Release Notes for iCube Control Products

Release 2024.9.1

Date: 2025-03-14

Version Information:

iCube Engineer Version: 2024.9 (Build 6.0.15981.0)

iC9226M-EC Firmware Version: 2024.9.1 (Build 147054)

iC9226M-FSoE Firmware Version: 2024.9.1 (Build 147055)

Profinet Version: 114

Ethernet/IP Version: 1.2

1. NEW FEATURES

1.1 Control Yaskawa GP series robots using PLCopen Motion Part 4 function blocks

With the addition of the Y_MSync library, PLCopen Motion Part 4 function blocks can control motion of Yaskawa GP series robot arms over EtherCAT when the YRC1000 or YRC1000 micro controllers have the INPACT interface card installed. For details search the help file for Y_MS_INPACT_Driver.

1.2 ASM-X (SGDXS-OSAxxx) option card can be used for FSoE communication with SGDXS servo drives

Safety functions and safety status can be accessed using FSoE communication with the SGDXS servo drives when the ASM-X (SGDXS-OSAxxx) servo option card is installed.

1.3 ASM-5 (SGDV-OSA01A) option card can be used with Sigma-5 servo drives

The ASM-5 (SGDV-OSA01A) can be used with Sigma-5 servo drives to implement safety functions.

1.4 HMI Designer is integrated with iCube Engineer

iCube Engineer and HMI Designer can share variable name and datatype information. It is recommended to start HMI designer separately from iCube Engineer instead of launching HMI Designer from inside iCube Engineer.

There are some limitation with this integration that will be resolved in the next release.

1.5 EtherCAT PDO map editing is supported

The PDO map for EtherCAT devices can be edited in iCube Engineer.

1.6 Controller Commissioning Tool is available

A stand-alone Windows application, Controller Commissioning Tool, is available for installing and managing feature licenses on the iC9200 controller.

1.7 Rotary knife supported in the Cam toolbox

Rotary knife applications are now supported by the Cam toolbox.

1.8 iCube Engineer 2024.9 is based on PLCnext Engineer 2024.6

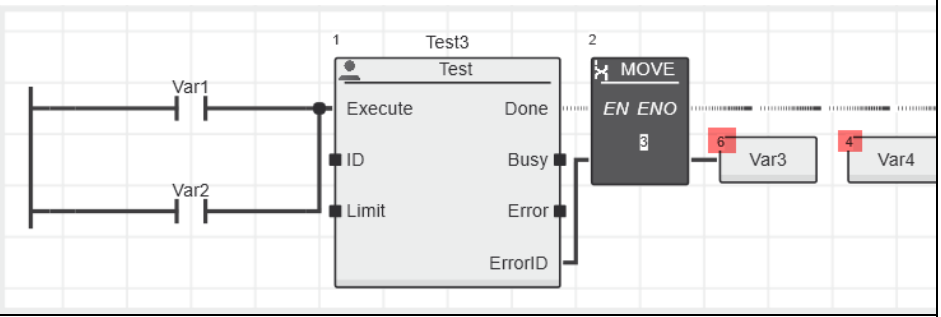
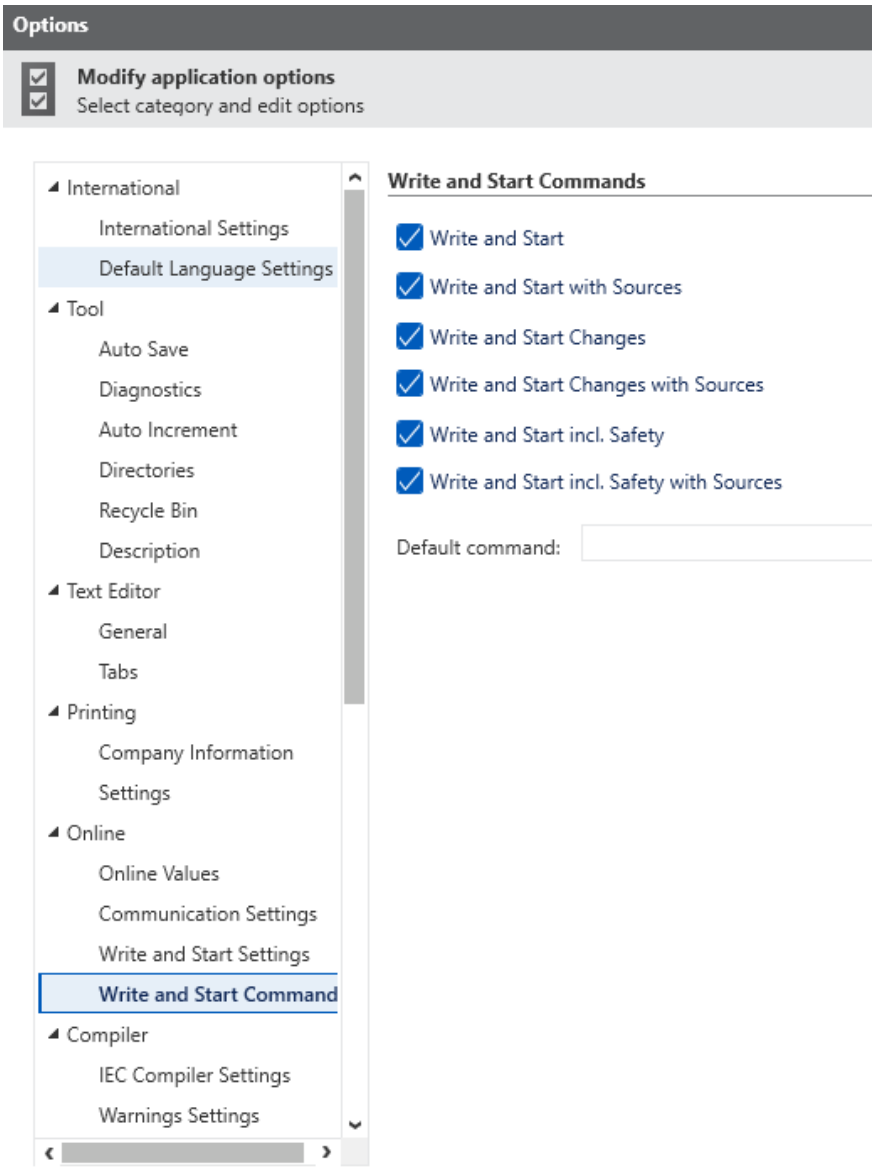
There are improvements in iCube Engineer 2024.9 that come with the incorporation of PLCnext Engineer 2024.6. These improvements include:

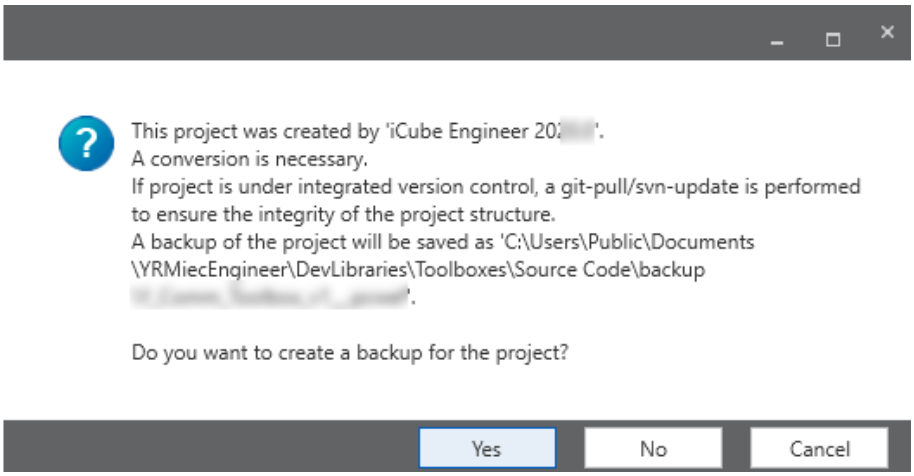
- Data lists and port lists now provide import and export functions for csv-files. With the import into a data list of a device, new process data assignments can be added.
- Defined constants can now also be used to set the length of a user-defined string.
- Arrays and user-defined strings can now be defined directly in a variable worksheet of a local POU and in the list of global variables. A definition in a separate datatype worksheet is not necessary anymore
- The documentation of local function blocks can now be opened in the browser via the help command of the context menu in FBD/LD or the shortkey "shift"+"F1" in ST.
- The format of online values can be set for every single variable separately. The setting is synchronized between code and variables worksheet as well as the WATCHES window and the FORCELIST. All changes can be reset to the default format via the "Options" menu.
- In all programming editors the subeditor "Variable Properties" can be opened via the context menu or toolbar. All properties of a selected variable can be defined here without switching to the variables worksheet.
- The user can switch to debug mode even if the name of the currently opened project in PLCnext Engineer differs from the name of the project running on the connected controller

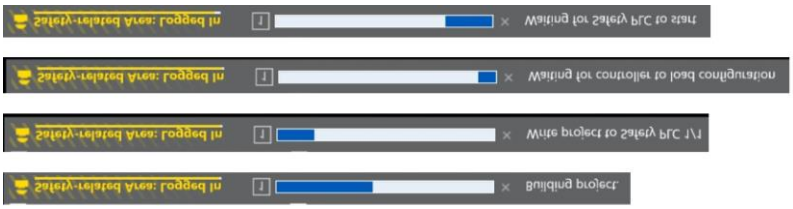
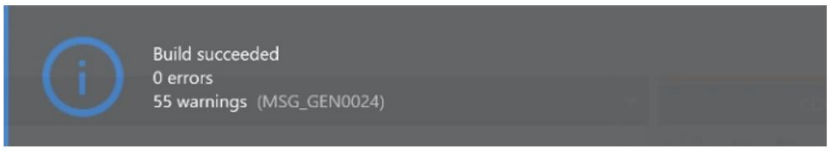
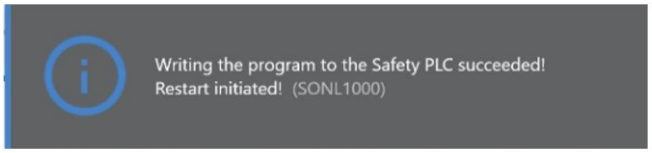
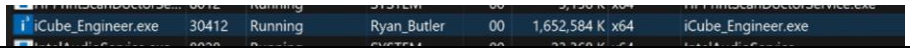
2. FIXES INCLUDED IN THIS RELEASE

2.1 Fixed in iCube Engineer with this Release

ID	Title	Description
36237	Autocompile feature does not work reliably using PCWEX format so that sometimes the last compiled code is allowed to be downloaded (written) to the controller.	Autocompile frequency is not reliable sometimes. This causes the last compiled code (not the code currently available in the project) to be downloaded to the controller. This would result in a mismatch of code in the project and the code running on the controller.
42355	Safety project templates can only be opened in the language setting, with which they were created.	Safety project template can't be opened in German language.
43653	iCube not responding and showing random EtherCAT data when Node is disconnected with the Online functions tab open and hot connect enabled	If iCube Engineer's EtherCAT online functions page is online with the controller, and a change in state (power loss) of any device on the etherCAT network or if there is change in the network (disconnected device), the online functions page can become unresponsive.
47538	Unsupported Modules in iCE	The following module listed in the catalog of iCube Engineer is not supported. 1. AI 8x12Bit (0/4)..20mA (031-1BF60) Rev. >= 00/1.00 on PROFINET
48936	Y_YA_EC_Diagnostics can get stuck	When only one EtherCAT device is connected, Y_YA_EC_Diagnostics is unable to complete its read operation, and gets stuck Busy in an internal step.
48980	ESI file import: Error Importing Schmersal Safety Field Box ESI	Import of Schmersal Safety Field Box ESI fails. This device is not supported.
49054	ESI file import: Error Importing Fortress amGardPro ESI	Importing of Fortress amGardPro ESI fails. This device is not supported.

49197	Incorrect execution order in Ladder Logic	In some scenario in LD, the execution order of the code is wrong as follow : 
49305	Software crashes when selecting 'Write and Start incl. Safety' from the Write and Start Commands config	iCube Engineer crashes if the Write and Start commands are edited from the Extras > Options menu in iCube Engineer's home page. (without opening a project) 

49501	iCube Engineer 2024.3 removes the POU of a project build in earlier versions during project conversion	When converting a older version project into iCube Engineer 2024.3, with the following pop up :  the following error can appear:  Resulting in corrupted code display as follow in the component tree :  One of the possible reason other than the maximum length is that the POU, FB or datatype worksheet have been renamed in the previous iCube Engineer version with the same string name but different font case, example : "**p**ou_1" replaced with "**P**ou_1". During the conversion the link between the component tree and the file is then lost afterward.
51211	Error: "A license error has occured" after locking computer or energy saving mode	After a few hours of running iCE and possibly staying idle, a pop up message saying ' A license error has occurred' appears. The only option is to click OK. The user can lose unsaved code.
52962	IP address conflicts, when creating an iCE project with PN devices, EoE-EtherCAT devices and EthernetIP devices	IP address conflicts can occur between devices on the controller subnet.

53293	Safety PLC Write & Start Project Stops Working	Users may experience cases where the project Write & Start function does not work. This can occur with both the Standard PLC -> Write and Start (incl. Safety) and also the Safety PLC -> Write and Start functions. When this issue occurs there are several indications that the user will not see, which should appear within approx. 10-20 seconds of stating a Write and Start. These missing indications include Progress bar and status messages such as shown below:  Also, iCube Engineer will not display snack-bar messages such as:   Another effect of this issue is that iCube Engineer will hang when closed. This can be seen in the Windows Task manager by looking at the Task Manager's Details screen, for example: 
55296	FB-Lib: Y_FileRW_Toolbox_2024_03: Y_RW_Write_CSV_File: Appending more than 512 Byte to the CSV file leads to an error	Using Y_RW_Write_CSV_File with a Buffer size above 512 bytes generate a string error on the PLC side.
56844	Y_GroupDirectControl not correctly handling PCS coord system input	Y_GroupDirectControl does not correctly handle the CoordSys input to select between ACS/MCS/PCS coordinate system. The coordinate system may be misapplied to some other coordinate system instead. This can lead to unexpected motion behavior. For example, inputting MC_CoordinateSystem#PCS may instead execute the move data in MCS instead.
57006	Parameter tab missing for Sigma-X drives using catalog entry ending in 0x10002	The parameter tab is missing from device configuration page of Sigma-X drives if revision number 0x10002 of the SigmaX servo is chosen while performing an etherCAT bus scan.

57927	Velocity input on MC_TorqueControl does not limit velocity on Direct Drive Motors	The velocity input on MC_TorqueControl does not limit the velocity in torque mode for direct drive motors.
58067	Bus scan misidentifies SGDXS unit as SGDXW when using "Apply the selected file to other similar slaves"	During EtherCAT bus scan, if the discovered device profile does not match the device profile of similar devices from the same vendor, the user is asked to chose an appropriate device profile available in the catalog. The user can choose to use the same catalog profile for other devices that may be discovered and have the same decision to be made by pressing the "Apply the selected file to other similar devices' check box. This check box selection may lead to erroneous results.
58268	EIP assembly instance configuration: Error on download after EIP instances are changed (swapped)	When the iC922x controller is an EtherNet/IP adapter, and the user changes the assembly instance number of an instance that already exists, the ports mappings get corrupt and the project cannot be downloaded.
58359	Y_CO_FTP_SendFile Function Block reports timeout error incorrectly even though the file gets sent	Y_CO_FTP_SendFile Function Block reports timeout error incorrectly even though the file gets sent.
62013	Regression: iC9226 does not work as an OPC UA server to HMI designer because DNS Name / IP Address Not Accepting Entered Value	The "DNS name/ IP address" does not stick when changed. This is an issue because in order to enable communication this needs to be set to the server's IP address.
62208	In German Version of ICE MC_Power goes into error 4625	When working with the German version of the software, MC_Power will always go to error even before enabling it when using any axis with DriverType = FMK. ErrorID given is 4625.
63101	ASM5: Invalid constant error and AT error when an ASM5 module is added in iCube Engineer	When an ASM5 module is added to a servo in iCube Engineer, a compile error is generated because of a an autogenerated variable in the PLC data list.
63129	Regression: EtherNet/IP (EIP): Unable to create two adapter connections to the same device	iCube Engineer does not allow the iC9200 as a scanner to open more than one adapter connection to the same device.
63178	Regression: Help for FBs does not come up in 2024.9 SP5	Right clicking a function block instantiated in a POU or looking for help from the component tree does not work.
63223	Software crash: Random crash without doing anything (likely due to Autosave + OneDrive)	iCubeEngineer crashes because of interaction with OneDrive. OneDrive blocks access to certain files iCube Engineer is looking for.
63373	Regression: SigmaXT - Parameter Screen Hangs and Crashes iCube Engineer	Selecting the parameter page for any module on a SigmaXT or SigmaXW servo while connected to the controller and in debug mode can lead to iCube Engineer being unresponsive.

2.2 Fixed in iC9226 Runtime and Motion with this Release

ID	Title	Description

31986	MC_TrackConveyorBelt reports MC_GroupReadStatus::InPosition output incorrectly for groups with real axes	The GroupReadStatus::InPosition output does not come on when MC_TrackConveyorBelt is complete on a group with real axes that has disengaged. This is a regression from the MPIec product. It appears to be a reporting problem, but the motion should behave properly. There are no known workarounds specifically for the InPosition output. Application code should not rely on the InPosition output to tell the group state.
46129	MC_SetPosition reports error 4380 after MC_TrackConveyorBelt is used with no other motion	MC_GroupSetPosition reports error 4380 when executed after MC_TrackConveyorBelt.Done and motion is idle.
49331	MC_TouchProbe can not take ownership of TouchProbe after failed attempt to take ownership and then completion	In a multimodule set up (servo is module 1 and feedback option card is module 2), the two modules cannot swap ownership of the touchprobe. Example: o module1 arms latch for touchprobe1 o module1 latch aborted o module2 arms latch for touchprobe1. Not allowed.
49665	Incorrect PCS calculation when using an auxiliary axis in a Group	The presence of an auxiliary axis in a group can lead to incorrect calculations of the PCS offset when using Y_GroupSetFrameOffset and/or MC_TrackConveyorBelt.
50022	MC_MoveCircularRelative incorrectly reports error 9002 (unreachable position) in some cases	MC_MoveCircularRelative does not correctly apply the relative-offset when checking for a potential positions outside the workspace, i.e. due to nonlinear kinematics such as Delta robot kinematics. This can lead to spurious 9002 errors if the un-offset position lies outside the workspace.
52948	MC_MoveLinear does not complete when "incorrect" velocity unit specified	For PLCopen Part 4 multi-axis groups, MC_Move type function blocks can become busy indefinitely in certain scenarios for groups which contain both translational and rotational axes - for example, an XYZRz gantry. This occurs when **either** the translational component **or** the rotational component of the move (but not both) has zero magnitude, **and** the input value of Yt_GroupMoveOptions.VelocityUnit matches the zero magnitude component.
56721	Pn20E,Pn210 non 1:1 can cause fatal hardware exception or incorrect initial startup multi-turn position	Pn20E and Pn210 (electronic gear ratio numerator/denominator) should be set to 1:1 for proper operation with the motion kernel. iCube Engineer enforces this requirement. When these values are set away from 1:1, then incorrect initial start position can be read at program warm start time. In extreme cases, an integer overflow can occur which causes a controller crash.
56925	Y_F1_WriteParameters reports error 4915 (eeprom save not supported) when there is an active servo alarm	When a servopack is in an alarm state, Y_WriteParameters incorrectly reports error 4915 after .Busy output for 30 seconds, without initiating the final save-to-eeprom operation.

58344	PLC reboots continuously after 30 seconds when disabling SliceBus Service in WBM	After deactivating SliceBus Service in Web Interface Services the PLC reboots continuously after approximately 30 seconds. There is no connection possible to the iC9200 due to the reboot cycle.
58463	Unable to use counter module on iC9200 slicebus if it's the last item on the bus	Unable to use counter module on iC9200 Slicebus if there is another counter module on the bus.
61678	Axis can become stuck in ErrorStop after successful MC_Reset	In certain rare situations, the AXIS_REF internal state machine can become stuck in ErrorStop state and not correctly transition to StandStill or ErrorStop after a successful call to MC_Reset.
62227	EtherNet/IP Scanner - Unreachable remote device IP Address with off-network gateway address crashes plcnext and reboots controller	If the controller's network configuration includes a Default Gateway which is not on the local subnet, then Ethernet/IP Scanner connection attempts to remote adapters also not on the local subnet will cause a fatal controller crash and reboot.
62408	Servopack alarm clear causing motion scan overrun, watchdogs, or controller reboots	Clearing CoE servopack alarms via MC_Rest, WBM motion alarms page view, or iCube Engineer motion alarms view can in some cases result in motion scan overrun alarms, PLC task watchdogs, or controller reboots due to system watchdogs. These effects seem more likely on heavily cpu-loaded systems, especially on FSoE controllers.

3. OPEN ISSUES

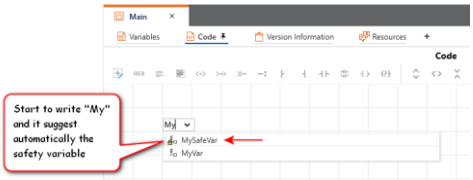
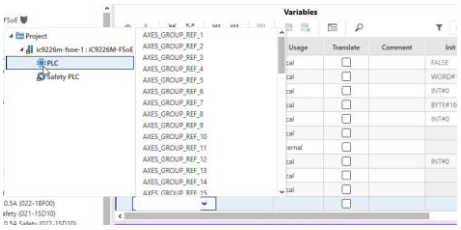
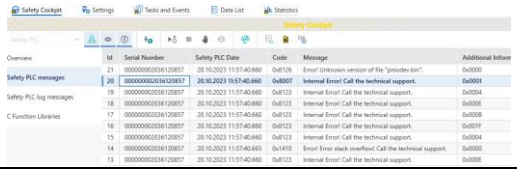
3.1 iCube Control Safety Process Related Issues

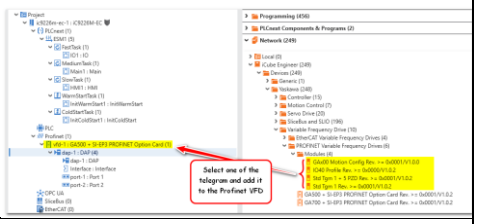
ID	Title	Description	Workaround
46087	Safety PLC is stuck in STOP if no safety variable are linked to the safety device pdo.	When a safety component has a PDI (Process Data Item) linked to a normal PLC variable but not to a safety variable, there is no compilation error, but the Safety PLC remains in Stop state even on trying to run the safety PLC.	Every safety device should have at least one safety PDI (Process Data Item) linked to one safety variable (input and/or output).
49198	Safety PLC: Process data mapping offset is not updated, when a safety slave is deleted.	When a FSoE slave is deleted, the offset of the remaining slaves is not recalculated, so there are empty spaces in the mapping list.	Not available.
49597	Message "The safety message log has no valid data hash" on opening caused by safety project created in a different time zone	Message "The safety message log has no valid data hash" on project opeing will occur if the iC9226M-FSoE project is opened in a different time zone than the one it was saved in. The message is related to a hash used in the persistent safety log. This defect does not represent a safety-critical defect, as the safety log only has a logging function and has no influence on safety-related data that is used to generate the safety-related user program.	Once the project is saved again in the new time zone the error will no longer occur on opening the project.
52878	WBM Archive Project does not handle safety project	Project archive feature in the WBM cannot be used to manage (send to controller or receive from controller) safety projects.	Use iCubeEngineer to commission (download) safety applications.
62599	Phoenix Contact safety DO (AXL SE FSDO4/2) not working	When using an AXL SE FSDO4/2 safety digital output module in an AXL F BK EC EtherCAT coupler from Phoenix Contact on the EtherCAT node, the safety controller will not be able to go into Safe Run.	Do not use the AXL SE FSDO4/2 safety digital output module.

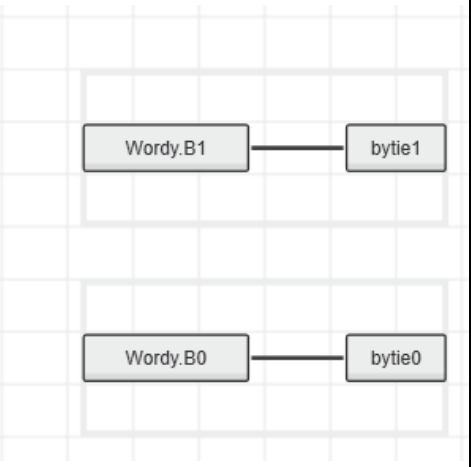
3.2 iCube Engineer Known Issues

ID	Title	Description	Workaround
9546	'Create New Function Block Instance' option doesn't exist when editing in ST environment	A function block instance cannot be created by right clicking and choosing to create a new instance from the code editor of a Structured Text worksheet.	Drag and drop an instance of a function block from the components tree of the project.

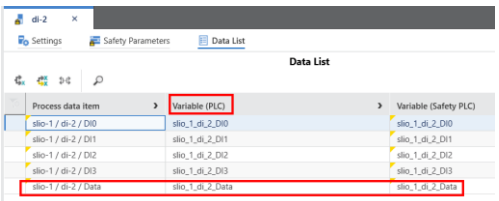
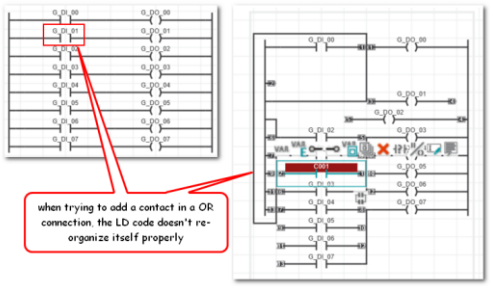
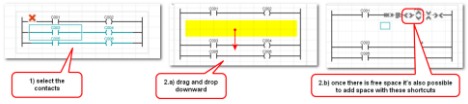
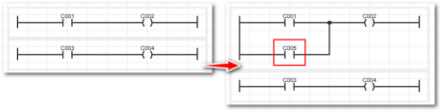
21016	Error (division by zero) is displayed in the wrong line of code	Errors such as division by zero may not be traceable to the exact line where the error occurred. The error line could be wrongly shown on a line in the vicinity of the error occurrence.	The error could be displayed on a line near the line where the error occurred.
25444	Import csv file in the variable table does not retain mapped PDI variables	The import from CSV file functionality to import variable in the data list of the PLC table mention "Finished importing CSV", but doesn't import any PDI linked to the imported variable. 	The PDI mapping to the imported variable needs to be done manually. The imported variable that are duplicated needs also to be removed manually.
26625	Y_AX_Home_LS_Pulse CreepDistanceLimit not enforced on Re-Trigger	The CreepDistanceLimit is not enforced when the Home _LS_Pulse function block is re-triggered because the MC_StepRefPulse function block is ignoring the distance limit during this case.	Not available.
28153	Controller scan and Profinet scan don't detect devices all times	Controller scan and Profinet Scan does not detect profinet devices always	Multiple scans may be required to detect Profinet devices on the network. Or download NetNames+ : https://www.phoenixcontact.com/en-pc/products/data-interface-em-pnet-gateway-ifs-2904472 
30202	Project Rebuild is required on project open if Profinet VFD devices are in the configuration	Opening a project that contains a Yaskawa profinet(SI-EP3) VFD (GA500 or GA700) which was working before ends up in Y_MotionAxisDriver with an Error&errorID 13807 .	Execute a Project-->Rebuild, then download the project again.
31416	Global Replace - creates a new variable and keeps the current one that was supposed to be replaced	Global Replace function creates a new variable and keeps the current one that was supposed to be replaced	Manually remove the old variable if it is not required. User could evaluate if 'Refactor' could be used instead of a 'Global Replace'

32554	Safe variable aren't protected from the main PLC	Names of variables from the Safety PLC project will appear in a list of available variables when working in the standard PLC project. This occurs when typing a variable name - see the example below - as well as when browsing the variable names in the drop-down list. If a safety PLC variable is used within the standard PLC project this will cause an error when the project is rebuilt. 	When selecting a variable name, first open the variable list drop-down and then select "PLC" to filter only for standard PLC variables. 
41425	Flag all changes to Motion area of plant to prohibit download-changes	Changes made to the PLANT Configuration cannot be downloaded to the controller using the 'Download Changes' command.	After making changes to the PLANT configuration, the project will have to be recompiled and a full download has to be performed.
42328	SliceBus safety module diagnostics not available	Diagnostics for the SLIO safety modules on the SliceBus are not available through iCube.	Visually review LED states present on the SLIO safety modules and refer to the meaning of the LED indicators in the technical manual . (https://www.yaskawa.eu.com/Global%20Assets/Downloads/Technical_Documentation/Controls/Slio/Safety/HB300E_SM-S_02x-1SD10_23-20.pdf) See the section "status indication" as a starting point.
43101	A.A48 on Sigma-7 when using iCube Engineer servo parameter editor	The A.A48 alarm indicates corruption of the Servo drive EEPROM memory, which includes the servo drive parameter settings.	Use SigmaWin+ to initialize parameters on the servo drive.
43610	In safety PLC messages further information to the error codes in Columns "Additional information" and "Extended information" are not available	In the Safety PLC cockpit messages, the errors point to internal errors that are hard to decipher. 	Contact Yaskawa for help on safety PLC errors.

43636	Drive scanned from the Profinet network doesn't automatically add the GAx00 Motion Config module	Executing a Profinet scan functionality on Yaskawa Profinet VFD doesn't add the Profinet telegram Part.	there are 2 solutions: • add the Profinet VFD from the catalog manually instead of automatically with the Profinet scan • add manually Profinet telegram to the Profinet VFD after the scan has been executed: 

46312	non safety FB from "Safety IEC 61131-3" library aren't supported on iC922xM-EC	If a WORD_TO_BYTES FB is used in the application, a compile error is generated mentioning that the iC922x resource does not support the WORD_TO_BYTES function block because this FB is part of the Safety IEC 61131-3 library.	• Do not use any FB from Safety IEC 61131-3 in a nonsafe PLC.
			• Use implicit addressing as shown below:
			 
			`byte1 := wordy.B0;`
			`byte2 := wordy.B1;`

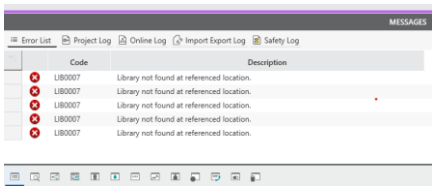
46399	Motion Axis generation fail to create the proper variable when Identity.Axis Number is changed from default	If a user modifies the axis number property of a motion axis and then adds additional motion axes to the project, then the automatic generation of the AXIS_REF variable in the PLC/global variable table is affected.	Do not change axis number property of a motion Axis if additional servopack need to be added to the project at a later stage.

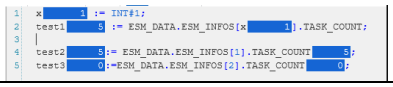
46400	GDS-Error, when connecting the data variable of an FSOE-module with a non-safety plc variable - this variable connection is not undo-able	If the 'Data' Process Data Item of a safety module is connected to a PLC variable as shown below, the project cannot be downloaded. The Data PDI should not be edited by the user. 	Do not edit the Data PDIs for safety modules. Contact your Yaskawa support and provide the reference #46400
46740	'Servonet external axis' is not automatically created when a 'Feedback Option card' is added to a servo and feedback operation mode is 'external encoder monitoring'.	If an SGDV Feedback Option Card is added to a servo in the plant, an external motion axis is automatically created.	The automatically created external axis (when an SGDV Feedback Option card is added to a servo) is only used in Option mode = "Semi-closed loop + External encoder monitoring". In all the other operation modes, this external axis created is not useful.
47608	LD Network Graphics Incorrect	Modify ladder diagram rung with common power rail can bring organization display issue as follows. 	Make space in the ladder diagram before inserting the OR connection contact.  OR Do not make the power rails continuous for multiple rungs. 
48061	User can't use 021-1BD70 & 022-1BD70 TimeStamp modules with the internal clock of the iCube	021-1BD70 & 022-1BD70 TimeStamp modules can NOT be synchronized with an absolute time. These 2 modules can only be used to read or defined a time relative to a previous rising/falling edge.	No workaround available. A virtual module to simulate the clock is missing for Profinet, EtherCAT and Slicebus.
49219	MSG_ONL0156: Unable to download project and unable to find the reason for the download failure	If the error message "MSG_ONL0156: Unable to download the project changes to the device" is shown, the user will have to check the reason for the download failure in the output log of the controller.	The output log can be obtained by SSH-ing into the controller. The output log can be obtained at /opt/plcnext/logs.

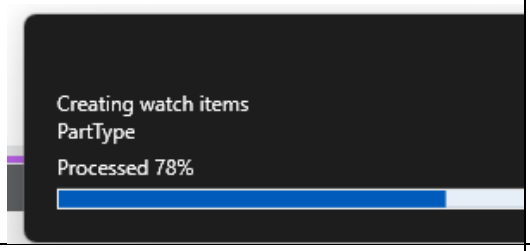
49241	Automatic IO Variable generation : PDIs links to PLC variables are not displayed in the data list	The automatically generated variable may not have a Process Data Item linked to it. The link is made automatically by iCube Engineer automatically in the background. If the user map a PDI, this will overwrite this automatic link done by iCube Engineer. 	The user should NOT try to map a PDI to the variable. The link is already done in the background and the communication with the device should work properly.
49637	PDO : Pressing "load PDO information" results in warning messages about process data item creation	If user selects to 'load PDO information' from the ECAT sub device's PDO data tab, process data creation could fail because of a datatype mismatch.	Do not use the 'Load PDO information' button on the PDO tab of an EtherCAT sub device.
49821	OPC UA PubSub Subscriber can receive data from an incorrectly configured publisher	An incorrect configuration can lead to data inconsistencies that are easy to troubleshoot. For example, if there are two publishers, one publisher configured correctly and the second publisher configured incorrectly (with the same IDs as the first publisher), the subscriber will get data from both publishers. There is no mechanism to filter data from an inadvertent wrong configuration	The user should take care to configure and set up publishers correctly.
49949	Cannot Debug/Monitor Safety PLC Variables after Write and Start Standard PLC Project	After writing and starting a standard PLC project, done while debug and monitoring of both the Standard and Safety PLC projects are active, the values reported for Safety PLC variables will not match the actual values and a reintegration request is required.	Following the Write and Start of the Standard PLC project, it is necessary to set ACK_REI_FSOE_GLOBAL=True to provide a reintegration request. Once the reintegration request is provided, the variable values shown when debugging match the actual states. Set ACK_REI_FSOE_GLOBAL=FALSE to complete the process.
49950	Unexpected Error - Project Cannot Be Built. Online Mode Is Not Possible	When rebuilding a project after making edits in the standard PLC area and while still connected to the iCube controller, iCE may report "MSG_ONL0048: The project cannot be built. Online mode is not possible."	Disconnected from both the standard and safety PLC, then rebuild the project (Project->Rebuild)

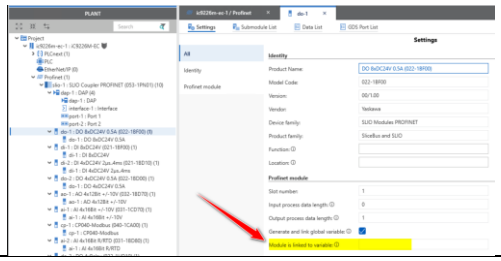
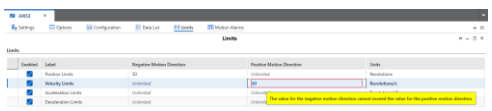
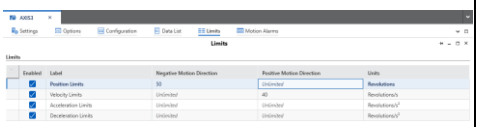
50132	Safety PLC does not exit Debug Mode	Under some circumstances the Safety PLC does not successfully exit debug mode.	Ensure the safety PLC enters Safe Run mode after exiting debug mode by checking the safety PLC status. The safety PLC status can be seen in the iCube Engineer Safety Cockpit. The SF RUN and SF ER LEDs on the iCube controller also display the safety PLC status. Safe Run is indicated with the SF RUN LED solid and the SF ER LED off. If a valid project is not loaded onto the Safety PLC it will be in Debug Stop state, and in this case it is not possible to exit Debug mode. Check the Safety Cockpit -> Safety PLC project information to see if a project is currently loaded.

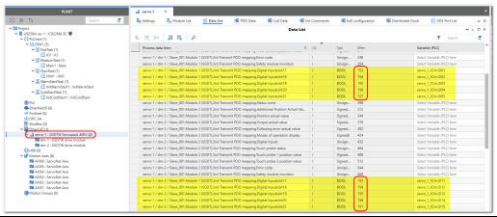
50179	Unable to use the same toolbox library with a different path than default library path: "The reference library could not be loaded because the library ..... "	If the user moves the library folder with libraries in it to a different location, projects which refer to the libraries in the original project will have compile errors when the old libraries are deleted and the libraries from the new location are added. The compile error is "The reference library could not be loaded because the library xxx with the same ID has already been loaded"	There are options: • Do not change the library location for an existing project. • Share a project as an archive. • Fix the library location as follows: 1. **In Window Explorer:** Copy all the libraries used in the project in a new folder location 2. **in iCube Engineer:** open: "Extras" --> "Options..." --> Tool/Directories 3. modify the path of "User libraries location" to the new path defined in step 1 4. save the project 5. close completely iCube engineer (not only the project) 6. re-open iCube Engineer and the project a. All the paths for each library should be modified and no error should occur.
50997	Execution of 'MC_Stop' returns Error with ID '14054' on 'Y_MotionAxisDriver' FB for ModbusRTU Drives	Sometimes the first execution of the 'MC_Stop' for a Drive controlled with ModbusRTU (040-1CA00) Function Block is not working properly. The axis will **not** stop in this case, the Driver Function Block will return an Error 14054.	Always check the Y_MotionAxisDriver FB status when using ModbusRTU Drive with PLCopen_Part1 library.
51198	Missing documentation for PLCnextBase in ICE	version 1.5.1 does not contain any documentation	Use documentation of the Version 1.6.4 version is available via PLCnextStore

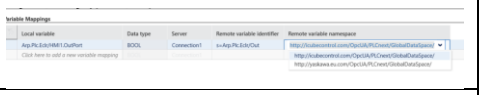
52815	Sigma-XT: "Import SigmaWin+ .usrs file" always imports the parameters for the first axis regardless of axis selected	"Import SigmaWin+ .usrs file" always imports the parameters for the first axis regardless of axis selected. 	Do not use the Import SigmaWin+.usrs file functionality in iCube Engineer for multi-axis servos.
52956	ECAT: Generated Process Data names too long for Fortress amGardPro and other devices	The Fortress amGardPro device can not be used due to the generated Process Data names being too long.	Not available.
53109	SI-EP3 PROFINET Option Card for VFD: No information about STO inside Status Word available	In the Statusword of SI-EP3 PROFINET option card there is no information about STO (Safe Torque Off) inside the Status Word. Therefore there is no reaction possible with the MC Function blocks (e.g. MC_MoveVelocity, MC_ReadStatus) in case of STO	Using the Multiprotocol Card JOHB-SMP3 (PROFINET mode) there is the STO information in Status Word Bit 14. Control/Status has to be set on 1: Yaskawa P-Drive
53202	Installing iCube Engineer as administrator and opening as normal user create issue to find user libraries location	The User libraries are installed at the time of software installation at the following path: C:\Users\<user>\Documents\iCube_Engineer\Libraries. If the installation is done as administrator, the <user> is the administrator account. In case the administrator and the local user are two different accounts, and iCube Engineer is being opened from the normal user, the following error will occur: "Library not found at referenced location". 	There are 3 possible workarounds in this situations: 1. Start iCube always in *Run As Administrator,* in this case the the default path to look for user libraries in iCube will change to *C:\Users\<user>\Documents\iCube_Engineer\Libraries.* 2. Incase you don't want to Run the iCube in Run as Administrator then after running iCube change the path in the iCube software where it looks for the user libraries. For this go to *Extras->Options->Tools->Directories->User Libraries location.* 3. Copy the library from the administrator folder to the user folder.

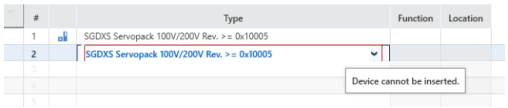
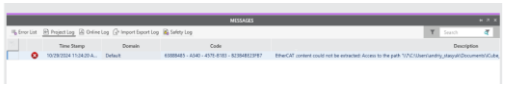
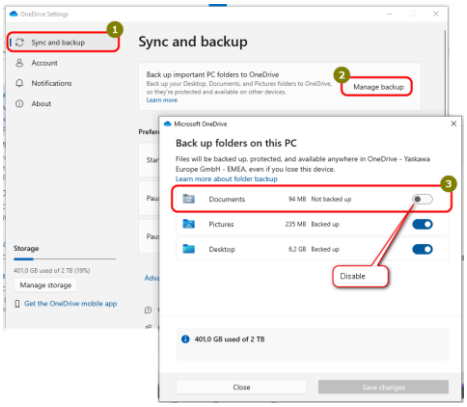
53415	Wrong online values in execution mode are displayed	The value of an expression will not be shown if the expression contains variables in it. For example, On line 2, the value of the right side of the equation is **not** shown. On lines 4 and 5, the value of the right side of the equations of the two lines are evaluated and displayed correctly. 	Not available.
53540	Unexpected controller reboot when using PBCL_SysDeviceStatus_1	Depending on the data type used in the InOut variable "anyResult", the controller might unexpectedly trigger a power cycle (reboot).	When using PBCL_SysDeviceStatus_1, set the data type of the variable connected to "anyResult" to the one defined in the documentation for the status variable specified in "strIndent". For example, to read "Status.Memory.Usage.Percent" (defined as a BYTE in the documentation), define the variable connected to "anyResult" as a BYTE data type.
53699	Generated Safety Variables are not removed when Safety modules are deleted	Generated Safety Variables are not removed when Safety modules are deleted	Delete the safety variables after removing the safety modules
54301	Deleting a servopack from the plant leaves behind servo IO global variables	When a servo is deleted from the EtherCAT node in the PLANT tree, the global variable that represents servo IO in the PLC data list is not deleted.	User can manually delete the global variable from the PLC data list.
54418	Cannot rebuild project, Internal error: UTL0001	Internal error UTL 0001 can occur if one of the temporary output files is locked.	Make sure no files in the Binaries directory are locked from editing due to be open in an editor.
54483	ECAT Online : missmatch analyzer is showing Sigma7W servopack modules in red	In the EtherCAT online functions page, modules that are part of multi module devices, are sometimes shown in red.	Check the state of the EtherCAT device and ensure that the device is in state 8 (OP state).

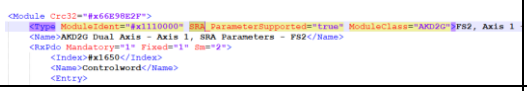
54492	iCE Active window crashes when attempting to cancel the load of a variable into the watches tab	While loading a new variable (which is a large structure) into the watches tab, canceling the operation by clicking the X in the "Creating watch items" window currently crashes the active iCube Engineer window. 	Wait for variable to load into watches tab completely, and then remove it.
54882	Impossible to bring back undocked window from a disconnected monitor	If an iCube Engineer window was undocked and moved to a secondary monitor, and if the user disconnects the secondary monitor, it is not possible for the user to bring back the undocked window back to the original monitor. The click action to make the window visible seems to work, but the window does not appear on the original screen.	<u>Below 2 possible solutions:</u> 1. Right click on Windows desktop > Display settings > Select 1 monitor. OR 1. In iCubeEngineer press CTRL+Tab and select the missing window with the arrow keys (i.e. Logicanalyzer) 2. Press Windows+Shift+Arrow to move the selected window from monitor to monitor.
55375	Multiple bus scan proliferates Motion Axes instances	Performing an EtherCAT bus scan does not automatically delete existing Motion Axes from the plant. This leads to proliferation of Motion Axis objects which are not connected to an underlying servo object, which causes additional configuration-related motion alarms.	The following recipe produces a clean bus scan without extraneous objects or variables: 1. Delete all EtherCAT servo nodes in the plant 2. Delete all servo Motion Axes in the plant 3. Delete all related global variables for servo-# and AXIS# from the PLC global variables list 4. Perform bus scan
56229	Y_RW_Write_CSV_File: Appending doesn't work when executed with a task interval lower than 4ms	When using the "Append" input of Y_RW_Write_CSV_File in a program run with a task interval of < 4ms, the information is not appended to the file. The CSV file is overwritten as if "Append" was set to FALSE.	Use the Append mode of Y_RW_Write_CSV_File in a POU in a task >= 4 ms.
56328	Unable to determine cause of error when EIP status variable is set to 0x000E	Detailed status of EtherNet/IP scanner connection is not available.	EtherNet/IP diagnostics will have to be done by using wireshark. The user will have to use a network hub for capturing network traffic.

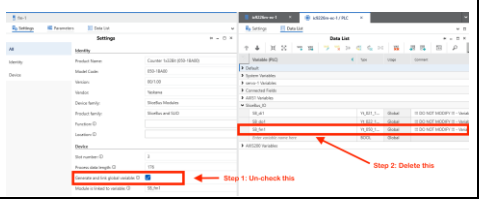
56341	ECAT Online : missmatch analyzer is showing SLIO Ecat module in red	The Mismatch Analyzer tab in the EtherCAT Online Functions page shows modules in EtherCAT devices in red.	None. This does not affect the functionality of the modules.
56464	In a project created using iCE 2023.9, and opened in 2024.3 axes cannot be used in simulation mode	If a project was created in 2023.9 and opened in 2024.3, servo axes cannot be used in simulation mode	Users will have to use real axes for projects created in 2023.9 and upgraded to 2024.3
56946	EtherCAT Bus Scan: Unable to find modules of EtherCAT devices in certain conditions	EtherCAT Bus Scan: Unable to find modules on the CoE bus coupler in certain conditions. A first bus scan without an existing configuration on an iC9200 controller can result in modules not being discovered.	A configuration needs to be present in the ECAT master for a successful discovery of modules on a bus coupler. A write and download of the project with the bus coupler in the configuration will establish the required configuration. A secondary bus scan will result in the discovery of modules on the coupler. Safety modules will communicate over FSoE only if the bus coupler is set up in enhanced mode.
56985	Profinet device integrated via "Online-Devices" has no name for automatically integrated variables	Using the "Online-Device" option to scan Profinet coupelr with SLIO module and then use the button "Add to project" create a module with the "Generate link global variable" checkbox checked but no variable linked to it : 	Uncheck and recheck the box "Generate and link global variable". This will populate the -> Field "Module is linked to variable...".
57944	Motion Axes: ServoNet positive Velocity limits is compared to the wrong value	When using motion axes, if the values to be used for velocity, acceleration, and deceleration limits in the positive motion direction are lower than the position limit in the negative motion direction, the software will not allow the setting of said value (see reference image) 	Set the limits for velocity, acceleration, and deceleration before setting the position limits 
58211	IO variable generation: ComState structure elements display FALSE and are not linked to PDIs	ComState elements of autogenerated global variables for SLIO modules is not currently populated. It displays the value FALSE always	Do not use the elements of the ComState structure of autogenerated IO variables corresponding to SLIO modules.

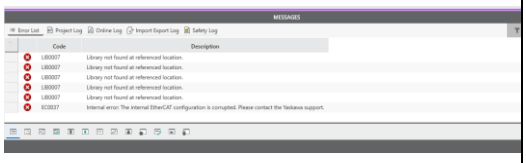
58334	Importing csv file resulting in cryptic error message : Error during generating native code, internal meta-compiler	Importing a large csv file can cause a native code generation error.	Not available.
58548	Cannot rebuild or download uncompressed project (possibly because of a network drive interaction / antivirus interaction ?)	Saving a safety project as an uncompressed project (*.pcwef) renders the project not buildable and not downloadable.	2 Suggestions: • Saving a safety project on a network drive is not supported. • Disable Auto Save in Extra--> Option/AutoSave
58651	MSync: Buffering a MCS move when tracking with active PCS move results in robot controller alarm	If conveyor tracking is used, and tracking PCS moves are executed then MCS move is buffered to abort tracking, it results in robot controller alarm. If the PCS moves are still active until TrackState 4, it results in alarm 4414 (excessive segment alarm)	2 Possible solutions: • Wait until the PCS moves finish before executing an MCS move that would break conveyor tracking • Execute MC_GroupStop, then wait 2 EtherCAT scans, then a MCS move can be triggered.
58851	Re-ordering EtherCAT devices by dragging and dropping in the plant tree results in a invalid EtherCAT configuration	IF HotConnect is disabled ("Create HC devices for slaves" is unchecked) and DeviceID is not being used, manually changing the order of devices in the EtherCAT node of the project's PLANT, will cause an incorrect position in the topology. This can affect the EtherCAT communication to devices.	If the user wishes to reorder devices in the EtherCAT node of the project's PLANT, delete all devices and re-add them. Also make sure that the 'position in topology' for each device is correct.
59056	Unable to get Sigma-X CoE data from the EtherCAT/Online Functions page	Unable to get Sigma-X CoE data from the EtherCAT/Online Functions page	Use Y_EC_COE_SdoRead function block to read EtherCAT objects. EC Lyzer or EC-Engineer could be used to get CoE data.
60264	Offset or EtherCAT slave process datum not updated	Some module devices have wrong Offset information display, for example Sigma7W: 	No workaround, this is a display issue and has no impact on the communication with the device. Do not trust the absolute value of the column "Offset" until iCube Engineer 2026.0.
60367	Debug Mode: In certain situations, the debug values of variables are not available in iCube Engineer's debug view.	In certain situations, the debug values of variables are not available in iCube Engineer's debug view. The variables cannot be added to the watch window.	Declare the variable whose value needs to be monitored in another location (POU), and add that to the watch window.

61204	Unable to delete EtherCAT device due to Hot Connect even when disabled with Beckhoff EK1100	Unable to delete Beckhoff EK1100 sub device and/or modules attached to the EK1100 sub device. The Hot Connect enabled warning is shown even though HotConnect is disabled.	Not available.
61260	Regression: OPC UA Client creates monitored item with wrong NamespaceIndex	The OPC UA client creates tag entries with the wrong namespace index . This causes OPC UA communication to fail.	In the variable mapping page, make sure to use the "*/iCubeControl.com* namespace as shown below. 
61487	MSync: MC_MoveLinearRelative while tracking does not behave properly if IOP is non zero and PCS moves are commanded	Using MC_MoveLinearRelative with coordinate system PCS with MotomanSync group while tracking a part with a non-zero IOP leads the robot to move to an un-expected position.	Define the IOP input of the MC_TrackConveyorBelt to zero.
61685	Engineering tool generates motion related config after motion axis is deleted	The FMK does not relinquish control of an EtherCAT Yaskawa servo device even after the associated motion axis is disconnected from the servo.	NA. Currently, a Yaskawa servo device will be under the FMKs control. It is not possible to control the Yaskawa servo directly over PDO maps using user code.
61984	Error: Port with name 'Arp.Io.Ecat/0.Reserved' already exists Schmersal SFB device	Schmersal Safety Field Box (SFB) is not currently supported by iC9226M-FSoE	Not available.
62023	iCube Engineer Incorrectly Reports Safety PLC Debug is Active	iCube Engineer reports Safety PLC Debug is active in cases where a Safety PLC project is not running. Examples include when the safety PLC is in Debug Stop state and also when a valid project has not been written to the Safety PLC.  From iCube Help (*Home -> Safety PLC Commissioning: From Compiling to Debugging -> Connecting vs. Monitoring Mode vs. Debug Mode)*  Note When connecting to the Safety PLC while no project is yet stored on it (e.g., first time connection), the debug mode is active by default and the icon appears pressed in the Safety Cockpit. The reason is that the Safety PLC expects to receive a project in this mode.	Check the Safety PLC status in the Safety PLC cockpit while connected to the Safety PLC to determine if the Safety PLC is in Debug Run or Debug Stop state, and also whether or not a project is present on the Safety PLC.
62024	iCE Pop Out Menus Cover Other Applications	In iCube Engineer, if a window is popped out (for example: Watch Window, Logic Analyzer Window, etc.) the popped window will cover other Windows applications even after the user tries to select the Windows application.	Not available.

62038	PLCopen Part 4: MC_GroupSetPosition stuck in Busy when group is enabled but powered off and the group moves or has vibration	MC_GroupSetPosition will get stuck in Busy state if the user tries to set the group's position while the axis is moving/vibrating. This can also happen if there is no commanded motion but there is jitter on any one of the axes.	Make sure that there is no motion on the groups axes while its position is being defined using MC_GroupSetPosition. Hint: Execute a Y_GroupPower before the MC_GroupSetPosition can help to resolve this issue.
62110	Unable to add more than one axes to iCube project (EtherCAT content could not be extracted / EtherCAT folder access denied) - possibly related to OneDrive	If Onedrive is being used to synchronize files on the PC, it interacts with files used by iCubeEngineer and restricts access to iCubeEngineer leading to issues adding devices to the EtherCAT node.  	1) close iCube if it was opened. 2) Remove the project folder's synchronization with Onedrive.  3) delete the folder : C:\Users\...\Documents\iCube_Engineer\<iCube engineer version>\ETHERCAT 4) open again iCube and then no more issue should appear, the insertion of a new EtherCAT devices should work.
62271	Motion Groups: MCS limits constructed incorrectly for Gantry groups with non-consecutive dimensionality (e.g. XYRz)	When using iCube Engineer to configure position/velocity/acceleration limits on the Limits page view, for a motion group as an nD gantry, and not using axes to represent all 6 dimensions (XYZRxRyRz), the limit values from the ACS (joint) frame may be incorrectly replicated to the MCS (machine/world) frame in the group configuration file.	Either: (a) Configure the gantry group with additional virtual axes to fill out all 6 axes, or (b) do not configure the limits via iCube Engineer. Instead set the ACS and MCS group limits programmatically using function block Y_GroupWriteVectorParameter with parameter numbers 2600-2623.
62334	Forced Output value of digital output variable in the project is unable to hold the forced value state.	Forced Output value of digital output variable in the project is unable to hold the forced value state.	Do not rely on the forced value of a variable in a project for critical logic decisions.

62416	Write and Start Project (with Sources) does not occur on a new project and removes the option to write and start again	When creating a new project either from a template or from scratch, if the IP address of the controller or the project is changed then using ***Write and Start Project (with Sources),*** a "Save As..." window will appears but the write and start will not take place and all options to write and start are greyed out after this attempt.	If a new project is created and IP address of the project or the controller is changed, **Save** the project before executing ***Write and Start Project (with Sources)*** to download it to the controller.
62417	Unable to add devices if a project compare is performed.	Unable to add devices after a project compare is performed.	Close the project and reopen.
62436	Mounting 054-1DA00 SliceBus Module to EtherCAT SLIO Coupler Throws IO Error	Unable to use 054-1DA00 module with a CoE bus coupler.	Use the 054-1DA00 module on slicebus.
62470	ESI File import: Unable to import AKD2G-SPE ESI file into iCube Engineer	If the ESI file of an EtherCAT subdevice contains safety modules with SRA support (for example AKD2G-SPE ESI file), ICube Engineer will fail to import the ESI file successfully. SRA support can be checked by searching for 'SRA_ParameterSupported' field. 	Not available.
62603	Incorrect message in snack bar "Unknown Axis Type....." when user tries to read, write or compare parameters	Incorrect message in snack bar "Unknown Axis Type....." when user tries to read, write or compare parameters.	Check PLC system variable, EC_TOPOLOGY_OK. This variable should be TRUE for successful parameter management in iCube Engineer.
62737	PDO: wrong data List if PDO name is modified	If the PDO name is edited in the PDO list for a device in iCubeEngineer, the name is not correctly refactored in the variables in the PDO data list.	Refrain from renaming the PDO name in the PDO list for EtherCAT devices in iCubeEngineer.
62807	iCubeEngineer crashes when moving cam points in the cam tool	iCube Engineer crashes when moving cam points the cam tool.	Do not edit cam points in the editor tool by dragging and moving points.
63179	Help about is a modal dialog, that gets hidden behind a logic analyzer trace which can not be moved or dismissed -> lockup	If you choose Help-About while a pop out window is displayed, the "About" window may be hidden.	Resize the screen to a higher resolution so that the "About" dialog is displayed and can be dismissed.

63215	Regression: PN282 error when setting Motor Type to linear with SGLFW2	If the user configures the motor connected to a servo as a linear motor, a compile error is generated prompting the user to set Pn282 for the servo in iCube Engineer's parameter. If the user has a serial converter on the motor (SigmaTrac: SGLFW), the user should set Pn282 to the value required for that particular converter. If the user does not have a serial converter on the motor (SigmaTrac2; SGLFW2), user should not have to set Pn282. A value of Pn282 set by the user is ignored if a serial converter is not used.	Set a value (any value will do) for Pn282 in the parameter page of iCube Engineer. The entry will suppress the compile error. This value is ignored by the servo when a serial converter is not used.
63343	CoE Servo Axis Initial Value Configuration Not Updating in certain situations.	If a non servo motion axis is deleted and a servo motion axis is added in its place in the plant, the servo axis will not have initial configuration set. This will lead to an error 60910 on PLCopenPart1 function blocks.	Check the initial value of the AXIS_REF structure to make sure it is correct. Check the Options page of the motion axis to make sure that it is mapped to the desired servo. Alternatively, delete the AXIS_REF variable for the VFD after deleting the VFD from the plant, so that the variable is not reused as is for the servopack.
63425	MSync: Interference Zone is still active after disabling Y_ActivateIZ when motion was aborted	Disabling Y_ActivateIZ doesn't remove the Interference Zone after a movement was aborted.	Execute MC_GroupReset AFTER disabling IZ (Interference Zone)
63583	E1001 Critical internal error, Error During Generation of Native Code	E1001 Critical internal error and Error During Generation of Native Code messages are generated when a large variable is passed through a MOVE block with EN/ENO connections.	Not available.
63588	Automatic variable generation: SLIO/SliceBus counter modules must not connect global variable SB_fm.Out fields when configured in combination with motion kernel axis	High speed pulse output (COIN) turns on at position 0 for the 1BA00 module even though the user configured comparison value is non zero.	Uncheck the option to automatically create and link the global variable on the module setting page. Delete the automatically created global variable from the PLC data list. 

63778	Ethernet/IP Scanner: connection error 0x315 when using config instance with zero length	When configuring an Ethernet/IP Scanner connection to a remote peer which requires a Configuration Instance as part of the Forward Open request, and the size of this configuration instance is zero, a malformed connection request is sent. The device responds with error 0x315.	Use another connection mode, if possible, without using a zero-length configuration instance. If no other connection mode is available, it is possible to modify the configuration file via SSH access to the controller. Please contact Yaskawa support and mention ticket #63778.
64609	Unable to open existing HMI project from iCube Engineer	User cannot open an existing HMI project in a new iCube Engineer project unless the project is within a certain file path with a certain project name.	Not available.
64741	iCube Engineer 2024.9 SP9 on fresh windows 11 gives error Microsoft.ACE.OLEDB.12.0' provider is not registered	Microsoft Access Database Engine (2010) is required for proper functioning of iCube Engineer. iCube Engineer does not install this database. Without this database, the user can expect an error mentioning that "Microsoft.ACE.OLEDB.12.0' provider is not registered on the machine".	Please install Microsoft Access Database Engine (2010) on the machine running iCube Engineer.
64822	Unable to transfer structures over between HMI designer project and iC9226 OPC UA tags if the tags are synchronized automatically	If the HMI Designer project is launched from iCubeEngineer and OPC data is automatically synchronized from iCube Engineer, structure data elements will not work when the tags are applied in the HMI projects.	Use HMI Designer as a separate tool and do not launch HMI Designer from iCube Engineer.
65086	EOE IP address error occurs when the controller IP address is changed, even though EOE is not active	If the IP address of the controller is changed, in the controller setting page, in a project where EtherCAT sub devices are present, EoE IP address errors can occur.	Double click on the IP address error. In the EOE page, set EOE to be active, set port mode/IP port to manual, make sure all entries in the IP settings are zeros. Disable EOE (make it inactive).
65124	iCubeEngineer - Crash after Moving Beckhoff EL6021 between EL6002/EL6001 in the EC Node in the PLANT	iCube Engineer becomes unresponsive if the a module is moved from one EBUS sub device to another under the EtherCAT node in the PLANT.	Do not move EBUS modules between sub devices in the EtherCAT node. If a move has to be performed, remove the sub device and re-add it.
65133	The path of directory not update in the iCube when installed by choosing a different destination for user data	If the default installation path has been changed during the installation process, the user will experienced the following error when creating a project from template: 	1. Go to Extra --> Option --> Tool --> Directories a. Do **NOT** modify any path individually 2. Press "Reset to Defaults" 3. Press OK 4. Reboot ICE 5. Create a new project from template No more issue should appear.

3.3 iC9226 Firmware Known Issues

ID	Title	Description	Workaround
16544	DHCP causes Profinet to exit the PLCnext application	When DHCP is enabled, the PROFINET functionality is not supported and is automatically disabled in the configuration.	Not available.
18996	Spike in commanded velocity and Torque at the end of MC_StepRefPulse implementation - missing decel input	There can be a jerk in motor position when the c pulse is detected using the MC_StepRefPulse using a high velocity.	Use a low value for velocity for detecting the c pulse when the MC_StepRefPulse function block is used.
31468	Data memory limits on the iC922x	The maximum data memory is 32MB for optimal operation of the iCube Engineer project on the iC9200 controller. • If the data memory size of the project is between 32 MB and 64 MB, the user may encounter failure executing 'Write and Start Project Changes' to the controller. There will be no compile error. • If the data memory size of the project is between 64 MB and 128 MB, the user may encounter failure executing 'Write and Start Project' to the controller. There will be no compile error. • If the data memory size of the project is greater than 128 MB, the user will get a compile error and will not be able to 'write and start' the project.	Keep data memory usage to less than 32MB.
33996	FSoE CPU is not working without FSoE module	Safety PLC will not run without a configured FSoE module. The SF ER will be lit all the time.	Add a FSoE slave in the project configuration and map at least (1) safety process data item to a safety PLC variable. If the safety module is not actually present, a topology error will be reported, which can be ignored. The communication to the existing modules is running.

34460	Parameters 1305 and 1307 for scan compensation incorrect values or not settable for Ethercat external encoders	Parameter 1305 (feedback compensation) is fixed to a value of one network cycle. It cannot be modified.	Not available.
34872	SliceBus network shutdown when a breakpoint is reached	If a breakpoint is activated for the first time (logic halts at the breakpoint), the PLC enters debugging state. In this state the various fieldbuses (EtherCAT, Slicebus) stop running and all outputs are set to state FALSE. The PLC leaves the debugging state only when all breakpoints in the project are removed.	It is not possible to keep the fieldbusses running when the PLC enters the debugging state. The PLC State can be monitored using the notifications tray in iCube Engineer. Do not use breakpoints if the application requires fieldbus activity while in the debugging state.
34961	Unexpected behavior of 'Debugging' flag when a breakpoint exists in a project and the PLC is stopped and started	If a breakpoint is set in a project , and the project is stopped and warm started, the PLC should start with 'debugging' mode enabled. However, there is a short time period (2 ms) on startup where the PLC runs without the 'debugging' flag before the 'debugging' flag comes on. During this time period, all physical output states would change based on programmed logic before becoming FALSE because of the debugging flag.	Not available.
39022	Logic Analyzer inconsistent in picking the trigger for short duration pulses on local and remote modules	Logic analyzer cannot trigger a plot based on a rising or falling signal if the trigger variable (not a port variable) is tied to a process data item (like a digital input or output) and the signal has a small pulse width (1 or 2 ms).	Map the process data item to a port variable and use the port variable to trigger the logic analyzer.
40832	Non safe exchange variable has unstable state when the safe module is passivated	When the FSoE device communication state is not in "ProcessData" (regular operation), then the non-safe PLC exchange variable value is not valid.	Verify that that FSoE device is in "ProcessData" state before using the exchange variable value. Contact Yaskawa support for more information on how to use FSOE_MSTR_ADDR_0000x_PASS_OUT to check for the status of the device.
40870	No error generated when bypassing the 32Mebibytes data Memory limit	User is able to add variables that consume data memory greater than 64 MB.	Make sure that the total memory used in a project is less than 32 MB.

41020	Limits for Safety PLC number of variables and process data mapping are not checked at compile time	There is no error message in iCube Engineer if the limits for Safety PLC variable assignments mapped to process data is exceeded until an attempt is made to download the project to the safety PLC.	Use the following limits for variables which are mapped to safety process data in the Safety PLC: - The total of all variables which are mapped to the safety process data must not exceed 19980 bytes. - Each safety variable which is mapped to process data occupies 16 bytes. - Each standard variable which is mapped to process data occupies 8 bytes.
44020	SPLC1000 board with under/over temperature shutdown can not be diagnosed usefully	If an overtemperature/under temperature error occurs on the safety PLC, it goes into a Hard Fail-safe state: the safety CPU will set the red ERR LED and and stop all communication; all connected FSoE devices will enter fail-safe state after FSoE communication watchdog time. Once the heartbeat between the standard PLC and the safety PLC detects that communication between the safety PLC and standard PLC has stopped, the data from the safety PLC will no longer be valid.	Include heartbeat logic in the code on the standard PLC to detect that the safety PLC is unresponsive and to determine if the data from the safety PLC is valid.
44534	ErrorID 4915 when using Y_WriteParameters on SGDXS	Y_WriteParameters for CoE servopacks may intermittently return error 4915 (parameter write failed) rather than 4916 (servopack reboot required).	Verify the parameters are set correctly with Y_VerifyParameters to confirm the write succeeded.
47907	iC9226M-FSoE: PLC state changes to STOP with Watchdog under heavy network load with UDP broadcast frames	Under high network load with UDP broadcast frames, it could happen that the standard PLC state changed to STOP because the watchdog time of the SafetyProxyTask was exceeded.	None, except avoiding heavy UDP broadcast load
49270	In a continuous power cycle test in rare cases the IO DIAG LED is lit	It can happen sporadically that the IO DIAG LED is lit at start up without the log mentioning the issue. This means no issue is present.	If the IO DIAG is lit without log information, perform a power cycle or write and start a project.

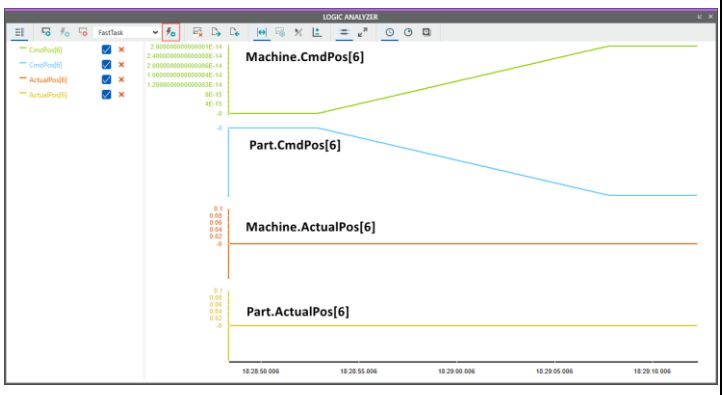
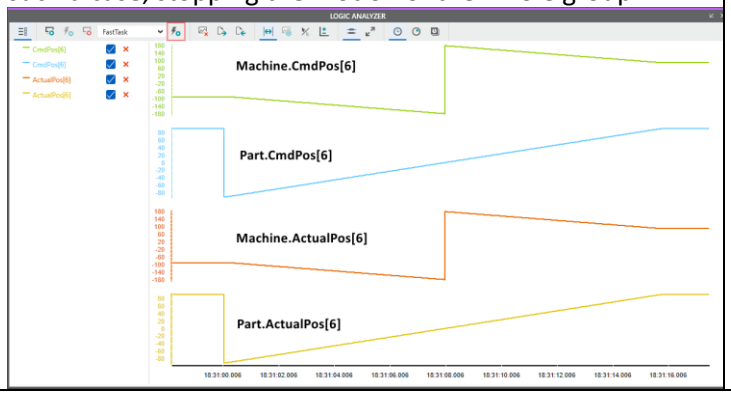
51216	LLDP duplication between PROFINET Device/Controller and Ethernet/IP Adapter	Ethernet/IP and Profinet Device have different specifications and implementations for LLDP frame emission. Thus, multiple frames are emitted, with different content, if both components are enabled. This can cause some automatic device configuration issues with the Profinet network.	It is recommended to disable the Ethernet/IP component when using the Profinet Device/Controller component, and vice versa. This can be configured using the WBM System Services view. If both Ethernet/IP and Profinet are required in the application, please contact Yaskawa support for assistance to defeat the Ethernet/IP LLDP feature.
54091	EtherCAT DC sync is not checked for initially unpowered hot-connect axis	At project start, the motion kernerl verifies that all Sigma servopacks are configured with DC sync enabled. If DC sync is disabled, a warning alarm is posted for the axis. If a hot-connect configured axis is initially offline at project start, the DC sync status of the servopack cannot be verified.	Keep DC synchronization enabled for all Sigma servopacks.
54297	Diagnostics EtherCAT Page in the Web Management shows detected slaves when no slaves are configured in project, but there are slaves on the EtherCAT network	The EtherCAT diagnostics page in the WBM can show the detected slaves on the EtherCAT network, when no slaves are defined in the project configuration.	Do not use the EtherCAT diagnostics page to verify the number of sub devices (slaves) configured in a project. Use the project configuration in the PLANT tree of iCube Engineer.
56171	Unable to download to iC9226 if Profinet Controller is enabled and Profinet license doesn't exist.	Activating the Profinet Controller services without the Profinet license will unload the project in the controller and forbid any new project download.	Do no activate the Profinet Controller functionality if the controller doesn't have prior a Profinet license.
56683	Ethernet/IP: IO connection RPI/API not checked against actual maximum update rate	The Ethernet/IP Scanner and Adapter components share a single cyclic update rate, which is configured in iCube Engineer on the Assemblies tab, Schedule Interval field. Neither outgoing scanner IO connections nor incoming adapter IO connections correctly advertise the RPI / API on the wire, if lower than this configured limit. This can lead to unexpected timeouts or connection errors.	Set the Schedule Interval to the minimum expected production interval for all scanner and adapter connections expected in the system.

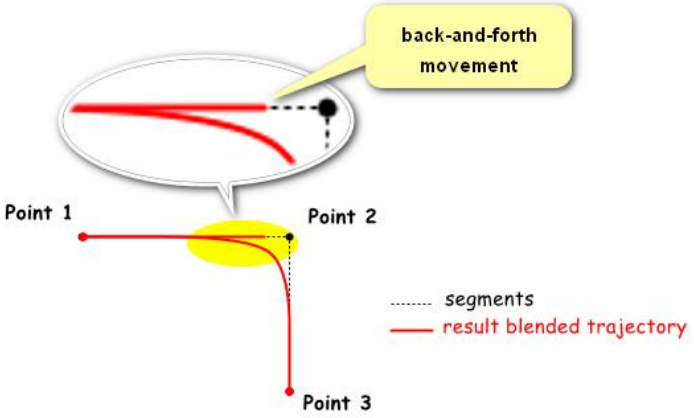
58060	Sigma-X A.E00/A.EA0 after power cycle with the iC9226 in run state	If there is only one servo is on the EtherCAT network and it is rebooted, the iC9200 may not stay in OP state. It goes to safe OP state along with the servo.	Warm start the iC9200.
62379	Troubleshooting EtherCAT: "ERROR: Line Crossed" - Unable to Download project after Reset type 1	When trying to download an empty project to the controller, where the hardware wiring is wrong, below shown error is thrown. 	Check the EtherCAT cable wiring. Every cable needs to start from an output port and be connected to the IN port of the next device.
62411	Unable to download changes if an output is in forced state	User is unable to download changes if a hardware output is in forced state.	Not available.
63146	Local-SLIO synchronous mode consumes 75% of CPU0	In Slicebus settings, Synchronization Mode should be enabled for counter modules that support Slicebus External Axes. When synchronous mode is enabled for SliceBus with any local-SLIO module (such as a pulse counter), CPU0 load (core 1 load) is consistently 75%. If the cpu load is increased, then Profinet and Ethernet/IP performance will be reduced.	Enable synchronization mode on slicebus only if a module with counter functionality (example: 050-1BA10) is being configured. If counter functionality is not being used on slicebus, leave the Synchronization mode at default. As an alternate solution, the counter module can be configured on an EtherCAT bus coupler.
63182	FSOE controller fails to load config with 28+ aux axes in a group	If a gantry group is created with many (27+) auxiliary axes (with or without configured X Y Z Rx Ry Rz axes), downloading this project to the controller will cause a software crash. A type-1 reset is required to recover.	There is not a well-defined use case for an axes group with 27 or more auxiliary axes. Do not configure such groups in the engineering tool.

63722	Ethernet/IP: iCube adapter cannot detect O2T 'retain state when PLC stops' = FALSE behavior from an iCube scanner	The Ethernet/IP adapter component requires all Exclusive Owner O2T I/O connections to use the Run/Idle flag. When the remote scanner connection is IDLE, then the data values are discarded as required by specification. Thus if the data value are also transitioned to 0 on the wire while IDLE, this is not reflected in the data within the userprogram. Note there is not a method to detect the Run/Idle state of a connected Exclusive Owner O2T connection. This behavior is most easily observed in combination with another iCube controller as a scanner with "retain state when PLC stops" set to FALSE/unchecked.	Maintain a heart beat variable to monitor communication with the scanner. When the connection drops, make sure that the input data is not used in the application on the adapter.
63832	PxC runtime 2025.0 - backward incompatibility with PLCnextBase library 1.5.1 in user projects	For iCube firmware versions after 2025.6: If the user project contains PLCnextBase 1.5.1 library or earlier, or another library which references it - such as Y_Yaskawa_Toolbox - AND certain function blocks are instantiated in the user project programs - such as Y_YA_SetRTC, then the project will fail to load at startup. This may not manifest until the following controller reboot.	Rebuild the project with newer libraries which reference PLCnextBase library 1.7 or later.
63990	Axis permanently remains stuck in the stopping state if MC_Stop is executed while MC_GearInPos is still waiting to be engaged.	If MC_Stop is executed while MC_GeraInPos is busy, MC_Stop stays stuck busy. The axis stays stuck in Stopping state.	Do not execute MC_Stop while MC_GearInPos is busy.
63995	SliceBus counter module does not initialize position to 0 on warm start	2024.9 firmware does not initialize the SliceBus counter module incremental encoder axis position to 0 on warm start. Note: this applies to incremental mode encoders (only) which are managed by the motion kernel.	Call MC_SetPosition with an appropriate position value (such as 0) from a user program at an appropriate time during system initialization.
64407	Executing MC_GroupStop while Group Synchronized motion state is active causes MC_GroupStop to error out	If MC_TrackConveyorBelt function block is used to synchronize a group with a conveyor and the group is 'in sync' with the conveyor, without any active or buffered MCS or PCS moves, and an MC_Stop is executed, MC_Stop generates and error and does not show done. Motion is aborted but the state is not changed correctly	Turn MC_Stop.Execute to FALSE and continue with the application.

3.4 iC9226 Motion Application Notes

ID	Title	Description	Workaround
20033	Drift in position of slave for one way, relative cams that are executed while the master and slave are in motion	If a one way, slave relative mode Y_CamIn is executed repeatedly while the master is in motion, the slave experiences a loss of position of one scan at the start of the new Y_CamIn. This happens when repeated cam synchronization- desynchronization cycles are performed.	Use slave absolute mode when repeated cam synchronization-desynchronization cycles have to be performed. Contact Yaskawa for further details and discussions based on application requirements.
40843	MC_GearInPos: PositionTracker can cause slave motion in opposite direction	In some situations, MC_GearInPos can cause temporary reverse motion during synchronization phase. This may be unexpected for some applications.	Verify the starting conditions when the block will be executed to check if there can be backward motion on the slave axis during the synchronization attempt. Use with caution if backward motion on the slave axis can cause damage.
46472	Large cam out disengage window causes an instantaneous jump in position when the slave is disengaged	A larger Y_CamOut disengage window can lead to an instantaneous jump in position on camming out.	The window should be calculated such that it is larger than the position travelled by the master in one motion network scan.
50028	MC_MoveCircularAbsolute generates unexpected trajectories - start/end position matching tolerance for AuxPoint2 is too tight	MC_MoveCircular with MC_CircleMode#Border uses very tight tolerances to determine whether AuxPoint2 should be considered. When working in 3-dimensional XYZ space, this can lead to unintended circular move geometry, including being in the wrong plane (i.e. XZ vs XY) when the circle start-point and end-point are intended to be colocated, but do not match exactly.	Determine the start-point of the circle programmatically, and assign it exactly to the end-point in the user program. Manually entering a fixed LREAL value for the end-point is not recommended for this use-case.

50808	Problems with PCS handling for group's rotational axis defined as a linear load type	If a group's rotational axis is defined as "Linear (finite)" in its configuration, the group will not handle said axis correctly when commanding trajectories using a PCS coordinate system. In such a case, multiturn rotations are not handled. For example, a rotation of 720° was commanded in the following image.  Also, PCS movements where the rotational axis' position crosses 0 might cause a jump in the MCS position, as seen in the following image. The servo will throw an alarm in such a case, stopping the motion of the whole group.  	Some possible workarounds are: • Do not use a PCS coordinate system • Select target positions that avoid conflicting trajectories • Add middle positions commanded in MCS to avoid conflicting trajectories

58494	Unexpected back-and-forth movement when blending with MC_MoveLinear Absolute, when MC_BufferMode #Aborting is used in actually buffered scenarios	PLCopen Part 4 multi-axis motion (MC_MoveLinearRelative, MC_MoveLinearAbsolute) blending between two consecutive moves can follow an unexpected trajectory for the first part of the move, including a sudden change in velocity. This occurs only when the first move in a multi-move sequence is specified with MC_BufferMode#Aborting input (which is the default), followed by MC_BufferMode#BlendingXXXX. The motion produces a back-and-forth movement between the 2 first segments during the blending transition as follows:  Notes: • In this scenario, MC_BufferMode#Aborting is equivalent to MC_BufferMode#Buffered, because there is no in-progress move to abort. • In general, if a MC_MoveLinearXXX with MC_BufferMode#Aborting *does* cause an in-progress move to abort, a following move with MC_BufferMode#BlendingXXX is not supported (an error will result). A full stop is required before the next move is possible.	Use MC_BufferMode#Aborting only when actually needed, to abort an in-progress motion. Prefer to use MC_BufferMode#Buffered otherwise.

58528	PLCopenPart4 group moves: Aborting moves with TransitionMode#TMNone does not produce stop / sharp-corner, unexpected trajectories result	PLCopen Part 4 multi-axis moves with MC_BufferMode#Aborting can be unintuitive in the resulting trajectory geometry, and do not follow PLCopen Part4 specification in some situations.
		• The PLCopen specification calls out behavior for MC_TransitionMode#TMNone for Aborting buffer mode. A full stop is indicated.
		  ○ The transition mode argument is currently ignored in iCube implementation
		  ○ The implementation always attempts instead to produce a smooth change-of-direction with non-zero velocity.
		  ▪ This is similar to the PLCopen specification for MC_TransitionMode#TMDefinedVelocity
		• A multi-axis aborting move cannot be then blended into another following move: a full stop or another aborting move is required.
		  ○ Note: Any blended MC_BufferMode#BlendingXXX input on a following function block is silently converted to MC_BufferMode#Buffered which will cause a full stop in between.
		• The geometry of a multi-axis aborting move is unspecified. It may, depending on the initial-conditions, endpoint, and vel/accel/decel constraints:
		  ○ overshoot the final target and return
		  ○ execute a spiral type move to the target
		  ○ combine a curved path with a straight-line path, possibly including a full stop at an arbitrary intermediate point
		  ○ decelerate to a full stop to an arbitrary point in the original line of action - possibly including the original endpoint - then continue to the next point (equivalent to #TMNone)
		• The exact trajectory behavior is dependent on the initial conditions: thus the exact timing of the start of the move can cause changed behavior.
		  ○ Consider variable timing of execute rising edge in the user program
			In most cases, reducing the velocity constraints or especially increasing the accel/decel constraints can produce a more intuitive trajectory which more closely follows an idealized sharp-corner transition.
			
			Consider the inputs to the function block as well as any velocity/acceleration limits configured on the axes group (ACS, MCS) and individual axes, all of which are in effect.
			
			Consider also using MC_Stop + MC_MoveLinearAbsolute when a full stop and sharp angle transition geometry is required.
			
			For future compatibility, scenarios which want to preserve the current behavior should input MC_TransitionMode#TMConstantVelocity. It's possible that in the future, TMNone will be honored according to the specification.

		○ Consider variable delay between execute rising edge and initiation of the move in the motion scan, which may be delayed by high CPU load • The resulting trajectory is not pre-computed a priori, but instead computed iteratively each cycle given the current state, the end state, and the constraints. Thus the only way to predict the exact behavior is to simulate it with exactly correct input conditions. ○ There are a very large amount of input conditions which play into this trajectory algorithm. While the results are deterministic, analysis of upper and lower bounds of the envelope of the motion is highly complex. ○ "High" acceleration/deceleration values (relative to velocity and distance values) give the most intuitive behavior of the trajectory, with the least deviation from an idealized sharp-corner turn.	
61095	Y_WriteDriveParameter truncates input values which are out of range for the datatype	Y_WriteDriveParamer does not check that the input DINT value is within the range for a 16-bit signed or unsigned value, if the actual datatype of the parameter is a 16-bit size. The data is instead masked to include only the lower 16 bits. This can cause unexpected parameter write values without function block errors, if the input data is outside the datatype range for 16-bit parameters.	Check that the input value is inside the range [-32768, 32767] or [0, 65535] for signed or unsigned 16-bit parameters. Verify written parameters with Y_ReadDriveParameter.