Automation Builder 2.6
Webinar
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Automation Builder 2.6 Overview

ABB Ability™ Automation Builder
Automation Builder 2.6.0
Next level engineering productivity

- General performance improvements and bug fixes
- Support of side-by-side installations
- Introduction of Automation Builder 64-bit version

Platform

- System features
  - All AC500 libraries are signed with a trusted timestamp, i.e. they will always be shown as trustworthy in the library manager
  - Convenient access from IEC application to I/O channels without mapping of symbol names to individual I/O channels - either PLC wide by using default channel names or via automatically generated and editable data structures
  - Improved IEC 61131 editors
  - Use of communication manager to publish data via the OPC UA server
  - Integration of externally created HTML5 objects into web visualization
  - User management of visualization can be combined with PLC user management

AC500 V3
AC500 V3

- Communication
  - Availability of additional ethernet ports via new communication module CM5640-2ETH(-XC)
  - Availability of PROFINET shared device functionality via CM589-PNIO-4(-XC)
  - TCI (Tool Calling Interface) conformance class 1 and 2 support for 3rd party PROFINET and PROFIsafe devices
  - Support of SNMP v2 and v3
  - Support of sending e-mails (SMTP and SMTPS)

- Technology previews
  - FlexConf on local I/O bus
  - OPC UA client
  - OpenVPN client

SM560-S safety PLC

- Support of F-Device functionality via SM560-S-FD-1(-XC) and SM560-S-FD-4(-XC) safety CPUs
- Improved Look&Feel of the AC500-S Programming Tool
- Integration of the AC500-S SCA (Safety Code Analysis) tool into Automation Builder
Automation Builder 2.6.0

Next level engineering productivity

- Firmware version 2.8.6 with improved security, available for all AC500 V2 CPUs
- Certification of firmware V2.8.6 according to Achilles level 2

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- Integration of latest Panel Builder version 4.5.0.632

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- Default installation of most common ABB Drives for Ethernet/IP, EtherCAT and CANopen
- Integration of latest Drive composer pro version 2.8.1
Automation Builder 2.6 New Features – Details

ABB Ability™ Automation Builder
Automation Builder 2.6.0 – New Features
Support of side-by-side installations

Solution

- Availability of side-by-side installation instead of offering previous version profiles from the installer.
- Starting from Automation Builder 2.6.0 the version number is available from the launch commands. Automation Builder executables without version number indicate version 2.5 or before.
- Each version installs its own installation manager, an updated Installation Manager for Automation Builder versions prior to 2.6.0 is installed by default to handle side-by-side installations properly.
- Versions can be installed, modified and uninstalled separately.
- Default version to open projects can be set by Windows mechanism.
Automation Builder 2.6.0 – New Features

Support of side-by-side installations

Constraints

• For technical reasons there are some shared components across the different Automation Builder versions. Even despite the side-by-side installation of Automation Builder versions, these components will continue to be shared. Examples of shared components are AC500 V2 libraries or Codesys V2 engineering and gateway.

• Recommended to use Automation Builder 2.5 for accessing previous version profiles

• No side-by-side installation with same version of Automation Builder 64bit

Customer benefits

• Easy management of required Automation Builder versions
  • Install a further version, whenever this is required
  • Change a version, whenever this is required
  • Uninstall a version, whenever this is not required anymore
New features and improvements
• Availability of 64bit version of Automation Builder as dedicated installer
• All projects are fully compatible between the 32bit and 64bit versions

Constraints
• No side-by-side installation with same version of Automation Builder 32bit
• Project migration from AC500 V2 to AC500 V3 only available with 32bit version

Customer benefits
• Use of big projects without any memory issues
New features and improvements

- Two options of accessing I/O channels without mapping of single channels
  - Symbolic access for all I/O channels (CODESYS SP19 feature)
  - Manual assignment to auto-generated data types

Customer benefits

- Easier access to I/O channels
- Support of modularization: Same data types can be used for multiple instances of related functions
New features and improvements

• CODESYS communication manager has been extended to support OPC UA server
  • Possible to define multiple symbol sets with different symbols
  • Linked to the PLC user management
• Current symbol configuration still available

Customer benefits

• Easier to share different tags to different OPC UA clients
• Sharing of tags via OPC UA server can be done independently from OPC DA
Automation Builder 2.6.0 – New Features
More flexibility, scalability and onboard connectivity with higher integration

CM5640-2ETH port extender, provides additional “onboard ethernet interfaces” on V3 CPU

The communication module CM5640-2ETH acts as a port extender of the AC500 V3 CPU used.

It offers 2 additional Ethernet interfaces controlled from the CPU.

The ethernet limitations of the CPU apply for all the onboard and additional interfaces.

Up to 6 CM                …………

Up to 6 slots for CMs: Serial(1), CANopen, PROFIBUS DP M/S, Ethernet port extender, PROFINET IO Controller/Device, EtherCAT M

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Automation Builder 2.6.0 – New Features
PROFINET TCI (Tool Calling Interface) conformance class 1 and 2 support

Usage of 3rd party configuration tools with AB for PROFINET/PROFIsafe devices

New features and improvements

- Ability to call 3rd party TCI configuration tools up to Class 2 from AB to configure 3rd party PROFINET/PROFIsafe devices from 3rd party configuration tools
- TCI configuration tools can be called from AB context menu for given devices.
- For example, F_iPar_CRC values for safety encoder, 3rd party safety I/Os, etc. can be calculated using 3rd party TCI tools

Constraints

- TCI Class 3 integration is not supported in AB 2.6. It is planned to be supported in future versions.
- TCI tools shall be pre-installed.

Customer benefits

- Efficient and user-friendly engineering with less errors during PROFINET/PROFIsafe device configuration due to only single input of iParameter values (in AB only)
New features and improvements

- New PROFINET stack to make the PROFINET I/O controller compliant to PNO specification
- New related library “CM579Profinet”

Constraints

- Current FW 3.6.0 only supports the new PROFINET stack
- Manual adjustments on the application required (changed function blocks)
- CM579-PNIO from stock has to be updated to new firmware

Customer benefits

- Will be certified by PNO later
About SMTP

- SMTP stands for “Simple Mail Transfer Protocol”
- De-facto standard for sending e-mails
- All serious mail servers require encryption

Solution

- Availability of CODESYS library “Mail Service SL”
- No additional license required
- Application example available from ABB Library

Use cases

- Sending e-mails by the PLC
About SNMP

- SNMP stands for “Simple Network Management Protocol”
- Protocol mainly for accessing network components like routers, switches, firewalls, servers and printers
- Two versions used
  - SNMP v2c: widely used, no security considerations
  - SNMP v3: increasing usage, secure protocol

Solution

- Availability of CODESYS library “SNMP Service SL”
- No additional license required
- [Application example](#) available from ABB Library

Use cases

- Monitoring of any network components and printers
- Remote control and configuration of network components
- Fault detection and reporting
New features and improvements
• Configuration of all possible devices below one single PLC
• Application based enabling or disabling of devices based on a scan. Library is available on request.

Constraints
• Maximum number of 10 S500 devices in configuration
• No support of safety I/O devices
• No start-up with last configuration, always scan required
• Error in Automation Builder online view because of missing devices

Customer benefits
• Maintaining of product lines with one single PLC application
Re-styled GUI (Graphical User Interface) of AC500-S Programming Tool

AC500-S Programming Tool

New features and improvements

• A new style for graphical elements is used for AC500-S Programming Tool to have a unique ABB Look & Feel
  • New icons
  • Flat style of tabs, frames, etc.
  • No functional changes

Constraint

• The new Look & Feel is available only for AC500-S Programming Tool and not for AC500 CODESYS V2

Customer benefits

• More modern Look & Feel closer to that of Automation Builder
Automation Builder 2.6.0 – New Features
Integration of the AC500-S SCA (Safety Code Analysis) tool into Automation Builder

Automation Builder and AC500-S SCA (Safety Code Analysis) Tool

New features and improvements
• AC500-S Safety Code Analysis Tool can be now directly installed and used together with Automation Builder 2.6.0
  • A loose integration using Automation Builder context menu and messages is provided
  • No functional changes in AC500-S SCA tool.

Constraint
• The current integration level only warns users to use AC500-S SCA
• The responsibility for proper usage of AC500-S SCA is still at user’s side.

Customer benefits
• The user is warned about the need for using AC500-S SCA
• In line with the current functional safety standard requirements for limited variability language (LVL) check in safety engineering tools
Automation Builder 2.6.0 – New Features
CM589-PNIO-4(-XC) and SM560-S-FD-4(-XC) support on V3 CPUs

Multiple controller-controller communication using PROFINET / PRPROFIsafe with V3 CPUs and AC500-S

New features and improvements

• PROFIsafe communication between safety CPUs and shared device for PROFINET on AC500 V3 CPUs
  • CM589-PNIO-4 (-XC) PROFINET IO device communication module and SM560-S-FD-1 (-XC) / SM560-S-FD-4 (-XC) support with Automation Builder 2.6 and all V3 CPUs
  • The same functionality is available on AC500 V3 CPUs as it is today with AC500 V2 CPUs: PROFIsafe V2.4 and PROFIsafe V2.6, etc.

Constraints

• The only limitation for data exchange is the size of the data exchange between safety and non-safety CPU which is currently 2 k Bytes.

Customer benefits

• No need of 3rd party PROFINET/PROFIsafe gateways for PROFINET/PROFIsafe controller-controller communication – cost optimization, more flexibility in connectivity (bigger fail-safe data exchange), less space in the control cabinet, etc.
New features and improvements

- Firmware version 2.8.6 with improved security, available for all AC500 V2 CPUs
- Certification of firmware V2.8.6 according to Achilles level 2
- No need to update Automation Builder for using FW version 2.8.6

Constraints

- No functional changes

Customer benefits

- Improved security for AC500 V2 based automation systems
- Need for Achilles level 2 in bidding specs is no more a blocker
Automation Builder 2.6.0 – New Features

Drives: Default installation of most common ABB Drives

New features and improvements
- Default installation of most frequently used ABB Drives
- Available for Ethernet/IP, CANopen and EtherCAT

Constraints
- More Drives are available from ABB library. Missing Drives have to be manually installed.

Customer benefits
- Default availability of most frequently used ABB Drives without need for searching the ABB library and manual installation
New features and improvements

- Cyber security: Fixing of multiple vulnerabilities, details are available from the related ABB advisory from ABB’s cyber security alerts and notifications list.
- Support of Windows 11
- Fixes to Drive Firmware update and drive connectivity
- Removal of "FSO firmware loader" feature

Customer benefits

- Improved security
- Windows 11 compatibility
Automation Builder Knowledge Base

Automation Builder 2.6

What's new?

Automation Builder 2.6.0

Platform

- General performance improvements, e.g.
  - Faster start-up time
  - Faster loading of projects
  - Faster response times when being online

- Support of side-by-side installations
  - Starting with Automation Builder 2.6 there will be no more version profiles available for installation
  - Any versions Automation Builder 2.6 or later can be installed and uninstalled separately
  - For accessing Automation Builder versions 2.5 and / or older it is recommended to install Automation Builder 2.5 including the required version profiles

- Introduction of Automation Builder 64-bit version
  - Dedicated 64-bit installer
  - Required mainly for large AC500 V3 projects with high memory consumption
  - Constraint: no side-by-side installation with 32-bit version Automation Builder 2.6.0

AC500 V2 (FW version 2.6.6)

- New firmware version 2.6.6 with improved security
- Certified by Achilles Level 2

AC500 V3 (FW version 3.6.0)