual machine. KUKA.OfficeLite is started and the activation wizard FLEXnet License Finder is opened.
3. Save the license file *.LIC in the virtual machine.
4. Select the license type Specify the License File. Click Next> to proceed.
5. Enter the location and name of the license file *.LIC or use Browse to search for the license file *.LIC and load it. Click Next> to proceed.
6. Confirm the licensing with Finish. KUKA.OfficeLite is now licensed and activated.

3.5 Using KUKA.OfficeLite with a server license

3.5.1 Requesting a server license

Procedure
1. In the virtual machine, copy the folder FLEXLM in the directory C:\KRC\UTIL.
2. Save the folder FLEXLM on the license server. VMware can now be exited.
3. On the license server, start the program lmtools.exe in the folder FLEXLM. The LMTOOLS window is opened.
4. On the System Settings tab, click on the button Save HOSTID Info to a File.
5. Select the file location and enter a name for the license request file. Click on Save. The license request file is created.
6. Send the license request file with the following information by e-mail to simulation@kuka-roboter.de:
   - KUKA reference number for the purchased software (found under Supplier Ref. No. on the Order Confirmation from KUKA)

   The license key is requested. The license file *.LIC will be sent to you by KUKA Roboter.

3.5.2 Starting up the license server for KUKA.OfficeLite

Precondition
- The license file *.LIC is present.

Procedure
1. Save the license file *.LIC on the license server.
2. On the license server, start the program lmtools.exe in the folder FLEXLM. The LMTOOLS window is opened.
3. Select the Config Services tab.
4. Under Service Name, enter the name of the new service, e.g. OL Service.
5. Under Path to the lmgrd.exe file, enter the path to the lmgrd.exe file, or use the Browse button to search for and load the file.
6. Under **Path to the license file**, enter the path to the license file *.LIC or use the **Browse** button to search for and load the file.

7. Under **Path to the debug log file**, enter the path to the license server LOG file, or use the **Browse** button to search for and load the file.

8. Activate the **Use Services** check box (set the check mark).

9. If necessary, activate the **Start Server at Power Up** check box (set the check mark).

   The option **Start Server at Power Up** has the effect that the FLEXlm license manager is automatically started when the computer is rebooted.

10. Click on **Save Service**. OL Service is saved.

    On the **Start/Stop/Reread** tab, OL Service can be started and stopped, or the server license file can be reloaded.

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**Fig. 3-1: LMTOOLS – Config Services**

**Fig. 3-2: LMTOOLS – Start/Stop/Reread**
3.5.3 Activating KUKA.OfficeLite with a server license

**Precondition**
- Network connection to the license server on which the license file *.LIC is saved.

**Procedure**
1. Start the VMware software and select the image KR C, VOL_RELEASE in the navigator of the virtual machine.
2. Click on Play virtual machine. KUKA.OfficeLite is started and the activation wizard FLEXnet License Finder is opened.
3. Select the license type Specify the License Server System. Click Next> to proceed.
4. Enter the name of the license server. Click Next> to proceed. The license server automatically assigns a license from its license pool.
5. Confirm the licensing with Finish. KUKA.OfficeLite is now licensed and activated.

The smartHMI is closed in the event of a licensing error, e.g. if an incorrect license file has been used.
To repeat the licensing, execute the program C:\KRC\SmartHMI\SmartHMI.exe in the virtual machine. The activation wizard FLEXnet License Finder is opened again.

3.6 Installing KUKA VRC Interface

For the connection with KUKA.Sim Pro, KUKA VRC Interface must be installed on the virtual image on which KUKA.OfficeLite is installed. KUKA VRC Interface is only licensed in conjunction with KUKA.Sim Pro.

**Precondition**
- KUKA.OfficeLite is started.
- “Expert” user group

**Procedure**
1. In the main menu, select Start-up > Additional software. All additional programs installed are displayed.
2. Click on the New software button.
3. Select the entry VRC Interface and click on the Install button. Reply to the request for confirmation with Yes. Installation is prepared.
4. Confirm the reboot prompt with OK.
5. Reboot Windows in the virtual machine by selecting Shut Down > Restart in the Windows Start menu. Installation is resumed and completed.
6. Once Windows has booted, the smartHMI is no longer automatically started.
   To start smartHMI, select All Programs > KUKA > StartKRC in the Windows Start menu of the virtual machine.

3.7 Uninstalling KUKA VRC Interface

**Precondition**
- “Expert” user group

**Procedure**
1. In the main menu, select Start-up > Additional software. All additional programs installed are displayed.
2. Select the entry VRC Interface and click on the Uninstall button. Reply to the request for confirmation with Yes. KUKA VRC Interface is uninstalled.

**LOG file**
A LOG file is created under C:\KRC\ROBOTER\LOG.
4 License management and use of server licenses

Detailed information about license management can be found in the License Administration Guide for FLEXlm. This guide is included in the scope of supply for KUKA.OfficeLite.

4.1 Borrowing licenses

Precondition
- KUKA.OfficeLite is not running.
- KUKA VRC Manager is not running.
- Network connection to the license server
- The maximum borrow time for licenses is known. (Can be requested from the server administrator.)

Procedure
1. In the virtual machine, start the program lmtools.exe in the directory C:\KRC\UTIL\FLEXLM. The LMTOOLS window is opened.
2. Make the following settings on the Utilities tab:
   - Under Vendor Name, enter LM_LICENSE_FILE.
   - Under Path, enter the path @Server name to the license server, e.g. @Server01.
3. Click on Add Vendor Path to save the settings on the Utilities tab.
4. Make the following settings on the Borrowing tab:
   - Enter KUKAROB under Vendor Name.
   - Under Return Date, enter the date the license is required until, e.g. 31-mar-2012 (31st March 2012; always enter the first 3 letters of the name of the month in English). The date must be within the maximum borrowing period.
   - Under Return Time, enter the time the license is required until, e.g. 12:00.

Detailed information about license management can be found in the License Administration Guide for FLEXlm. This guide is included in the scope of supply for KUKA.OfficeLite.

The borrow time for licenses is limited by default to 30 days by KUKA. If there is only a limited number of licenses available on the license server, it is possible that the server administrator may further reduce the maximum borrow time.
5. Click on **Set Borrow Expiration** to save the settings on the **Borrowing** tab.


7. Start KUKA VRC Manager if required for connecting to KUKA.SimPro.

8. The PC can be disconnected from the license server: remove the network cable.

9. Click on **List Currently Borrowed Features** to check whether licensing was successful.

   The licensed applications are displayed:
   - KUKAROB_HMI_8 for KUKA.OfficeLite
   - KUKAROB_VRC_2 for KUKA VRC Interface

### 4.2 Returning borrowed licenses early

**Precondition**
- KUKA.OfficeLite is not running.
- KUKA VRC Manager is not running.
- Network connection to the license server

**Procedure**
1. In the virtual machine, start the program **lmtools.exe** in the directory C:\KRC\UTIL\FLEXLM. The **LMTOOLS** window is opened.
2. On the **Borrowing** tab under **Feature Name**, enter the name of the application for which the license is to be returned to the license server earlier than originally planned:
   - KUKAROB_HMI_8 for KUKA.OfficeLite
   - KUKAROB_VRC_2 for KUKA VRC Interface
3. Click on **Return Borrowed Licenses Early** to return the license for the application specified under **Feature Name**.

4. Start the application (KUKA.OfficeLite or KUKA VRC Manager). The license is returned to the license server only after the application has been started.

5. Click on **List Currently Borrowed Features** to check that the borrowed license has been successfully returned. The application is no longer shown in the list of licensed applications.

### 4.3 Transferring licenses

#### Overview

A new license must be requested in the following cases:

<table>
<thead>
<tr>
<th>Case</th>
<th>License transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>After the host computer has been exchanged, the old license is no longer valid on the new computer (only relevant for single PC license). If the current license no longer matches the computer, this is indicated by FLEXlm (Error Code -9: Invalid host).</td>
<td>Create a new fingerprint file *.KFP and send it together with the old license file to the following address: <a href="mailto:simulation@kuka-roboter.de">simulation@kuka-roboter.de</a>.</td>
</tr>
<tr>
<td>Licenses are valid for 12 months. If a license has expired, it can be renewed. If a license has expired, this is indicated by FLEXlm (Error Code -10: Feature has expired).</td>
<td>Send the old license file to the following address: <a href="mailto:simulation@kuka-roboter.de">simulation@kuka-roboter.de</a></td>
</tr>
<tr>
<td>After a software update, i.e. if a new build of KUKA.OfficeLite is installed, the host ID is changed. The old license will no longer be valid.</td>
<td>Send the old license file together with the order number for the software update or software maintenance agreement to the following address: <a href="mailto:simulation@kuka-roboter.de">simulation@kuka-roboter.de</a></td>
</tr>
<tr>
<td>Modification of the number of server licenses on the license server</td>
<td>Send the old server license file together with the desired number of server licenses to the following address: <a href="mailto:simulation@kuka-roboter.de">simulation@kuka-roboter.de</a></td>
</tr>
<tr>
<td>Modification of the maximum possible borrow time of server licenses on the license server By default, server licenses can be borrowed for a maximum of 30 days (= 720 hours).</td>
<td>Send the old server license file together with the desired number of hours to the following address: <a href="mailto:simulation@kuka-roboter.de">simulation@kuka-roboter.de</a></td>
</tr>
</tbody>
</table>
5 VMware settings and operating instructions

5.1 Operating instructions for VMware

License transfer
If a new build of KUKA.OfficeLite is installed or if the OfficeLite image is moved to a different folder, the host ID will also change. The old license will no longer be valid. A new license must then be requested.

>>> 4.3 “Transferring licenses” Page 19

Keyboard assignment
The Windows language in VMware is English by default. The input scheme for the keyboard assignment is German by default.

The keyboard assignment can be set to English in the Windows Control Panel of the virtual machine:

1. Select Clock, Language, and Region > Region and Language in the Windows Control Panel. The Region and Language window is opened.
2. Select the Keyboards and Languages tab and double-click on Change keyboards.... The window Text Services and Input Languages is opened.
3. On the General tab, select English ... under Default input language.
4. Close the window by clicking on OK.
5. Restart Windows in the virtual machine. To do so, select Shut Down > Restart in the Windows Start menu.

5.2 Manually connecting a USB drive with the virtual machine

Description
The virtual machine must be active in order for a USB stick to be automatically assigned a drive in the virtual machine on connecting the stick. By default, this is the E:\ drive

If the host computer is active instead of the virtual machine, no USB drive is displayed in the virtual machine. In this case, the drive must be connected manually to the virtual machine.

Procedure

1. Select the following menu sequence in the virtual machine:
   - VMware Workstation: VM > Removable Devices > Swissbit xxx > Connect (Disconnect from host)
   - VMware Player: Player > Removable Devices > Swissbit xxx > Connect (Disconnect from host)

2. Answer the request for confirmation with OK.

5.3 Configuring network settings

Description
The following network settings are available in VMware for the operation of KUKA.OfficeLite:

- **Bridged**: This is the default setting. Required if the host computer is integrated into a network. The user can then access the virtual machine from the network, and the network can be accessed from the virtual machine.
  - If Bridged is used, the check box Replicate physical network connection state must be activated (check mark set).

- **NAT**: This setting is required if the host computer is not integrated into a network.

- **Host-only**: Not required.

Procedure

1. Select the following menu sequence in the virtual machine:
2. On the Hardware tab, select the device Network Adapter.

![Network Adapter Settings](image)

Fig. 5-1: Network Adapter Bridged (default)

3. If the host computer is integrated into a network, use the default setting in the Network connection box:
   - Bridged option
     - Check box Replicate physical network connection state (check mark set)

4. If the host computer is not integrated into a network, select the option NAT in the Network connection box.

5. Restart VMware to initialize the modified network settings.

5.4 Checking a network connection

**Description**
If it is not possible to access an external system, e.g. the license server, from the virtual machine, it is recommended to check whether the corresponding computer can be pinged.

**Procedure**
1. Open the Windows command prompt in the virtual machine by entering the command `cmd` in the Windows Start menu and confirming with the Enter key.
2. Enter the command `ping computer_name` and confirm with the Enter key.
Fig. 5-2: Send ping

3. If the pinged computer does not respond, contact the network administrator to check the network or domain settings.
6 Operation, KUKA.OfficeLite

6.1 Overview of the graphical user interface

The KUKA.OfficeLite user interface is largely identical to the KUKA smartHMI. The operator control elements of the KUKA smartPAD that are required for programming are made available as additional buttons.

The user interface is displayed in the language that was selected during installation of the software. If desired, a different language can be set again from the main menu.

Further information about the KUKA smartHMI is contained in the operating and programming instructions for the System Software.

![Fig. 6-1: Overview of the graphical user interface](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Button for the enabling switch</td>
</tr>
<tr>
<td>2</td>
<td>List box for selecting the operating mode</td>
</tr>
<tr>
<td>3</td>
<td>Buttons for manual motion (jog keys)</td>
</tr>
<tr>
<td>4</td>
<td>Button for setting the program override</td>
</tr>
<tr>
<td>5</td>
<td>Button for setting the jog override</td>
</tr>
<tr>
<td>6</td>
<td>This button is used to display the menu items on the user interface (Main menu key).</td>
</tr>
<tr>
<td>7</td>
<td>Buttons for the status keys. Status keys are used primarily for setting parameters in technology packages. Their exact function depends on the technology packages installed.</td>
</tr>
<tr>
<td>8</td>
<td>This button is used to start a program (Start key).</td>
</tr>
</tbody>
</table>
6.2 Simulating inputs

KUKA.OfficeLite can be used to simulate physical inputs. Some inputs are write-protected and cannot be simulated.

**Procedure**

Setting a simulated input:

1. In the main menu, select **Display > Inputs/outputs > Digital I/O**.
2. Click on **Go to** and enter the number of the desired input via the keyboard. The display jumps to the input with this number.
3. Click on **Sim on/off**. Simulation is activated.
4. Click on **Value**. The input is set to TRUE and simulated.

**Description**

- **Item 9** This button is used to start a program backwards (Start backwards key).
- **Item 10** This button is used to stop a program that is running (STOP key).
- **Item 11** Button for displaying the keyboard (Keyboard key).
  It is generally not necessary to press this key to display the keyboard, as the user interface detects when keyboard input is required and displays the keyboard automatically.

**Fig. 6-2: Digital inputs**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input number</td>
</tr>
<tr>
<td>2</td>
<td>Value of the input. The icon is green if an input is TRUE.</td>
</tr>
<tr>
<td>3</td>
<td>SIM entry: The input is simulated. SYS entry: The value of the input is saved in a system variable. This input is write-protected and cannot be simulated.</td>
</tr>
<tr>
<td>4</td>
<td>Name of the input</td>
</tr>
</tbody>
</table>

The following buttons are available:

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-100</td>
<td>Toggles back 100 inputs in the display.</td>
</tr>
<tr>
<td>+100</td>
<td>Toggles forward 100 inputs in the display.</td>
</tr>
</tbody>
</table>
6.3 Signal exchange via VRC Interface – note on programming

Description
KUKA.OfficeLite can be used together with KUKA.Sim Pro in order to simulate e.g. the signal exchange between a sensor and a robot. A signal is only transmitted when an edge change is detected.

To ensure that an edge change occurs from FALSE to TRUE when an output is set, the I/Os used must be set to FALSE at the beginning of the program.

6.4 Changing the user group in VW System Software

Precondition
- To switch to a higher user group than that which is currently selected:
  A USB stick with a key file for the desired user groups is present. The key file can be generated using the KUKA.UserKey software.

Procedure
1. Place the focus on the virtual machine and connect the USB stick on the host computer. Confirm the notification message with OK.
2. Check that the USB drive is displayed in the virtual machine.
3. If no USB drive is displayed in the virtual machine, connect the drive manually to the virtual machine.
4. Select Configuration > User group in the main menu. The current user group is displayed.
5. To switch to the default user group: Press Default.
   To switch to a higher user group:
   - Press Login.... The user groups configured in the key file are displayed. Select the desired user group.
   - If prompted: Enter the password.
   - Confirm with Log-on.

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to</td>
<td>The number of the input being searched for can be entered.</td>
</tr>
<tr>
<td>Value</td>
<td>Toggles the selected input between TRUE and FALSE. This button is not available when simulation is switched off and in AUT and AUT EXT modes.</td>
</tr>
<tr>
<td>Name</td>
<td>The name of the selected input can be modified.</td>
</tr>
<tr>
<td>Sim on/off</td>
<td>Switches simulation on or off.</td>
</tr>
</tbody>
</table>
# 7 Messages

## 7.1 Error messages during licensing

The following FLEXlm error messages occur most frequently during licensing:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description / cause</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| -5  | No such feature exists.  
The license file does not match the installed OfficeLite version. | Install the OfficeLite version for which the license file is valid, or request a new license file after a software update. For this, send the old license file together with the order number for the software update to the following address: simulation@kuka-roboter.de |
| -9  | Invalid host.  
The current license file does not match the computer:  
- After exchanging the computer  
- The OfficeLite image has been moved to a different folder. | Request a new license file. To do so, send the old license file together with the following information to simulation@kuka-roboter.de:  
- Fingerprint file *.KFP in the case of a single PC license  
- Host ID and host name of the license server in the case of a server license  
**Note:** To reactivate OfficeLite, the old license file in the virtual machine or on the license server must be deleted. |
| -10 | Feature has expired.  
The license file has expired. | Request a new license file. For this, send the old license file to the following address: simulation@kuka-roboter.de |
| -15 | Cannot connect to license server system.  
No connection can be established to the license server:  
- The license server is not running.  
- The wrong license file is being used.  
- The host ID or host name has been changed. | Contact the network administrator. |
| -88 | System clock has been set back  
The Windows system clock in VMware differs too greatly from the current actual world time (UTC). | Adapt the Windows system clock and time zone in VMware to the current actual world time (UTC). |

Other error messages which may occur during licensing are described in the chapter Error Codes in the License Administration Guide for FLEXlm. This guide is included in the scope of supply for KUKA.OfficeLite.
8 KUKA Service

8.1 Requesting support

Introduction
The KUKA Roboter GmbH documentation offers information on operation and provides assistance with troubleshooting. For further assistance, please contact your local KUKA subsidiary.

Information
The following information is required for processing a support request:
- Model and serial number of the manipulator
- Model and serial number of the controller
- Model and serial number of the linear unit (if applicable)
- Model and serial number of the energy supply system (if applicable)
- Version of the KUKA System Software
- Optional software or modifications
- Archive of the software
- Application used
- Any external axes used (if applicable)
- Description of the problem, duration and frequency of the fault

8.2 KUKA Customer Support

Availability
KUKA Customer Support is available in many countries. Please do not hesitate to contact us if you have any questions.

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