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What's New RobotStudio® 5.12.02

New Functionality RobotStudio 5.12.02

EPS and SafeMove in Offline.

The EPS Wizard and the SafeMove Configurator are now available in the Offline mode. This allows users to configure the safety configurations without the need to connect to a real controller.

New robot models

The following robots are now supported by RobotStudio

- IRB 120 3kg/0.58m
- IRB 2600 12kg/1.65m
- IRB 2600 20kg/1.65m
- IRB 2600 12kg/1.85m
- IRB 6620LX-150/1.9m.*

**) The simulation model for the IRB 6620LX robot is created when RobotStudio detects that a corresponding VC system has started. The recommended way is to use a template system for this robot.*

New Functionality RobotStudio 5.12.01

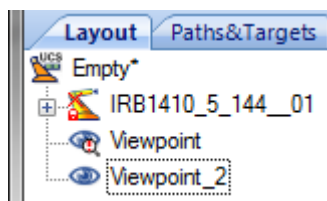
No new functionality added.

New Functionality RobotStudio 5.12

View Points

A Viewpoint stores the location and direction of the virtual "camera" in the 3D environment. Viewpoints can be used to store points of interests in a station and to create camera movements during simulation.

Viewpoints in the station are displayed as an eye icon in the Layout browser:



The position and direction of the Viewpoint can also be visualized as an arrow in the 3D graphics. Note: newly created Viewpoints are by default not visible. Viewpoints cannot be selected by clicking in the graphics.

A new action type "Move to Viewpoint" is available in the Event Manager.

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When this action is executed, the active 3D view is moved to the Viewpoint in the same way as when executing the corresponding command. In addition, the time for the movement can be specified.

This action is also executed when replaying the simulation in a Station Viewer

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Station Viewer

The Station Viewer is a standalone executable that contains a station file and the binaries required to load and view a station in a 3D environment. It can also play back a prerecorded simulation.

When the target user starts the executable, the embedded station file is automatically loaded and presented in a 3D view. The user interface is ribbon based with a single tab.

The RobotStudio user creates a Station Viewer by selecting "Save Station as Viewer" beneath "Collaborate" in the application menu. If a simulation has been executed, an option to include a recording of that simulation is available. The user can also add a comment to be shown when the viewer is started, for example confidentiality information.

In addition to the embedded station, .rsstn files can be loaded by selecting "Open" in the application menu. Note that if the station contains connected library files they must be available on the target system, otherwise the station will be incomplete.

When the RobotStudio user executes a simulation, the movements and visibility of objects are recorded. This recording can optionally be included in the Station Viewer.

If the Station Viewer contains a recorded simulation, the Simulation controls in the ribbon are enabled. These are:

- Play: Starts or resumes simulation playback
- Stop: Stops simulation playback
- Reset: Resets all objects to their initial state. Resets the process time display to zero.
- Run mode: Select to run the simulation once or continuously
- Process time: Displays the current simulation time.

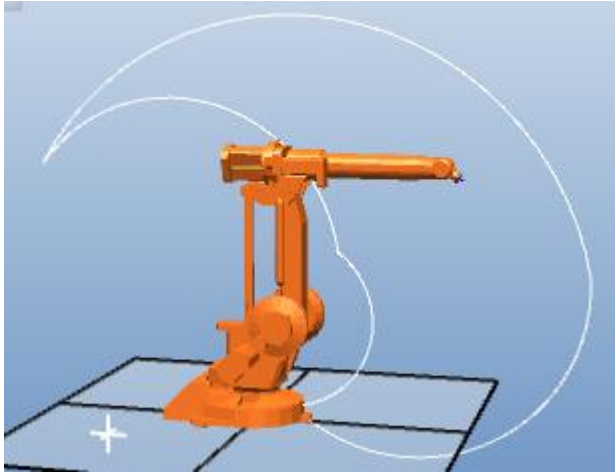
The recording only stores events for objects of Part level and higher. Other events such as VSTA macros are not included. For example, if the RobotStudio simulation executes a VSTA macro that sets the visibility of an individual Body, this is not reflected when playing back the simulation in the Station Viewer.

Note: cycle time displayed in the station viewer only matches cycle time from RobotStudio if the simulation was executed with Time Slice option (under RobotStudio options – Virtual Time).

Working Envelope

The work envelope for a robot is the maximum range of movement. It can be visualized in the 3D graphics by selecting "Show Work Envelope" in the context menu for a robot.

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The work envelope is visualized as the outermost trajectory of the active TCP when jogging joints 2 and 3 through all possible values. The visualization is attached to the first link of the robot, so it follows the movement when rotating joint 1.

Work envelopes are only available for articulated robots, e.g. not for picker robots or external axes.

To display the correct work envelope for parallel arm robots (such as the IRB1410 above), some additional metadata in the robot model is needed. This metadata is only included in models shipped with RS 5.12 and higher.

The visualization is temporary, e.g. it is not part of the station data. This means that it is not persisted when the station is saved

Linked Geometry

The Linked Geometry feature allows the user to load geometry from a shared repository (such as a file share) and let RobotStudio remember the source location. If the source file is updated, the RobotStudio user will be able to update the RobotStudio station with a simple click. The following functions are available for linked geometry:

- Add Link:

There are two ways to add a link to a geometry file:

1. Select the "Link to Geometry" checkbox in the "Import Geometry" dialog
2. Select an existing part in the station and select the "Add Link" command from the context menu. This will open a file dialog where the user can select the CAD file to link to.

The tooltip for a linked part in the layout browser will display the path of the file that has been linked to.

- Edit Link:

An existing link can be edited from the Part context menu by selecting "Edit Link". The behavior is identical to the "Add Link" command.

- Delete Link:

An existing link can be deleted by selecting "Delete Link" from the context menu.

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- Update Linked Geometry:

By selecting "Update Linked Geometry" from the Part, Component group or Station context menus, all corresponding parts will be updated from the source location if the timestamp on the file is newer than the timestamp stored in the station.

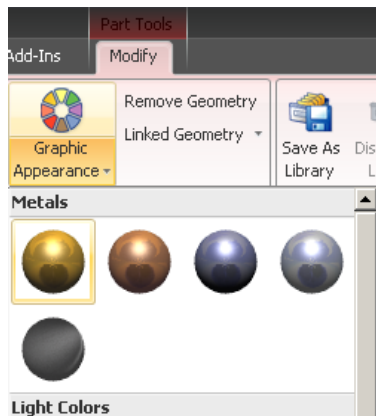
The result of the update operation will be displayed in the output window

Event Manager

It is now possible to export and import Event Manager tables as xml files. So the user can now transfer complex Event manager scenarios from one project to another.

Graphic Appearance

It is now possible to select from predefined materials:



Visualization and manipulation of SetBrush instructions

Trig planes defined by the SetBrush instruction in RobotWare Paint are now visualized in the graphics. Each SetBrush instruction is drawn as a rectangle together with the brush number. It is possible to change the trig plane position by freehand move, using selection level *Target/Frame*, or by using the Modify Instruction tool.

The path segments between trig planes are drawn with different colors. Each brush number has a color associated with it.

Note: In the RobotStudio user interface it is not possible to change the color that is associated with a brush number, but it is possible from Painting PowerPac.

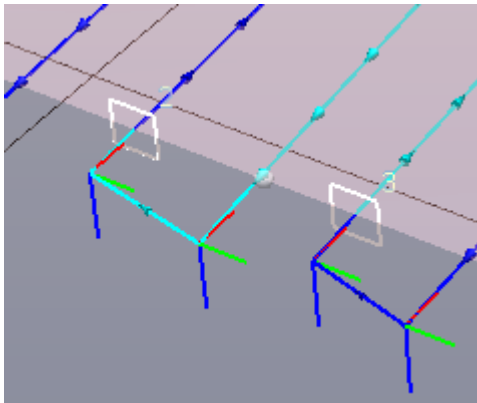


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Screen Recorder

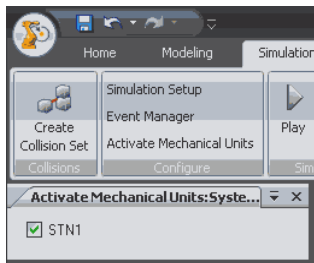
It is now possible to record a simulation in time slice mode. For each time step the recorder shall grab a frame.

This will allow smooth simulation movies to be recorded independently of the hardware used.

The user is able to select which codec he wants to use for the recording. The codec installed on the PC shall be available for selection

Reachability & AutoConfiguration

Reachability and AutoConfiguration is now supported for external axis (positioners) as well. **Note:** it important to active the external axis Mechanical Units before using those functions!



HOME, BACKUP, SYSPAR Shortcuts

There are shortcuts in the dialogs for saving/loading modules, backups and configuration files for the respective default directories for the VC.

Support for new SxTPU3

RobotStudio now supports the new SxTPU3. It will automatically detect which TPU version that is used by the system and start the right one when the user selects to start the Virtual FlexPendant.

Operator Window

The FlexPendant Operator Window is available in RobotStudio. It will display in Offline mode the same output as displayed on the Virtual FlexPendant Operator Window.

Online: EPS Wizard

It is now possible to upload the EPS configuration to the EPS Wizard from the controller to the EPS Wizard.

Application Development

Add-Ins can be loaded from Common Files

RobotStudio now scans the folder *C:\Program Files\Common Files\ABB Industrial IT\Robotics IT\RobotStudio\Addins* for *.rsaddin* files.

In the *.rsaddin* file it is possible to specify the location of the Add-In DLL.

If Add-Ins are located in a folder outside the RobotStudio installation folder, they will be able to be discovered and loaded when you upgrade to a newer RobotStudio version.