Release Notes

PC SDK

6.01

Revision: -

The information in this manual is subject to change without notice and should not be construed as a commitment by ABB. ABB assumes no responsibility for any errors that may appear in this manual.

Except as may be expressly stated anywhere in this manual, nothing herein shall be construed as any kind of guarantee or warranty by ABB for losses, damages to persons or property, fitness for a specific purpose or the like.

In no event shall ABB be liable for incidental or consequential damages arising from use of this manual and products described herein.

This manual and parts thereof must not be reproduced or copied without ABB's written permission, and contents thereof must not be imparted to a third party nor be used for any unauthorized purpose. Contravention will be prosecuted.

Additional copies of this document may be obtained from ABB at its then current charge.

Table of Contents

Overview

Description

This document provides information about new features, corrected problems and installation of PC SDK 6.01

Product Overview

PC SDK can be used to develop customized PC applications for communication with the IRC5 controller.

It can also be used in combination with RobotStudio SDK to develop RobotStudio add-ins that interacts with the IRC5 controller.

PC SDK applications can connect to one or several IRC5 controllers, real as well as virtual.

The RobotWare Option "PC Interface" according to chapter 8.1.

For download, information and help getting started, visit our Developer Center: http://developercenter.robotstudio.com

On the User Forum developers discuss problems and solutions online:

http://forums.robotstudio.com

1 Release Information

1.1 General

Release Name

The release name is PC SDK 6.01 and the build number is 6.01.6409.0123

Release Date

The release date is April 29th, 2015.

1.2 Contents

.NET Assemblies

ABB.Robotics.Controllers.PC.dll

Redistributables

ABBControllerAPI.msm – Merge module containing the assemblies required by a PC SDK application.

ABB Robot Communication Runtime.exe – Standalone installer for Robot Communication Runtime.

Merge Modules for Robot Communication Runtime – Merge modules for including Robot Communication Runtime in your own installer

- ABBRobAPI.msm

- ABBRobAPICommon.msm

- ABBRobInstallAPI.msm

- ABBRobInstallAPICommon.msm

Documentation

- Reference Manual PC SDK – Class library API reference in C# syntax. Available online at developercenter.robotstudio.com and as Html Help in the installation folder.

- Application Manual PC SDK – Available online at developercenter.robotstudio.com and as Html Help and PDF in the installation folder.

- Code samples – Available online at developercenter.robotstudio.com.

- Installed documentation can be accessed from the Windows Start Menu; Programs > ABB Industrial IT > Robotics IT > PC SDK 6.01

2 What's New in 6.01?

2.1 Overview

PC SDK 6.01 is a maintenance release for supporting of RW 6.01.

Distribution via Developer Center

PC SDK can be downloaded from Robotics Developer Center:

developercenter.robotstudio.com.

3 Late-breaking information

3.1 Overview

This section contains late-breaking information that will be included in the appropriate documents in the subsequent releases.

Nothing in this release.

8

4 Corrected Problems in PC SDK 6.01

4.1 Overview

This section describes the corrected problems in PC SDK 6.01

PDD4044 - DirectoryExists method is case sensitive

The function DirectoryExist was casesensitive which now is fixed.

PDD4583 - GetRapidDataType return nothing for userdefined datatypes

The call should look like this to work properly:

_Ctrl.Rapid.GetRapidDataType("<task>", "<module>", "<var/const/pers declaration>");

ES140729-229743 - ControllerStartMode enum does not match controller

All types of controller restart modes has now been added

PDD686 – Make it possible to retrieve RAPID data larger than 1024 Bytes.

It was not possible to retrieve RAPID data larger that 1+24 bytes. This has now been fixed.

---

5 Corrected Problems in PC SDK 6.00.01

5.1 Overview

This section describes the corrected problems in PC SDK 6.00.01

PDD4106, UIMessageBox.SendAnswer issue.

When using the UIMessageBox.SendAnswer method against RobotWare 5.6x systems, the RAPID program would not react with no indication of failure. This was not an issue against RobotWare 5.1x or 6.x.This has now been fixed"

Wrong elog types in messages

EventlogCategory cat = this.controller.EventLog.GetCategory(0) didn't result in a correct error list. This has now been fixed

---

Property Controller.CultureInfo returned wrong culture

The property Controller.CultureInfo always returned Chinese culture, regardless of what language the controller actually was set to.
This has now been resolved and the actual culture is returned (defaulting to English if no language info can be found on controller).

---

6 Corrected Problems in PC SDK 6.00.00

6.1 Overview

This section describes the corrected problems in PC SDK 6.00.00

Reading Arrays of user defined Records doesn't work correct (PDD686, PDD1732)

Fail to get controller status after setting up eventhandlers (PDD3518)

7 Known Limitations

7.1 Overview

This section describes known limitations in PC SDK 6.01.

RapidData.Value.ToString() for data exceeding 1024 bytes not supported in snapshot mode

The RapidData.Value.ToString() method is not supported when it is used to view a large RAPID array in snapshot mode.

Workaround: Use RapidData.StringValue.

Maximum number of connected Robot Communication Runtime clients

The following table describes how many client applications can connect to an IRC5 controller using Robot Communication Runtime over its different network ports.

Network port	Max number of connected clients
LAN	3
SERVICE	1
FlexPendant	1

On a single PC, all applications using Robot Communication Runtime, like PC SDK applications and RobotStudio, shares one single connection to the controller.

The RobotStudio Online apps consumes one separate connection each as long as they are visible on the screen. When they become suspended they automatically disconnects from the controller.

In Windows 8.1 it is possible to have two apps docked besides each other which means the apps can consume up to two connections per PC.

Example:

A PC with Windows 8.1 running the following apps and applications consumes three connections. The apps are both visible and docked side by side.

- PC SDK application A (1 shared connection via Robot Communication Runtime)

- PC SDK application B (1 shared connection via Robot Communication Runtime)

- RobotStudio (1 shared connection via Robot Communication Runtime)

- RobotStudio Online Adjust (1 connection when it is visible)

- RobotStudio Online Tune (1 connection when it is visible)

Total: 1+1+1=3 connections

Maximum number of logged in users

The maximum number of logged in users to the controller is 50.

PC SDK UIInstructionEvent / RAPID UIListView

UIListViewEventArgs.ListItems may return the wrong number of list items if - if you are using characters like double quote (") and brackets ([ ]) in the RAPID array of list item strings, the

Avoid using double quote (") and brackets ([ ]).

FlexPendant may lock up when PC SDK application release and immediately request mastership

In manual mode, when a PC SDK application releases master and immediately requests master again, the FlexPendant is locked up when the user presses the prompt to grant write access to the PC SDK application. In automatic mode there is no problem.

IPC Messaging - PC SDK always sends 444 bytes of data

When sending a message with `IpcQueue.Send()`, the size of the message sent over the network will be 444 bytes, regardless of the amount of data passed to `Send()`. Data must therefore be null terminated.

IPC Messaging requires MTA thread

`IpcQueue.Send()` must be called from an MTA thread. Create a separate sender thread and use the method `Thread.SetApartmentState()` to set the apartment state to MTA before starting it.

IsLocal on the class RapidData, returns true for shared data

The property IsLocal on the class RapidData, returns true for shared data, even though such data is visible from all modules.

The declarations of default zonedata and speeddata has been moved from module BASE.SYS in each task, and are now installed as shared data.

If an application used to create a RapidData object representing for example "v1000", the IsLocal property returned false in RobotWare 5.12, but will return true in RobotWare 5.13."

8 Installation Information

8.1 Prerequisites

Before you install

You need administrator permissions on the computer that you are using.

Licensing

PC SDK can be used free of charge to develop applications.

The RobotWare option "PC Interface" is required to allow an application to connect to the controller over LAN.

Application type	Ethernet port on controller	Requires PC Interface
RobotStudio Add-In	Service port	No
Stand-alone executable	Service port	No
RobotStudio Add-In	LAN port	Yes
Stand-alone executable	LAN port	Yes

PC operating system requirements

Operating System	
Microsoft Windows 7 SP1	32-bit edition
Microsoft Windows 7 SP1 (recommended)	64-bit edition
Microsoft Windows 8.1 (recommended)	64-bit edition

Simulation environment

RobotStudio is needed for building virtual controller systems and for debugging and testing in a virtual environment.

Development environment requirements

IDE	
Visual Studio 2012	Express edition or better.
Visual Studio 2013	Express edition or better.

RobotWare software requirements

In order for a PC SDK application to be able to communicate with an IRC5 controller, the RobotWare option PC Interface is required on the controller.

8.2 Installing PC SDK 6.01

Installation information

PC SDK 6.01 will be installed side by side with any previous major version of PC SDK 5.xx, while minor versions within a release will upgraded.

The default installation path is C:\Program Files (x86) \ABB Industrial IT\Robotics IT\SDK\PC SDK.

How to install PC SDK 6.01 on a PC

	Action
1	Browse to http://developercenter.robotstudio.com/ and select Robot Communication and then Download.
2	Download the file **PCSDK.6.01.####.####.exe** to a folder on your computer.
3	Double click **PCSDK.6.01.####.####.exe** to start the installation procedure and complete the wizard.

9 Compatibility

9.1 Overview

Robot Communication Runtime

PC SDK communicates with the robot controller using the Robot Communication Runtime, which is designed to be backwards compatible with earlier versions of RobotWare.

Note! Functionality introduced in later versions of RobotWare will not be available for a PC SDK application that is connected to a controller with an older version of RobotWare.

For example the Messaging functionality is only supported on RobotWare 5.10 and above. This means that a PC SDK application cannot use the Ipc class when communicating with a controller with RobotWare 5.09.

The code will compile, but an exception will be thrown at runtime. Application developers are responsible for handling this scenario in their applications. Please refer to the PC SDK Reference Documentation for details.

Note! Compatibility between RobotWare minor revisions is guaranteed (PC SDK 5.15.01 will be compatible with PC SDK/RW 5.15.02 etc.).

Robot Communication Runtime on Windows XP

Microsoft has announced that its support for Windows XP will end April 8 2014.

PC SDK 6.01 does not support Windows XP.

10 Application deployment

10.1 Overview

.NET Framework 4.5

Applications based on PC SDK 6.01 requires .NET 4.5 Framework to be installed on the target PC.

Robot Communication Runtime

Applications based on PC SDK requires Robot Communication Runtime to be installed on the target PC. The Robot Communication Runtime redistributable, can be found in the PC SDK installation folder; *C:\Program Files\ABB Industrial IT\Robotics IT\SDK\PC SDK\6.00\redistributable\RobotCommunicationRuntime*.

Redistributables for earlier versions of PC SDK can be found on http://developercenter.robotstudio.com

11 Technical Support

For technical support please contact your local ABB office:

www.abb.com/contacts

For help, advice and the latest updates visit the User Forum and Developer Center:

forums.robotstudio.com

developercenter.robotstudio.com