

Welcome to ABB Automation Builder 2.0.2

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.

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Changes in Automation Builder 2.0.2

The release includes the following device groups:

Automation Builder

Functional changes / New features	Version
Pluto Manager: Pluto Manager can now be installed as separate additional tool (Automation Builder setup -> additional tools)	2.0.2
Bug corrections	
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"	
Known problems	
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)

Functional changes / New features	Version
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): Two additional editor pages are provided for each fieldbus protocol node. <ul style="list-style-type: none"> - 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
Bug corrections	
Various stability improvements.	2.6.2
Known problems	
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. <i>Workaround:</i> not available	ID 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
II_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

<i>Functional changes / New features</i>	<i>Version</i>
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

<i>Bug corrections</i>	<i>Version</i>
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 POUs: <ul style="list-style-type: none"> Counter: <ul style="list-style-type: none"> o CNT_IO_EXT o SWAP Data storage: <ul style="list-style-type: none"> SRAM data: <ul style="list-style-type: none"> o SRAM_CLEARED o SRAM_EXPORT o SRAM_IMPORT I/O-Bus: <ul style="list-style-type: none"> 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 Production data <ul style="list-style-type: none"> o CPU_PROD_ENTRY_READ o CPU_PROD_READ_ASYNC System information <ul style="list-style-type: none"> o PM_VERSION o SYS_TIME - ExtUtils - with POUs: <ul style="list-style-type: none"> Leds (NEW): <ul style="list-style-type: none"> o ErrLEDSet Battery <ul style="list-style-type: none"> o BATT Realtime clock <ul style="list-style-type: none"> o CLOCK o CLOCK_DT - EtherCAT - with POUs: <ul style="list-style-type: none"> CoE: <ul style="list-style-type: none"> o ECAT_COE_READ o ECAT_COE_WRITE COM: <ul style="list-style-type: none"> o ECAT_BUS_SET_STATE o ECAT_SLV_GET_STATE o ECAT_SLV_SET_STATE o ECAT_START_COM o ECAT_STOP_COM DIAG: <ul style="list-style-type: none"> o ECATBUS_DIAG o ECAT_GET_DCLK_DEVI o ECAT_SLV_DIAG INFO: <ul style="list-style-type: none"> o ECAT_STATE o 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's:</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's:</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 <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 <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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<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 librara 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 <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>Diagnosis</p> <ul style="list-style-type: none"> - Not all devices show the correct connector status (green circle = ok, red triangle = error). – Fixed <p>EtherCAT</p> <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 <p>Modbus TCP</p> <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 <p>PROFINET IO</p> <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

<i>Known problems</i>	<i>Version</i>
<p>System</p> <ul style="list-style-type: none"> - In case of exception the correct program position will not be shown. Workaround: Open <p>Diagnosis</p> <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. <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. 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. <p>OPC Server:</p> <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 <p>OPC UA:</p> <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. <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> <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. <i>Workaround:</i> 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. <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</p>	<p>AC500-V3 Configuration 2.6.1</p>

For AC500 V3 PLCs please change settings to:

[CmpRouter]

..

0.MainNet=**BlkDrvTcp**

For Programmable Drives to:

[CmpRouter]

..

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>
<p>ABB DriveManager package</p> <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>
<p>ABB DriveManager package</p> <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>
<p>ABB DriveManager package</p> <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

<i>Known problems</i>	<i>ID</i>
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

<p>For Programmable Drives to: [CmpRouter] .. 0.MainNet=BlkDrvShm</p>	
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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>	<p>1.12.1</p>

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

<i>Bug corrections</i>	<i>Version</i>
Zenon integration: Various stability improvements	2.0.2

<i>Known problems</i>	<i>Version</i>
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

<i>Bug corrections</i>	<i>Version</i>
Panel Builder Integration: Various stability improvements	2.0.2

<i>Known problems</i>	<i>Version</i>
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

<i>Functional changes / New features</i>	<i>Version</i>
Servo Drives Package Support for firmware version 5863 on MicroFlex e150, MotiFlex e180 and MicroFlex e190	2.0.2

<i>Bug corrections</i>	<i>Version</i>
Servo Drives Package When updating a servo device and changing its type, the default name was not updated	2.0.2

<i>Known Issues</i>	<i>ID</i>
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

<i>Bug corrections</i>	<i>Version</i>
Minor bug corrections	2.0.1
<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

PLC - AC500 V2 Processor Modules (PM5xy)

<i>Bug corrections</i>	<i>Version</i>
EtherCat XML is now correctly generated also for big EtherCat configurations (more than 1 EtherCat frame required)	AB-6567
<i>Known problems</i>	
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 Workaround: 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)

<i>Functional changes / New features</i>	<i>Version</i>
New Features: Libraries: New libraries are available: - IntUtils - with POUs: 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: <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: <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: <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: <ul style="list-style-type: none"> <i>Data</i> 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 Send_monitored_direction_external_time_stamp <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 <i>General</i> <ul style="list-style-type: none"> ○ IEC60870_BACKGROUND_SCAN ○ IEC60870_GET_ADDRESS ○ IEC60870_STATE <i>Parameter_setting</i> <ul style="list-style-type: none"> ○ IEC60870_REC_P_ME ○ IEC60870_SEND_P_ME <i>Supplement</i> <ul style="list-style-type: none"> ○ RESET_INIT ○ RESET_RESET <i>System_Information</i> <ul style="list-style-type: none"> Rec_monitored_direction <ul style="list-style-type: none"> ○ IEC60870_REC_C_TS_NA_1 Send_control_direction <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 Send_monitored_direction <ul style="list-style-type: none"> ○ IEC60870_SEND_C_TS_NA_1_ACTION ○ IEC60870_SEND_M_EI_NA_1 - ModbusTCP - with POU's: <ul style="list-style-type: none"> ○ ETHx_MOD_CONFIG ○ ETHx_MOD_INFO ○ ETHx_MOD_MAST Buffered data <ul style="list-style-type: none"> - Support of persistent data in %M area via pragma {no init} - Support of VAR RETAIN PERSISTENT Display <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) Diagnosis <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) I/O-bus <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 librara 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 Error-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 'sdcards' 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 'sdcards' 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('sdcards/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 "sdcards", "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. <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</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

<i>Functional changes / New features</i>	
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
<i>Bug corrections</i>	
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
<i>Known problems</i>	
<ul style="list-style-type: none"> - None 	

Solutions

Pump Station Library Wizard

<i>Bug corrections</i>	
Pump Station wizard code generation error is fixed	2.0.1

DriveManager

<i>Bug corrections</i>		<i>Issue ID</i>
Datatype of virtual drive variable and fieldbus parameters in process data editor doesn't match	AB-10656	
<i>Known problems</i>		
Automation Builder is crashing when user edit same bit pointer parameter or value pointer parameter twice in Drive Manager <i>Workaround:</i> 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 <i>Workaround:</i> 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> 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>		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	
<p>Motion Solution</p> <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
<p>Motion Control Library</p> <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
<p>Motion Control Library: PLCopen motion features not correctly supported in Version v0.9.5.x</p> <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

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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"> o Generate a new basic license o 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> behavior: StartupProfileName is launched <add key="ShowProfileSelectionDialog" value="true" /> <add key="StartupProfileName" value="Automation Builder 2.0" /> behavior: profile selection dialog is shown </pre>	

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 <ul style="list-style-type: none"> ○ Share configuration of PROFINET modules on up to 4 PROFINET I/O controllers 	2.0.0

<i>Bug corrections</i>	<i>Version</i>
Various stability improvements.	2.5.0

<i>Known problems</i>	<i>ID</i>
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 	<p>2.5.1</p>

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 	<p>2.5.1</p>

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, 	<p>2.32</p>
<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 	<p>2.30</p>

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	
<p>ABB DriveManager package</p> <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	
<p>ABB DriveManager package</p> <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	
<p>ABB DriveManager package</p> <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

<i>Functional changes / New features</i>		<i>Version</i>
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	

<i>Bug corrections</i>		<i>Version</i>
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.

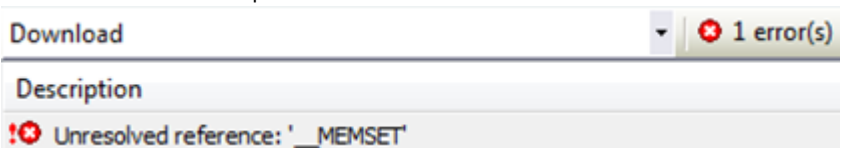
Note 3: Drive composer pro version 1.9 or newer is recommended. See appendix 1 how to set Drive composer pro working parallel with Automation Builder.

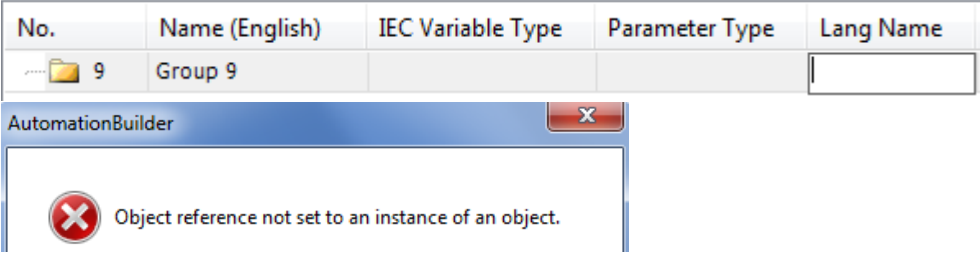
VERSION INFO	
ABB Driveware IEC programming package	3.6.616.1021
Automation Builder	2.0
Compiler versions	3.5.7.0, (3.4.4.30)
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.40 (recommended*)
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>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

<p>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).</p>	<p>AB-6682 TFS-16751</p>
<p>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.</p>	<p>TFS-89686</p>
<p>Dragging device object leads to missing implementation warning.</p>	<p>AB-10285</p>
<p>IoManager Missing –info during login and creating boot application.</p>	<p>AB-10212</p>
<p>This information is given if target firmware is not supporting F-series I/O IEC- programming.</p>	
<p>After Creating boot application double clicking PLC_PRG doesn't open it online.</p>	<p>AB-10203</p>
<p>REMEDY: Click first (for example) on menu bar and double click PLC_PRG again.</p>	
<p>"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.</p>	<p>AB-10059</p>
<p>While renaming "Application" under ACS880 project unexpected "Refactoring windows" will appear. Refactoring propose can be disabled in Tool/Options/Refactoring alternative "on renaming"</p>	<p>AB-9962</p>
<p>Unmapped F-Series I/O channels have uninitialized current values when a project is online and uses Extension I/O via IEC-programming.</p>	<p>AB-9912</p>
<p>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.</p>	<p>AB-9070</p>
<p>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);</p>	<p>AB-8630</p>
<p>Mapping to existing IEC variable is denied when compiler version 3.5.7.0 selected.</p>	<p>AB-8545</p>
<p>REMEDY: Select compiler version 3.4.4.30, define mappings and change back to version 3.5.7.0.</p>	
<p>Multiple ACS880 Drives –objects under a project is not working.</p>	<p>TFS-84243</p>
<p>Source Upload/Download –option. Source Upload exists in File Menu. In previous version Source upload was in context menu same place as download.</p>	<p>TFS-82672</p>
<p>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.</p>	<p>TFS-81457</p>
<p>Automation Builder will crash if Lang Name –column of the default language (English) is deleted without giving a new name.</p>	<p>TFS-77905</p>
	
<p>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.</p>	<p>TFS-71451</p>
<p>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.</p>	<p>TFS-49494</p>

<p>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.</p> <table border="1"> <thead> <tr> <th>Index</th> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td colspan="7">80. Test Parameters 1</td> </tr> <tr> <td>1</td> <td>Test Par1</td> <td>0</td> <td>Unit1</td> <td>-15000</td> <td>15000</td> <td>1500</td> </tr> <tr> <td>2</td> <td>Test Par2</td> <td>0</td> <td>Unit1</td> <td>-15000</td> <td>15000</td> <td>0</td> </tr> <tr> <td>3</td> <td>Test Par3</td> <td>0</td> <td>Unit1</td> <td>-15000</td> <td>15000</td> <td>0</td> </tr> <tr> <td>4</td> <td>Test Par4</td> <td>0</td> <td>Unit1</td> <td>-15000</td> <td>15000</td> <td>0</td> </tr> </tbody> </table>	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	<p>TFS-36769</p>
Index	Name	Value	Unit	Min	Max	Default																																					
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3	Test Par3	0	Unit1	-15000	15000	0																																					
4	Test Par4	0	Unit1	-15000	15000	0																																					
<p>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. But PAR_SCALE_CHG has Err output = 3</p> <pre> 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); </pre>	<p>TFS-36761</p>																																										
<p>Import parameter XML file in ApplicationParametersandEvent editor is not working properly. REMEDY: Use only Export XML.</p>	<p>TFS-20026</p>																																										
<p>Formatted parameters are not working properly with Drive Composer Pro.</p> <p>Minimum: 1.1 Maximum: 31.12 Default value: 1.1 Display format for Data Parameter: Short date (DD.MM)</p> <table border="1"> <thead> <tr> <th>Index</th> <th>Name</th> <th>Value</th> <th>Unit</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>test</td> <td>1.1</td> <td>NoUnit</td> <td>1.1</td> <td>12.7</td> </tr> </tbody> </table>	Index	Name	Value	Unit	Min	Max	10	test	1.1	NoUnit	1.1	12.7	<p>TFS-17859</p>																														
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10	test	1.1	NoUnit	1.1	12.7																																						

Panel Builder

Functional changes / New features	Version
Panel Builder Data Integration - Exchange of driver configuration and tag lists - Installer integration of "unified" Panel Builder (supporting both standard and eCo panels)	2.0.0
- 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 - Fonts <ul style="list-style-type: none"> ○ Bold properties has not effect with "Open Sans" font when font style "Normal" is set - 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 - Keypads <ul style="list-style-type: none"> ○ Wrong value written via data entry when tag is int64 or uint64 - Multilanguage <ul style="list-style-type: none"> ○ Alarm Dump does not print lang string for other languages if default lang string is empty... - 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 mantain 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 - Performance <ul style="list-style-type: none"> ○ Lot of duplicated broadcast discovery messages are sent by studio - 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 - 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 - Scheduler <ul style="list-style-type: none"> ○ Scheduler changes from editor not getting reflected in widget - 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 - 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 - Tag editor <ul style="list-style-type: none"> ○ You can add only 4294967077 more tag(s)... message appears after copy and paste Tags action - Tag importer 	
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<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) 	1.12
<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.

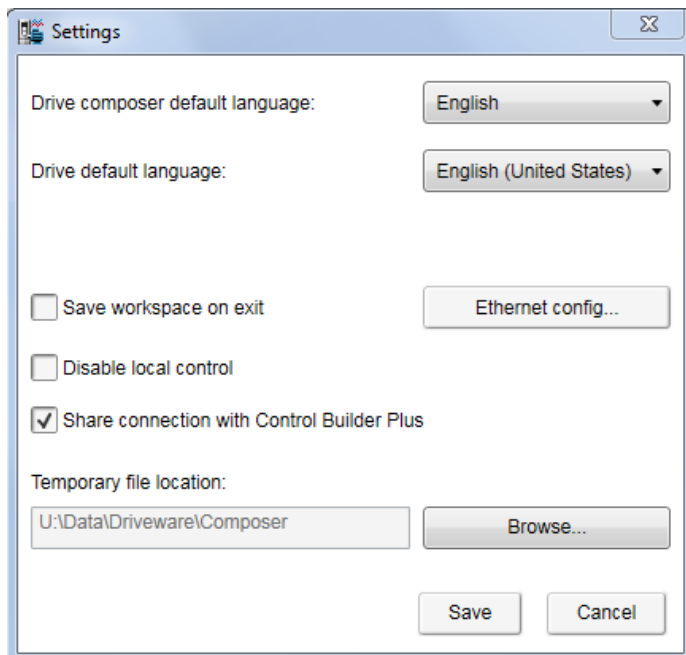
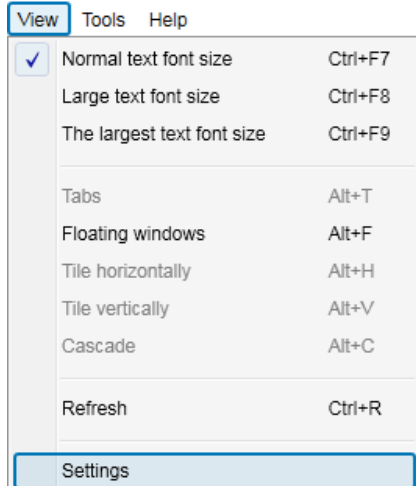
RobotStudio

<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: 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*).



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

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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.

Changes in different 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) HA_CS31_CALLBACK_STOP updated from program to function

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

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

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

V2.4.3 HA_CS31_AC500_V23.lib (2015-03-27) 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 2.4.2 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 1.2.4

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

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

Changes in different versions

V1.2.4: (March 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:

- Automation Builder 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

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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

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

Known limitations or bugs

- Error with upgrading older CMS projects (e.g. also Example FM502-CMS Control.project):
 - Workaround: Please press "Keep" instead of "update" button to avoid compilation error.

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

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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

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.

What's 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

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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

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

none

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

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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 AC500 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.

What's 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

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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

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.

What's 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

What's new in Version V1.2.0

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

What's 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

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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.

What's 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

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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

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

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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

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.

This Library needs a valid license for compilation.

- License can be requested from

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

Welcome to PS552-MC-E Motion Library Package, Version 3.2.0

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

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 cannot 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)

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.

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.

What's 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, Ehercat and motion-cycle < 1ms possible
 - 16 bit limits for velocity, acceleration and deceleration removed

What's new in Version V3.2.0

- 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

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

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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 it's 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,m even if axis state is changed to STOP (LIB-1290)
- MC_MoveeAbsolute can not be started while the axis 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)