JetSym

Version update from V. 5.6.0 to V. 5.6.1

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1 New features

Below, all features that are new in this version, as well as the enhancements are listed.

1.1 Motion Setup

1.1.1 New warnings with EtherCAT

The Motion Setup for EtherCAT Drives has been extended to include the display of warnings.

1.1.2 Enhancements to Motion Setup pages

The motion setup pages for the encoder settings and for homing of EtherCAT axes have been extended if an absolute encoder for position control is selected.

1.1.3 Updated ESI file for JM-1005 and JM-1008

The ESI file for JM-1005 and JM-1008 has been updated.

1.1.4 Updated error messages for JM-3xxx

The error messages for JM-3xxx have been updated.

1.1.5 Selection of temperature sensor connector added

The motor configuration page in the Motion Setup for JM-3xxx axes has been expanded to include a parameter for selecting the temperature sensor connector. This new feature has also been added in Motion API v2.0.0.5.

1.2 General information

1.2.1 Simplified selection of the data type for the JX3-COM-PND module

When using the JX3-COM-PND module, the data type can now be selected for all elements at the same time using a selection field in the column header.

1.2.2 Declaration files no longer supported

As of this version, the creation of declaration files is no longer supported.

1.2.3 Display format of "double" values in the JetSym monitor

The display format of **double** values in the monitor window now corresponds to the previous display format of **double** values in the setup window. This applies in particular to switching to the display with exponent.

1.2.4 Extension by I²t

The Motion Setup for EtherCAT axes has been extended by I²t values and settings.
This new feature has also been incorporated into Motion API v2.0.0.5.

1.3 OPC UA

1.3.1 OPC UA server now also available for JC-940MC, JC-945MC, JC-970MC, and JC-975M

The OPC UA server can now also be configured for the JC-940MC, JC-945MC, JC-970MC and JC-975MC controllers if the appropriate OS is available.

1.4 Motion API

1.4.1 MoveHome.SetAbsEncoderReference()

MoveHome.SetAbsEncoderReference(...) has been added to the Motion API 2.x.

1.4.2 MCTechnoCAM.DefineSegementAuto()

The method MCTechnoCam.DefineSegment(...) has been split into a new MCTechnoCam.DefineSegment__LW_AT__(..) and MCTechnoCam.DefineSegmentAuto(..). Accordingly, the autopolynomial options of the enumeration MCTechnoCamSegmentTypes were transferred to a new enumeration MCTechnoCamSegmentAutoTypes.

1.4.3 MCAxisPosition.EncoderPosition

Extension of the Motion API 2.x by the property MCAxisPosition.EncoderPosition for reading out the raw encoder position of the encoder used for position control in user units.

1.4.4 DriveEncoderChannel.MaxNoOfAbsRevolutions

Extension of the Motion API 2.x by the property DriveEncoderChannel.MaxNoOfAbsRevolutions for reading out the number of multi-turns of an absolute encoder.

1.4.5 MCAxisMoveHome.ReferenceShift

Extension of the Motion API 2.x by the property MCAxisMoveHome.ReferenceShift for reading and writing the reference shift.

1.4.6 MCAxisMoveHome.IsAbsEncoderReferenceValid

Extension of the Motion API 2.x by the property MCAxisMoveHome.IsAbsEncoderReferenceValid to determine whether the stored value is valid for the reference shift.

1.4.7 MCAxisMoveHome.ClearAbsEncoderReferenceStatus()

Extension of the Motion API 2.0.0.5 by the method MCAxisMoveHome.ClearAbsEncoderReferenceStatus() to reset the validity status of the stored value for the reference shift.

1.5 Oscilloscope

1.5.1 Selectable parameters in live mode added

The list of selectable parameters that can be recorded with the oscilloscope in live mode has been extended for EtherCAT axes:

- Amplifier - Internal temperature
- Amplifier - temperature power section

- Controller - Us
- Motor - Motor temperature
- Motor - I²t value

1.5.2 Set and actual positions selectable for EtherCAT axes

In the device-internal mode of the oscilloscope for EtherCAT axes, the set and actual positions can be selected as the recording value.

2 Fixed software bugs

This chapter describes the software bugs which have been fixed in the new software release. Please also refer to the **Open Issues** page in the online help.

2.1 Module setup

2.1.1 Register value now appears in the modification dialog of the Module Setup

The register value now appears in the modification dialog of the module setup even if there is no online connection or no valid value in the register.

2.2 Setup

2.2.1 Fields for Ethernet configuration via the INI file in the module setup

The fields for the Ethernet configuration via the INI file in the module setup were not write protected. An IP address could be entered which has no effect at this point.

2.2.2 Crash when opening the Properties dialog

JetSym could crash if the properties dialog of a setup file not belonging to a project was opened via the shortcut menu.

2.2.3 Incorrect task numbers after IntelliSense update

After an IntelliSense update, the setup could display the task ID incorrectly if you used the tasks predefined in the platform files, such as Task1, Task2, etc., and additionally used your own task definitions. The predefined tasks have a dedicated task ID, the own tasks are numbered in ascending order with a task ID starting with 0. If there were any gaps within the task IDs in this mixed form, the representation in the setup was not correct.

2.2.4 IntelliSense collapses in Setup

The IntelliSense could collapse in setup if the option to resolve pointers is set.

2.2.5 Crash when deactivating the setup mode

When deactivating the setup mode, JetSym could crash if the tooltip for a variable was displayed in the program window immediately before.

2.2.6 Crash after entering an Enum variable

In Setup, a crash could occur in JetSym after entering an Enum variable which was located in a structure.

2.2.7 No resolution of structured array indices

In setup, it was not possible to specify structured indices for arrays (structure elements or object fields)

2.3 General information

2.3.1 Temporary connection interruption in the internal file explorer

Internal File Explorer no longer worked properly after a brief interruption in the connection to the controller. For example, contents of folders were no longer displayed.

2.3.2 Insufficient display of the .NET version in the feedback dialog

The feedback dialog now displays the installed version of the .NET framework more precisely.

2.3.3 No connectivity node after creating a new configuration

After creating a new configuration, the connectivity node was not immediately displayed. Only after the workspace was closed and reopened the node did appear.

2.3.4 Incorrect renaming of force elements

Elements of a structure could not or not completely be renamed by the function **Rename Identifier** .

2.3.5 Branch distance for conditional jumps

The branch distance for conditional jumps has so far been limited to +- 32kB. In very large applications it could happen that this limit was exceeded. In this case, the compiler generated incorrect code because there was no check of the branch distance.
This check has been added. The compiler will issue the following new error message if the branch distance is exceeded:

error 3034: Branch distance exceeds 32kB limit.

2.3.6 Crash during longer online operation

Switching back and forth between the tabs over a longer period of time in online mode and switching online mode on and off several times in the process could cause the program to crash.

2.3.7 Possible crash when changing the file structure of a library

JetSym could crash when trying to delete, add or rename files or folders using the shortcut menu of files and folders of a library.
These options are now grayed out in the shortcut menus.

2.4 IntelliSense

2.4.1 IntelliSense support "Complete word" did not always work

In some constellations the IntelliSense support with the "Complete word" function did not work properly.

2.4.2 Elements of an enum appeared in IntelliSense with comparison operators

The elements of an enum appeared in IntelliSense incorrectly even when using comparison operators (=, >, <, >=, <=, <>, !=).

2.4.3 Projects of versions 4.0 or earlier could no longer be read in

Projects of versions 4.0 or earlier could no longer be read in with JetSym 5.6. In the conversion dialog a corresponding note appeared and the recommendation to use a version up to and including 5.3.2 for the conversion. Version 5.3.2 is the recommended version for reading in very old projects.

2.4.4 Missing class variables in IntelliSense

When opening the Intellisense dialog within a class method, only the class functions were listed, but not the class variables.

2.4.5 No OS version display for JX3-BN-ECs

In the OS update dialog, the existing OS versions were not displayed for the listed JX3-BN-ECS.

2.4.6 Local constants were always offered

Local constants, are now offered in the IntelliSense in the same way as local variables, i.e. only in context.

2.4.7 No IntelliSense information of classes after an IntelliSense update

The IntelliSense information of classes could be lost after an IntelliSense update if the class contained declarations that did not end with a semicolon.

2.5 Hardware Manager/Motion Setup

2.5.1 Incorrect sorting of EtherCAT axes after switching controllers

After switching controllers, it could happen that EtherCAT axes at the EtherCAT node were resorted, especially with mixed forms of single and multiple axes.

2.5.2 No feedback after renaming an axis or a module

After renaming a module or an axis, JetSym could **freeze** temporarily.
This occurred when there were many large oscilloscope files in a project.

2.5.3 JX3 modules connected to a JC-440EXT were not displayed during the scan

When scanning the hardware of a JC-440EXT, JX3 modules present on the JX3 bus were not displayed. Furthermore, the JX3 modules already present in a current configuration could not be applied.

2.5.4 Wrong data type in touch probe PDO data for JM-3xxx

The data type of the touch sample positions in the PDO data of a JM-3xxx has been changed from REAL to DINT.

2.5.5 New operating systems for EtherCAT controllers

New operating systems are available for the JC-440MC, JC-440EXT, JC-945MC and JC-975-MC EtherCAT controllers. They replace all previous versions, which can no longer be selected. It is strongly recommended to install the new operating system before continuing with the projects.

2.5.6 New Drive Parameters (Properties)

When using a new JetSym version together with an older controller OS, it may happen that certain properties of the motion setup are not yet supported by the OS. In rare cases, this could lead to the MC on the controller not being initialized correctly. The Motion Setup has been extended by check routines which, in the case of an older OS, hide or do not transfer incompatible properties to the controller.

2.5.7 Invalid hardware configuration possible after drag-and-drop

If EtherCAT devices are sorted into the “unassigned modules” folder after a controller change and then added back to the EtherCAT bus by drag-and-drop, this may possibly lead to an invalid hardware configuration.

2.5.8 Data error after entering a GNN

If the GNN of a bus node was not entered with three digits, the process data for the node could become invalid.

2.6 STX

2.6.1 Incorrect parameter info for function calls as function parameters

The parameter info for functions could be incorrect if function calls or cast operators were used as parameters.

2.6.2 Compiler generated incorrect code for constant arrays

The compiler generated incorrect code for constant arrays that were nested as an index for other arrays.
Example:

```
Const
   aC: array[1..4] Of Int = 100000109, 100000110, 100000111, 100000112;
End_Const;

Task t1 Autorun
   Outputs[AC[1]] := True; // <--- generated incorrect byte code
End_Task
```

2.6.3 STX parser interpreted brackets after item as if they were after the function

Sample program, see below, now returns the following error message:

BUG12843_ClassPropertiesBug.stxp (35,37) : error 3420: Left of '.' must have an object, struct or numeric type.

Sample program:

```
//------------------
// types and class
//------------------
Type
 tNumbers: Struct
  item1: int;
  item2: int;
 End_Struct;

 cContainer: Class
  Public Function FunctionData(): tNumbers;
 End_Class;
 End_Type;

Function cContainer.FunctionData: tNumbers
End_Function;

Var
 Container: cContainer;
 Number: int;
End_Var;

Task tMain Autorun
Loop
    Number := Container.FunctionData().item1; // coding ok
    Number := Container.FunctionData.item1(); // coding error now recognized by compiler
 //delay(0);
End_Loop;
End_Task;
```

2.7 OPC UA

2.7.1 Internal functions of the OPC UA Server Class in function table

After loading a project, the internal functions of the OPC UA server class were mistakenly listed in the function table.

2.7.2 Publishing Array of Struct

Publishing the data structure of type Array of Struct did not work.

2.7.3 Extended type check resulted in a compiler error when assigning bits to numeric variables

The extended type check resulted in compiler error 2132 (possible data loss due to down conversion) when bit was assigned to numeric variables.

2.8 Oscilloscope

2.8.1 Value of a Boolean variable could not be recorded

When attempting to record a localized (%RL) Boolean variable in live mode, its value was always "0".

2.8.2 Non-chronological sampling times in .csv files in live mode

In .csv files generated from oscilloscope recordings, sampling times that were not chronologically ordered could have been entered at the beginning of a recording. This could occur if different controllers were recording simultaneously.

2.8.3 Recording of unselected modules was allowed by mistake

After changing the oscilloscope mode from **Live** to **Device internal**, the channel definitions remained, some of which addressed other modules as recording sources than the (only possible) module set in the device internal mode. When the oscilloscope was started, this meant that all channels were recorded with the same module as source set in internal mode. Now the start is prevented and a warning message is issued.

2.8.4 Incorrect addressing of axes connected to JC-3xx controllers on the JX2 bus

If in the case of JC-3xx(-MC) controllers several axes were connected to the JX2 bus, the data of the 1st axis were always recorded, even if an axis on the bus with a position greater than 1 was specified for recording.

2.8.5 Register contents of the type Bool were represented as integer value

In the device-internal mode of the oscilloscope, the up to 4 possible different Boolean values of a register address were only represented as an integer value at this address.

2.8.6 JetSym could no longer be operated after displaying the oscilloscope's properties dialog

If an attempt was made to display the Properties dialog box of the dialog window via shortcut menu while the oscilloscope was running, JetSym could not be operated afterwards.

2.8.7 Response time when starting an oscilloscope recording

The response time when starting an oscilloscope recording has been improved.

2.9 Motion Setup

2.9.1 Problem with communication between MC Global pages and JC-647

The communication between MC Global and a JC-647 did not work.

2.9.2 Selected motor type for EtherCAT axes in online mode

The selected motor type was lost for EtherCAT axes in online mode.
External motor was displayed instead.

2.10 Monitor

2.10.1 Wrong display in the JetSym monitor on the "Tasks" tab

In the **Tasks** tab of the JetSym monitor, incorrect displays could occur if you used the tasks predefined in the platform files, such as **Task1**, **Task2**, etc. in combination with your own task definitions. The predefined tasks have a dedicated task ID, the own tasks are numbered in ascending order with a task ID starting with 0. If there were any gaps within the task IDs in this mixed form, the representation in the monitor was not correct.

2.11 Editor

2.11.1 Go to define in a compiler constant

The compiler constant definitions ("#define" directive) could only be accessed via **Go to definition** if a second IntelliSense scan was performed (manually or automatically, after editing in the program editor).

3 Important notes

3.1 OS update

This item refers to the dialog that allows you to update several OS files at once.
After the dialog has completely transferred the OS file for the JX3-BN-EC modules via EtherCAT (FoE), a message appears stating that the update process has been completed. At this point, the JX3-BN-EC only disconnects from the EtherCAT network and then loads the new OS file. We therefore recommend that you do not restart the controller until 5 minutes after the update process has been reported. In a few special cases, it may be necessary to briefly disconnect the controller and the expansion modules from the power supply and re-start them.