Release Notes

RobotStudio

6.07.01 SP1

Revision: -

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1 Release Information

1.1 General

Release Name

The release name is RobotStudio 6.07.01 SP1 and the build number is 6.07.7985.1011**.** This is a quality release with only one correction in RobotStudio and no new features. See section 4.1 Corrections made in 6.07.01 SP1 for details.

Release Date

The release date is August 9th, 2018.

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 ( ) in the upper-right corner of RobotStudio.

The complete documentation in PDF for RobotWare including RobotStudio is available from the Help menu in RobotStudio for Premium users. Internet connection is required.

1.2 System recommendation

Recommended Software

Operating System	
Microsoft Windows 7 SP1	32-bit edition
Microsoft Windows 7 SP1 (recommended)	64-bit edition
Microsoft Windows 10 (recommended)	64-bit edition

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.

Recommended Hardware

Item	Requirement
CPU	2.0 GHz or faster processor, multiple cores recommended
Memory	3 GB if running Windows 32-bit 8 GB or more if running Windows 64-bit (recommended)
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.

1.3 Simulation Models

Robot Libraries

IRB Variant	IRB Variant	IRB Variant
120 3kg/0.58m	4400S 30kg	6700 200 kg/2.8m SW
120T 3kg/0.58m	4450S 30kg	6700 205 kg/2.8m MH3
1200 5kg/0.9m BTM (./FGL/*FPL)	4600 20kg/2.5m	6700 205 kg/2.8m
1200 5kg/0.9m STD (./FGL/*FPL)	4600 20kg/2.5m Type C	6700 140 kg/2.85m MH
1200 7kg/0.7m BTM (./FGL/*FPL)	4600 45kg/2.05m Type C	6700 140 kg/2.85m SW
1200 7kg/0.7m STD (./FGL/*FPL)	4600 60kg/2.05m	6700 155 kg/2.85m MH3
140 5kg/0.8m Type A/B	4600 60kg/2.05m Type C	6700 155 kg/2.85m
140 5kg/0.8m Type C	460	6700 220 kg/2.65m MH
140 6kg/0.8m Type C	4600 40kg/2.55m	6700 220 kg/2.65m SW
140T 5kg/0.8m Type C	4600 40kg/2.55m Type C	6700 235 kg/2.65m MH3
1400 Type A/B	4600 45kg/2.05m	6700 235 kg/2.65m
1400H Type A/B	6400R 200kg/2.5m	6700 175 kg/2.6m MH
1410	6400R 200kg/2.8m	6700 175 kg/2.6m SW
1520ID	6400R 120kg/2.5m	6700 200 kg/2.6m MH3
1600 5kg/1.2m	6400R 150kg/2.8m	6700 200 kg/2.6m
1600 5kg/1.2m Type A	6400R 150kg/2.8m	6700 220kg/3.0m MH
1600 5kg/1.45m	6400R 100kg/3.0m	6700 220kg/3.0m SW
1600 5kg/1.45m Type A	640	6700 245kg/3.0m MH3
1600 6kg/1.2m	660 180kg/3.15m	6700 245kg/3.0m
1600 6kg/1.45m	660 250kg/3.15m	6700 270kg/2.7m MH
1600 7kg/1.2m	6600 175kg/2.55m	6700 270kg/2.7m SW
1600 7kg/1.2m Type A	6600 175kg/2.80m	6700 300kg/2.7m MH3
1600 7kg/1.45m	6600 225kg/2.55m	6700 300kg/2.7m
1600 7kg/1.45m Type A	6600ID 185kg/2.55m	6700 Inv 210kg/2.9m MH6
1600 8kg/1.2m	6620 150kg/2.2m	6700 Inv 210kg/2.9m SW6
1600 8kg/1.45m	6620LX-150/1.9m	6700 Inv 245kg/2.9m
1600 10kg/1.2m	6640 130kg/3.2m	6700 Inv 245kg/2.9m MH3
1600 10kg/1.45m	6640 180kg/2.55m	6700 Inv 270kg/2.6m MH6
1600ID 4kg/1.5m	6640 185kg/2.8m	6700 Inv 270kg/2.6m SW6
1660ID 4kg/1.55m	6640 205kg/2.75m	6700 Inv 300kg/2.6m
1660ID 6kg/1.55m	6640 235kg/2.55m	6700 Inv 300kg/2.6m MH3
2400 10kg	6640ID 170kg/2.75m	7600 150kg/3.5m
2400 16kg	6640ID 200kg/2.55m	7600 325kg/3.1m
2400L	6640 150kg/2.55m DP6	7600 340kg/2.8m
2600 12kg/1.65m	6640 165kg/2.8m DP6	7600 400kg/2.55m
2600 20kg/1.65m	6640 185kg/2.75m DP6	7600 500kg/2.55m
2600 12kg/1.85m	6640 200kg/2.55m DP6	7600 500kg/2.3m
2600ID 8kg/2.0m	6650 125kg/3.2m	7600 150kg/3.5m MH3
2600ID 15kg/1.85m	6650 200kg/2.75m	7600 325kg/3.1m MH3
260	6650ID 170kg/2.75m	7600 340kg/2.8m MH3
340	6650S 125kg/3.5m	7600 400kg/2.55m MH3
360 1kg/1130 Std No axis 4	6650S 200kg/3.0m	7600 500kg/2.55m MH3
360 1kg/1130 Wash-down No axis 4	6650S 90kg/3.9m	7600 390kg/3.1m MH6
360 1kg/1130 Standard	6650S 100kg/3.5m MH6	7600 320kg/2.8m MH6
360 1kg/1130 Wash-down	6650S 190kg/3.0m MH6	7600 390kg/2.55m MH6
360 1kg/1130 Stainless	6650S 100kg/3.5m SW6	7600 390kg/3.1m SW6
360 1kg/800 Std No axis 4	6650S 190kg/3.0m SW6	7600 320kg/2.8m SW6
360 1kg/800 Wash-down No axis 4	6650S 125kg/3.5m MH3	7600 390kg/2.55m SW6
360 1kg/800 Std	6650S 200kg/3.0m MH3	760
360 1kg/800Wash-down	6650S 90kg/3.9m MH3	8700 475kg/4.2m MH6
360 3kg/1130 Std No axis 4	6600 100kg/3.35m	8700 475kg/4.2m SW6
360 3kg/1130 Wash-down No axis 4	6660 130kg/3.1m	8700 550kg/4.2m MH3
360 3kg/1130 Standard	6660 205kg/1.9m	8700 550kg/4.2m
360 3kg/1130 Wash-down	6700 145 kg/3.2m MH	8700 630kg/3.5m MH6
360 3kg/1130 Stainless	6700 145 kg/3.2m SW	8700 630kg/3.5m SW6
360 1kg/1600 Standard	6700 150 kg/3.2m MH3	8700 800kg/3.5m MH3
360 6kg/1600 Standard	6700 150 kg/3.2m	8700 800kg/3.5m
360 8kg/1130 Standard	6700 155 kg/3.05m MH	910SC 3kg/0.45m
4400 45kg	6700 155 kg/3.05m SW	910SC 3kg/0.55m
4400 60kg	6700 175 kg/3.05m MH3	910SC 3kg/0.65m
4400L 10kg	6700 175 kg/3.05m	**940
4400L 30kg	6700 200 kg/2.8m MH	14000

** 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 Paint

Variant
52 short vertical arm
52 std vertical arm
540-12 std arm
580-12 std arm
580-12 short arm
5300-12 left
5300-12 right
5320-1500
5320-2000
5350/01 Type Left
5350/01 Type Right
5350/02 Type Left Side Left
5350/02 Type Left Side Right
5350/02 Type Right Side Left
5350/02 Type Right Side Right
5400-12 std arm
5400-13 std arm
5400-14 std arm
5400-22 process arm
5400-23 process arm
5400-24 process arm
5400-12 std arm axis 2 +60 deg
5400-13 std arm axis 2 +60 deg
5400-14 std arm axis 2 +60 deg
5500 35A b_00 / b_80
5500 35B b_00 / b_80
5500 ProArm 35A b_00 / b_80
5500 ProArm 35B b_00 / b_80
*5510

Track Libraries

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

Track family	Length
IRBT2005	2 m to 21 m
IRBT4003	1.7 m to 10.7 m
IRBT4004	1.9 m to 19.9 m
IRBT6003	1.7 m to 10.7 m
IRBT6004	1.7 m to 19.7 m
IRBT7003	1.7 m to 10.7 m
IRBT7004	1.7 m to 19.7 m
RTT_Bobin	1.7 m to 11.7 m
RTT_Marathon	1.7 m to 11.7 m
Paint Rails left and right versions	2 m to 20 m
IRB5350 Rail left and right versions	3 m to 10 m
Elevated Rail left and right versions	3 m to 10 m

2 What’s new in RobotStudio 6.07

Overview

This section describes the new features of RobotStudio 6.07.

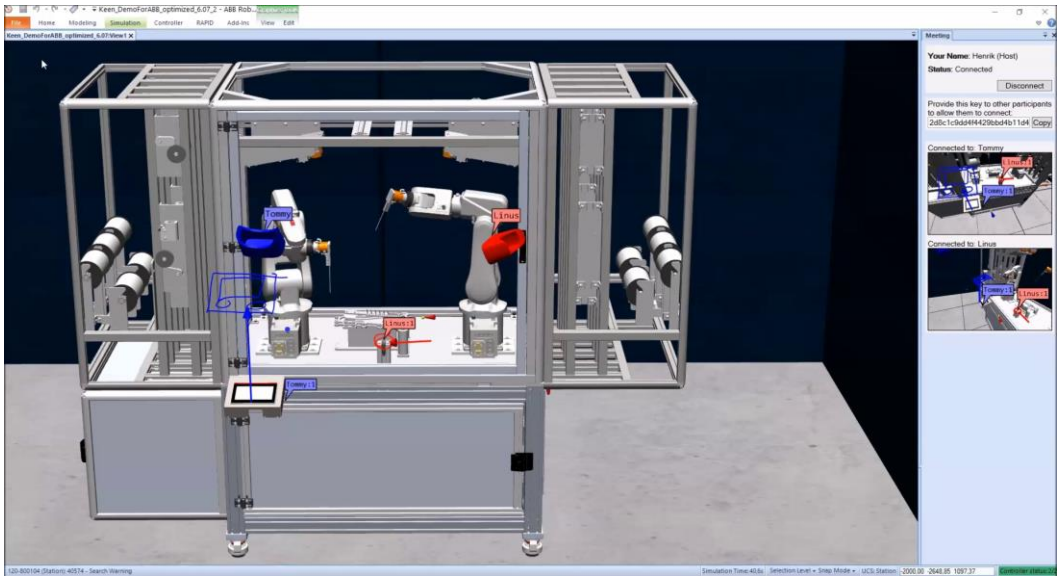
2.1 New features

Virtual Reality Lead Through Programming

Virtual Reality allows robot programs to be created in an intuitive way by guiding the robot through the process and simultaneously recording the motion. Lead-through programming efficiently lowers the threshold and allows non-robot experts to do the motion programming as hands-on lead-through programming is not possible in reality due to various limitations such as safety, availability of equipment, work environment, and ergonomics. VR Lead-through programming guarantees reachability since the robot manipulator itself is used to teach the path. The VR functionality is built into RobotStudio and is enabled for Premium users.

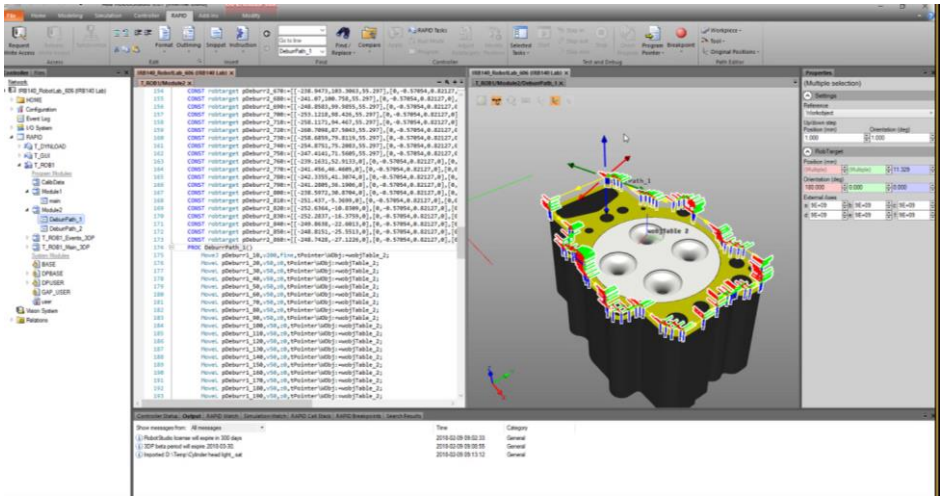
Virtual Reality Meeting

In a Virtual Reality Meeting, several participants can share the same virtual room from multiple locations. You can see avatars of each other, talk, draw, and make annotations in a live RobotStudio simulation. Virtual Reality provides an accurate perception of dimensions, ergonomics, and accessibility for cleaning and servicing of equipment. The VR Meeting function helps in design reviews and to correct errors at an early stage. This results in significantly shorter installation and start-up phase.



Graphical Path Editor for real controllers

The paths of a real robot can be viewed and edited graphically without the need of a virtual controller or running a simulation. You can load a workpiece to see the path in relation to the part geometry. By enabling the tool visualization, you can easily see the target orientation. The property window allows you to tune multiple robtargets in a single operation.



Generic motion instructions, e.g. MyMoveL, can be edited by adding the corresponding instruction template files to the folder

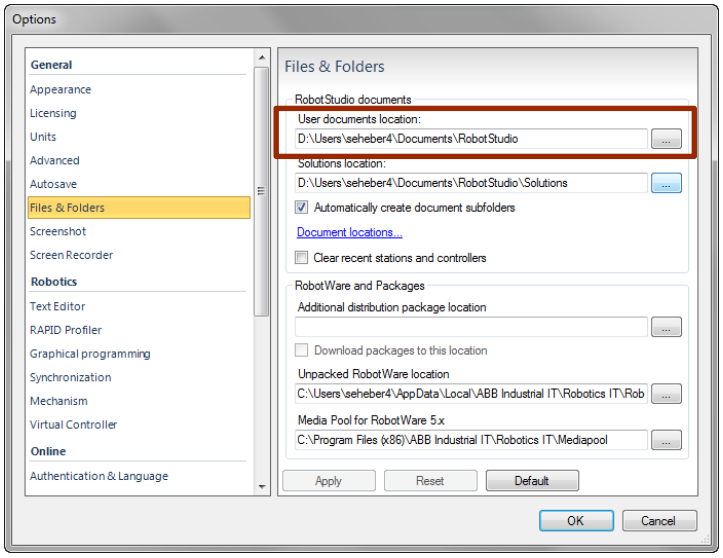
<RobotStudio user document location>\InstructionTemplates.

For a default installation of RobotStudio on Windows the default the folder is

C:\Users\<user name>\Documents\RobotStudio\InstructionTemplates,

where <user name> shall be replaced by the user name of the currently logged in Windows user.

The RobotStudio user document location can be set in the RobotStudio Options, see below



To create an instruction template file for your custom motion instructions proceed as follows.

1. Connect to a controller
2. Press the Go Offline button to create a virtual replica of your real controller.
3. Working with the virtual controller, create instruction templates and save to file. This is done with the Instruction Template Manager.

4. Copy the file to the following location:
   C:\Users\<user name>\Documents\RobotStudio\InstructionTemplates
5. Restart RS
6. Connect to the real controller again.
7. Open the RAPID path editor for a selected RAPID routine that contains the path you want to edit.

Done! Now you should be able to see a graphical representation of your path including your custom motion instructions.

Note that the instruction template file can be distributed to anyone who will use the path editor with the customized move instructions.

I/O Configurator

The I/O Configurator required for configuration of PROFINET, PROFISAFE and the CI-502 module is integrated with RobotStudio 6.07. The I/O Configurator can be opened from the Configuration menu of the Controller tab.

Configuration of new module for conveyor tracking

Functionality is added to setup and maintain the Ethernet based conveyor tracking unit DSQC2000.

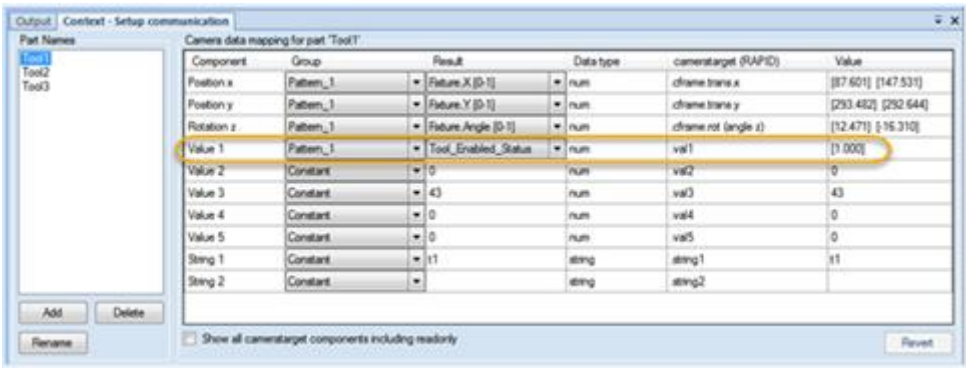
2.2 Changes related to Integrated Vision

Enable/Disable tools (RobotWare)

The controller will now discard all “Output to RAPID data” for a specific “Part” if the tool that is linked to the part is disabled, see screen shot below.

Motivation: If a user disables a tool during runtime they often assume that data from these tools are not included when they do a CamGetResult.

You can enable/disable a tool in runtime by using the RAPID instruction CamSetParameter(camera, “toolName”, boolValue);




```
CamSetParameter mycamera, "Pattern_1.Tool_Enabled" \BoolVal:=TRUE;
CamSetParameter mycamera, "Pattern_2.Tool_Enabled" \BoolVal:=FALSE;
```

PatMax 1-10 with Advanced Sorting (RobotStudio)

A new localization tool have been added to IV in RobotStudio.

With this new tool you can use a normal PatMax but with another set of sorting instructions in the EasyBuilder interface.

The different sorting instructions included are X, Y, GridX, GridY, Angle, Angular Distance and Distance.

Note: These sorting functions are based on the image coordinate system and could be somewhat confusing, so please lookup “SortPatterns” in the online manual for further information.

Changes made to the camera emulator support (PDD6353)

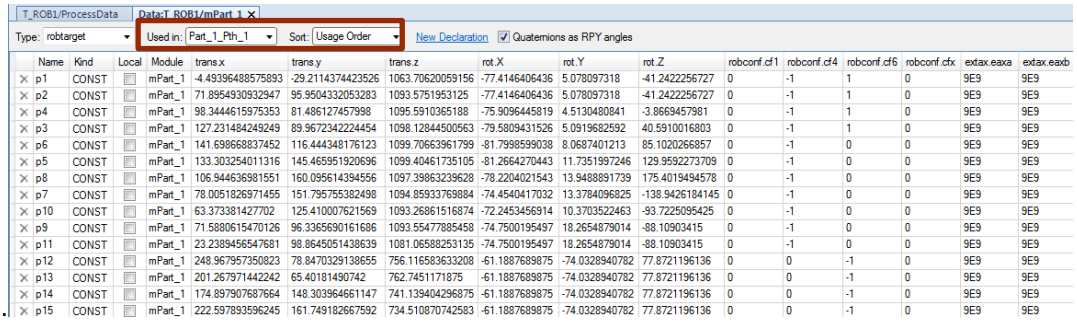
The Cognex camera emulator doesn’t allow us to “acquire an image” so we have now added an Elog message to warn the user that “CamReqImage” is not supported when running against a camera emulator. On a real controller the warning is a stopping error and on a virtual controller it’s just an elog warning.

(You could still verify your vision job file by using the camera emulator in RobotStudio and you can still verify your RAPID program by manually create a Part and map constant values in X,Y,..)

2.3 Improvements

Improvements of the RAPID Data Editor

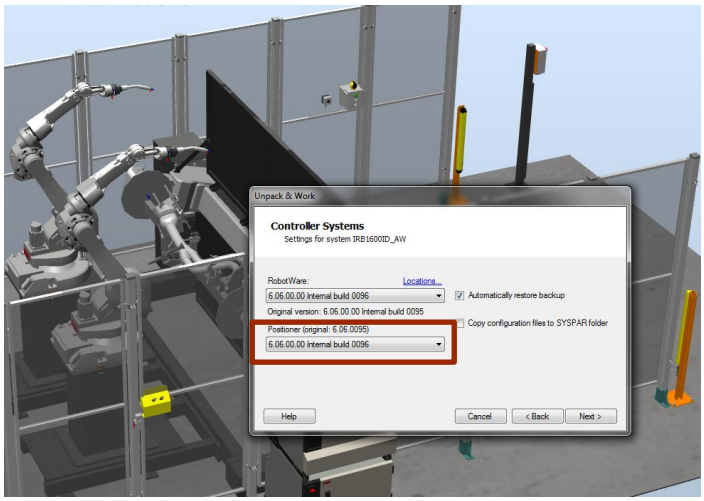
RAPID Data can be filtered by its use in a selected routine. Also, it can be sorted in order of usage. This is particularly useful when editing robtargets.



Name	Kind	Local	Module	trans.x	trans.y	trans.z	rot.X	rot.Y	rot.Z	robconf.cf1	robconf.cf4	robconf.cf6	robconf.cfx	extax.eaxa	extax.eaxb
p1	CONST		mPart_1	-4.49396488575893	-29.2114374423526	1063.70620059156	-77.4146406436	5.078097318	-41.2422256727	0	-1	1	0	9E9	9E9
p2	CONST		mPart_1	71.8954930932947	95.9504332053283	1093.5751953125	-77.4146406436	5.078097318	-41.2422256727	0	-1	1	0	9E9	9E9
p4	CONST		mPart_1	98.3444615975353	81.486127457998	1095.5910365188	-75.9096445819	4.5130480841	-3.8669457981	0	-1	1	0	9E9	9E9
p3	CONST		mPart_1	127.231484249249	89.9672342224454	1098.12844500563	-79.5809431526	5.0919682592	40.5910016803	0	-1	1	0	9E9	9E9
p6	CONST		mPart_1	141.698668837452	116.444348176123	1099.70663961799	-81.7998599038	8.0687401213	85.1020266857	0	-1	0	0	9E9	9E9
p5	CONST		mPart_1	133.303254011316	145.465951920696	1099.40461735105	-81.2664270443	11.7351997246	129.9592273709	0	-1	0	0	9E9	9E9
p8	CONST		mPart_1	106.944636981551	160.095614394556	1097.39863239628	-78.2204021543	13.9488891739	175.4019494578	0	-1	0	0	9E9	9E9
p7	CONST		mPart_1	78.0051826971455	151.795755382498	1094.85933769884	-74.4540417032	13.3784096825	-138.9426184145	0	-1	0	0	9E9	9E9
p10	CONST		mPart_1	63.373381427702	125.410007621569	1093.26861516874	-72.2453456914	10.3703522463	-93.7225095425	0	-1	0	0	9E9	9E9
p9	CONST		mPart_1	71.5880615470126	96.3365690161686	1093.55477885458	-74.7500195497	18.2654879014	-88.10903415	0	-1	0	0	9E9	9E9
p11	CONST		mPart_1	23.2389456547681	98.8645051438639	1081.06588253135	-74.7500195497	18.2654879014	-88.10903415	0	-1	0	0	9E9	9E9
p12	CONST		mPart_1	248.967957350823	78.8470329138655	756.116583633208	-61.1887689875	-74.0328940782	77.8721196136	0	0	-1	0	9E9	9E9
p13	CONST		mPart_1	201.267971442242	65.40181490742	762.7451171875	-61.1887689875	-74.0328940782	77.8721196136	0	0	-1	0	9E9	9E9
p14	CONST		mPart_1	174.897907687664	148.303964661147	741.139404296875	-61.1887689875	-74.0328940782	77.8721196136	0	0	-1	0	9E9	9E9
p15	CONST		mPart_1	222.597893596245	161.749182667592	734.510870742583	-61.1887689875	-74.0328940782	77.8721196136	0	0	-1	0	9E9	9E9

Selection of RobotWare Add-Ins

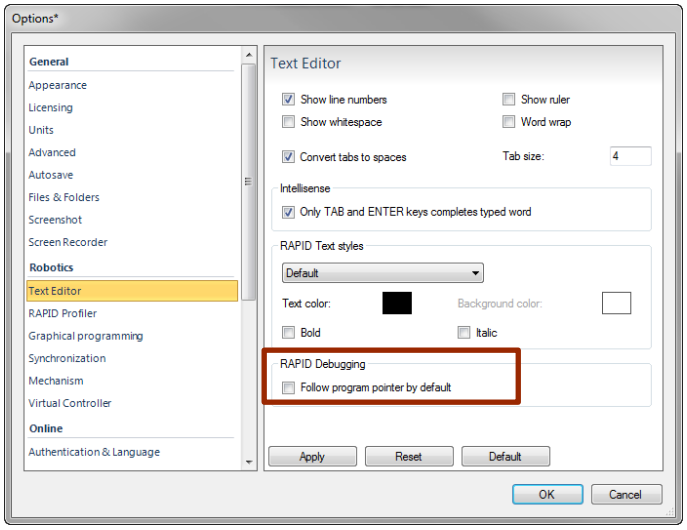
When opening a Pack&Go file that contains a virtual controller system that uses a RobotWare add-in, it is possible to select which version that shall be used when unpacking the system if several compatible versions are available.



This also applies to the functions Go Offline and Create system from backup.

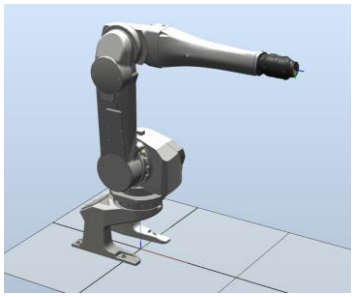
Possibility to disable “Follow Program Pointer” in the RAPID Editor

The default setting for the function “Follow Program Pointer” of the RAPID Editor can be set in the RobotStudio Options.



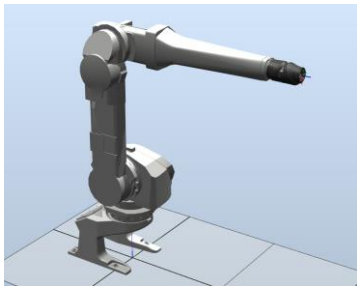
New paint robot IRB 5510

There is a new paint robot in the 5500-family, IRB 5510

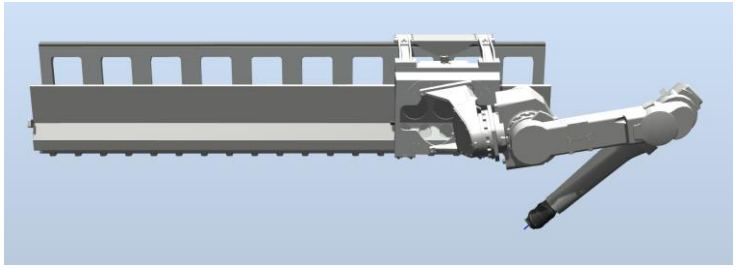


New bases for IRB 5500

A new base for floor mounting of the IRB 5500 is available in RobotStudio 6.07.

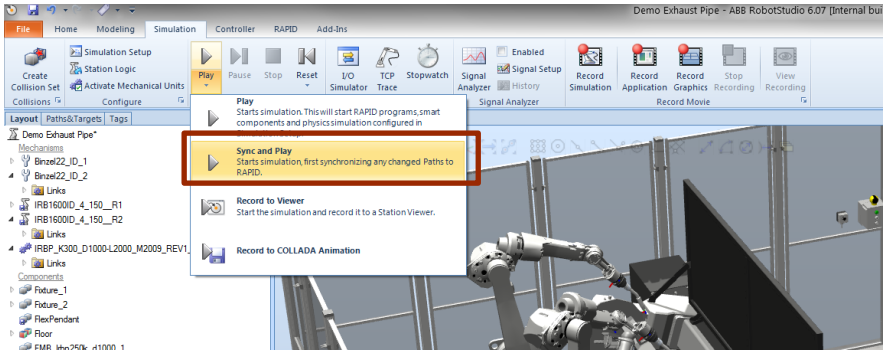


There is also an alternative base for rail mounting of the IRB 5500.



Automatic synchronization of RAPID

There is an alternative Simulation Play button called “Sync and Play” that will synchronize changes in the station to RAPID before starting the simulation, thus reducing the need for the separate sync step.



Upgrade for firmware of Local I/O

The local I/O units that can ordered as an option to the robot controller has a firmware that can be upgraded with RobotStudio 6.07.

Jobs – controller name and system name added to report

The system name and the controller name can be left blank in the Device List used for a Job. If that is the case, RobotStudio will query the controller and populate these columns in the generated report. This is new in RobotStudio 6.07.

If the system name and controller name is added to the Device List it will be used to validate them. If they do not match, an error will be reported.

Smart Components: Manage I/O Connections has been discontinued

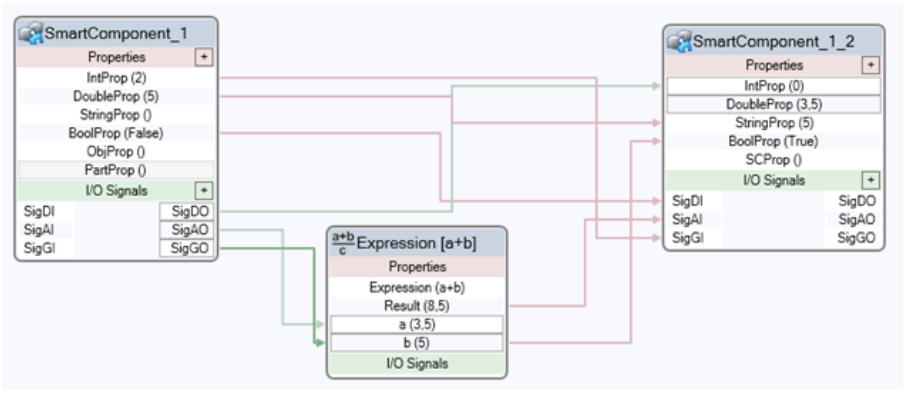
The Smart Component design tool “Manage I/O Connections” has been discontinued. The same tasks can be carried out in the Design View.

Smart Components: Conversion components automatically removed

Since RobotStudio 6.06 it is no longer required to explicitly convert between properties and signal by going through the Converter component, e.g. bool <-> digital signals, real numbers <->analogue signals, integers <-> group signals

In RobotStudio 6.07, station logic including a Converter component will be removed from the station if no longer required when a station is opened.

Also, it is possible to connect different types if the value can be converted, e.g. double <-> int <-> bool.



3 Late Breaking Information

Overview

This section describes changes and additions done after the Operating Manual was finalized.

***Updates to CAD format versions**

RobotStudio 6.07.01 includes an updated CAD converter that supports the latest versions. (The table below lists all formats and versions supported by RobotStudio for completeness even though not all of them have been updated for 6.07.01).

Format	File extensions	Option required
3DStudio	.3ds	-
ACIS, reads versions R1 - 2017 1.0, writes versions R18 - 2018 1.0	.sat, .sab, .asat, .asab	-
CATIA V4, reads versions 4.1.9 to 4.2.4*	.model, .exp, .session	CATIA V4
CATIA V5/V6, reads versions V5R8 – V5/V6R2018 writes V5R15 – V5/V6R2018*	.CATPart, .CATProduct, .CGR, .3DXML	CATIA V5
COLLADA 1.4.1	.dae	-
DirectX writes 2.0	.x	-
DXF/DWG, reads versions 2.5 - 2018*	.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 – 2018*	.ipt, .iam	Inventor
JT, reads versions 8.x, 9.x and 10.x*	.jt	JT
LDraw, reads version 1.0.2	.ldr, .ldraw, .mpd	-
NX, reads versions NX 1 – NX 12*	.prt	NX
OBJ	.obj	-
Parasolid, reads versions 9.0.* – 30.0.*	.x_t, .xmt_txt, .x_b, .xmt_bin	Parasolid
Pro/E / Creo, reads versions 16 – Creo 4.0*	.prt, .prt.*, .asm, .asm.*	Pro/ENGINEER
Solid Edge, reads versions V18 – ST10*	.par, .asm, .psm	SolidEdge
SolidWorks, reads versions 2003 – 2018 *	.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	-

* Supported only in the 64-bit version of RobotStudio.

The RAPID Profiler has been removed.

The RAPID Profiler has been removed from RobotStudio.

4 Corrections

Overview

This section lists the corrections made.

4.1 Corrections made in 6.07.01 SP1

PDD	Description
-	**Visual SafeMove: Duplicate signals for paint robots with CIP Safety Adapter** When configuring safety for a paint robot with the RobotWare option **997-3 CIP Safety Adapter** the safety configuration becomes incorrect since it contains duplicate signals. The default safety configuration contains a number of signals which Visual SafeMove fails to recognize why they are added once more. As a result the safety configuration is rejected by the controller and cannot be installed. The bug only applies to paint robots with CIP Safety Adapter. No other combinations are affected. SP1 contains a fix to this problem.

4.2 Corrections made in 6.07.01

PDD	Description
9626 9811	**Signal analyzer Online failed for some real controllers** The Signal Analyzer failed when the internal system ID of the robot controller had lower-case characters instead of upper-case characters. This has been fixed so that RobotStudio igores the casing for the internal system ID.
10367	**Visual SafeMove: The protect checksum changed for certain configurations.** A regression in RobotStudio 6.07 caused the protected checksum to change for configurations with nested combinatorial logic (CL). The reason was the generation of internal names of the intermediate gate connections. This bug did not affect configurations with non-nested CL logic**.**
10433	**Silent install of RobotStudio failed on Windows 10** When installing RobotStudio silently from the command prompt using the syntax setup.exe /s /v"/qb ADDLOCAL=ALL LICENSE_SERVER=myhostname" Then RobotStudio incorrectly reported about a missing prerequisite and the installation process was discontinued. This has been fixed.
10477	**Visual SafeMove: Import of the simplified Geometry configuration file failed in RobotStudio 6.07 for certain files.** RobotStudio allows safety geometries to be defined in a simplified XML file and imported into RobotStudio. Files which could be successfully be imported in RobotStudio 6.06.01 failed in 6.07 due to unnecessarily strict validation. This has been changed back in RobotStudio 6.07.01 to allow import again.
-	**Smart component signal names are limited to 32 chars and does not allows dots (“.”)** Smart component signal names were required to follow the naming restrictions that apply to the IRC5 controller for all signals, even signal that are not connected to a controller. This has been relaxed in RobotStudio 6.07.01 to allow longer signal names and names with dots.

4.3 Corrections made in 6.07

PDDs

ID	Title
3389	Viewing joint movements slows down the simulation
6767	RobotStudio: program editor intelligence issue
7685	RobotStudio Docs missing detail on Oculus Rift and HTC Vive
8218	Incorrect information about how to start and stop tasks.
8417	Scara Not Available on Full Size Controller
8597	System from Backup causes exception, if RW Addin is not available -
9008	Jerky motion during simulation
9021	IRBT6004 Double CAD Model
9037	Can't warmstart the virtual system
9252	Add proper error message to CAD converter when file not supported.
9360	SmartComponent line sensor won't align
9380	PatMax1-50 array result not present
9381	Results not displayed in HMI for Patmax [1-50]
9385	User accounts not possible to edit, when choose Handle write access automatically option
9457	[/allowExecStateRunning] is not mentioned in the manual
9461	Problem Event log screen are not updated after log on in Robotstudio 6.05.03
9517	Selecting wrong Robotware while Unpacking
9543	Add checkbox "Reset virtual controllers (I-start)" in the station Open dialog.
9552	Objects added when clearing conveyor
9553	Attached to Axis not showing in Rs 6.06.
9586	Floor plan are not created in SafemoveReport when the robot position in Robotstudio is not in zero position
9608	Unable to restore Pack&Go
9609	Wrong Safemove CRC
9644	Backup problem
9646	Unwanted parts in selection
9648	RAPID editor and RS stuck forever
9649	Existing directory not found
9654	Graphic Appearence function does not support multiselection
9655	Create tooldata from pull-down menu not working OK
9656	Improvment of user interface while dealing with multiple selection
9668	RobotStudio Change Options exception should not allow both SafeMove1 and SafeMove2 to be installed in same robot
9669	RobotStudio Change Options exception
9673	Description in Signal Analyzer (Online) of "Available signals" is not correct
9680	System crash when untick PickMaster3 option by Change Options function in Controller Tab
9748	RobotStudio: Robot won't jump to target
9753	RS crash
9762	Pack&Go file with conveyor tracking fails to open
9763	RS / Visual SafeMove not able to support older safety configuration, if PROFIsafe Only is booted.

9764	Pbl with axis config of first instruction of a path
9767	Problem Opening old PnG in RS6.06
9774	Check Reachability not enabled while opening an 'old' station
9779	Station Viewer crashes in VR
9784	RObotStudio 6.06.01 crashes when using PaintApplicator
9797	RS unexpected failure after open backup file
9799	TCP trace not working for systems with old RW release
9852	SafeMove 2/Profisafe issue
9860	Exception when downloading SafeMove 2 configuration to robot or VC
9895	Function "Adjust Robtarget" tooldata could not selected when the user in connected to a real controller
9981	Protected elements checksum changing for no reason

5 Known Limitations

Overview

This section describes known limitations in RobotStudio.

5.1 Visual SafeMove

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.

5.2 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.

5.2.1 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.

5.2.2 Online – Integrated Vision

***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 – 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 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.

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.

5.3 Offline

***Event "Not allowed command" may be shown in the output window**

When starting a Virtual Controller with RobotWare 5, the evenlog message "Not allowed command" may be displayed in the output window. This message can safely be ignored.

***Live update of Signal Analyzer may cause lag.**

When running Signal Analyzer with live update for virtual controllers, the graph rendering may cause lag and slow the simulation down. As a workaround, switch windows back and forth to force an update of the graph rendering of the Signal Analyzer.

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

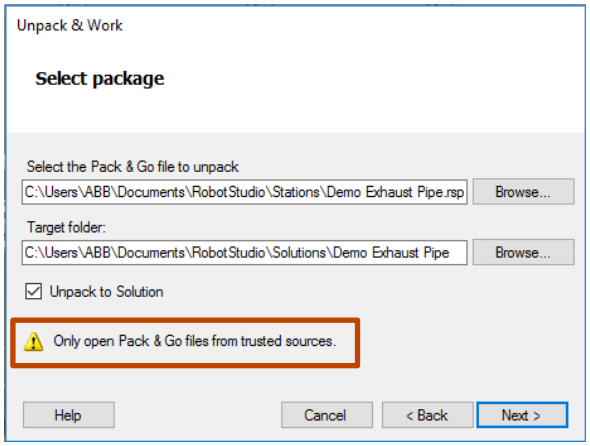
The robot IRB 1600ID 1.55 m / 6 kg is not available in RobotWare 6.04 and later. It has been renamed to IRB 1660ID 1.55 m / 6 kg. Virtual controller systems for IRB 1600ID 1.55 m / 6 kg based on RobotWare 6.03 cannot upgraded to RobotWare 6.04 and later. This means that Pack&Go files for this robot based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

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 avail***able 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.

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 librar***y 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 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

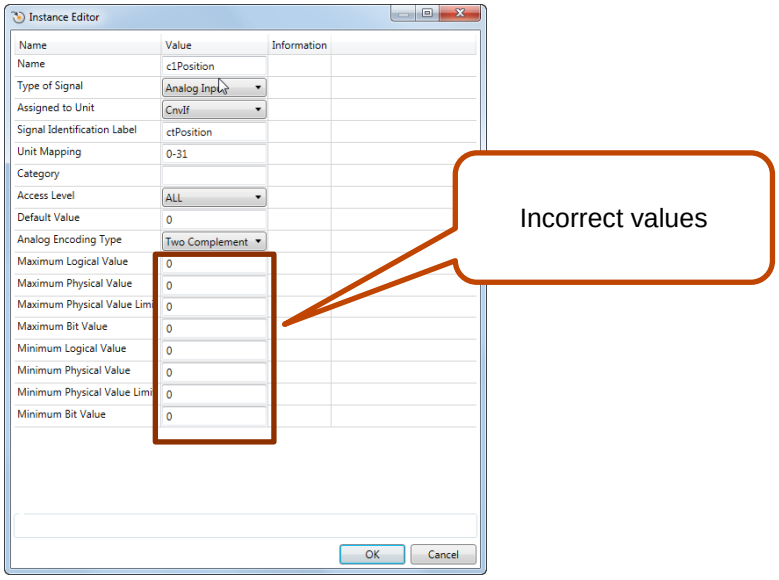
Conveyor Tracking

***Conveyor objects must be re-added for statoins 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.



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
```

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: Workobject 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 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.

5.3.6 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.

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.

5.3.7 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.

5.3.8 Graphics and Geometry

***First character of part name incorrect when importing assemblies or converting files**

The first character of part or assembly names may become incorrect when importing CAD parts or assemblies into a RobotStudio station. The error only occurs on Windows 7.

Some CAD converters not available in Premium trial license

No trial license available for CAD converters for DXF/DWG, JT, NX, Parasolid, Solid Edge, and SolidWorks.

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.

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)

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 behavior 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.

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 is distributed with the corresponding version of RobotWare 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 "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
```

6.8 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.

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

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

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 6.07 supports all future minor revisions of RobotWare 6.07, but no future major releases. For example, RobotStudio 6.07 will support RobotWare 6.07.01 (if, and when available) but not RobotWare 6.08 or later.