Release Notes

RobotStudio

2019.5.2

Revision: -

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1 Release Information

1.1 General

Release Name

The release name is RobotStudio 2019.5.2 and the build number is 7.00.8732.594.

User documentation

The RobotStudio Operating Manual is available in all languages except Czech, i.e. English, German, French, Korean, Chinese, Japanese, Spanish.

A selected set of RobotWare manuals are available. Each of them is available in two versions, one for IRC5 and one for OmniCore. The OmniCore manuals are only available in English.

Release Date

The release date is February 13th, 2020.

Demo stations

The following demo stations are included in this version.

- Demo AW Station
- Demo Solar Simulation
- Demo Exhaust Pipe
- Demo FlexLoader
- SC demo station finished.rspag
- SC demo station start.rspag

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

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1.2 System recommendation

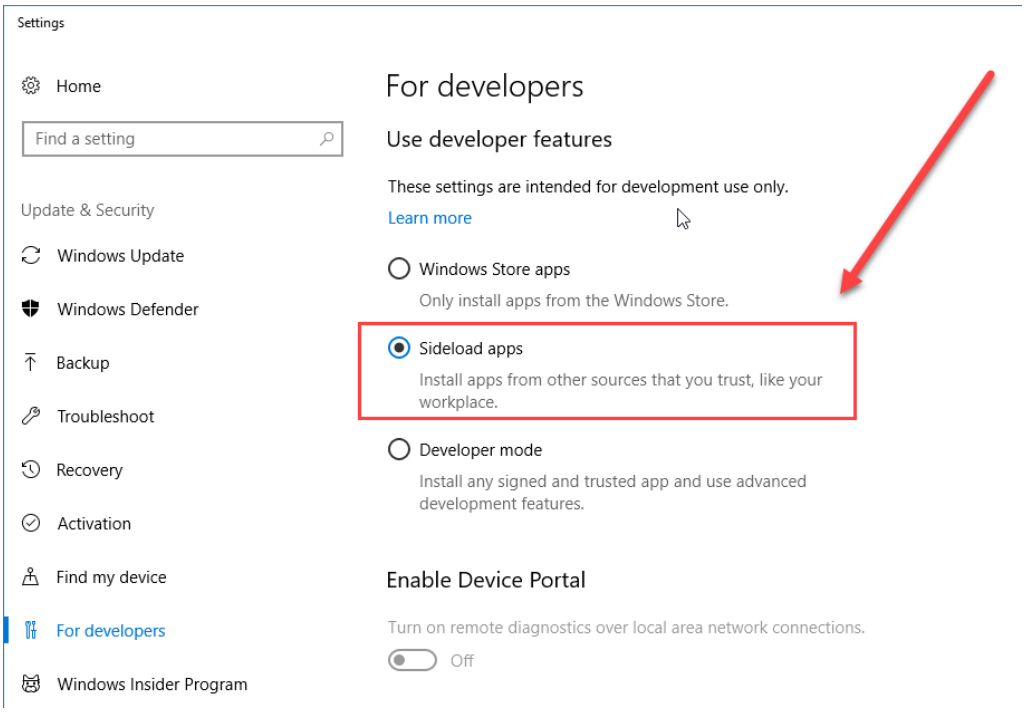
Recommended Software

Operating System	
Microsoft Windows 7 SP1[1]	64-bit edition
Microsoft Windows 10 Anniversary update or later (recommended)[2,3]	64-bit edition
ABB RobotWare 5 for IRC5	5.06 to 5.16.x 5.60.x and 5.61.x
ABB RobotWare 6 for IRC5	6.0 to 6.10.x
ABB RobotWare for OmniCore	7.0.x

[1] The virtual OmniCore FlexPendant requires Windows 10 and does not work on Windows 7

[2] The Windows AppInstaller is a pre-requisite for the virtual OmniCore FlexPendant software, see **https://www.microsoft.com/en-us/p/app-installer/9nblggh4nns1.** The App Installer is a default built-in app in Windows 10, but may have been removed on some PCs.

[3] Sideloading of apps must be enabled on Windows 10 to install the virtual OmniCore FlexPendant, see below



It is recommended to run Windows Update to get the latest updates to Windows prior to installing and running RobotStudio. This applies to any of the operating systems above.

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.

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Recommended Hardware

Item	Requirement
CPU	2.0 GHz or faster processor, multiple cores recommended
Memory	8 GB minimium 16 GB or more if working with large CAD models
Disk	10+ GB free space, solid state drive (SSD)
Graphics card[1]	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.
Screen resolution	1920 x 1080 pixels or higher is recommended
DPI	Normal size (100% / 96 dpi) up to Large size (150% / 144 dpi) Only Normal size supported for Integrated Vision.
Mouse	Three-button mouse
3D Mouse [optional]	Any 3D mouse from 3DConnexion, see http://www.3dconnexion.com.
Virtual Reality Headset	Oculus Rift, HTC Vive or any Windows Mixed Reality Headset. Note that special PC hardware requirements apply when using RobotStudio with VR, see https://www.oculus.com/oculus-ready-pcs/, https://www.vive.com/us/ready/, or, https://www.microsoft.com/en-us/windows/windows-mixed-reality-devices, respectively.

[1] A note on graphics cards and PC hardware. RobotStudio will not benefit from the additional features of so-called 'Professional' or 'Workstation' graphics cards. The price level of these are at a much higher range than gaming graphics cards with comparable performance. High-end gaming PCs are very suitable for offline programming with RobotStudio. Such a PC will provide good performance for a limited budget.

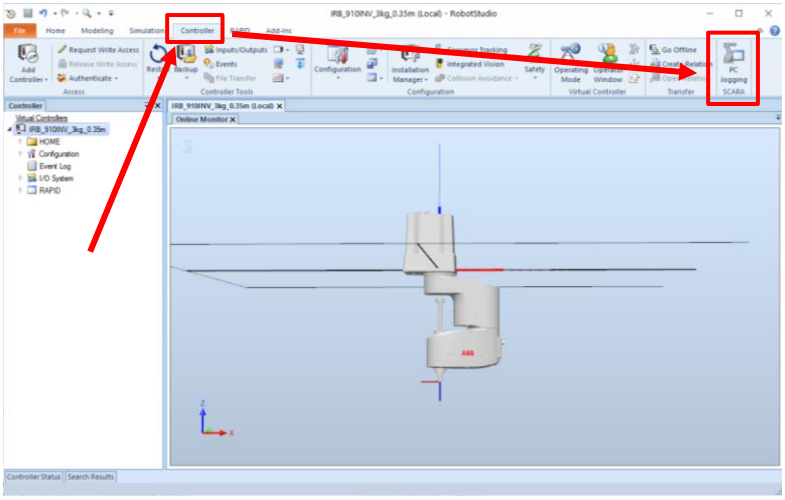
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2 What's new in RobotStudio 2019.5

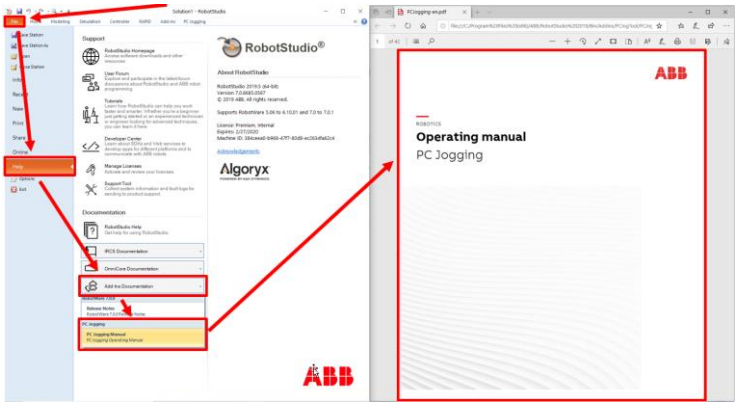
2.1 Jogging the real IRB 910INV from RobotStudio

Overview

To allow using the IRB 910INV without a FlexPendant, a jogging tool has been added. Just connect RobotStudio and open the Jogging tool from the Controller tab.



See the manual available in the Help menu for details.



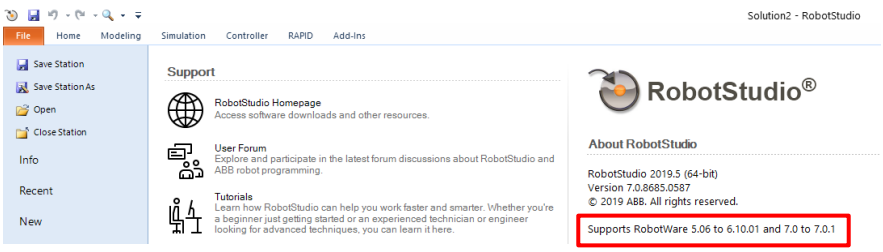
Note that the controller need be in Automatic mode and have the RobotWare feature *3018-1 Hot Swappable FlexPendant* to use this function.

2.2 Confirmation when connecting to controller with later RobotWare version

Overview

The user needs to confirm when connecting to a controller with a RobotWare version that is not supported by RobotStudio. Check the About section for the supported RobotWare versions.

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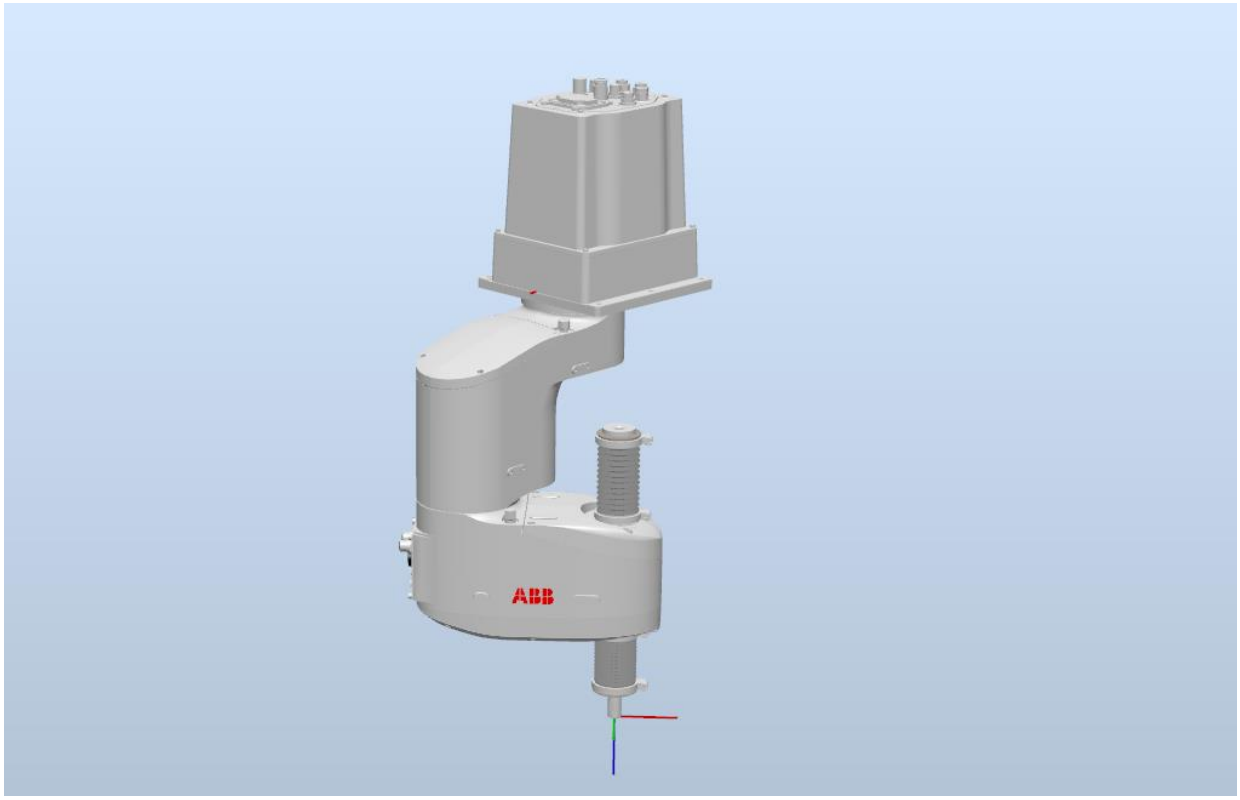


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2.3 New robot model

There is a new robot model supported by RobotWare 7.0.1 and RobotStudio 2019.5

IRB 910INV IP54/CR (Inverted Scara Clean Room)



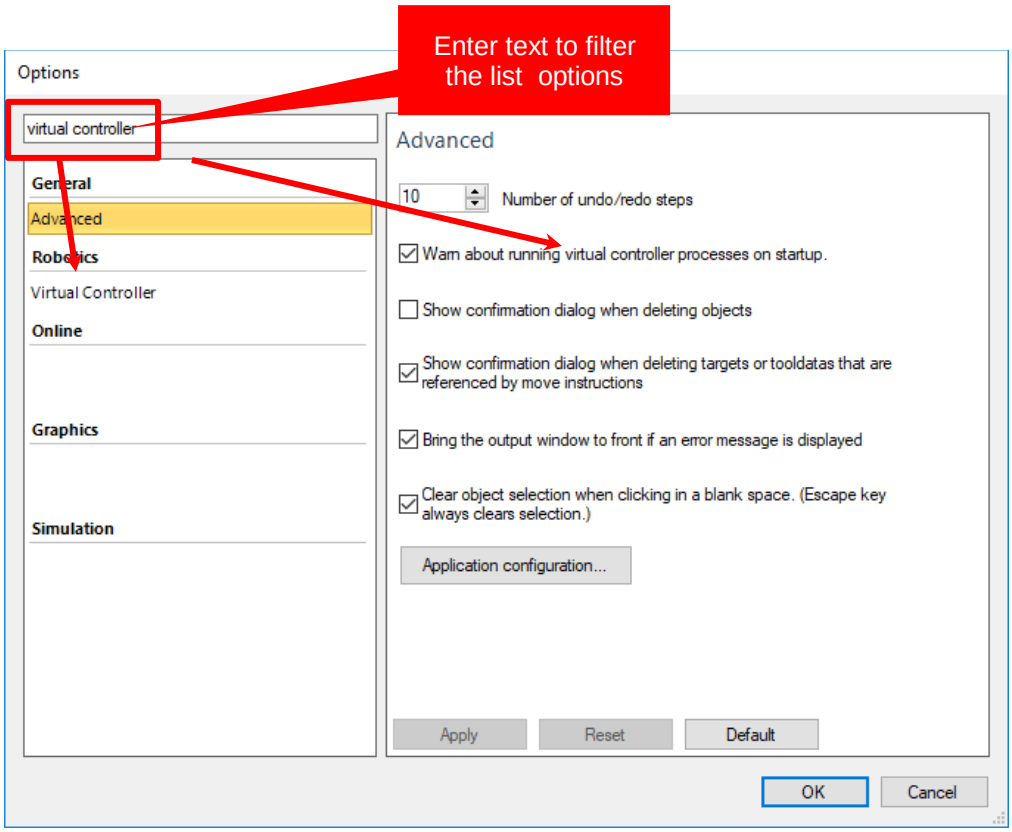
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3 What's new in RobotStudio 2019.4

3.1 Search file in Options dialog

Overview

A filter has been added to make it easier to find the option you are looking for in the Options dialog.

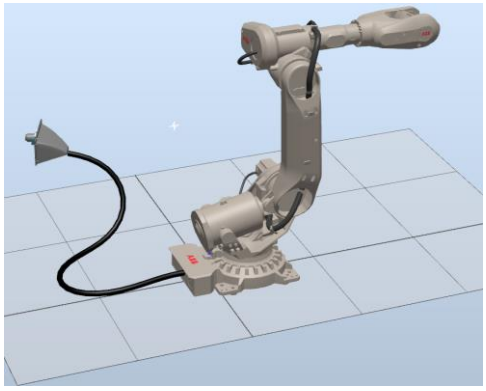


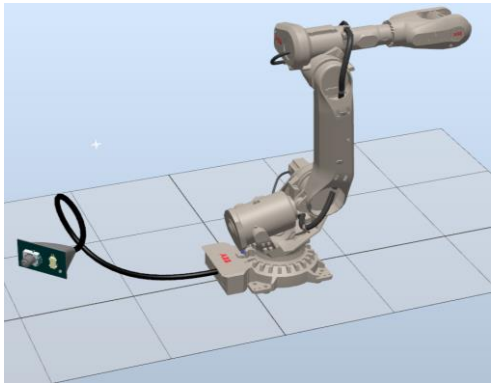
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3.2 IBT 6790: Cable and contactor added

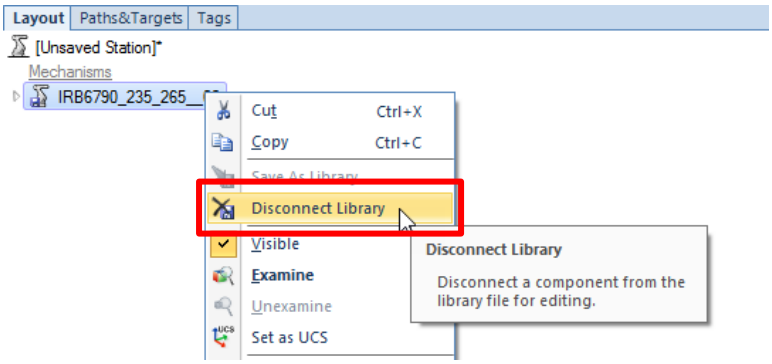
Overview

The cable and contactor board of the IRB 6790 has been added. The contactor position can be moved to fit your robot cell. The cable is flexible and will follow.





Note that you need to Disconnect the simulation model from its file first. Then you can move the contactor using e.g. SetPosition or free-hand move. You need to use Selection Level = Part.

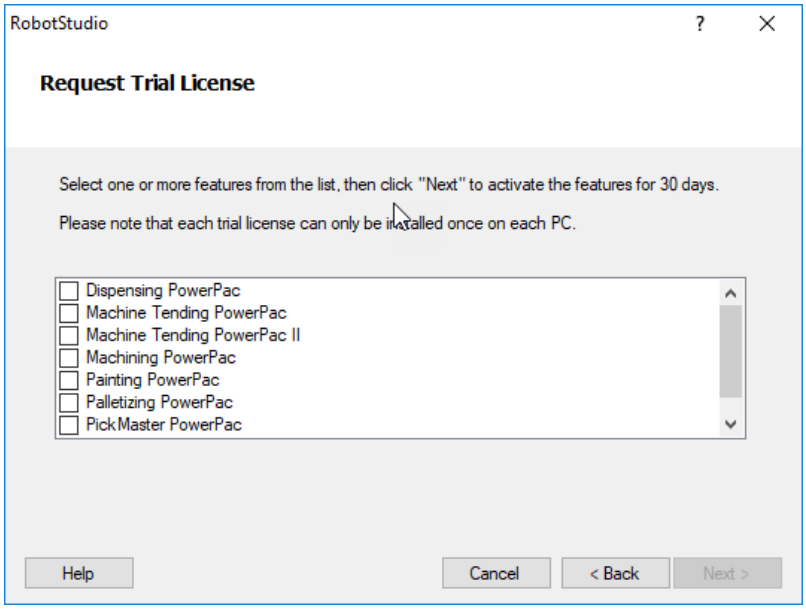


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3.3 Trial license for PowerPacs

Overview

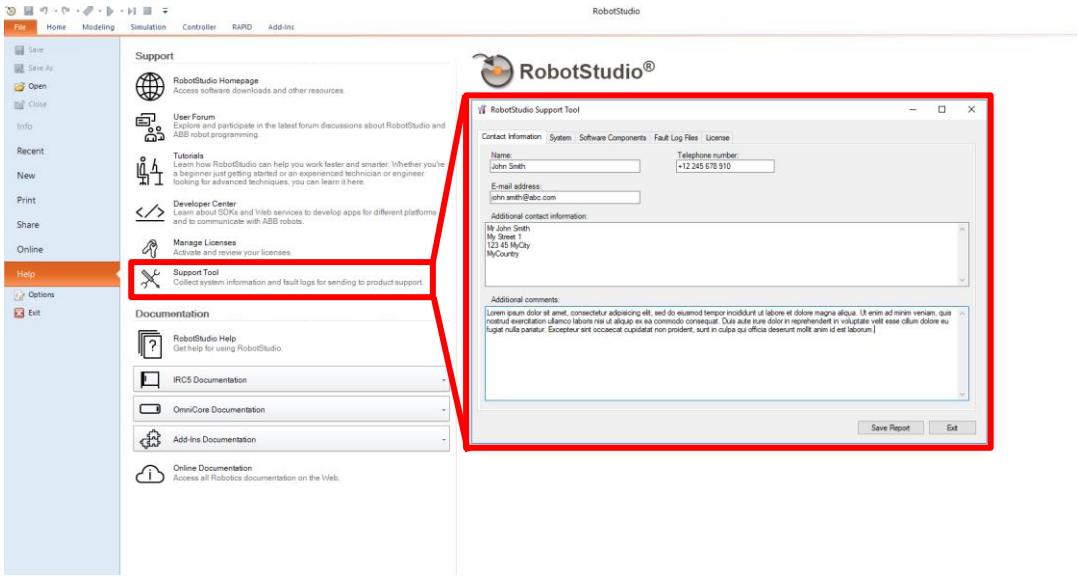
With RobotStudio 2019.4, you can request trial licenses for PowerPacs independently of trial licenses for RobotStudio. This means you can try out a PowerPac for free even if you have consumed your trial license for RobotStudio itself and are using a Premium license.



3.4 Support tool available from the Help menu

Overview

In case you need to contact ABB to ask a question or submit a bug report, you may be asked to create a so-called ‘Support Log file’ using the Support Tool. The support tool is now easier to find, since it is available in the Help menu of the File tab.



3.5 Support for RobotWare 5.16

Overview

RobotStudio 2019.4 supports RobotWare 5.16 (in addition to RobotWare 6 and 7).

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4 What's new in RobotStudio 2019.3

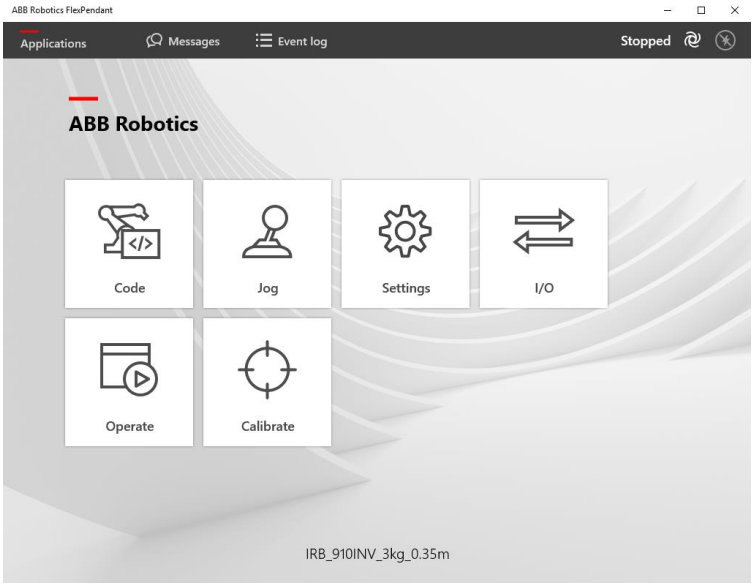
4.1 Support for RobotWare 7 and OmniCore

New robot controller

RobotWare 7 supports the new OmniCore controller.

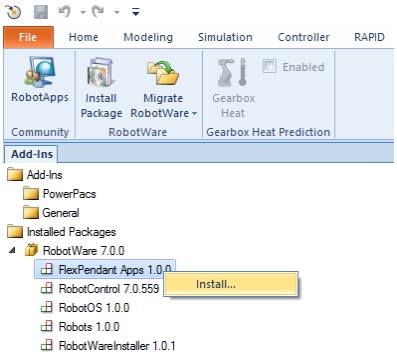
New FlexPendant

There is a new virtual FlexPendant for OmniCore that is supported by RobotWare 7.



For system requirements, see section **1.2 System recommendation**

When installing RobotWare 7, you will get a question whether to install or update also the virtual OmniCore FlexPendant. If you want to install or update it manually, you can do it from the Add-ins tab. Expand the RobotWare 7 node, and select "Install…" from the context menu of the FlexPendant Apps node, see screenshot below.



New user interface for User Authenication System (UAS)

The user interface for UAS has been remade.

Support KeepStartPath and KeepEndPath for fine points

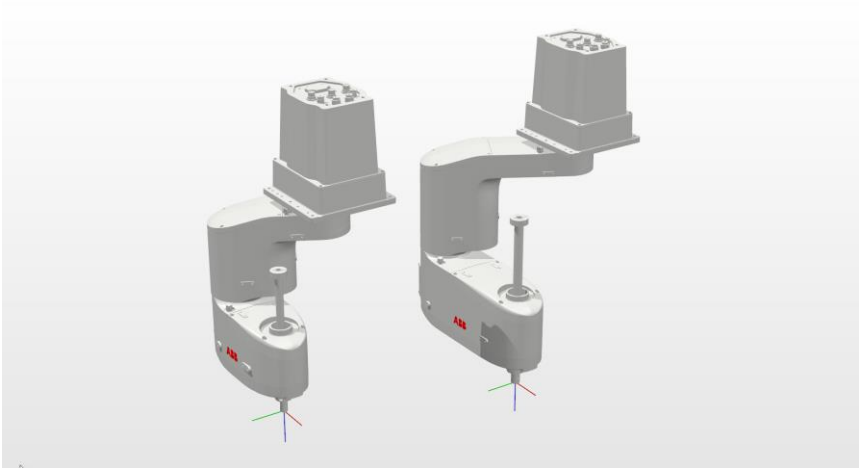
New options for move instructions in RobotWare 7

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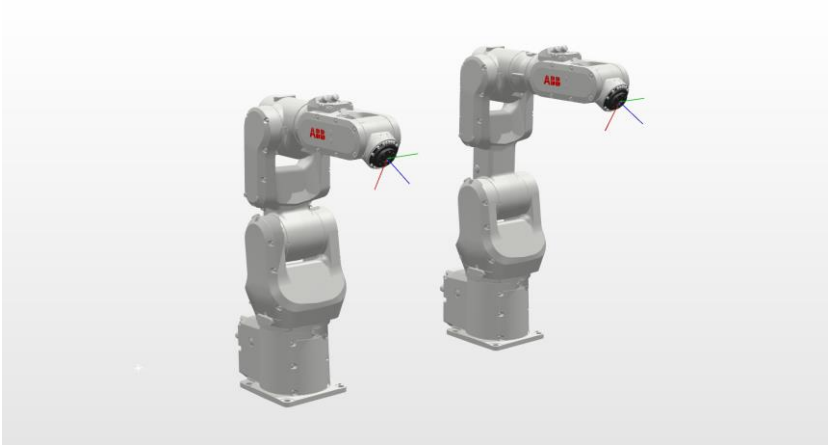
4.2 New robots

The following new robots are supported by RobotWare 7 and RobotStudio 2019.3.

IRB 910INV (inverted Scara)



IRB 1100



IRB 14050 (Single Arm Yumi)



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4.3 Other changes

Scale geometry

There is a new function to scale geometry

Measurement tool - dynamic measurement

Measurements between objects may follow objects to allow dynamic measurements.

Project templates for Visual Studio 2019

New project templates for Online Addins

New UI to edit poses for mechanisms

This was only possible in the Mechanism Modeler before

VR: Verify that RobotStudio and VR uses the same display adapter

A check has been added to ensure RobotStudio and VR uses the same graphic adapter.

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5 What's new in RobotStudio 2019.1

5.1 Changes to naming and licensing

Changes in version naming

Starting this year, we will introduce a new version naming scheme for RobotStudio. It will be based on the current year and remove any reference to RobotWare. This will facilitate communication with our support teams and be more readable both for us and for you. This new naming does not change the fact that RobotStudio will continue to support all released versions of RobotWare 5, 6 or 7. It will also allow us to release RobotStudio independently of RobotWare for more frequent quality and feature updates.

Changes in licensing

With RobotStudio 2019 we need to upgrade a vital part of our licensing system in order to:

- Reduce illegal use of our trial licenses
- Prepare our systems for new features
- Ensure a modern and maintainable architecture

Current licenses will continue to run as usual on RobotStudio up to version 6.08 until their expiry. Any future licenses purchased will only be compatible with RobotStudio 2019 and up. On renewal we will ask you to update RobotStudio to its latest version. Finally, current users will be receiving an email in the next few days with new license keys compatible with RobotStudio 2019. If you wish to work immediately on the latest version of RobotStudio 2019, you can! Once again, these new license keys will not affect your current work or existing licenses that will continue to run as usual.

You can always contact ABB Robotics software licensing support via e-mail: softwarefactory_support@se.abb.com, or, your local ABB Robotics Service representative for assistance with this transition process.

5.2 The term '*System*' replaced by '*Virtual Controller*'

Overview

In previous versions of RobotStudio, the term **System** was used to denote the set of RobotWare files that defined the virtual controller setup for the currently used robot and its RobotWare options. This term has been replaced by **Virtual Controller** whenever possible. The function as such is the same.

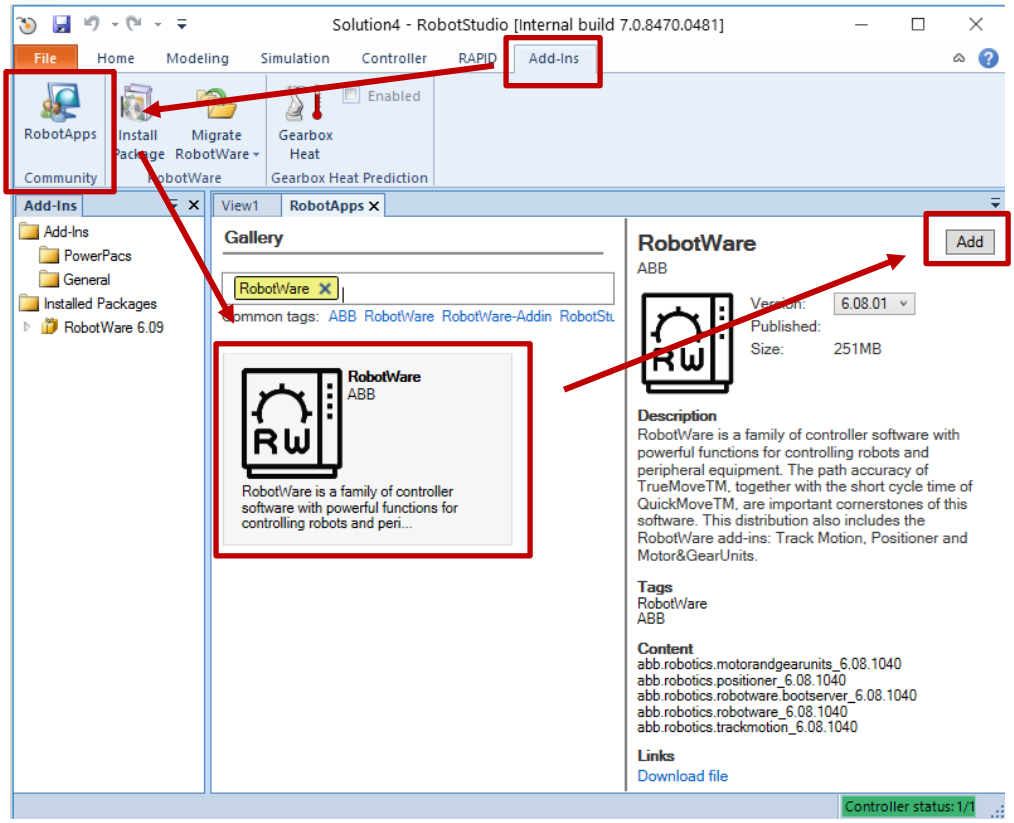
This applies to several places in the user interface and the user documentation. Also the folders named System in the user documents location and in Solution folders have been renamed.

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5.3 RobotWare must be installed separately

Overview

RobotWare is no longer installed with RobotStudio, but have to be installed separately. RobotWare can be downloaded and installed from the RobotApps page in RobotStudio, see screenshot below.



5.4 Other changes

Overview

The linked document describes all new features and changes to RobotStudio 2019.1

https://robotstudiocdn.azureedge.net/documentation/RobotStudio_2019.1_News.pdf

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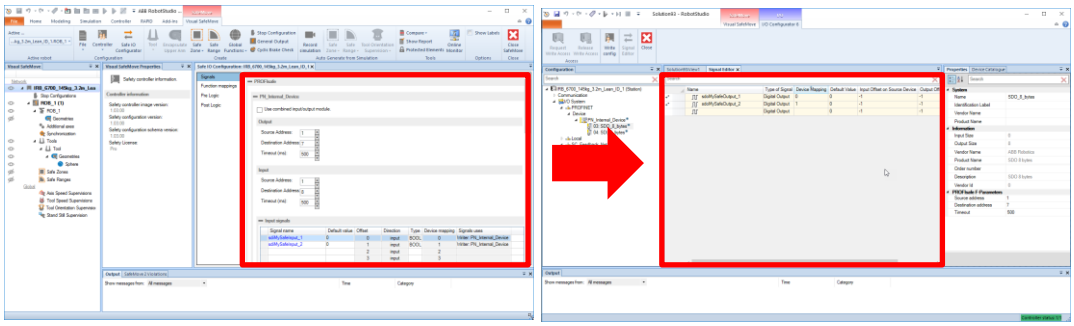
6 Late changes

6.1 Late changes in RobotStudio 2019.4

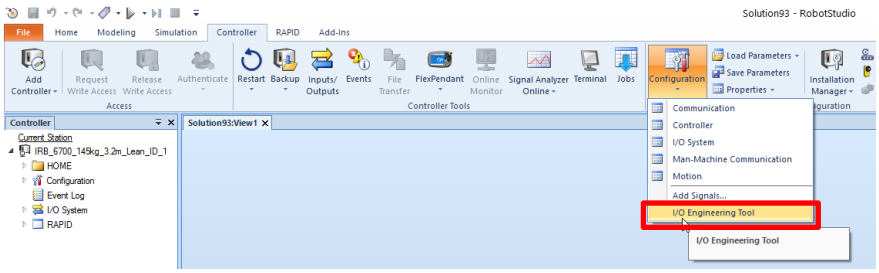
Configuration of safe signals for PROFIsafe F-Device moved to the I/O Engineering Tool

Signals for PROFIsafe F-Device are no longer configured in the Safe IO Configurator of Visual SafeMove. Instead, the signal configuration has moved to the I/O Engineering Tool. Signals for PROFIsafe F-Host has been configured in the I/O Configuration Tool since earlier. The change means that signals for PROFIsafe F-Host and F-Device are configured in the same way.

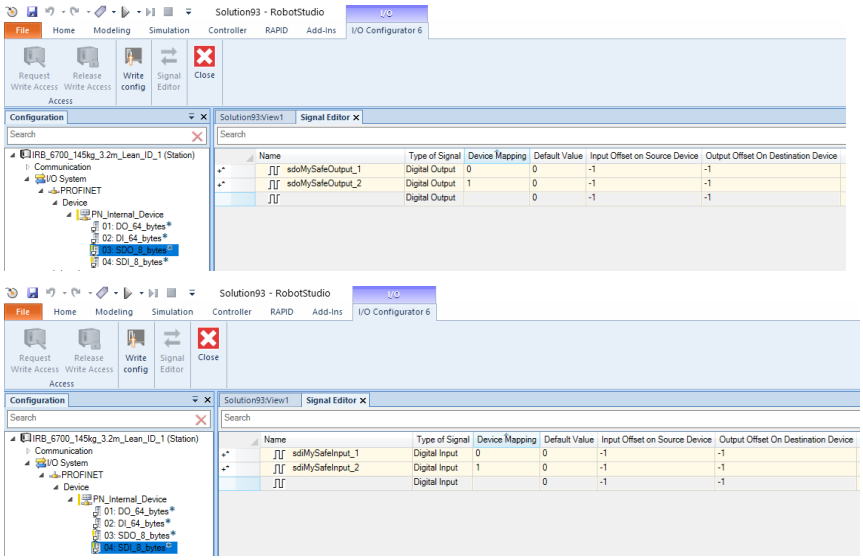
RobotStudio ≤ 2019.3 **RobotStudio ≥ 2019.4**



The I/O Engineering Tool can be opened from the *Configuration* menu of the *Controller* tab.



The safe safe signals are configured by selecting the safe modules for safe inputs and outputs in the tree view to the left. The safe modules are indicated by a yellow icon in the tree view. Then signals are added in the table in the document window to the right. See screen shots below.



When signal configuration is completed, you can write the configuration to the controller from the I/O Engineering tool or from Visual SafeMove.

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6.2 Late changes in RobotStudio 2019.3

New version of the CAD converters

The version of Spatial ACIS InterOp used for the CAD converters has been updated to version 2019 1.0.2 (SP2). By adopting the latest version of InterOp, RobotStudio automatically provides best-in-class interoperability for the latest 3D modeling formats ensuring that new data and features are available.

6.3 Late changes in RobotStudio 2019.2

CPU Load removed from Signal Analyzer

The CPU Load signal has been removed from the Signal Analyzer. The reason is that the CPU Load measurements are hard to interpret for the end user. The IRC5 robot controller is an event based system with mixed hard, soft, and non real-time components. There are rare cases where you can identify a problem using the CPU load, but this requires deep knowledge of internal priorities and implementations in the controller software. Furthermore, the CPU Load signal is a statistical measurement with low sample rate and low resolution. In addition, 100% CPU load is normal in many cases for operations like Program Save, Backup, CFG-load, System Diagnostics, etc. This is not a sign of poor performance, to the contrary, this is by design. The controller uses the CPU to do all non real-time critical tasks as quickly as possible. System real-time performance (Motion, IO, Rapid) is controlled by other means.

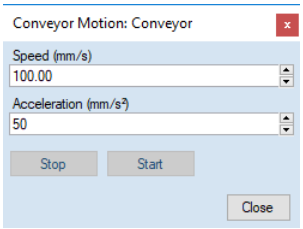
This may not be intuitive for all users which may believe that high CPU load is the cause when issues arise with e.g. robot performance or I/O communication.

New version of the CAD converters

The version of Spatial ACIS InterOp used for the CAD converters has been updated to version 2019 SP1. By adopting the latest version of InterOp, RobotStudio automatically provides best-in-class interoperability for the latest 3D modeling formats ensuring that new data and features are available.

Improvements for simulation and programming of conveyor tracking

Simulation of conveyor acceleration. The acceleration and deacceleration of the simulated conveyor can be set in the Motion tool of the conveyor. The acceleration value is zero by default but can be changed by the user. This can be valuable to prevent the controller error *Geometrical Interpolation Error* caused by too high acceleration of the conveyor.



Teaching targets for track mounted robot with conveyor tracking. A limitation in RobotStudio caused incorrect external axis values for the track motion and conveyor to be taught for *Teach Target* and *Teach Move Instruction*. This has been fixed in RobotStudio 2019.2.

When a track mounted robot is configured to follow the conveyor, i.e. the system configuration parameter *Track Conveyor with Robot = No*, then the external axis value for the conveyor is used by the robot controller. In this case, the conveyor value is used to offset the track motion so that the difference between the track motion and the conveyor is maintained. This is the only case where the conveyor position in the robtarget is used.

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***View robot at target* and *Jump to target/Move Instruction* for track mounted robots with conveyor tracking.** The view and jump functions has been enhanced to take the external axis value for the conveyor into account.

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RobotWare not installed with RobotStudio

RobotWare is not longer installed with RobotStudio for the following reasons:

- RobotStudio works with any version of RobotWare between 5.06 and 7.0.
- RobotStudio is sometimes released independently of RobotWare.
- RobotStudio is forwards compatible with RobotWare revisions within a specific version, i.e. RobotStudio 2019.3 supports any revision of RobotWare 7.0.
- There are many RobotWare versions available, and it is not certain that the specific version needed for a particular user matches the one that comes with RobotStudio.
- Any version of RobotWare can be downloaded and installed from the RobotApps page within RobotStudio.

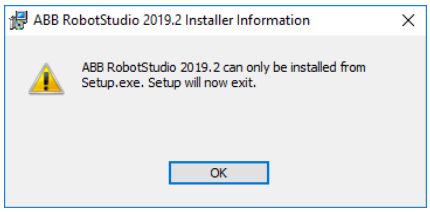
The SLP Distributor must be updated

The software component *SLP Distributor* that manages the network licenses for the School and Partner editions must be updated to support license for RobotStudio 2019. When updated, it can handle license for both RobotStudio 6.x and RobotStudio 2019 in parallell.

The updated component is available in the *Utilities* folder of the download package for RobotStudio 2019.

Prevent user from running the msi-installer

When installing RobotStudio, the file *setup.exe* must be used and not the msi-file (*ABB RobotStudio 2019.2.msi*). The reason is that the setup-file ensures that the necessary pre-requisites are installed. Otherwise, RobotStudio will fail due to rise to e.g. license errors. To prevent users from mistakenly installing RobotStudio with the msi, it has been blocked and cannot be executed. The following error message will be presented



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7 CAD import formats and versions

Overview

This section describes the supported CAD formats and versions.

CAD formats

The table below lists all formats and versions supported by RobotStudio

Format	File extensions	Option required
3DStudio	.3ds	-
ACIS, reads versions R1 - 2019 1.0, writes versions R18 - 2019 1.0	.sat, .sab, .asat, .asab	-
CATIA V4, reads versions 4.1.9 to 4.2.4	.model, .exp, .session	CATIA
CATIA V5/V6, reads versions V5R8 – V5/V6R2019 writes V5R15 – V5/V6R2019	.CATPart, .CATProduct, .CGR, .3DXML	CATIA
COLLADA 1.4.1	.dae	-
DirectX writes 2.0	.x	-
DXF/DWG, reads versions 2.5 - 2019	.dxf, .dwg	AutoCAD
FBX writes version 7.5	.fbx	-
IGES, reads up to version 5.3, writes version 5.3*	.igs, .iges	IGES
Inventor, reads V6 – V2019	.ipt, .iam	Inventor
JT, reads versions 8.x, 9.x and 10 and 10.2	.jt	JT
LDraw, reads version 1.0.2	.ldr, .ldraw, .mpd	-
NX, reads versions NX 11 – NX 1847	.prt	NX
OBJ	.obj	-
Parasolid, reads versions 9.0.* – 31.1.x.	.x_t, .xmt_txt, .x_b, .xmt_bin	Parasolid
Pro/E / Creo, reads versions 16 – Creo 6.0	.prt, .prt.*, .asm, .asm.*	Creo
Solid Edge, reads versions V18 – ST11	.par, .asm, .psm	SolidEdge
SolidWorks, reads versions 2003 – 2019	.sldprt, .sldasm	SolidWorks
STEP, reads versions AP203, AP214, AP242, writes version AP214	stp, step, p21	STEP
STL	stl	-
VDA-FS, reads 1.0 and 2.0, writes 2.0	vda, vdafs	VDA-FS
VRML, reads VRML2 (VRML1 not supported)	wrl, vrml, vrml2	-

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8 Corrections

Overview

This section lists the corrections made.

8.1 Corrections made in 2019.5.2

PDDs

ID	Title
12033	RobotStudio Add-In based on PC-SDK causes significant problems since RS2019.3 *When using Controller.Connect as Standalone connection type, the Logon() does not work*

8.2 Corrections made in 2019.5.1

PDDs

ID	Title
12110	Can't configurate Profinet by RobotStudio IO configurator *The ippnio generation was broken so that an invalid ippnio file was generated on write config.*
12102	I/O Engineering Tool not possible to WriteCfg *Exception was thrown by the target of an invocation*
11838	RS (IOC) crashes adding a component to a Profinet network

8.3 Corrections made in 2019.5

PDDs

ID	Title
11685	Grab function in VR selects two parts *When trying to grab one part in VR two parts were erroneously selected.*
11327	RobotStudio IRB640 axis mapping wrong *When jogging a IRB640 with RW6.08 sometimes the axis 6 was moved to 0 hen another axis was jogged.This was due to a bad axis mapping of the robot model.*
11780	Wrong work area for IRB5500 in RobotStudio
11783	Multiple floors in RobotStudio *In some cases when moving up/down in VR additional floors were created.*
11791	SIMITConenction - not possible to set/reset AS1 & AS2 signals
11816	German translation error for "SetGo" popup description *An error in the translation to German.*
11840	Create solution with system from backup fails in first run

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	Depending on the path of the VC it was in some cases not possible to create a system from backup.
11919	Pack n go issue *In some combinations of RobotStudio and anti-virus software the users where unable to unpack a Pack n go.*
11959	Open station error *A station had duplicate references to an rslib. This made it impossible to open the station.*
11979	ThrowKeyNotFoundException *An exception was thrown when trying to open a corrupt station. RobotStudio will not try to repair the station before loading.*
11999	System cannot be created with a combination of IRB5500(configB) and ElevRail(ConfigB)
12023	Remove internal geometry *"Remove internal geometry should only remove geometry not visible from the outside but In some cases geometry parts that are visible where also removed.*

8.4 Corrections made in 2019.4 SP1

PDDs

ID	Title
PDD11957	I/O Engineering Tool: Modules for PN Internal Device not updated when changed. *The tree view showing the size and type of the PN Internal Device Module was not updated correctly after it had been changed*
PDD11960	Visual SafeMove: Not possible to protect signals, but leave the module unprotected. *When using protected elements, it must be possible to protect only the signals, but not the module information. This was not possible in 2019.4.*
PDD11961	I/O Configurator: The integer value of the source or destination address has incorrect limits (1 to 1022 instead of 1 to 65534) *The limits of the source and destination address of a safe module was incorrect.*

8.5 Corrections made in 2019.4

PDDs

ID	Title
10890	Exception when restoring backup due to inadequate error handling
11392	IO Engineering tool: Wrong error message if unauthorized user try to write IO config
11590	VrHandController SmartComponent doesn't respond *The VrHandController component doesn't give any feedback when the trigger is pushed on the VR hand controller.*
11615	Collision Avoidance: Collision geometries not updated in Colliision Avoidance configuration tool when robot moves.
11696	Online Monitor: Incorrect interpretation of base frame for MultiMove system with Collision Avoidance

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	There was a mishmatch between the Collision Avoidance geometries and the robot model in Online Monitor for MultiMove systems
11794	Signal Analyzer: Problem with trimming of signals *When trimming a recording the signal quantity was lost which caused RobotStudio to interpret the signal as unitless.*
11803	Licensing: RobotStudio 2019 License Storage not initialized *In certain circumstances, there may be a problem with the RobotStudio license. In these cases RobotStudio will display a message whereby the user can allow RobotStudio to fix the problem. Unfortunately, RobotStudio was not always able to fix the problem. This has been improved in 2019.4 so that RobotStudio will be able to fix the problem in more cases.*
11807	OmniCore virtual FlexPendant: Does not support Windows 7 *The OmniCore virtual FlexPendant is a Windows 10 application and will not run on Windows 7. In RobotStudio 2019.4, the user will get an error message when trying to start the OmniCore virtual FlexPendant on Windows 7.*
11930	German translation error "Projektmappe" not "Lösung" *Incorrect translation of the term “Solution” in german language.*

8.6 Corrections made in 2019.3

PDDs

ID	Title
10469	Visual SafeMove: Safety configuration is not restored to virtual controller when using when opening station using Unpack & Work. This is solved by adding an option to the Unpack & Work wizard that can be selected to restore the safety configuration when the station is opened.
10965	Add-Ins tab / RobotApps: There is no scroll bar in the properties window that describes that selected app.
11202	RAPID Sync: Sync to station fails unless robdata module is open. Values are not updated otherwise.
11316	IRB5500 Elevated Rail - Fails to load mechanism after adding existing system.
11403	MuliMove tool: Path Config function fails for a particular setup
11441	Configuration Editor / Area Motion / Type Robot / : Items are missing in the list of ROBOTs and SINGLEs for attribute "Base Frame Moved by".
11505	Display problems in the Robot Studio in high res displays: The "Offset position" tool does support 4K displays.
11511	Visual SafeMove: Signal names treated as case sensitive in Visual SafeMove configuration tool as opposed to the safety controller that treats them as case insensitive.
11541	Set Local Origin: Strange behavior for certain parts.
11553	Record to Viewer: Invalid glTF-file generated from RobotStudio when recording simulation.
11562	Pack & Go: RobotStudio will create a corrupt Pack & Go file for long folder paths.
11573	The menu of migration steps incorrectly displays the License Migration tool option in RobotStudio 2019.1
11597	Virtual Controller is not starting after upgrading a particular station from RS6.0.8 to RS2019.1. Checkbox for resetting VCs added to Unpack&Work wizard.
11616	Physics: Station fails to open after upgrading a from RS6.0.8 to RS2019.1. Problem related to physics objects and their properties.
11622	Conveyor Tracking / Create connection: RS 2019.2 Fatal Error when creating connection for Conveyor

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11634	Motion Configuration aka Edit System: The dialog box is empty, i.e. no data displayed after having deleted old and added new virtual controllers.
11635	Virtual Reality: Problems when jogging robot and finetuning targets
11652	CAD Conversion: CAD Converter fails when CATIA installed in same PC due problems with shared components.
11679	Online Monitor: Online Monitor fails for controller with certain setup of track motion,
11662	EPS Wizard: Read from Controller fails for certain controllers.
11684	Virtual Reality: VR fails if headset configured to run on different graphics adapter as screen. (We have added a check in RobotStudio to verify that VR and RS use the same graphics adapter to prevent this error from happening.)
11687	Visual SafeMove: RobotStudio may incorrectly reports an error of the safe IO configuration when reading safety configuration from controller if IO Configurator has not been opened.
11692	EPS Wizard: The EPS wizard fails if a joint value is outside its limits.

8.7 Corrections made in 2019.2

PDDs

ID	Title
10416	Conveyor Tracking: The error “Geometric Interpolation Failed” caused by instantaneous acceleration.
10588	Conveyor Tracking with Rail Tracking: The functions “Jump to Target” and “View to Target” fails
10923	RAPID Editor: Wrong help function opened in RobotStudio when browsing RAPID code in controller tab
11095	Conveyor Tracking with Rail Tracking: Incorrect external axis value stored for conveyor when teaching position
11186	RAPID Watch: Array values sometimes presented as "Unknown"
11246	Visual SafeMove: Elbow geometry incorrectly visualized for door opener robot IRB 5350
11391	Physics simulation: Exception when opening station due to incorrect physics behavior if component group items connected through physics
11412	Visual SafeMove: Gravity parameters (gravity alpha, gravity beta) incorrectly interpreted for when visualizing Coordinated MultiMove robots.
11509	Mechanisms: Incorrect motion for mechanisms with dependencies between expressions
11520	Visual SafeMove: Cannot download configuration for system with Profisafe F-host unless I/O Engineering tool has been opened.
11540	Station Logic: Bad performance issue when opening the Design tab for stations with may Smart Components and connections
11561	Installation: License server cannot be specified for command line installation `C:\>setup.exe /s /v"/qn ADDLOCAL=ALL LICENSE_SERVER=my_lic_server"`
11579	Licensing: PC cannot not be renamed after installation, but before activation of license
11583	Solution cannot be created when whitespace is used at the end of the solution name

Other changes

The CAD Converter for the STEP format was not part of the Partner edition for 2019.1
This has been fixed in 2019.2 so that the STEP converter is part of the Partner Edition.

The Station Viewer caused parts to move unexpectedly.
In RobotStudio 2019.1, a problem of the Station Viewer caused moving objects to move unpexpectedly. This has been fixed in 2019.2.

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8.8 Corrections made in 2019.1

PDDs

ID	Title
9276	Visual SafeMove: The function to automatically generate a zone fails if two geometries are used for the upper arm.
9671	Signal Analyzer: Cannot distinguish joint “J1” from different mechanical units in Excel report.
9672	Signal Analyzer Online: Initial values of motion signas not visualized in beginning of recording.
9824	The function Move Along Path fails for paths defined as LOCAL
10147	Online Monitor: Zoom in / Zoom out commands does not work in Online Monitor.
10192	Failed to save station, when saving to StationBackups folder.
10360	Unable to open HOME folder for virtual controllers
10719	Station Viewer: Unable move forward in simulation with arrow keys
10736	Physics cable creation not working
10913	3D attachment jumps when simulations stopped manually
11021	Mirror Path: Exception if “Receiveing Robot” is not set.
11093	RAPID Editor / Modify Position: External axis value are deleted
11094	Joint jog: Lock TCP not using correct tooldata for IRB 5350
11133	Create backup: Fails for long file paths
11141	Problems when using RobotWare 5.13 or lower.
11204	Physics cable is getting longer instead of shorter by using the “Shorter” function
11215 11228	Smart Components / Station Logic: Fatal error when connecting output of LogicGate to I/O input
11219	Pack & Go / Unpack & Work: File size very large if RobotWare Add-In MotorsAndGearUnits added to virtual controller
11226	Jobs / Backup: Fails if white-space included if white space added to beginning or end of name string
11270	RAPID Path Editor: Unable to edit SpotL instructions
11322	Visual SafeMove: Unable to restore safety configuration if LockInfo and ValidationInfo was in wrong order in safety configuration file.
11332	Smart Component Design View / Signals and Connection: Missing child Signals in Expose Child Signal dialog
11335	YuMi AbsAcc Recovery routine is missing in RW6.08.01
11385	Visual SafeMove: SafeMove Report shows internal Function Mappings which are not configured by the user
11391	Physics: Exception when opening station if physics joints are configured between parts of a component group.
11411	Collision avoidance configuration tool: Bad performance when adding many large objects

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9 Known Limitations

Overview

This section describes known limitations in RobotStudio.

9.1 Visual SafeMove

***The safety controller is not forwards compatible**

When writing a safety configuration file of a later version than the current safety controller image, then RobotStudio will generate an error of type "*C00FFFE: Unknown error (0xC004FFFE)LoadSafetyConfigurationFile*". (Note that this error may occur for other reasons as well and is thus unique to this case).

***The function *Get vectors from active tool* reads values from the robot**

The idea behind this function is to to read the data from the currently active tool of the robot in order to define a corresponding SafeMove Tool in the safety configuration. That is the reason why the tool information is read from the robot and not the safety controller. The tools of the safety configuration are visible the Visual SafeMove itself and does not need a special function to be retrieved.

Protected checksum may change when upgrading RW from 6.04.0x to 6.05 or 6.06

The protected checksum will change if the input and output modules of the internal device is protected. The reason is that two attributes change order.

No visualization of Safe Range for external axes in Visual SafeMove for SafeMove Basic or Pro

When Safe Range is used to limit the axis range of an external axis such as a track motion, there will be no visual indication of the actual range in the graphic view.

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.

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.

9.2 Online

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.

However, from RobotWare 6.03 onwards, then RAPID tasks to execute or to stop can be selected from RobotStudio RAPID tab.

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.

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9.2.1 Online – Paint

Backup for Paint systems does not create backup of the PIB for IRC5P with RobotWare 5.xx

The Backup function of RobotStudio does not create a backup of the PIB board of the IRC5P system when running RobotWare 5.xx.

***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.

9.2.2 Online – Integrated Vision

***Installation error when having previous versions of RobotStudio or Insight Explorer**

If you have a previous version of RobotStudio or Cognex In-Sight software installed, installing a new version of RobotStudio may result in the following error message

> *Module C:\Program Files (x86)\Common Files\Cognex\In-Sight\5.7.1674.0\CvsInSightDisplay.ocx failed to register. HRESULT -2147220472. Contact your support personnel.*

Workaround: To correct the issue, open *Windows Settings -> Apps -> Apps & features*, select the current ABB RobotStudio 2019.x, select Modify, and step through the installation wizard and select Repair. Alternatively, uninstall and reinstall RobotStudio.

Note: Only one version of the In-Sight Display Control can be registered at a time, and this is always the latest version installed. Although older versions of RobotStudio or In-Sight may seem to function with this version installed, their compatibility with this version is not guaranteed.

RobotStudio may hang for up to 60 seconds when configuring jobs with PatMax 1-50

The user interface of RobotStudio may freeze for up to 60 seconds when configuration Integrated Vision jobs with the tool PatMax 1-50.

***Workaround**: Use PatMax 1-10 instead.*

Remaining error – New Emulators

New camera models have been added to the camera emulator option in RobotStudio 6.04.01. Some of these new models are not yet fully compatible. Our recommendation is to choose a camera model from the 7000 series which is fully compatible with Firmware version 4.10.2.

Emulated cameras not discovered when controller in Motors On

For RobotWare 5.61 onwards, the camera discovery mechanism is disabled when the controller is in Motors On. As a consequence, the camera nodes will not appear in the controller browser.

***Workaround:** Switch to Manual Reduced Speed and use the Refresh command on the Integrated Vision node in the browser to make the cameras appear.*

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

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- 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 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 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.*

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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 persist, please try a static address instead.

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9.3 Offline

***RobotStudio needs to be restarted to update a modified library instance**

When editing a library file (.rslib) that is used in a currently open station, then RobotStudio needs to be restarted to update the library. Simply re-opening the station is not enough to update the content of the station. Unless RobotStudio is restarted, the old library instance will remain in memory and be loaded even though the underlying file has been updated. This is a known limitation and is expensive to fix. There is a workaround to the problem, which is to restart RobotStudio

The robot IRB 1600ID 1.55 m / 6kg replaced by IRB 1660ID1.55 m / 6 kg in RobotWare 6.04

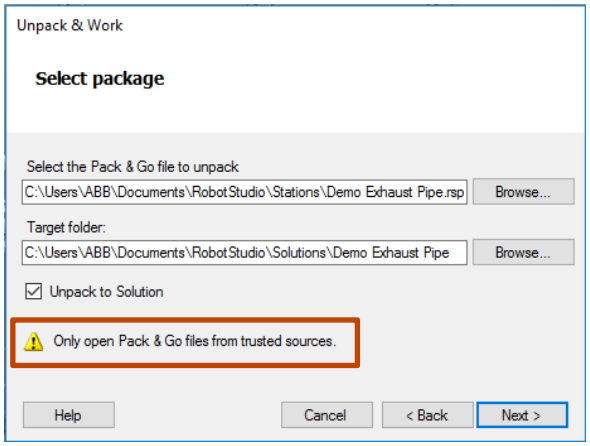
The robot IRB 1600ID 1.55 m / 6 kg is not available in RobotWare 6.04 and later. It has been renamed to IRB 1660ID 1.55 m / 6 kg. Virtual controller systems for IRB 1600ID 1.55 m / 6 kg based on RobotWare 6.03 cannot upgraded to RobotWare 6.04 and later. This means that Pack&Go files for this robot based on RobotWare 6.03 cannot be upgraded to RobotWare 6.04 automatically

***Workaround**: Re-build or modify the virtual controller system to use IRB 1660ID 1.55 m / 6 kg instead when using RobotWare 6.04 or later.*

FlexPendant and RAPID applications run with logged in user rights

A FlexPendant or RAPID application running on the virtual controller runs with the rights of the logged-in Windows user. RAPID applications running in a background task will start to execute when the Pack&Go file is opened and FlexPendant applications will start to execute when the user starts the Virtual FlexPendant.

A warning message has been added to the Unpack&Work wizard to make the user aware that only Pack&Go files (.rspag) from trusted sources shall be opened.



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 6.04 into an earlier version of RobotStudio such as e.g. RobotStudio 5.x, 6.03.02 or earlier. However, RobotStudio is **backwards compatible**, which means stations and libraries created in versions 5.x, 6.03.02 or earlier can be opened in RobotStudio 6.04

TrueMove path visualization fails for customized zone data.

The TrueMove path visualization function only supports predefined zonedata. It will not work for user defined zonedata.

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Backup fails for RobotStudio solutions with SafeMove or Electronic Position Switches

Backups are automatically created for virtual controller systems that are part of a RobotStudio solution when saving the station. For virtual controller systems with the RobotWare options *SafeMove* or *Electronic Positioning Switches* the backup will fail since these systems contain files that are read-only. As a result, an error message is presented in the output window: *"<System name>: Backup failed".* The station will be successfully saved but there will be no backup created.

Workaround*: Ignore the error message* "<System name>: Backup failed" *and create a manual backup whenever needed. The RobotStudio Option* "Enable automatic backup of controllers in solution" *that is available in"* RobotStudio Options -> Robotics -> Virtual Controller" *can be de-selected to disable the backup function.*

IRB 14000 cannot be combined with any other robot

The function system from layout fails if trying to create a MultiMove system where one robot is an IRB 14000. The reason is that the IRB 14000 cannot be combined with any other robot.

Workaround*: Create a separate system for the IRB 14000.*

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.

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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.*

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 jointtargets. The functions will leave the jointtargets 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

Conveyor Tracking

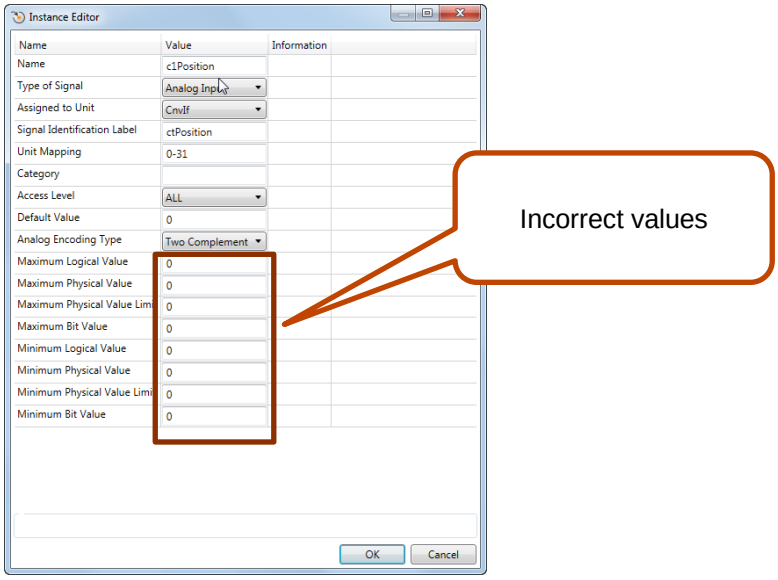
***Conveyor objects must be re-added for stations created prior to RS 6.05.**

When opening stations with conveyor tracking created prior to RobotStudio 6.05, conveyor objects must be re-added.

Incorrect default values for c1Position and c1Speed for RobotWare 5 with the PaintWare option

The default values for the parameters c1Position and c1Speed may become incorrect for a virtual controller system. The symptom is that its attribute values are all zero, see snapshot below.

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Workaround: *Save the following lines to a CFG file named 'TEMP.CFG' or similar and load in the virtual controller followed by a restart.*

```
EIO:CFG_1.0:5:0::
#

EIO_SIGNAL:

      -Name "c1Position" -SignalType "AI" -Unit "CnvIf"\
      -SignalLabel "ctPosition" -UnitMap "0-31" -Access "ALL"\
      -MaxLog 21474.8 -MaxPhys 1 -MaxPhysLimit 1\
      -MaxBitVal 2147483647 -MinLog -21474.8 -MinPhys -1 -MinPhysLimit -1\
      -MinBitVal -2147483647

      -Name "c1Speed" -SignalType "AI" -Unit "CnvIf" -SignalLabel "ctSpeed"\
      -UnitMap "32-63" -Access "ALL"\
      -MaxLog 21474.8 -MaxPhys 1 -MaxPhysLimit 1\
      -MaxBitVal 2147483647 -MinLog -21474.8 -MinPhys -1 -MinPhysLimit -1\
      -MinBitVal -2147483647
```

9.3.2 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: *Workobject is not set for the current task*

9.3.3 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.*

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9.3.4 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 Virtual FlexPendant

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 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>                                         <!-- THIS IS ONE OF THE NEW LINES!!! -->
</configuration>
```

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

For further information, see

http://msdn.microsoft.com/en-us/library/dd409252(v=vs.100).aspx

Note

Windows security settings may prevent the file from being directly edited in the default location. Copy the file to your local Documents folder to edit it. Upon completion, you need to manual copy the file back to its original location.

9.3.5 RAPID

Robtargets that are LOCAL to a PROCEDURE cannot be synchronized with RobotStudio

The RobotStudio synchronization engine that translates 3D data of the station to RAPID code and vice versa does not support robtargets that are declared locally to a procedure.

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***Workaround**: Declare the robtargets as global or local to a module instead.*

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 mix-up 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.

9.3.6 Paint

The new conveyor tracking module DSQC2000 is not supported for paint robots.

The new conveyor tracking module DSQC2000 is not supported for paint robots.

Lack of Virtual Controller support for the Paint systems

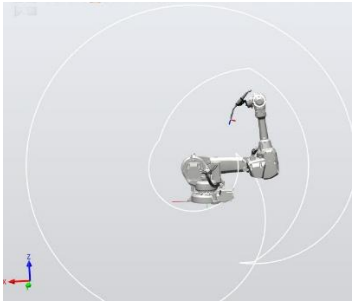
Paint systems that are configured using the Paint package I/O option Discrete, Compact or Fieldbus, will result in a SysFail state.

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

9.3.7 Graphics and Geometry

***Display of working range optimized for furthest reach**

The current algorithm uses a fixed value for joint five which gives the furthest reach for a given tool. The sweep is not optimized to get the shortest reach on the "inside" of the working area.



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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 x.y\Bin64`

and

`C:\Program Files (x86)\ABB Industrial IT\Robotics IT\RobotStudio x.y\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.

9.4 ScreenMaker Limitations

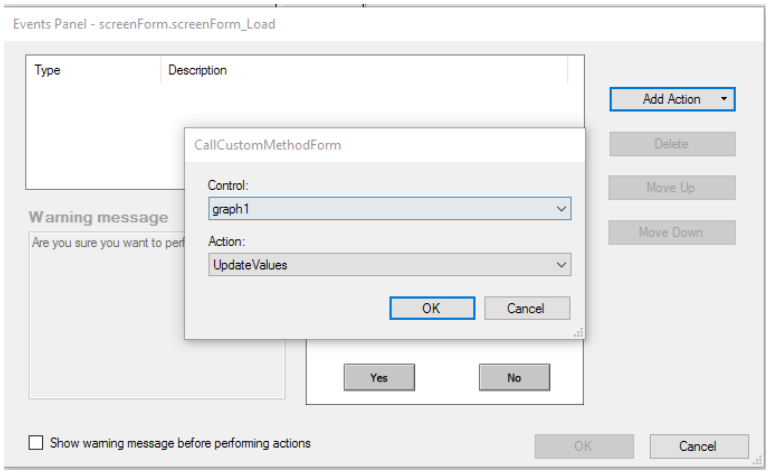
*Numeric controls and decimal separators

To use numeric controls in ScreenMaker on the PC set the decimal symbol to a single period ('.'). Other decimal symbols are not supported and binding values will not work in the Virtual FlexPendant. The behavior on the real FlexPendant is not affected by this PC setting.

*Graphs on secondary screens

To use a *Graph* on a secondary screen (not the main screen) a custom action is needed. Otherwise, the *Graph* will not be updated properly.

In the *ScreenForm* that contains the *Graph* add a *Load* event. In this event add an action using *Add Action->Advanced->Call Custom Action*. Select the *Graph* control and the *UpdateValues* action.



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***Binding to the Enabled property**

Connecting the *Enabled* property of any control to a BOOL variable or IO signal may not work as expected. The variable or signal may be inadvertently changed leading to unexpected behavior.

Instead, bind to a digital output where the *Access Level* is set to *ReadOnly*.

A ScreenMaker cannot be deployed a controller with disabled Default User

Workaround: Enable the Default User.

NumEditor in ScreenMaker disables the controls in a group box or panel

If you are using the NumEditor control in a group box or a panel, and that box or panel is enabled by an input signal, then all other controls of that group or panel will become disabled if the editor is opened and closed.

Button with multiple states in ScreenMaker app do not update the images if button is disabled

For an app which uses Buttons with multiple states connected to images that change depending on the value of a RAPID variable, then if the button is disabled, the button shows the greyed image of the state which was active when the disabled state was shown the first time.

ScreenMaker fails for RobotWare 5.12

ScreenMaker fails to build applications for RobotWare 5.12.

Workaround*: Update to a later RobotWare version.*

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.*

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)

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.

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10 RobotWare Compatibility

10.1 General

Supported RobotWare versions

RobotStudio is distributed with the corresponding version of RobotWare and works with RobotWare 5.07 and later. Please check details below.

10.2 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.

10.3 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

10.4 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.

10.5 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.

10.6 RobotWare 5.11 Compatibility

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

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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.

10.7 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 "A1HVErrNo" -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
```

10.8 RobotWare 5.13 Compatibility

RobotWare 5.13 and its revisions of 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.

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10.9 RobotWare 5.15 Compatibility

Signal Analyzer Online

The feature Signal Analyzer Online requires RobotWare 5.15.03 or later.

10.10 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.

10.11 General Compatibility Limitations

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.

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*

10.12 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.

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