Kollmorgen Automation Suite

Release Notes

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Valid for Software Revision 2.7

Valid for AKD PDMM firmware version: 1.10

Part Number: 959720

Keep all manuals as a product component during the life span of the product.

Pass all manuals to future users / owners of the product.

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Table of Contents

1   Introduction

Welcome to KAS v2.7! This release contains new features and many improvements. This document is intended to help existing users understand the differences between this and KAS v2.6. If you are new to KAS, we recommend that you start off with other documents, such as the Installation Guide.

This document has five sections:

- "Installation" (see page 9) — this section covers system requirements as well as provides firmware, software, and hardware information.

- "What's New" (see page 13) — an overview of new features.

- "What's Changed" (see page 23) — this section discusses how this release may affect some of your older projects. It let's you know what to do when upgrading, especially if there is anything you need to be careful about.

- "What's Fixed" (see page 25) — a list of issues addressed in this release.

- "Known Issues" (see page 27) — this section contains issues we are aware of, and methods for avoiding or working around them.

> ⓘ *TIP*   This document contains links to more complete descriptions in the online help.
>
> Wherever you find this icon ⓘ, you may click it and go to the help topic. Please note that these links will not work if this PDF is opened from a location other than the KAS install directory.

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2 Installation

2.1 System Requirements

Element	Description
Operating System	Microsoft® Windows® XP (32-bit XP Pro SP3 or above) and Windows 7 (32 and 64-bit). ⓘ TIP For optimal performance, please be sure your operating system is fully updated with the latest patches.
Processor type	Intel® Pentium® M or equivalent processor at 1.5 GHz or greater.
Memory	512 MB RAM or greater (which is recommended for complex applications)
Storage	1 GB hard drive or compact flash space
Display	WXGA+ (1440 x 900) or higher-resolution monitor with 24-bit color ✎ NOTE Better results are achieved with OpenGL and 3D cards
Connectivity	1 Ethernet port, at either 100Mbits/s or 1Gbits/s. ⓘ IMPORTANT A 100Mb network is required in order to allow the IDE to Runtime communication to work in all conditions. The AKD WorkBench AutoTuner and Scope both require 100Mb of bandwidth to function properly.
WebServer	A modern web browser is required to access the web server. We recommend Internet Explorer 9 , Mozilla FireFox (v.11 or later) , or Google Chrome .

2.2 Firmware & Software Requirements

KAS is comprised of several software components integrated together to provide a complete motion system. We recommend the following component software versions for best performance and compatibility.

2.2.1 IDE, Controller, and Programmable Drive Software

Software Images	Recommended Version	Download
KAS IDE	2.7.0	n/a
AKD PDMM Runtime Firmware	2.7.0	

Software Images	Recommended Version	Download
PAC master image (Previous KVB 1.2 runtime pre-installed)	2012-04-30	n/a

2.2.2 AKD Drive Firmware Requirement

KAS is compatible with AKD-M (AKD PDMM Drive) and AKD-P (Motion Tasking Drive or Position Indexer) drives. The recommended firmware version is dependent upon your drive's model and revision. The operational image associated with this release is 01-10-00-003.

AKD firmware to use with version 2.7		Download
AKD PDMM Servo Drive Firmware	AKD-M-MCEC-V01-10-00-003.i00	
AKD EtherCAT drive, up to r.8	AKD-P-NAEC-V01-10-00-003.i00	
AKD EtherCAT drive, r.9	AKD-P-NBEC-V01-10-00-003.i00	
Resident image	R_00-00-40-000	n/a

> ⓘ *TIP*
> Please be aware that you may get a F106 error after upgrading your AKD firmware. This indicates that non-volatile parameters are not compatible between the two firmware versions. Resetting the drive to the default memory values using Parameter Load will fix this error.

> ⓘ *TIP*
> FBUS.PARAM05 bit 5 should be set to 0, which is the default value. This will prevent an error E33 and EtherCAT not starting.
>
> If it is not set to the default, the rotary switch of the drive is used to set the EtherCAT Station Alias. This can conflict with the address that KAS is writing.

2.2.2.1 Mandatory Resident Firmware

The recommended resident firmware is v40. To reliably support the EtherCAT Firmware Download, the resident firmware must be at least version 35. Please contact Kollmorgen for any AKD Drive with resident firmware lower than v35.

2.2.3 Kollmorgen Visualization Builder

Software Images	Recommended Version	Download
Kollmorgen Visualization Builder (KVB) master image	2.0	

The new installation package contains both the IDE and runtime for PAC. KVB runtime installation on the PAC requires that:

- KVB runtime 1.20 should be uninstalled from the PAC prior to the KVB 2.0 runtime installation
- Windows firewall on the PAC should be disabled to allow this feature to work.

The KVB ZIP file contains two different installers:

Install Type	File	Notes
New installation	setup.exe	This is the complete package which will install all prerequisite components.
KVB is already installed	NeoSetup.msi	This package will update your current installation to v2.0

ⓘ IMPORTANT   KVB 1.2 projects are not compatible with KVB 2.0. An attempt to open a v1.2 project with v2.0 will result in an alert message. If accessing v1.2 projects is important, we recommend keeping both versions installed on your system. New panels will automatically use KVB 2.0.

ⓘ TIP   If you have a KVB 1.2 project that needs to be updated in KVB 2.0, please contact Kollmorgen.

2.3 KAS Controls

KAS Runtime is compatible with, and has been verified with the following AKC hardware models:

Description	Model Number	Main Characteristics
Panel PAC	AKC-PNC-C1-224-10N-00-000	Mono-core 1.2 GHz CPU, 2GB RAM, 10" display
Panel PAC	AKC-PNC-C1-224-15N-00-000	Mono-core 1.2 GHz CPU, 2GB RAM, 15" display
Panel PAC	AKC-PNC-D1-224-15N-00-000	Dual-core 1.86 GHz CPU, 2GB RAM, 15" display
Panel PAC	AKC-PNC-D1-224-17N-00-000	Dual-core 1.86 GHz CPU, 2GB RAM, 17" display
Performance Box Controller	AKC-PLC-C1-224-00N-00-000	Mono-core 1.2 GHz CPU, 2GB RAM
Performance Box Controller	AKC-PLC-D2-224-00N-00-000	Dual-core 1.86 GHz CPU, 2GB RAM
Performance Box Controller	AKC-RMC-D2-224-00N-00-000	Dual-core 1.86 GHz CPU, 2GB RAM
AKD PDMM	various	

✎ NOTE   KAS IDE and Simulator should not be installed on a PAC or AKD PDMM.

ⓘ TIP   In order to prevent CF card corruption when shutting down the PAC, we recommend using the Enhanced Write Filter (EWF). This filter redirects all the write operations in memory in order to avoid making physical write operations in the compact flash.

The filter should be activated on the PAC when it is fully set up, programmed, and will not change. In case of a significant change, such as a new KAS version or downloading a new application, the recommendation is to turn off

ⓘ *TIP*	the EWF, make the change, and then reactivate it. Please see the user help to learn how to use the EWF. ⓘ

2.4   Allow Simulator to Use HTTP Communication

The Simulator needs to open HTTP ports to allow communication. The first time Simulator is run, Windows will prompt you to block or unblock the KAS application. You should allow access to all of these requests to ensure correct behavior.
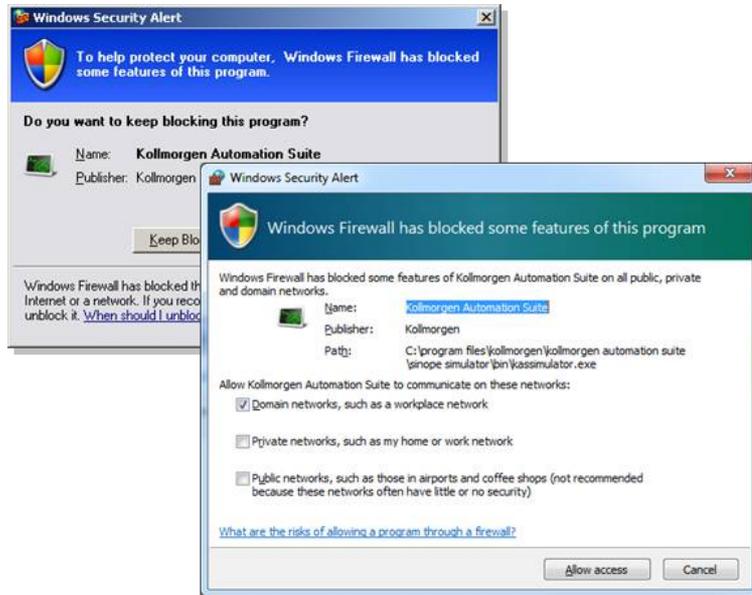
Figure 2-1: Security Alert on Windows 7 and Windows XP.

The Simulator uses port 80 for the web server. This communication channel is mandatory for Simulator to work properly. So please close any application, such as VOIP, that may use port 80 before starting Simulator.

For more information see Start KAS Simulator in the online help. ⓘ

3   What's New

3.1   PLCopen Part 4 — Coordinated Motion

The motion capabilities of KAS have been expanded to include several of the PLCopen Part 4 – Coordinated Motion features. With this change, a KAS application can perform simple 2D linear, circular, and direct moves. The quickest and easiest way to create a coordinated motion application is to use one of the two templates provided in the KAS IDE. You can use the templates by selecting File | New and then selecting the Coordinated Motion template type, and finally the template you wish to use.
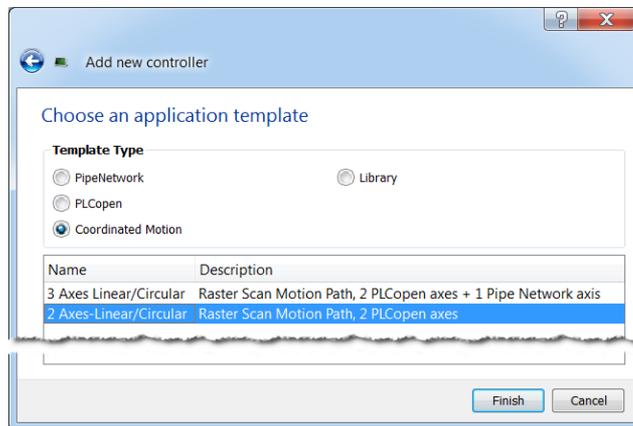
Alternatively, you can add coordinated motion capabilities to an existing application. To do this, please see "Motion with Coordinated Motion" in the user help.

3.1.1 Coordinated Motion Features

- Add and remove PLCopen axes from a group.
- Enable and disable an axes group.
- Perform absolute or relative 2D linear, circular, and direct moves.
- Buffered modes are the same as single axis PLCopen motion:
    - Aborting – abort the first move and immediately start the new move.
    - Buffered – second move doesn't start until first move is finished.

- Blending – the velocity is blended between two moves. Blending modes available: BlendingLow, BlendingHigh, BlendingPrevious, and BlendingNext.
- Transitioning (or contour curve) between two moves using TMCornerDistance.
  - Transitioning between Line to line, line to arc, arc to line, and arc to arc are all supported.
- Stop or Halt all the axes in a group on path.
- Change the feed rate override value for all the axes in a group from 0% to 200%
- Set the current position for all the axes in the group.
- Read actual acceleration, position, and velocity.
- Read commanded position and velocity.
- Read the current state of an axes group.
- Determine whether or not an axes group is In-Position, accelerating, decelerating or at constant velocity.
- Reset all axes errors for a given axes group.
- Configure handling of axes errors within a group.
- Configure how often an axes group is updated.
- KAS IDE includes 2 coordinated motion templates.
- Pipe Network can co-exist in the same application.

For more information about PLCopen Part 4 Coordinated Motion or any of the associated function blocks, see the KAS documentation or online help. 🛈

3.1.2 Coordinated Motion Limitations

- Only support Axes Coordinate System (ACS). No support for Machine Coordinate System (MCS) or Product Coordinate System (PCS)
- Coordinated motion cannot be performed using Pipe Network Axes. Pipe Network Axes cannot be added to a coordinated motion axes group.
- All coordinated moves use trapezoidal velocity profiles.
- Axes group synchronization with master/slave relationships are not supported.
- An aborted move cannot transition to the next move. The abort must complete before commanding the next move.

The following PLCopen Part 4 Coordinated Motion FB's are not yet supported in KAS:

MC_GroupContinue	MC_GroupHome
MC_GroupInterrupt	MC_MovePath
MC_PathSelect	MC_ReadCartesianTransform
MC_ReadCoordinateTransform	MC_ReadKinTransform
MC_SetCartesianTransform	MC_SetCoordinateTransform
MC_SetDynCoordTransform	MC_SetKinTransform

MC_SyncAxisToGroup	MC_SyncGroupToAxis
MC_TrackConveyorBelt	MC_TrackRotaryTable.

3.1.3 Coordinated Motion Function Blocks

Below is a summary of the new coordinated motion function blocks that have been added to KAS along with a brief description of each. The coordinated motion function blocks can be found in the KAS IDE Function Block libraries tab under: Motion/Common | Coordinated Motion.

Name	Grouping	Description	Location in the Dictionary
MC_AddAxisToGrp	Group Control	Adds an axis to an axes group.	
MC_AxisSetDefaults	Motion	Sets the default kinematic parameters for an axis.	
MC_CreateAxesGrp	Group Control	Create an axis group for coordinated motion.	
MC_ErrorDescription	Motion/Common > Info	Converts the PLCopen error IDs into message strings	
MC_GrpReset	Group Control	Resets all the axes in an axes group.	
MC_GrpDisable	Group Control	Changes the state of a group to GroupDisabled.	
MC_GrpEnable	Group Control	Changes the state of a group from GroupDisabled to GroupStandby.	
MC_GrpHalt	Motion	Performs a controlled motion stop of all the axes in the group	
MC_GrpReadActAcc	Info	Reads the actual acceleration of the group and the axes in the group.	
MC_GrpReadActPos	Info	Reads the actual position of the axes in the group.	
MC_GrpReadActVel	Info	Reads the actual velocity of the group and the axes in the group.	
MC_GrpReadBoolPar	Group Control	Reads a value from the specified boolean group parameter	
MC_GrpReadCmdPos	Info	Reads the command position of the axes in the group.	
MC_GrpReadCmdVel	Info	Reads the command velocity of the axes in the group and the path velocity.	
MC_GrpReadError	Info	Reads the Group ErrorID in State ERRORSTOP.	
MC_GrpReadStatus	Info	Returns the status of an axes group.	
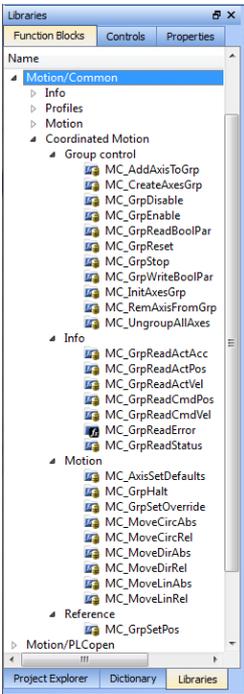
Name	Grouping	Description	Location in the Dictionary
MC_GrpReset	Group Control	Makes the transition from the state GroupErrorStop to GroupStandby by resetting all internal group-related errors. Also resets axis errors and drive faults for each axis in the group.	
MC_GrpSetOverride	Motion	Sets the velocity factor that is multiplied to the commanded velocity of all axes in the group.	
MC_GrpSetPos	Reference	Sets the axis position for all of the axes in an axes group to the positions specified in the `Position` input.	
MC_GrpStop	Group Control	Performs a non-aborted, controlled motion stop on all axes in an AxesGroup.	
MC_GrpWriteBoolPar	Group Control	Writes a value to the specified boolean group parameter.	
MC_InitAxesGrp	Group Control	Initializes the kinematic limits for the axis group.	
MC_MoveCircAbs	Motion	Commands interpolated circular movement on an axes group to the specified absolute positions.	
MC_MoveCircRel	Motion	Commands interpolated circular movement on an axes group to the specified relative positions.	
MC_MoveDirAbs	Motion	Commands movement of an axes group to an absolute position regardless of path.	
MC_MoveDirRel	Motion	Commands movement of an axes group to a relative position regardless of path.	
MC_MoveLinAbs	Motion	Commands interpolated linear movement on an axes group to the specified absolute positions.	
MC_MoveLinRel	Motion	Commands interpolated linear movement on an axes group to the specified relative positions.	
MC_RemAxisFromGrp	Group Control	Removes an individual axis from an axis group.	
MC_UngroupAllAxes	Group Control	Removes all axes from an axes group.	

For more information about any of these Function blocks, please see the documentation or online help. ⓘ

3.2 EtherCAT Device Configuration

The IDE now incorporates several features to configure and manage EtherCAT devices. Any standard EtherCAT device can be discovered, configured, and accessed from a PLC program. An EtherCAT device can be added to a project in just a couple steps.

1. Simply connect the device to your PAC or PDMM.

2. Scan the network to discover the connected devices.

    To use any 3rd party EtherCAT device, you will also need to add the vendor provided ESI (EtherCAT Slave Information) file to the IDE's ESI file library.

    All Kollmorgen device ESI files are automatically included in the ESI library during software installation. If you want to change device configurations, then access the device configuration views.

3. Lastly, map your PLC variables to the device PDO objects, compile/download/run your project and the devices will be initialized to operational mode.

For more details about adding EtherCAT devices to a KAS project, see the section "EtherCAT Devices" by clicking this icon. ⓘ

3.2.1 Features

- Scan, discover, configure, and operate any standard EtherCAT device.
- Add and/or configure devices off-line.
- Select Tx/Rx PDO(s) from the device vendor's pre-defined list.
- Map PLC variables to PDO objects for read/write access to cyclic data.
- Select Distributed Clock profile, including devices with oversampling.
- Manage ESI files with built-in local ESI library.
- ESI files are automatically stored in the project to prevent future missing ESI files.
- Automatic ESI file content comparison checking to manage ESI file versions.
- Add/Edit device initialization commands with configurable transition phase.
- EtherCAT initialization error logging for device troubleshooting.
- Line, Tree, Star, and mixed network topologies.
- Compatible with 32-bit and 64-bit Distributed Clocks.

3.2.2 New IDE Views & Configurations

General Properties ⓘ – View device information, address, and port connections.

PDO Selection/Mapping 🛈 – View and select PDOs. Map PLC variables to PDO objects.

Distributed Clock 🛈 – View and select Distributed Clock profiles.

CoE Init-Commands 🛈 – View, added or edit CoE (CAN over EtherCAT) initialization commands.

CoE Object-Dictionary 🛈 – View CoE object content.

ESI Files 🛈 – View ESI files and device profiles. Manage local ESI file library.

3.2.3 Limitations

- MDP (modular device profile) devices are not yet supported. For example, I/O device modules, safety device modules, or fieldbus gateway modules requiring support for ETG.5001 will be supported in a future KAS release.
- Flexible (non-fixed) PDO object mapping is not yet supported.
- Non-Kollmorgen servo drives are not supported. Kollmorgen servo drives are fully supported, pre-integrated, and certified for operation with KAS.

3.3 Kollmorgen Visualization Builder v2.0

The new Kollmorgen Visualization Builder includes the following features.

- Strings over Modbus are now supported, just have to check the variable on the dictionary
- Importing and Export KVB projects is available from the project tree
- Web Browser component of TxC panels is able to display the KAS controller web server
- New KVB 2.0 projects automatically clean-up to an optimized size when KAS project is saved
- Download HMI project directly on PAC: When the KVB HMI project is intended to run on the IPC, you should install the KVB runtime on the PAC. This lets you download the HMI project to the IPC directly from KVB IDE.

ⓘ IMPORTANT KVB 1.2 projects are not compatible with KVB 2.0. An attempt to open a v1.2 project with v2.0 will result in an alert message. If accessing v1.2 projects is important, we recommend keeping both versions installed on your system. New panels will automatically use KVB 2.0.

ⓘ TIP If you have a KVB 1.2 project that needs to be updated in KVB 2.0, please contact Kollmorgen.

3.4 Other IDE Features

Numerous smaller features have been added to the KAS IDE.

3.4.1 Softscope

8 channels on the Softscope: Up to eight channels may now be configured on the Softscope.

3.4.2 Generic Modbus Configurator

New generic Modbus configuration: The new generic Modbus configuration allows for integrating third party TCP/IP Modbus slave devices.

1. From the *Controller Properties* dialog window, choose the *Other Modbus device* option for Modbus Configuration

2. The *Modbus Slave* configuration option is available from the *Add Configuration* dialog window in the FieldBus Editor.

3.4.3 Dictionary Improvements

User Interface Improvements, Enum types, Bit Field, Browse Variable, Rename Variable

- **User Interface improvements in the Dictionary**
    - **Filtering:** There is a filter icon in the top left corner of the Dictionary which allows for defining which columns to display as well as control the column width.
    - The KVB column has been moved to the 4th position for greater accessibility.
- **Enum types** ⓘ **:** Enumerated types are available in the Dictionary widget. They may be inserted via a right-click. An enumerated type allows for defining a data type and assigning a specific set of accepted values.
- **Bit Field** ⓘ **:** A bit field has been added. This feature allow user to define your own bit field type and then easily use it within the code. By default a bit field type is created with 16 bits, but you can change the type by double clicking on the type info in the right column.
- **Browse Variable:** This feature allows you to know where a PLC variable is used and set. This feature necessitates up-to-date cache information of the complete project in order to provide accurate information. As soon as the project source code is modified and saved, then this cache becomes dirty and needs to be refreshed. This action, depending on the size of the project, can be time consuming. This feature is accessible from 2 places:
    - from the Dictionary
    - from the *Browse Variable* tab on the *Information and Logs* widget
- **Rename Variable** ⓘ **:** This allows for renaming a variable in the Dictionary and in all POUs that use the variable. This also allows for renaming multiple variable at once, using some matching rules.

3.4.4 Control Panel

- **Import / Export:** Control Panel can now be imported/exported directly from the project tree. Right-click on **Controller** to import or right-click on **Control Panel** to export.

  - Control panels are exported as .GRA files.

  - The same control panel may be imported multiple times.

- **Graphic Item Properties:** Double-clicking on an element in the Control Panel opens the **Graphic Item Properties** dialog box. From this dialog you may control the look and actions of the element.
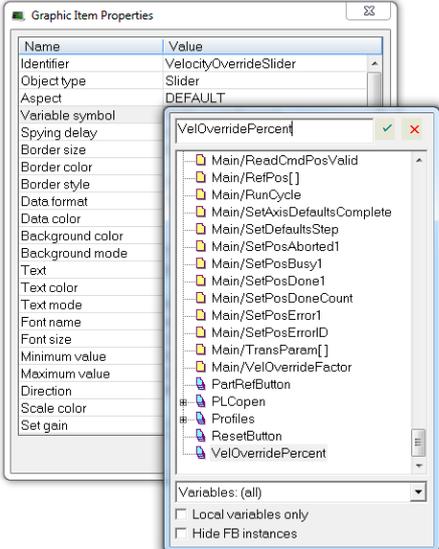
- **Mapping Variables:** Double-clicking on the Variable Symbol field in the **Graphic Item Properties** dialog box brings up the Variable Selector so you may quickly and easily map a PLC variable to the item.

- **Control Panel Grid:** Right-click within the control panel workspace and select **Grid**. This allows you to show or hide a background grid which is useful for laying out the HMI GUI. Optionally, you may set the preference for elements to snap to the grid, making positioning easy. You may also set the size of the grid.

- **Variable Checking:** Control Panels are now compiled and will produce a warning message if a used variable is not valid. See "Backward Compatibility Issues" (see page 23) for more information.

3.4.5 Miscellaneous

- **AKD GUI:** The AKD graphical user interface inside KAS IDE has been optimized. The GUI is much more responsive. The performance is roughly equivalent to a stand-alone WorkBench installation.

- **Cam export and a new property dialog:** Cam profiles may be directly exported from the project tree. The property and import dialog have been simplified.

- **PN Cam Block:** Pipe network Cam Block properties display a combo box to select the profile to use among the existing one.

- **PN Import/Export:** Pipe Network import/export allows a user to import/export a complete PipeNetwork and then to import and replace the PipeNetwork inside another project. The current export does not export the cam profiles along with the pipe network as the cam could be exported separately. Similarly, if the Pipe Network uses defines, the defines will not be exported automatically, those need to be copied and pasted in order for the PN to compile correctly. User could import an old PN inside a new IDE version, but not the opposite.

- **ST Programs:** ST programs now support true auto-completion using the CTRL+space shortcut.

- **UDFB Functions:** In/out parameters for UDFB/functions: When adding a new UDFB or function, a new dialog to edit input and output will be displayed automatically. This dialog allow user to easily create, edit and change order of all inputs and outputs parameters. This dialog could be reached via the right click from the project tree as well, via In/Out Parameters menu
- **Watch Window:** The Watch Window preserves the PLC variables that are plugged in the different watch windows when the project is saved. For performance reasons, the AKD Parameters that are plugged in the watch window are not preserved.

3.5 Motion and Fieldbus

- Ability to restart motion engine and EtherCAT from PLC code especially after an error. The function block MLMotionRstErr allow user to reset an error without stopping the application. Calling this new function block will bring the Motion status from "Error" to "Stopped". Then you can call MLMotionStart in order to restart the EtherCAT. This fix has been ported as well on the 2.6 release, a patch release is available.
- New GSDML file for Profinet allow exposing arrays of variable in Profinet slots. The new GSDML file is posted on the Kollmorgen website.
- AKT-PSF-024-000 slice is now supported. This is a power supply slice with 2 monitoring inputs.

3.6 Webserver Password Protection

- **Webserver with credentials:** By default the webserver is in "User" mode, i.e. no administrative privileges. Logging in as an administrator, via the LOGIN menu on the top of the webpage, provides greater control over the webserver and application.
  - The default password is `administrator`. This may be changed via the *Settings* menu
  - The webserver clearly indicates the logged-in user name at the top of each page.
  - Accessing the web server through the KAS IDE automatically provides administrative privileges.
  - Most actions of the web server are protected if an administrator is not logged in. Protected actions are represented by a locked icon. 🔒
- **Reset Password:** Webserver passwords may be reset by launching the controller webserver from the IDE.
  - The Settings page allows administrators to change the password without entering the previous one. This allows the administrator to reset a forgotten password.
  - When logged in as administrator, a user can do a *Reset to Factory Settings*. This resets the password to the default value: `administrator`.
- **Timeout:** Users are automatically logged out after 20 minutes of inactivity. There is no "time out" inside IDE.

3.7   AKD 1.10 Firmware

- New object CANopen object 0x20A7 for Capture Engine 1 (Rising or falling edge)
- New Fixed 0x1b25 TxPDO allowing 2 Fast Inputs (working only with Pipe Network)
- Enhanced performance with AKD WorkBench views (ASCII SDO grouping channel)

4   What's Changed

This section discusses changes in products that you should be aware of.

4.1   Removed Features

- ECATGetObjVal Function Block Is Deprecated.

  This function has been removed from the standard library. Applications that are using it will still compile, but a warning message will appear:
  User should now use the EtherCAT PDO mapping screen instead of using this FB that was complicated and not standard.

- Simulated option for Kollmorgen Couplers.

  The simulated option for Kollmorgen Couplers is no longer available in the EtherCAT devices view.

- Unique ID for each EtherCAT Device.

  Write a unique ID to each EtherCAT device to prevent wiring mistakes have been removed. The station alias is still written on the device to allow to recognize the drive mapping and to be able to perform Backup & Restore feature, but we do not prevent EtherCAT to start if the station alias do not correspond.

4.2   Backward Compatibility Issues

- ECATReadData and ECATWriteData offset will change due to the new way of generating ENI file, ie the offset are now different. So any project using those methods would have to be reworked. The offsets of the entries in the EtherCAT process image are different due to the new ENI engine. The direct consequence of this is that the PLC program that contains the functions ECATReadData and ECATWriteData will not work correctly. In fact, these functions take an Offset(*UINT*) parameter that correspond to the position of an entry in the EtherCAT process image.

  The way to correct a PLC program that uses these functions is to correct the hard coded Offset by looking at the generated ENI (EtherCAT.xml) file.

- S300 PDO selection will be lost but the user will be warned. With the new 3rd party EtherCAT configurator, the S300 is now considered as a standard EtherCAT device. Therefore the combo box of the PDO selection in the EtherCAT widget has been removed, and the new PDO Mapping tab should be used to select the right PDO.

- The internal HMI panels are now compiled and old KAS template contains one graphical widget mapped to a non-existing variable. So when user will compile such project, it will create a compilation warning.

  User just has to remove the wrong variable mapping to fix the issue.

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5 What's Fixed

Following are the issues corrected by this release.

Item #	Issue
DT-1498	AKD GUI terminal - command too long causes disconnection
DT-2071	AKD GUI Help not working on some views
DT-2185	KVB: SINT negative data is not handled properly in KVB
DT-2518	HMI Check box still available for non-exportable data
DT-2631	When PN editor is open with multiple compilation error, double clicking on the error will not automatically scroll the PN editor
DT-2637	Ctrl-Space shortcut in ST editor conflicts with Asian computers
DT-2710	AKD-GUI: when opening for the first time views on a drive with Faults or Warnings, the status bar/toolbar are not updated correctly
DT-2713	Error message in online change after breaking in the code and editing code
DT-2718	Shortcut keys Ctrl-Shift-O and Ctrl-Shift-C not working in FFLD
DT-2723	Export programs is always taking to default location
DT-2733	[PDMM] Online Change error after adding a new function call
DT-2739	IDE not able to re-connect to PDMM after disconnection
DT-2748	Random temporary AKD-GUI disconnection
DT-2762	PDMM fails to start EtherCAT with 2 AKD and 3 coupler due to MTU too low
DT-2766	ECAT propagation delays not compensated by the master
DT-2768	Pipe Network easy to use issue with FFLD only, when PNCode definition change
DT-2772	MC_ReadActPos writing to output when not enabled
DT-2773	Trigger block can't be cleared after 2nd MLAxisCfgFastIn
DT-2774	Master block is calculating wrong absolute position when in accelerating state
DT-2776	PDMM and simulator crash with large cam profile
DT-2789	Error pop up in IDE browser on opening KAS Application tab when axes are moving
DT-2818	StopRegist could causes runtime crash
DT-2819	Right click on FFLD editor can crash KAS on Asian computers
DT-2829	IDE crashes pushing HELP on network property window (FFLD program)
DT-2833	DriveParamWrite function gives an out of range error, for AKD negative parameters for value between -1 and 0
DT-2851	Adding a profile and editing it with a PLC open template gives an error popup to the user
DT-2878	Cannot start new KAS project if intermediate files still present

Item #	Issue
DT-2922	The variable Profiles is not properly initialized in PLCopen 2 Axis ST template
DT-2938	Deceleration is not correct when EtherCAT cycle is 2ms
DT-2943	Adding a string variable (not retained) reset all the retain variables
DT-3009	ST Editor: Ctrl-Space don't work with a variable name

6   Known Issues

6.1   Known Limitations

6.1.1 IDE Limitations

- **Online Help in Google's Chrome:** The online help does not render when run from Chrome. This is due to a recent automatic update in the browser. Please use a different browser for viewing the online help outside of the KAS IDE.

- **Undo:** The Undo action is not supported for AKD GUI views, control panel, or the EtherCAT view.

- **Softscope:** Heavily loaded applications using all 8 channels plugged with derivatives can lose connection with the IDE. This is unusual but if you experience this, please contact Support.

- **Find/Search/Replace function limitations**:
    - Search & Replace function is not supported in Pipe Network.
    - Search & Replace for HMI are supported only with using CTRL+F

- **SFC programs**
    - **Intellisense:** Intellisense is not active in Sequential Function Chart (SFC) programs.
    - **Breakpoints:** In SFC programs, breakpoints can only be set on transitions (i.e. in First Level diagram), and not in steps or conditions. If a breakpoint is set on a transition, you can debug cycle by cycle.

- **PLC Variable mapping:** each PLC variable can be mapped to an EtherCAT IO and exclusively to:
    - Modbus for an HMI
    - Or to an PDMM onboard IO
    - Or to an external driver like Profibus

    For example we cannot map the same PLC variable to Modbus and Onboard PDMM IO, but this is possible with a regular EtherCAT IO.

- **Online Change:** Modified cam profiles are detected by the IDE but will not be updated to the controller, even if you choose to force the update. (DT-3013)

- **Downloading Project to a Controller:** If the Ethernet cable is disconnected when downloading a KAS project to a controller, the IDE will freeze for 2-3 minutes. Re-downloading the application will not work. To recover from this condition, restart the KAS Runtime on the controller or power-off/on the controller and restart the IDE. (DT-3011)

- **Application restart with AKD drive error:** If one (or more) AKDs on the EtherCAT network are in error when an application is restarted, any AKD drive that had an error and is mapped to a PLCopen axis cannot be enabled. No error will be reported in the IDE or controller logs. To recover from this condition, stop and start the application again. After the second application stop/start, the drives can be enabled successfully. (DT-3010)

- **Upgrading 17 AKD drives firmware:** If selecting 17 (or more) drives to upgrade firmware, the first 16 drives will be upgraded properly, but the 17th (and higher) drives will not be upgraded. No errors will be reported in the IDE. (DT-2968)

- **Analog Input Slice Offset Parameter:** The offset parameter for Kollmorgen analog input slices is not supported. Changes the offset parameter will have no effect. The gain parameter is working properly. (DT-2935)

6.1.2 KVB Limitations

- **Variables:** The Modbus variables are imported to KVB when KVB is opened. They are not updated cyclically after opening. If other variables are exported in the IDE, KVB should be closed and reopened.

- **Alarm stops updating a tag value:** It's not advised to modify in the AlarmServer action on the same tag as the one used to trigger it. A different variable should be used.

- **Running KVB with Simulator:** There is a known issue when using Simulator on some PCs running Windows 7 Home Premium Edition. To workaround this issue, delete the *Platform* system variable:
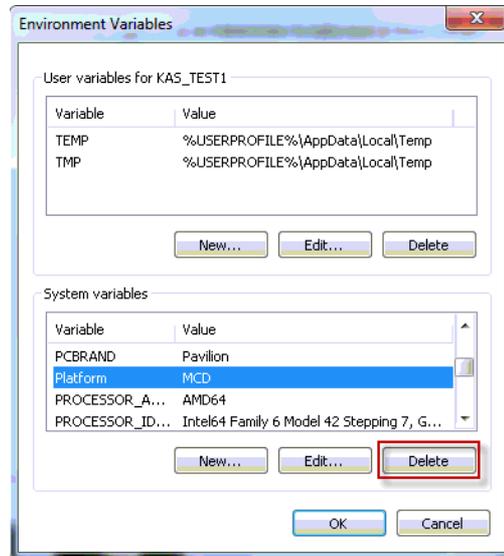
- **Autostart:** When a KVB project is sent to an IPC using the Download feature, the project may not Autostart. The workaround is to start the project manually from `C:\Documents and Settings\All Users\Documents\Kollmorgen Corporation\Kollmorgen Visualization Builder™ 2\(ProjectName)`.

- **Web Browser for AKI-CDB-xxx panels:** While a web browser component may be added to a AKI-CDB-xxx panel, this component on the CDB panels is fairly limited. For example, KAS web server controller cannot be displayed.

6.1.3 EtherCAT Limitations

- **Cabling:** Plugging the EtherCAT cable to the OUT port is not detected and not reported as an error.

- **External EtherCAT Configuration:** If an external EtherCAT XML file needs to be used, the file `AKD-for-KAS.xml` should be used as the ESI file for AKD. This ensures proper operation with KAS. It can be found at `C:\Users\<user.name>\AppData\Local\Kollmorgen\KAS\Astrolabe\ESI\`.

- **AKD drive cannot reach operation mode:** If the primary feedback cable for an AKD is disconnected during EtherCAT network initialization, the AKD will not reach operation mode. To recover from this condition, connect the primary feedback cable and restart the application. (DT-2796)

6.1.3.1 EL2252 - 2 channel digital output terminal with time stamp, tri-state

Known issue - DT 2974: The device will not go in operational mode when Tx PDOs 0x1A00 or 0x1A01 are selected.

6.1.4 PAC Limitations

- **A38 Alarm:** On the PAC High Range, at 4Khz, user may experience a A38 alarm when having roughly 20 or more drives. This issue means the ECAT frame does not return back to the controller within the same EtherCAT cycle.

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Global Support Contacts

North America
KOLLMORGEN
203A West Rock Road
Radford, VA 24141 USA

Web: www.kollmorgen.com

Mail: support@kollmorgen.com

Tel.: +1 - 540 - 633 - 3545

Fax: +1 - 540 - 639 - 4162

Europe
KOLLMORGEN Europe GmbH
Pempelfurtstraße 1
40880 Ratingen, Germany

Web: www.kollmorgen.com

Mail: technik@kollmorgen.com

Tel.: +49 - 2102 - 9394 - 0

Fax: +49 - 2102 - 9394 - 3155

Asia
KOLLMORGEN
Rm 2205, Scitech Tower, China
22 Jianguomen Wai Street

Web: www.kollmorgen.com

Mail: sales.asia@kollmorgen.com

Tel.: +86 - 400 666 1802

Fax: +86 - 10 6515 0263