

Welcome to ABB Automation Builder 2.0.4

This README file contains important information about the Automation Builder software.
Please read this file carefully and completely. It contains the latest information and relevant documentation.

General

System Requirements:

- 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor
 - 3 GB RAM
 - 1-18 GB available hard disk space depending on the selected feature set (in addition to Operating System (OS) and other applications)
 - SVGA graphics adaptor 256 colors, resolution of 1024x768 pixels
 - Supported operating systems:
 - Windows 7 (32/64 Bit) Professional / Enterprise / Ultimate (SP1 required)
 - Windows 10 (32/64 Bit) Professional / Enterprise
 - Windows 8.1 (32/64 Bit) (requires .Net Framework version 4.6.2 installed prior to Automation Builder installation)
- Note: Windows XP and Windows VISTA are no longer supported.

Attention:

- **Standard and Premium license of Automation Builder 1.x will not be valid for Automation Builder 2.x For Automation Builder 2.0 standard and premium features appropriate licenses need to be purchased and activated.** Please check the upgrade licenses possibilities with your ABB sales representative. For details please refer to Automation Builder lifecycle documentation in ABB Library or contact your sales representative.
- The installation of the ABB Automation Builder software requires administrator rights.
- Prior to installation, the Automation Builder, Control Builder Plus, CODESYS software and the CODESYS Gateway Server must be shut down.
- Automation Builder 2.0 installation completely replaces installed versions of Automation Builder prior to 2.0.0 / Control Builder Plus. Side-by-side installations of Automation Builder and Control Builder Plus are not required. Projects created with previous versions can be upgraded to the latest version easily. If upgrading is not desired, projects can be opened in one of the integrated version profiles.
- Automation Builder 2.0 creates a new device repository. Devices which had been installed additionally in previous versions of Automation Builder/Control Builder Plus have to be installed in Automation Builder 2.0 via menu "Tools" → "Device Repository".
- The English documentation contains the latest changes for Automation Builder 2.0. Latest documentation packages can be found on the ABB website: www.abb.com/plc → Download Documentation, then select your language.
- Automation Builder 2.0 includes CODESYS version 3.5 and 2.3. Side-by-side installations of other CODESYS version 2.3 based engineering tools like AC1131 may cause issues or disturb the use of one or both tools. If side-by-side installation cannot be avoided, please install all other tools BEFORE installing Automation Builder.
- In case the Automation Builder installation fails please re-execute the setup to ensure that no temporary file access issues (e.g. through virus scan software) was blocking the installation.
- If you have projects made with Automation Builder older than 2.0.x that use safety devices other than CI5xx please make a projectARCHIVE (File -> Project Archive -> Save/Send Archive...) BEFORE installation of Automation Builder 2.0.x.
- In case of issues during online activation of licenses please try to execute offline activation as local IT restrictions might interfere with online license activation.

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Changes in Automation Builder 2.0.4

The release includes the following device groups:

Automation Builder

<i>Functional changes / New features</i>	<i>Version</i>
Test Manager has been added to the professional tool chain of Automation Builder platform: Test Manager allows the programming and execution of automated tests within the Automation Builder. As the central component for the test automation and management and it serves most primarily for the test of applications and libraries and supports in general the test of application, IEC libraries and communication objects.	4.1.0.3
UML has been added to the professional tool chain of Automation Builder platform: The UML (Unified Modeling Language) is a graphical language for specification, design and documentation of object oriented software. UML provides a generally intelligible discussion basis between programming and other company divisions within system development. UML consists of 14 different diagram types in two main categories: structure diagrams and behavior diagrams. Structure diagrams schematically illustrate the architecture of software and are basically meant for modeling and analysis (e.g. project design, specification of system requirements or documentation). Behavior diagrams are executable models with distinct syntax and semantics, which directly generate application code („model driven architecture“). UML extends the Automation Builder development with two new diagrams of the Unified Modeling Language: the class diagram and the state diagram.	4.0.2.2
Static Analysis has been added to the professional tool chain of Automation Builder platform: With Static Analysis it is possible to check the source code based on pre-defined rules and naming conventions in addition to the compiler code check. Additional information on potential development problems is revealed and errors are detected early in the development process. More than 100 pre-defined rules are implemented, where some of them are configurable and which can be combine to individual sets of rules.	4.1.1.0
Automation Builder license is now no longer limiting the number of parallel launched virtual drives instances	2.0.4

<i>Bug corrections</i>	<i>ID</i>
Improved Automation Builder installer robustness	AB-12497
Adding modules to CM572-DP or CM579-PNIO devices when project is in "Virtual Mode" might lead to an error or when tried twice even to an Automation Builder crash.	AB-12273
GSDML file installation improved for devices with a high number of modules	AB-12276
Inconsistency issues of Gateway settings for Programmable Drive Application and AC500 V3 features are now resolved. No workarounds are anymore required.	AB-9070
After project upgrade a login to PM-CPU was not working	AB-12448
False installation status of Codesys OPC server V2.3 installation is fixed	AB-11181

<i>Known problems</i>	<i>Version</i>
Projects created in Control Builder Plus software versions cannot be upgraded automatically to Automation Builder version 2.0.3. Workaround: <ul style="list-style-type: none"> open project with profile "Automation Builder 1.2", perform upgrade, save project open project with latest profile "Automation Builder 2.0", perform upgrade, use project 	2.0.3
ABB I/O mapping list view for disconnected modules on PROFINET IO devices with Shared Device functionality like AC500 CM589-PNIO-4 (-XC) or 3 rd party PROFINET IO devices (drives, I/O modules, encoders, etc.) is temporarily not supported. As a result, no I/O mapping information is shown for disconnected modules on CM589-PNIO-4 (-XC) or 3 rd party PROFINET IO devices with Shared Device functionality in Automation Builder. Workaround: <ul style="list-style-type: none"> use standard I/O Mapping for disconnected modules on CM589-PNIO-4 (-XC) or 3rd party PROFINET IO devices with Shared Device functionality 	2.0.3
Launch AB in user selected profile The profile in which the Automation Builder shall be launched can be defined in the Automation Builder menu Tools -> Options -> Startup settings. To enable the changes remove from the Automation Builder desktop icon the profile definition as follows: desktop icon -> properties -> shortcut -> target -> "C:\Program Files (x86)\ABB\AutomationBuilder\Common\AutomationBuilder.exe" --Profile="Automation Builder 2.0"	2.0.X
Automation Builder installation: In case a PC reboot is required/executed during Automation Builder installation the setup might have to be restarted manually after PC restart. Workaround: Please start the setup after restart and select the desired options to install. The setup will then continue the installation where it has been interrupted for reboot	2.0.X

PLC - AC500 V2 Processor Modules (PM5xy)

Bug corrections	ID
AB2.0.2 Profile 1.2 does not contain the KT9x-Adapter CPUs	AB-12049
Known problems	ID
Calling a function using structure elements directly within an IF ... THEN statement might lead to wrong condition value and subsequently wrong code execution! Workaround: call the function outside of the IF ... THEN statement and store the result in a local bool variable which can then be used in the IF ... THEN statement	AB-12333
Projects containing device with modular (e.g. FSO-21 on ACS880) can't be upgraded to latest AB 2.0.X version Workaround: The corresponding modules have to be deleted in original project, the project upgraded and the required modules added again In case of issues please contact the ABB technical support.	AB-11536
PNIO Controller scan communication settings configuration might lead to an unhandled exception in Automation Builder Workaround: none	AB-12281
Please create backup during project upgrade and check Codesys safety project after upgrade to ensure that upgrade was successful before saving the AB project.	AB-11881

SCADA - Zenon

Bug corrections	ID
Zenon Converter failed to be install in Windows 32 bit machines	AB-12217
Improved message handling during zenon project update	AB-11367

Drive Application Programming

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010) loaded to drive memory unit. Please contact ABB representative.

Note 2: In order to get ABB Standard and System library visible, please disable *Enable simplified library handling* and *Hide system libraries* options in Library management Tools/Options/Feature.

Note 3: Drive composer pro version 1.9 or newer is recommended. See appendix 1 how to set Drive composer pro working parallel with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package	3.6.717.807
Automation Builder	2.0.4
Compiler versions	3.5.7.0, (3.4.4.30)
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.62 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.6.4 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.6.4 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.6.4 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.6.4 (ZCU-14)
Target device ACS880_ATBF_BCU12_M_V3_5	3.5.6.4 (BCU-12/02/22)
Target device ACS880_ATBF_ZCU12_14_M_V3_5	3.5.6.4 (ZCU-12 /14)
Target device ACS880_AMMF_BCU12_M_V3_5	3.5.6.4 (BCU-12/02/22)
Target device ACS880_AMMF_ZCU14_M_V3_5	3.5.6.4 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and version 3.4.4.30 of the compiler must be used. Firmware 2.40, 2.51 or 2.62 must be used in case of F-series I/O IEC-programming.

Bug corrections	ID
Creation of Boot project is not possible if both Drive programming and AC500 V3 packages are installed in same PC	AB-11844

Known problems	ID
Formatted parameters are not working properly with Drive Composer Pro.	AB-3436
Codesys Internal error during code generating if MIN and MAX operators are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx); REMEDY: result := MAX(REAL#0.1, xxx);	AB-8630
While renaming "Application" under ACS880 project unexpected "Refactoring windows" will appear. Refactoring propose can be disabled in Tool/Options/Refactoring alternative "on renaming".	AB-9962
After Creating boot application double clicking PLC_PRG doesn't open it online. REMEDY: Click first (for example) on menu bar and double click PLC_PRG again.	AB-10203
In case selecting Function Type to "Signal" (readonly) and existing variable is Global (GVL) then parameter creation fails. Parameters are not fully available or no parameters are created at all.	AB-11629
Opening a project that was created in AB 2.0/AB 2.0.2 in AB 2.0.3 failed to update the project. User has to explicitly update the project from Project menu -> Update project option	AB-12120
F-series I/O DIO delays and AI filter times are not correct if drive FW 2.60 or 2.61 are in use. REMEDY: This is corrected into drive FW 2.62. Please Use FW 2.62	AB-12199
Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed. However, Base Value scaling is done properly.	TFS-36761
Par_Def_CHG function block is not changing the default value of all parameters in a family. Only the first parameter's default value was changed	TFS-36769
Comparison feature of Application parameters and events object in project/SVN compare is not working as expected.	AB-12111, AB-12114, AB-12143, AB-12145, AB-12146, AB-12163
In NewDefault column of DriveInterface it allows user to select a bit of parameter to a value pointer type parameter. This lead to Application Loading Fault 64A3 on the drive after create boot application REMEDY: Only select a parameter in NewDefault column for the value pointer type parameters	AB-12172

Drive Manager

Bug corrections	ID
Now first option slot of ACS880 drive under Profinet controller reflects both Profisafe ABB_PS1, Profisafe ABB_PS2 slots Safety modules can only be configured under ACS880 drive.	AB-12392

Known problems	Version
No synch between Process data tab and Drive Manager's FBA data in & data out parameter group with 32 bit parameters. Workaround: While configuring offline data in FBA data in & data out in drive manager if 32 bit parameter is selected then leave next parameter as empty.	2.0.4
Dynamic parameter values are not loading immediately in online mode after changing the module types.	2.0.4
Workaround: Collapse and expand the group then parameter values will be updated.	

Changes in Automation Builder 2.0.3

The release includes the following device groups:

Automation Builder

<i>Functional changes / New features</i>	<i>Version</i>
Improvement in representation of exported plugins information via "About" dialog and crash report	2.0.3
<i>Bug corrections</i>	
AB is crashing while Uploading parameters from ACS355 Device configuration editor in Open Device Integration	AB-11587
Upgrade V2 to V3 not working as expected – Losing IO modules and Extension Bus configuration	AB-11553
IEC address in IO Mapping List editor not updated	AB-11450
While Simulation V2 & V3 virtual device fails to stop and terminates	AB-11362
Automation Builder crashes during license activation	AB-11303
Launching virtual drives fails because of WIBU protection	AB-11034
AB Crash after "Compare objects" when the object types are different	AB-10657
Installation of AB2.0.0 error with CodeMeter	AB-11158
TK503 drivers installation failed	AB-11114
OpenDeviceIntegration: blank causes failure when parsing a IP address	AB-11559
Installation of IP Configuration Tool from additional tools might cause a corrupt CodeMeter installation	AB-11887
<i>Known problems</i>	
Projects created in Control Builder Plus software versions cannot be upgraded automatically to Automation Builder version 2.0.3. Workaround: <ul style="list-style-type: none"> open project with profile "Automation Builder 1.2", perform upgrade, save project open project with latest profile "Automation Builder 2.0", perform upgrade, use project 	2.0.3
ABB I/O mapping list view for disconnected modules on PROFINET IO devices with Shared Device functionality like AC500 CM589-PNIO-4 (-XC) or 3 rd party PROFINET IO devices (drives, I/O modules, encoders, etc.) is temporarily not supported. As a result, no I/O mapping information is shown for disconnected modules on CM589-PNIO-4 (-XC) or 3 rd party PROFINET IO devices with Shared Device functionality in Automation Builder. Workaround: <ul style="list-style-type: none"> use standard I/O Mapping for disconnected modules on CM589-PNIO-4 (-XC) or 3rd party PROFINET IO devices with Shared Device functionality 	2.0.3
Codesys OPC server V2.3 might report installation error but gets in general correctly installed. In case of an installation error please try anyhow if the Codesys OPC server can be used.	2.0.3

PLC - AC500 V2 Processor Modules (PM5xy)

<i>Bug corrections</i>	<i>ID</i>
AB2.0.2 Profile 1.2 does not contain the KT9x-Adapter CPUs	AB-12049
Parameter list and CCF not ok after device update to new hardware type with different child connector	AB-7465
Error Message at Create Boot Project	AB-11332
Can open the add object dialog on the extension bus of a PM5650. In it I can the options you see for a coupler. Attempting to add an item fails. These items should not be visible for the extension bus.	AB-10510
create boot project failed	AB-11844
AB2.0.2 is not detecting the FW of CM574-RS coupler and doesnt allow to go online	AB-11500
Updating the project with EtherCAT from AB1.2.2 to AB2.0.2 fails	AB-11575
EtherCAT Interop: Create configuration data takes a lot of time	AB-11496
AB1.1.0 project file updates to AB2.0.2, the cpu cannot run with an unknown error	AB-11482
CANopen Slave Node diagnostic page is gone in AB2.0.2	AB-11481
For disconnected communication modules in CM589-PNIO-4 with shared device, the I/O range is still occupied also on master systems which do not use these disconnected communication modules. This leads to the too high I/O range on the master is a show-stopper for ABB BU Cranes and other big systems with a big number of I/Os	AB-11392
Target change to PM595 fails after updating the project with AB 2.0.2	AB-11391
Login to V23 PLC: Detection of download state is broken	AB-11759
Automation Builder crashes when "Device Command Trigger" is used	AB-10735
AB_2_0_0_AND_CPUFW_2_5_3,download manager works improperly.	AB-10542
OBE diagnostic page tries to execute PLC browser command even when not online	AB-10211
EtherCat XML is now correctly generated also for big EtherCat configurations (more than 1 EtherCat frame required) Fixed	AB-6567
Value 0 for parameter "FTP Sessions" is not allowed.	AB-9650

Known problems	ID
Calling a function using structure elements directly within an IF ... THEN statement might lead to wrong condition value and subsequently wrong code execution! Workaround: call the function outside of the IF ... THEN statement and store the result in a local bool variable which can then be used in the IF ... THEN statement	AB-12333
EtherCAT Configuration is wrong for Balluf IO Link Module: For Balluf IO Link EtherCAT slaves the PDO offsets for inserted modules (slots) are calculated wrong. This leads to configuration error of the device. Workaround: not available	AB-8755
Configuration issue of Profinet IO devices under certain conditions: Configurations for PNIO Shared Device usage might lead to not running Profinet connections when project is saved under different name and changing other project for the usage of shared devices. (The ARUUID remains the same in both projects which leads to connection issues.) Workaround: Configurations for PNIO Shared Device usage shall be created using copy&paste of PLCs within one project. Creation of cloned projects via "save project as" or copying on file system level will lead to collision of ARUUID for PNIO devices.	AB-12227
When using the structures with pragma "pack" there might be errors during download Workaround: not available	AB-12098
Adding modules to CM572-DP or CM579-PNIO devices when project is in "Virtual Mode" might lead to an error or when tried twice even to an Automation Builder crash. Workaround: Add modules only when project is not in "Virtual Mode".	AB-12273

PLC - AC500 V3 Processor Modules (PM5xyz)

Functional changes / New features	Version/ID
Search functionality for unused variables in V3 project	2.0.3
PROFINET-IO-Device DevDesc for V3 PLCs: adaptation of default value for IP address and subnet mask	AB-10515

Bug corrections	ID
Virtual AC500 V3 not accessible for login. This requires communication page to be visible or some other means of setting the communication parameters	AB-11328
Resolve incompatibility of Gateway settings between AC500 V3 and Programmable Drives devices	AB-9070
When Using Modbus Client Protocol to PM5650 PLC you have to add the Modbus Lib and Ethernet Utils Lib automatically	AB-11578

Known problems	ID
When installing Programmable Drives option for previous Automation Builder versions on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs. Workaround: Modify the Gateway Settings in the file C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg or C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg manually to the following settings and restart the Gateway Please change settings to: [CmpRouter] EnableParallelRouting=2 EnableLoopDetection=1 0.MainNet=ether x 0.NumSubNets=1 0.SubNet.0.Interface=BlkDrvShm 1.MainNet=BlkDrvTcp	AB-9070 AB-10821
When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the functionality "Create boot application" is no longer working and shows an error message. Workaround:	AB-11844

Don't install Programmable Drives option together with AC500 V3 (PM5xyz) option on the same PC. If it is already installed, please uninstall the Drives option via Automation Builder Installation Manager -> Modify workflow	
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Panel Builder

Functional changes / New features		Version
PB610 Panel Builder 600: <ul style="list-style-type: none"> - Actions and events <ul style="list-style-type: none"> o System variable to check the status of dumped files o New LoadProject / LastVisitedProject actions (Switch Terminal Emulator / Runtime) o Extend Launch Application by adding a new optional parameter to free RAM before executing it - Alarms <ul style="list-style-type: none"> o Set and change "Alarm widget" and "Alarm History Widget" background color - Data transfer <ul style="list-style-type: none"> o Allow to transfer data from Alias (tag indexed) tags with DataTransfer action and DataTransfer feature - Deployment and run time operation <ul style="list-style-type: none"> o Enable attach to... for properties x, y of widgets o Gestures support for combo box widget navigation o Add attach tag in all fields of e-mail server configuration o Provide same behavior of Install Runtime to Update Runtime o Add project property in order to choose the http connection mode - JavaScript <ul style="list-style-type: none"> o Add append file function to JS fs object - PB4Web (HTML5 pages for mobile devices) <ul style="list-style-type: none"> o Enable/disable javascript of project page for remote clients and add the API project.getClientType() - PDF Reader <ul style="list-style-type: none"> o Enable PDF Reader on CP600-eCo panels (OS: Linux) - Productivity tools and IDE UI <ul style="list-style-type: none"> o Add support to read WiBu hardware key o Grid Layout o Remove "Launch VNC" from the Developer Tools on CP600-eCo devices o Invoke "update runtime" dialog while downloading project to incompatible runtime... - Protocol <ul style="list-style-type: none"> o Extend OPC UA server support to alarms (active and historical) and trends o Modbus TCP V3 AC500 drivers o Enable PING protocols - Protocol Editor <ul style="list-style-type: none"> o Grayout unsupported protocols that require special HW - Recipes <ul style="list-style-type: none"> o Implement recipes in PB4Web (HTML5 pages for mobile devices) - Remote Client / Activex <ul style="list-style-type: none"> o Remove the CGI Tags Read/Write console from the distribution - Security <ul style="list-style-type: none"> o Provide cancel button inside ChangePassword page - Special widgets <ul style="list-style-type: none"> o Generic canvas widget - Standard widgets <ul style="list-style-type: none"> o Table widget - Trends <ul style="list-style-type: none"> o Add Trend widget to PB4Web o Add pinch zoom gesture to the PB4Web "Trends" implementation - Widget: RealTimeTrend <ul style="list-style-type: none"> o Consumption Meter: Add values to display - Widget: scatter diagram <ul style="list-style-type: none"> o Use of attach to tag standard dialog for ScatterDiagram widget graph x-tag and y-tag properties. 		2.6.0.351
Bug corrections		Version
<ul style="list-style-type: none"> - Actions and Events <ul style="list-style-type: none"> o DataTransfer is not possible between "this client user-name" and string Tag o SetBit action not working on Negative values in PB4Web (HTML5 pages for mobile devices) o StepTag with tag attached to parameters not working in PB4Web o Step tag does not respect step over limit for byte data type in Linux (CP600-eCo) - Alarms <ul style="list-style-type: none"> o Live Tag in alarm's description save old value into the buffer o Error getting in browser, if alarm widget column have a tag attachment o Live tags don't work in history alarm widget on PB4Web o PB4Web: Events not listed in one of the history alarm widgets, if there are two alarm widgets in single page o PB4Web: Page loading error in alarm page if tag attached to remote enabled 		2.6.0.351

<ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Alarms events found missing while duration 'All' is selected in PB4Web ○ Alarm widget: Always Load new alarms with unselected ○ Events not listed in one of the history alarm widget, if there are two alarm widgets in single page ○ Wrong enable alarm status if enable is managed from the PLC ○ Improper warning shown while copy paste alarms, if number of alarms in project is higher than the allowed limit ○ Enable node via alarm not working if binary is enabled - Branding: <ul style="list-style-type: none"> ○ Favicon branding for web pages not correct - Data entry <ul style="list-style-type: none"> ○ Mouse pointer becomes permanently visible on UN60 (CP600-eCo) when dragging/moving keypad and dialog - Data logger <ul style="list-style-type: none"> ○ DB editor malfunction on opening the editor, when it is not enabled - Data transfer <ul style="list-style-type: none"> ○ Force the data transfer synchronization when a communication node return is active ○ It is not possible to copy a datatype tag on a single element array of the same datatype - Deployment and run time operation <ul style="list-style-type: none"> ○ PB4Web - tag action not working, if widget value is attached directly ○ jmx file not removed from project folder, if project is downloaded again with binary... ○ DataLink is modified by HMI-Studio when edited ○ LaunchUpdater action doesn't load the new project after reboot ○ Html files not deleted when a PB4Web page is deleted from HMI-Studio ○ Send Email action not working with invalid path in attachment parameter ○ In linux platforms (CP600-eCo) messages are not printed out to console, if logger is active. ○ Change page with vertical/portriat orientation requires much more time than with horizontal/landscape orientation. ○ JS API DB write events is not working... ○ Panel can't display the float field if "NaN" data is detected ○ PB4Web: SVG image is not shown in web page, if used as button icon - Dialogs <ul style="list-style-type: none"> ○ Dialog pages are not modal for PB4Web in Safari browser. - Installer <ul style="list-style-type: none"> ○ At least 1,4 MB of free disk space is required - PB4web (HTML5 pages for mobile devices) <ul style="list-style-type: none"> ○ PB4Web - "eventInfo.newValue" return wrong value in an "alert" javascript ○ Wrong background-color for an alarm, if state is "Triggered Acked" ○ Possibility to show SVG from IP Camera widget in PB4Web ○ Missing attach to button to "Fill Color" property of ButtonWgt ○ Remove popup error message if tag action failed ○ Malfunction of blink property attached to a tag ○ Numeric field shown in browser as "NaN", if scaling is applied to array tag ○ Apply to WebPageRequest the same behavior as to PageRequest - Multilanguage <ul style="list-style-type: none"> ○ Multilanguage string is empty in runtime if default language text is not defined... - Productivity tools and IDE UI <ul style="list-style-type: none"> ○ HMI-Studio crashes while executing undo command after having deleted a grouped widget... ○ Review of project size calculation algorithm ○ LastVisitedPage action converted to HomePage action during editing ○ Wrong text properties ○ Trend background image not visible on web ○ HMI-Studio crashes, if pressing download button repeatedly ○ Tag attached to alarm's remote enable detected as unused from tag cross reference ○ Keyboard editor unusable with some screen resolutions ○ Storage Device "Preferred" always disabled even if project's target is Runtime PC ○ Last IP address used in download dialog is not saved with dialog if invoked by menu instead of by icon ○ IPs are not removed from the list, if HMI is undiscoverable... ○ Renamed tag is not updated in the list of tags linked to e-mail configuration... ○ Renamed tags are not updated in the data base actions in scheduler and alarms... - Protocol editor <ul style="list-style-type: none"> ○ HMI-Studio crashes on changing protocols in protocol editor with specific sequences ○ Default offline node management of MODT protocol is 3 s instead of 30 s - Recipes <ul style="list-style-type: none"> ○ Numeric field attached to recipe elements is not refreshed after setRecipeItem() action via JS ○ Tag actions on recipe tags cause error in browser ○ Runtime crashes while loading project with recipe sets attached to fields with index -1 - Special widgets <ul style="list-style-type: none"> ○ HMI FTP Client support ○ Image path does not update in multistate image multilayer widget if you drag and drop it from gallery 	
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<ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Network adapter widget does not work in dialog and template page ○ RefreshTrend macro does not refresh latest defined color band in consumption meter widget - Standard widgets <ul style="list-style-type: none"> ○ Widget properties attached to another widget property on itself freezes the simulator - Tag editor <ul style="list-style-type: none"> ○ UI Issue – Multiple tags get selected in attach to dialog if you select random tags - Trends <ul style="list-style-type: none"> ○ DumpTrend action on Linux devices (CP600-eCo) report an error message, if network path contains `\' in string ○ Historical Trend does not draw correctly until the last sample value changes ○ DumpTrendAction does not work correct in PB4Web ○ Trend flickering curve render issue on Safari and Internet Explorer 11 browsers ○ RefreshTrend action does not work on consumption meter widget after execution of DeleteTrend action - Widget: Field <ul style="list-style-type: none"> ○ PB4Web prevents the possibility to add not supported characters to field widget at design time - Widget: Knob <ul style="list-style-type: none"> ○ Needle values in PB4Web are not mapped correctly in min-max range ○ PB4Web knob widget allows to select only 4 states even if max value is set to 5 - Widget: Light <ul style="list-style-type: none"> ○ On PB4Web page light object remains hidden, if tag switched off, during off status in blinking behavior - Widget: Message text <ul style="list-style-type: none"> ○ PB4Web message widget does not work, if multilanguage is not enabled ○ Messages added are lost while changing 'Continuous index' flag and other UI issues in message widget ○ PB4Web issue: Message shows 'null', if you execute show message action from template and dialog pages. - Widget: Multi state image <ul style="list-style-type: none"> ○ Error while downloading web project if multistage image widget contains .jpeg files - Widget: Text <ul style="list-style-type: none"> ○ PB4Web label text is not displayed correctly, if horizontal align is set to right. 	
Panel Builder integration:	
Panel Builder doesn't work with a license dongle DM-KEY	AB-11375
Panel Builder communication settings window retains connection string	AB-11442
Known issues	Version
<ul style="list-style-type: none"> - Tag actions, PB4Web <ul style="list-style-type: none"> ○ If the WriteTag action is enabled in web template pages, switching of web pages will be slow. 	2.6.0.351

SCADA - Zenon

Functional changes / New features	Version
Zenon Editor available as additional tool in Automation Builder installer	2.0.3

Bug corrections	ID
AB must check that zenon Editor in compatible version is used	AB-11489
Automation Builder crash when configuring zenon project	AB-11398
Zenon summary window shows incorrect data when update of zenon project is performed for arrays	AB-11390
Performance improvement for zenon excluded variables	AB-11237
AB basic license allows zenon data transfer.	AB-11566

Drive Manager

Functional changes / New features	Version
ABB DriveManager package <ul style="list-style-type: none"> - New Firmware support <ul style="list-style-type: none"> o ACS560 – IGPK2 2.02.00.01 	2.0.3

Bug corrections	Version
ABB DriveManager package <ul style="list-style-type: none"> - Launching of ACS580 Virtual Drive Failed from Virtual System testing window. - Automation Builder is crashed when user edit same bit pointer/ value pointer/ binary parameter twice in Drive Manager. - Category "Drives" for the top level programmable drives (e.g ACS880 AINF BCU12) is not translated to other languages than english sometimes 	2.0.3

Known problems	Version
ABB DriveManager package <ul style="list-style-type: none"> - No synch between Process data tab and Drive Manager's FBA data in & data out parameter group with 32 bit parameters. <u>Workaround:</u> While configuring offline data in FBA data in & data out in drive manager if 32 bit parameter is selected then leave next parameter as empty. - Dynamic parameter values are not loading immediately in online mode after changing the module types. <u>Workaround:</u> Collapse and expand the group then parameter values will be updated. 	2.0.3

Drive Application Programming

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010) loaded to drive memory unit. Please contact ABB representative.

Note 2: In order to get ABB Standard and System library visible, please disable *Enable simplified library handling* and *Hide system libraries* options in Library management Tools/Options/Feature.

Note 3: Drive composer pro version 1.9 or newer is recommended. See appendix 1 how to set Drive composer pro working parallel with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package	3.6.717.601
Automation Builder	2.0.3
Compiler versions	3.5.7.0, (3.4.4.30)
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.60 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.6.3 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.6.3 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.6.3 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.6.3 (ZCU-14)
Target device ACS880_ATBF_BCU12_M_V3_5	3.5.6.3 (BCU-12/02/22)
Target device ACS880_ATBF_ZCU12_14_M_V3_5	3.5.6.3 (ZCU-12 /14)
Target device ACS880_AMMF_BCU12_M_V3_5	3.5.6.3 (BCU-12/02/22)
Target device ACS880_AMMF_ZCU14_M_V3_5	3.5.6.3 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and version 3.4.4.30 of the compiler must be used. Firmware 2.40, 2.51 or 2.62 must be used in case of F-series I/O IEC-programming.

Functional changes / New features	Version
Drive Interface now shows proper comparison window with proper table view comparison during Project/SVN Compare	3.6.717.601
DCS880 support added.	3.6.717.601
ACS880_AMMF BCON target support added	3.6.717.601

Bug corrections	ID
Application Parameters--Import XML option does not work.	AB-3481
CODESYS gateway V3 settings are not correctly set right after the installation of Automation builder. Reboot of the PC is needed. Before that the scan time of the drive targets is too short and it's not enough long to get drive connected. Another problem is that it possible to be connected other CODESYS Gateway's in same LAN. This might cause confusion.	AB-9070
When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs.	AB-10821
Application stuck (or endless boot loop) if more than 8 power fail saving type application parameters used. The power fail saving type limit is fixed to 9. Correction is in firmware AINFX 2.60.	TFS-81457
Updating Projects created in old profiles than AB 2.0 failed to update the drive device even after upgrading the project to AB 2.0 Profile	AB-11762

Known problems	ID
Formatted parameters are not working properly with Drive Composer Pro.	AB-3436
Codesys Internal error during code generating if MIN and MAX operators are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx); REMEDY: result := MAX(REAL#0.1, xxx);	AB-8630
While renaming "Application" under ACS880 project unexpected "Refactoring windows" will appear. Refactoring propose can be disabled in Tool/Options/Refactoring alternative "on renaming".	AB-9962
After Creating boot application double clicking PLC_PRG doesn't open it online. REMEDY: Click first (for example) on menu bar and double click PLC_PRG again.	AB-10203
In case selecting Function Type to "Signal" (readonly) and existing variable is Global (GVL) then parameter creation fails. Parameters are not fully available or no parameters are created at all.	AB-11629
Opening a project that was created in AB 2.0/AB 2.0.2 in AB 2.0.3 failed to update the project. User has to explicitly update the project from Project menu -> Update project option	AB-12120
F-series I/O DIO delays and AI filter times are not correct if drive FW 2.60 or 2.61 are in use. REMEDY: This is corrected into drive FW 2.62. Please Use FW 2.62	AB-12199
Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed. However, Base Value scaling is done properly.	TFS-36761
Par_Def_CHG function block is not changing the default value of all parameters in a family. Only the first parameter's default value was changed	TFS-36769
Comparison feature of Application parameters and events object in project/SVN compare is not working as expected.	AB-12111, AB-12114, AB-12143, AB-12145, AB-12146, AB-12163
In NewDefault column of DriveInterface it allows user to select a bit of parameter to a value pointer type parameter. This lead to Application Loading Fault 64A3 on the drive after create boot application REMEDY: Only select a parameter in NewDefault column for the value pointer type parameters	AB-12172
When installing AC500 V3 (PM5xyz) option on a PC with installed Programmable Drives option the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs. <i>Workaround:</i> Modify the Gateway Settings in the file C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg or C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg manually to the following settings and restart the Gateway Please change settings to: [CmpRouter] EnableParallelRouting=2 EnableLoopDetection=1 0.MainNet=ether x 0.NumSubNets=1 0.SubNet.0.Interface=BlkDrvShm 1.MainNet=BlkDrvTcp	AB-9070

Drive Composer

Functional changes / New features	Version
New Drive Composer Pro version 2.0.0 Technical Description New version 2.0 of startup and maintenance PC tool Drive composer pro is available through ABB sales channels. Drive composer pro is compatible with all new common architecture drives such as ACS880. The complete compatibility table available in Software Tools web page http://new.abb.com/drives/software-tools/ . Main new features of Drive composer pro	2.0.0.441

<ul style="list-style-type: none"> · Graphical user interface for functional safety configuration · Integrated DriveStartUp tool for MV drives (e.g. ACS6080) when Drive composer pro is installed with special license keys · Support of PSL2 datalogger uploading from multiple BCU control boards · Support of connectivity to virtual drives when used together with Automation builder · Appropriate handling of protected adaptive programs <p>Changes of Drive composer pro</p> <ul style="list-style-type: none"> · Quality and stability improvements · Support for Windows XP ended as there will be no more security updates or technical support for the XP operating system from Microsoft <p>Note: <i>Usage with Automation Builder:</i> Drive composer pro started via an Automation Builder project requests no additional license.</p>	
<p>Compatibility with older FSO-11 Drive composer pro version 1.12 supports safety configuration of ACS880 primary control program versions AINFX v1.51 or later and FSO-11 hardware rev. N (fw v1.41) or later (and all FSO-12 versions). The safety configuration of ACS880 primary control program versions AINFX v1.41 or older and FSO-11 hardware rev. K (fw v1.33) or older requires that Drive composer pro version 1.3.0.0 is used. There is special package available to install Drive composer pro version 1.3.0.0 in parallel to Drive composer pro 1.12. It should <i>strictly only</i> be used in case of required compatibility with older FSO-11 as described above. Package is available in ABB Library for ABB internal users with document number 9AKK105713A8935.</p> <p>Please check the ACS880 compatibility table in IHMM for full details.</p>	

Known problems	Version
<p>When uninstalling the Drive composer pro 2.0.0 version it might lead to corrupt previous versions of Drive composer pro (< 2.0) installed on the PC which cause execution errors. Workaround: Execute a repair of the corresponding Drive composer pro version via Windows Control Panel -> Programs -> Programs and Features and click on the repair button when selecting the Drive composer pro in the list or re-execute setup of previous Drive composer pro version to repair installation.</p>	2.0.0.441
<p>To use BCBL-01 cable with Windows 7 64-bit version user must launch Windows in "Disable Driver Signature Enforcement" mode. The issue does not exist with any other Windows version nor affect users not using BCBL-01 cable. https://support.microsoft.com/en-us/help/17419/windows-7-advanced-startupoptions-safe-mode</p>	2.0.0.441
<p>There are some known issues listed with mitigation instructions in IHMM (ACS880 / Support / PC-Tool Hints)</p>	2.0.0.441

Motion

Bug corrections	Version
The EtherCAT sync shft time is not set by the Motion Solution	AB-11235

Solutions

Condition Monitoring System

Functional changes / New features	Version
Condition Monitoring System (CMS): - Internal changes for future extensions, no functional changes.	2.6.3

Known problems	Version
Known issue while upgrading Example FM502-CMS Control.project using AB2.0.0: Please press "Keep" instead of update button as it may cause compilation error.	2.6.3
Triggering measurement start from external signal (e.g. DI or DC) should be prevented. The file could be corrupted. Please use the "Instantly" or "Delayed" trigger mode for starting a measurement.	2.6.3

RobotStudio

Known problems	ID
Robostudio Integration The RobotStudio object shows an error message when trying to be edited. <i>Workaround:</i> not available	AB-12237

Changes in Automation Builder 2.0.2

The release includes the following device groups:

Automation Builder

<i>Functional changes / New features</i>	<i>Version</i>
Pluto Manager: Pluto Manager can now be installed as separate additional tool (Automation Builder setup -> additional tools)	2.0.2
<i>Bug corrections</i>	<i>Version</i>
Various stability improvements	2.0.2
Launch AB in user selected profile The profile in which the Automation Builder shall be launched can be defined in the Automation Builder menu Tools -> Options -> Startup settings. To enable the changes remove from the Automation Builder desktop icon the profile definition as follows: desktop icon -> properties -> shortcut -> target -> "C:\Program Files (x86)\ABB\AutomationBuilder\Common\AutomationBuilder.exe" –Profile="Automation Builder 2.0"	
<i>Known problems</i>	<i>Version</i>
Automation Builder installation: In case a PC reboot is required/executed during Automation Builder installation the setup might have to be restarted manually after PC restart. <i>Workaround:</i> Please start the setup after restart and select the desired options to install. The setup will then continue the installation where it has been interrupted for reboot	2.0.0 / 2.0.1/2.0.2

PLC - AC500 V2 Processor Modules (PM5xy)

<i>Functional changes / New features</i>	<i>Version</i>
AC500 Configuration: New features IEC application modularity: <ul style="list-style-type: none"> – Support of fully qualified object access using the dot operator. e.g. MyGVL.MyVariable in IEC-61131 including late binding for IO addressing -> VAR_CONFIG – Use of fully qualified variable names in IO mapping dialogs of AB CM582-DP: <ul style="list-style-type: none"> – Availability of CM582-DP (as coupler and as slave device) Live List for harmonized CAN fieldbus commissioning (supported for netX based devices): <ul style="list-style-type: none"> – Two additional editor pages are provided for each fieldbus protocol node. – The first page provides a live list of all slaves that are currently connected to the selected protocol device. – The second page provides a list of all events that are related to the selected protocol node and all devices/slaves that are connected to it. EtherCAT bit level access <ul style="list-style-type: none"> – Direct access on bit-level to ABB EtherCAT I/O devices. PM595 ETH3/4 Ethernet Support <ul style="list-style-type: none"> – Internal slots of PM595 ETH3 / ETH4 can be used for Ethernet connectivity (like CM597) 	2.6.2
<i>Bug corrections</i>	<i>Version</i>
Various stability improvements.	2.6.2
<i>Known problems</i>	<i>ID</i>
EtherCAT Configuration is wrong for Balluf IO Link Module For Balluf IO Link EtherCAT slaves the PDO offsets for inserted modules (slots) are calculated wrong. This leads to configuration error of the device. Workaround: not available	AB-8755

Configuration parameters for Modbus TCP client do not exist in the Modbus-TCP client tab Workaround: Configure parameters in Modbus TCP server tab	AB-7928
Invalid use of character ' in alarm string leads to runtime exception on PLC Workaround: use \$ as escape character for special characters (like ')	AB-6852
CODESYS project is still marked as dirty when changes are undone/deleted Workaround: check the changes and save/don't save project correspondingly.	AB-4383
Copy/paste of communication protocol sub-trees (e.g. PROFIBUS) between two different parent node types (e.g. CM572-DP and CM592-DP) is only supported within one and the same Automation Builder instance: <ul style="list-style-type: none"> - If the protocol sub-tree is copied between different Automation Builder instances and with different parent node types, all parameters are set to their default values. - If the protocol sub-tree is copied between two Automation Builder instances, but below the same parent node type (e.g. CM572-DP to CM572-DP), all parameters keep their values. Workaround: use export and import functionality	AB-7822
ECAD import/export does not work for modular EtherCAT IO modules Workaround: not available	AB-7751
In case of INVALID task intervals (e.g. 0) just a warning is shown. Error message is missing. Workaround: double check the settings and warnings	AB-7577
For CAN the check for double COB-Ids is not working properly. No error message is shown Workaround: double check COB-Ids	AB-7169
Il_Settings are missing in project tree of Extension_Bus after merging projects via SVN Workaround: not available	AB-6937
String functions are not "thread safe": When using tasks, string functions may only be used in a single task. If the same function is used in different tasks, there is a danger of overwriting. This issue is solved with PLC FW V2.3.0	AB-5635
Codesys Gateway: <ul style="list-style-type: none"> - In case of AC500 PLC login or CoDeSys Gateway errors please restart the CoDeSys Gateway service or reboot your PC - There might be timeout errors when downloading a configuration change of the AC500 PLC via Automation Builder Workaround: restart CoDeSys Gateway	

PLC - AC500 V2 Processor Modules (PM5xy) Firmware

Functional changes / New features	Version
Ethernet: <ul style="list-style-type: none"> - IEC60870-5-104: Background scan (COT=2) Devices: <ul style="list-style-type: none"> - Support of new PROFIBUS DP slave communication module CM582-DP (-XC) - Added functionality in PROFINET Device communication module CM589-PNIO (-XC) for certification - Support of new PROFINET IO device coupler CM589-PNIO-4 (-XC) - Support of CM597-ETH FW on internal Ethernet configurable interfaces ETH3 and ETH4 (already configurable as PROFINET IO Controller or EtherCAT Master) from PM595-4ETH 	2.6.0

Bug corrections	Version
Webserver: <ul style="list-style-type: none"> - Security issue, minor Web service vulnerability. Fixed Serial routing driver "ABB RS232 AC" for CM574-RS communication module <ul style="list-style-type: none"> - No Login anymore possible in CM574-RS with CPU PM5xx without Ethernet. - Fixed AC500 CPU I/O-bus with S500-eCo I/O modules: <ul style="list-style-type: none"> - I/O-Bus with S500-eCo and Run on config fault = yes, after reboot E2 error: Timeout while waiting for ready status (error number 34). - Fixed - PM595 ARP Table increased: PM595-4ETH: Too many ARP broadcast messages -> increased ARP table to 127. - Fixed DC541: <ul style="list-style-type: none"> - Error message after firmware update also in case of correct update. - Will not be fixed Workaround: check FW version of DC541 after update	2.6.0

PLC - AC500 V3 Processor Modules (PM5xyz)**Important Notes:**

- By AC500 V3 CPU, the diagnostic handling is different from the AC500 V2 CPUs.
In AC500 V3 CPU, the system diagnostic should be done using function blocks and the user program or with Automation Builder Software using online diagnostic and Device Tree. The CPU ERR Led doesn't indicate the errors.
- AC500 V3 (PM5xyz) and Programmable Drives installations are incompatible! The Gateway settings for going online are either working for AC500 V3 PLCs or Programmable Drives (refer to known problems further down in this section for details)

<i>Functional changes / New features</i>	<i>Version</i>
<p>New Features: Note: The new features available from the FW V3.0.2 are marked “(NEW)”.</p> <p>Libraries: New libraries are available:</p> <ul style="list-style-type: none"> - IntUtils - with POU's: <ul style="list-style-type: none"> Counter: <ul style="list-style-type: none"> ○ CNT_IO_EXT ○ SWAP Data storage: <ul style="list-style-type: none"> SRAM data: <ul style="list-style-type: none"> ○ SRAM_CLEARED ○ SRAM_EXPORT ○ SRAM_IMPORT I/O-Bus: <ul style="list-style-type: none"> ○ IO_DIAG ○ IO_DRIVER_VERSION ○ IO_INFO ○ IO_MODULE_DIAG ○ IO_MODULE_INFO ○ IO_MODULE_INFO_EXT ○ IOPROD_ENTRY_READ Production data <ul style="list-style-type: none"> ○ CPU_PROD_ENTRY_READ ○ CPU_PROD_READ_ASYNC System information <ul style="list-style-type: none"> ○ PM_VERSION ○ SYS_TIME - ExtUtils - with POU's: <ul style="list-style-type: none"> Leds (NEW): <ul style="list-style-type: none"> ○ ErrLEDSet Battery <ul style="list-style-type: none"> ○ BATT Realtime clock <ul style="list-style-type: none"> ○ CLOCK ○ CLOCK_DT - EtherCAT - with POU's: <ul style="list-style-type: none"> CoE: <ul style="list-style-type: none"> ○ ECAT_COE_READ ○ ECAT_COE_WRITE COM: <ul style="list-style-type: none"> ○ ECAT_BUS_SET_STATE ○ ECAT_SLV_GET_STATE ○ ECAT_SLV_SET_STATE ○ ECAT_START_COM ○ ECAT_STOP_COM DIAG: <ul style="list-style-type: none"> ○ ECATBUS_DIAG ○ ECAT_GET_DCLK_DEVI ○ ECAT_SLV_DIAG INFO: <ul style="list-style-type: none"> ○ ECAT_STATE ○ ECAT_SYNC SoE 	<p>Firmware 3.0.2</p>

<ul style="list-style-type: none"> ○ ECAT_SOE_READ ○ ECAT_SOE_WRITE <p>- EthernetUtils with POU:</p> <p>General</p> <ul style="list-style-type: none"> ○ ETHx_OWN_IP ○ ETHx_OWN_IP_INFO <p>ICMP</p> <ul style="list-style-type: none"> ○ ETHx_ICMP_PING <p>IP Conversions</p> <ul style="list-style-type: none"> ○ IP_ADR_DWORD_TO_STRING ○ IP_ADR_STRING_TO_DWORD <p>- IEC60870_5_104 with POU:</p> <p><i>Data</i></p> <p>Rec_control_direction</p> <ul style="list-style-type: none"> ○ IEC60870_REC_C_DC ○ IEC60870_REC_C_SC <p>Rec_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_REC_M_DP ○ IEC60870_REC_M_IT ○ IEC60870_REC_M_ME ○ IEC60870_REC_M_ME1 ○ IEC60870_REC_M_SP <p>Send_control_driection</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_C_DC ○ IEC60870_SEND_C_SC ○ IEC60870_SEND_C_SE <p>Send_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_M_DP ○ IEC60870_SEND_M_IT ○ IEC60870_SEND_M_IT_1 ○ IEC60870_SEND_M_IT_16 ○ IEC60870_SEND_M_ME ○ IEC60870_SEND_M_ME_1 ○ IEC60870_SEND_M_ME_16 ○ IEC60870_SEND_M_SP ○ IEC60870_SEND_M_SP_16 <p>Send_monitored_direction_external_time_stamp</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_M_DP_ET ○ IEC60870_SEND_M_IT_16_ET ○ IEC60870_SEND_M_IT_1_ET ○ IEC60870_SEND_M_ME_16_ET ○ IEC60870_SEND_M_ME_1_ET ○ IEC60870_SEND_M_SP_16_ET ○ IEC60870_SEND_M_SP_1_ET <p><i>General</i></p> <ul style="list-style-type: none"> ○ IEC60870_BACKGROUND_SCAN ○ IEC60870_GET_ADDRESS ○ IEC60870_STATE <p><i>Parameter_setting</i></p> <ul style="list-style-type: none"> ○ IEC60870_REC_P_ME ○ IEC60870_SEND_P_ME <p><i>Supplement</i></p> <ul style="list-style-type: none"> ○ RESET_INIT ○ RESET_RESET <p><i>System_Information</i></p> <p>Rec_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_REC_C_TS_NA_1 <p>Send_control_direction</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_C_CI_NA_1 ○ IEC60870_SEND_C_CI_NA_1_2 ○ IEC60870_SEND_C_CS_NA_1 	
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<ul style="list-style-type: none"> ○ IEC60870_SEND_C_CS_NA_1_2 ○ IEC60870_SEND_C_IC_NA_1 ○ IEC60870_SEND_C_IC_NA_1_2 ○ IEC60870_SEND_C_RD_NA_1 ○ IEC60870_SEND_C_RP_NA_1 ○ IEC60870_SEND_C_RP_NA_1_2 ○ IEC60870_SEND_C_TS_NA_1_ACT <p>Send_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_C_TS_NA_1_ACTION ○ IEC60870_SEND_M_EI_NA_1 <p>- ModbusTCP - with POU:</p> <ul style="list-style-type: none"> ○ ETHx_MOD_CONFIG ○ ETHx_MOD_INFO ○ ETHx_MOD_MAST <p>Buffered data</p> <ul style="list-style-type: none"> - Support of persistent data in %M area via pragma {no init} - Support of VAR RETAIN PERSISTENT <p>Display</p> <ul style="list-style-type: none"> - Basis support of PLC display: <ul style="list-style-type: none"> ○ run/stop switch ○ RTC ○ battery ○ PLC mode setting (Mode 1, 2, 3) <p>Diagnosis</p> <ul style="list-style-type: none"> - Support CODESYS Device diagnosis for: <ul style="list-style-type: none"> ○ I/O-Bus ○ CM579-PNIO PROFINET IO controller Communication Module ○ CM589-PNIO PROFINET IO device Communication Module - Support CODESYS DeviceTree diagnosis (green circle/red triangle) <p>I/O-bus</p> <ul style="list-style-type: none"> - Scan of I/O modules for configuration - Support of AC500 I/O-Bus with up to 10 S500/S500-eCo modules <p>CAN interface</p> <ul style="list-style-type: none"> - Support of Protocols - J1939 on Onboard CAN interface with library IODrvJ1939 - CAN2B on Onboard CAN interface with library CANbusDevice - CAN2A on Onboard CAN interface with library CANbusDevice - CANopen device diagnosis with library CANbusDevice - CANopen master on Onboard CAN interface with driver lib: CANbusDevice <p>COM1</p> <ul style="list-style-type: none"> - Data receive/send with library SerialCommunication <p>Userdisk</p> <ul style="list-style-type: none"> - Data read/write with library CAA_File - 248MB Userdisk in FLASH for IECproject, user data, WEB server data, Log data, Source project <p>SD-Card</p> <ul style="list-style-type: none"> - Data read/write with library CAA_File - FW update with signed files for BootFW, UpdateFW and SystemFW <p>Modbus TCP</p> <ul style="list-style-type: none"> - (NEW) - Modbus TCP Server release <p>EtherCAT</p> <ul style="list-style-type: none"> - EtherCAT device diagnosis with library ABB EtherCAT 1.0.0.26 - Support of CM579-ETHCAT EtherCAT master comm. module <p>PROFINET</p> <ul style="list-style-type: none"> - PROFINET device diagnosis with library 3S CommFB and CAA DeviceDiagnosis - Support of CM589-PNIO PROFINET IO device Communication Module - PROFINET device diagnosis with library 3S CommFB and CAA DeviceDiagnosis - Support of CM579-PNIO PROFINET IO controller Communication Module 	
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Ethernet <ul style="list-style-type: none"> - ICMP ping out of user project with POU - WEB server on PLC CODESYS WEB visualization - CODESYS network variables OPC UA server - OPC UA server - OPC DA server - FTP server (one server, listening on both Ethernet interfaces ETH1 and ETH2) - Protocol ABB netConfig - Protocol UDP out of user program with library netBaseServices - Protocol TCP/IP out of user program with library netBaseServices - Protocol Modbus TCP Client with POU ETHx_MOD_MAST (library ABB ModbusTcp 1.0.0.22) - Online access with 3S block drivers: <ul style="list-style-type: none"> o TCP/IP o UDP - (NEW) - Protocol SNTP client with 3S licenced store package SNTPSERVICE.package - (NEW) - Protocol "Telecontrol" IEC60870-5-104 - CPU as Control station including 2nd connection and 2nd port - (NEW) - Protocol "Telecontrol" IEC60870-5-104 - CPU as Substation incl. 2nd port System <ul style="list-style-type: none"> - Support of CODESYScontrol V3.5.9.0 runtime system (needs Automation Builder 2.0) Device <ul style="list-style-type: none"> - Support of new TB TB5622-2ETH for PM5650-2ETH - Support of new PLC PM5650-2ETH 	
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Fixed issues	Version
Diagnosis <ul style="list-style-type: none"> - Not all devices show the correct connector status (green circle = ok, red triangle = error). – Fixed EtherCAT <ul style="list-style-type: none"> - CM579-ETHCAT: Parameter "Run on config fault" does not work. – Fixed - CM579-ETHCAT: Setting of substitute values for EtherCAT slaves doesn't work. – Fixed Modbus TCP <ul style="list-style-type: none"> - Crash when calling more than 100 (= max supported) instances of MOD_MAST in parallel. – Fixed - Response time of Modbus TCP server is greater than in V2.x PLCs. Currently ~200ms. Improved in V3.0.2 to ~80ms. – Fixed - If Modbus TCP server is configured under both Ethernet interfaces ETH1 and ETH2, only ETH1 shows "green circle". Modbus TCP server under ETH2 shows every time error state "red triangle". – Fixed PROFINET IO <ul style="list-style-type: none"> - CM579-PNIO: Status of coupler not correct shown in device tree. (Always red triangle). – Fixed 	Firmware 3.0.2

Known problems	Version
System <ul style="list-style-type: none"> - In case of exception the correct program position will not be shown. Workaround: Open Diagnosis <ul style="list-style-type: none"> - In AC500 V3 CPU, the system diagnostic should be done using function blocks in user program or with Automation Builder using online diagnostic and Device Tree. The CPU ERR Led doesn't indicate the errors. Workaround: Use Automation Builder or User program for diagnosis. New POU SetLEDErr in IntUtils library in 3.0.2. Modbus TCP / Modbus TCP Library <ul style="list-style-type: none"> - It's not possible to use multiple connections to one server with Modbus TCP. Workaround: Use only one connection per Modbus TCP server. - Function Code 7 for Modbus TCP is not working. Workaround: FCT=7 cannot be used until issue is fixed. - Function code 23 for ETHx_MOD_TCP has different max data length (write 121, read 125) then V2 (write 125, read 125). The values in V3 are according to Modbus specification. Workaround: Won't be fixed, use data length according to Modbus specification. OPC Server: <ul style="list-style-type: none"> - Other OPC client could not access the V3 PLC easily when one OPC client is accessing the same V3 PLC via OPC server. Workaround: Open, use max. 4 Online connections at a time - Three OPC clients could not access one V3 PLC stable via OPC server at the same time. Workaround: Open, use max. 4 Online connections at a time OPC UA: <ul style="list-style-type: none"> - OPC UA Client don't get data from PLC after disconnect/connect cable with a big amount of tags (15000). 	Firmware 3.0.2

<p>Workaround: Open</p> <p>FW Update:</p> <ul style="list-style-type: none"> The keys CPUFW, BootFW, UpdateFW and DisplayFW for the group [FirmwareUpdate] and [CPU] are checked. If one of these keys is missing, the result is set to "7; Unknown update mode" with a blinking Error-Led at the end of the update process. <p><i>Workaround:</i> Content of SDCARD.INI for update of BootFW, UpdateFW and SystemFW:</p> <pre> [Status] FunctionOfCard=2 [FirmwareUpdate] CPUFW=11 BootFW=11 UpdateFW=11 DisplayFW=0 [CPU] CPUFW=/SystemFW/3_0_0_151/AC500_V3_SystemFirmware_V3.0.0.151.tar.bz2 BootFW=/BootFW/3_0_0_89/AC500_V3_BootFirmware_V3.0.0.89.tar.bz2 UpdateFW=/UpdateFW/3_0_0_73/AC500_V3_UpdateFirmware_V3.0.0.73.itb Display= </pre> <p>OPC Server:</p> <ul style="list-style-type: none"> OPC server: three OPC clients could not access one V3 PLC stably via OPC server at the same time. <p><i>Workaround:</i> Open, use max. 4 Online connections at a time</p> <p>SD Card:</p> <ul style="list-style-type: none"> If the user creates in /home/system/ an 'sdcard' directory and then inserts a memory card, it is mounted and the directory should refer to the memory card now. After taking the card out the directory should be deleted. The behavior is unexpected because after taking the card out, the 'sdcard' directory is still present and shows the previous content. <p><i>Workaround:</i> Avoid creating files and folders inside user root folder (/home/system)</p> <ul style="list-style-type: none"> If the SD card is removed during a read / write process, the SD card won't remounted from the PLC after replug. POU FileClose does not output a Done or Error and remains in Busy status. <p><i>Workaround:</i> Do not remove the SD card during read/write process.</p> <ul style="list-style-type: none"> In some cases, If the SD card is removed while in PLC is in RUN mode and SD card is accessed and is put back, the PLC don't recognized that the SD Card is put back. <p>If you try to write on a File on the SD Card there is Error NOT_EXIST put the File is there.</p> <p><i>Workaround:</i> Do not to pull the SD card while actively accessing it.</p> <p>System:</p> <ul style="list-style-type: none"> Command "Restore" in AB use internally the command "Reset origin device". Reset origin device resets the PLC to factory state. After Power on, the UpdateFW will start and a FW download via SD card or AB must be performed. <p><i>Workaround:</i> Do not use command "Restore" from AB</p> <p>PROFINET:</p> <ul style="list-style-type: none"> LIB: CommFB POU: GETIO_PART/SETIO_PART do not work. Status code 16#40820000 will be returned. <p><i>Workaround:</i> Do not use the POU</p> <ul style="list-style-type: none"> CM579-PNIO: status of coupler not correct shown in device tree. (Always red triangle). <p><i>Workaround:</i> Check state of connected PNIO devices.</p> <p>CAA_File:</p> <ul style="list-style-type: none"> SysFileOpen() does not create missing folders on paths that belong to volatile placeholders. <p>(1) Volatile placeholder:</p> <pre>SysFileOpen('sdcard/abc/test.txt', AM_WRITE) -> File will not be created if folder abc is missing</pre> <p>(2) Non-Volatile placeholder:</p> <pre>SysFileOpen('userdisk/abc/test.txt', AM_WRITE) -> File will be created, even if folder abc is missing</pre> <p>(3) No placeholder:</p> <pre>SysFileOpen('foo/test.txt', AM_WRITE) -> File will be created inside first standard file path (currently: /home/system), even if folder foo is missing.</pre> <p><i>Workaround:</i> Do not use the volatile placeholders "sdcard", "userdisk" inside user root folder.</p> <p>Coupler:</p> <ul style="list-style-type: none"> First external slot is mapped to index 0 instead of 1. Slot number must be set as parameter in configuration. <p>Empty slots are not allowed.</p> <p><i>Workaround:</i> Set slot as parameter in configuration of coupler.</p> <ul style="list-style-type: none"> Note: Empty slots are not allowed. <p>FTP Server:</p> <ul style="list-style-type: none"> User "system" has restricted permissions on "userdisk". <p>User "system" is not able to Create/Write/Upload delete a file on userdisk. But it is possible on SD Card.</p> <p><i>Workaround:</i> Login as user "userdisk".</p>	
<p>When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs.</p> <p><i>Workaround:</i></p> <p>Modify the Gateway Settings in the file</p> <pre> C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg or C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg </pre> <p>manually to the following settings and restart the Gateway</p>	<p>AC500-V3 Configuration 2.6.1</p>

<p>For AC500 V3 PLCs please change settings to: [CmpRouter]</p>	
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..
0.MainNet=**BlkDrvTcp**

<p>For Programmable Drives to: [CmpRouter]</p>	
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..
0.MainNet=**BlkDrvShm**

Safety PLC - AC500-S

Functional changes / New features	Version
A new licensing mechanism common with existing Automation Builder products is used now for AC500-S functional safety engineering. It means that PS501-S license enabling package is replaced by DM220-FSE and DM221-FSE-NW Automation Builder 2.0.2 add-ons. All customers who have already valid PS501-S license keys can upgrade free-of-charge their licenses to new ones (DM220-FSE and/or DM221-FSE-NW). All users of Automation Builder 2.0.2 who start their safety programming in Automation Builder 2.0.2 profile will have to obtain DM220-FSE and/or DM221-FSE-NW Automation Builder add-ons to do AC500-S functional safety engineering.	2.0.2
Safety Verification Tool (SVT) can be ordered as a separate option for Automation Builder 2.0.2 by pilot customers. SVT is a new upcoming tool to improve efficiency of AC500-S functional safety engineering and is used to check your safety program configuration generated by the Automation Builder. It is planned that SVT tool will become a mandatory tool for AC500-S functional safety engineering in future versions of Automation Builder.	2.0.2

Functional changes / New features	Version
A new version of GSDML importer is used in Automation Builder 2.0.2. This new version of GSDML importer is not compatible with the previous version due to the change in the data description. This was needed to be able to implement more restrictive style checks according to GSDML style rules. Special steps are now needed to migrate projects with 3 rd party safety modules instantiated using GSDML files in old profiles to Automation Builder 2.0. These steps are described in Application Note 3ADR025275M0201 in detail.	2.0.2

Known problems	
CM589-PNIO-4 (-XC): CM589-PNIO-4 (-XC) is included in Automation Builder 2.0.0, 2.0.1 and 2.0.2 only to enable product evaluation by pilot customers. CM589-PNIO-4 (-XC) shall not be used with AB 2.0.0, 2.0.1 or 2.0.2 in customer projects.	2.0.0, 2.0.1, 2.0.2

Note 1: The configuration of CM589-PNIO-4 (-XC) will change in the next Automation Builder releases and, thus, will lead to the incompatibility with configurations created using 2.0.0, 2.0.1 and 2.0.2. The official release of CM589-PNIO-4 (-XC) will be done with future versions of Automation Builder.

AC500 Firmware

Functional changes / New features	Version
-	

Bug corrections	Version
-	

Safety PLC - AC500-S

Functional changes / New features	Version
Refer to changes in Automation Builder 2.0.2: - New GSDML importer - New licensing mechanism for AC500-S functional safety engineering	

Bug corrections	Version
Various internal improvements related to the handling of 0 telegrams in the PROFIsafe F-Host library V1.0.0 (SafetyBase_PROFIsafe_AC500_V22.lib). The new PROFIsafe F-Host library V1.0.1 (SafetyBase_PROFIsafe_AC500_V22_Ext.lib) shall be used in all new AC500-S safety projects. PROFIsafe F-Host library V1.0.0 (SafetyBase_PROFIsafe_AC500_V22.lib) shall not be used in any new AC500-S safety projects.	1.0.1

Note 1: Before using the functional safety configuration and programming tools contained in Automation Builder, you must have read and understood the AC500-S Safety PLC User Manual (see <http://www.abb.com/PLC>). Only qualified personnel are allowed to work with AC500-S safety PLCs.

Compiling and executing functional safety projects on SM560-S Safety CPUs require the purchase of a license.

Drive Manager

<i>Functional changes / New features</i>	<i>Version</i>
ABB DriveManager package <ul style="list-style-type: none"> - ACS880M drive support for both Profibus and Profinet. - ACS560 drive support for both Profibus and Profinet - New Firmware support <ul style="list-style-type: none"> o ACS880 – AINFX 2.43.0.0, AINFX 2.51.0.0 o ACS580 – ASCK2 2.0.0.3 o ACS380 – AMCK6 2.0.0.4 	2.0.2
<i>Bug corrections</i>	<i>Version</i>
ABB DriveManager package <p>When there is a difference in online and offline values of dynamic parameters for e.g. parameter 14.01 of ACS880 there is a mismatch in parameters that shows under 14th group in DriveManager and parameters existing on actual drive</p> <p>DriveManager is going online with drive even though IP address configured is wrong. It gave preference to FENA station name than IP address while going online.</p> <p>Drive device descriptions without ABB vendor id in device id may cause corruption of F-Parameter sets (FENA 11/21)</p> <p>ACS380 allows configuring FSO-21 where there is no slot available on drive to configure FSO-21 when fieldbus is configured and communicated.</p> <p>When opening a safety project with AB 2.0.1 in AB1.2 Profile, the AB failed to access the F-Parameters of the Profisafe ABB PS1 Module.</p> <p>Firmware Version mismatch warning for ACS880-M04 Drive over Profibus.</p> <p>Firmware Version mismatch warning for ACS580 Drive over Profibus in Drive manager.</p>	2.0.2
<i>Known problems</i>	<i>Version</i>
ABB DriveManager package <p>No synch between Process data tab and Drive Manager's FBA data in & data out parameter group with 32 bit parameters.</p> <p>Workaround: While configuring offline data in FBA data in & data out in drive manager if 32 bit parameter is selected then leave next parameter as empty.</p> <p>Automation Builder is crashed when user edit same bit pointer/ value pointer/ binary parameter twice in Drive Manager.</p> <p>Workaround: Close the DriveManager window and open it again then edit that parameter again.</p> <p>Dynamic parameter values are not loading immediately in online mode after changing the module types.</p> <p>Workaround: Collapse and expand the group then parameter values will be updated.</p>	2.0.2

Drive Application Programming

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010) loaded to drive memory unit. Please contact ABB representative.

Note 2: In order to get ABB Standard and System library visible, please disable *Enable simplified library handling* and *Hide system libraries* options in Library management Tools/Options/Feature.

Note 3: Drive composer pro version 1.9 or newer is recommended. See appendix 1 how to set Drive composer pro working parallel with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package	3.6.717.310
Automation Builder	2.0.2
Compiler versions	3.5.7.0, (3.4.4.30)
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.51 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.6.2 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.6.2 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.6.2 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.6.2 (ZCU-14)
Target device ACS880_ATBF_BCU12_M_V3_5	3.5.6.2 (BCU-12/02/22)
Target device ACS880_ATBF_ZCU12_14_M_V3_5	3.5.6.2 (ZCU-12 /14)
Target device ACS880_AMMF_ZCU14_M_V3_5	3.5.6.2 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and version 3.4.4.30 of the compiler must be used. Firmware 2.40 must be used in case of F-series I/O IEC-programming.

Functional changes / New features	Version
Extended functionality of Project/Compare for comparing the current project with a project on disk.	2.0.2
User can choose to clear user sets while creating boot application	2.0.2

Bug corrections	ID
Old language Files are not getting cleared when a new application is downloaded on top of another application.	TFS-27608
Motor must be stopped and restarted after bus break (optical fiber disconnected and reconnected) if encoder and some F-series module(s) are connected into same ring. Correction is in firmware AINFX 2.51: Bus can be recovered without motor stop and restart by means of the new Bus Control –object in IEC-programming.	TFS-71451
Automation Builder crashes when Lang name of Group is changed, deleted or it is empty.	TFS-77905
In case the old FW (AINFX 2.21.0.0) or older is used the default compiler version 3.5.7.0 cannot be used. Instead of that the old compiler 3.4.4.30 must be used to prevent unresolved reference. However with old compiler (3.4.4.30) and AB 2.0 every time when a project is closed and reopened again a new RAM download is requested even there are no changes compared to target program.	TFS-81416
Creation of boot application fails when we have more than one drive in same project.	TFS-84243
Double clicking a block in CFC editor does not open the implementation.	AB-3719
Creating boot application fails if a project includes a PLC and a programmable drive object is added.	AB-7529
Mapping to existing IEC variable is denied in Drive Interface when compiler version 3.5.7.0 selected.	AB-8545
Unnecessary download required during login to drive even though no change in project.	AB-8973
Unmapped F-Series I/O channels have uninitialized current values when a project is online and uses Extension I/O via IEC-programming.	AB-9912

"Start inhibit not granted" situation is causing download error (AppExists Error) if drive is having the empty application and it is in running mode (motor shaft turning). This will not be happened if some application exists in the drive.	AB-10059
Unnecessary warning message <i>IoManager Missing</i> appears during Login and Creating boot application if F-series I/O is not present in configuration.	AB-10212
Dragging device object leads to missing implementation warning.	AB-10285
Automation Builder shows wrong error message if licensing is activated in project settings but no valid data file was found.	AB-11071
"Source Upload" functionality is not working for programmable drive when drive is connected using USB port.	AB-11099
Menu items are shown with wrong texts in Customize window.	AB-11210
Automation Builder crashes when some application parameter group is renamed and a new parameter will be added into that group.	AB-11468

Known problems	ID
Formatted parameters are not working properly with Drive Composer Pro.	TFS-17859
Import parameter XML file in ApplicationParametersandEvent -editor is not working properly. REMEDY: Use only Export XML.	TFS-20026
Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed. However, Base Value scaling is done properly.	TFS-36761
Par_Def_CHG function block is not changing the default value of all parameters in a family. Only the first parameter's default value was changed.	TFS-36769
In case selecting Function Type to "Signal" (readonly) and existing variable is Global (GVL) then parameter creation fails. Parameters are not fully available or no parameters are created at all.	TFS-49494
Application stuck (or endless boot loop) if more than 8 power fail saving type application parameters used. The power fail saving type limit is fixed to 9. Correction is in firmware 2.60.	TFS-81457
Codesys Internal error during code generating if MIN and MAX operators are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx); REMEDY: result := MAX(REAL#0.1, xxx);	AB-8630
CODESYS gateway V3 settings are not correctly set right after the installation of Automation builder. Reboot of the PC is needed. Before that the scan time of the drive targets is too short and it's not enough long to get drive connected. Another problem is that it possible to be connected other CODESYS Gateway's in same LAN. This might cause confusion. REMEDY: Reboot PC after installation.	AB-9070
While renaming "Application" under ACS880 project unexpected "Refactoring windows" will appear. Refactoring propose can be disabled in Tool/Options/Refactoring alternative "on renaming".	AB-9962
After Creating boot application double clicking PLC_PRG doesn't open it online. REMEDY: Click first (for example) on menu bar and double click PLC_PRG again.	AB-10203
When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs. <u>Workaround:</u> Modify the Gateway Settings in the file <i>C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg</i> or <i>C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg</i> manually to the following settings and restart the Gateway For AC500 V3 PLCs please change settings to: [CmpRouter] .. 0.MainNet=BlkDrvTcp	AB-10821

For Programmable Drives to: [CmpRouter] .. 0.MainNet=BlkDrvShm	
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Drive Composer

<i>Functional changes / New features</i>	<i>Version</i>
<p>New Drive Composer Pro version 1.12.1</p> <p><u>Technical Description</u> New version 1.12.1 of startup and maintenance PC tool Drive composer pro is available exclusively as part of Automation Builder. The version available through ABB sales channels remains to be 1.12 – please refer to release note of that version for more details.</p> <p>Drive composer pro is compatible with all-compatible drives and devices such as ACS580 and ACS880 drives, DCT880 power controller, and PRO-33.0-TL solar inverter.</p> <p>Drive composer pro has to be registered with the license key after the installation. Please refer to release note of version 1.12 for more details about delivery options.</p> <p><u>Content of the delivery</u> Drive composer pro 1.12.1 is delivered exclusively as a part of Automation Builder.</p> <p><u>New features Drive composer pro</u> Support for Virtual Drive connectivity</p> <p><u>Known issues</u></p> <ul style="list-style-type: none"> • To use BCBL-01 cable with Windows 7 64-bit version user must launch Windows in “Disable Driver Signature Enforcement” mode. The issue does not exist with any other Windows version nor affect users not using BCBL-01 cable. https://support.microsoft.com/en-us/help/17419/windows-7-advanced-startup-options-safe-mode • Adaptive Programming is not available for Windows XP users • There are some known issues listed with mitigation instructions in IHMM (ACS880 / Support / PC-Tool Hints) <p>Note: <i>Usage with Automation Builder:</i> Drive composer pro started via an Automation Builder project requests no additional license.</p>	1.12.1

Solutions

Condition Monitoring System

Functional changes / New features	
Condition Monitoring System (CMS): - Internal changes for future extensions, no functional changes.	2.6.2

Known problems	
Known issue while upgrading Example FM502-CMS Control.project using AB2.0.0: Please press "Keep" instead of update button as it may cause compilation error.	
Triggering measurement start from external signal (e.g. DI or DC) should be prevented. The file could be corrupted. Please use the "Instantly" or "Delayed" trigger mode for starting a measurement.	

PS5520 Motion Control Library Package (Technology Preview)

For details on Motion control library and Motion solution please refer to Appendix 13: PS5520 Motion Control Library Package (Technology Preview)

SCADA - Zenon

Bug corrections	Version
Zenon integration: Various stability improvements	2.0.2
Known problems	Version
Zenon integration: Zenon screen editor has to be closed and re-opened after synchronization of user defined data type changes of symbols used in the screen	2.0.2

Panel Builder

Bug corrections	Version
Panel Builder Integration: Various stability improvements	2.0.2
Known problems	Version
Panel Builder licensing: Panel Builder doesn't work with License on DM-KEY USB dongle Workaround: Please contact ABB Automation Builder helpline	2.0.2

Servo Drives

Functional changes / New features	Version
Servo Drives Package Support for firmware version 5863 on MicroFlex e150, MotiFlex e180 and MicroFlex e190	2.0.2
Bug corrections	Version
Servo Drives Package When updating a servo device and changing its type, the default name was not updated	2.0.2
Known Issues	ID
Servo Drives Package Irrelevant EtherCAT mappings can be left after updating a servo drive device	AB-10509

Changes in Automation Builder 2.0.1

The release includes the following device groups:

Automation Builder

Bug corrections	Version
Minor bug corrections	2.0.1
Known problems	Version
Automation Builder installation: In case a PC reboot is required/executed during Automation Builder installation the setup might have to be restarted manually after PC restart. <i>Workaround:</i> Please start the setup after restart and select the desired options to install. The setup will then continue the installation where it has been interrupted for reboot	2.0.0 / 2.0.1

PLC - AC500 V2 Processor Modules (PM5xy)

Bug corrections	Version
EtherCat XML is now correctly generated also for big EtherCat configurations (more than 1 EtherCat frame required)	AB-6567
Known problems	
Codesys Gateway: - In case of AC500 PLC login or CoDeSys Gateway errors please restart the CoDeSys Gateway service or reboot your PC - There might be timeout errors when downloading a configuration change of the AC500 PLC via Automation Builder <i>Workaround:</i> restart CoDeSys Gateway	

PLC - AC500 V3 Processor Modules (PM5xyz)

Important Notes:

- By AC500 V3 CPU, the diagnostic handling is different from the AC500 V2 CPUs.
In AC500 V3 CPU, the system diagnostic should be done using function blocks and the user program or with Automation Builder Software using online diagnostic and Device Tree. The CPU ERR Led doesn't indicate the errors.
- AC500 V3 (PM5xyz) and Programmable Drives installations are incompatible! The Gateway settings for going online are either working for AC500 V3 PLCs or Programmable Drives (refer to known problems further down in this section for details)

Functional changes / New features	Version
New Features: Libraries: New libraries are available: - IntUtils - with POU's: Counter: o CNT_IO_EXT o SWAP Data storage: SRAM data: o SRAM_CLEARED o SRAM_EXPORT o SRAM_IMPORT I/O-Bus: o IO_DIAG o IO_DRIVER_VERSION o IO_INFO o IO_MODULE_DIAG o IO_MODULE_INFO o IO_MODULE_INFO_EXT o IOPROD_ENTRY_READ	Firmware 3.0.1

<ul style="list-style-type: none"> Production data <ul style="list-style-type: none"> ○ CPU_PROD_ENTRY_READ ○ CPU_PROD_READ_ASYNC System information <ul style="list-style-type: none"> ○ PM_VERSION ○ SYS_TIME - ExtUtils - with POU's: <ul style="list-style-type: none"> Battery <ul style="list-style-type: none"> ○ BATT Realtime clock <ul style="list-style-type: none"> ○ CLOCK ○ CLOCK_DT - EtherCAT - with POU's: <ul style="list-style-type: none"> CoE: <ul style="list-style-type: none"> ○ ECAT_COE_READ ○ ECAT_COE_WRITE COM: <ul style="list-style-type: none"> ○ ECAT_BUS_SET_STATE ○ ECAT_SLV_GET_STATE ○ ECAT_SLV_SET_STATE ○ ECAT_START_COM ○ ECAT_STOP_COM DIAG: <ul style="list-style-type: none"> ○ ECATBUS_DIAG ○ ECAT_GET_DCLK_DEVI ○ ECAT_SLV_DIAG INFO: <ul style="list-style-type: none"> ○ ECAT_STATE ○ ECAT_SYNC SoE <ul style="list-style-type: none"> ○ ECAT_SOE_READ ○ ECAT_SOE_WRITE - EthernetUtils with POU's: <ul style="list-style-type: none"> General <ul style="list-style-type: none"> ○ ETHx_OWN_IP ○ ETHx_OWN_IP_INFO ICMP <ul style="list-style-type: none"> ○ ETHx_ICMP_PING IP Conversions <ul style="list-style-type: none"> ○ IP_ADR_DWORD_TO_STRING ○ IP_ADR_STRING_TO_DWORD - IEC60870_5_104 with POU's: <ul style="list-style-type: none"> Data Rec_control_direction <ul style="list-style-type: none"> ○ IEC60870_REC_C_DC ○ IEC60870_REC_C_SC Rec_monitored_direction <ul style="list-style-type: none"> ○ IEC60870_REC_M_DP ○ IEC60870_REC_M_IT ○ IEC60870_REC_M_ME ○ IEC60870_REC_M_ME1 ○ IEC60870_REC_M_SP Send_control_drirection <ul style="list-style-type: none"> ○ IEC60870_SEND_C_DC ○ IEC60870_SEND_C_SC ○ IEC60870_SEND_C_SE Send_monitored_direction <ul style="list-style-type: none"> ○ IEC60870_SEND_M_DP ○ IEC60870_SEND_M_IT ○ IEC60870_SEND_M_IT_1 ○ IEC60870_SEND_M_IT_16 ○ IEC60870_SEND_M_ME ○ IEC60870_SEND_M_ME_1 	
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<ul style="list-style-type: none"> ○ IEC60870_SEND_M_ME_16 ○ IEC60870_SEND_M_SP ○ IEC60870_SEND_M_SP_16 <p>Send_monitored_direction_external_time_stamp</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_M_DP_ET ○ IEC60870_SEND_M_IT_16_ET ○ IEC60870_SEND_M_IT_1_ET ○ IEC60870_SEND_M_ME_16_ET ○ IEC60870_SEND_M_ME_1_ET ○ IEC60870_SEND_M_SP_16_ET ○ IEC60870_SEND_M_SP_1_ET <p><i>General</i></p> <ul style="list-style-type: none"> ○ IEC60870_BACKGROUND_SCAN ○ IEC60870_GET_ADDRESS ○ IEC60870_STATE <p><i>Parameter_setting</i></p> <ul style="list-style-type: none"> ○ IEC60870_REC_P_ME ○ IEC60870_SEND_P_ME <p><i>Supplement</i></p> <ul style="list-style-type: none"> ○ RESET_INIT ○ RESET_RESET <p><i>System_Information</i></p> <p>Rec_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_REC_C_TS_NA_1 <p>Send_control_direction</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_C_CI_NA_1 ○ IEC60870_SEND_C_CI_NA_1_2 ○ IEC60870_SEND_C_CS_NA_1 ○ IEC60870_SEND_C_CS_NA_1_2 ○ IEC60870_SEND_C_IC_NA_1 ○ IEC60870_SEND_C_IC_NA_1_2 ○ IEC60870_SEND_C_RD_NA_1 ○ IEC60870_SEND_C_RP_NA_1 ○ IEC60870_SEND_C_RP_NA_1_2 ○ IEC60870_SEND_C_TS_NA_1_ACT <p>Send_monitored_direction</p> <ul style="list-style-type: none"> ○ IEC60870_SEND_C_TS_NA_1_ACTION ○ IEC60870_SEND_M_EI_NA_1 <ul style="list-style-type: none"> - ModbusTCP - with POU's: <ul style="list-style-type: none"> ○ ETHx_MOD_CONFIG ○ ETHx_MOD_INFO ○ ETHx_MOD_MAST <p>Buffered data</p> <ul style="list-style-type: none"> - Support of persistent data in %M area via pragma {no init} - Support of VAR RETAIN PERSISTENT <p>Display</p> <ul style="list-style-type: none"> - Basis support of PLC display: <ul style="list-style-type: none"> ○ run/stop switch ○ RTC ○ battery ○ PLC mode setting (Mode 1, 2, 3) <p>Diagnosis</p> <ul style="list-style-type: none"> - Support CODESYS Device diagnosis for: <ul style="list-style-type: none"> ○ I/O-Bus ○ CM579-PNIO PROFINET IO controller Communication Module ○ CM589-PNIO PROFINET IO device Communication Module - Support CODESYS DeviceTree diagnosis (green circle/red triangle) <p>I/O-bus</p> <ul style="list-style-type: none"> - Scan of I/O modules for configuration - Support of AC500 I/O-Bus with up to 10 S500/S500-eCo modules 	
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<p>CAN interface</p> <ul style="list-style-type: none"> - Support of Protocols - J1939 on Onboard CAN interface with library IODrvJ1939 - CAN2B on Onboard CAN interface with library CANbusDevice - CAN2A on Onboard CAN interface with library CANbusDevice - CANopen device diagnosis with library CANbusDevice - CANopen master on Onboard CAN interface with driver lib: CANbusDevice <p>COM1</p> <ul style="list-style-type: none"> - Data receive/send with library SerialCommunication <p>Userdisk</p> <ul style="list-style-type: none"> - Data read/write with library CAA_File - 248MB Userdisk in FLASH for IECproject, user data, WEB server data, Log data, Source project <p>SD-Card</p> <ul style="list-style-type: none"> - Data read/write with library CAA_File - FW update with signed files for BootFW, UpdateFW and SystemFW <p>EtherCAT</p> <ul style="list-style-type: none"> - EtherCAT device diagnosis with library ABB EtherCAT 1.0.0.26 - Support of CM579-ETHCAT EtherCAT master comm. module <p>PROFINET</p> <ul style="list-style-type: none"> - PROFINET device diagnosis with library 3S CommFB and CAA DeviceDiagnosis - Support of CM589-PNIO PROFINET IO device Communication Module - PROFINET device diagnosis with library 3S CommFB and CAA DeviceDiagnosis - Support of CM579-PNIO PROFINET IO controller Communication Module <p>Ethernet</p> <ul style="list-style-type: none"> - ICMP ping out of user project with POU - WEB server on PLC CODESYS WEB visualization - CODESYS network variables OPC UA server - OPC UA server - OPC DA server - FTP server (one server, listening on both Ethernet interfaces ETH1 and ETH2) - Protocol ABB netConfig - Protocol UDP out of user program with library netBaseServices - Protocol TCP/IP out of user program with library netBaseServices - Protocol Modbus TCP Client with POU ETHx_MOD_MAST (library ABB ModbusTcp 1.0.0.22) - Online access with 3S block drivers: <ul style="list-style-type: none"> o TCP/IP o UDP <p>System</p> <ul style="list-style-type: none"> - Support of CODESYScontrol V3.5.9.0 runtime system (needs Automation Builder 2.0) <p>Device</p> <ul style="list-style-type: none"> - Support of new TB TB5622-2ETH for PM5650-2ETH - Support of new PLC PM5650-2ETH 	
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<i>Fixed issues</i>	<i>Version</i>
<p>Syslib</p> <ul style="list-style-type: none"> - Wrong comments in CPU_PROD_ENTRY_READ and CPU_PROD_READ_ASYNC. – Fixed - Incorrect numbering in comment of in/outputs of POU CPU_PROD_READ_ASYNC and CPU_PROD_READ. – Fixed <p>EtherCAT</p> <ul style="list-style-type: none"> - Using the function block ECAT_BUS_SET_STATE with correct values, the FB always returns error code 4. In addition it seems that the following memory blocks (outside FB) will be overwritten. – Fixed - Application not running with configuration of CM579-ETHCAT in sync mode. – Fixed <p>Diagnosis</p> <ul style="list-style-type: none"> - Not all devices show the correct connector status (green circle = ok, red triangle = error). – Fixed 	Firmware 3.0.1

<i>Known problems</i>	<i>Version</i>
<p>Modbus TCP / Modbus TCP Library:</p> <ul style="list-style-type: none"> - It's not possible to use multiple connections to one server with Modbus TCP. 	Firmware 3.0.1

<p><i>Workaround:</i> Use only one connection per Modbus TCP server.</p> <ul style="list-style-type: none"> - Function Code 7 for Modbus TCP is not working. <i>Workaround:</i> FCT=7 cannot be used until issue is fixed. - Function code 23 for ETHx_MOD_TCP has different max data length (write 121, read 125) then V2 (write 125, read 125). The values in V3 are according to Modbus specification. <i>Workaround:</i> Won't be fixed, use data length according to Modbus specification. - Response time of Modbus TCP server is greater than in V2.x PLCs. Currently ~200ms. <i>Workaround:</i> Set timeout times in client application accordingly. - If Modbus TCP server is configured under both Ethernet interfaces ETH1 and ETH2, only ETH1 shows "green circle". Modbus TCP server under ETH2 shows every time error state "red triangle". <i>Workaround:</i> Don't care about red triangle under ETH2. <p>FW Update:</p> <ul style="list-style-type: none"> - The keys CPUFW, BootFW, UpdateFW and DisplayFW for the group [FirmwareUpdate] and [CPU] are checked. If one of these keys is missing, the result is set to "7; Unknown update mode" with a blinking Err-Led at the end of the update process. <i>Workaround:</i> Content of SDCARD.INI for update of BootFW, UpdateFW and SystemFW: <pre> [Status] FunctionOfCard=2 [FirmwareUpdate] CPUFW=11 BootFW=11 UpdateFW=11 DisplayFW=0 [CPU] CPUFW=/SystemFW/3_0_0_151/AC500_V3_SystemFirmware_V3.0.0.151.tar.bz2 BootFW=/BootFW/3_0_0_89/AC500_V3_BootFirmware_V3.0.0.89.tar.bz2 UpdateFW=/UpdateFW/3_0_0_73/AC500_V3_UpdateFirmware_V3.0.0.73.itb Display= </pre> <p>OPC Server:</p> <ul style="list-style-type: none"> - OPC server: three OPC clients could not access one V3 PLC stably via OPC server at the same time. <i>Workaround:</i> Open, use max. 4 Online connections at a time <p>SD Card:</p> <ul style="list-style-type: none"> - If the user creates in /home/system/ an 'sdcard' directory and then inserts a memory card, it is mounted and the directory should refer to the memory card now. After taking the card out the directory should be deleted. The behavior is unexpected because after taking the card out, the 'sdcard' directory is still present and shows the previous content. <i>Workaround:</i> Avoid creating files and folders inside user root folder (/home/system) - If the SD card is removed during a read / write process, the SD card won't remounted from the PLC after replug. POU FileClose does not output a Done or Error and remains in Busy status. <i>Workaround:</i> Do not remove the SD card during read/write process. - In some cases, If the SD card is removed while in PLC is in RUN mode and SD card is accessed and is put back, the PLC don't recognized that the SD Card is put back. If you try to write on a File on the SD Card there is Error NOT_EXIST put the File is there. <i>Workaround:</i> Do not to pull the SD card while actively accessing it. <p>System:</p> <ul style="list-style-type: none"> - Command "Restore" in AB use internally the command "Reset origin device". Reset origin device resets the PLC to factory state. After Power on, the UpdateFW will start and a FW download via SD card or AB must be performed. <i>Workaround:</i> Do not use command "Restore" from AB <p>PROFINET:</p> <ul style="list-style-type: none"> - LIB: CommFB POU: GETIO_PART/SETIO_PART do not work. Status code 16#40820000 will be returned. <i>Workaround:</i> Do not use the POU - CM579-PNIO: status of coupler not correct shown in device tree. (Always red triangle). <i>Workaround:</i> Check state of connected PNIO devices. <p>CAA_File:</p> <ul style="list-style-type: none"> - SysFileOpen() does not create missing folders on paths that belong to volatile placeholders. <ol style="list-style-type: none"> (1) Volatile placeholder: SysFileOpen('sdcard/abc/test.txt', AM_WRITE) -> File will not be created if folder abc is missing (2) Non-Volatile placeholder: SysFileOpen('userdisk/abc/test.txt', AM_WRITE) -> File will be created, even if folder abc is missing (3) No placeholder: SysFileOpen('foo/test.txt', AM_WRITE) -> File will be created inside first standard file path (currently: /home/system), even if folder foo is missing. <i>Workaround:</i> Do not use the volatile placeholders "sdcard", "userdisk" inside user root folder. <p>Coupler:</p> <ul style="list-style-type: none"> - First external slot is mapped to index 0 instead of 1. Slot number must be set as parameter in configuration. Empty slots are not allowed. <i>Workaround:</i> Set slot as parameter in configuration of coupler. - Note: Empty slots are not allowed. <p>FTP Server:</p>	
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<ul style="list-style-type: none"> User "system" has restricted permissions on "userdisk". User "system" is not able to Create/Write/Upload delete a file on userdisk. But it is possible on SD Card. Workaround: Login as user "userdisk". 	
<p>When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs.</p> <p>Workaround: Modify the Gateway Settings in the file C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg or C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg manually to the following settings and restart the Gateway</p> <p>For AC500 V3 PLCs please change settings to: [CmpRouter] .. 0.MainNet=BlkDrvTcp</p> <p>For Programmable Drives to: [CmpRouter] .. 0.MainNet=BlkDrvShm</p>	AC500-V3 Configuration 2.6.1

Servo Drives (as shown in the AB installer option selection tree)

Note 1: Changes for Servo Drives Package from 2.0.0 to 2.0.1

Functional changes / New features	
Servo Drives Package <ul style="list-style-type: none"> Add support for latest drive firmware - Ship device description files for 5861.2.0 for MicroFlex e150, MotiFlex e180 and MicroFlex e190 	2.0.1
Mint WorkBench <ul style="list-style-type: none"> None 	Build 5822
Bug corrections	
Servo Drives Package <ul style="list-style-type: none"> AB-10701: Remove unsupported firmware versions from package AB-9981: Update Object creates an error when changing a MicroFlex e150 into a MotiFlex e180 (or vice-versa) 	2.0.1
Mint WorkBench <ul style="list-style-type: none"> None 	Build 5822
Known problems	
<ul style="list-style-type: none"> None 	

Solutions

Pump Station Library Wizard

Bug corrections	
Pump Station wizard code generation error is fixed	2.0.1

DriveManager

Bug corrections		Issue ID
Datatype of virtual drive variable and fieldbus parameters in process data editor doesn't match		AB-10656
Known problems		
Automation Builder is crashing when user edit same bit pointer parameter or value pointer parameter twice in Drive Manager Workaround: Close & Reopen DriveManager window then edit parameter again		AB-9665
Drive manager is going online with wrong IP address and preference is given to FENA station name while connecting online if station name is changed then not going Online Workaround: Change Station name also when IP address of drive is changed		AB-10967

Drive Application Programming

Bug corrections		Issue ID
Project Templates of Drive Application Programming are shown under General category instead of Projects category in new project dialog		AB-10814
Drag & Drop of Programmable Drive object shows an missing implementation warning		AB-10285
Known problems		
<p>When installing Programmable Drives option on a PC with AC500 V3 (PM5xyz) option installed the Gateway settings are getting modified in an incompatible way that it is no longer possible to go online with AC500 V3 PLCs.</p> <p><i>Workaround:</i></p> <p>Modify the Gateway Settings in the file</p> <p style="padding-left: 40px;">C:\Program Files\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg</p> <p style="padding-left: 40px;">or</p> <p style="padding-left: 40px;">C:\Program Files (x86)\ABB\AutomationBuilder\GatewayPLC\Gateway.cfg</p> <p>manually to the following settings and restart the Gateway</p> <p>For AC500 V3 PLCs please change settings to:</p> <p style="padding-left: 40px;">[CmpRouter]</p> <p style="padding-left: 40px;">..</p> <p style="padding-left: 40px;">0.MainNet=BlkDrvTcp</p> <p>For Programmable Drives to:</p> <p style="padding-left: 40px;">[CmpRouter]</p> <p style="padding-left: 40px;">..</p> <p style="padding-left: 40px;">0.MainNet=BlkDrvShm</p>		AB-10821

Motion Control Library (PS5520 for AC500 V3)**Notes:**

- Changes for Motion Solution and Motion Control Library from v2.0 to v2.0.1 (Technology Preview)
- Further details can be found in Appendix 13: PS5520 Motion Control Library Package (Technology Preview)

Functional changes / New features		
Motion Solution - None		2.0.1
Motion Control Library - Add MC_ReadParameter (and MC_ReadBoolParameter), which works with MCA_PARAMETER_NUMBER.CommandedPosition, MCA_PARAMETER_NUMBER.ActualVelocity and MCA_PARAMETER_NUMBER.CommandedVelocity (LIB-1220) - Improved error logging - Improved drive fault handling - Improved handling of PLCopen states when drive power is enabled/disabled		0.9.5
Bug corrections		
Motion Solution - AB-10718: Crash is possible when comparing Motion Solution items with Project compare or SVN compare. - AB-10251: UI is slow when a device with a very large ESI file is selected - AB-10013: Improve support for devices with fixed PDO mappings		2.0.1
Motion Control Library - Fixed a bug that stopped the Valid output from going high - Fixed a bug in MC_ReadActualPosition to make it return the modulo position - Fixed a bug that caused the Valid output to stay high when Enable goes low (for level triggered FBs) - Fixed a bug that caused an exception when an unassigned reference to an AXIS_REF was used as an FB input - Fixed a bug where the ErrorId was not set for level triggered FBs (LIB-1208) - Fixed a bug that caused only a subset of errors to be logged - Fixed a bug that caused the misleading error that an axis was in error when it was actually just not powered - Fixed a bug in the implementation of mcCurrentDirection in MC_MoveVelocity - Fixed a bug where CommandAborted stayed high for ever - Fixed a bug where a move would continue after re-enabling the drive's power - Adjusted the comments for MCA_PARAMETER_NUMBER to enable the internal help to show whether a parameter was R or R/W - Added an error code for attempting to modify a read only parameter		0.9.5

<ul style="list-style-type: none"> - Fixed a bug that caused buffered FBs terminated due to an axis error to be flagged as aborted when then should have been flagged as in error - Made all libraries use placeholders rather than explicit versions - Reversed the checking so that an axis in error is reported ahead of the axis not being powered - Made adjustments to make drive errors cause the axis to go into an error state (ERRORSTOP and AXIS_IN_ERROR) - Adjusted FBs to make them return an error if the axis is in error - Adjusted IsDone to make it take into account that an FB has been told (by the motion kernel) that it is done, but this change has yet to propagate to the FB's Done output - Adjusted MC_SetPosition to make it operate correctly - Adjusted the kernel's SetState method to stop an error being logged when a state change to the same state is requested - Fixed a bug that caused a clunk when the idle VPU was switched to 	
Known problems	
Motion Solution <ul style="list-style-type: none"> - Mapping fails with "Parameter Id already exists" when no Rx/Tx PDOs are selected (Jira ID AB-10236) - Selected Drive device briefly flicks to invalid status when performing a mapping (Jira ID AB-9982) - Upgrading Microflex to Motiflex or vice versa does not changing the node name (Jira ID AB-10697) - Mappings that are no longer valid are left after updating Servo Drive (Jira ID AB-10509) - Changing EtherCAT Master causes multiple UI problems in EtherCAT Mapping screen (Jira ID AB-10504) - EtherCAT Master validation incorrect after cut/paste of CM579 (Jira ID AB-10502) - If no motion solution master selected, user is presented with an empty combo box on Axis > Mapping for Encoder (Jira ID AB-10401) - Manual editing of mapping objects causes multiple failure messages (Jira ID AB-10237) - Undo doesn't cause the UI to refresh (Jira ID AB-10227) - Wrong text in Motion solution plugin - "MO_Generate_Title_HelpText" (Jira ID AB-10941) - Motion Solution: Clean up resources for texts which don't need translation (Jira ID AB-10940) - When servo drives are updated, a connected ECAT Axis will lose its tick boxes even though the mappings are actually set correctly (Jira ID AB-10773) 	2.0.1
Motion Control Library <ul style="list-style-type: none"> - An exception occurs when warm reset is selected. (Jira ID LIB-1232) - When using a JERK value >0 the motion profile will generate a position overshoot then jump back to target value. (Jira ID LIB-1234) - EtherCAT slave drive errors are not reported back to PLCmotion library (Jira ID LIB-1215) 	0.9.5
Motion Control Library: PLCopen motion features not correctly supported in Version v0.9.5.x <ul style="list-style-type: none"> • MC_MoveAbsolute – No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported. • MC_MoveRelative– No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported. • MC_MoveVelocity– No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported. • MC_Power – No support for forward or negative • MC_CamIn– No support for Continuous update, Only mcABORTING buffer mode is supported. • MC_CombineAxes – Only mcABORTING buffer mode supported. • MC_GearIn – Only mcABORTING buffer mode supported. No support for JERK. • MC_GearInPos – Only mcABORTING buffer mode supported. No support for JERK. • MC_ReadMotionState – Only supports mcSET_VALUE. • MC_ReadParameter - Only parameters supported are demand velocity, actual velocity and commanded position (3/17) • MC_WriteParameter – Does not return parameter values. 	0.9.5

***Disclaimer:** Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Changes in Automation Builder 2.0.0

The release includes the following device groups:

Automation Builder

<i>Functional changes / New features</i>		<i>Version</i>
Virtual Commissioning <ul style="list-style-type: none"> Virtual Commissioning offers the user early commissioning of programs and projects, eliminating direct dependency on hardware. Variable exchange between different devices can be verified in simulation. The user need to create system model which represents physical system for commissioning. Virtual Commissioning supports AC500 V2 PLC, ACS380 Drive and ACS580 Drive. To work with this feature, apart from essential license, the user need to enable Virtual Mode (Online->Virtual Mode). Virtual drive and PLC simulation only works in Time slice mode. 		2.0.0
Licensing Extensions to Libraries <ul style="list-style-type: none"> The library license grants the right to use the library in any number of projects and on any number of PLCs. The license is checked on IEC project compilation 		2.0.0
Open Device Type Editor <ul style="list-style-type: none"> Full viewing and editing capability of open device type configuration Export of open device types to device descriptions Bulk editing with MS Excel 		2.0.0
License Experience <ul style="list-style-type: none"> Enhancement of license check for new major version 		2.0.0
Solution Layer <ul style="list-style-type: none"> Solution Manager Common UI components Solution interfaces for v3 engineering Device Tree interfaces Generic Storage and SVN 		2.0.0
ABB License Manager <ul style="list-style-type: none"> New options for ABB License Manager <ul style="list-style-type: none"> Generate a new basic license Generate a 30 day trial license 		2.0.0
<i>Known problems</i>		
Launch AB in user selected profile Workaround: to launch Automation Builder in another profile than the newest, please adapt the file AutomationBuilder.exe.config (located in the ProgramFiles folder AutomationBuilder\Common) <pre>< StartUpSettings> <add key="ShowProfileSelectionDialog" value="false" /> <add key="StartupProfileName" value="Automation Builder 2.0" /> </StartUpSettings></pre> behavior: StartupProfileName is launched <pre> <add key="ShowProfileSelectionDialog" value="true" /> <add key="StartupProfileName" value="Automation Builder 2.0" /></pre> behavior: profile selection dialog is shown		

PLC - AC500

Note:

- Release notes for PLC AC500 V3 can be found in ABB Library.

<i>Functional changes / New features</i>	<i>Version</i>
<p>AC500 Configuration:</p> <ul style="list-style-type: none"> - New device types: <ul style="list-style-type: none"> o PM585-ETH o CM592-DP (replacement for CM572-DP) <ul style="list-style-type: none"> ▪ easy configuration update from CM572-DP to CM592-DP o PM595 with EtherCAT - Condition Monitoring System (CMS): <ul style="list-style-type: none"> o Engineering of condition monitoring solution based on FM502 o 16 fast sampling IEPE/+-10V channels with encoder connectivity for vibration analysis and machine monitoring o Library function for control and data analysis o Combination with other IO for e.g. temperature measurement - AC500 Firmware Identification and Update via Automation Builder: <ul style="list-style-type: none"> o Identify firmware version on AC500 devices o Download of matching firmware by Automation Builder - Advanced IO device handling: define structures (DUT) of devices <ul style="list-style-type: none"> o Productivity improvements: Modularity in hardware can be reflected in Automation Builder → Re-use during configuration and application programming o In general: Access to IO channels without need for defining individual mappings - General CAN improvements: <ul style="list-style-type: none"> o New editor for complete PDO configuration (dialogs can be moved to convenient position) o version control improved with better SVN support - MultiOnlineChange Tool: <ul style="list-style-type: none"> o Enable parallel downloads to PLCs via multiple instances of MultiOnlineChange tool o Option to select up to 5 firmware files incl. file type (firmware, boot code, display, etc.) that are written to the PLC o The timeout to download one file and to reboot the PLC can be manually set (customer-selectable activation delay) o For firmware 2.4 and newer, the sdcard.ini is always written to the PLC - Enable library licensing via Automation Builder License Manager <p>Technology previews*:</p> <ul style="list-style-type: none"> o IEC Application Programming in Automation Builder <ul style="list-style-type: none"> ▪ Global variable lists (GVL), user defined data unit types (FUT) and structured text POU's can be added to application object in Automation Builder ▪ All objects are copied automatically to the IEC 61131 editor o Open Modbus RTU/TCP device integration based on the drive ACS355 o PackML support: <ul style="list-style-type: none"> • quick start via a comprehensive template pre-filled with often used data 	2.5.0
<ul style="list-style-type: none"> - EtherCAT feature Improvements <ul style="list-style-type: none"> o Diagnostic support for EtherCAT communication modules (CM579-EtherCAT, PM595 onboard) o Prototype: Motiflex e180 as top-level device including EtherCAT master support. An e180 specific process image editor must be created and the process image configuration must be included in the ENI file. - S500 Device Support <ul style="list-style-type: none"> o DO526 device support in Automation Builder- Device Description update - Online Mode <ul style="list-style-type: none"> o Single point of data entry for gateway settings. o Offer download of application and hardware configuration in online mode when hardware configuration is not up to date on PLC. o Check firmware version of PLC and coupler firmware on login and offer update option on mismatch between project and connected hardware. o Prevent changes of hardware configuration in online mode. - Improved user experience and usability by Harmonized Fieldbus Commissioning <ul style="list-style-type: none"> o Commissioning for all AC500 fieldbusses with harmonized layout for display of important diagnostic information. Fast, comfortable access on main diagnostic page o Compare offline and online configuration (hardware setup) and allow merge 	2.0.0

<ul style="list-style-type: none"> ○ Detailed diagnostic information in separate tab page ○ Live list for EtherCAT, Profinet, Profibus 	
AC500_Engineering <ul style="list-style-type: none"> - PROFINET I/O Device ○ Share configuration of PROFINET modules on up to 4 PROFINET I/O controllers 	2.0.0

Bug corrections	Version
Various stability improvements.	2.5.0

Known problems	ID
Configuration parameters for Modbus TCP client do not exist in the Modbus-TCP client tab Workaround: Configure parameters in Modbus TCP server tab	AB-7928
Invalid use of character ' in alarm string leads to runtime exception on PLC Workaround: use \$ as escape character for special characters (like ')	AB-6852
CODESYS project is still marked as dirty when changes are undone/deleted Workaround: check the changes and save/don't save project correspondingly.	AB-4383
Drives connected to CM592-DP PROFIBUS coupler cannot be connected to Automation Builder. Error message "Unable to connect to drive" is shown Workaround: use instead CM572-DP	AB-8100
Copy/paste of communication protocol sub-trees (e.g. PROFIBUS) between two different parent node types (e.g. CM572-DP and CM592-DP) is only supported within one and the same Automation Builder instance: <ul style="list-style-type: none"> - If the protocol sub-tree is copied between different Automation Builder instances and with different parent node types, all parameters are set to their default values. - If the protocol sub-tree is copied between two Automation Builder instances, but below the same parent node type (e.g. CM572-DP to CM572-DP), all parameters keep their values. Workaround: use export and import functionality	AB-7822
ECAD import/export does not work for modular EtherCAT IO modules Workaround: not available	AB-7751
In case of INVALID task intervals (e.g. 0) just a warning is shown. Error message is missing. Workaround: double check the settings and warnings	AB-7577
Parameters might get changed for third party modules in Device Editor (e.g. watchdog (ms) and VLAN Id) Workaround: not available	AB-7357
For CAN the check for double COB-Ids is not working properly. No error message is shown Workaround: double check COB-Ids	AB-7169
II_Settings are missing in project tree of Extension_Bus after merging projects via SVN Workaround: not available	AB-6937
Some given parameters are changed for Third Party module (Slave bus sinamics CBE20)	AB-7357

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AC500 Firmware

Functional changes / New features	Version
<ul style="list-style-type: none"> ○ Ethernet: <ul style="list-style-type: none"> ○ IEC60870-5-104: Variable Broadcast Address for General Interrogation FB from AC500 (AC500 IEC60870-104 type C_IC_NA_1). ○ System: <ul style="list-style-type: none"> ○ New CPU parameter "Task compatibility mode" with values: <ul style="list-style-type: none"> ▪ File Handling prioritized for Idle CPU time (default/same as v2.4.x) ▪ Balanced Handling of Ethernet and file operations for Idle CPU time ▪ Ethernet Handling prioritized for Idle CPU time ○ Support of CM5xx firmware identification and download from Automation Builder (AB) ○ Support of PM5xx firmware identification and download from Automation Builder (AB) ○ Display firmware V2.9 - extension for EC58x (Custom specific) ○ PM59x: Increased HEAP memory for CMS Signal Processing Lib (C-Code) ○ EtherCAT: <ul style="list-style-type: none"> ○ Support of EtherCAT slaves with several layers of submodules (e.g. Beckhoff EK1110) ○ Support of sync units ○ EtherCAT support on PM595-4ETH, internal couplers ETH3 and ETH4: customer can select whether being PROFINET master or EtherCAT master. ○ Support of new devices: <ul style="list-style-type: none"> ○ New PROFIBUS DP communication module CM592-DP (as replacement of CM572-DP) ○ New AC500 CPU PM585-ETH ○ New AC500-eCo PLC PM566-ETH 	2.5.1

Bug corrections	Version
<ul style="list-style-type: none"> - PROFINET: <ul style="list-style-type: none"> ○ PM595-4ETH shows configuration error in case of configuration of PROFINET for internal coupler ETH3 and/or ETH4 and external coupler CM579-PNIO in slot 1 or slot 2 and SM560-S. Fixed - File handling: <ul style="list-style-type: none"> ○ File handling in RUN mode of PM5xx (e.g. by CAA_File_, write Bootproject, ..) can limit the Ethernet throughput. This can lead to timeout e.g. in Modbus TCP communication. Fixed - System: <ul style="list-style-type: none"> ○ Online change + RESET: Project with large structures with REAL/LREAL variables can lead to fault values after Online change and followed by RESET. Fixed ○ "IEC conversion function LWORD_TO_STR() doesn't work for numbers > (2^32)-1". Fixed - Webserver: <ul style="list-style-type: none"> ○ PM595-4ETH can crash when typing a LREAL Variable in Webvisu. Fixed - Online access: <ul style="list-style-type: none"> ○ Force will not be released when logged in via Ethernet and connection is broken (no logout). Fixed 	2.5.1

Safety PLC - AC500-S

Safety PLC – AC500-S feature is not included in Automation Builder 2.0.0 and will be available with Automation Builder 2.0. Service Release 2.

Resulting behavior: When opening in Automation Builder 2.0.0 a project that contains functional safety components the following error message will be displayed: "The project contains objects that are not supported by the current installation: AC500_S. Please install the appropriate packages."

Here, customer must work with previous version of Automation Builder: 1.1 or 1.2

Recommendations:

- New projects: For projects containing functional safety components use Automation Builder version profile 1.1 / 1.2 (which contains AC500 Firmware V2.4/V2.5).
- Existing projects: Projects containing functional safety components must not be upgraded to Automation Builder 2.0. Open and modify these projects instead in compatibility mode for previous Automation Builder versions. We recommend to install and use Automation Builder version profile 1.1 / 1.2 (which contains AC500 Firmware V2.4/V2.5).

The functional safety feature for Automation Builder 2.0 will be again available with Automation Builder 2.0 Service Release 2.

Note 1: Before using the functional safety configuration and programming tools contained in Automation Builder, you must have read and understood the AC500-S Safety PLC User Manual (see <http://www.abb.com/PLC>). Only qualified personnel are allowed to work with AC500-S safety PLCs.

Compiling and executing functional safety projects on SM560-S Safety CPUs require the purchase of a PS501-S license enabling package.

Pluto Manager

<i>Functional changes / New features</i>	<i>Version</i>
<ul style="list-style-type: none"> - Function block programming - All system function blocks libraries merged to func06.fps - TC1S, TC2S, TC1T, TC2T and TC2RTI updated in func06. Short off glitches were not handled correctly. Older block version still available in func05 for compability. - Timing diagrams in function block descriptions - Archive project - New function block option: an output pin can be marked as NonSafe - New ini file location: \\Users\\<User Name>\\AppData\\Roaming\\PlutoManager\\Settings - New downloaded OS location: \\Users\\<User Name>\\AppData\\Roaming\\PlutoManager\\OS - New log file location: \\Users\\<User Name>\\AppData\\Roaming\\PlutoManager\\Logs Log files are stored there in case of compiler mismatch error - New default project location: \\Users\\<User Name>\\Documents\\PlutoManager\\Projects Location can be changed under preferences - New location for user installed pdf's on help menu: \\Users\\<User Name>\\Documents\\PlutoManager\\UserPdf - Warning for write to read-only system memories - Export double register halves to CP600 - Export system variables to CP600 - Renumber sequence - Bug fix: Coil dialog box didn't work for jump instruction - Bug fix: Description texts not enabled if window opened when online - Bug fix: Fixed com port driver, 	2.32
<ul style="list-style-type: none"> - Gateway monitoring (EIP/S3/EC/MT/PN) - Network connection to gateway - New OS download dialog - New Pluto Manager upgrade dialog - Bug fix: Reload encrypted unicode files failed. - Bug fix: Monitoring of networks with several timers and function blocks did sometimes display incorrect timer values 	2.30

Solutions

Condition Monitoring System

Functional changes / New features	
<ul style="list-style-type: none"> - Condition Monitoring System (CMS): <ul style="list-style-type: none"> o internal changes for future extensions, no functional changes. o Known issue while upgrading Example FM502-CMS Control.project using AB2.0.0: Please press "Keep" instead of update button as it may cause compilation error. --> solved with AB2.0.1 	2.6.1
<ul style="list-style-type: none"> - Condition Monitoring System (CMS): <ul style="list-style-type: none"> o Updated version of CMS_IO_AC500_V24.lib (V1.0.2): Minor bug fixes o Updated version of WAV_FILE_AC500_V24.lib (V1.1.0): FB WAV_FILE_CREATE: Added ability to read in WAV files with 64Bit data size 	2.5.3
<ul style="list-style-type: none"> - Condition Monitoring System (CMS): <ul style="list-style-type: none"> o Updated version of WAV_FILE_AC500_V24.lib (V1.0.1) o Online help added 	2.5.2
<ul style="list-style-type: none"> - Condition Monitoring System (CMS): <ul style="list-style-type: none"> o Engineering of condition monitoring solution based on FM502 o 16 fast sampling IEPE/+-10V channels with encoder connectivity for vibration analysis and machine monitoring o Library function for control and data analysis o Combination with other IO for e.g. temperature measurement o PM59x: Increased HEAP memory for CMS Signal Processing Lib (C-Code) 	2.5.0

Drive Manager

Functional changes / New features	
ABB DriveManager package <ul style="list-style-type: none"> - New & Improved functionality while installing application parameters <ul style="list-style-type: none"> o Now user can provide name while installing application parameters and the same name will be visible in firmware list of DriveManager tab. o Append firmware version to user provided name for better understanding. o Now user can install application parameters to multiple firmwares by choosing multiple firmwares from the list. o Now user can install different sets of application parameters to each firmware. (For e.g. Crane application parameters & Lift application parameters can be installed for ACS880 AINFX 2.40.0.0 firmware). - ACS530 drive support for both Profibus and Profinet. - Now for ACS880 some parameters will be added dynamically based on user selection. <ul style="list-style-type: none"> o Parameters under Group 14, 15, 16 & 58 are added dynamically based on the module selection by user. o Improved logic for Dependency parameters - New Firmware support <ul style="list-style-type: none"> o ACS880 – AINFX 2.31.0.0, AINFX 2.40.0.0 o ACS580 – ASCCL 1.70.1.5, ASCCL 1.70.3.0 o ACS380 – AMCK6 1.71.0.0, AMCK6 1.73.8.0 o ACS850 – UIF1 2901, UIF1 2930, UIF1 2940 o ACSM1 Speed – UMFI 1889B, UMFI 1900, UMFI 1910 o ACSM1 Motion – UMFI 1889B, UMFI 1900, UMFI 1910 	2.0.0
Bug corrections	
ABB DriveManager package <ul style="list-style-type: none"> - Configuration error on updating projects created in 1.2.x which has drive devices - Automation Builder is crashing while connecting Drive Manager online over Profinet. - Offline changes of parameters and process data information are not saved in project file. - Adding "ProfiSafe" module under any drive shows "Error in CRC check" error message. - DriveManager Window is missing for any Drive configured on Profibus - DriveManager shows a warning message "Error on restoring properties from project. Check drive configuration" while updating a project created in AB1.2.2. - DriveManager shows Continuous error pop up message on opening the DriveManager tab by double click the drive node. - Process data - PPO mapping wrong for those PPO's which has PKW. - When we connect multiple drives from Drive overview window, it connects only one drive. - For ACS 880/ACSM1 speed drives even though if some values in Online Offline mode are same, are considered as differences. 	
Known problems	
ABB DriveManager package <ul style="list-style-type: none"> - No synch between Process data tab and Drive Manager's FBA data in & data out parameter group with 32 bit parameters. <u>Workaround:</u> While configuring offline data in FBA data in & data out in drive manager if 32 bit parameter is selected then leave next parameter as empty. - Automation Builder is crashed when user edit same bit pointer/ value pointer/ binary parameter twice in Drive Manager. <u>Workaround:</u> Close the DriveManager window and open it again then edit that parameter again. 	

Drives

<i>Functional changes / New features</i>	<i>Version</i>
ACS380 virtual drive available with AMCK6 1.74.2.0 firmware.	AMCK6 1.74.2.0
ACS580 virtual drive available with ASCK2 1.74.2.0 firmware	ASCK2 1.74.2.0

Servo Drives

Functional changes / New features		Version
Servo Drives Package <ul style="list-style-type: none"> - Now possible using Update Object to change a (EtherCAT slave) MicroFlex e150 into a MotiFlex e180 and vice-versa. - Include device description files for new MicroFlex e150 and MotiFlex e180 firmware (as EtherCAT slave devices). Builds 5852 & 5860 now included. - Removal of device description files for older firmware builds (Builds 57xx) 		2.0.0
Mint WorkBench <ul style="list-style-type: none"> - Add support for the new ESM servo motor range. 		Build 5822

Bug corrections		Version
Servo Drives Package <ul style="list-style-type: none"> - AB-6893: MicroFlex e150 and MotiFlex e180 devices as EtherCAT slaves do not update correctly - AB-8464: Renaming of MicroFlex e150 not working correctly - AB-8595: Not possible to update a MicroFlex e150 or MotiFlex e180 EtherCAT device imported from its ESI file 		2.0.0

Programmable Drive

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010) loaded to drive memory unit. Please contact ABB representative.

Note 2: In order to get ABB Standard and System library visible, please disable *Enable simplified library handling* and *Hide system libraries* options in Library management Tools/Options/Feature.


Note 3: Drive composer pro version 1.9 or newer is recommended. See appendix 1 how to set Drive composer pro working parallel with Automation Builder.

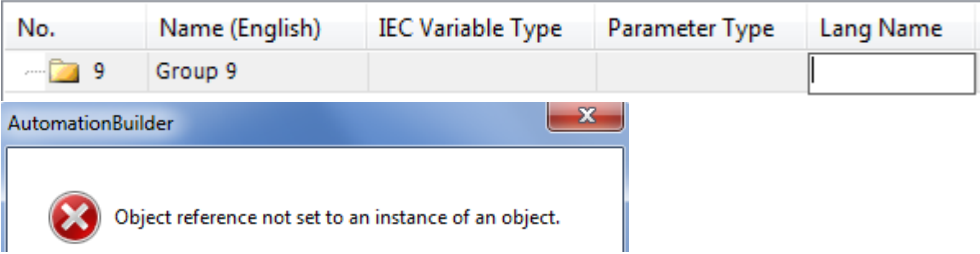
VERSION INFO	
ABB Driveware IEC programming package	3.6.616.1021
Automation Builder	2.0
Compiler versions	3.5.7.0, (3.4.4.30)
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.40 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.6.0 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.6.0 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.6.0 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.6.0 (ZCU-14)
Target device ACS880_ATBF_BCU12_M_V3_5	3.5.6.0 (BCU-12/02/22)
Target device ACS880_ATBF_ZCU12_14_M_V3_5	3.5.6.0 (ZCU-12 /14)
Target device ACS880_AMMF_ZCU14_M_V3_5	3.5.6.0 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and version 3.4.4.30 of the compiler must be used. Firmware 2.40 must be used in case of F-series I/O IEC-programming.

Functional changes / New features	Version
Default compiler version is 3.5.7.0.	2.0
ACS880 Test Bench drive target devices for ZCU and BCU control boards	2.0
ACS880 M04 drive target device for ZCU-14 control board	2.0
Extended functionality of Project/Compare for comparing the current project with a project on disk.	2.0

Bug corrections	ID
Automation Builder error and crash with SVN plugin.	AB-9922
Output mappings of signal type firmware parameters were deleted during device update.	TFS-82753
Updating Lang True or Lang False –fields of Bitlist type parameter. Bitlist True and False value names doesn't update correctly.	TFS-79482 TFS-18781
Application parameters can go missing until next reboot. This happened if customized loading package was used. Unload file list was incomplete.	TFS-78720

Known problems	ID
<p>In case the old FW (AINFx 2.21.0.0) or older is used the default compiler version 3.5.7.0 cannot be used. Instead of that the old compiler 3.4.4.30 must be used because of Unresolved reference:</p>  <p>Description</p> <p>! Unresolved reference: ' __MEMSET'</p> <p>However with old compiler (3.4.4.30) and AB 2.0 every time when a project is closed and reopened again a new RAM download is requested even there are no changes compared to target program-</p>	TFS-81416

User Set's may have incompatible parameter values if the drive is not having same original application. Pointer type of FW parameters which are linked to application memory are not cleaned from the User sets in case of some other application has been downloaded to drive and User set is loaded back. REMEDY: Use application loading package to remove incompatible User sets (option 4).	AB-6682 TFS-16751
If the application parameter group name will be changed, user must activate (click on) group again before adding parameters to the group. Otherwise Automation builder will crash.	TFS-89686
Dragging device object leads to missing implementation warning.	AB-10285
IoManager Missing –info during login and creating boot application. This information is given if target firmware is not supporting F-series I/O IEC- programming.	AB-10212
After Creating boot application double clicking PLC_PRG doesn't open it online. REMEDY: Click first (for example) on menu bar and double click PLC_PRG again.	AB-10203
"Start inhibit not granted" situation is causing download error (AppExists Error) if drive is having the "empty application" and it is in running mode (motor shaft turning). This will not be happened if some application exists in the drive.	AB-10059
While renaming "Application" under ACS880 project unexpected "Refactoring windows" will appear. Refactoring propose can be disabled in Tool/Options/Refactoring alternative "on renaming"	AB-9962
Unmapped F-Series I/O channels have uninitialized current values when a project is online and uses Extension I/O via IEC-programming.	AB-9912
CODESYS gateway V3 settings are not correctly set right after the installation of Automation builder. Reboot of the PC is needed. Before that the scan time of the drive targets is too short and it's not enough long to get drive connected. Another problem is that it possible to be connected other CODESYS Gateway's in same LAN. This might cause confusion. REMEDY: Reboot PC after installation.	AB-9070
Codesys Internal error during code generating if MIN and MAX operators are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx); REMEDY: result := MAX(REAL#0.1, xxx);	AB-8630
Mapping to existing IEC variable is denied when compiler version 3.5.7.0 selected. REMEDY: Select compiler version 3.4.4.30, define mappings and change back to version 3.5.7.0.	AB-8545
Multiple ACS880 Drives –objects under a project is not working.	TFS-84243
Source Upload/Download –option. Source Upload exists in File Menu. In previous version Source upload was in context menu same place as download.	TFS-82672
Application stuck (or endless boot loop) if more than 8 power fail saving type application parameters used. The power fail saving type limit is fixed to 9. Correction is in firmware 2.50.	TFS-81457
Automation Builder will crash if Lang Name –column of the default language (English) is deleted without giving a new name. 	TFS-77905
F-series I/O bus is not able to recover automatically, in the next cases: We suppose here that encoder and some F-series IO modules are connected into same ring. Drive is running motor and FEA-03 board is then powered on first time. Bus will stay in fault state, until motor is stopped and restarted. Same happens in case FEA-03 is powered on, drive is running motor, and then bus (fiber) is disconnected and reconnected. (bus break) Bus is recovering from both cases, when motor is stopped and restarted.	TFS-71451
In case selecting Function Type to "Signal" (readonly) and existing variable is Global (GVL) then parameter creation fails. Parameters are not fully available or no parameters are created at all.	TFS-49494

Par_Def_CHG function block is not changing the default value of all parameters in a family. Only the first parameter's default value was changed.

TFS-36769

Index	Name	Value	Unit	Min	Max	Default
80. Test Parameters 1						
1	Test Par1	0	Unit1	-15000	15000	1500
2	Test Par2	0	Unit1	-15000	15000	0
3	Test Par3	0	Unit1	-15000	15000	0
4	Test Par4	0	Unit1	-15000	15000	0

Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed. However, Base Value scaling is done properly.

TFS-36761

But PAR_SCALE_CHG has Err output = 3

```
23 Inst_PAR_SCALE_CHG1(  
24   Enable TRUE := EnableIN TRUE,  
25   Group 80 := 80,  
26   Index 13 := 13,  
27   Basevalue 5 := bVal 5,  
28   BIT32_scaler 1 := 1,  
29   BIT16_scaler 1 := 1,  
30   Err 3 => Err4 3);
```

Import parameter XML file in ApplicationParametersandEvent editor is not working properly. REMEDY: Use only Export XML.

TFS-20026

Formatted parameters are not working properly with Drive Composer Pro.

TFS-17859

Minimum

Maximum

Default value

Display format for Data Parameter

Index	Name	Value	Unit	Min	Max
10	test	1.1	NoUnit	1.1	12.7

Panel Builder

Functional changes / New features	Version
Panel Builder Data Integration <ul style="list-style-type: none"> - Exchange of driver configuration and tag lists - Installer integration of "unified" Panel Builder (supporting both standard and eCo panels) 	2.0.0
<ul style="list-style-type: none"> - General <ul style="list-style-type: none"> o Add panel CP635-Fx o Remove CP650, CP660, CP675 (supported up to V2.0.1) o Remove ActiveX o Enable SQL4Automation o Add a tooltip on "Delete Dynamic File" at Download to target dialog o Enable OPC-UA client protocol - Actions and events <ul style="list-style-type: none"> o VNC and HMICloud service for Linux target o Gesture area widget - hotspot button with gesture events (pinch and pan) - Alarms <ul style="list-style-type: none"> o Rename the Alarms System Variables o Alarm State translation / possibility to customize the Alarms Management Labels (Triggered, Acknowledge...) o Gesture support for scrolling tables in Panel Builder o New System Variables for alarms status: Active Alarms, Unacknowledged Active Alarms o Group of alarms o Enable alarms from plc o User Action on selected alarm - Protocol settings now easy <ul style="list-style-type: none"> o Extend to manage sync of protocol settings between Automation Builder and Panel Builder also for ABB CoDeSys ETH and CODESYS V2 ETH - Data entry <ul style="list-style-type: none"> o Gestures & Multi-touch support for Panel Builder (support by control panels depending on their operation system) - Data logger <ul style="list-style-type: none"> o Enable attach to tag buttons inside trend editor - Data transfer <ul style="list-style-type: none"> o Possibility to use a centralized server for data trending, video storage and recipe manipulation based on CIFS file system (Windows or Unix) - Deployment and run time operation <ul style="list-style-type: none"> o Keep hidden Panel Builder runtime loading screen at boot until Panel Builder project is loaded and show it just if failed loading o Extend manage target or installing/upgrading multiple targets in one step o Launch updater added on Linux panel o Add Close button in Project manager and About Dialog... o Porting Backup/Restore to Linux UN6x o Create an IP widget - Dialogs <ul style="list-style-type: none"> o Add the possibility to set the background color of a web dialog transparent. - Gallery <ul style="list-style-type: none"> o Add IP-Widget inside Standard library - Installer <ul style="list-style-type: none"> o Add [CDS3] to ABB PB Setup - JavaScript <ul style="list-style-type: none"> o JavaScript embedded in custom widgets o JavaScript Function Block Widget o Enable JavaScript in Mobile Pages - Keypads <ul style="list-style-type: none"> o Calendar Keypad for DateTime widget o New "BeginKeypadDataEntry" widget action - Localization <ul style="list-style-type: none"> o Add the translation in Studio with French language - Multilanguage <ul style="list-style-type: none"> o Multi-language support for keypad page o Multi-Language Support for BACnet Calendar and Scheduler o Implement Multilanguage support on PB4Web - PB4Web (HTML5 pages for mobile devices) <ul style="list-style-type: none"> o Redirect to specific page using URL request o Enable attach to property color of ticks widget o Scale widget: Min, Max and alarm color are not taggable o Labels widget - Gauge: Min, Max and num labels are not taggable o Enable attachTo the font color property of MessageText and Labels Widgets and relative JavaScript function. 	2.4.0.89

<ul style="list-style-type: none"> ○ Enable in web page the possibility of hide the dialog title bar as in the normal dialog ○ Add to Panel Builder web pages the JavaScript function selectAllAlarms ○ Summary ○ Align vertically the web page when "Fit to screen size" is enabled ○ Integrate HTML5 Server-Sent Events for Tag and Alarm update ○ Date format (DD mmm YYYY) correct visualization on browser ○ Screen width/height system variables ○ Implement Project properties "WebPageRequest "into PB4Web ○ PB4Web - Open visualization full screen on Tablet and Smartphone ○ Enable OnActivate and OnDeactivate in Mobile Pages - Performance <ul style="list-style-type: none"> ○ Apply Binarization to Alarms.xml to improve boot time ○ Apply Binarization to Tags.xml to improve boot time - Productivity tools and IDE UI <ul style="list-style-type: none"> ○ Virtual Commissioning ○ Enable binary format for ABB brand up to v2.4 ○ Read/Write attribute visible on Property pane ○ Confirm Attach To dialog via double click ○ Improve group widget editing ○ Allow to delete items from object view pressing Delete char ○ Extend limits check also when converting a project. - Protocol <ul style="list-style-type: none"> ○ [MRTU][MODT][MODR][MODS] Add support to 64bit data type ○ [MODT] Allows Panel Builder to work with FC6 and FC16 based on tags settings on Modbus TCP Client ○ Enable OPC-UA Server also for WCE ○ OPC-UA server support in Panel Builder for Linux platform UN6x ○ [CDS3] Implement IP Override functionality for CODESYS V3 protocol ○ BACnet: Implementation of BACnet widgets for Scheduler & Calendar - Remote Client / ActiveX <ul style="list-style-type: none"> ○ Possibility to configure some IP addresses to get web page access without login - Security <ul style="list-style-type: none"> ○ User management minor improvement ○ provide action ChangePassword for user management ○ Option to select the Users/user Groups that can be managed when checking "Can manage other Users" in User Group Authorization settings. - Special widgets <ul style="list-style-type: none"> ○ Add IP-Widget inside Standard library ○ BACnet: BACnet widgets Scheduler & Calendar Improvements ○ Import user gallery - Standard widgets <ul style="list-style-type: none"> ○ Blink Attribute for Widgets in Web page. - System variables <ul style="list-style-type: none"> ○ New System Variables: Manufacturer Code - Tag importer <ul style="list-style-type: none"> ○ Split linear tag imports that allow multiple file selection - Trends <ul style="list-style-type: none"> ○ Trend support for mouse/touch navigation - Widget: scale <ul style="list-style-type: none"> ○ Add the possibility to change the fill color (Alarm color) of scale widget using JavaScript into web pages - Widget: scatter diagram <ul style="list-style-type: none"> ○ In message widget, when in non-continuous mode, the index should be free ○ Extend XY graph / scatter diagram from 5 to 10 curves 	
Bug corrections	
<ul style="list-style-type: none"> - Alarms <ul style="list-style-type: none"> ○ On alarm widget, sort is not working on "enable" column ○ Runtime crashes if the alarm name is only space ○ Alarms not trigger when the source value difference is less than 0.5 ○ Description column in AlarmHistory widget is editable even when the Column type is Static - PB600-387 - Data entry <ul style="list-style-type: none"> ○ Not possible to send an empty string via Data Entry - Deployment and run time operation <ul style="list-style-type: none"> ○ Duplicate events are writing to Data base connector... ○ Gauge Alarm Max reference is not updated if linked tag is updated via JS ○ Step tag issue using negative value ○ Disable property not working on Combo box when returning to page ○ Keypad is shown behind non modal dialog when data entry is launched on a page field ○ HMI overwrite every value inserted greater than 128 with value 254 when "Display Brightness" are edited on runtime 	Version 2.4.0.89

	<ul style="list-style-type: none"> ○ Crash setting the fill property of a button with string rgb() ○ Data transfer with incompatible types doesn't work ○ Issues while trying to update time tag if the number format is empty or none ○ Widgets in web page found missing in iPad if we have segmented bargraph with reverse true and false widgets are in same page ○ Blank page shows while we refresh the web page when dialog page is active in the web page ○ Manage Target Dialog is Not modal 	
-	<ul style="list-style-type: none"> ○ Fonts <ul style="list-style-type: none"> ○ Bold properties has not effect with "Open Sans" font when font style "Normal" is set 	
-	<ul style="list-style-type: none"> ○ JavaScript <ul style="list-style-type: none"> ○ Date functions from JS returns incorrect date / time in WCE only (problem with timezone and dst settings) ○ curRecipeSet and curRecipeSetList value undefined in JS if same are not present in page ○ JavaScript code not executed if alarm name contains a space 	
-	<ul style="list-style-type: none"> ○ Keypads <ul style="list-style-type: none"> ○ Wrong value written via data entry when tag is int64 or uint64 	
-	<ul style="list-style-type: none"> ○ Multilanguage <ul style="list-style-type: none"> ○ Alarm Dump does not print lang string for other languages if default lang string is empty... 	
-	<ul style="list-style-type: none"> ○ PB4Web (HTML5 pages for mobile devices) <ul style="list-style-type: none"> ○ Shape Buttons are not render correctly ○ If in the alarm events no notification are checked, the quality status for tag in web page is uncertain ○ Dialog does not maintain the correct position during browser window resizing ○ Change the languages of MessageText widget that contains empty text generate a JS error. ○ Add the action DeleteEventArchive for Alarm Buffer in web project ○ Multimessage text disappear if we remove Multilanguage checkbox ○ JM4- Active alarm widget shows server time instead of showing local time ○ Long time web project execution with automatic change page and alarm widget generate JavaScript overhead. ○ Issues on web input for Numeric widget with hexadecimal format ○ In the Studio the stop angle of Scale widget that composes the RadialScale Widget doesn't change according the stop angle of RadialScale. ○ Background color of user svg image not respect the studio settings. ○ Change multiple pages quickly it generates JavaScript error 	
-	<ul style="list-style-type: none"> ○ Performance <ul style="list-style-type: none"> ○ Lot of duplicated broadcast discovery messages are sent by studio 	
-	<ul style="list-style-type: none"> ○ Productivity tools and IDE UI <ul style="list-style-type: none"> ○ Project dimension not getting changed if it is changed via Project wizard dialog invoked from Project properties pane. ○ Change language name result in loss of all texts into the project ○ Mobile dialog page listed in web project settings dialog ○ Studio get crash on downloading project to Win32 runtime when HMI logger is enable ○ CTRL+Mouse wheel event in studio should zoom in/out the scene ○ Studio reports to update the runtime even after the update (Refresh issue)... ○ Limits HMIs available in panel setup and when converting a project based on license (for ABB PB600 Basic/Standard) ○ Sometimes wrong properties are shown for items selected via object view 	
-	<ul style="list-style-type: none"> ○ Recipes <ul style="list-style-type: none"> ○ Restore recipes from network folder using browsing not working, error returned by system ○ Array tag value not import correctly in Recipe editor ○ Field lost its element value attachment, if we delete its adjacent element from studio recipe editor 	
-	<ul style="list-style-type: none"> ○ Scheduler <ul style="list-style-type: none"> ○ Scheduler changes from editor not getting reflected in widget 	
-	<ul style="list-style-type: none"> ○ Security <ul style="list-style-type: none"> ○ Default Maximum clients value set in project is not correct (UI issue) ○ Enable logoff time flag into UserEditor page doesn't work ○ Permission denied in sub folder of additional path with ftp authorization ○ Users with 1-2 characters long password are not deleted ○ Avoid showing login page when the user is already logged in browser 	
-	<ul style="list-style-type: none"> ○ Standard widgets <ul style="list-style-type: none"> ○ Widget properties attached to other widgets should update in studio when the source data changed ○ Date/Time widget not available in web gallery - PB4Web 	
-	<ul style="list-style-type: none"> ○ Tag editor <ul style="list-style-type: none"> ○ You can add only 4294967077 more tag(s)... message appears after copy and paste Tags action 	
-	<ul style="list-style-type: none"> ○ Tag importer 	

<ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Attach To dialog that show the dictionary in some case takes several seconds to open or lead Studio to crash in case you have huge dictionary (dictionary can include more than 10000 tags) - Widget: field <ul style="list-style-type: none"> ○ Single Real array element shows wrong value when visualized on page (TP) - Widget: Gauge <ul style="list-style-type: none"> ○ Wrong text alignment in Gauge's labels - Widget: message text <ul style="list-style-type: none"> ○ Message field does not show messages for values above 32767 - Widget: multistate <ul style="list-style-type: none"> ○ Rendering issue with stretched multistate image in runtime if Xform transformation is applied to the group widget ○ MultiState Image has different behavior if "Scale To Fit" property is set to "true" - Widget: scatter diagram <ul style="list-style-type: none"> ○ Datalinks reference not updated when the referred widget changes id 	
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SCADA - Zenon

<i>Functional changes / New features</i>	<i>Version</i>
ABB Zenon Setup Integration ABB zenon set up included in Automation Builder Refer Zenon release notes in this location " %ProgramFiles%\ABB\zenon 7.50 SP0\HELP\ENGLISH\Release notes (in Engineering PLC) for further details	zenon750_LanguageBuild30617_ABB
ABB Zenon Data Integration Tags/Variables/Type Exchange with ABB zenon Communication settings exchange with ABB Zenon Multi-user support with ABB Zenon	2.0.0

Drive Composer

Functional changes / New features	Version
<p>New Drive Composer Pro version 1.12</p> <p><u>Technical Description</u> New version 1.12 of startup and maintenance PC tool Drive composer pro is available. Drive composer pro is compatible with all-compatible drives and devices such as ACS580 and ACS880 drives, DCT880 power controller, and PRO-33.0-TL solar inverter.</p> <p>Note: <i>Usage with Automation Builder:</i> Drive composer pro started via an Automation Builder project requests no additional license.</p> <p><i>Standalone usage:</i> Drive composer pro launched via Windows Start Menu has to be registered with the license key after the installation. The software is fully functional for the first 30 days after installation during which time the registration must be completed. After 30 days registration is mandatory to run the software. License key needed for registration can be found on top of the installation CD or in case of multi-user licenses on the different registration instruction sheet. Drive composer pro single license kit: MRP code: 3AUA0000108087 Drive composer pro multi-user license kit (10): MRP code: 3AUA0000145150 Drive composer pro multi-user license kit (20): MRP code: 3AUA0000145151</p> <p><u>Content of the delivery</u> Drive composer pro package includes software CD, license key, license agreement, registration instruction and Mini-B USB cable.</p> <p><u>Update package</u> Update package that updates older version Drive composer pro version to 1.12 is available for all registered users in Software Tools web page: http://new.abb.com/drives/software-tools/drive-composer Note: Existing registered installation is required to complete the update Note: Update package cannot update version older than 1.2.0.0, any development or release candidate (RC) version, or some special releases (e.g. 1.3.0.0, 1.6.3, or 1.8.1)</p> <p><u>New features Drive composer pro</u></p> <ul style="list-style-type: none"> - Confirmed support for Windows 10 - Device driver for BCBL-01 cable <p><u>Changes of Drive composer pro</u></p> <ul style="list-style-type: none"> - Fix for issue on .NET window handling that caused problems on scroll bars and parameter value updating - Support for dynamic offline drive (not yet available as new feature) <p>Drive composer pro supports Drive parameterization (Drive Tuning) with ACS380/ACS580 Virtual Drives</p>	1.12

Known Problems	Version
<p><u>Known issues</u></p> <ul style="list-style-type: none"> - To use BCBL-01 cable with Windows 7 64-bit version user must launch Windows in "Disable Driver Signature Enforcement" mode. The issue does not exist with any other Windows version nor affect users not using BCBL-01 cable. https://support.microsoft.com/en-us/help/17419/windows-7-advanced-startup-options-safe-mode - Adaptive Programming is not available for Windows XP users - There are some known issues listed with mitigation instructions in IHMM (ACS880 / Support / PC-Tool Hints) 	

Compatibility with older FSO-11

Drive composer pro version 1.12 supports safety configuration of ACS880 primary control program versions AINfx v1.51 or later and FSO-11 hardware rev. N (fw v1.41) or later (and all FSO-12 versions).

The safety configuration of ACS880 primary control program versions AINfx v1.41 or older and FSO-11 hardware rev. K (fw v1.33) or older requires that Drive composer pro version 1.3.0.0 is used.

There is special package available to install Drive composer pro version 1.3.0.0 in parallel to Drive composer pro 1.12. It should *strictly only* be used in case of required compatibility with older FSO-11 as described above. Package is available in ABB Library for ABB internal users with document number 9AKK105713A8935.

Please check the ACS880 compatibility table in IHMM for full details.

RobotStudio

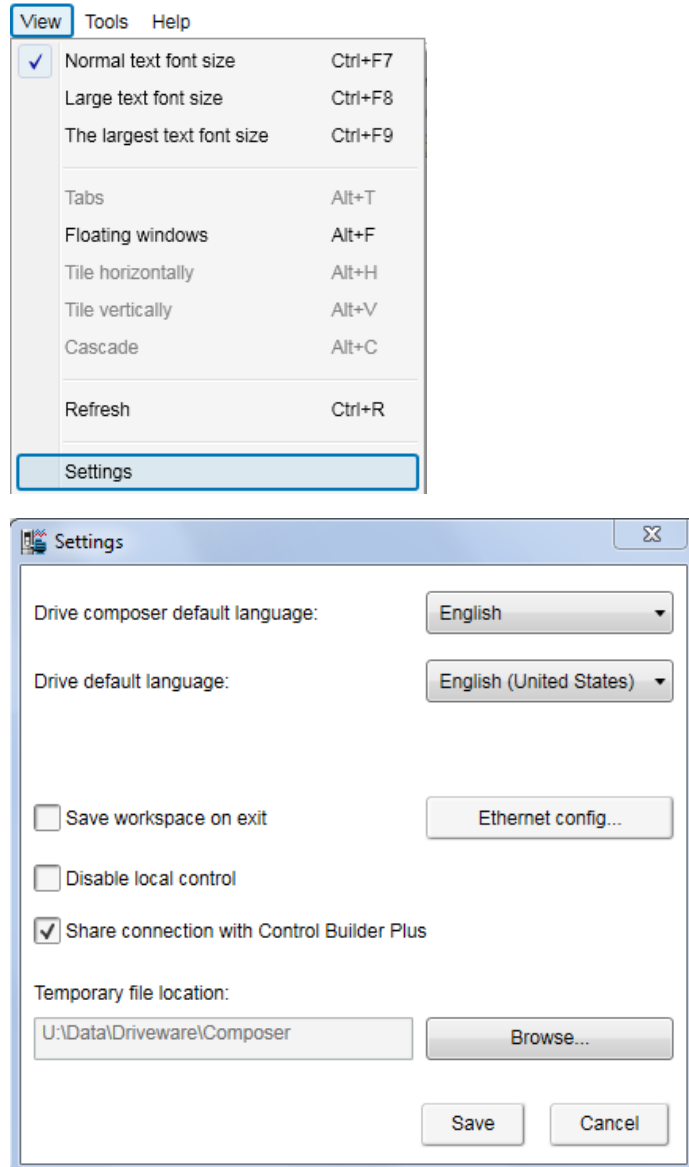
<i>Functional changes / New features</i>		<i>Version</i>
Robostudio Integration <ul style="list-style-type: none">- Installation of IRC5 field device descriptions by default		2.0.0
Robostudio Setup <ul style="list-style-type: none">- New set up of Robotstudio 6.03.02 included.- Refer to		6.03.02

Appendix

Appendix 1: Drive Composer pro 2.0 release

How to use Drive Composer Pro and Automation Builder in parallel

Update Settings of Drive composer pro to get it working parallel with Automation Builder
(Share connection with Automation Builder).



Technical Description

New version **2.0** of startup and maintenance PC tool **Drive composer pro** is available through ABB sales channels.

Drive composer pro is compatible with all new common architecture drives such as ACS880. The complete compatibility table available in Software Tools web page <http://new.abb.com/drives/software-tools/>.

Drive composer pro has to be registered with the license key after the installation.

The software is fully functional for the first 30 days after installation during which time the registration must be completed. After 30 days registration is mandatory to run the software.

License key needed for registration can be found on top of the installation CD or in case of multi-user licenses on the different registration instruction sheet.

Drive composer pro single license kit: MRP code: 3AUA0000108087

Drive composer pro multi-user license kit (10): MRP code: 3AUA0000145150

Drive composer pro multi-user license kit (20): MRP code: 3AUA0000145151

Content of the delivery

Drive composer pro package includes software CD, license key, license agreement, registration instruction and Mini-B USB cable.

Update package

Update package that updates older version Drive composer pro version to 2.0 is available for all registered users in Software Tools web page:

<http://new.abb.com/drives/software-tools/drive-composer>

Note: Update package cannot update version older than 1.2.0.0, any development or release candidate (RC) version, or some special releases (e.g. 1.3.0.0, 1.6.3, or 1.8.1)

Main new features of Drive composer pro

- Graphical user interface for functional safety configuration
- Integrated DriveStartUp tool for MV drives (e.g. ACS6080) when Drive composer pro is installed with special license keys
- Support of PSL2 datalogger uploading from multiple BCU control boards
- Support of connectivity to virtual drives when used together with Automation builder
- Appropriate handling of protected adaptive programs

Changes of Drive composer pro

- Quality and stability improvements
- Support for Windows XP ended as there will be no more security updates or technical support for the XP operating system from Microsoft

Technical Release Note

Drive composer pro 2.0

2017-05-27

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ABB Oy

Drives

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<http://www.abb.com/drives/>

Known issues

- To use BCBL-01 cable with Windows 7 64-bit version user must launch Windows in "Disable Driver Signature Enforcement" mode. The issue does not exist with any other Windows version nor affect users not using BCBL-01 cable.
<https://support.microsoft.com/en-us/help/17419/windows-7-advanced-startupoptions-safe-mode>
- There are some known issues listed with mitigation instructions in IHMM (ACS880 / Support / PC-Tool Hints)

Compatibility with older FSO-11

Drive composer pro version 1.12 supports safety configuration of ACS880 primary control program versions AINFX v1.51 or later and FSO-11 hardware rev. N (fw v1.41) or later (and all FSO-12 versions).

The safety configuration of ACS880 primary control program versions AINFX v1.41 or older and FSO-11 hardware rev. K (fw v1.33) or older requires that Drive composer pro version 1.3.0.0 is used.

There is special package available to install Drive composer pro version 1.3.0.0 in parallel to Drive composer pro 1.12. It should *strictly only* be used in case of required compatibility with older FSO-11 as described above. Package is available in ABB Library for ABB internal users with document number 9AKK105713A8935.

- Please check the ACS880 compatibility table in IHMM for full details.

Appendix 2: Release notes HA Library Package 2.4.3

The software Libraries in HA Library Package V2.4.3 have been tested with the following versions:

- Automation Builder V1.1, Firmware V2.4.2 (CPU and CM574), CI590-CS31-HA: Firmware T3.0.15
- Automation Builder V1.2, Firmware V2.5
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

In no event will ABB or its representatives be liable for loss of data, profits, revenue or consequential, incidental or other damage that may result from the use of other versions of product / software / firmware versions.

The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Changes in different package versions

V1.0.0 HA_CS31_AC500_V13.lib

V2.0.0 HA_CS31_AC500_V20.lib

V2.3.0 HA_CS31_AC500_V23.lib (2013-12-11, library version V2.3.0) HA_CS31_CALLBACK_STOP updated from program to function

V2.4.0 HA_CS31_AC500_V23.lib (2014-04-29, library version V2.4.0) Support of more than one CS31 bus by using CM574, Bug fixes.

V2.4.1 HA_CS31_AC500_V23.lib (2014-10-24, library version V2.4.1) Adaptation for compatibility with new FW 2.4.0 (LIB-391, LIB-394)

V2.4.2 HA_CS31_AC500_V23.lib (2015-03-27, library version V2.4.2) bugs fixes (LIB-347, LIB-419, LIB-347, LIB-418)

V2.4.3 HA_CS31_AC500_V23.lib (2015-03-27, library version V2.4.2) no changes in library, only online help CAA-Merger-9.chm updated (2016-05-02)

Known limitations or bugs

- A list of limitations can be found in the online help: High Availability - System Technology - System structure - HA-CS31 Limitations
- CI590 Sync ERR LED is not blinking after switchover (manual). This is fixed with CI590 FW T3.0.15
- CI590 Analogue + Digital output compare is not working. This is fixed with CI590 FW T3.0.15
- Panel example in Example_AC500_HA_CS31_V242.project not working, because tags are not getting updated by node override ID (PB600-497). Workaround: use Panel Builder V1.91.0
- The Replacement of CI590 is possible with a normal HA-CS31 system, which otherwise has no error : PLC A has to be (made) Primary. For replacement of CI590 when PLC B is Primary, the following pins of TU522-CS31 must be bridged before: 2.2 to 2.5, 2.3 to 2.6, 2.4 to 2.7

Installation and Update

The AC500 HA Library Package, Version 2.4.3 is part of the Automation Builder

Whats new in Version V2.4.2 / V2.4.3

- Support of more than one CS31 bus by using CM574 with new function blocks.
- HA_CS31_CALLBACK_STOP updated from program to function.
- New PID function blocks to use dedicatedly with Digivis Faceplates.
- Visualization for Control, Diagnosis and Synchronization function blocks.
- New HA system overview visualization.
- Increased total size of the sync entry array from 256 to 1024.
- Timer & RAMP Utility function block synchronisation gaps are fixed.
- fG_HA_PRIMARY, fG_HA_PM1_PRIMARY Variable status update issues are fixed.
- Adaptation for compatibility with new FW 2.4.0
- Several bugs fixed
- Online help updated with V2.4.3

Appendix 3: Release notes PS553-DRIVES 1.2.5

AC500 libraries for control and communication to ABB ACS and DCS Drives using ABB Drives Profile.

The software Libraries of this package have been tested with the following versions:

- ABB Automation Builder V1.1 (FW2.4)
- ABB Automation Builder V1.2 (FW2.5)
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

In no event will ABB or its representatives be liable for loss of data, profits, revenue or consequential, incidental or other damage that may result from the use of other versions of product / software / firmware versions.

The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Changes in different versions

V1.2.5: (29.05.2017)

- Updated Examples for Modbus RTU and TCP (workaround for AB-12166)

V1.2.4: (15.03.2017)

- Updated Example documentation: Quickstart Guide B 3ADR025232M0201.pdf (LIB-1247)
- Online help: Added chapter about "ACS / DCS Drives Communication via Modbus TCP EXT" library (AB-11069)

V1.2.3: (22.09.2016)

- Added broadcast message functionality to ACS_COM_MOD_RTU_GEN Function block (V1.1.3).
- ACSDrivesComModRTU_AC500_V20

V1.2.2: (24.06.2016)

- Improved generation time of DONE output for Profibus and Profinet DPV1 function blocks (V1.0.1)
- ACSDrivesComPB_AC500_V24
- ACSDrivesComPN_AC500_V24

V1.2.1: (17.03.2016)

- Update of online help

V1.2.0: (27.10.2015)

- Added following new libraries (V1.0.0)
 - DCSDrives_AC500_V24.lib
 - ACSDrivesComPB_AC500_V24
 - ACSDrivesComPN_AC500_V24
 - ACSDrivesComModTCP_Ext_AC500_V24
- Several improvements in the existing libraries
 - ACSDrivesBase_AC500_V20.lib (V1.1.2)
 - ACSDrivesComModRTU_AC500_V20.lib (V1.1.2)
 - ACSDrivesComModTCP_AC500_V22.lib (V1.0.1)

- Update of online help and examples

V1.1.7: (17.07.2013)

- Corrections in PB / PNIO Example documentations - now version E
- Added Presentation "PS553 Library Introduction and Exercises V34.pdf" and ACS Drives - AC500 overview fieldbus connectivity.xls in folder "Examples\PS553-DRIVES"

V1.1.6: (17.05.2013)

- Update of folder structure, documents and projects in Examples

V1.1.5: (03.05.2013)

- Update of AC500 online help (CAA-Merger11.chm) - Version delivered with Control Builder Plus V2.3.0

V1.1.4: (12.04.2013):

- Update of AC500 online help (CAA-Merger11.chm) including German translation.

V1.1.3: (03.04.2013):

- Update of example documentations and AC500 online help (CAA-Merger11.chm).

V1.1.1: (16.01.2013):

- ACSDrivesBase_AC500_V20.lib:
 - Bug fixes in existing visualizations for webserver use
- ACSDrivesComModRTU_AC500_V20.lib:
 - Bug fixes in existing visualizations for webserver use
- installshield:
 - Bug fix to install (setup) documentation without libraries

V1.1.0: (14.12.2012):

- ACSDrivesComModTCP_AC500_V22.lib:
 - new library for Modbus TCP communication to all ACSxxx drives
- ACSDrivesBase_AC500_V20.lib:
 - New function blocks for fieldbus independent control and scaling

Bug fixes in existing function blocks and visualizations
ACSDrivesComModRTU_AC500_V20.lib:
New function blocks for Modbus RTU communication to all ACSxxx drives
New function blocks for communication to generic slave devices used on same RTU line.
Bug fixes in existing function blocks and visualizations
Documentation:
Update of chm docu in CAA-Merger11.chm
Examples:
New examples for connection with Profibus, ProfiNet

V1.0 (10.12.2010):
Release for AC500-eCo and ACS3XX

Known issues

- Drive manager may be disconnected if user is using Profinet / Profibus DPV1 read write function block in PLC. (AB-8376)
- Currently user cannot use enumeration from ACS_PB_PN_PRM_TYPE_ENUM. Instead user need to use numerical values from ACS_PB_PN_PRM_TYPE_ENUM only. (LIB-940)

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.
Examples can be found in C:\Users\Public\Documents\AutomationBuilder\Examples\PS553-DRIVES

Appendix 4: PS566 CMS Signal Processing Package (Technology Preview)

Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Welcome to the AC500 CMS Signal Processing Package, Version 1.1.0

The software Libraries in this package have been tested with the following versions:

- AutomationBuilder V1.2, Type: PM592-ETH (FW2.4 and 2.5) and the FM502 (V1.0.0)
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

V1.0.0	2016-01-18	First version
V1.1.0	2016-07-11	New LP and HP filter blocks

Known limitations or bugs

none

Installation and Update

Basic CMS libraries and examples are part of the Automation Builder:

- Basic Libraries: \Program Files\Common Files\CAA-Targets\ABB_AC500\AC500_V12\library\CMS_IO_AC500_V24.lib and WAV_FILE_AC500_V24.lib
- Basic Examples: \Users\Public\Documents\AutomationBuilder\Examples\PS566-CMS\Measurements

This package contains additional libraries, examples and documentation for the Condition Monitoring System:

- Signal Processing library: \Program Files\Common Files\CAA-Targets\ABB_AC500\AC500_V12\library\ApplicationLibraries\SP_AC500_V24_App.lib
- Signal Processing examples and library help file: \Users\Public\Documents\AutomationBuilder\Examples\PS566-CMS

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

Appendix 5: PS565 BACnet-ASC Library Package (license required)

Welcome to PS565 BACnet-ASC Library Package, Version 1.0.1

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.2, Firmware V2.5
- Automation Builder V1.2.3, Firmware V2.5.3
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

V0.9.0 2016-05-04 First version, technology preview

V1.0.1 2016-08-30 First product version, certified by BTL

Known limitations or bugs

- eCo (PM554 etc.): Very little applications possible only
 - BASC_SERVER + BASC_DEVICE + 1 ANALOG_IN is working
 - May be one to two more FBs will work in addition
- Runtime error #81 after program change and download -> Solution: Perform "Project - Clean all" and download again [LIB-1074]

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

This Library needs a valid license for compilation.

- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.

Whats new in Version V1.0.1

Several fixes for BACnet certification

Appendix 6: PS554 FTP Client Library Package (Technology Preview)

Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Welcome to the AC500 FTP client Library Package, Version 1.7.0

The software Libraries in this package have been tested with the following versions:

- AutomationBuilder V1.0, CBP 2.3.0, CPU-FW V2.4.2, Type: PM583-ETH
- AutomationBuilder V1.1, Type: PM592-ETH (FW 2.2, FW2.3, FW2.4), PM591-2ETH (FW 2.4.1), PM573 and PM564 (FW 2.4.1)
- AutomationBuilder V1.2
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

2013-02-06 V 1.0 - released
2013-03-06 V 1.2 - few bug fixes
2013-03-27 V 1.3 - added corrections from final review
2013-06-24 V 1.4 - Fixed reply code evaluation when opening a data channel to Microsoft FTP Server / - Free socket descriptor even if socket could not be opened
2013-07-23 V 1.5 - changed FTP_MAX_PATH lenght from 30 characters to 60 characters
2014-11-04 V 1.6 - Fixed error in the offset calculation of the internal receive / - Fixed reply code evaluation in the FTP_OPEN on slow connections
2014-11-28 V 1.7 - Fixed error when the server sends "download complete" message before all data packages have been acknowledged by the client.

Known limitations or bugs

- When adding the library to blank project the following libraries must be referenced manually: syslibsockets.lib and CAA_File lib [LIB-1329]

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

Appendix 7:PS562 Solar Library Package (license required)

Welcome to PS562 Solar Library Package, Version 1.0.3

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.0 (CBP 2.3.0), CPU-FW V2.3
- Automation Builder V1.1, Firmware V2.4.2
- Automation Builder V1.2, Firmware V2.5
- Automation Builder V1.2.3, Firmware V2.5.3
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions cannot be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

PS562 Solar Library Package	Solar_AC500_V22.lib	SolarNREL_AC500_V22.lib
V1.0.0	V1.0.0 (2012-12-19)	V1.0.0 (2012-12-19)
V1.0.2 / V1.0.3	V1.0.2 (2016-02-16)	V1.0.1 (2016-02-16)

Known limitations or bugs

SolarNREL_AC500_V22.lib

- Not running on Eco

Solar_AC500_V22.lib

- (no known limitations)

Solar example does not work with PM595. If user wants to use PM595, then user needs to do some changes in program e.g. at some places REAL variable is used to store multiplication of two REAL variables. User needs to replace these REAL variables with LREAL variables (Lib 1178).

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

This Library needs a valid license for compilation.

- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.0.2 / V1.0.3

- Solar_AC500_V22.lib compatible with new CPU type PM595
- SolarNREL_AC500_V22.lib compatible with new CPU type PM595
- Example updated with V1.0.3

Appendix 8: PS563 Water Library Package (license required)

Welcome to PS563 Water Library Package, Version 1.2.1

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.0 (CBP 2.3.0), CPU-FW V2.3
- Automation Builder V1.1, Firmware V2.4.2
- Automation Builder V1.2, Firmware V2.5
- Automation Builder V1.2.3, Firmware V2.5.3
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

PS563 Water Library Package	LogData_AC500_V23.lib	PUMP_AC500_V23.lib	HMI Example	PSCT Pump Station Configuration Tool (Technology Preview)
V1.0.0	V1.0.0 (2013-10-24)	V1.0.0 (2013-10-22)	HMI_ACQ_V18_Example.zip	n/a
V1.1.0	V1.1.0 (2015-04-17)	V1.0.1 (2014-10-15)	HMI_ACQ_V191_Example.zip	n/a
V1.2.0	V1.1.0 (2015-04-17)	V1.1.0 (2015-09-15)	HMI_ACQ_V191_Example.zip	V1.2.0
V1.2.1	V1.1.1 (2016-03-17)	V1.1.0 (2015-09-15)	HMI_ACQ_V191_Example.zip	V1.2.2 / V2.0.0

Known limitations or bugs

LogData_AC500_V23.lib

- Not running on Eco
- CPU firmware must be V2.3.3. or higher
- Use SD card from ABB
- Maximum number of files (input of FB LOG_HANDLING) is limited to 500, if SD card is formatted with FAT16

PUMP_AC500_V23.lib

- (no known limitations)

HMI example for ACQ Drive (project for pumping functions in ACQ810)

- Only working with with Panel Builder V1.91.0

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

This Library needs a valid license for compilation.

- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.1.0

- PUMP_AC500_V23.lib compatible with new CPU type PM595
- LogData_AC500_V23.lib: Bugs fixed (details in LOG_VERSION_INFORMATION)
- HMI example compatible with Panel Builder V1.91.0

Whats new in Version V1.2.0

- PUMP_AC500_V23.lib with new simulation blocks
- Pump Station Configuration Tool as Technology Preview

Whats new in Version V1.2.1

- Pump Station Configuration Tool as Technology Preview: Boost Control Mode added
- LogData_AC500_V23.lib: Bugfix direct communication Mode 2

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Appendix 9: PS564 Temperature Control Library Package (license required)

Welcome to the PS564 Temperature Control Library Package, Version 1.1.1

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.1 (CPU-FW V2.4, Panel Builder V1.9)
- Automation Builder V1.2 (CPU-FW V2.5, Panel Builder V2.0)
- Automation Builder V1.2.3 (CPU-FW V2.5.3 Panel Builder V2.0.1.195)
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

- V1.0.0 2015-12-10 First version
- V1.1.0 2016-05-04 Online documentation corrected, improved logger, current monitoring
- V1.1.1 2016-07-29 Update of online documentation

Known limitations or bugs

- Cooling not possible if Heat is disabled (LIB- 918)
- If TECT_WrongLimits error is generated, then Reset warm is required to reset the Error. (LIB- 939)
- Autotune will still be started when Actual Temperature is greater than Tune Setpoint (LIB-912)

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

This Library needs a valid license for compilation.

- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.1.0 / V1.1.1

- Current monitoring with common or individual sensor, 1 phase or 3 phase
- Data logging modified in order to reduce number of data log lost
- Online help updated with V1.1.1 (AB-8489)

Appendix 10:AC500 HVAC Library Package (Technology Preview)

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Welcome to the AC500 HVAC Application Library Package, Version 1.0.3

It contains the following components:

- AC500 Library HVAC_AC500_App_V22.lib (V1.0.2) containing basic Function Blocks, structures and visualizations for Heating, Ventilation and Air Condition
- AC500 Library CTRL_AC500_App_V22.lib (V1.0.1) containing HVAC specific control or signal processing blocks
- CTRL_test_example_PM583.project example for the CTRL library, function block CTRL_PI_PULSE_APP
- HVAC AC500 Application Library Package Documentation V103.pdf (V1.0.3) documentation for HVAC libraries including example description

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.1
- Automation Builder V1.2
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

V1.0.0	2013-11-07	First release of package, consisting of HVAC_AC500_App_V22.lib (V1.0.0) and CTRL_AC500_App_V22.lib (V1.0.0)
V1.0.1	2014-05-15	HVAC_AC500_App_V22.lib (V1.0.1): Update of air density and enthalpy FB
V1.0.2	2015-01-19	HVAC_AC500_App_V22.lib (V1.0.2): Add conversion function LREAL_TO_REAL, CTRL_AC500_App_V22.lib (V1.0.1): CTRL_FILTER_CONTINUOUS_APP optimized
V1.0.3	2015-12-10	Example CTRL_test_example_PM583.project updated for upgrade to PM595

Known limitations or bugs

none

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

Appendix 11: PS571 Pumping Library Package (Technology Preview, license required)

Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Welcome to PS571 Pumping Library Package, Version 0.9.0

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.2.3, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

V0.9.0 First version (Oct. 2016)

Known limitations or bugs

External mode of sleep function is not yet implemented

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

Appendix 12: PS552-MC-E Motion Control Library Package (license required)

Welcome to PS552-MC-E Motion Library Package, Version 3.2.1

The software Libraries in this package have been tested with the following versions:

- Automation Builder V1.2, Firmware V2.5
 - CM579-ETH EtherCAT coupler FW 4.3.0
 - Bosch Indra Drive Cs FW MPB-16V20-D5-1-NNN-NN
 - ACSM1 FW 1510 + FECA-01 FW 109
 - E150 FW 58.09
- Automation Builder V1.2.4, Firmware V2.5.3
- Automation Builder V2.0.0
- Automation Builder V2.0.1
- Automation Builder V2.0.2
- Automation Builder V2.0.3

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The error-free operation of this library package with other products / software / firmware versions can not be guaranteed.

This release notes contains important information about the library and it's installation.

Version history

- | | | | | |
|---|------|------------|--------|--------------------|
| • | V1.0 | PS551-MC | (2010) | First version |
| • | V2.0 | PS552-MC | (2011) | PLC based Motion |
| • | V3.0 | PS552-MC-E | (2014) | Coordinated Motion |
| • | V3.1 | PS552-MC-E | (2016) | see below |
| • | V3.2 | PS552-MC-E | (2016) | see below |

Known limitations or bugs

- CMC_MOTION_KERNEL_REAL function block ErrorID values can be overwritten by subsequent motion errors - e.g. passing the axis wrap boundary when using a linear axis will initially result in ErrorID 13 [Position Overrun] that may then be quickly overwritten by ErrorID 1 [Following error]. Consider using a circular buffer (array) to log all instances of Kernel errors (LIB-682)
- Initial delta times values for MC_PositionProfile, MC_VelocityProfile and MC_AccelerationProfile must be zero (LIB-550)
- Motion profiles for linear moves using values for Jerk greater than zero can produce small inaccuracies in the resulting acceleration and deceleration times (up to 10%) when compared to the theoretical calculated values (LIB-967)
- ACS355_Drive-based_MotionControl_ProfibusDP.project and ACSM1_Drive-based_MotionControl_ProfibusDP.project: Compilation error due to new Profibus library. Work around is user should manually delete PROFIBUS_AC500_V10.lib. (LIB-1311)
- Using MC_COMBINEAXES results in increasing EtherCAT processing time when used with Modulo axes (LIB-1219)
- MC_SetPositon reports error 7 (timeout) as long as Execute=TRUE used with PTO (LIB-1139)
- Move FBs should not start a movement with deceleration=0, because it will then never stop again (LIB-1040)

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

When upgrading from Motion Library Package V3.1.0 to V3.2.0 a "Rebuild all" might be necessary, no online update (LIB-1123)

This Library needs a valid license for compilation.

- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V3.1.0

- New function blocks
 - MCA_MoveRelativeOpti
 - CMC_Sinterpolation
 - Buffered and blending movement for coordinated motion
- Direct parameter access through AXIS_REF structure
 - Position control loop parameters directly available
- Additional actual values from AXIS_REF structure
 - Improvement for software limit switches
 - U_PER_REV_NOMINATOR/U_PER_REF_DENOMINATOR as DINT (from WORD)
- Bug fixing
 - Improved accuracy of acceleration/deceleration times when using Jerk
 - Allow access to new axis run-time parameters to adjust gains, following error limits and other axis related settings
 - Additional error codes added to Kernel ErrorID
 - Inclusion of new software limit functions including ramp to limit
 - Fixed issue with modulo master axis when using MC_PhasingRelative
 - Fixed issue with MC_CamIn when using data that is relative to start point
 - Improved operation of MC_ReadStatus function block
 - Scaling parameters for axis now defined as DINT instead of WORD
 - Fixed issue with MC_MoveContinuousAbsolute caused by constantly changing Velocity parameter
 - Increased range of various axis parameters (e.g. MaxVelocityApplication changed from WORD to LREAL)
 - Added new generic ECAT_CiA402_CONTROL_APP function block to replace previous block that referenced e150 servo drive
 - In combination with PM595, Ethercat and motion-cycle < 1ms possible
 - 16 bit limits for velocity, acceleration and deceleration removed

Whats new in Version V3.2.0 / V3.2.1

- New function blocks
 - ECAT_AC500_APPL_V21
New block ECAT_402_ParameterHoming_APP to send homing related parameters per SDO support for drive-based homing and input parameter for drive-operation mode with ECAT_CiA402_CONTROL_APP
 - MC_BLOCKS_AC500_V11
New block MCA_DriveBasedHome to execute a drive based homing method for 402-profile drives on Ethercat
New block MCA_GearInDirect, a modified MC_GearInPos which does not need the master to move for starting synchronization
New block MCA_CamInDirect, a modified MC_CamIn which does not need the master to move for starting synchronization
New block MCA_SetOperatingMode, allows to set the axis in a state to work just velocity based, switch of position control loop, ignore position jumps and following error
 - MC_CoBlocks_AC500_V23
New block MCA_SyncInfeedToPath
New block MCA_SyncCamToPath
- New behavior
 - Axis will go to an ERRORSTOP when 32-Bit position overrun occurs with an axis in positioning mode, in velocity mode, position overrun is allowed (related to MCA_SetOperatingMode)
- Bug fixing
 - CMC_Sinterpolation, had wrong deceleration when velocity changed to smaller values during movement
 - SPLINE interpolation for profiled movement had not used the last data point, problem since 3.1.0
 - V_CHECK_TIME was not used anymore, problem since 3.1.0
 - modified the velocity calculation for CAM with MasterStartDistance, had before wrong result with non-linear velocity transition
 - changed the functionality for MCA_SetPositionContinuous with SUPER=FALSE, did create a small movement
 - improvement for jerk calculation
 - MCA_JogAxis had wrong behavior when moving backward with MinJogDistance > 0
 - MCA_MoveBuffered, output ActiveEvent ok, problem since 3.1.0
- V3.2.1: Example CompactMotion_EtherCAT_ACSM1.project updated as workaround for AB-10467

Appendix 13: PS5520 Motion Control Library Package (Technology Preview)

Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement. Welcome to PS5520 Motion Control Library Package, Version 0.9.6, consisting of Motion Library and Motion Solution

The software Libraries in this package have been tested with the following versions:

- Automation Builder V2.0.2
- PLC CPU module PM5650-2ETH, Firmware V3.0.2
- CM579-ETH EtherCAT coupler FW 4.3.0
- MotiFlex e180 Servo drive FW5863
- MicroFlex e150 Servo Drive FW5863
- MicroFlex e190 Servo Drive FW5863

In no event will ABB or its representatives be liable for loss of data, profits, revenue or consequential, incidental or other damage that may result from the use of other versions of product / software / firmware versions.

The error-free operation of this library package with other products, software or firmware versions cannot be guaranteed.

This release notes contains important information about the library and its installation.

Version history

- V0.9.2 PS5520-MC Motion Library v0.9.2.x / Motion Solution v2.0.0 (Nov 2016), Technical Preview
- V0.9.5 PS5520-MC Motion Library v0.9.5.x / Motion Solution v2.0.1 (Dec 2016), Technical Preview
- V0.9.6 PS5520-MC Motion Library v0.9.6.x / Motion Solution v2.0.2 (March 2017), Technical Preview

Installation and Update

This Library Package is part of the Automation Builder. It can be selected as an Option during installation.

Features supported in Motion Library Version 0.9.6.x

- This library contains the axis definitions
MCA_AXIS_VIRTUAL
MCA_AXIS_ETHERCAT
MCA_AXIS_ENCODER
- The following PLCopen motion function blocks are available in this library
MC_Halt
MC_MoveAbsolute
MC_MoveRelative
MC_MoveVelocity
MC_Power
MC_Reset
MC_Stop
MC_MoveAdditive
MC_SetPosition
MC_CamIn
MC_CamOut
MC_CamTableSelect
MC_CombineAxes
MC_GearIn
MC_GearInPos
MC_GearOut
MC_ReadActualPosition
MC_ReadActualVelocity
MC_ReadAxisError
MC_ReadMotionState

MC_ReadParameter
MC_ReadStatus
MC_WriteParameter

Bug fixes in Motion Library Version 0.9.6.x

- The MC_Reset FB logs errors with the incorrect FB name (LIB-1249)
- Non-motion moves (like MC_SetPosition) can cause the ongoing move to be aborted (LIB-1250)
- The user's application can fail with an exception on start-up (LIB-1251)
- A move that cannot start will abort continuous motion without causing the motion to stop (LIB-1252)
- Using mcBlendingPrevious as an input for MC_MoveVelocity gives a wrong error code (LIB-1277)
- Execution fails with an exception if MC_Reset is executed without a coupler connected (LIB-1278)
- Setting the axis position while powered followed by un-powering and re-powering causes a large clunk (LIB-1293)
- MC_STOP shows Busy, never DONE, even if axis state is changed to STOP (LIB-1290)
- MC_MoveAbsolute can not be started while the axis is in ContinuousMotion (LIB-1289)

PLCopen motion features not correctly supported in Motion Library Version 0.9.6.x

- MC_MoveAbsolute – No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported.
- MC_MoveRelative – No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported.
- MC_MoveVelocity – No support for Continuous update, only mcABORTING and MCBUFFERED buffer modes are supported.
- MC_Power – No support for forward or negative
- MC_CamIn – No support for Continuous update, Only mcABORTING buffer mode is supported.
- MC_CombineAxes – Only mcABORTING buffer mode supported.
- MC_GearIn – Only mcABORTING buffer mode supported. No support for JERK.
- MC_GearInPos – Only mcABORTING buffer mode supported. No support for JERK.
- MC_ReadMotionState – Only supports mcSET_VALUE.
- MC_ReadParameter - Only parameters supported are demand velocity, actual velocity and commanded position (3/17)
- MC_WriteParameter – Does not return parameter values.

Known problems in library v0.9.6.x

- An exception occurs when warm reset is selected. (Jira ID LIB-1232)
- When using a JERK value >0 the motion profile will generate a position overshoot then jump back to target value. (Jira ID LIB-1234)
- EtherCAT slave drive errors are not reported back to PLCmotion library (Jira ID LIB-1215)

New features in Motion Solution v2.0.2

- A visualization is now created when the Motion Solution is generated. This shows status information for the selected axis and allows test motion to be created.
- ACSM1 devices can now be selected as the target device for a motion axis.

Bug fixes in Motion Solution v2.0.2

- Axes not set to be generated still added to the Motion task list (AB-11307)
- Remove Homing checkbox from mapping screen (AB-11283)
- Improve UI layout to scale better on different screen sizes (AB-11125, AB-11273)
- Update text strings (AB-10940, AB-10941)
- Updating a servo device can result in the mapping checkboxes being lost (AB-10773)

- Improve UI when changing EtherCAT master (AB-10504)
- Improve UI when no EtherCAT master is selected (AB-10401)
- Errors when mapping motion axis if PDO content has been deleted (AB-10236, AB-10237)
- Following an SVN revert, the editor does not refresh (AB-10064)

Known problems in Motion Solution v2.0.2

- Selected Drive device briefly flicks to invalid status when performing a mapping (Jira ID AB-9982)
- Upgrading Microflex to Motiflex or vice versa does not change the node name (Jira ID AB-10697)
- Mappings that are no longer valid are left after updating Servo Drive (Jira ID AB-10509)
- EtherCAT Master validation incorrect after cut/paste of CM579 (Jira ID AB-10502)
- Undo doesn't cause the UI to refresh (Jira ID AB-10227)
- The device tree can appear blank when the Motion Solution is generated (AB-11419)
- Compare not available from the SVN commit screen (AB-11311)
- The EtherCAT sync shift time is not set when the Motion Solution is generated (AB-11235)
- The UI does not show the result of an undo operation (AB-10227)
- Show changes in SVN log can cause errors (AB-10066)