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Robotics Products
SE-721 68 Västerås
Sweden
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<td>6.4 RobotWare 5.08 Compatibility</td>
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<td>6.5 RobotWare 5.10 Compatibility</td>
<td>31</td>
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<tr>
<td>6.6 RobotWare 5.11 Compatibility</td>
<td>31</td>
</tr>
<tr>
<td>6.7 RobotWare 5.12 Compatibility</td>
<td>32</td>
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<td>6.8 RobotWare 5.13 Compatibility</td>
<td>32</td>
</tr>
<tr>
<td>6.9 RobotWare 5.15 Compatibility</td>
<td>33</td>
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<td>6.10 RobotWare 6 Compatibility</td>
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<tr>
<td>6.11 General Compatibility Limitations</td>
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<tr>
<td>6.12 ScreenMaker Compatibility</td>
<td>33</td>
</tr>
<tr>
<td>6.13 Support for future RobotWare versions</td>
<td>34</td>
</tr>
</tbody>
</table>
1 Release Information

1.1 General

Release Name
The release name is RobotStudio 6.01 SP1 and the build number is 6.01.6426.0123.

Release Date
The release date is May 8th, 2015.

Demo stations
The following demo stations are included in this version.
- Demo AW Station
- Demo Solar Simulation
- Demo Exhaust Pipe
- Demo FlexLoader

They are stored in the Pack & Go format (.rspag) and can be opened with the command Unpack & Work on the Share section of the RobotStudio menu.

ScreenMaker Demo Station and Project
There is a demo station and associated ScreenMaker project available.
- SCM_ExampleProject (ScreenMaker Project)
- SCM_ExampleStation (RobotStudio station)

These files are found in the ‘Addins/ScreenMaker/Samples’ folder under the RobotStudio installation folder.

Tutorials
Tutorials are available at the RobotStudio product pages at http://www.abb.com/roboticssoftware

Documentation
User documentation for RobotStudio is available from the Help button (quire) in the upper-right corner of RobotStudio.

The complete documentation in PDF for RobotWare including RobotStudio is available on DVD and can be ordered separately from ABB.

1.2 System recommendation

Recommended Software

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows 7 SP1</td>
<td>32-bit</td>
</tr>
<tr>
<td>Microsoft Windows 7 SP1 (recommended)</td>
<td>64-bit</td>
</tr>
<tr>
<td>Microsoft Windows 8.1 (recommended)</td>
<td>64-bit</td>
</tr>
</tbody>
</table>
Recommended hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>2.0 GHz or faster processor, multiple cores recommended</td>
</tr>
<tr>
<td>Memory</td>
<td>3 GB if running Windows 32-bit</td>
</tr>
<tr>
<td></td>
<td>8 GB or more if running Windows 64-bit (recommended)</td>
</tr>
<tr>
<td>Disk</td>
<td>10+ GB free space, solid state drive (SSD)</td>
</tr>
<tr>
<td>Graphics card</td>
<td>High-performance, DirectX 11 compatible, gaming graphics card from any of the leading vendors. For the Advanced lightning mode Direct3D feature level 10_1 or higher is required.</td>
</tr>
<tr>
<td>Screen resolution</td>
<td>1920 x 1080 pixels or higher is recommended</td>
</tr>
<tr>
<td>DPI</td>
<td>Normal size (100% / 96 dpi) up to Large size (150% / 144 dpi)</td>
</tr>
<tr>
<td></td>
<td>Only Normal size supported for Integrated Vision.</td>
</tr>
<tr>
<td>Mouse</td>
<td>Three-button mouse</td>
</tr>
<tr>
<td>3D Mouse [optional]</td>
<td>Any 3D mouse from 3DConnexion, see <a href="http://www.3dconnexion.com">http://www.3dconnexion.com</a>,</td>
</tr>
</tbody>
</table>

Note

The Windows Firewall will try to block features necessary to run RobotStudio. Make sure to unblock these features when asked (Industrial Robot Discovery Server, RobotStudio StudioAppFramework module, Virtual RobotController (all published by ABB)). The blocking state of a certain program can be viewed and changed at Start/Control Panel/Windows Security Center/Windows Firewall. Read more on http://www.microsoft.com.
## 1.3 Simulation Models

### Robot Libraries

<table>
<thead>
<tr>
<th>IRB Variant</th>
<th>IRB Variant</th>
<th>IRB Variant</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 3kg/0.58m</td>
<td>360 3kg/1130 Stainless</td>
<td>6600 130kg/3.1m</td>
</tr>
<tr>
<td>120T 3kg/0.58m</td>
<td>360 1kg/1600 Standard</td>
<td>6600 205kg/1.9m</td>
</tr>
<tr>
<td>1200 5kg/0.9m BTM</td>
<td>360 6kg/1600 Standard</td>
<td>6700 145kg/3.2m MH</td>
</tr>
<tr>
<td>1200 5kg/0.9m STD</td>
<td>360 8kg/1130 Standard</td>
<td>6700 145kg/3.2m SW</td>
</tr>
<tr>
<td>1200 7kg/0.7m BTM</td>
<td>440 45kg</td>
<td>6700 150kg/3.2m MH</td>
</tr>
<tr>
<td>1200 7kg/0.7m STD</td>
<td>4400 60kg</td>
<td>6700 150kg/3.2m</td>
</tr>
<tr>
<td>140 5kg/0.8m Type A/B</td>
<td>4400L 10kg</td>
<td>6700 155kg/3.05m MH</td>
</tr>
<tr>
<td>140 5kg/0.8m Type C</td>
<td>4400L 30kg</td>
<td>6700 155kg/3.05m SW</td>
</tr>
<tr>
<td>140T 5kg/0.8m Type C</td>
<td>4400S 30kg</td>
<td>6700 175kg/3.05m MH</td>
</tr>
<tr>
<td>1400 Type A/B</td>
<td>4450S 30kg</td>
<td>6700 175kg/3.05m</td>
</tr>
<tr>
<td>1400H Type A/B</td>
<td>4600 20kg/2.5m</td>
<td>6700 200kg/2.8m MH</td>
</tr>
<tr>
<td>1410</td>
<td>4600 20kg/2.5m Type C</td>
<td>6700 205kg/2.8m MH</td>
</tr>
<tr>
<td>1520ID</td>
<td>4600 45kg/2.05m</td>
<td>6700 205kg/2.8m</td>
</tr>
<tr>
<td>1600 5kg/1.2m</td>
<td>4600 60kg/2.05m</td>
<td>6700 140kg/2.95m MH</td>
</tr>
<tr>
<td>1600 5kg/1.2m Type A</td>
<td>4600 60kg/2.05m Type C</td>
<td>6700 140kg/2.85m SW</td>
</tr>
<tr>
<td>1600 5kg/1.45m</td>
<td>4600 40kg/2.55m</td>
<td>6700 155kg/2.85m MH</td>
</tr>
<tr>
<td>1600 5kg/1.45m Type A</td>
<td>4600 40kg/2.55m Type C</td>
<td>6700 155kg/2.85m</td>
</tr>
<tr>
<td>1600 6kg/1.2m</td>
<td>4600 45kg/2.05m</td>
<td>6700 220kg/2.65m MH</td>
</tr>
<tr>
<td>1600 6kg/1.45m</td>
<td>6400R 200kg/2.5m</td>
<td>6700 220kg/2.65m SW</td>
</tr>
<tr>
<td>1600 7kg/1.2m</td>
<td>6400R 200kg/2.6m</td>
<td>6700 220kg/2.65m MH</td>
</tr>
<tr>
<td>1600 7kg/1.45m</td>
<td>6400R 120kg/2.5m</td>
<td>6700 220kg/2.65m MH</td>
</tr>
<tr>
<td>1600 7kg/1.45m Type A</td>
<td>6400R 150kg/2.8m</td>
<td>6700 175kg/2.6m MH</td>
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<tr>
<td>1600 8kg/1.2m</td>
<td>6400R 150kg/2.8m</td>
<td>6700 175kg/2.6m SW</td>
</tr>
<tr>
<td>1600 8kg/1.45m</td>
<td>6400R 100kg/3.0m</td>
<td>6700 200kg/2.6m MH</td>
</tr>
<tr>
<td>1600 10kg/1.2m</td>
<td>640</td>
<td>6700 200kg/2.6m</td>
</tr>
<tr>
<td>1600 10kg/1.45m</td>
<td>660 180kg/3.15m</td>
<td>6700 220kg/3.0m MH</td>
</tr>
<tr>
<td>1600 10kg/1.45m</td>
<td>660 250kg/3.15m</td>
<td>6700 220kg/3.0m SW</td>
</tr>
<tr>
<td>16001D 4kg/1.5m</td>
<td>660 175kg/2.55m</td>
<td>6700 245kg/3.0m MH</td>
</tr>
<tr>
<td>2400 10kg</td>
<td>660 175kg/2.60m</td>
<td>6700 245kg/3.0m</td>
</tr>
<tr>
<td>2400 16kg</td>
<td>660 225kg/2.55m</td>
<td>6700 270kg/2.7m MH</td>
</tr>
<tr>
<td>2400L</td>
<td>6600ID 185kg/2.55m</td>
<td>6700 270kg/2.7m SW</td>
</tr>
<tr>
<td>2600 12kg/1.65m</td>
<td>6620 150kg/2.2m</td>
<td>6700 300kg/2.7m MH</td>
</tr>
<tr>
<td>2600 20kg/1.65m</td>
<td>6620LX-150/1.9m</td>
<td>6700 300kg/2.7m</td>
</tr>
<tr>
<td>2600 12kg/1.65</td>
<td>6640 130kg/3.2m</td>
<td>7600 150kg/3.5m</td>
</tr>
<tr>
<td>2600ID 8kg/2.0m</td>
<td>6640 180kg/2.55m</td>
<td>7600 325kg/3.1m</td>
</tr>
<tr>
<td>2600ID 15kg/1.85m</td>
<td>6640 160kg/2.8m</td>
<td>7600 340kg/2.8m</td>
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<tr>
<td>260</td>
<td>6640 200kg/2.55</td>
<td>7600 400kg/2.55m</td>
</tr>
<tr>
<td>340</td>
<td>6640 235kg/2.55m</td>
<td>7600 500kg/2.3m</td>
</tr>
<tr>
<td>360 1kg/1130 Std No axis 4</td>
<td>6640ID 170kg/2.75m</td>
<td>7600 500kg/2.55m</td>
</tr>
<tr>
<td>360 1kg/1130 Wash-down No axis 4</td>
<td>6640ID 200kg/2.75m</td>
<td>760</td>
</tr>
<tr>
<td>360 1kg/1130 Standard</td>
<td>6640 150kg/2.55 DP6</td>
<td><strong>8700 475kg/4.2m MH6</strong></td>
</tr>
<tr>
<td>360 1kg/1130 Wash-down</td>
<td>6640 165kg/2.8m DP6</td>
<td><strong>8700 475kg/4.2m SW6</strong></td>
</tr>
<tr>
<td>360 1kg/1130 Stainless</td>
<td>6640 185kg/2.75m DP6</td>
<td><strong>8700 550kg/4.2m MH3</strong></td>
</tr>
<tr>
<td>360 1kg/800 Std No axis 4</td>
<td>6640 200kg/2.55 DP6</td>
<td><strong>8700 550kg/4.2m</strong></td>
</tr>
<tr>
<td>360 1kg/800 Wash-down No axis 4</td>
<td>6650 125kg/3.2m</td>
<td><strong>8700 630kg/3.5m MH6</strong></td>
</tr>
<tr>
<td>360 1kg/800 Standard</td>
<td>6650 200kg/2.75m</td>
<td><strong>8700 630kg/3.5m SW6</strong></td>
</tr>
<tr>
<td>360 1kg/800 Wash-down</td>
<td>6650ID 170kg/2.75m</td>
<td><strong>8700 800kg/3.5m MH3</strong></td>
</tr>
<tr>
<td>360 3kg/1130 Std No axis 4</td>
<td>6650S 125kg/3.5m</td>
<td><strong>8700 800kg/3.5m</strong></td>
</tr>
<tr>
<td>360 3kg/1130 Wash-down No axis 4</td>
<td>6650S 200kg/3.0m</td>
<td>^*9400</td>
</tr>
<tr>
<td>360 3kg/1130 Standard</td>
<td>6650S 90kg/3.9m</td>
<td>^*14000</td>
</tr>
<tr>
<td>360 3kg/1130 Wash-down</td>
<td>6660 100kg/3.35m</td>
<td></td>
</tr>
</tbody>
</table>

** requires the StandAlone Controller mediapool that is available for download from Add-Ins tab / RobotApps / RobotWare Add-Ins

**Note**

All simulation models in the table are installed with RobotStudio, but only the robots in the current product range are displayed in the ABB Library gallery. To import any other robot you need to browse to the file on disk.
Robot Libraries

<table>
<thead>
<tr>
<th>Variant</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 short vertical arm</td>
</tr>
<tr>
<td>52 std vertical arm</td>
</tr>
<tr>
<td>540-12 std arm</td>
</tr>
<tr>
<td>580-12 std arm</td>
</tr>
<tr>
<td>580-12 short arm</td>
</tr>
<tr>
<td>5300-12 left</td>
</tr>
<tr>
<td>5300-12 right</td>
</tr>
<tr>
<td>5320-1500</td>
</tr>
<tr>
<td>5320-2000</td>
</tr>
<tr>
<td>5350/01 Type Left</td>
</tr>
<tr>
<td>5350/01 Type Right</td>
</tr>
<tr>
<td>5350/02 Type Left Side Left</td>
</tr>
<tr>
<td>5350/02 Type Left Side Right</td>
</tr>
<tr>
<td>5350/02 Type Right Side Left</td>
</tr>
<tr>
<td>5350/02 Type Right Side Right</td>
</tr>
<tr>
<td>5400-12 std arm</td>
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<td>5400-13 std arm</td>
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<td>5400-14 std arm</td>
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<td>5400-22 process arm</td>
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<td>5400-23 process arm</td>
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<tr>
<td>5400-24 process arm</td>
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<tr>
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</tr>
<tr>
<td>5400-13 std arm axis 2 +60 deg</td>
</tr>
<tr>
<td>5400-14 std arm axis 2 +60 deg</td>
</tr>
<tr>
<td>5500 35A b_00 / b_80</td>
</tr>
<tr>
<td>5500 35B b_00 / b_80</td>
</tr>
<tr>
<td>5500 ProArm 35A b_00 / b_80</td>
</tr>
<tr>
<td>5500 ProArm 35B b_00 / b_80</td>
</tr>
</tbody>
</table>

Track Libraries

RobotStudio is distributed with the following track types that are available in the Track folder of the ABB Library.

<table>
<thead>
<tr>
<th>Track family</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRBT4003</td>
<td>1.7 m to 10.7 m</td>
</tr>
<tr>
<td>IRBT4004</td>
<td>1.9 m to 19.9 m</td>
</tr>
<tr>
<td>IRBT6003</td>
<td>1.7 m to 10.7 m</td>
</tr>
<tr>
<td>IRBT6004</td>
<td>1.7 m to 19.7 m</td>
</tr>
<tr>
<td>IRBT7003</td>
<td>1.7 m to 10.7 m</td>
</tr>
<tr>
<td>IRBT7004</td>
<td>1.7 m to 19.7 m</td>
</tr>
<tr>
<td>RTT_Bobin</td>
<td>1.7 m to 11.7 m</td>
</tr>
<tr>
<td>RTT_Marathon</td>
<td>1.7 m to 11.7 m</td>
</tr>
<tr>
<td>Paint Rails</td>
<td>2 m to 20 m</td>
</tr>
<tr>
<td>left and right versions</td>
<td></td>
</tr>
<tr>
<td>IRBS350 Rail</td>
<td>3 m to 10 m</td>
</tr>
<tr>
<td>left and right versions</td>
<td></td>
</tr>
</tbody>
</table>
2 What’s new in RobotStudio 6.01

Overview

The new functionality of RobotStudio 6.01 is described in this section.

2.1 New robot models

**IRB 14000**

The new dual arm robot is available in RobotStudio. You can use it with the Smart Grippers that are available from the ‘Import Library’ gallery.

**IRBT 8700**

The heavy duty robot IRB 8700 is now available in RobotStudio. It comes in two sizes of which the strongest can take up to 800 kg payload. The IRB 8700 is available with the LeanID wrist in addition to the regular wrist. You can get it pre-dressed for spot welding or material handling.

**IRBT 4004 / 6004 / 7004**

The IRBT x004 series of track motions has been available since long in RobotStudio. The new thing in 6.01 is that the mirrored and double carriage variants are also available. The double carriage variant is modeled as two individual models that needs to imported and configured separately.
2.2 General

Disable licensing

If you are using a network license, you can use RobotStudio in Basic mode without grabbing a license from the license server if you select the check box ‘Disable licensing’ in the RobotStudio Options.

Keyboard shortcuts for navigation in the 3D graphics view

The arrow keys can be used to rotate the 3D view. If you press and hold the Ctrl button you can pan the view with the arrow keys. You can zoom by pressing the PageUp and PageDown buttons. The navigation keys work also for station viewers as well as the ‘Online Monitor’.

2.3 Layout and Modeling

3D Work Envelope

A 3D volume representing the work envelope of the robot can be enabled by selecting the ‘Work envelope’ option of the context menu of a robot. You can select choose between using the wrist center point or the active tool center point to define the work envelope.
Remove internal geometry

Hidden bodies, faces and triangles can be automatically removed by the function ‘Remove internal geometry’. The function aims to simplify the process of removing excess detail of CAD parts.

1. Original part with internal geometry  2. Reduced part without internal geometry

Snap to center of hole

If you click on a surface close to a circular edge with ‘Snap Mode: Center’ enabled, RobotStudio will snap to the center of the circular edge. This is useful if you want to pick the center point of a hole.

VRML export

Parts and stations can be exported to the VRML2 format using the ‘Export Geometry’ function.

Source: RobotStudio  Target: ShopFloor Editor (for example)
Shallow rectangle selection

By pressing and holding the Shift keyboard button you can draw a selection rectangle with the mouse cursor in the 3D view. Starting with RobotStudio 6.01, you can optionally select only the currently visible objects using rectangle selection. This selection mode is called ‘shallow rectangle selection’ and is enabled if you press and hold the keyboard buttons Shift and S and draw a rectangle in the 3D view using the mouse. The default selection mode is still the usual ‘deep rectangle selection’ that selects everything covered by the selection rectangle regardless of its visibility.

Four bar linkage

Four bar linkages are typically used for the hinges of motor hood. These can now be modeled in RobotStudio if you use an .rsxml file to describe your mechanism. The library can be built by importing the .rsxml file using the ‘Import Library’ command.

Sample .rsxml file:

```xml
<?xml version="1.0"?>
<Mechanism xmlns="urn:abb:robotics:robotstudio:graphiccomponent"
  lengthUnit="mm" angleUnit="deg" name="Test"
  modelName="Test" type="Other">
  <Links basicLink="FourBarLink_Base">
    <Part name="FourBarLink_Base" source="FourBarLink_Base.sat"/>
    <Part name="FourBarLink_Crank" source="FourBarLink_Crank.sat"/>
    <Part name="FourBarLink_Lever" source="FourBarLink_Lever.sat"/>
    <Part name="FourBarLink_Coupler" source="FourBarLink_Coupler.sat"/>
  </Links>
  <Joints>
    <!-- This is the new tag -->
    <FourBarJoint name="J1" axis="0, 1, 0" parent="FourBarLink_Base" child="FourBarLink_Coupler">
      <Crank link="FourBarLink_Crank" point1="1354.00, 0, 682.99" point2="1396.73, -1, 683.64"/>
      <Lever link="FourBarLink_Lever" point1="1215.17, 0, 606.23" point2="1323.31, -1, 682.53"/>
    </FourBarJoint>
  </Joints>
  <Limits>
    <Limit joint="J1" min="-90" max="90"/>
  </Limits>
</Mechanism>
```
Graphics Tools: Replace Material

If you have a part with several different materials, i.e. colors, and you want to replace one of them, then you can use the function 'Replace Material'. Select a material from the ‘Materials’ gallery and click on a surface of your to part to replace its material.

Switch between Euler angles and Quaternions

The representation of orientations can be switched between angles and quaternions. Which representation to use by default is defined by the RobotStudio Options.

Show and Hide SetBrush instructions

The visibility of SetBrush instructions can be changed through a context menu command.
2.4 Offline programming

System From Layout: Align task frame with track base frame

There is an option in the ‘System From Layout’ wizard to place the task frame by the robot base frame. In 6.01, the selection has been extended to also include the track base frame, if available.

Visualization of programmed speed

The programmed speed of a path can be visualized by the command ‘Show speed’ in the Path context menu.

Set color of path

The color of all motion instructions of path can be set by the function ‘Set Color’. Starting with 6.01, the function is also available on the Path level. The command will override any colors defined on the instructions.
External axis smoothing

The movement of a linear or rotating external axis can be smoothened by the new option ‘Constant speed’ that is available in the command ‘Interpolate External Axis’.

Export station logic

The Station logic used to define the behavior of the surrounding equipment and its connections to the virtual controller can be exported to a file for later re-use in another station.

Station change log and version numbering

Each time a station is saved using ‘Save As’, its filename is incremented and a change log comment optionally added. The change log will be displayed in the Info and Recent sections of the File tab.
Automatic backup on save of RobotStudio Solution

The controllers of your station will be automatically backup when saving the station if you are using a solution. The backups can be used to manually restore the controller data.

2.5 Online functions

FlexPendant Viewer – Copy to Clipboard

The new button ‘Copy to clipboard’ is useful e.g. when creating user documentation of FlexPendant user screens.

HOME folder visible in Controller browser

The content of the HOME folder of the connected virtual or real controller is visible in the Controller browser. Both RAPID and configuration files can be edited as text files.

For virtual controllers, RAPID modules can be synchronized to the graphics environment of the station using the context menu of the RAPID module file. To synchronize any changes back to the RAPID module, use the command ‘Synchronize to file’.
### I/O Signal Data Editor

The signal instances of an EIO.CFG file can be edited with the ‘I/O Signal Data Editor’ available in the Files browser of the RAPID tab.

### Remove unused data in RAPID module

To clean up a module, you can use the command ‘Remove unused data in Module’. The command will remove any RAPID data that is declared in the selected module, but neither used in the module nor in the current task.

### Display Euler angles in RAPID Data Editor

By selecting the checkbox ‘Show quaternions as RPY angles’ in the RAPID Data Editor, the orientation of e.g. robtargets will be displayed in angles instead.
Local client

RobotStudio can act as a local client thereby getting full access to the controller functionality without restrictions in manual mode. When you select the local client checkbox in the ‘Add Controller’ dialog or in the ‘Login’ dialog you can get local client privileges by pressing the enabling switch on the safety device twice. Examples of safety devices are the FlexPendant, the Jokab JSHD4, and the Keba T10.

Low bandwidth mode

The low bandwidth mode is useful when connecting RobotStudio to a controller over a network connection with limited bandwidth. It reduces controller communication to a fraction of the regular connection mode.

New Job Actions

There are new job actions for verifying time, saving or searching event logs, reading cfg data, signal values and RAPID data or text. You can also read or write files and get the system information for all controllers. Note that the Restart action has been removed.
Settings file for automatic selection of RobotWare options

When migrating a RobotWare 5.60/5.61 key using a backup or a connected controller you will get a settings file (.rsf) in addition to the license file (.rlf). The settings file can be used by the Installation Manager to automatically select the options used by the original system.
3 Late Breaking Information

Overview

This section contains information about late changes that were done after the RobotStudio 6.01 Operating Manual was finalized. The following new commands has been added but are not covered by the 6.01 Operating Manual:

- Remove internal geometry
- VRML export
- Shallow rectangle selection
- Four bar linkage
- Graphics Tools: Replace Material
- Visualization of programmed speed
- External axis smoothing
- HOME folder visible in Controller browser
- Display of Euler angles in RAPID Data Editor
- New and removed Job Actions

See section 2 for more information.
4 Corrections

4.1 Corrections made in 6.01 SP1

Overview

This section describes the corrections made in 6.01 SP1.

Corrections

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>The base Smart Component 'LogicExpression' failed</td>
</tr>
<tr>
<td></td>
<td>A problem with the regular expression parser caused the smart component to fail.</td>
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<tr>
<td>-</td>
<td>The Jobs action 'System Information' failed</td>
</tr>
<tr>
<td></td>
<td>The System Information action is new to 6.01 and unfortunately failed due to a late change.</td>
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<tr>
<td>-</td>
<td>Unhandled exception when library mechanism was selected for external axis</td>
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<tr>
<td></td>
<td>The exception appeared, for example, when browsing to a mechanism library when configuring an external axis servo gun.</td>
</tr>
<tr>
<td>-</td>
<td>Unhandled exception when copying target to a new workobjekt</td>
</tr>
<tr>
<td></td>
<td>When copying targets from one workobject to another by copy/paste or drag-and-drop an unhandled exception appeared.</td>
</tr>
</tbody>
</table>

4.2 Corrections made in 6.01

Overview

This section describes the corrections made in 6.01.

Product Defect Documents (PDD)

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
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<tbody>
<tr>
<td>36</td>
<td>RobotStudio cannot be closed while simulation is running</td>
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<td>45</td>
<td>Geometry import fails for curves in COLLADA format (.dae)</td>
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<tr>
<td>1229</td>
<td>Not possible to save multiple RAPID modules in one operation</td>
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<tr>
<td>1231</td>
<td>File Transfer window does not allow drag-and-drop file within pane inside another folder</td>
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<tr>
<td>1267</td>
<td>UAS Users window sometime abruptly minimizes</td>
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<tr>
<td>1395</td>
<td>Virtual Controller connection may fail after crash of RobotStudio</td>
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<tr>
<td>1590</td>
<td>Cosmetic errors in the I/O Simulator user interface</td>
</tr>
<tr>
<td>1688</td>
<td>No switch to Controller tab when controller is connected from File tab</td>
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<tr>
<td>1690</td>
<td>Focus removed from I/O Simulator when 'Follow Program Pointer' is active</td>
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<td>1757</td>
<td>The I/O simulator does not show signals that are configured with a mix of upper and lower case letters in the Configuration database.</td>
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<tr>
<td>1916</td>
<td>Add RobotStudio option for not grabbing a network license</td>
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<tr>
<td>1943</td>
<td>Back-up folder looks like robot system folder in RobotStudio</td>
</tr>
<tr>
<td>1955</td>
<td>UAS: Renamed Users group is not removed from Users list</td>
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<tr>
<td>1982</td>
<td>RobotStudio does not open Controller tab when a controller is added from File tab</td>
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<tr>
<td>2067</td>
<td>Cannot make bodies permanently invisible, they become visible when re-loading station</td>
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<tr>
<td>2087</td>
<td>Incorrect formatting of RAPID program with ERROR statement</td>
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<td>2104</td>
<td>Columns for Module in dialog for 'Synchronize to RAPID' are too narrow</td>
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<tr>
<td>2136</td>
<td>Error in page numbers when printing RAPID module</td>
</tr>
<tr>
<td>ID</td>
<td>Description</td>
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<td>-----</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>2434</td>
<td>‘AutoConfiguration’ fails for circular points when using stationary tool and moving workobject</td>
</tr>
<tr>
<td>2557</td>
<td>Drag-and-drop errors in ‘File Transfer’ tool</td>
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<tr>
<td>2652</td>
<td>Add option to show ‘All Tags’ in the ‘Show/Hide’ menu</td>
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<tr>
<td>3109</td>
<td>System From Layout: The pedestal weight is automatically added to the configuration parameters for IRBT x004</td>
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<tr>
<td>3173</td>
<td>The instance editor does now allow to change characters of the signal definition from upper case to lower case</td>
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<tr>
<td>3190</td>
<td>Crash when importing a STEP file created with SolidWorks</td>
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<tr>
<td>3344</td>
<td>Library for IRBT 4004 type A not correct – hole pattern missing on carriage</td>
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<tr>
<td>3368</td>
<td>‘System from Layout’ must be blocked for IRB on RTT with IRBP K (not enough drives)</td>
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<td>3406</td>
<td>Changing language causes .spag or .rsstn file to be re-opened if RobotStudio was started by double-clicking file in Windows Explorer.</td>
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<td>3875</td>
<td>Allow remote controller connection</td>
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<td>3904</td>
<td>French localization issues</td>
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<td>4115</td>
<td>Losing view center when rotating the view</td>
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<tr>
<td>4156</td>
<td>Lack of error handling in Control Panel</td>
</tr>
<tr>
<td>4173</td>
<td>The function ‘Migrate Backup or Folder’ is greyed out</td>
</tr>
<tr>
<td>4236</td>
<td>Automatic transparency not documented in the Operating Manual</td>
</tr>
<tr>
<td>4304</td>
<td>Copy / Paste of move instructions reverses order if pasted on other move instruction</td>
</tr>
<tr>
<td>4358</td>
<td>Visual SafeMove fails to automatically generate zone from simulation</td>
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<tr>
<td>4467</td>
<td>Memory issue when restoring backup on virtual controller</td>
</tr>
<tr>
<td>4538</td>
<td>Direction control should not response to point picking</td>
</tr>
<tr>
<td>4569</td>
<td>Saving a station viewer may cause libraries to be renamed and relocated</td>
</tr>
<tr>
<td>4571</td>
<td>Poor performance with ‘System from Layout’</td>
</tr>
<tr>
<td>4572</td>
<td>Error message for ‘Upgrade Boot Application’ clarified if controller already upgraded</td>
</tr>
<tr>
<td>4598</td>
<td>Library for IRBT 4004 type A not correct – hole pattern on carriage incorrect</td>
</tr>
<tr>
<td>4602</td>
<td>RobotStudio fails when connected through Remote Access in Remote Service</td>
</tr>
<tr>
<td>4616</td>
<td>Frequent RobotStudio crashes during Smart Component simulation</td>
</tr>
<tr>
<td>4628</td>
<td>Installation issues causes CAD conversion to fail</td>
</tr>
<tr>
<td>4633</td>
<td>RobotWare 6 appears as two different versions in Add-Ins browser.</td>
</tr>
<tr>
<td>4634</td>
<td>RobotStudio Product Specification does not contain the option numbers</td>
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<tr>
<td>4657</td>
<td>Conveyor tracking: Start window width cannot be set to non-zero for paint systems</td>
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<tr>
<td>4673</td>
<td>CAD import fails due to faulty installation</td>
</tr>
<tr>
<td>4697</td>
<td>Visual SafeMove incorrectly warns about difference between safety and controller configuration</td>
</tr>
<tr>
<td>4764</td>
<td>Not possible to delete station tasks</td>
</tr>
<tr>
<td>4732</td>
<td>Simulation hangs every second time</td>
</tr>
<tr>
<td>4761</td>
<td>‘Import Geometry’ fails due to problems with installation</td>
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<tr>
<td>4777</td>
<td>Slow response for ‘View Robot at Target’</td>
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<tr>
<td>7514</td>
<td>Unit mapping missing in the ‘I/O System’ viewer</td>
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<tr>
<td>8743</td>
<td>The function ‘Show Work Envelope’ ignores the x values of tooldata</td>
</tr>
<tr>
<td>9844</td>
<td>Hint about possibly empty path added to function ‘Create Target on Edge’</td>
</tr>
<tr>
<td>10725</td>
<td>Cannot select range of instructions in ‘Interpolate External Axis’</td>
</tr>
</tbody>
</table>
5 Known Limitations

Overview
This section describes known limitations in RobotStudio.

5.1 General

Compatibility of RobotStudio Library and Stations with older RobotStudio versions
RobotStudio is generally not forwards compatible, i.e. it is not possible to load stations or libraries created in RobotStudio 6.01 into an earlier version of RobotStudio such as e.g. RobotStudio 5.15.02, 5.61.02, 6.0, 6.00.01 or earlier. However, RobotStudio is backwards compatible, which means stations and libraries created in versions 5.15.02, 5.61.02, 6.0, 6.00.01 or earlier can be opened in RobotStudio 6.01.

5.2 Online

Visual SafeMove windows can be re-opened from the Quick Access Toolbar menu
Any windows that are closed can be re-opened using the Quick Access Toolbar menu, as the command Default Layout does not recover these windows.

Individual RAPID tasks cannot be stopped for RobotWare 5.60 and later
When running multitasking systems, it is not possible to start and stop individual tasks with the dropdown menu of the task node in the Controller browser. This is due a restriction introduced with RobotWare 5.60 and later.

Signal Analyzer Online not available for RobotWare 5.60, RobotWare 5.15.02 and earlier
The feature Signal Analyzer Online is not available for controllers running RobotWare 5.60, RobotWare 5.15.02 and earlier. The reason is a vulnerability in Robotware that may cause interruptions in the robot operation.

Signal Analyzer Online is supported by Robotware 5.15.03 and later, and RobotWare 5.61 and later, where the problem has been corrected.

It is not recommended to use Signal Analyzer Online of RobotStudio 5.15.01 or 5.15.02 with RobotWare versions prior to 5.15.03 or 5.61.

SafeMove Tool Zone visualization in Online Monitor for robots with external axes
Only TCP robots and track mounted robots will be visualized in the Online Monitor, no other external axes or positioners.

As a consequence, the Online Monitor may show the robot in a non-violating position, even though the safety controller has detected a safety violation and stopped the robot.

FlexPendant Viewer running with automatic reloading
When having FlexPendant Viewer running with automatic reloading of the screens and at the same time jogging the robot with the joystick the robot jogging might halt when the FlexPendant Viewer reloads.

5.2.1 Online - Paint

Backup for Paint systems does not create backup of the PIB board
The Backup function of RobotStudio does not create a backup of the PIB board of the IRC5P system.
**Workaround**: Create the backup of the PIB board with the FlexPaint Pendant using an USB-stick.

**Go Offline does not work for Paint systems**

The Go offline function will not create a working Virtual controller system for Paint system unless the Paint package I/O option is set to Simulated.

### 5.2.2 Online – Integrated Vision

**Information – Integrated Vision only works on 32-bit installations**

It is not possible to use Integrated Vision in the 64-bit version of RobotStudio.

**Information – Camera firmware version and update**

The minimum firmware version to be used with Integrated Vision is 4.08. If this version is not available for a specific camera model, then the newest version available shall be used.

There are two important things to know before upgrading a sensor

- The user must make sure to first backup the files on the camera. This can be done using the Rapid snippets for camera backup/restore, or the FlexPendant Explorer.
- The latest available firmware version may vary across sensor types. However, when the firmware update utility presents the latest available version it shows the firmware with the highest version number which may not apply to the sensor to be updated. However, the appropriate firmware will be applied.

**Information – The spreadsheet view**

The spreadsheet view is not enabled when editing in the following modes “Add part location tool”, “Add part inspection tool”. Before entering the spreadsheet mode click for example “Setup Image” or Output to Rapid.

**Information – Calibration board without fiducial**

When using the calibration boards, checkerboard or board with dots, the user must select the preferred origin by clicking and accepting (press enter) three points on the board. Only after these three points have been selected is it possible to click “calibrate” to execute the calibration.

**Information - Use default camera settings**

If the camera is not using default communication settings the result may be that RAPID instructions return error code “Communication Error”. The safest method to get default settings is to go to Connect->Add Sensor Right click and select “Show all sensors”. Select the device to reset and click “Apply factory settings” in the lower right corner. The most important settings are:

- Telnet port: 23
- User: “admin”
- Password: ""

**Information – User Credentials**

It is now possible to create user profiles with different access levels on the camera. For detailed information about this, please refer to the Integrated Vision User Manual.
Remaining error – Save image on camera
It is not possible to save an image on the camera using “Save Image”. This is by design, but the dialog still allows the user to try to do this. The result is that the image is not saved and no error message is given.

Remaining error - Connect button greyed out for no reason
It may sometimes happen that the “Connect” button is greyed out, with the tooltip saying the the camera is not on the correct subnet although the IP settings are OK.
Workaround: Restart the Integrated Vision Add-In.

Remaining error – VC started from Controller->Add controller does not detect cameras
A VC that is started from Controller->Add controller does not detect cameras on the network, even if the VC_network_definition.xml is correctly configured and the firewall is turned off. The reason is that the controller is not able to detect new cameras on the network when it is in “Motors On” state. When the VC is started stand-alone in RobotStudio it is automatically set to “Motors On” when started.
Workaround: To allow it to discover cameras, turn the control panel key to manual mode or launch the VC as part of a station.

User tip - Removing cameras from configuration
To remove a configured camera from the list of configured cameras, use the configuration editor. Enter Configuration->Communication->Application Protocols and remove the desired camera. Perform a warm start to complete the operation.

User tip -- Viewing all cameras present on the network
Connect->Add Sensor is normally used for setting the IP addresses of sensors that are not currently on the correct subnet (192.168.125.X). Since the dialog shows all cameras “seen” by the PC, this dialog is useful when error tracing camera network problems.

If a camera does not appear on the network using the “Add sensor” dialog as suggested above, it is advisable to cycle the power of the camera. If the camera receives power from the controller, then cycle power by turning the mains switch.

User tip – Warm start the controller after changing network settings
Whenever changing the network settings of the camera, either from Connect->Add Sensor or Connect->Network settings, it is important to warm start the controller. If this is not done, RAPID instructions will give the error “Communication Error” and the FTP-mounted camera disk is not accessible. If DHCP address is used and persists, please try a static address instead.

5.3 Offline

5.3.1 General

* The Work Envelope function does not support IRB 14000
The function is disabled for the IRB 14000 and cannot be activated.

The 2D work envelope fails for certain robot models
As a result, the generated work envelop may appear distorted.

Update of current selection in the 3D graphics window may be delayed
A problem related to the graphics driver has been observed on certain PCs. The problem is that the update of the current selection in the 3D graphics is delayed until the next redraw.
Workaround: Add or uncomment the following line in the file RobotStudio.exe.config

   <add key="DoublePresentWorkaround" value="true" />

Failure to open Pack&Go file to same folder the second time

RobotStudio will prevent Pack&Go files to be opened to the same folder a second time if the station contains VC systems with the EPS or SafeMove option. This is by design to prevent the safety controller configuration file to be accidentally overwritten.

Workaround: Remove the write protection manually using Windows Explorer.

Updates of instruction template and code snippets

RobotStudio will not automatically update the user files for instruction templates and code snippets files in the folders:

...\My Documents\RobotStudio\Instruction Templates
...\My Documents\RobotStudio\Code snippets

Workaround: The user has to manually copy the latest files from

%ProgramFiles%\ABB Industrial IT\Robotics IT\RobotStudio 5.xx\Instruction Templates,
and

%ProgramFiles%\ABB Industrial IT\Robotics IT\RobotStudio 5.xx\Code Snippets
to the data folder.

IO signals configured with access level ‘DEFAULT’

When IO signals are configured with access level ‘DEFAULT’, only input signals are possible to set/reset from the I/O Simulator and I/O Window. To be able to affect also output signals, set the access level to ‘ALL’ for them in the Configuration Editor.

VC does not start with RRI option and GSI folder structure missing.

The VC will hang when started with a system containing the RobotWare option RRI (Robot Reference Interface) if the GSI folder structure is missing.

Workaround: create GSI Folder before starting the VC inside the HOME directory of the system. See the Application Manual for Robot Reference interface for more information.

System in Guard Stop state in Automatic mode after run-time error

Certain run-time errors may cause the controller system to enter Guard Stop state in Automatic mode. This is the same behavior as in a physical robot controller system. This typically happens when a run-time error related to Conveyor Tracking occurs. A simulation cannot be started when the controller is in this state.

Workaround: To reset the controller state, open the Control Panel window and first switch to Manual mode, and then back to Automatic mode.

Information message starting system with IRB260/460/660/760

Starting a system with IRB260/660 gives you an error message: ‘The number of joints is different between the library model and the controller configurations’. The reason is that the IRBx60 is modeled with six joints in RobotStudio of which two are locked, but has four joints in the VC.
Path handling of instructions with multiple joint targets

The path functions Rotate, Translate, and Mirror do not work as expected with instructions containing via points as joint targets. The functions will leave the joint targets as is. Interpolate Path gives an Unknown Error and Tool Compensation reports an error message.

Event Manager: Simulation cannot be triggered by analog system signals

The event manager only supports analog station signals, not analog system signals.

5.3.2 Station Viewer

Memory problem when doing Save As Viewer or Record to Viewer with large stations

RobotStudio may run out of memory (OutOfMemory exception) when doing Save As Viewer or Record To Viewer if the station is very large.

Workaround: Use the 64-bit version of RobotStudio and create a 64-bit viewer by ticking the checkbox in the Save As Viewer file dialog.

5.3.3 MultiMove

MultiMove error: ‘Object reference not set to an instance of an object’

When the Test Play button is pressed in the MultiMove tool, the following error message may be displayed: ‘Object reference not set to an instance of an object’, but the robot moves and the Status ‘Calculation OK’ is displayed. In addition, when ‘Create Paths’ is pressed the following message is displayed: ‘Can’t create paths : Value cannot be null’, and no paths are created. In the ‘Create Paths Settings’, is the WP TCP drop down empty.

Reason: wobj is not set for the current task

5.3.4 External Axis

Error 50091: ‘Restart not possible’ after warm start of a system with external axis

When restarting a system with activated mechanical units the activation state is lost. Then the program can no longer be started from the Virtual FlexPendant, the RAPID Editor or the RAPID Tasks window.

Workaround: Reset the program pointer (‘Program Pointer to Main’) before starting the program from the Virtual FlexPendant, the RAPID Editor or the RAPID Tasks window, or, start the program from the Simulation Play button.

5.3.5 Network Drives and UNC Paths

RobotStudio on computers with roaming user profiles

RobotStudio may fail on PC configurations with roaming user profiles, i.e. when the users’ documents folder resides on a server and not on the local disk.

Workaround: Redefine the ‘User Project Folder’ to a folder on the local disk (File → Options → General → Files & Folders → User Project Folder).

Virtual Controller does not support UNC paths

UNC paths cannot be used to locate Virtual Controller systems. Using UNC paths for VC systems will cause the log message ‘Failed to initialize FW upgrade framework’ to appear when the system starts. Subsequent attempts to work with the VC such as synchronizing RAPID data will fail.
Creating and starting systems located on a network drive

When using a network drive to store RobotStudio data such as RobotWare systems or the RobotWare mediapool, the following problems may occur

- Virtual controller does not start
- Not possible to open VirtualFlexpendant

**Cause:** By default, the .NET Framework does not allow execution of code from a remote file system. This means the application may behave unexpectedly if the media used by the system or the system itself resides on a network share.

**Workaround:** To resolve this, the user must explicitly grant the required permissions:

1. Open the file `Virtual FlexPendant.exe.config` located in `C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio 5.61\Bin`
2. Add the following lines

```xml
<?xml version="1.0"?>
<configuration>
  <startup useLegacyV2RuntimeActivationPolicy="true">
    <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.0"/>
  </startup>
  <runtime>
    <!-- THIS IS ONE OF THE NEW LINES!!! -->
    <loadFromRemoteSources enabled="true"/>
    <!-- THIS IS ONE OF THE NEW LINES!!! -->
  </runtime>
</configuration>
```

The Virtual FlexPendant must be restarted for the changes to take effect.


---

**5.3.6 RAPID**

**Robtarget names must be unique in RAPID even if they are LOCAL**

RobotStudio requires that robtarget names are unique for the RAPID synchronization to work properly, i.e. you cannot have a global robtarget named pMyTarget1 in module A and a local robtarget with the same name in Module B.

**Global robtargets cannot be made local through Synchronization to VC**

Global robtargets cannot be changed to local through Synchronization to VC, the option is disabled (PDD 3140).

**Workaround:** Change the robtargets to module local in the RAPID Editor and Synchronize to station.

**Error Message: Sync. to Station completed with errors**

`Error Message: Sync to Station completed with errors: New data <name> <type> has same name as existing object in same block <routine>.`

When this error message appears, there is a storage type mixup between data already stored in RS and in the VC. Because of this, and per design, the data is not considered the same data.
Workaround: 1. Ensure all data declarations have the same definition in RS as in RAPID (there is no user interface for this).
2. Sync to station should now work.
3. Sync back to controller, and remember to change the data declarations back to what you want.

5.3.7 Paint

Lack of Virtual Controller support for the Paint systems

Paint systems that are configured using the Paint package I/O option Discrete, Compact or Fieldbus, will result in a SysFail state.

Workaround: Re-create the system with the simulated I/O option.

Compiling a Conveyor Mechanism does not disable the Compile button

After compiling a conveyor mechanism, using the Create Mechanism tool, the Compile Mechanism button is not disabled. If the user presses the Compile button again, without changing anything, another identical conveyor mechanism will be created.

5.3.8 Graphics and Geometry

Enforce selected graphics device for PCs with multiple graphics cards

For best performance when running RobotStudio on a PC with multiple graphics cards, RobotStudio can be configured to use a specified device. By this option you can ensure maximum performance. This is useful for e.g. Lenovo W540 that has both an integrated Intel graphics device and a discrete NVIDIA card.

Open the file RobotStudio.exe.config that is located in the folders:

C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio 6.0\Bin64
and

C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio 6.0\Bin
and uncomment the line:

<add key="GraphicsDeviceType" value="Discrete"/>

Valid values are 'Discrete', 'Integrated' and 'Warp' (software renderer).

Note that there are two different files, one for the 32-bit version, and another for the 64-bit version.

Problems when undoing Boolean operations on Geometry

Undoing a Boolean operation might not succeed. To recover from these problems, you need to delete the items that caused the problem.

Out of memory

The application might fail when out of memory due to the import of very large ACIS files or load of very large stations.

Workaround: Use the 64-bit version that can handle more memory. Ensure that you have enough memory installed on the PC, see System Requirements.
5.4 ScreenMaker Limitations

*A ScreenMaker application may fail to build if the DPI setting is not set to 100%*

Certain UI controls in ScreenMaker may fail to build correctly if the DPI setting is not set to ‘Smaller – 100%’.

**Symptom:** The error message caused by this problem will read ‘System.Drawing.Font’ does not contain a constructor that takes 2 arguments.

**Workaround:** Set DPI to 100% on your PC.

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**File changes to FlexPendant applications does not load the changes until a FlexPendant reset**

With RobotWare 6.0x the controller’s restart will no longer reset the FlexPendant memory. This was part of an effort to improve the restart time of the controller.

This means that after placing a new FlexPendant application file(s) on the FlexPendant unit, you need to manually reset the FlexPendant for it to reload its assets.

To manually reset the FlexPendant you need to use the reset button on the FlexPendant’s backside. (See Operating Manual – IRC5 with FlexPendant, 3HAC16590)

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**Dynamic update of Rapid Data**

The switch from Manual Mode to Auto Mode causes the RAPID boolean data bound to the enabled property of control change to value TRUE. This behaviour is noticed when the mode is changed from a different screen and not on the screen where the control is bound to RAPID boolean data. An additional side effect is that the enabled property of RunRoutine button has been disabled as similar behavior was seen.

---

**Running Routine with Movement**

RunRoutine Button control does not always work correct when a routine with movements is called.

As a workaround use instructions like StopMove, StorePath, RestorePath and StartMove to control the movements of the robot.

A Trap routine could be called with a normal button control and in the Trap the above instructions can be used to control the movements of the robot.

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**PictureBox control as a Widget**

If a Picture Box control is created as a widget from a Windows 8 operating system, the control is not shown on the FlexPendant. The behavior is fine with any other operating system like Windows 7.
6 RobotWare Compatibility

6.1 General

Supported RobotWare versions

RobotStudio 6.00.01 is distributed with RobotWare 6.00.01 and works with RobotWare 5.07 and later. Please check details below.

6.2 RobotWare 5.05 and 5.06 Compatibility

RobotWare 5.05 and 5.06 including revisions thereof are not supported by RobotStudio 5.15 and later versions. Please use the corresponding version of RobotStudio for managing robot controllers with any of these RobotWare versions.

6.3 RobotWare 5.07 Compatibility

RobotWare 5.07 and its revisions of are supported with the following limitations:

General

The location of the program pointer is not updated in the RAPID Editor during program execution.

Offline

A limitation in the versions 5.07.02, 5.07.03, and, 5.07.04 of RobotWare may cause the Virtual Controller to System Failure state during I-start on certain computers. The problem is due to the ctrl.bin-file not being correctly created.

Workaround: Create an empty ctrl.bin file in the INTERNAL folder of the controller system, and then perform a warm start.

Note

The problem will reappear if the system is I-started.

The virtual controller does not support RobotWare 5.07.08 and RobotWare 5.07.07.

Online

FlexPendant Viewer does not work RobotWare 5.07

6.4 RobotWare 5.08 Compatibility

RobotWare 5.08 and its revisions of are supported with the following limitations:

Offline

RobotWare 5.08 is not supported.

Workaround: Use RobotWare 5.08.01 or later.

6.5 RobotWare 5.10 Compatibility

RobotWare 5.10 and its revisions of are supported with the following limitations:

Offline

Starting a controller will generate internal UAS error in controller error log.

6.6 RobotWare 5.11 Compatibility

RobotWare 5.11 and its revisions of are supported with the following limitations:
Offline

Linear jogging of a robot across joint values that will cause a change of confdata may fail. For example, if the robot is jogged linearly when joint values is passing 90 degrees for axis 1 may cause the robot to stop or to change configuration.

6.7 RobotWare 5.12 Compatibility

RobotWare 5.12 and its revisions of are supported with the following limitations:

Paint backups from RW 5.12.01 not compatible with RW 5.12.02 or later

Restoring a paint system backup from RobotWare 5.12.01 will cause SysFail for RobotWare 5.12.02 or later

Workaround: Add the following parameters to the configuration files

```
EIO.CFG:

EIO_SIGNAL:
- Name "doMainInMC" - SignalType "DO" - Unit "SysComm" - UnitMap "44"
- Name "A1HVEnRNo" - SignalType "GO" - Unit "SysComm" - UnitMap "150-151"
- Access "ALL"
- Name "A1HVEn" - SignalType "DO" - Unit "SysComm" - UnitMap "155"
- Access "ALL"

EIO_CROSS:
- Res "A1HVEn" - Act1 "HVEnabled"

SYS.CFG:

CAB_TASK_MODULES:
- File "INTERNAL:/pntrapid/T_ROB1/cycinfo.sys" - ModName "cycinfo"
- Task "T_ROB1"
- File "INTERNAL:/pntrapid/csvlkup.sys" - ModName "csvlkup" - AllTask
- Hidden
```

6.8 RobotWare 5.13 Compatibility

RobotWare 5.13 and its revisions are supported with the following limitations:

Paint backups from RW 5.12.02, 5.12.03 or RW 5.13 or 5.13.01 not compatible with RW 5.13.02 or RW 5.13.03

There are several changes in the configuration database for I/O (EIO.CFG) and Controller (SYS.CFG) that will cause System Failure if an old backup is loaded. There are also changed in installed RAPID modules. To create a compatible configuration, proceed as follows:

1. Create and start a VC with a RobotWare 5.13.03 system containing the same options as your original backup, but do not load the backup.
2. Save the EIO.CFG and SYS.CFG to file.
3. Compare the saved files with the corresponding files of your backup. (You can use a text file comparison tool for simplification.)
4. Add your system-specific configuration to the general configuration files saved from the 5.13.01-system using a text editor.
5. Replace the files of the original backup with the corresponding modified configuration files.
6. Go through the RAPID modules of the backup and remove the default modules (i.e. those that are not changed by the user).
7. Load the backup and restart the system. You are done.
6.9 RobotWare 5.15 Compatibility

Signal Analyzer Online

The feature Signal Analyzer Online requires RobotWare 5.15.03 or later.

6.10 RobotWare 6 Compatibility

Overview

RobotWare 6.00 and 6.00.01 systems cannot be directly upgraded to RobotWare 6.01. To upgrade a system, you need to create backup and migrate it using the tool ‘Migrate Backup or Folder’, then recreate the system and finally, restore the backup.

For this reason, the functions ‘Unpack&Work’, ‘Go Offline’ and ‘New Solution with Station and Robot Controller – From backup’ are blocked to prevent upgrade from RobotWare 6.00 or 6.00.01 to RobotWare 6.01.

RobotStudio, however, is compatible with both RobotWare 6.00 / 6.00.01 and 6.01.

6.11 General Compatibility Limitations

RAPID Profiler

The profiler will be able to create a log file for the profiler automatically for RobotWare 5.14 or later. For RobotWare 5.13 or earlier, the log file must be created manually using the RAPID Spy command (SpyStart/SpyStop).

Safety Configuration

Safety configuration of a track motion IRC5 system equipped with a safety controller of type EPS or SafeMove can be done without the need to read track motion parameters manually when using RobotWare 5.11.01 or later. Encrypted parameters needed by the safety controller will be automatically read by EPS Wizard and SafeMove Configurator, respectively.

Signal Analyzer Online

Signal Analyzer Online requires RobotWare 5.15.01 or later.

Signal Analyzer.

The error message Failed to subscribe on signal may sometimes appear during signal recording for RobotWare 5.15 or earlier.

Workaround: Restart the VC or upgrade to RobotWare 5.15.01 or later.

Configurations

The feature Configurations for selecting the robot arm configuration (confdata) may fail, or not present all solutions, in some specific circumstances even when the target is reachable if RobotWare 5.14 or earlier is used.

Workaround: Upgrade to RW5.14.01 or later

6.12 ScreenMaker Compatibility

RobotWare

It is possible to use previous RobotWare versions, but with some limitations.

- ActionTrigger will work only on RobotWare 5.12.02 or later.
• The controls Button, TpsLabel and PictureBox controls was modified in RobotStudio 5.13. The property ‘Allow MultipleStates’ of these controls can be accessed from RobotWare 5.13 and later.
• Variant Button will work only on RobotWare 5.14.01 or later
• Conditional Trigger will work only on RobotWare 5.14.01 or later
• Widgets will work only on RobotWare 5.60 or later.

FlexPendant SDK

ScreenMaker should be used with FlexPendant SDK 5.12.02 or later. ScreenMaker allows selection of FlexPendant SDK version when it is launched. If only one version of FlexPendant SDK is available in the system, it is loaded by default.

6.13 Support for future RobotWare versions

RobotStudio 6.01 supports all future minor revisions of RobotWare 6.01, but no future major releases. For example, RobotStudio 6.01 will support RobotWare 6.01.01 (if, and when available) but not RobotWare 6.02, or 6.03.