ABB PROCESS AUTOMATION

System 800xA

Engineering workflow, and Engineering efficiency

PAPCP, Global Product Management, Hans Nordström

Engineering Efficiency in System 800xA Version 6.1

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Synopsis:
Standardization is key to address cost pressure and generational change. This session proposes a standard engineering workflow and tool set, which balances between customization and efficiency

What you will learn:
– Key success factors enabling for cost effective configuration
– How to standardize as much as possible allowing as much as necessary customization
– How you can split work effectively
– How you use different talents effectively

Engineering Efficiency in System 800xA Version 6.1

Session Introduction

Common 800xA Engineering Workflow

– Focuses on I/O, Controller and HMI

– Presenting overview, concepts and best practice

Recommendations on how to use which tools

– Scalable solution from small to large

– Covers interactive use cases as well as auto bulk generation

– Use the best off all worlds

Documented in a new book in version 6.1.1

– 3BSE091683-611 ~250 pages

SYSTEM VERSION 6.1.1

ABB Ability™ System 800xA
Engineering
Efficient Engineering Reference Guide
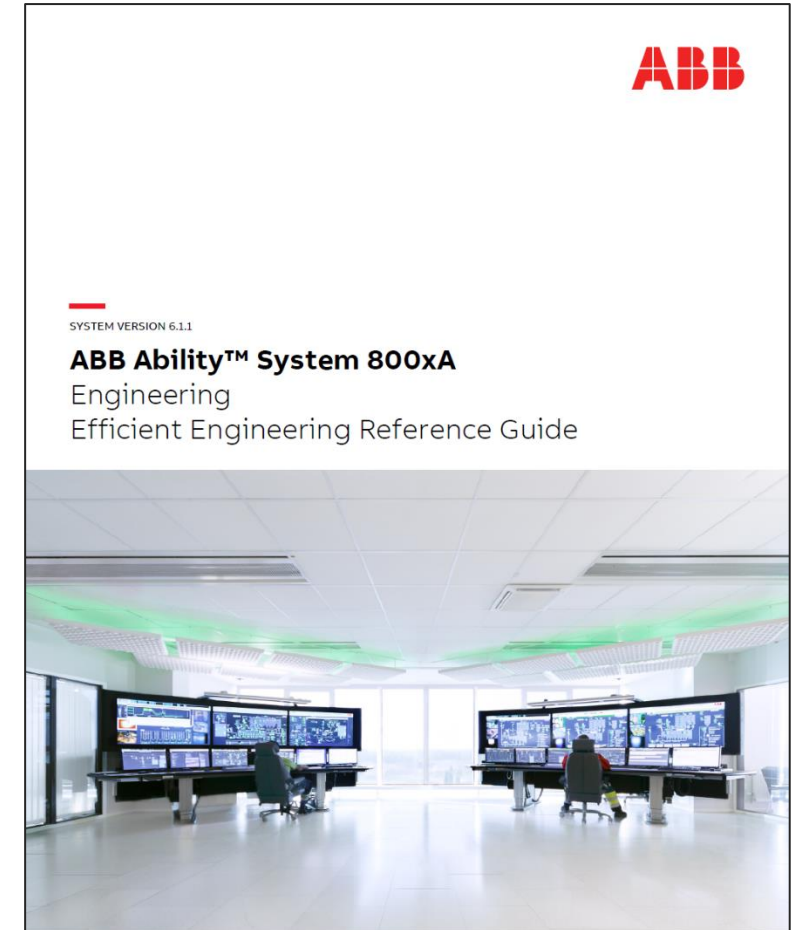
System 800xA Basic Engineering Training

Now Available Completely Online

A new learning path has been implemented for basic 800xA Engineering training, completely provided online.

The complete set of requirements for product certification described in the newly released training program for System 800xA.

Consisting of 3 parts:

1. System 800xA Basic Engineering – eLearning T360e (~2h)
2. Engineering Efficiency – Set of eLearnings (~8h)
3. Engineering Efficiency – Instructor-led Virtual Classroom training (3 half-days)

New Learning Path:

T360e
800xA Introduction
eLearning

↓

Engineering
Efficiency
eLearning series

↓

800xA hands-on
Virtual Training

T360E – SYSTEM 800XA INTRODUCTION
T360e-GLB-EN-p

LAUNCH

T360e eLearning course is an introduction to the overall 800xA system. It contains information about new products and features available with 800xA 6.1 release. E-learning course contains the following modules: System Architecture System 800xA Concepts (Including xStream engineering) System 800xA, AC800M Hardware (Including Select I/O) C...

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☆☆☆☆☆ | TAGS : 800xA - 9AA... | ⌔ Share

T361E - SYSTEM 800XA ENGINEERING EFFICIENCY
T361e | Complete 9 out of 9 courses

REGISTER

This web-based training plan guides you with the best practice of automation engineering in terms of efficiency while working with the System 800xA.The training plan consists of 9 course modules. Module 1 is just about the course menu and instructions how to proceed with the whole 800xA Engineering Efficiency training plan. The target audience is anyone u...

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T361V - SYSTEM 800XA ENGINEERING EFFICIENCY
9CSC014951-WB-GLB-EN

REGISTER

This is a place holder, for registration please enroll in this class. Our training administrator will contact you. The time slot for the class will be communicated later. Channel Partners to contact their local ABB channel manager for a price. The list price is 1.500 USD. Prerequisites (Please pass these courses before T361v): Online training T360e list ...

☆☆☆☆☆ | ⌔ Share

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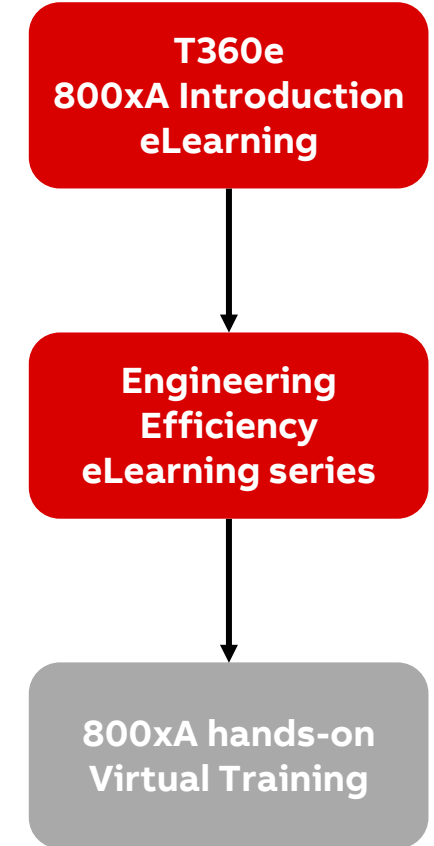
T361E System 800xA Engineering Efficiency

Instructor-led Virtual Classroom training

ABB UNIVERSITY COURSE DESCRIPTION

T361v
Engineering Efficiency – virtual training

The goal of this course is to practice new recommended methods and tools increasing efficiency in engineering and commissioning of automation solutions with AC 800M with Select I/O and S800 I/O in the Extended Automation System 800xA.

Course type and methods
This is an instructor led virtual course with interactive discussions and associated remote exercises. Approximately 50% of the course are practical exercises.

Student Profile
This training is targeted to application and instrumentation engineers, commissioning and service engineers and system integrators.

Prerequisites
Students should have attended the Engineering course T315 or T360e and T361e - System 800xA Engineering Efficiency e-learning.

Course objectives
Upon completion of this course the participants will be able to:
- Understand the principle of engineering workflow
- Clarify and consolidate key project inputs, create a project, identify, and adapt module types
- Create and configure hardware manually and by using the BDM2 tool
- Configure and commission Select I/O with a Signal List including I/O Loop Check

- Create and configure controller application by using the BDM2 tool
- Create and configure HMI application by using the BDM2 tool
- Bind a controller application with an HMI application and perform a software test
- Bind both hardware and software configurations and prepare a project for a commissioning and a final site test
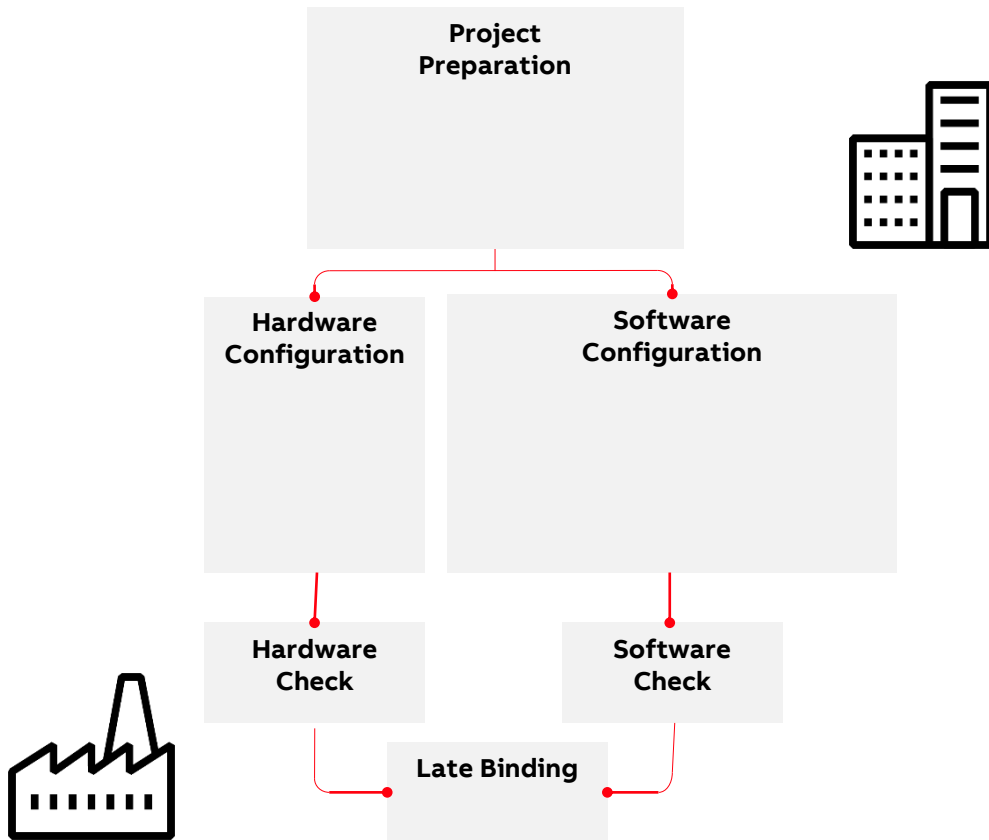
Main topics
- Engineering workflow
- Engineering efficiency
- Project inputs
- Hardware Engineering
- xStream Engineering
- Engineering with Signals
- Loop check
- Bulk Data Manager
- Ethernet I/O Wizard
- Application configuration
- HMI configuration
- Software test
- Late binding

Duration
The duration is 3 half-days.

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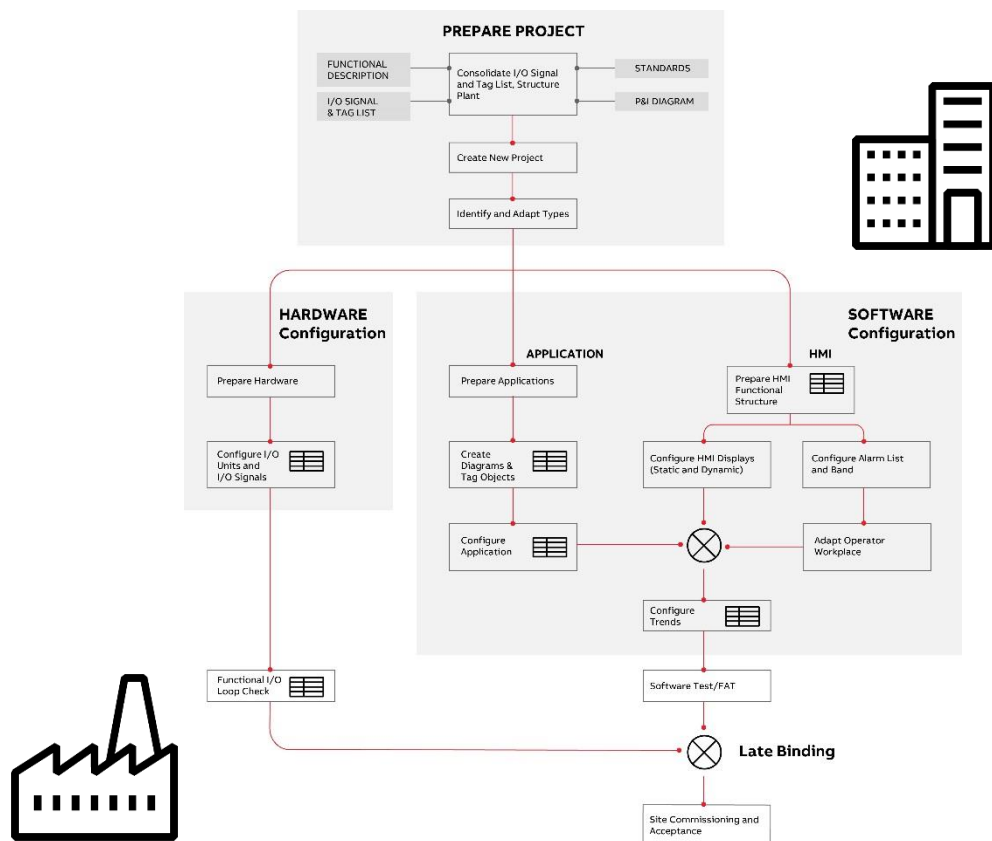Common Engineering Workflow - Overview

Key elements:

– Take time to prepare your projects well

– Fast-Track your Projects
  - ➔ Perform activities in parallel instead of sequential

  - Configure and check software in-house

  - Have Hardware be configured and checked at site early

  - Bind Software and Hardware as late as necessary at site

– Bind I/O Hardware via Signals to Software

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Common Engineering Workflow - Overview

Key elements:

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- Bind I/O Hardware via Signals to Software

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Tools

Control Builder provides

– Control Diagrams
  Editor of choice for new applications, which combines best of all other editors in one. Integrates Sequential Function Chart and Structured Text programming

– Programs
  Editor with IEC 61131 features Function Block Diagram, Structured Text, Sequential Function Charts and Ladder Diagrams

– Control Modules
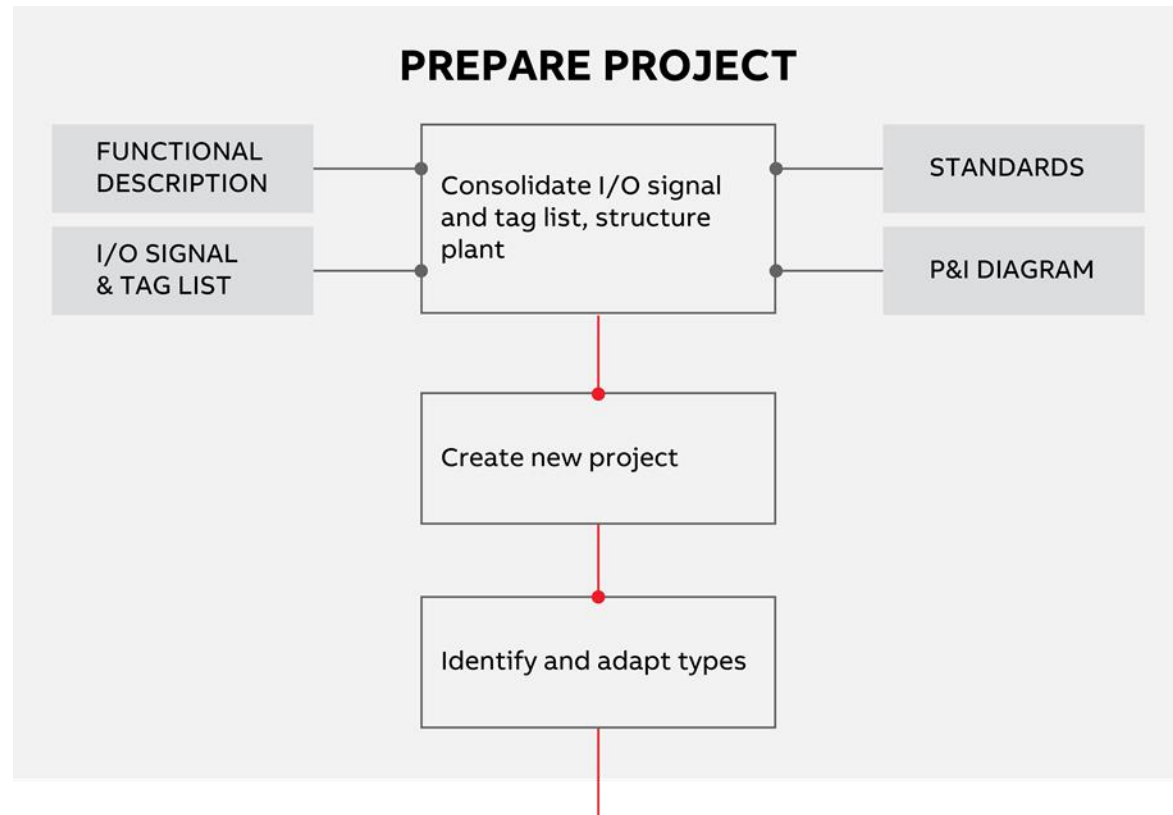 Graphics Editor for Control Modules that complements with Structured Text code

Note: All Editors are supported, where focus on new development is in the editor for Control Diagrams

HMI provides

– Tabbed Navigation
  Structuring element for HMI displays, supported by User Interface controls on the HMI displays

– Process Graphics 2
  Easy to use Process Graphics design tool with rich library of ready-made elements. Fully integrated in 800xA and allows dynamic Tag elements with or without the control code being available

– Trends and logs
  Allows configuration of logs on existing objects and the visualization into trends

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Prepare Project - Overview

PREPARE PROJECT

FUNCTIONAL DESCRIPTION → Consolidate I/O signal and tag list, structure plant → STANDARDS

I/O SIGNAL & TAG LIST → Consolidate I/O signal and tag list, structure plant → P&I DIAGRAM

Create new project

Identify and adapt types

Clarify the project Inputs and constraints as:

– I/O Signal list format, examples and schedule

– Instrument Tag list format, examples and schedule

– Piping and Instrumentation Diagrams schedule

– Function Design Specification schedule

– Standards to be followed

Create a new Project workplace

Identify and adapt types

– Select the types needed based on the application

– Reuse types may require adaptations

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Prepare Project – Example Inputs

Example for P&I Diagram

Tank100 Application

Tank 100
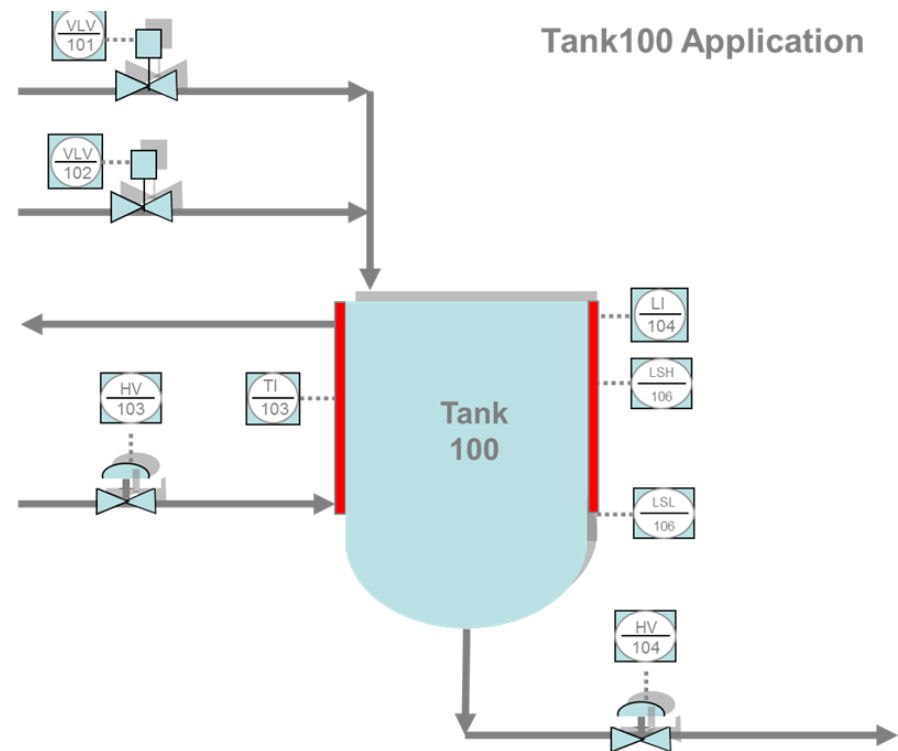
Example for Instrument / Device Tag List

Object Nam	Object Description	Object Type	Alarm/E	Class	Area	Unit
TT_508	Mixing tank N500 Product 5 Outlet Temperature	Analog input signal	AE	500	Preparation Area	U2B
QT_508	Mixing tank N500 Product 5 Outlet pH Measurement	Analog input signal	AE	500	Preparation Area	U2B
MIX_509	Mixing tank N500 Tank Mixer	Unidirectional motor	E	500	Preparation Area	U2B
SI_509	Mixing tank N500 Mixer Motor rpm indication	Analog input signal	AE	500	Preparation Area	U2B
II_509	Mixing tank N500 Mixer Motor current indication	Analog input signal	AE	500	Preparation Area	U2B
TI_509	Mixing tank N500 Mixer Motor temperature indication	Analog input signal	AE	500	Preparation Area	U2B
QT_509	Mixing tank N500 pH Measurement	Analog input signal	AE	500	Preparation Area	U2B
VLV_601	Reactor Products Inlet Valve	On/Off Valve	E	600	Reactor Area	U2C
VLV_602	Reactor Gas Inlet Valve	On/Off Valve	E	600	Reactor Area	U2C
TT_603	Reactor Tank Temperature	Analog input signal	AE	600	Reactor Area	U2C
LT_604	Reactor Tank Level	Analog input signal	E	600	Reactor Area	U2C
VLV_605	Reactor Waste Outlet Valve	On/Off Valve	E	600	Reactor Area	U2C

Example for I/O Signal List

	Signal Name	Signal Description	Signal Typ	IO Module Type	Signal R	Scalin	Scalin	Signal	Alarm	Area
3	VLV_101_LSO	Heater W100 Raw material 1 Inlet Valve A Open Limit Switch	DI	DI810					E	Prepar
4	VLV_101_CMD	Heater W100 Raw material 1 Inlet Valve A Open Command	DO	DO810					E	Prepar
6	VLV_102_LSO	Heater W100 Additives Inlet Valve B Open Limit Switch	DI	DI810					E	Prepar
7	VLV_102_CMD	Heater W100 Additives Inlet Valve B Open Command	DO	DO810					E	Prepar
9	HV_103	Heater W100 Manual Heating medium Temperature Valve	AO	AO810	4..20mA	0	100	%	E	Prepar
11	HV_104	Heater W100 Manual Product 1Outlet Valve	AO	AO810	4..20mA	0	100	%	E	Prepar
12	LSL_104	Heater W100 Tank Level Switch Low	DI	DI810					EA	Prepar
13	LSH_104	Heater W100 Tank Level Switch High	DI	DI810					EA	Prepar
14	VLV_105_LSO	Heater W100 Waste Outlet Valve Open Limit Switch	DI	DI810					E	Prepar
15	VLV_105_CMD	Heater W100 Waste Outlet Valve Open Command	DO	DO810					E	Prepar
17	PMP_107_CMD	Heater W100 Heating medium Circulating Pump Start Comman	DO	DO810					E	Prepar
23	VLV_201_LSO	Filter CX200 Raw material 2 Inlet Valve A Open Limit Switch	DI	DI810					E	Prepar
24	VLV_201_CMD	Filter CX200 Raw material 2 Inlet Valve A Open Command	DO	DO810					E	Prepar
26	VLV_202_LSO	Filter CX200 Solvent Inlet Valve B Open Limit Switch	DI	DI810					E	Prepar
27	VLV_202_CMD	Filter CX200 Solvent Inlet Valve B Open Command	DO	DO810					E	Prepar

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Prepare Project – Adapt Types

Out of the Box Libraries

Analog and Digital Monitoring blocks can be found in Signal Libraries. Scaled features are number of alarm levels for analogs and diagnostics

Motor and Pump object types are included in Process Objects Extended library, where such are designed as templates, which can be copied and adapted to the projects needs. Process Objects Drive Library complements the types,

Simple PID and Cascade Loop types are provides in Control Solution Library. Control Solutions can be copied and adapted to the projects needs

Refer:

– 3BSE035981 and online help for functional specification

– 3BSE041434 chapter 5.1 for footprint

More specialized application libraries are available from ABB Control Technologies as for example dairies, sugar, fine chemicals.

HMI Adaptation

Where the libraries already include a set of HMI elements as graphic elements and faceplates, there are multiple sites where adaptations are required. 800xA supports an Extension Library concept where delivered HMI extensions can be copied and adapted. The product provided extension library can in those cases be disabled in order to streamline operations

Logic Adaptation

In cases, where the types need to be adapted, it is suggested to:

a) Copy an existing type if the library is not protected

b) Wrap protected types in a new type and copy and adapt aspects
Note: In order to ensure proper number of tags, wrapped types should have the property „instantiate as Aspect Object" disabled

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Hardware Configuration - OPTIONS

Independent Hardware Configuration

Based on the I/O system and connectivity hardware can be tested independent:

a) **S800 and Select I/O on Ethernet**
Configuration is supported by Ethernet I/O Wizard and simple to create. Test does only require a Windows node with System 800xA field-kit installed

b) **All other I/O connectivity and I/O systems**
Configuration is supported by Bulk Data Manager. Users need to create Test applications to test the I/O. A controller and optionally PROFIBUS Communication Interface is needed for test

HARDWARE CONFIGURATION

Prepare hardware

Configure I/O units and I/O signals

Functional I/O loop check

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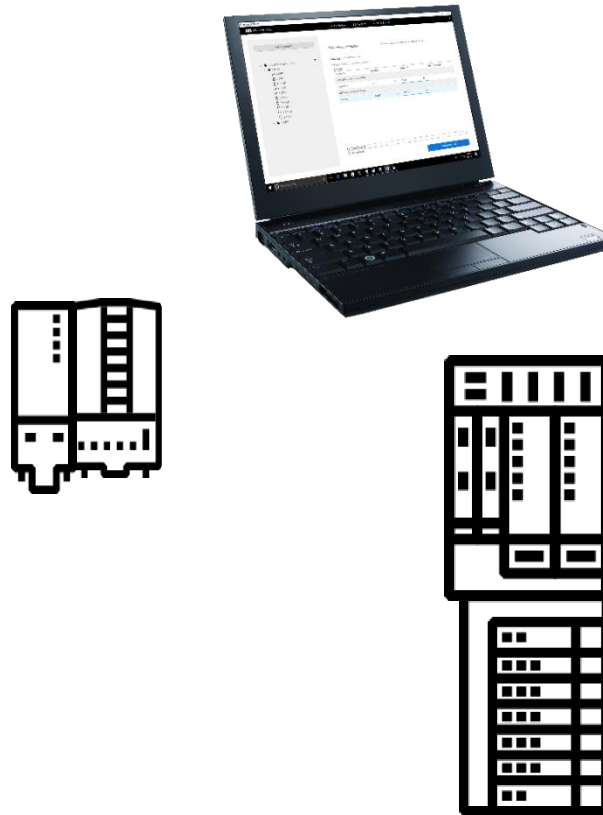
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Hardware Configuration – S800 Modulebus Overview

– Prepare Hardware:

  • Insert HW Libraries

  • Create Controllers

– Create & Configure I/O Units and I/O Signals:

  • Create I/O Units structure

  • Configure I/O Units

  • Assign I/O Signals to channels

– Functional I/O Loop Checks:

  • Create test Application with Signals

Note: for non safe apps one can enable the Controller's hardware object settings "copy unconnected in/output channels"

– Download Controller

– Verify function of the I/O units, wiring and field devices

Notes: Observe that system 6.1 provides automatic cross reference navigation via signals and I/O variables called Process relations
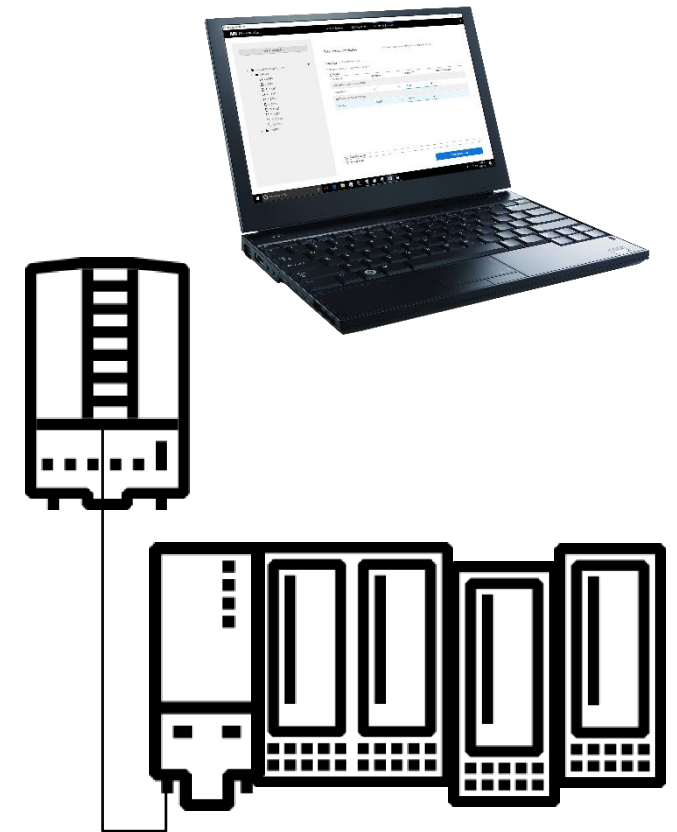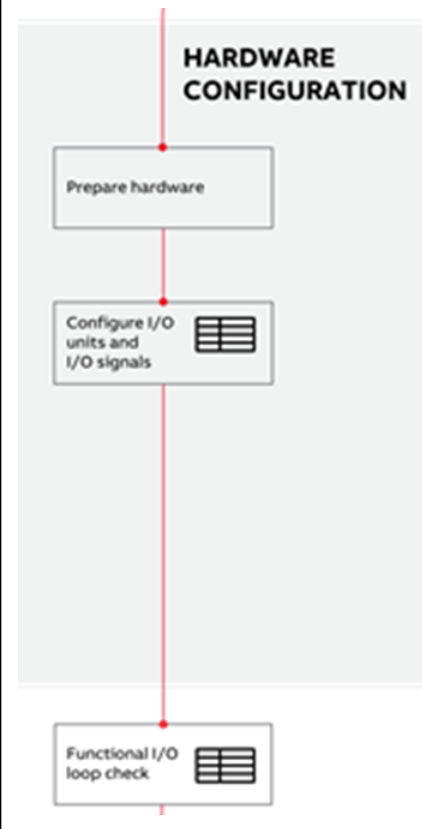
HARDWARE CONFIGURATION

Prepare hardware

Configure I/O units and I/O signals

Functional I/O loop check

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Hardware Configuration – S800 No Ethernet

Create Hardware Units

Create S800 I/O modules with simple BDM2 sheet
Notes:

– You may create one of each types interactively and drag controller into BDM2 in order to know what field values are needed

– Hardware objects have an identification number and a name. As the name is seen in the alarm messages it is suggested to code the location into the name make repair in runtime easier
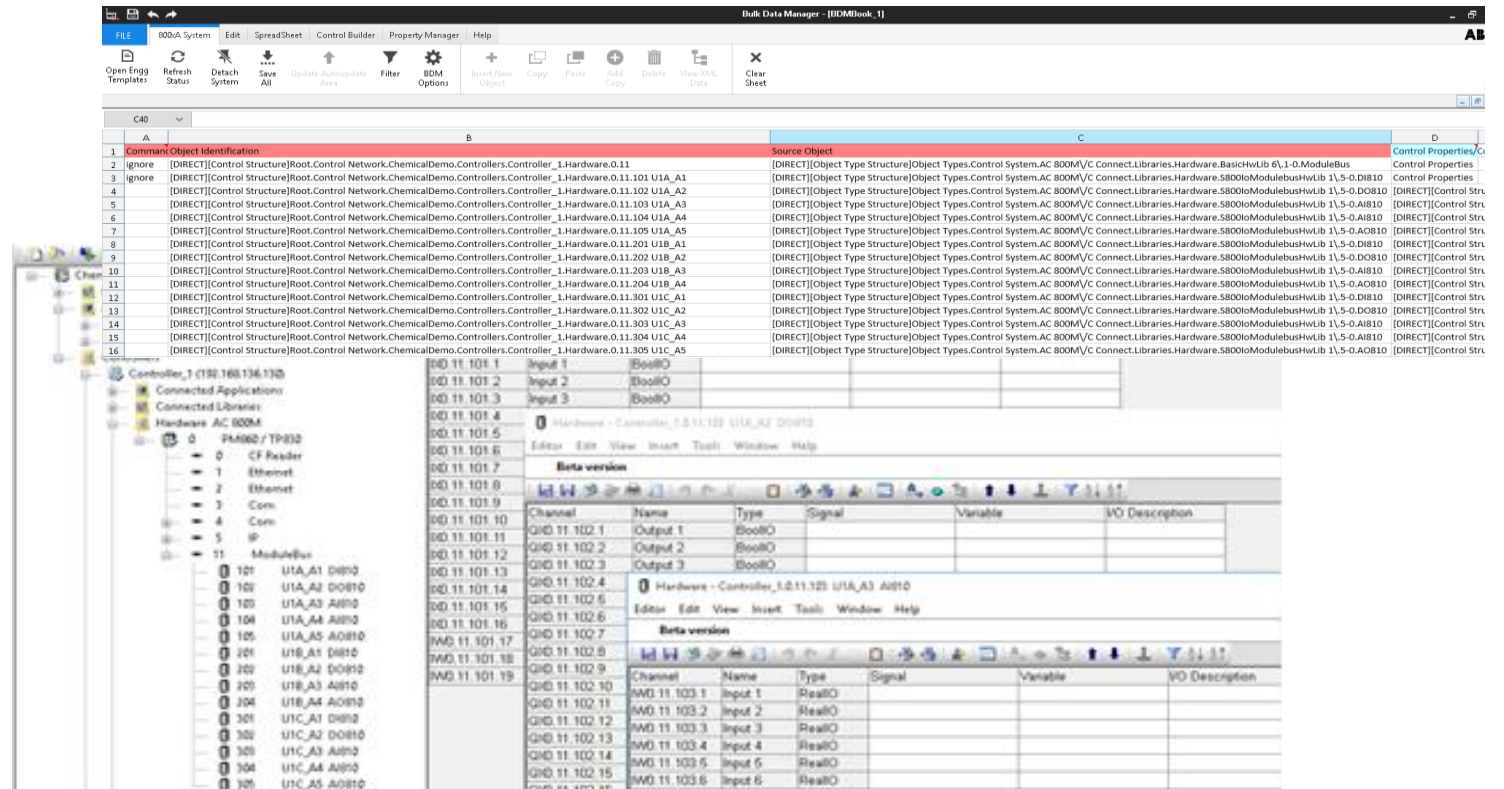
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Hardware Configuration – S800 No Ethernet

Configure Units

Once create the unit can be read into the CBHardwareUnitModification template

a) Turquoise columns configure Hardware unit settings as signal range, filter times and similar

b) Apricot columns configure allocation of signals to channels and I/O channel scaling parameters

Notes:

– Row Filters are not yet supported in CB based sheets, subject to later revisions
Consider using find or replace

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Hardware Configuration – Test Application

Test Application without Faceplates

If no Faceplate is needed to test open loop and shortcut and if the application does not require is safety level one can
➔ enable "Copy unused channels "
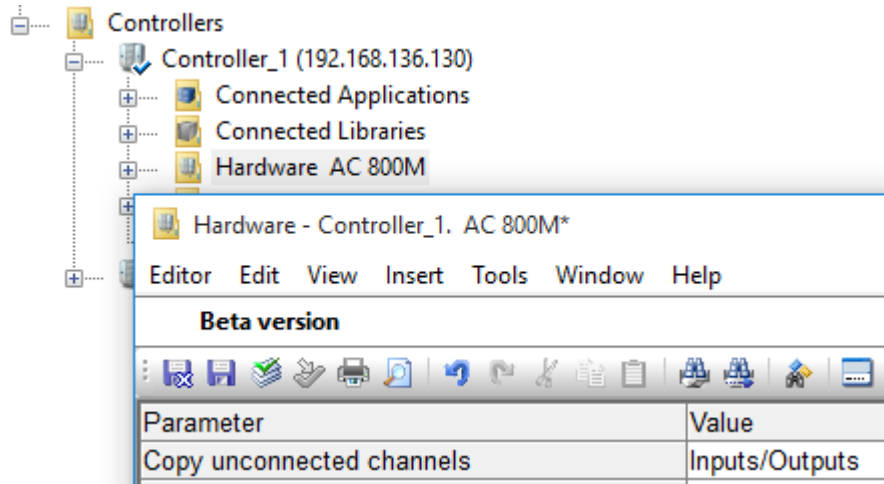
Note: Ensure the setting is disabled after use as it may load the controller and is not supported in plant operations conditions

Test Application with Faceplates

If a Faceplate is needed create a Test Application with BDM2.

Two Phase creation with BDM2 "CBDiagramCreate Template"

1. Create one signal object for each signal based on data type (Real | Boolean | DWORD) and direction (IN | OUT)

2. "Save to CB" creates objects in a Diagram an creates a new worksheet listing all I/O ports

3. Assign signals to I/O ports and save to CB

4. Connect Application to Controller and Task

5. Download Controller

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Hardware Configuration – Device Simulation and Configuration

Device Configuration and Test - DTM

System 800xA has build in support for Device Management PROFIBUS HART

ABB Library hosts a DTM library for all commonly used Device Drivers

The System 800xA can be use to:

– Observe HART devices

– Configure HART devices

– Simulate / Force output values of HART devices

– …

Device Configuration and Test – FDI and EDD

A new System 800xA Option called Field Information Manager 2.1 has been added

Find info on packages at www.abb.com/fieldinfo

FIM 2.1 can be used to:

– Observe HART devices

– Configure HART devices based on templates

– Simulate / Force output values of HART devices

– Document configuration

– Supports NAMUR device parameter

– Allows access to device data via OPC UA

– …

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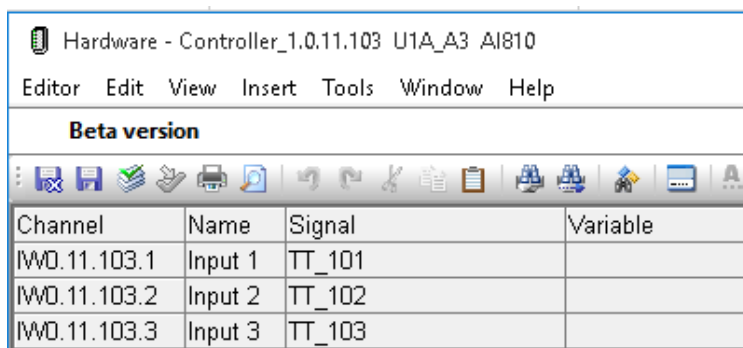
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Hardware Configuration – System 800xA 6.1 News

I/O Connection via Signals

I/O connection can be routed via:

a) I/O Signals or

b) already defined I/O variables

Process and Device Relations
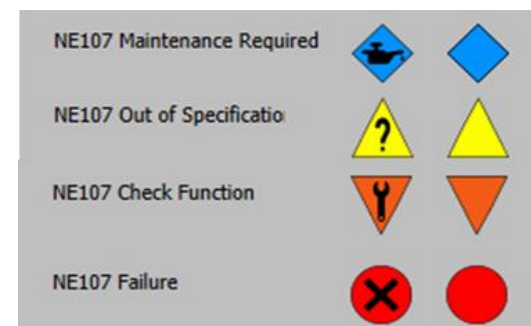
Control Builder links the device and the process objects as per I/O connections

Process Objects offer a new Aspect Category the Device Alarm Event list showing messages from connected devices

Process objects allow to navigate via context menu to connected device objects

NE 107 Status indication

All Unit status alarms and events for S800 and Select I/O on Ethernet have been assigned to a NE 107 category for easier recognition of the urgency and potential impact

Pause and questions

Engineering Efficiency in System 800xA Version 6.1

Software Configuration - Overview

Software Configuration can start in **two streams**:

a) **Application**
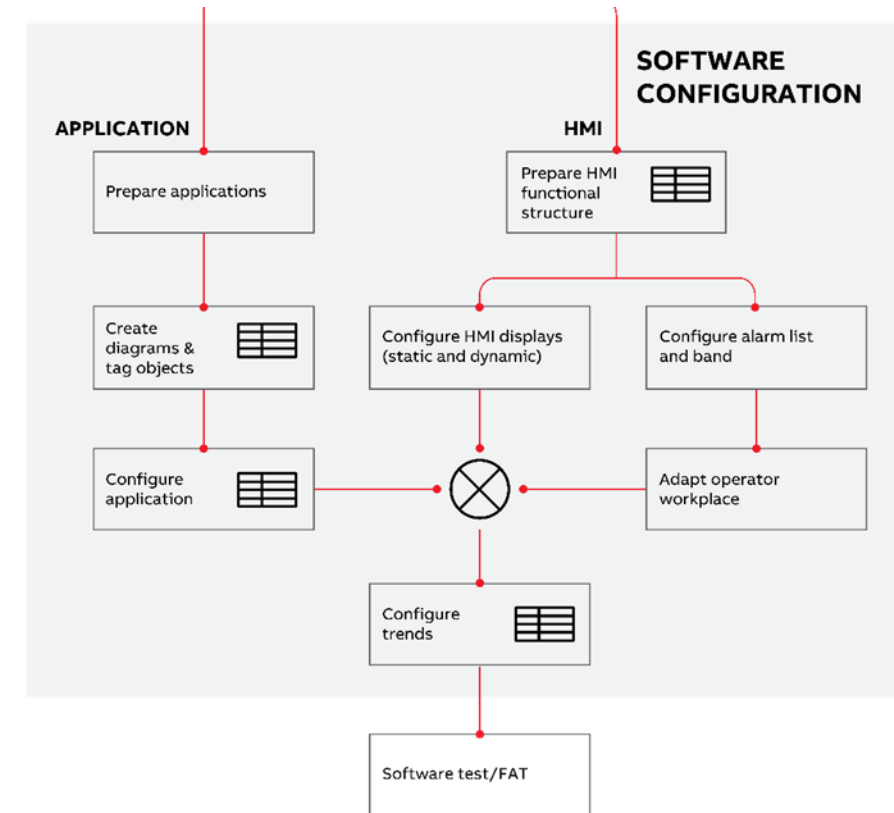   Configuration of the Applications, Diagrams and Tags as per the specification

b) **HMI**
   Engineering of the HMI starts with creation of the functional structure. Next the Alarm and event lists and bands are being configured and the Process Graphics with Statics and Dynamic content. Once the alarm bands and lists are available the Operator workplace and its menus and options can be done

c) **Software Binding**
   After the Applications are done the HMI and Application can be correlated and logs and trends can be configured

d) **Software Test & Factory Acceptance Test**
   The AC800M Soft Controller option allows software test and FAT to be done in an office environment or clouds with remote dial in capabilities.

Engineering Efficiency in System 800xA Version 6.1
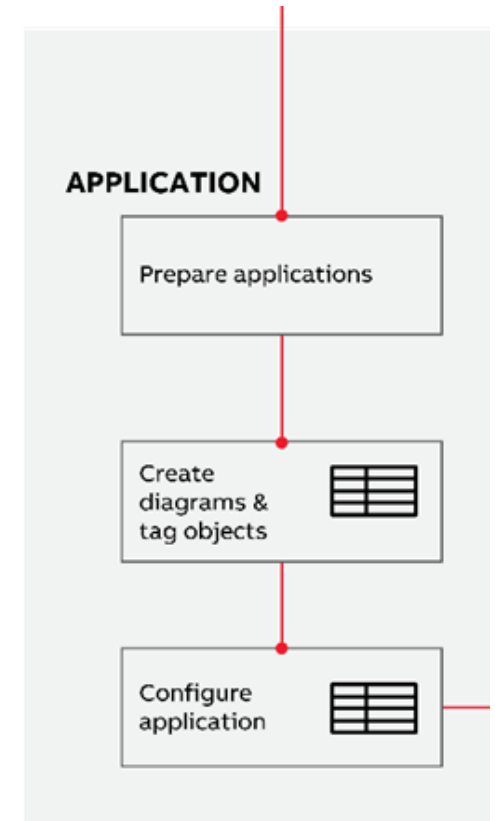## Software Configuration Application - Overview

Preparing Applications

– Checking if all necessary Libraries are inserted under Project Libraries if not inserting the missing ones.

– Creating the desired number of Applications.

– Connecting Libraries into the Applications under Connected Libraries folder (for each Application).

Creating Diagrams & Tag Objects

– Creating Diagrams in Applications according to the I/O List, TAG List and Functional Description

– Control Module blocks will be used as SW representation of valves, motors and measurements.

– Entering names of Control Modules according to the Tag List and connecting I/O Signals according to the I/O List.

Configuring Application

– Checking and modifying the necessary Control Module Parameters according to the Tag List, e.g. Name, Limits, AE Class etc.

APPLICATION

Prepare applications

Create diagrams & tag objects

Configure application

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Software Configuration Application - Create Diagrams & Tag Objects Considerations

Cycle Times

Up to 32 Applications can be assigned to one Controller

Up to 32 Tasks be run per Controller

Tasks can be assigned to one Application only

Best practice is to have about 3-10 applications per controller with 3 tasks each (fast, medium, slow)

Note: Controller tuning gets easy, when the different task interval times are multiples of the fastest tasks interval time
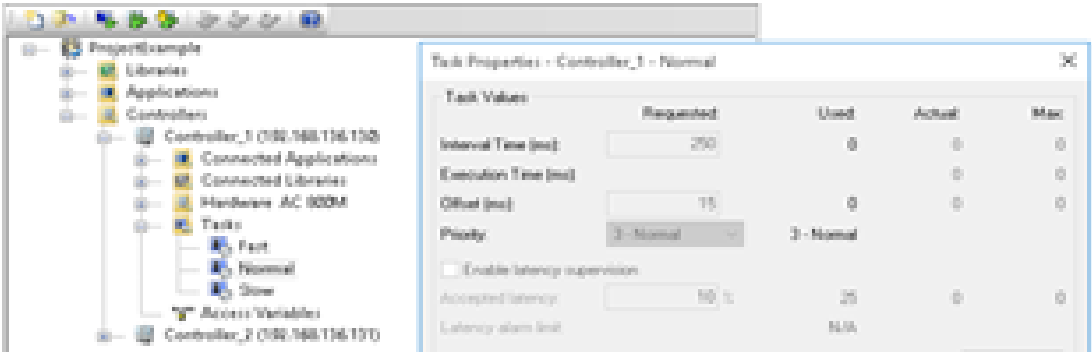
Diagram Size

Applications can host up to 128 Diagrams

In order to maintain responsiveness following limits are enforced. System variable value cause warning where max values are prevented to be exceeded.

System Variable	Min	Default	Max
FDMaxObjectsPerPage	10	120	200
FDMaxConnectionsPerPage	20	200	400
FDMaxPages	20	100	200
FDMaxNumberUndoRedo	3	50	100

It is recommended to either configure one Diagram:

a) per Unit (10 to 70 Tags)
   It keep process separation easy

b) one Diagram per Control Loop (1 to 5 Tags)
   May be suitable if such loops can be auto generate by BDM2

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Software Configuration Application - Create Diagrams & Tag Objects

Ways how to Create Diagrams and Tags
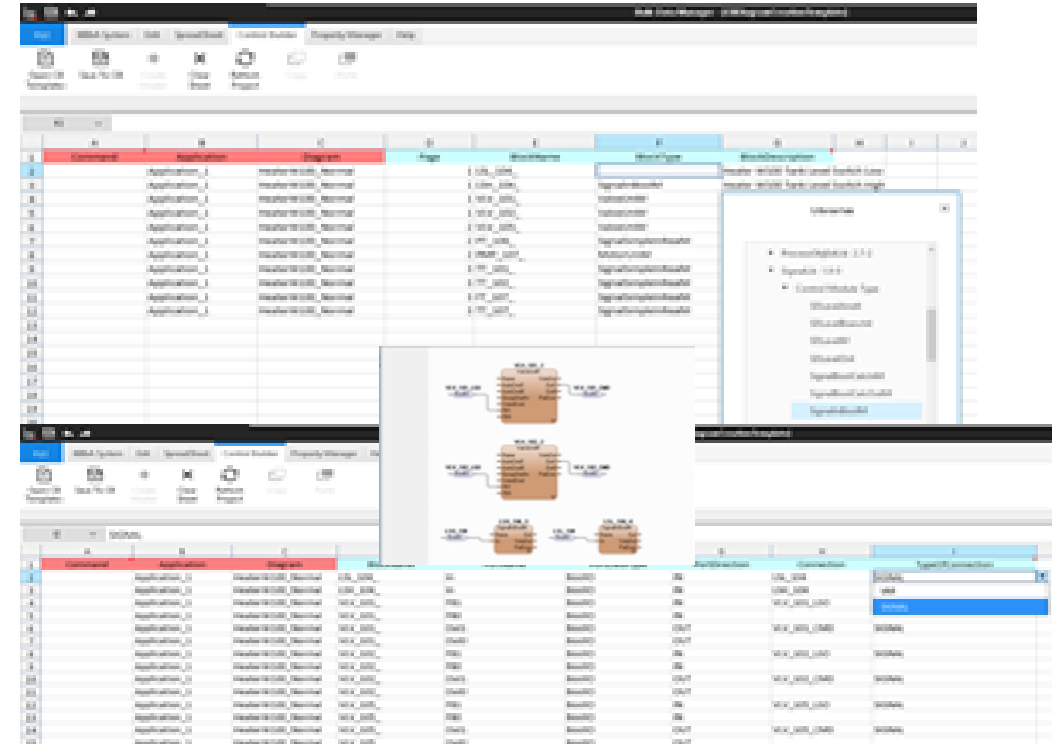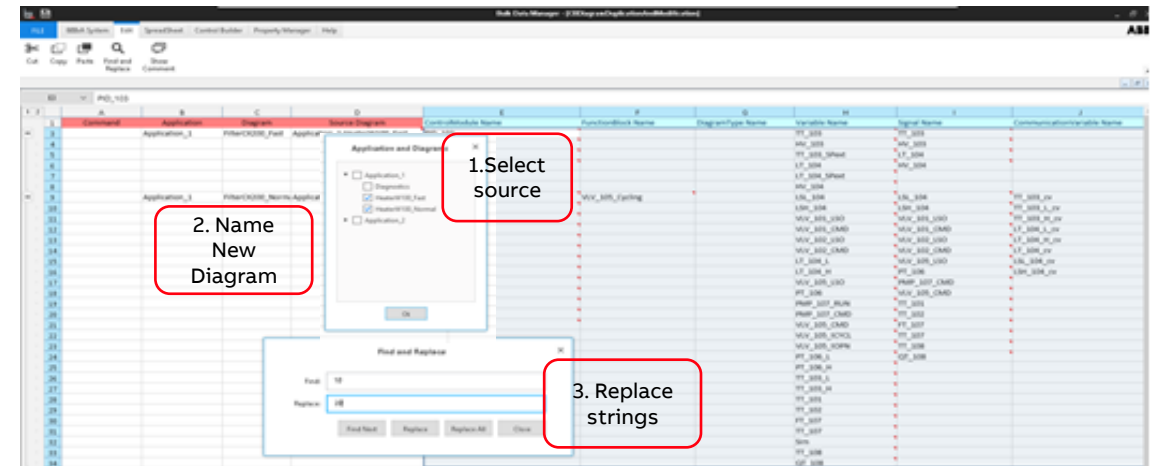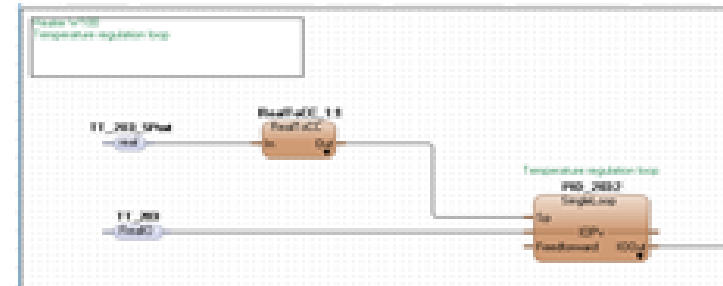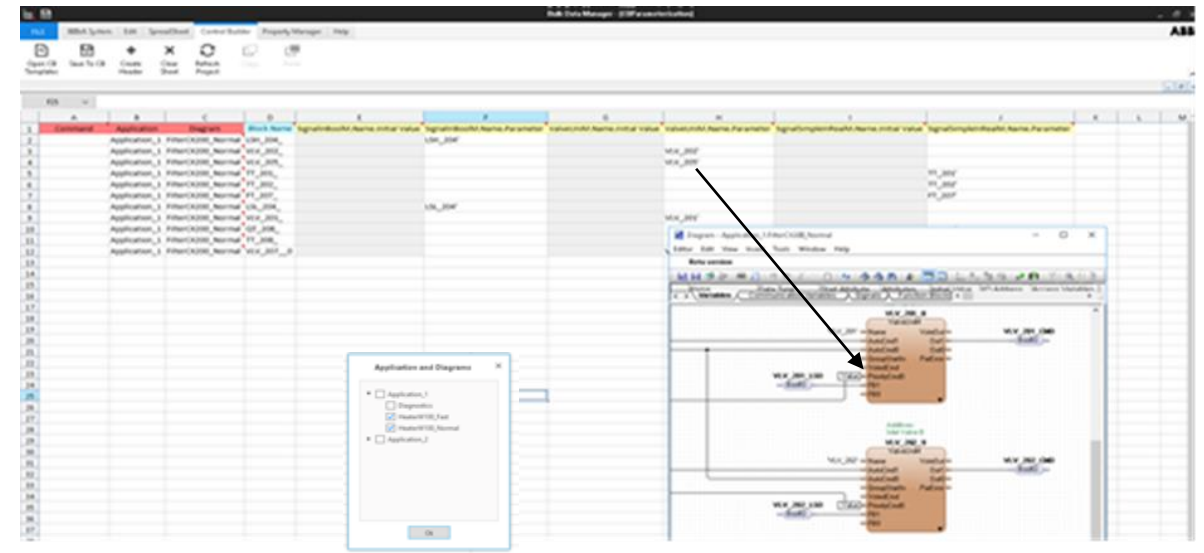
a) Interactively in Control Builder

b) Auto Generate: BDM2 CBDiagramCreation
   The sheet is optimized to create Diagrams for Units and place
   Tag process objects on pages and connect I/O signals to the
   process objects
   After generation of tags the unit logic is implemented
   interactively e.g., with SFCs

c) Auto Generate: BDM2 CBDiagramDuplicationAndModification
   This sheet is optimized to duplicate diagrams where in the
   duplicate a simple replacement of strings for tags, variables
   and signals is needed

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Software Configuration Application - Create Diagrams & Tag Objects

Ways how to Create Diagrams and Tags

a) Interactively in Control Builder

b) Auto Generate: BDM2 CBDiagramCreation
The sheet is optimized to create Diagrams for Units and place Tag process objects on pages and connect I/O signals to the process objects

c) Auto Generate: BDM2 CBDiagramDuplicationAndModification
This sheet is optimized to duplicate diagrams where in the duplicate a simple replacement of strings for tags, variables and signals is needed

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Software Configuration Application – Block Parametrization

BDM2 and Diagrams allow modification of parameters of Blocks.

1. Define which parameters of which block types are needed
Done in BDM2 CBParametrization template with + Create Header.
Typical parameter to configure in bulk is the AEClass parameter.
All visible ports of a block instance can be selected.

2. Reading applications and diagrams in reads the currently configured values

3. Values can be updated and written to the Diagrams for update
Note: visible and invisible ports can be read and written but only visible ports can be selected

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Software Configuration - Overview

Software Configuration can start in **two streams**:

a) **Application**
   Configuration of the Applications, Diagrams and Tags as per the specification

b) **HMI**
   Engineering of the HMI starts with creation of the functional structure. Next the Alarm and event lists and bands are being configured and the Process Graphics with Statics and Dynamic content. Once the alarm bands and lists are available the Operator workplace and its menus and options can be done

c) **Software Binding**
   After the Applications are done the HMI and Application can be correlated and logs and trends can be configured

d) **Software Test & Factory Acceptance Test**
   The AC800M Soft Controller option allows software test and FAT to be done in an office environment or clouds with remote dial in capabilities.

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Software Configuration HMI – Functional Structure

Functional structure follows the plant process hierarchy plant

HMI displays are added to the different hierarchies as Process Graphics as well as Trends and Alarm and Event lists

Structuring objects are build based on types in the plant and mill folder
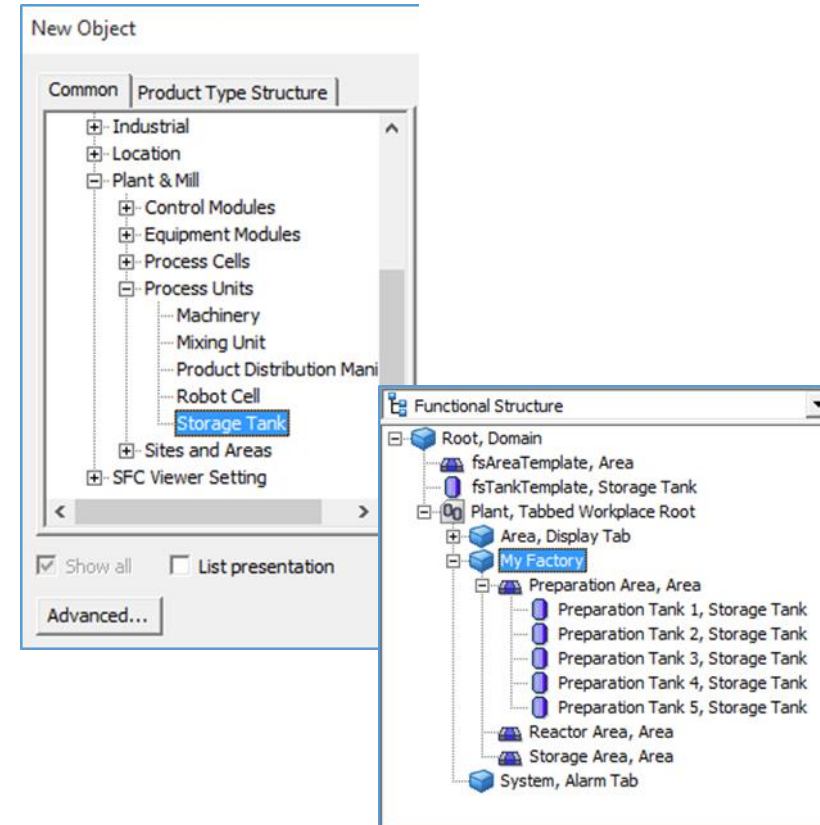
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Software Configuration HMI – Process Graphics Static

Static content in the Process Graphics can be created with the build in libraries

Libraries contain typical elements for the process industries market

The pipes connect wo points with vertical and horizontal lines automatically
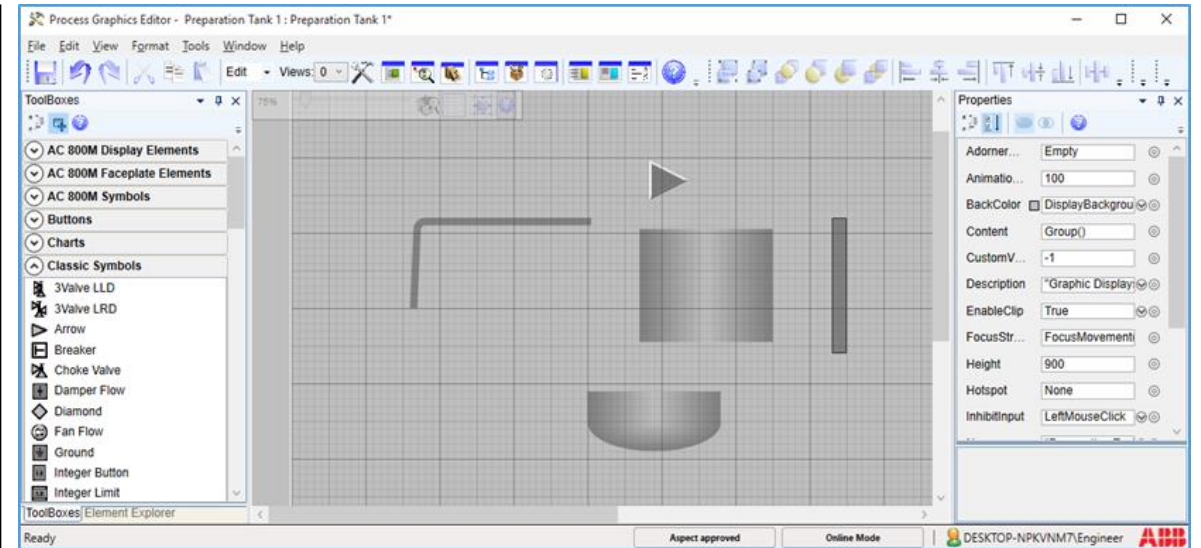
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Software Configuration HMI – Process Graphics Dynamic Content

Graphic Elements that are to be bound to a tag running in the controller can be created:

A) In offline mode

1. Select the object type to be placed (consider the filter field)

2. Select the element to be placed

3. Drag and drop the element to the display

4. Set the object name in the element property to the target Tag Name

5. Save Graphics Display

B) In online mode

1. Select the object to be placed (consider the filter field)

2. Select the element to be placed

3. Drag and drop the element to the display

Note: it is suggested to work in offline more as mostly the tag objects are not available to the technicians
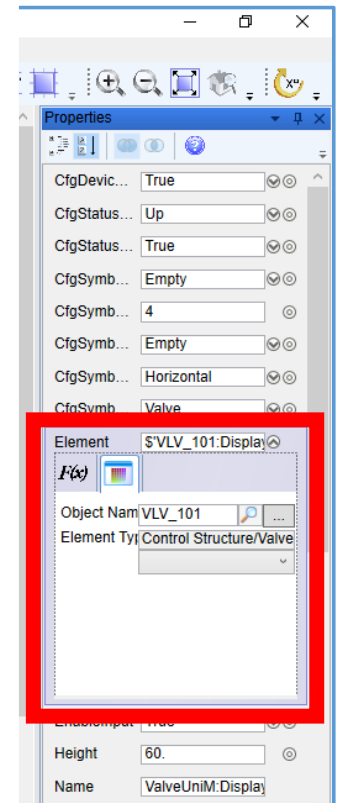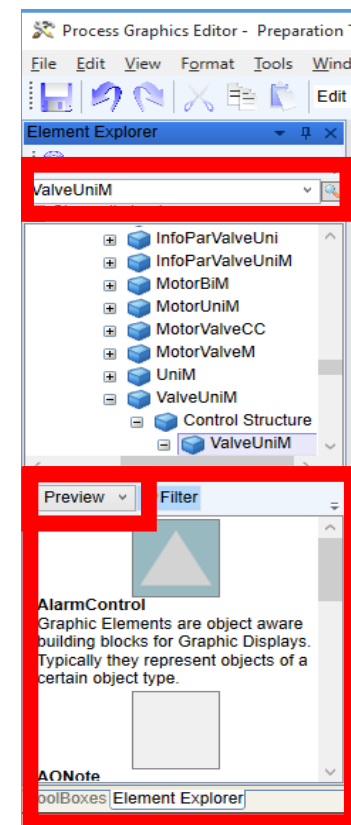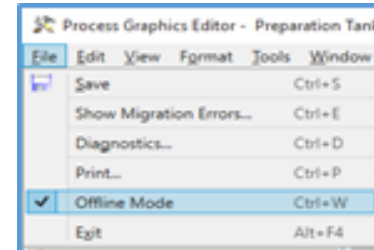
ABB

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Software Configuration HMI – Alarm and Events List and Band

Process areas and Units have been assigned to AE Class as per the tag list.

Next in the Functional Structure Alarm and Event lists are being created and the filter is to be set for the AE Class attributes.

In the Example the following filters are to be set:

– Preparation Area AE Class 100-500

– Preparation Tank 1 AE Class 100

– Preparation Tank 2 AE Class 200

– Preparation Tank 3 AE Class 300

– Preparation Tank 4 AE Class 400

– Preparation Tank 5 AE Class 500

– Reactor Area AE Class 600 - …

Simple configuration of columns and colors can be done by making the configuration local to the object and not referencing to a library object.
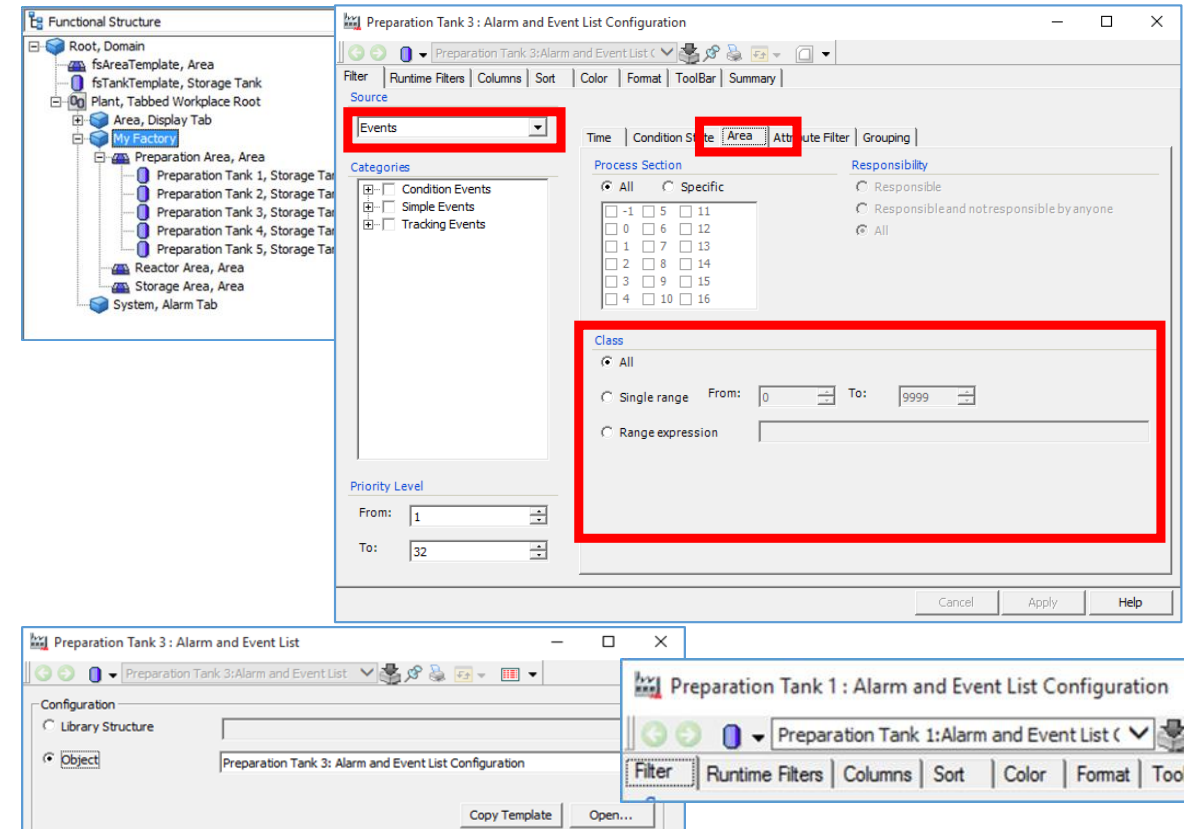
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Software Configuration HMI – Alarm and Events Band

The Workplace Object has an Aspect "Alarm Band Process"

Here multiple button of the Alarm Band can be configured in size and position, where each points to a Alarm and Even list for the filter conditions
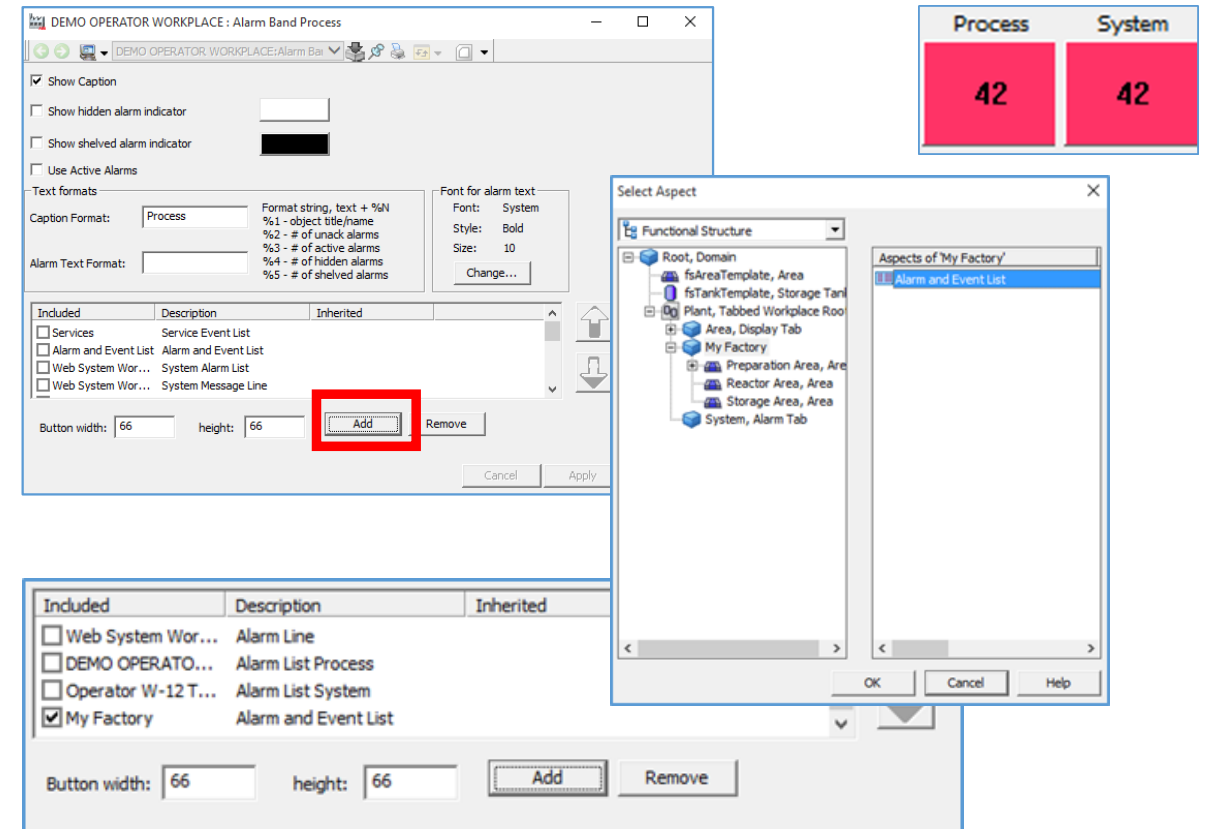
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Software Configuration HMI – Workplace

Note: It is not suggested to modify Workplaces delivered with the product as such may be overwritten at update and upgrades

Copy a product workplace e.g., Operator W-12 Tab 1920x1080 for a dual screen workplace with tabbed navigation

How to configure the Alarm Band is show in the Alarm and Event page section

The Startup screen is configured in the aspects 1_ScreenLayout and 2_ScreenLayout

In the user structure the default workplace profile values and plant explorer settings are configured
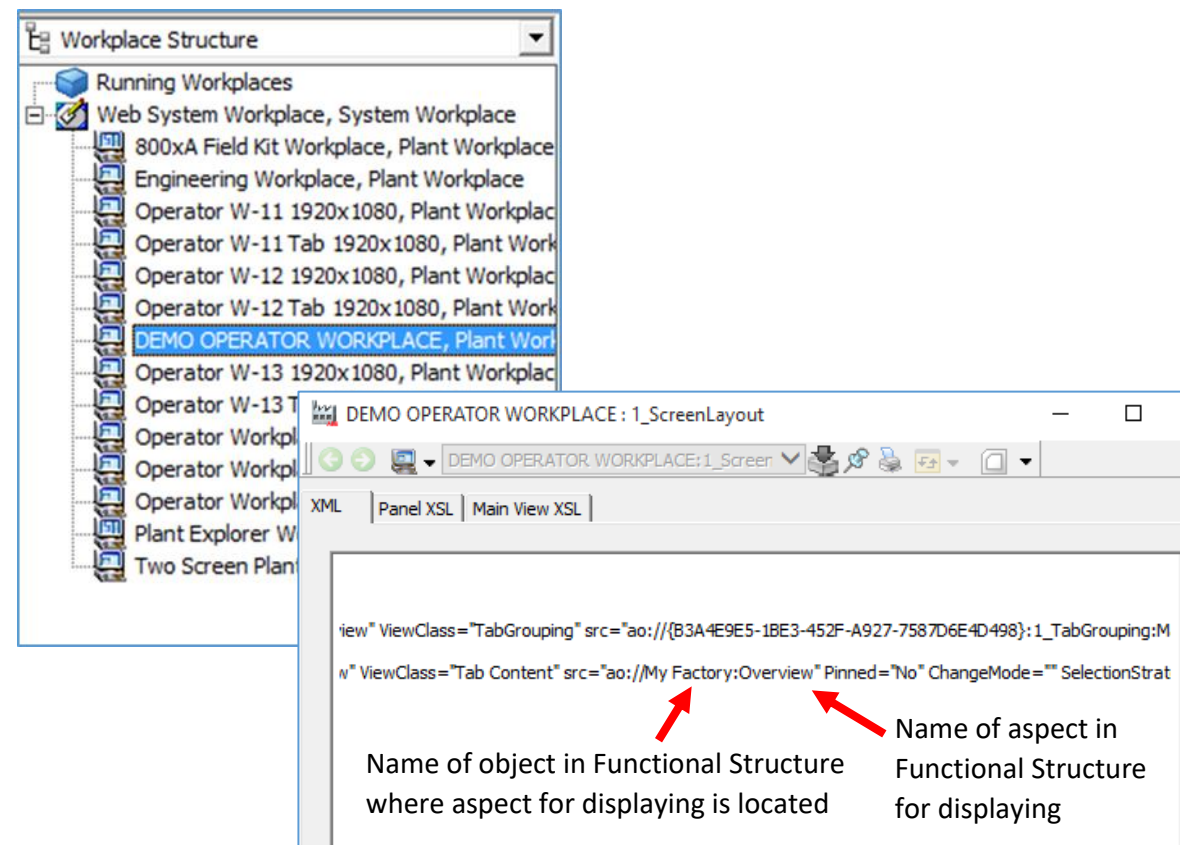
Name of object in Functional Structure where aspect for displaying is located

Name of aspect in Functional Structure for displaying

ABB

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Software Configuration HMI – Workplace tabbed Navigation

In the workplace the Tab Grouping aspect is already integrated in the workplace via the Panel Layout and Application Bar

The tabbed Navigation Aspect configures:

– Tab style appearance and status indications

– which path to be used in functional structure

– On which level the first object is

– How many levels are shown

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Software Configuration - Overview

Software Configuration can start in **two streams**:

a) **Application**
Configuration of the Applications, Diagrams and Tags as per the specification

b) **HMI**
Engineering of the HMI starts with creation of the functional structure. Next the Alarm and event lists and bands are being configured and the Process Graphics with Statics and Dynamic content. Once the alarm bands and lists are available the Operator workplace and its menus and options can be done

c) **Software Binding**
After the Applications are done the HMI and Application can be correlated and logs and trends can be configured

d) **Software Test & Factory Acceptance Test**
The AC800M Soft Controller option allows software test and FAT to be done in an office environment or clouds with remote dial in capabilities.

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Software Configuration – Software binding

All Graphic displays need to resolve references

– Open Graphic Display in Editor

– Open Data Reference tool

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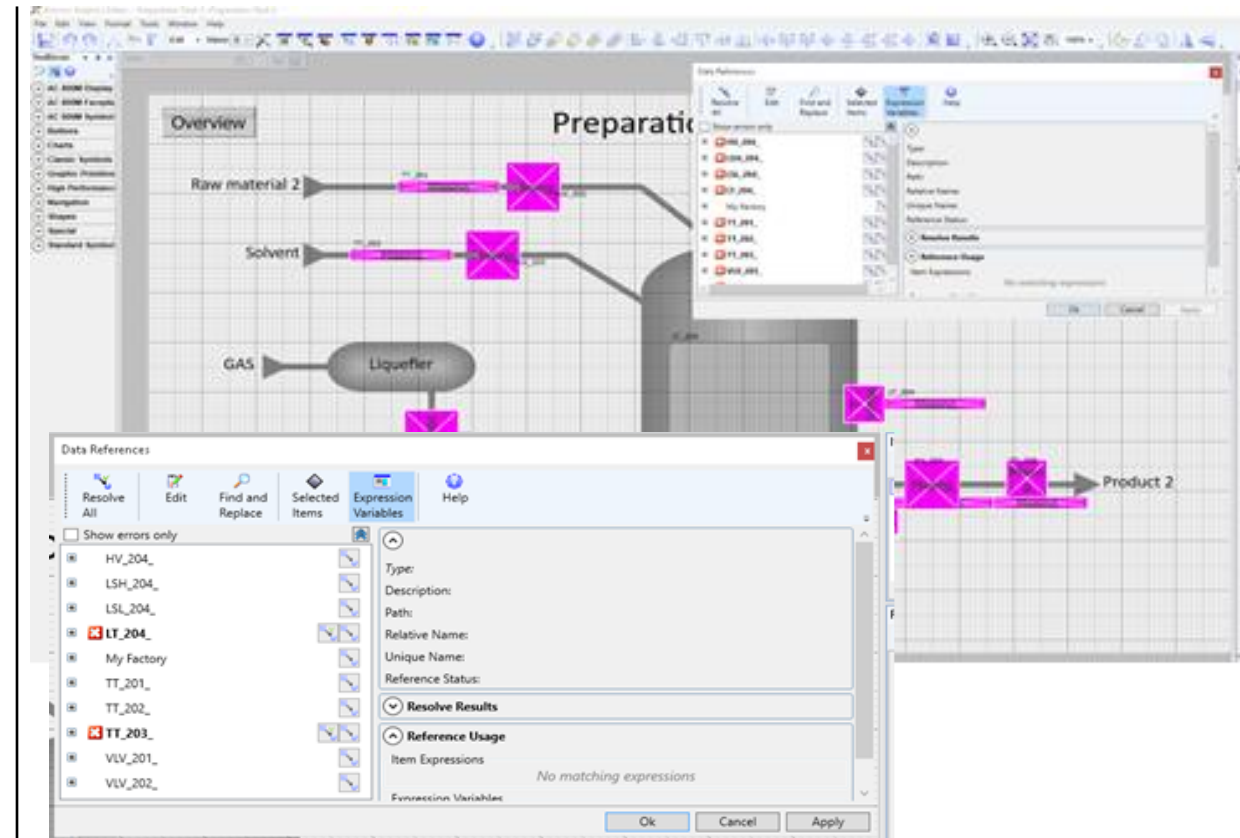
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Software Configuration – Configure Logs

Three different approaches are possible:

1) Configure logs at Object types and auto instantiate
Done if history performance is off no concern. Log template aspects are configured on the object to auto instantiate. All objects of such type will automatically have a log aspect on the instances and collect data.

2) Configure logs at Object types and bulk instantiate
Done if history performance is constraint. Log template aspects are configured on the object without auto instantiate. Log template aspect can added via BDM2 by simply adding a log configuration aspect.

3) Configure logs on instances
Fully flexible solutions are possible, where high flexibility to determine logged properties is required. Configuration can be performed via a BDM2 template for detailed log configuration

Note: All approaches rely on Log configuration templates configured in Library Structure
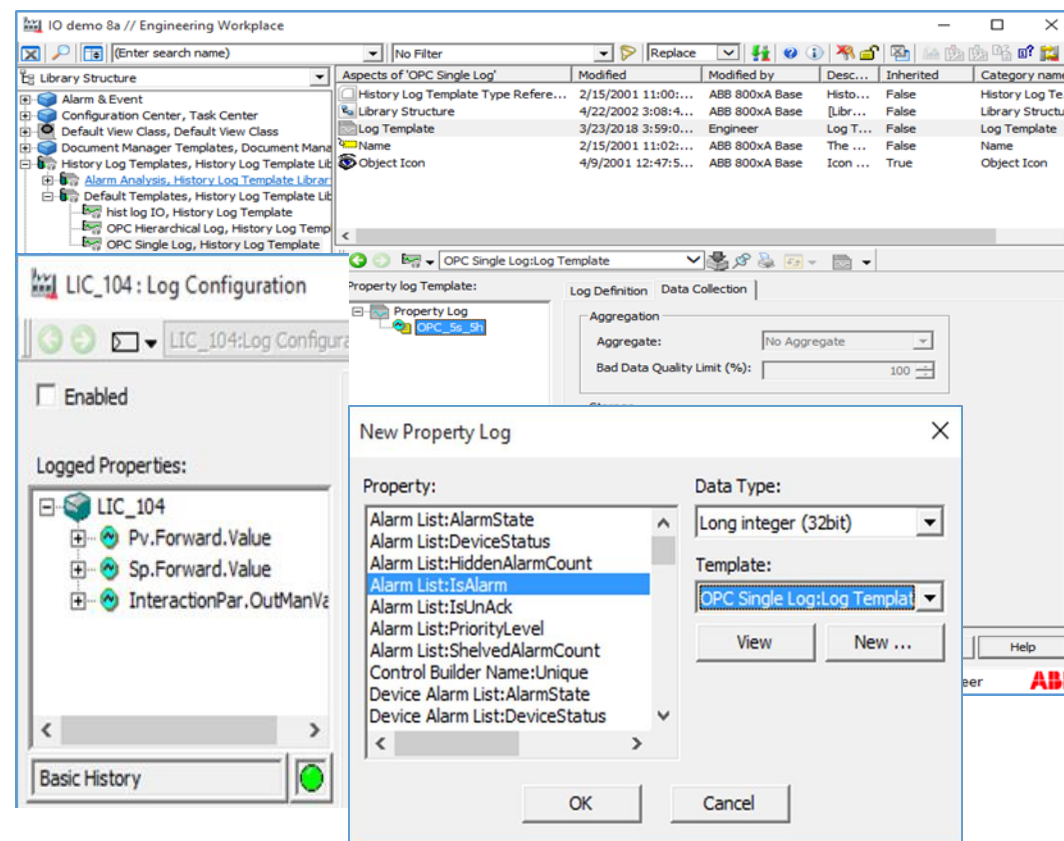
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Software Configuration – Configure Trends

Trends for single objects can be put on the object type and do not need any further configuration

Trends showing multiple traces from different object would be positioned into the function structure

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Software Configuration - Overview

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Software Configuration – Software Test / Factory Acceptance test

Software test can be performed on Soft Controller

a) up to 10 controller can be emulated on one PC

b) If the HW simulation flag is et on the controller any controller configuration can be loaded into a Soft Controller

c) If inter controller communication shall be tested the controllers System Identification needs to be set to the Soft Controller address as well as the IP address on the Ethernet port

d) Please also change the OPC Server addresses to the Soft Controller IP address
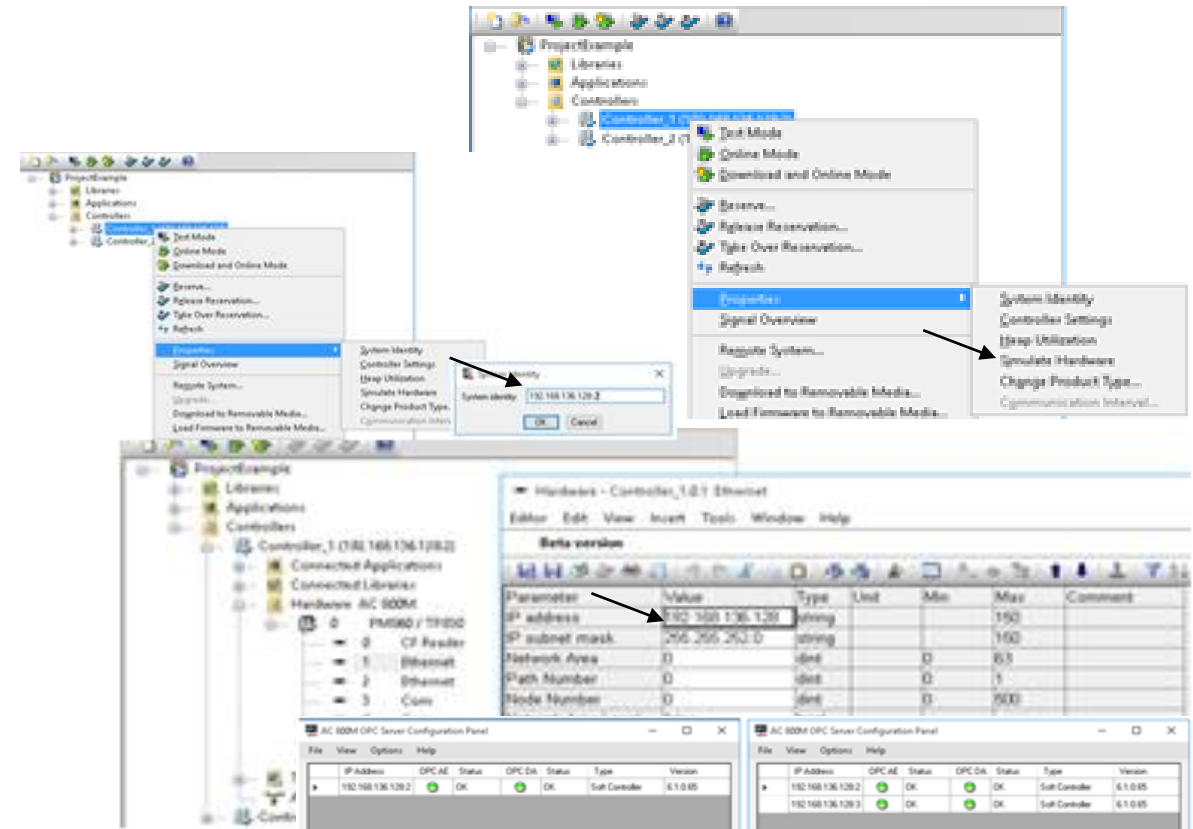
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Software Configuration – Software Test / Factory Acceptance test
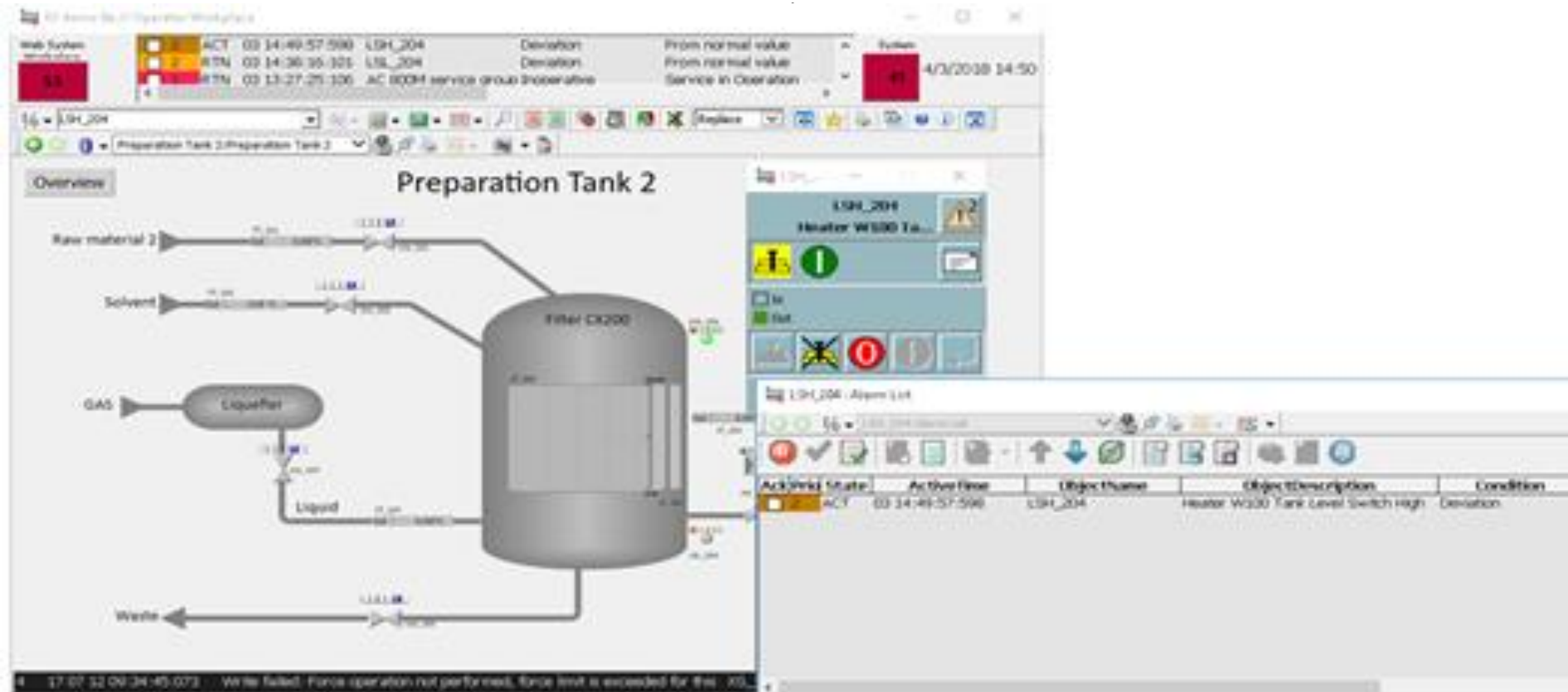
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Late Binding

Power of Signals

The new Signal Concept in 800xA allows to configure and test Software and application in parallel

Late Binding consider the steps

1. Merge the configuration into one system using Export Import

2. Check the Signal mapping of Hardware and Software for errors

3. Download integrated configuration

LATE BINDING

Site commissioning and acceptance

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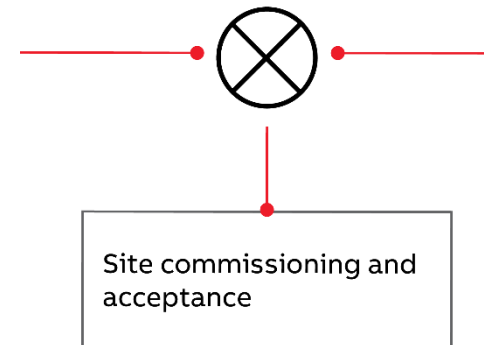
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Late Binding – Export Import

Export Import Hardware Configuration

From 800xA 6.1 onwards some Communication Interfaces can be independently exported and imported

To merge a Modulebus configuration into an existing controller:

1. Export the controller

2. Import the controller with the Modulebus in parallel to the one designed for the Software

3. Drag and drop the Modulebus I/O units from the Hardware controller to the Software one

ABB
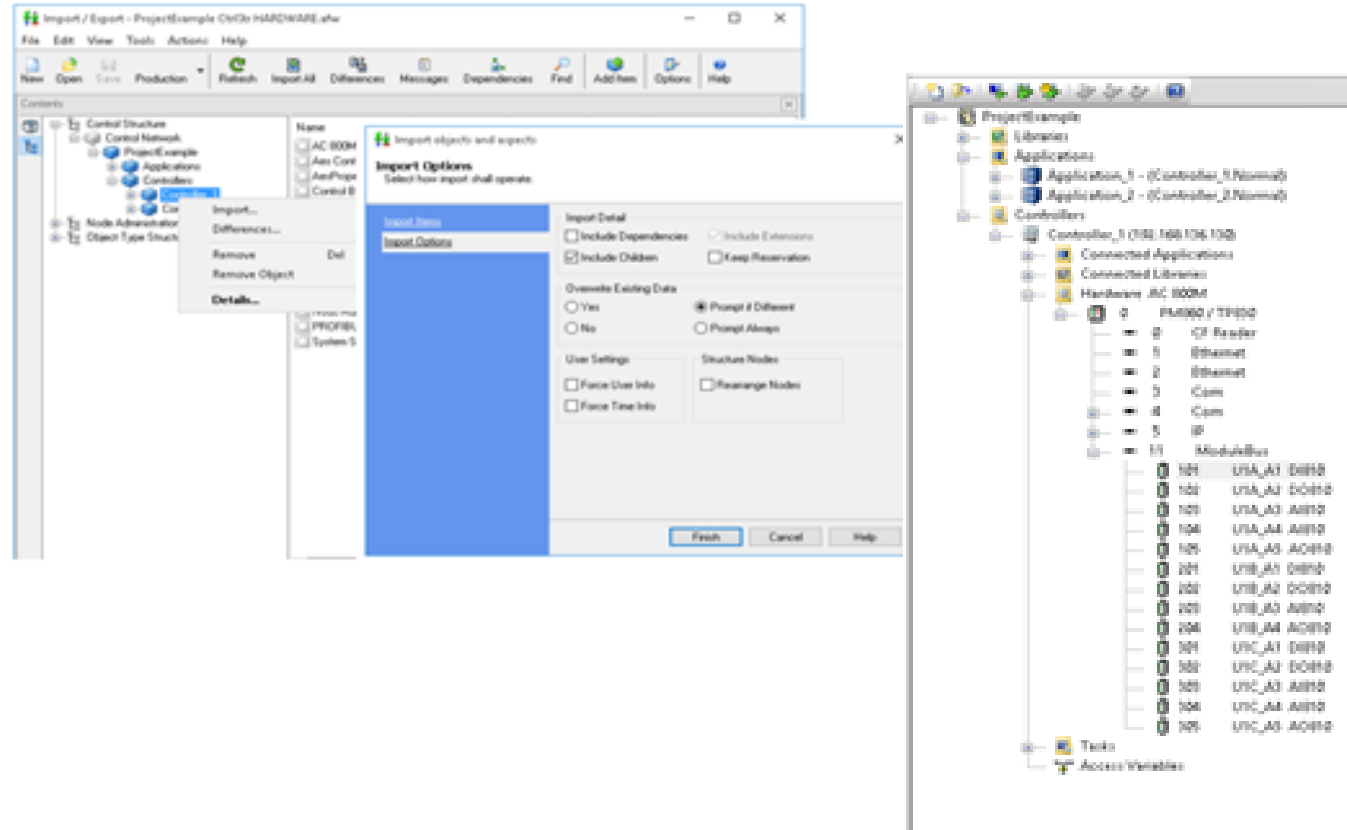
Engineering Efficiency in System 800xA Version 6.1
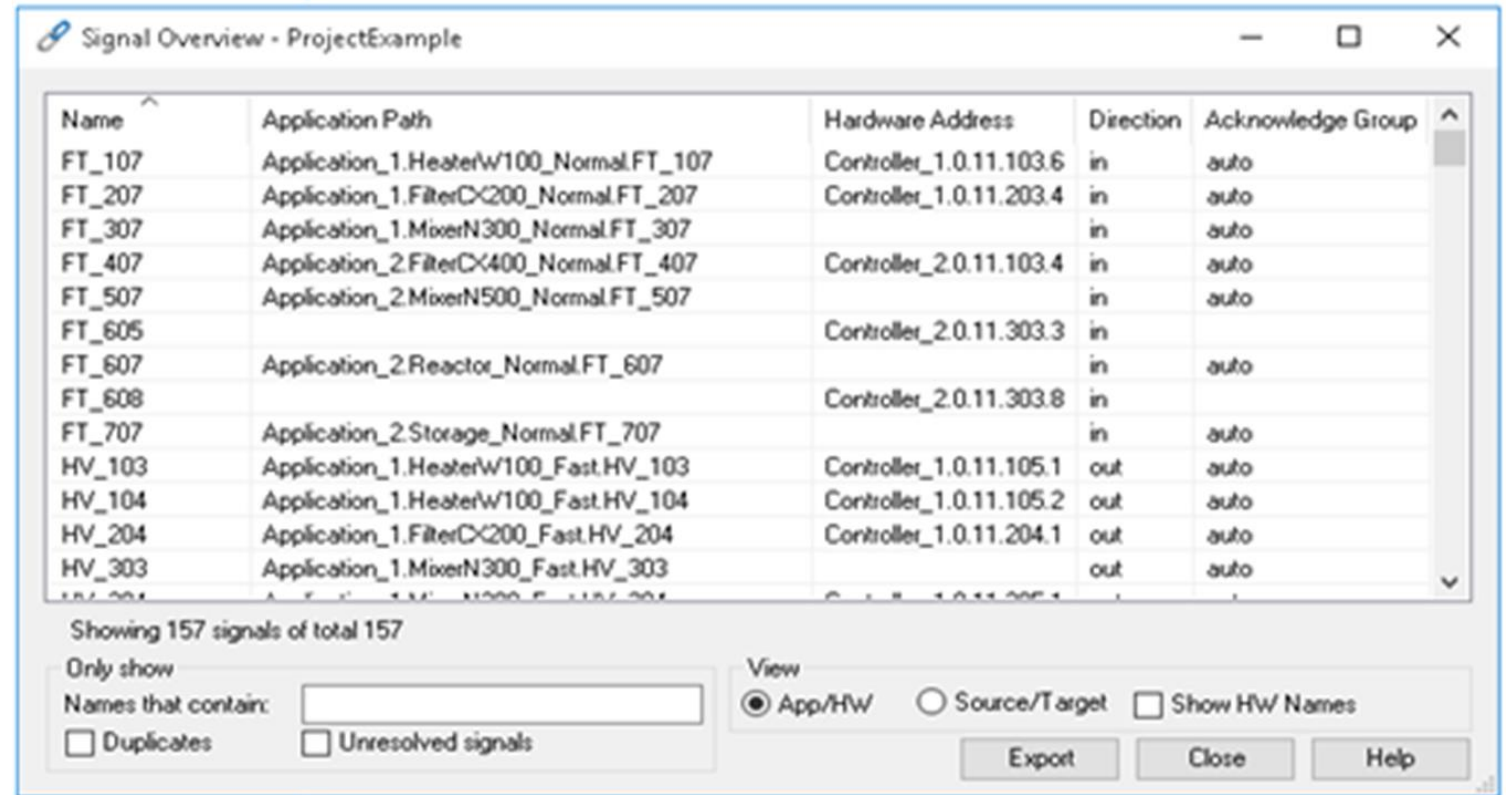
Late Binding – Signals

Signal Binding

Application Signals and Hardware Signals will be automatically being bind at download of the controller based on name, direction and data type

The Signal Overview on Application, Controller and Project level can help to determine configuration errors

– Duplicated I/O Signal names

– Open I/O Signals on Application or Hardware

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Engineering Efficiency in System 800xA Version 6.1

Key Learning

– Parallel execution is a key success factor enabling for cost effective configuration

– Stop binding Field device electrically, bind by software signals

– Prevent late changes and unplanned work by thorough preparation

– Standardize where possible allowing only as much as necessary customization

– You know how you can share work effectively between team members

– You know that different talents can be used for different task

End and questions