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ABB AB
Robotics Products
SE-721 68 Västerås
Sweden
# Contents

Overview 5

1 Release Information 6

1.1 General 6

1.2 Contents 6

2 What’s New in this Release? 7

2.1 Robot Communication on Developer Center 7

3 Late-breaking information 8

3.1 Overview 8

4 Problems Corrected 9

4.1 Solved Product Defect Documents (PDD) since PC SDK 5.14.03 9

5 Known Limitations 10

6 Installation Information 12

6.1 Hardware and Software requirements 13

6.2 Compatibility 14

7 Technical Support 15
Overview

Description

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

Product Overview

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

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

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

No license is required to develop applications using PC SDK.

The option “PC Interface” is required to allow PC SDK applications to connect to the IRC5 controller over LAN network.

For download, updates and information, visit the RobotStudio Community:

To get started, or to learn more, visit our Developer Center:
http://developercenter.robotstudio.com

Here you will also find the User Forum, where developers discuss software problems and solutions online:
http://www.robotstudio.com/forum
1 Release Information

1.1 General

**Release Name**
The release name is PC SDK 5.15 and the build number is 5.15. 0261.

**Release Date**
The release date is 12th of October, 2012.

1.2 Contents

**.NET Assemblies**
- ABB.Robotics.dll
- ABB.Robotics.Controllers.dll

**Redistributables**
- ABBControllerAPI.msm
  - Robot Communication Runtime installer

**Documentation**
- Application Manual – PC SDK (Html Help and PDF).

After installation the documentation can be launched from the Windows Start Menu Programs\ABB Industrial IT\Robotics IT\Robot Studio 5.15\SDK.

The manuals and additional samples are also available at [http://developercenter.robotstudio.com](http://developercenter.robotstudio.com).
2 What’s New in this Release?

Overview

This section contains information about new features in this release.

2.1 Robot Communication on Developer Center


To help you get started you will also find complete walk-through projects for download.
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.
4 Problems Corrected

Overview

This section describes the problems solved in PC SDK.

4.1 Solved Product Defect Documents (PDD) since PC SDK 5.14.03

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDD308</td>
<td>Controller.IOSystem.GetSignals performance degraded in 5.14.03</td>
</tr>
<tr>
<td></td>
<td>Old PC SDK Apps not working with/against RW5.14.02</td>
</tr>
</tbody>
</table>
5 Known Limitations

Overview

This section describes known limitations in PC SDK.

*Value of RAPID data exceeding 1024 bytes cannot be retrieved*

It is not possible to retrieve a value of a RAPID data exceeding 1024 bytes.

An instance of a large RECORD may exceed this limitation, as well as an array of such records, for example.

Workaround 1: Make your data smaller in size, for example by using two smaller records with less elements in each, instead of one large record with lots of elements.

Workaround 2: Do not retrieve the entire value of a RAPID array. Instead retrieve the value element by element. Prefer using RapidData.ReadItem(i), over ArrayData[i].

**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."
6 Installation Information

Overview

To install PC SDK click RobotStudio on the RobotWare & RobotStudio DVD.

If you select the default installation option Complete, PC SDK will be installed. If you want to install only PC SDK and not RobotStudio select the installation option Custom.

PC SDK 5.xx will be installed side by side with any previous major version of PC SDK 5.xx, while minor versions within a release will update to the latest one.

Microsoft Visual Studio development environment is used to develop PC SDK applications.

Refer to chapter 6.1 for a list of supported versions of Visual Studio.

The default installation path is C:\Program Files\ABB Industrial IT\Robotics IT\SDK\PC SDK 5.15.
6.1 Hardware and Software requirements

Software requirements

PC software requirements

Operating Systems
Microsoft Windows XP SP3 – 32bit edition
Microsoft Windows 7 – 32bit edition
Microsoft Windows 7 – 64bit edition
Microsoft Windows 8 – 64 bit edition

Robot Communication Runtime
PC SDK applications requires Robot Communications Runtime to be installed on the PC. The runtime is installed by RobotStudio installation, and can also be installed separately from C:\Program Files\ABB Industrial IT\Robotics IT\SDK\PC SDK 5.15.xx\redistributable\RobotCommunicationRuntime after you have installed PC SDK.

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

RobotStudio
RobotStudio 5.15 is needed for building virtual controller systems and for debugging and testing in the virtual environment.

Please see http://robotstudio.com/forum for more information.

IRC5 software requirements

- RobotWare option "PC Interface" for communication with IRC5 controller.

Supported development environments

Microsoft Visual Studio 2008
Express edition or better.

Microsoft Visual Studio 2010
Express edition or better.

Microsoft Visual Studio 2012
Express edition or better.

6.2 Compatibility

The APIs in PC SDK 5.15.xx are backwards compatible with the APIs in PC SDK 5.14.

There are no breaking changes.

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).
7 Technical Support

For technical support please turn to your local ABB office.

http://www.abb.com/contacts

For help, advice and the latest updates please visit the User Forum.

http://www.robotstudio.com/forum