Release Notes

FlexPendant SDK

5.60

Revision: -

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Overview

Description

This document provides information about the new features, problems corrected, and installation of FlexPendant SDK 5.60.

Product Overview

FlexPendant SDK can be used to develop customized operator screens for the FlexPendant using the Microsoft Visual Studio 2008 development environment.

Download, get started and learn more at Developer Center:

developercenter.robotstudio.com

Discuss problems and solutions online on the User Forum:

forums.robotstudio.com

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1 Release Information

1.1 General

Release Name

The release name is FlexPendant SDK 5.60 and the build number is 5.60.0084.

Release Date

The release date is November 29th, 2013.

1.2 Contents

.NET Assemblies

ABB.Robotics.dll

ABB.Robotics.Controllers.dll

ABB.Robotics.DataBinding.dll

ABB.Robotics.GTPU.dll

ABB.Robotics.GTPU.Windows.Forms.dll

ABB.Robotics.Taf.Base.dll

ABB.Robotics.Tps.Resources.dll

ABB.Robotics.Tps.SDK.Base.dll

ABB.Robotics.Tps.Taf.dll

ABB.Robotics.Tps.Windows.Forms.dll

Documentation

Reference Manual FlexPendant SDK – Documentation of class libraries with method signatures in C#. Available online at developercenter.robotstudio.com and as Html Help and PDF in the installation folder.

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

Style Guide FlexPendant SDK – Available as Html Help in the installation folder.

Installed documentation can be accessed from the Windows Start Menu Programs\ABB Industrial IT\Robotics IT\FlexPendant SDK 5.60.

Tools

abbct.exe – ABB Compliance Tool. Verifies the FlexPendant application syntax and generates the *.gtpu.dll.

Visual Studio Project Templates

ABB Application – template for a basic FlexPendant application.

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2 Information to all users of FlexPendant SDK

2.1 Limited Support

The software platform in the ABB FlexPendant device is based on Windows CE 6 and .NET Compact Framework 3.5.

Compact Framework is supported by Visual Studio 2008, but unfortunately Microsoft made the decision not to support it in later versions of Visual Studio.

Because of this ABB has had to adapt and will offer FlexPendant SDK under Limited Support only, from this release onwards.

2.2 Switch to ScreenMaker

ABB recommends all FlexPendant SDK users to switch to using ScreenMaker instead.

ScreenMaker is a tool in RobotStudio for designing FlexPendant screens. It lets you use a visual designer to bind screen control properties and events to RAPID variables and I/Os in the IRC5 controller. The program logic is implemented in RAPID code.

If you for some reason cannot or do not want to port your existing FlexPendant SDK applications to ScreenMaker, you can continue using FlexPendant SDK under Limited Support as long as you have VisualStudio 2008 Professional.

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3 What's New in 5.60?

Overview

This section contains information on the new features of FlexPendant SDK 5.60.

Distribution via Developer Center

FlexPendant SDK can be downloaded from Robotics Developer Center:

developercenter.robotstudio.com.

FlexPendant SDK is no longer distributed as a part of RobotStudio.

Limited Support

FlexPendant SDK is offered under Limited Support only, from this release onwards.

Please refer to chapter 2 for more information.

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4 Problems Corrected

Overview

This section describes the problems corrected in FlexPendant SDK.

4.1 Corrected problems in FlexPendant SDK 5.60

ID	Title
PDD1973	FlexPendant SDK, Mechanical.GetPosition() gets improper mapping to motors
PDD1420	FlexPendant SDK - Bargraph - Shows unwanted values for Min and Max property
DSE10615	Appearance of FP SDK controls: CheckBox, Led, Switch, RadioButton

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5 Known Limitations

Overview

This section describes known limitations in FlexPendant SDK.

MechanicalUnit.GetPosition() returns external axis values on unexpected position

The method JointTarget MechanicalUnit.GetPosition() returns external axis values in JointTarget.RobAx.Rax_1 to JointTarget.RobAx.Rax_6, instead in JointTarget.ExtAx_a - JointTarget.ExtAx_f, when called for an external axis mechanical unit.

***Workaround**:*
Use MechanicalUnit.GetPosition2() which returns the robot axis values in JointTarget.RobAx when called for a TCP mechanical unit, and external axes values in JointTarget.ExtAx when called for an external axis.

Note:

The fact that a JointTarget RAPID datatype is used to return information about joint values for a particular mechanical unit, and not about all active mechanical units in the system is a design flaw and may lead to confusion.

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 large records.

Exception thrown:

ABB.Robotics.GeneralException

“SYS_CTRL_E_BUFFER_OVERFLOW: The amount of data is too large to fulfill the request”

Avoid:
ArrayData[i] as it retrieves the entire value of the RAPID array from the controller.

Use:
RapidData.ReadItem(i) as it retrieves the value item by item from the controller.

***Workaround**:*
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.

Visual Studio 2008 cannot attach to VirtualFlexPendant.exe 5.15

VirtualFlexPendant.exe distributed with RobotStudio 5.15 and later is built with .NET 4.0. VisualStudio 2008 is not able attach and debug a .NET 4.0 application.

Hence it is not possible to use RobotStudio and the Virtual FlexPendant to debug a FlexPendant SDK application from Visual Studio 2008.

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Workaround #1: *Visual Studio 2010 or Visual Studio 2012 can be used for attaching and debugging VirtualFlexPendant.exe. You can open a code file from your Visual Studio 2008 project, from Visual Studio 2010 and set breakpoints. The debugger will hit the breakpoints and you can execute step vice etc.*

Workaround #2: *Do not uninstall RobotStudio 5.14.03 when installing RobotStudio 5.15.Visual Studio 2008 can attach to and debug the VirtualFlexPendant.exe 5.14.03.*

Visit http://forums.robotstudio.com for a step-by-step instruction.

Error when opening the designer for the first time in a VB project

When creating a FPSDK project for VB using an empty form (the default) as the startup view, an error message may be displayed in the designer the first time the viewer is opened. The problem does not occur when the startup type is *Form*, or in C#. Work around: Close and re-open the designer.

Memory leak in ImageList.Dispose

Due to a Microsoft bug the ImageList.Dispose method does not work, causing a memory leak. Microsoft's advice is to set the ImageList to null instead of calling Dispose. This way the memory will correctly be reclaimed by the garbage collector.

avoid:
imageList.Dispose();

use:
imageList = null;

RapidData.IsLocal returns true for shared data

In FlexPendant SDK 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."

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6 Installation Information

6.1 Prerquisites

Before you install…

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

Licensing

FlexPendant SDK can be used free of charge to develop applications. In order to allow the application to run on a specific IRC5 controller, the RobotWare option "FlexPendant Interface" is required on that controller.

Visual Studio Project Templates

Visual Studio project templates and control templates, will be installed and /made available to Visual Studio, by the FlexPendant SDK installation.

It is required that Visual Studio 2008 Professional is installed on the computer before you install FlexPendant SDK, in order to get the templates.

6.1 System requirements

PC Software requirements

Operating System	Edition
Microsoft Windows 7 SP1	32-bit
Microsoft Windows 7 SP1 (recommended)	64-bit
Microsoft Windows 8	64-bit
Microsoft Windows 8.1 (recommended)	64-bit

Visual Studio

Microsoft Visual Studio 2008 Professional is required for the development of FlexPendant SDK applications.

Note: Microsoft Visual Studio 2010 or Microsoft Visual Studio 2012 is required to debug FlexPendant SDK applications running in the Virtual FlexPendant (VirtualFlexPendant.exe). Please refer to chapter 5 for more information.

Note: FlexPendant SDK is developed and tested for the English version of Visual Studio.

RobotStudio

RobotStudio 5.60 is needed for building a test system and for debugging and testing in the virtual environment.

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RobotWare software requirements

- RobotWare option "FlexPendant Interface" for communication with IRC5 controller.
- RobotWare version 5.60 for running FlexPendant SDK applications.

Note: It is recommended that FlexPendant SDK 5.60 applications should be used with RobotWare 5.60.

IRC5 hardware requirements

The following FlexPendant device versions are supported:

SxTPU-2 (executes with .NET CF 2.0 and WinCE 5.0)
SxTPU-3 (executes with .NET CF 3.5 and WinCE6.0)

6.2 Installing FlexPendant SDK 5.60

Installation instructions

FlexPendant SDK 5.60 will be installed side by side with any previous major version of FlexPendant SDK 5.xx, while minor versions within a release will update to the latest one.

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

How to install PC SDK on a PC

	Action
1	Browse to http://developercenter.robotstudio.com/ and select Robot Communication and then Download.
2	Download the file **FlexPendantSDK5.60.exe** to a folder on your computer.
3	Double click **FlexPendantSDK5.60.exe** to extract the installation files.
4	Dobule click **setup.exe** in the extracted folder to start the installation procedure.

Default location

The default installation path is C:\Program Files\ABB Industrial IT\Robotics IT\SDK\FlexPendant SDK 5.60.

6.3 Compatibility

The APIs in the FlexPendant SDK 5.60 are backwards compatible with the APIs in FlexPendant SDK 5.15.xx. There are no breaking changes.

FlexPendant SDK compatibility between RobotWare releases cannot be absolutely guaranteed. The goal is to be 100% compatible and the development team tries hard to achieve this. Due to necessary upgrades in the Microsoft platforms or new demands breaking changes sometimes cannot be avoided.

Note! *Compatibility between a specific version of FlexPendant SDK and earlier versions of RobotWare can only be guaranteed within the same major release. (FP SDK 5.60.01 will be compatible with RW 5.60.02 etc.).*

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7 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

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