16 OCTOBER 2019

ABB Ability™ System 800xA v6.1 Electrical Integration

Webinar: IEC61850 Update

IAPCP

Speakers

Speakers

Rajasekaran D

- Global Product Manager – Electrical Integration
- Industrial Automation - Process Control Platforms
- Bangalore.

System 800xA v6.1 Electrical Control & Monitoring Update

Agenda

- What is IEC61850
- ABB Ability™ System 800xA
- System 800xA Electrical Control & Monitoring
- IEC61850 Improvements
- Commercial Update
- Where to find stuff
- Technical presentation
- Q&A Session

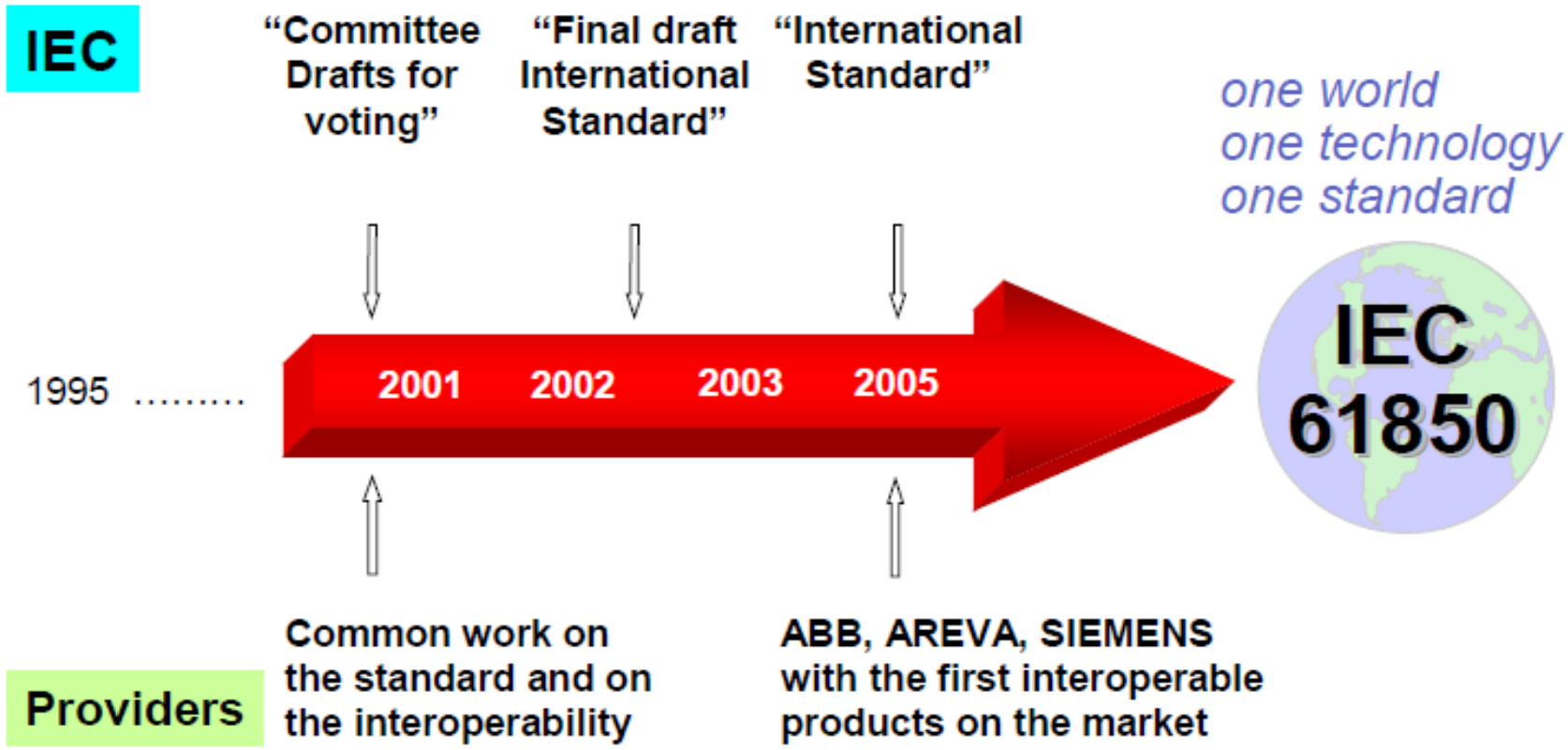
©ABB

Need for a global Substation Automation Standard

IEC 61850 - combination of ANSI and IEC standards

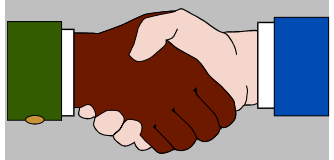
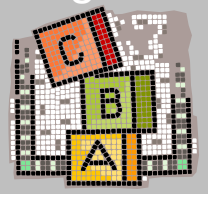
Need for a global Substation Automation Standard

History of IEC 61850



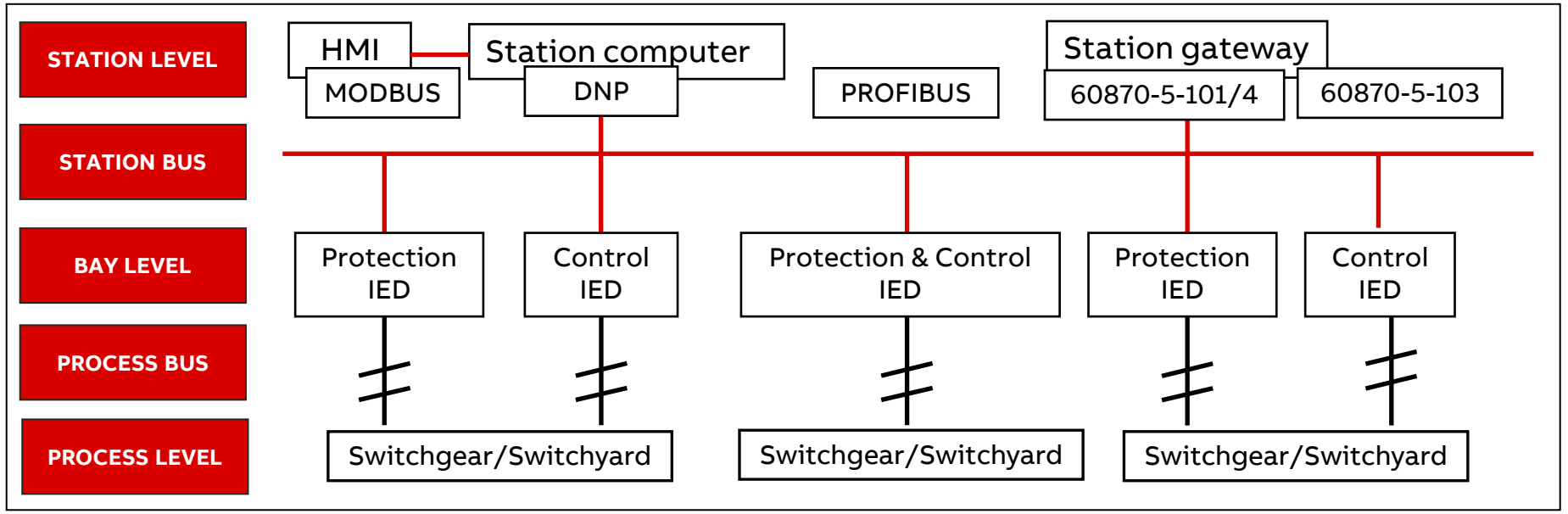
Need for a global Substation Automation Standard

Requirements on the standard

Interoperability 	The ability of IEDs from one or several manufacturers to **exchange** information and **use** the information for the their own functions.
Free configuration 	The standard shall support different **philosophies** and allow a free allocation of functions e.g. it must work equally well for centralized or decentralized systems.
Long-term stability	The standard shall be **future proof**, i.e. it must be able to follow the progress in **communication technology** and the evolving **system requirements.**

Need for a global Substation Automation Standard

State before IEC 61850

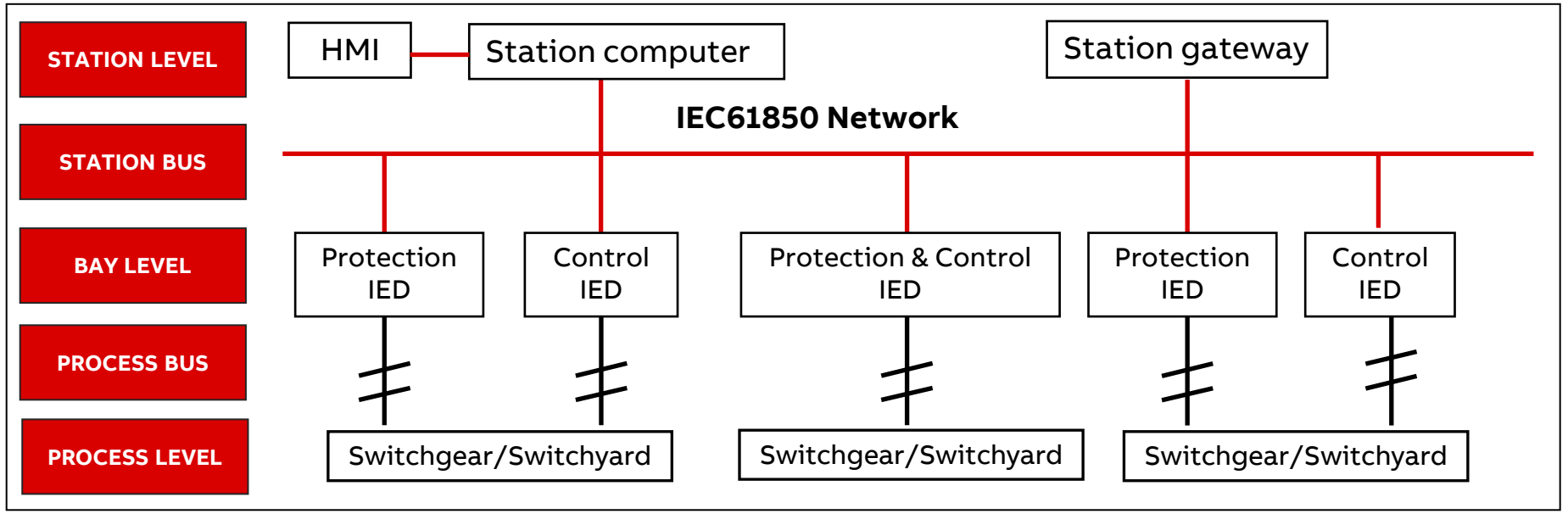


- Serial communication for Substation Automation is recognized for some time
- However: A lot of different protocols and hardwiring used
- Poor interoperability between different vendors
- Large engineering, installation and maintenance costs
- The global, highly competitive market requests a standard for competitive performance and cost reduction

©ABB

Need for a global Substation Automation Standard

IEC61850 replaces all protocols



Interoperability

– Through standardized modeling of the IEDs

Free configuration

– By supporting all physical and functional architectures

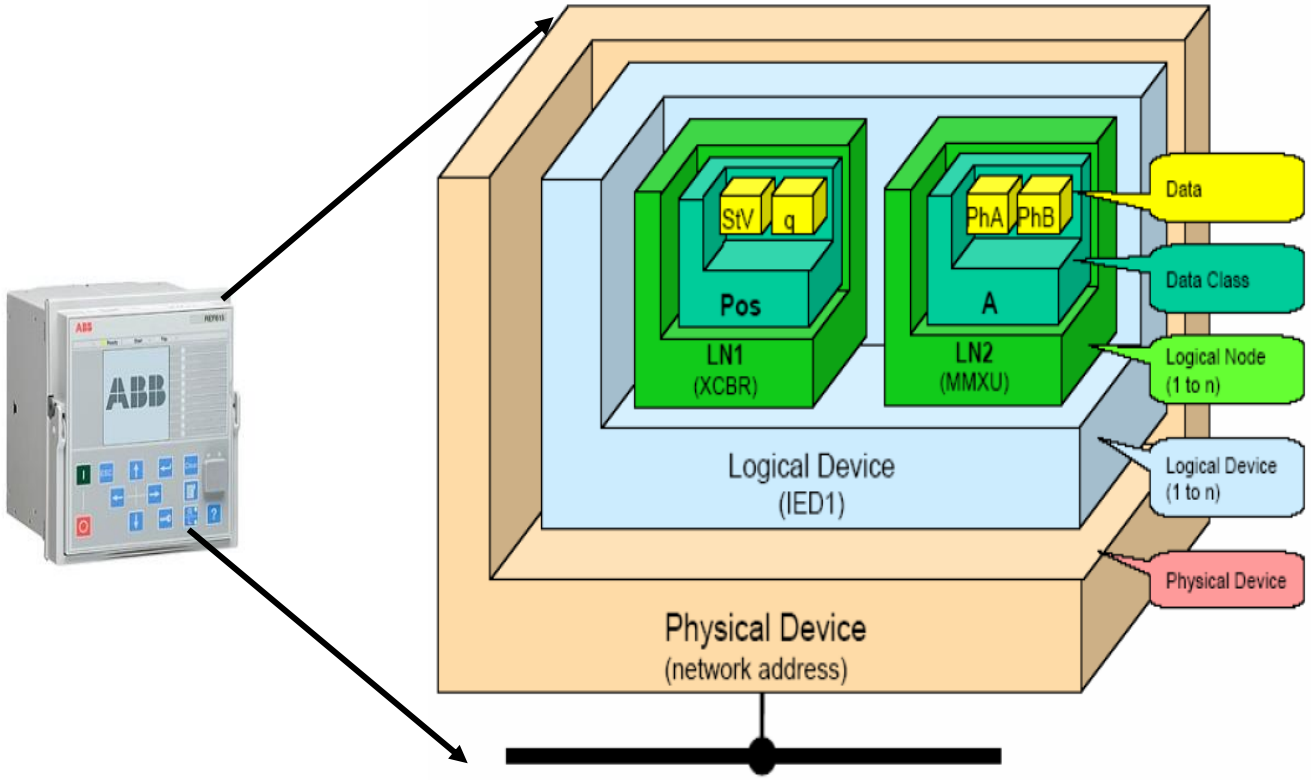
Long term stability

– By using main stream communication technology

©ABB

Data Model

Logical Nodes - Structure



Physical Device (IED) defined as Server — **IED**

↑ Implementation

Logical Device (LD) — **Control**

↑ Grouping

Logical Node (LN) — **XCBR Circuit Breaker**

Data ↓

Data (Object) — **Pos Position**

Properties ↓

Attribute — **StVal Status Value**

Value — **INTERM./OFF/ON/BAD**

Data Model

Logical Nodes – structured in groups (Logical Devices)

A Logical Device LD groups LNs which shall be managed together (e.g. Control, Protection etc)

- **L** System LN (2)
- **P** Protection (28)
- **R** Protection related (10)
- **C** Control (5)
- **G** Generic (3)
- **I** Interfacing and archiving (4)
- **A** Automatic control (4)
- **M** Metering and measurement (8)
- **S** Sensor and monitoring (4)
- **X** Switchgear (2)
- **T** Instrument transformers (2)
- **Y** Power transformers (4)
- **Z** Further power system equipment (15)

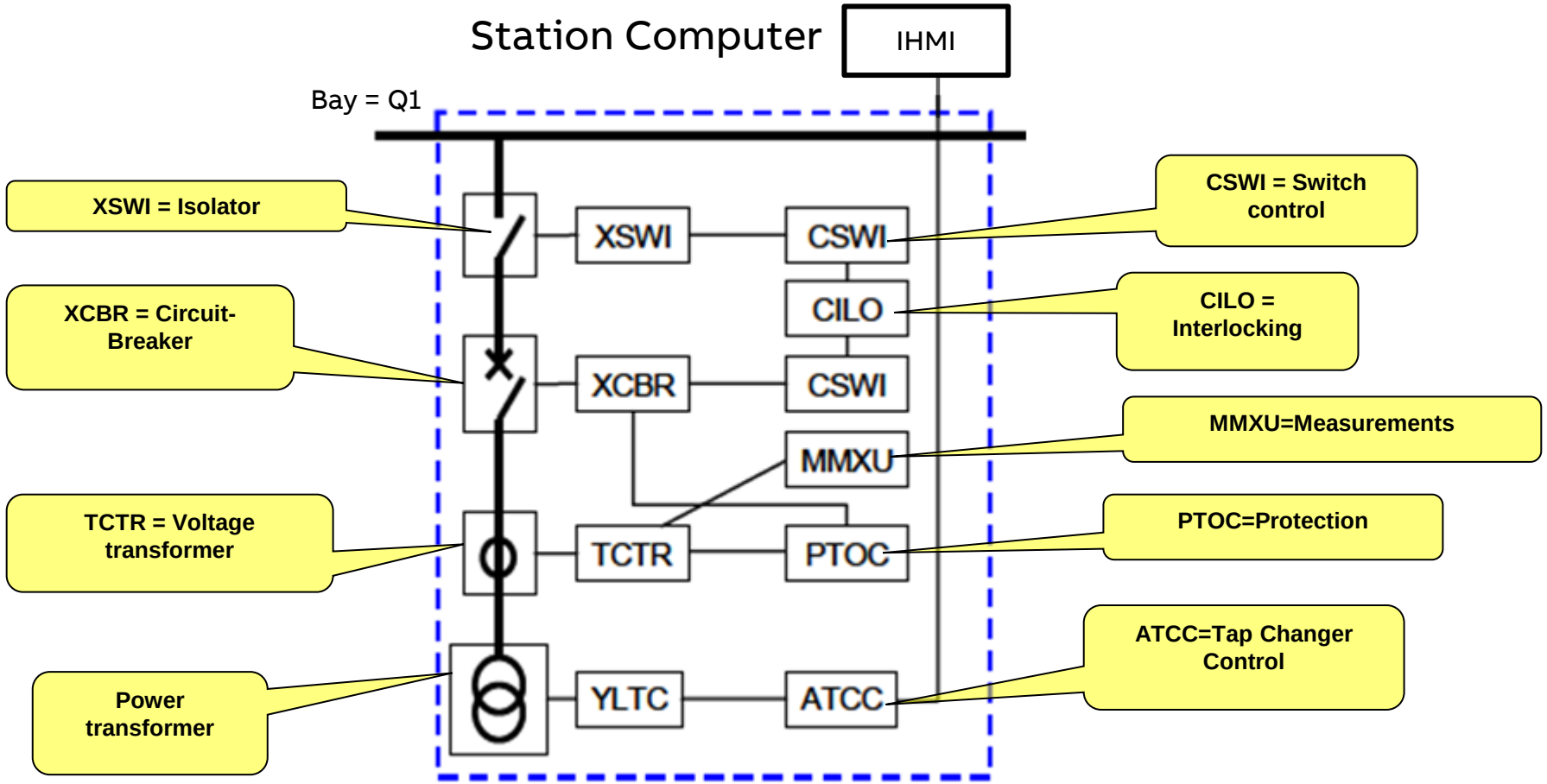
Examples

- PDIF: Differential protection
- RBRF: Breaker failure
- XCBR: Circuit breaker
- CSWI: Switch controller
- MMXU: Measurement function (unit)
- YPTR: Power transformer

©ABB

Data Model

Logical Nodes – Examples



Data Model

Logical Nodes – Examples

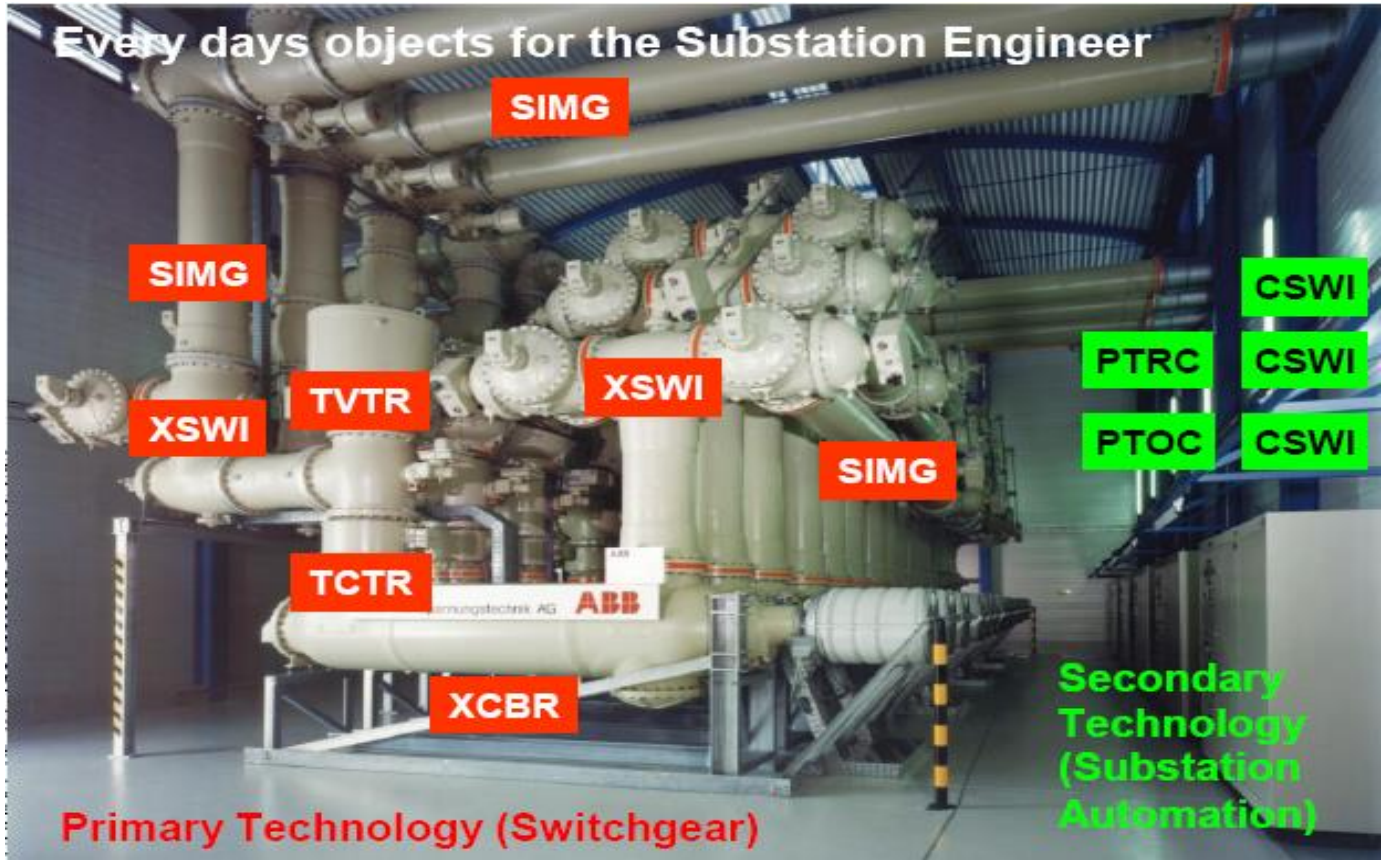


ABB Ability™ System 800xA

ABB Ability™ System 800xA – The Power of Integration

- **Collaboration enabler** : Multiple systems and applications in one collaborative environment to take advantage of unforeseen opportunities
- **Safe and Secure Operations**: High performance, feature rich, ergonomic operator environments based on industry best practices for safe and secure operations.
- **Intelligent Engineering** : Efficient multi-user, distributed engineering environment with purpose built libraries to ensure on-time, on-budget project deliveries.
- **Flexible I/O Solutions** : A wide variety of fieldbus technologies, hardwired, and wireless I/O solutions to match your automation project requirements.
- **Support for Life** : Software maintenance, training, and spare parts programs coupled with services to keep your system operating at its peak performance.

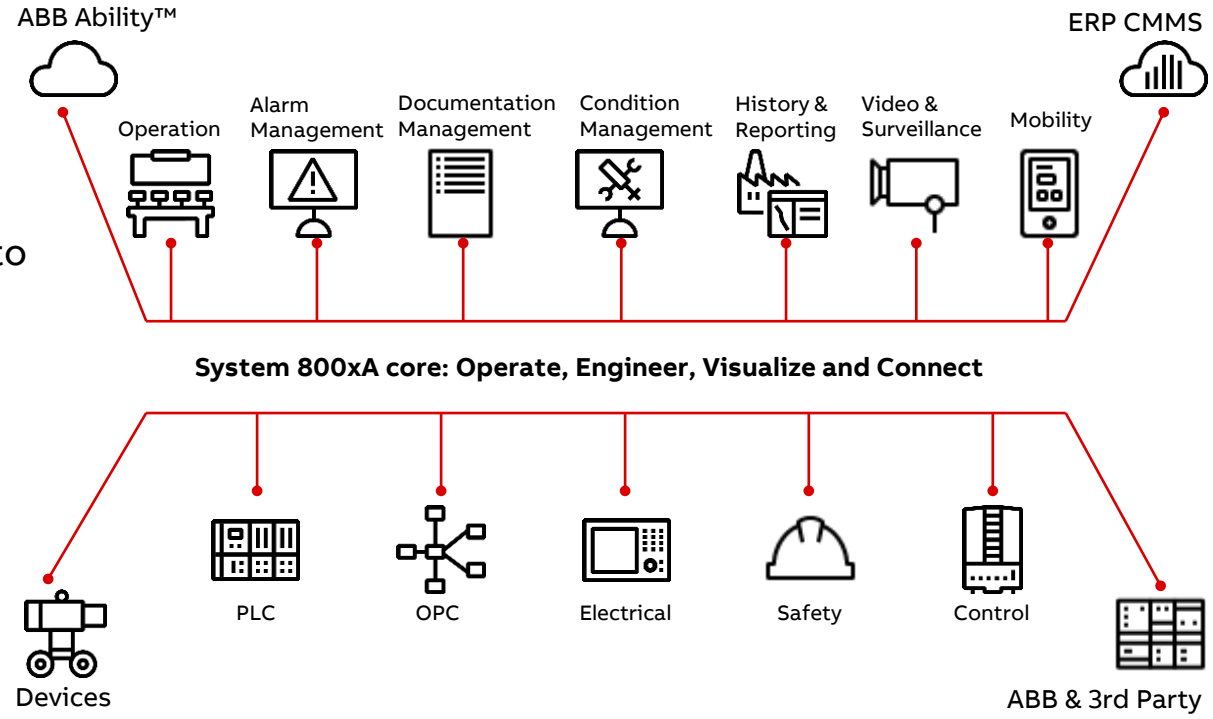
©ABB

ABB Ability™ System 800xA

xA = Extended Automation

Promotes collaboration by enabling the sharing if information without barriers

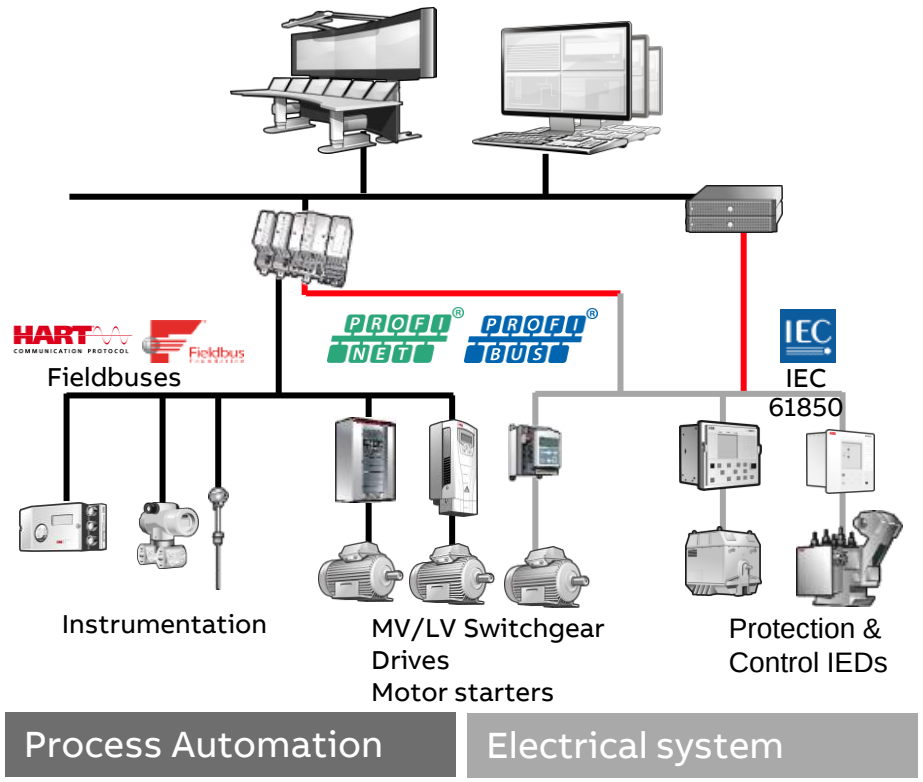
- Provides an **integration platform** with seamless connectivity to plant systems, applications, and fieldbus technologies
- Allows for simultaneous execution of various automation strategies in **one common environment**
- Includes embedded value added systems and applications providing a **lower cost of ownership**.



System 800xA is the collaboration enabler!

ABB Ability™ System 800xA

Electrical Control and Monitoring- IEC 61850 Definitions

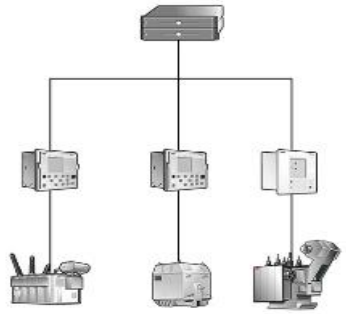


- **IEC61850-** Global standard for Power utility automation
- **MMS**-Communication protocol used for monitoring and control
- **GOOSE**-Communication protocol used for managing time critical application ex: Load shedding
- **OPC**- Open Platform Communications
- **Horizontal Communications** – Communications between devices on the same level
- **Vertical Communications –** Communications from devices to a higher level such as the HMI or operator level
- **SCD**-Substation configuration description-A file contains
- Entire substation configuration & Communication
- **IED**- Intelligent Electronic devices
- **IET600**- IEC61850 engineering tool for creating SCD file
- **PCM600**-ABB IED configuration tool/IEC61850 Engineering tool

©ABB

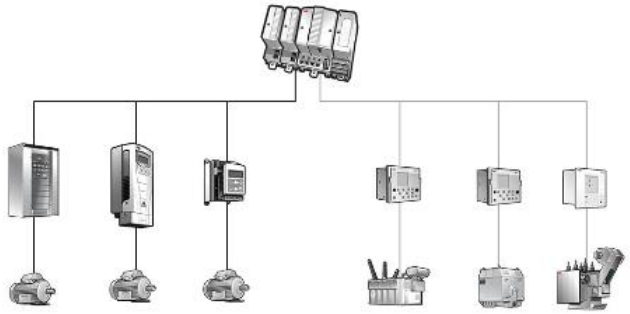
ABB Ability 800xA Electrical Control & Monitoring – Flexible Solutions

Electrical SCADA System



•Electrical equipment visualization/monitoring
•Alarm and events with SOE (Sequence of Events)
•Remote maintenance and parameterization
•Automatic upload of disturbance record files

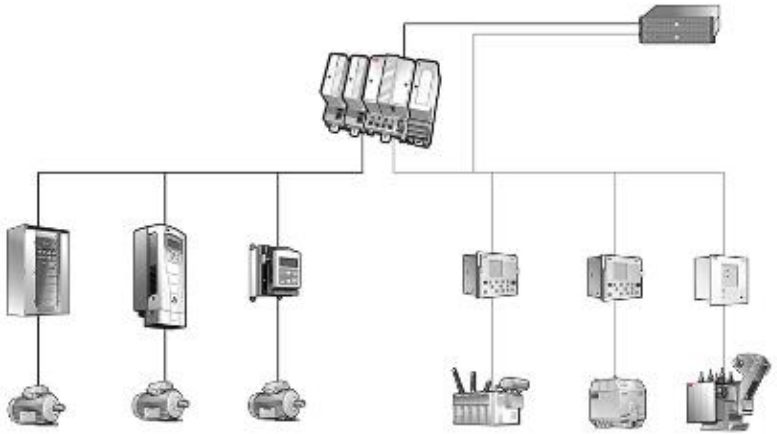
Power Management, Supervision and control



•Essential operation and supervision
•No IEC61850 Connect Server
- Power Management applications:
  - Load shedding;
  -Active and reactive power control
  - Busbar Synchronization

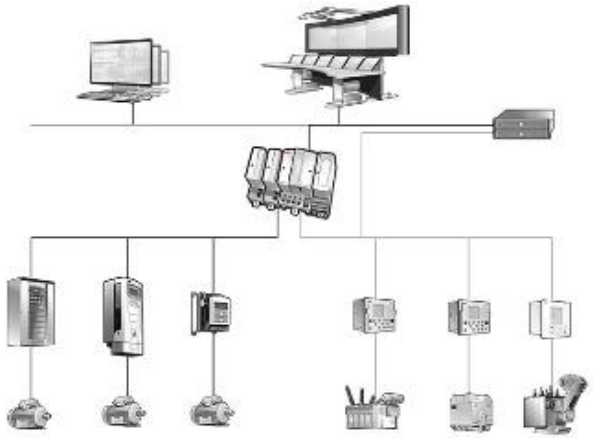
Suitable solution for small project

Power Management with Integrated SCADA



- Power Management applications:
  - Load shedding;
  -Active and reactive power control
  - Busbar Synchronization
- Remote operation and supervision
- Remote maintenance and parameterization

Integrated Electrical system with DCS



- Collaborative Process Automation / Total plant visualization
- Centralized operation and maintenance platform for both process and electrical control
- Possibility to combine production data with energy consumption in every level of the plant

©ABB

MARCH | 2020

Technical Presentation: System 800xA v6.1 Electrical Integration

Speaker(s): Rajasekaran D

System 800xA v6.1 Electrical Integration

Description & Prerequisites

Description

This webinar will provide an overview of 800xA 6.1 Electrical integration which includes IEC61850 edition-2 support, new features, engineering workflow improvements of both vertical and horizontal engineering.

This webinar will include the following details: Electrical Integration new features, Xstream Engineering concepts, Simplified workflow, Improvements on control builder-IEC61850 import wizard, Capacity and performance improvement of the CI868, Network redundancy capabilities, improvements on the control commands support , Support reading timestamped events from the IEDs.

Prerequisites

T314 and T315 course

Basics of IEC61850 communication

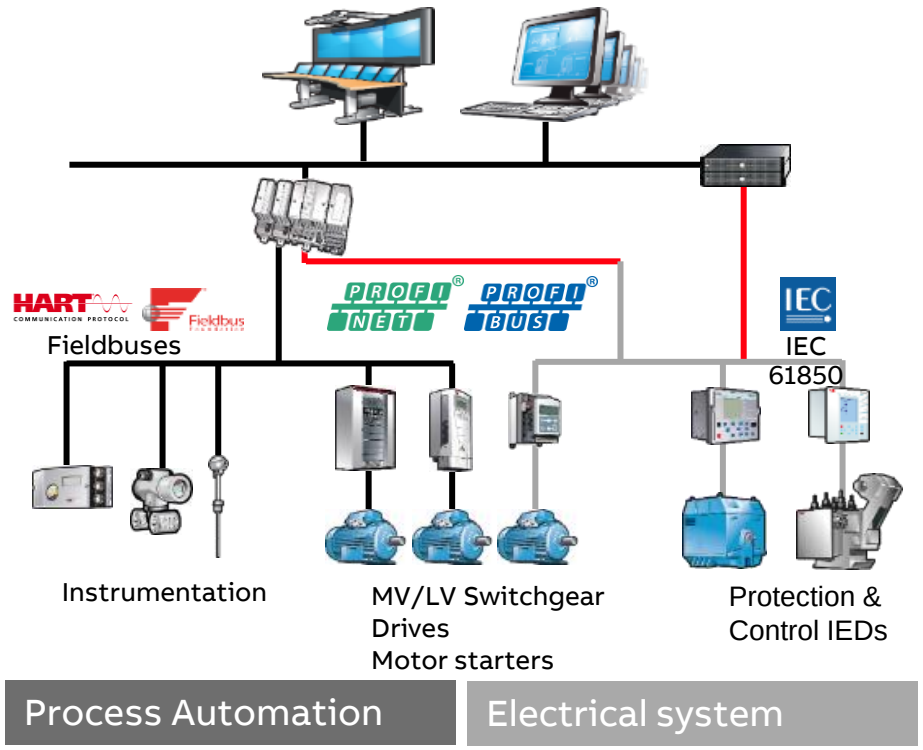
©ABB

Agenda

- CI868 communication Interface Improvements
  - IEC61850 Edition-2 Support
  - SNTP server support
  - IEC61850 Import wizard/Control builder improvements
  - Online Reconfiguration
  - Reading timestamped events from the IED
  - New Command types
  - Capacity and performance Improvements
- IEC61850 connectivity server
  - Simplified configuration
  - XStream Engineering workflow
  - Network Redundancy through PRP communication

ABB Ability™ System 800xA

Electrical Control and Monitoring- IEC 61850 Definitions



- IEC61850- Global standard for Power utility automation
- MMS-Communication protocol used for monitoring and control
- GOOSE-Communication protocol used for managing time critical application ex: Load shedding
- OPC- Open Platform Communications
- Horizontal Communications – Communications between devices on the same level
- Vertical Communications – Communications from devices to a higher level such as the HMI or operator level
- SCD-Substation configuration description-A file contains entire substation configuration & communication
- IED- Intelligent Electronic devices
- IET600- IEC61850 engineering tool for creating SCD file
- PCM600-ABB IED configuration tool/IEC61850 Engineering tool

©ABB

ABB Ability™ System 800xA 6.1

IEC61850 Enhancements

IEC61850 edition 2

Support for latest revision of the IEC61850 standard.

- IEC61850 OPC server Supports communicating with both **Ed.1 & Ed. 2 IEDs/Devices.** (Specifications).Support configuring all edition- 1 & 2 “Logical nodes” (92 -> 200+)
- Control builder supports all logical nodes which are part of edition-1 & 2 .
- **Increased Network availability–PRP** Parallel Redundancy protocol supported in IEC61850 connectivity server

Simplified Engineering Workflow

Simpler, more efficient workflow removing dependencies between tasks

- **Simplified configuration-** Reduction from multiple SCD import to Single SCD for import
- **Flexible Configuration**- Configuration can be made from any Node (Aspect server, Connectivity server, Client)
- **xStream Engineering** – Designing of HMI Graphics, Alarm configuration, Bay typicals, Faceplates using basic input documents (SLD,I/O list). Late binding with SCD file when available.

Operational Performance

Improved performance with the communications capabilities.

- **Double the communication capacity** of the CI868.
- **Support all type of commands** (Controlling of Breaker, Switches, Transformer tap position, Setpoint)
- **Reduce the cost of GPS clock:** CI868 can act as a SNTP master for the IEDs (Suitable for small projects)
- **CI868 Support SOE** for SPS,DPS and Enum data type
- **Improved operational flexibility** – No restart of CI868 needed when making changes/additions.

©ABB

ABB Ability™ System 800xA 6.1

IEC61850 Import wizard &CI868 communication interface-Improvements

Edition 2 compliant

- IEC61850 edition-1 & 2 LNs are supported
- No restriction on LN type
- Vendor specific LNs are supported (Ex: QCBAY)
- Combined Editions- are supported in same project

CI868 as SNTP Server

- Suitable for small projects (No GPS clock required)
- All IEDs time synchronized with CI868
- Option for enable/disable SNTP server from CBM

Command Enhancements

- All commendable LNs are supported (Ex: CSWI, XCBR, GGIO)
- New Function block for command management
- Single point control (Direct/SBO)
- Analog setpoint command & step change control

Online reconfiguration

- CI868 won't restart when adding new IED
- IED can be added when system is online
- More flexibility for reconfiguration

Alarm & Event with IED timestamp

- Alarm and event generation from protection LNs (PTOV)
- Alarm and event generation from control LNs (CSWI,GGIO,XCBR,CSWI)
- Alarm Enable/disable option at IED level
- A&E Enable/disable option at LN level.

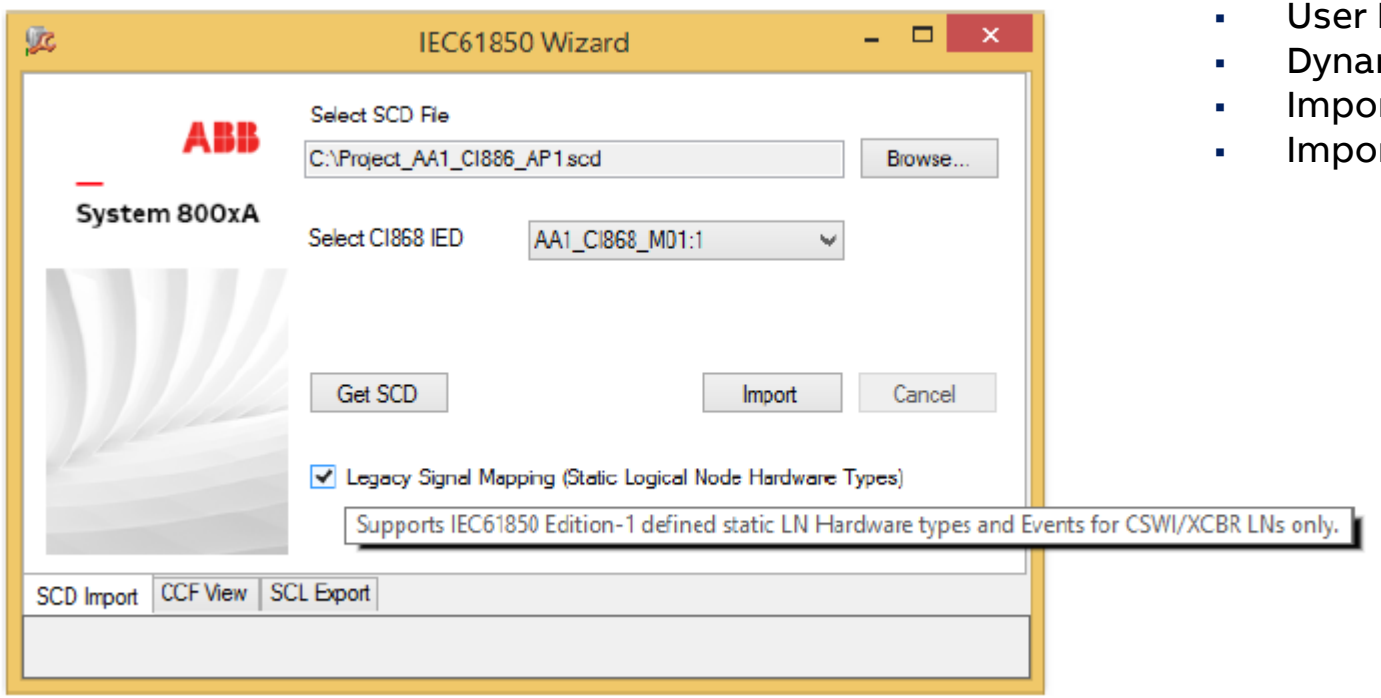
IEC61850 Import wizard improvements

- More than 200 Logical nodes (Both Edition-1 and 2)
- Vendor specific LNs are supported (Ex: QCBAY)
- Common structure for both MMS and Goose communication

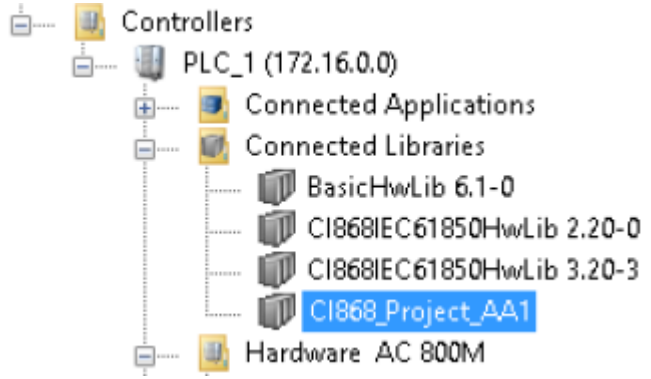
©ABB

CI868 Enhanced CBM IEC61850 Wizard

- Legacy LN Import Option – Backward Compatibility
- Significant Optimization of SCD-file Import duration



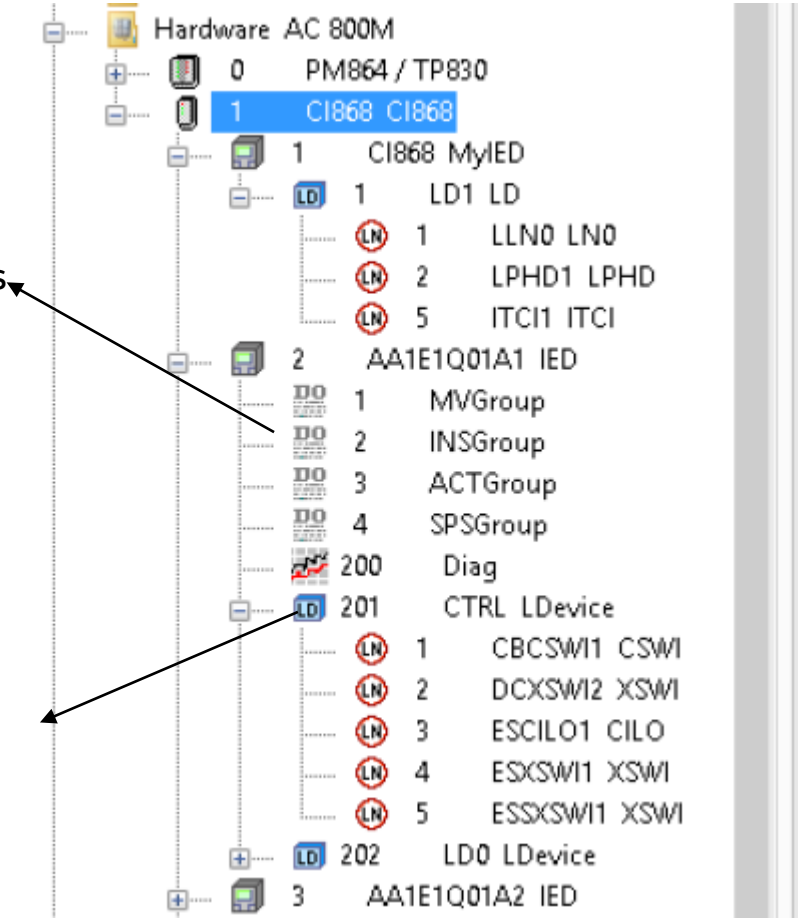
- User Hardware Library during Instantiation
- Dynamically generated LN Hw Units
- Import Standard & Vendor specific LN Types
- Import Standard & Vendor specific DO Names



©ABB

CI868 Enhanced CBM Hardware Tree

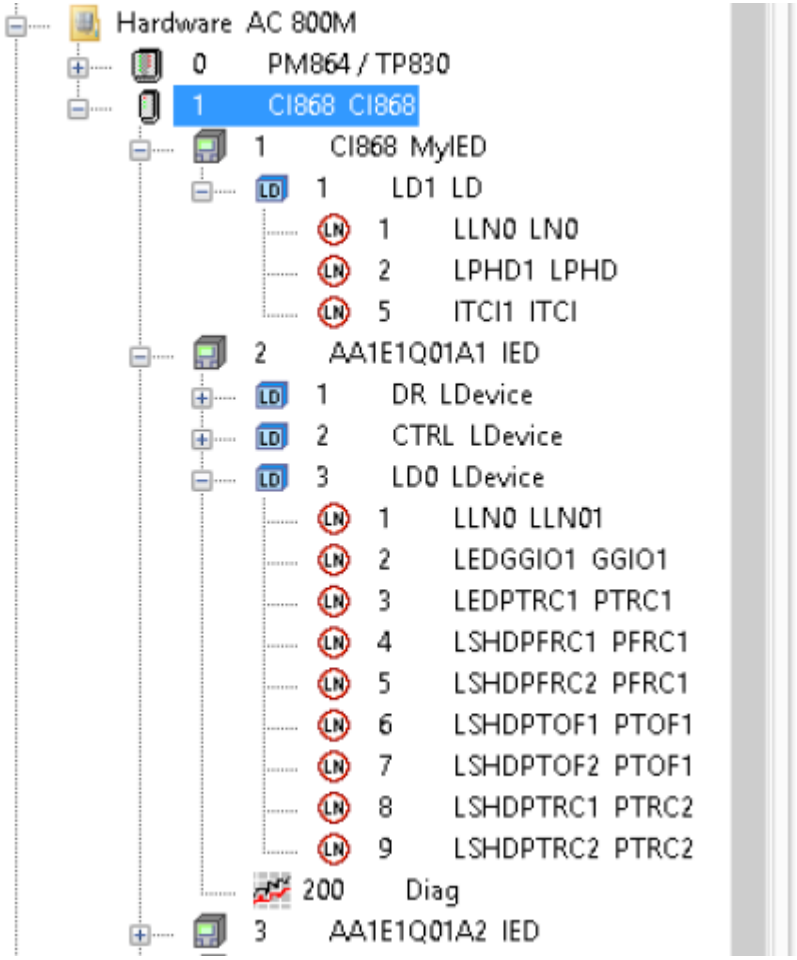
- Legacy LN Hw Tree



Goose LNs are listed under different Groups

MMS Logical nodes are derived from the predefined template

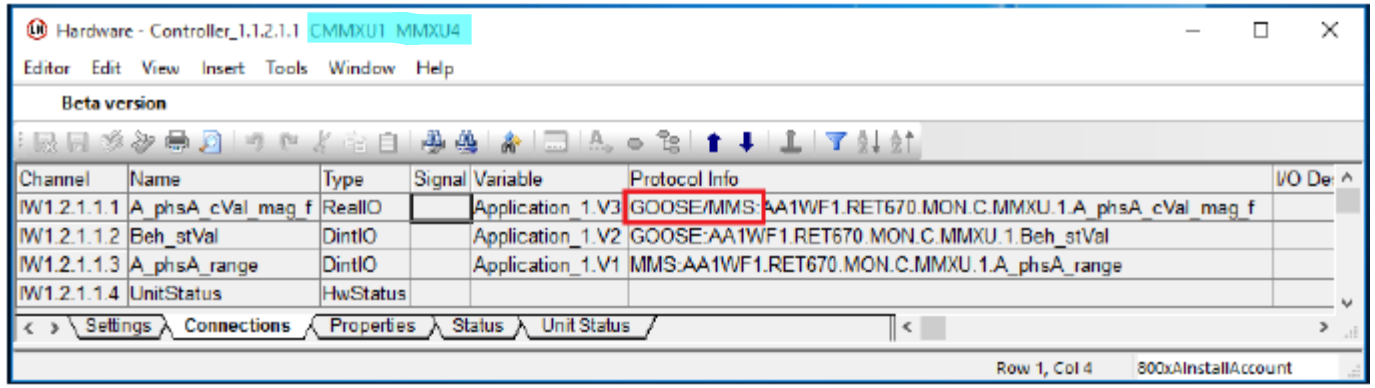
- Dynamic LN Hw Tree

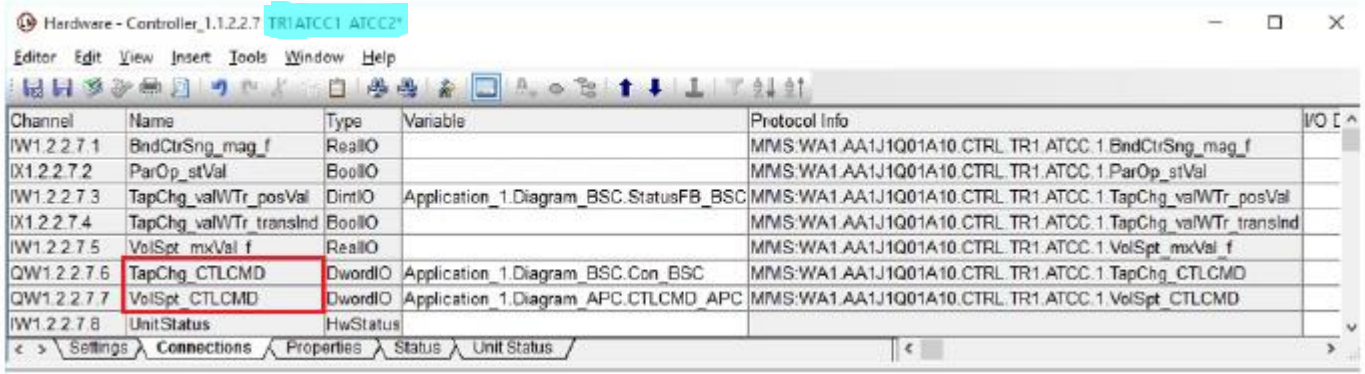


©ABB

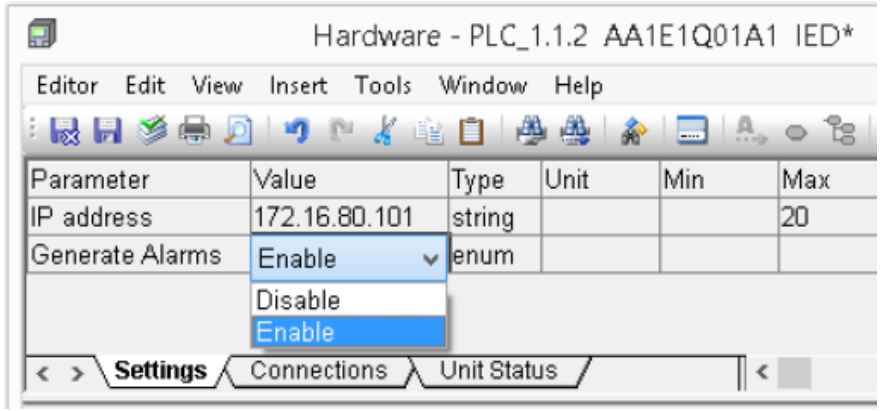
CI868 Compact LN Hardware Units

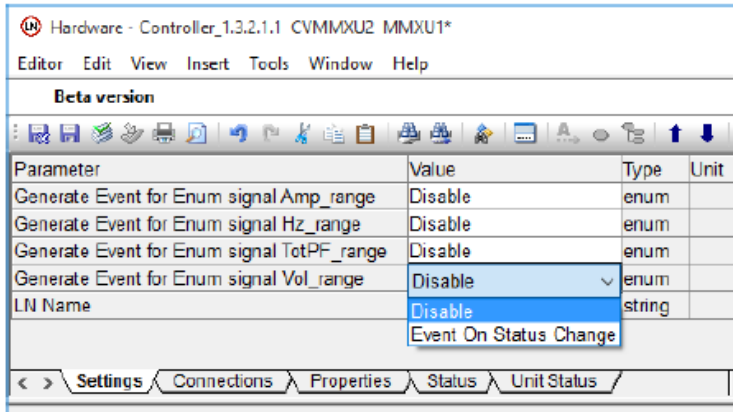
- Compacted LN Unit IO Channels
- No Empty LN IO Channels (Channels without Protocol Info)
- GOOSE / MMS Signal Type Prefixed in Protocol Info

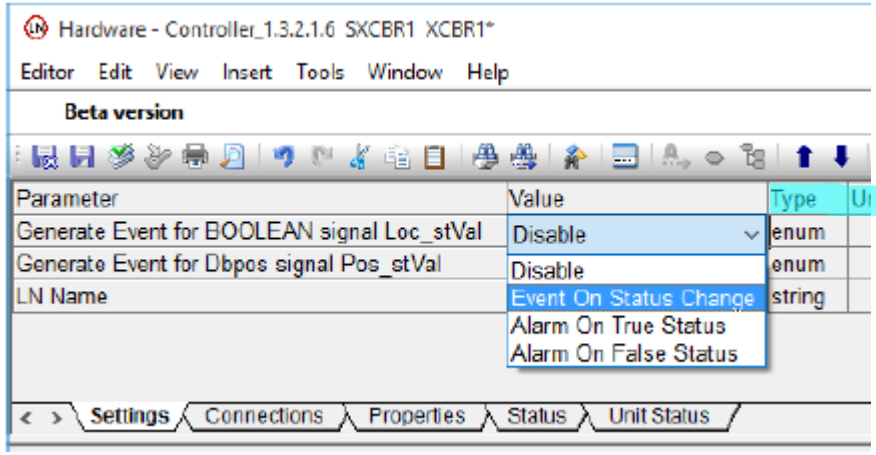




CI868 LN Hw Unit – Enable alarm and event Configuration







©ABB

CI868 Event Properties

Table 4.1: CI868 Signal ID Hardware Addressing

Event Configuration	Signal Value	Signal ID	Example	Event Severity
Signal Type: BOOL				
Disable	-	-	-	-
Event On Status Change	True	<HwAddress>.E_True	1.3.2.7.1.E_True	400
Event On Status Change	False	<HwAddress>.E_False	1.3.2.7.1.E_False	400
Alarm On True Status	True	<HwAddress>.A_True	1.3.2.7.1.A_True	600
Alarm On False Status	False	<HwAddress>.A_False	1.3.2.7.1.A_False	600
Signal Type: Dbpos				
Disable	-	-	-	-
Event On Status Change	0 (Intermediate)	<HwAddress>.E_Int	1.3.2.7.2.E_Int	400
Event On Status Change	1 (Open)	<HwAddress>.E_Off	1.3.2.7.2.E_Off	400
Event On Status Change	2 (Close)	<HwAddress>.E_On	1.3.2.7.2.E_On	400
Event On Status Change	3 (Fault)	<HwAddress>.A_Bad	1.3.2.7.2.A_Bad	600
Signal Type: ENUM				
Disable	-	-	-	-
Event On Status Change	0 - 63	<HwAddress>.E_<Num>	1.3.2.7.3.E_26	400

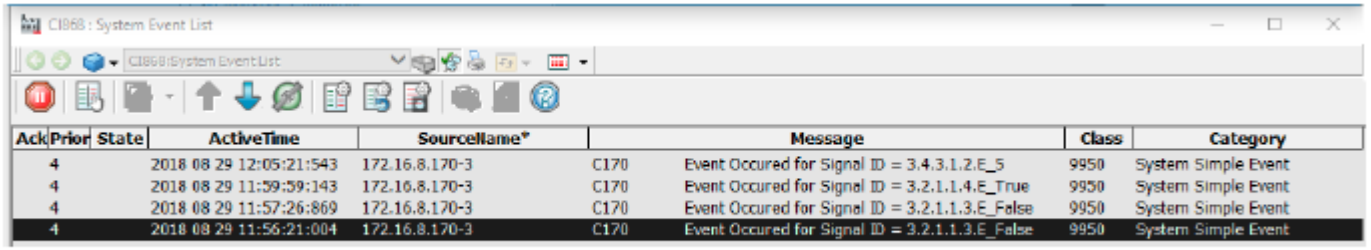


Figure 4.14: CI868 System Events

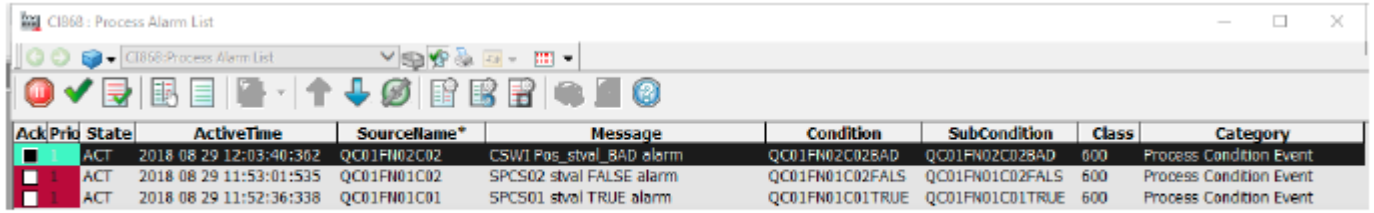
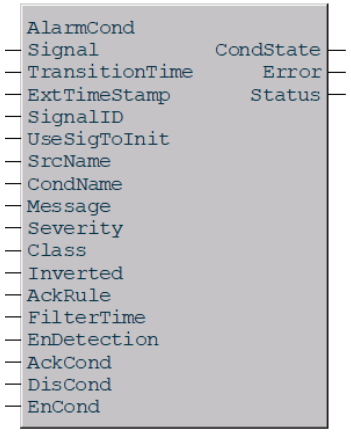


Figure 4.16: CI868 Process Alarms



©ABB

CI868 SNTP server and Edition selections

- SNTP Server Parameter for other IEDs to Synchronize to CI868 Time
- IEC61850 Edition Parameter – To Start CI868 in Ed1 / Ed2 Mode
- No CI868 Restart for Hw Tree Parameter Change and Download (Unlike earlier versions)

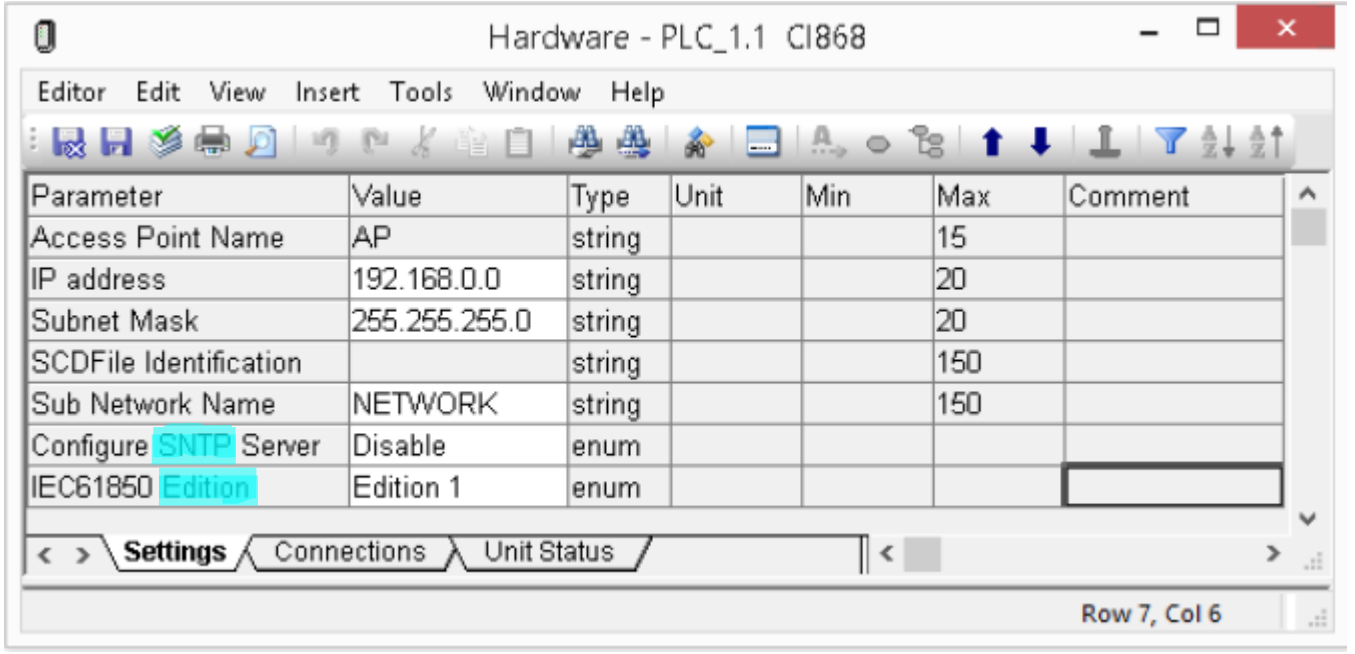
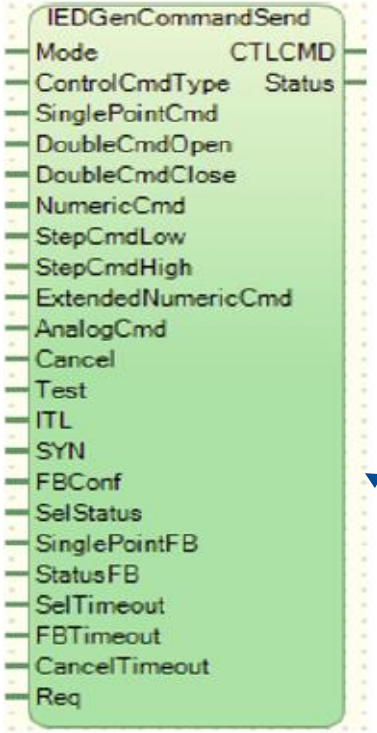


ABB Ability™ System 800xA 6.1

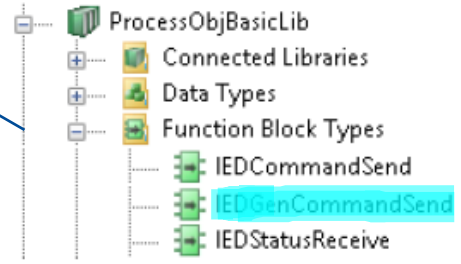
Enhancement- CI868- Command management & Library

Command Enhancements

- All commendable LNs are supported
  (Ex: CSWI, XCBR, GGIO)
- New Function block for command management
- Single point control -SPC
- Analog setpoint command (INC & APC)
- Transformer step change control (BSC/BAC)



- Control Mode: 1=Direct; 2=SBO else LGV
- Control Command Type. 1= SPC, 2 = DPC, 3 = ENC, 4 = BSC, 5 = ISC, 6 = BAC, 7 = INC, 8 = APC else LGV
- Input Command for SPC type
- Open Command for DPC type
- Close Command for DPC type
- Input Command for ENC/ISC types. Range -64 to 63 else LGV
- Step Lower Command for BSC/BAC types (pulse)
- Step Higher Command for BSC/BAC types (Pulse)
- Input Command for INC type. Range -32768 to 32767else LGV
- Input Command for APC type. Range -65504 to 65504 else LGV



©ABB

Performance Improvements

Double the CI868 Communications Capabilities

CI868 Capacity and Performance	800xA 6.0	800xA 6.1	Notes
Maximum IEDs supported Per CI868 (MMS)	20	40	For projects/applications requiring both monitoring and control (MMS). Suitable for small projects.
Maximum IEDs supported per CI868 (GOOSE)	80	120	Power management Applications requiring GOOSE
Maximum IEDs supported per CI868 (MMS and GOOSE)	20	40	Both Power management & Monitoring and control Applications
Maximum signals supported Per CI868 for monitoring and control application (MMS)	1000	2000	
Maximum signals supported for Power management Application (GOOSE)	800	1200	

Approximately - 50% Reduction of CI868s required!

©ABB

IEC61850 connect- Simplified configuration

Reduction of engineering steps

800xA 6.0 or Older versions

- Primary connectivity server –Import SCD in CET
- Secondary connectivity server- Import SCD in CET
- Primary or secondary server – Plant explorer
- Alarm and event configured in CET (Both Primary & Secondary server)
- Connectivity server Installation –OPC server, CET,SQL express

800xA 6.1

- Single SCD upload from Plant explorer-Control structure
- No manual configuration required for CET (Automatic)
- IEC61850 OPC servers gets **Alarm & Event** configuration during update
- CET and SQL Express are installed in Aspect server
- OPC server is installed in the connectivity server

©ABB

IEC61850 connect- New project vs Upgradation

Node Functions Compact ability with Legacy Engineering

Greenfield Customer

- A new User who requires new IEC61850 Edition-2, need to follow **new node Functions**
- Aspect Server will have CET+ SQL Express Deployed
- IEC61850 Connectivity Server contains only OPC Server

Migration from earlier versions of 800xA to 6.1

- User must deploy Legacy IEC61850 Connectivity Server node function
- User gets the IEC61850 Connectivity server as per previous releases of 800xA
- IEC61850 Connectivity Server Contains CET+ SQL and OPC server
- Supports Only IEC61850 Edition 1 Specification
- Mix Not allowed.

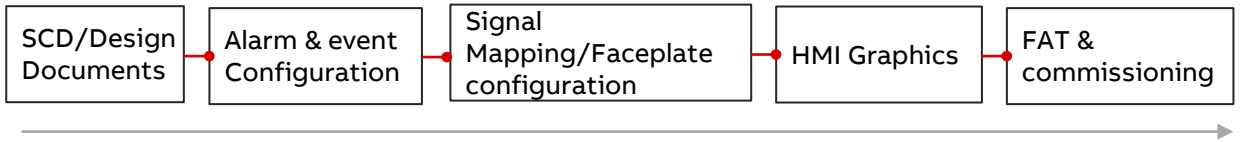
©ABB

Electrical Integration- Enhanced Engineering Workflow

xStream Engineering Concept

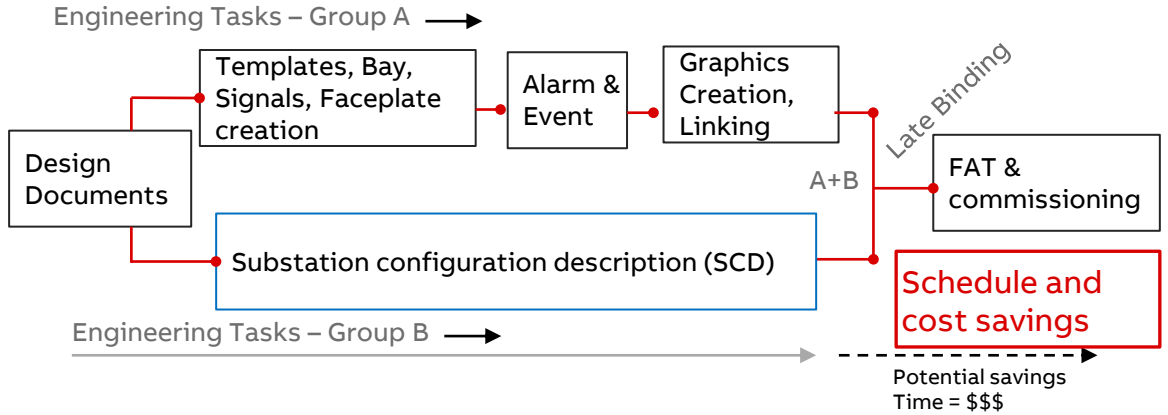
SLD-Single Line diagram
SCD-Substation configuration description
A&E-Alarm and event configuration
Typical- Template configured in Object types
FB-Faceplate
Late Binding –Map IED (SCD) with Bay typical and IED typical

System 800xA v6.0



- Serial project execution model
- SCD configuration (with substation) is Mandatory
- Without SCD further engineering cannot be started
- Engineering task needs to be done in a sequential manner
- Potentially large impact when making late changes

System 800xA v6.1

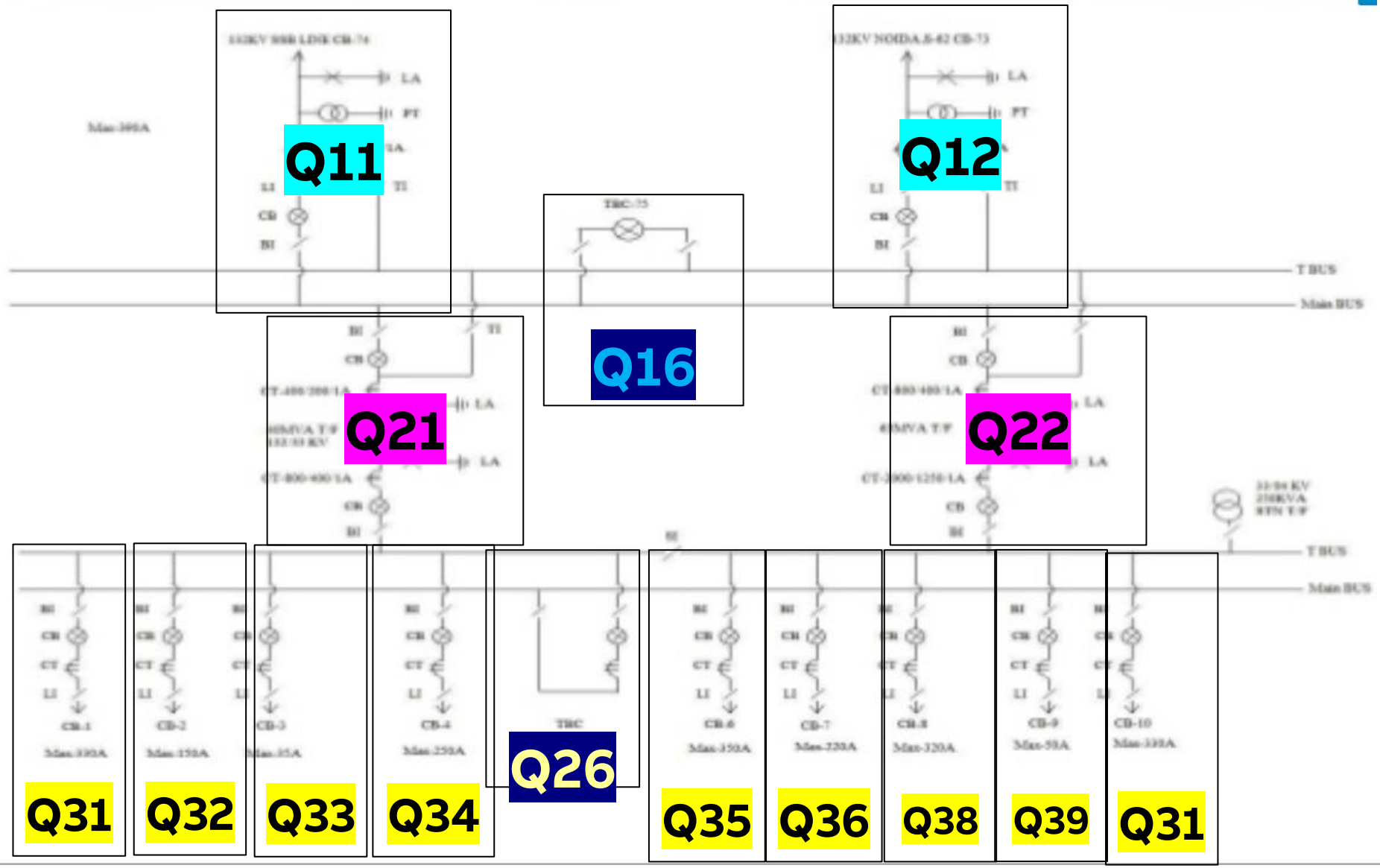


- Parallel project tasks
- Start Engineering with basic design documents (SLD, I/O List)
- Create substation configuration, A&E, FB, Graphics in Plant explorer
- Late Binding when SCD is available (Waiting for SCD from 3rd Party)

Parallel engineering = Project efficiency = Early startup

©ABB

SINGLE LINE DIAGRAM OF 132KV SUBSTATION

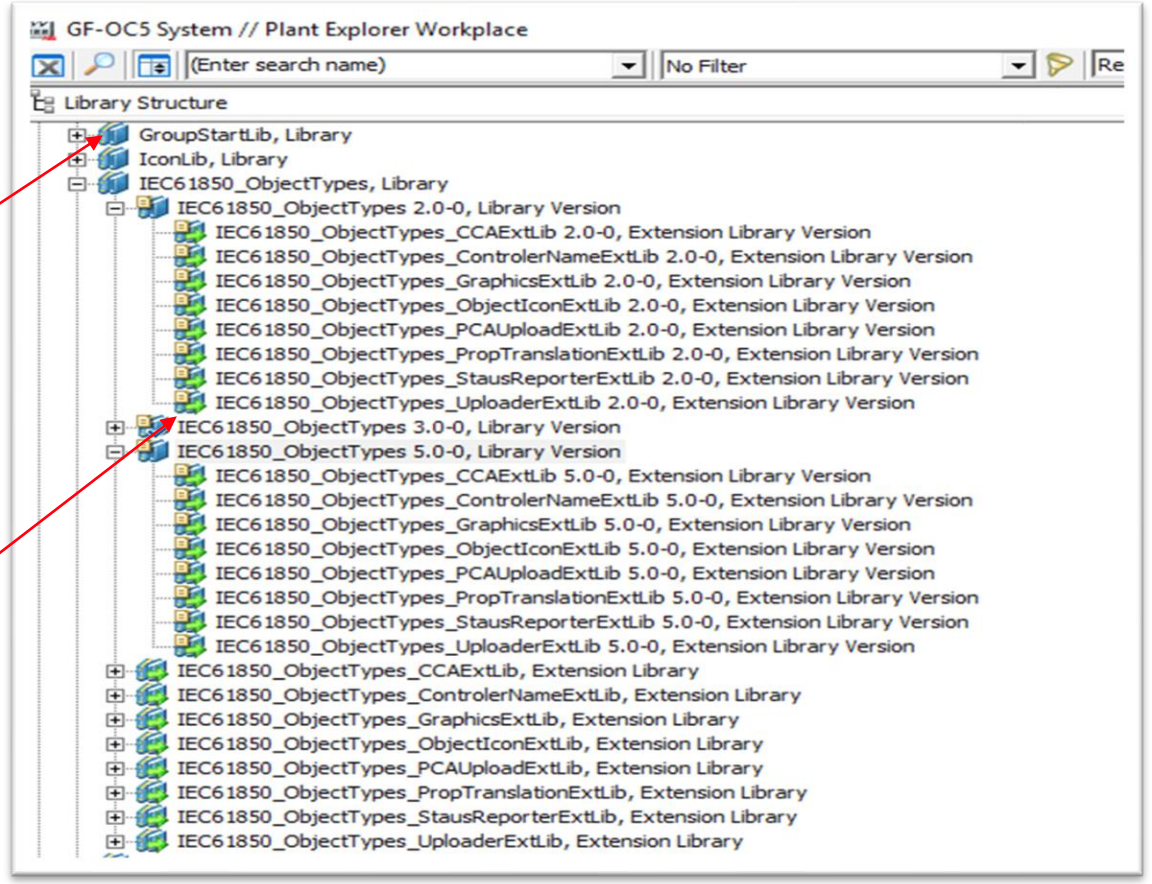


IEC61850 Object type library

Start Engineering- Creating Child library

IEC61850 OBJECT TYPES 2.0-0
PARENT LIBRARY

IEC61850 OBJECT TYPES 5.0-0
CHILD LIBRARY



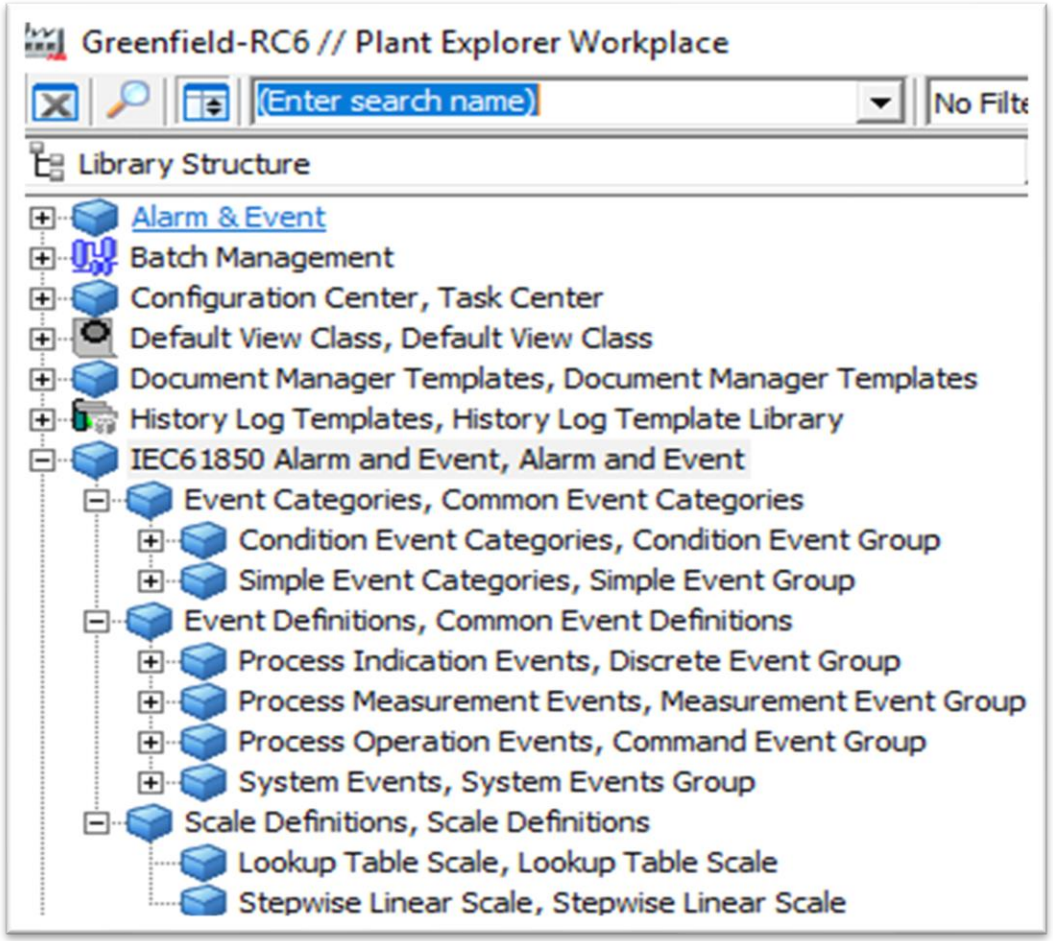
©ABB

Configure IEC61850 Event Definitions

IEC61850 Alarms and Events for a particular Data Object (DO) are based on Event Definition.

Four Types of Event Definitions are available

- Process Indication Events like Status of DO : Ind.stVal (binary), Pos.stVal : Ex: Breaker trip/Close
- Process measurements Events like Analog Values : Reactive Power TotVar.mag, Frequency HZ.mag (Ex:Voltage high)
- Process Operation Events for Control Command, example SBO : CSWI_1.Pos.ctlOperOn: Breaker open command issued
- System Events , Signals related to System Devices , IED's , Network etc: Ex:IED health



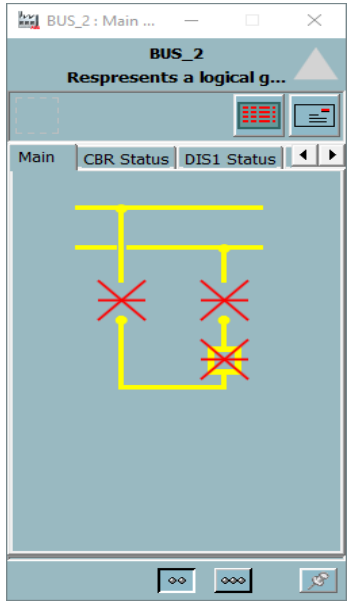
©ABB

Define Bay typical

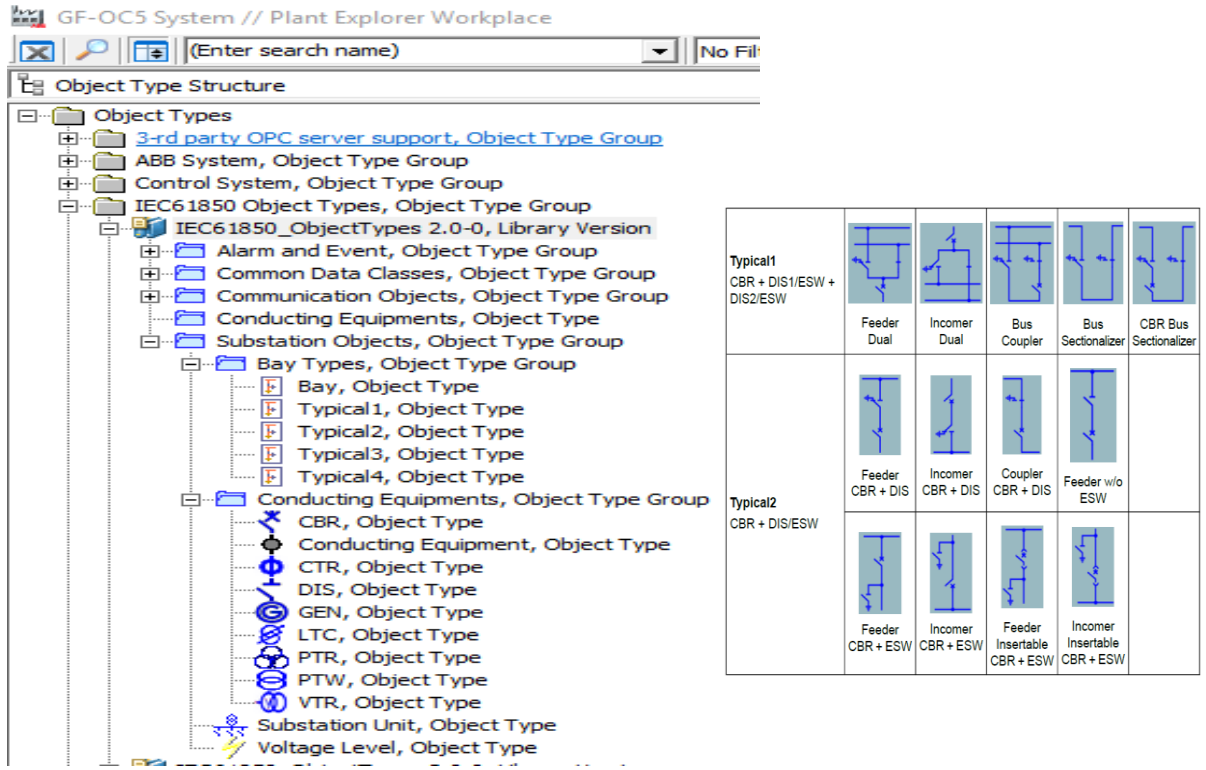
Templates creation Bay typical

Bay typical

- Bay Contains conducting equipment's
- Bay Contains Measuring instruments (CT &PT)
- Bay Contains one or more IEDs
- Create Graphic elements
- Create Faceplate
- Map the IED signal name with Faceplates



Object Type Structure -Create bay typical



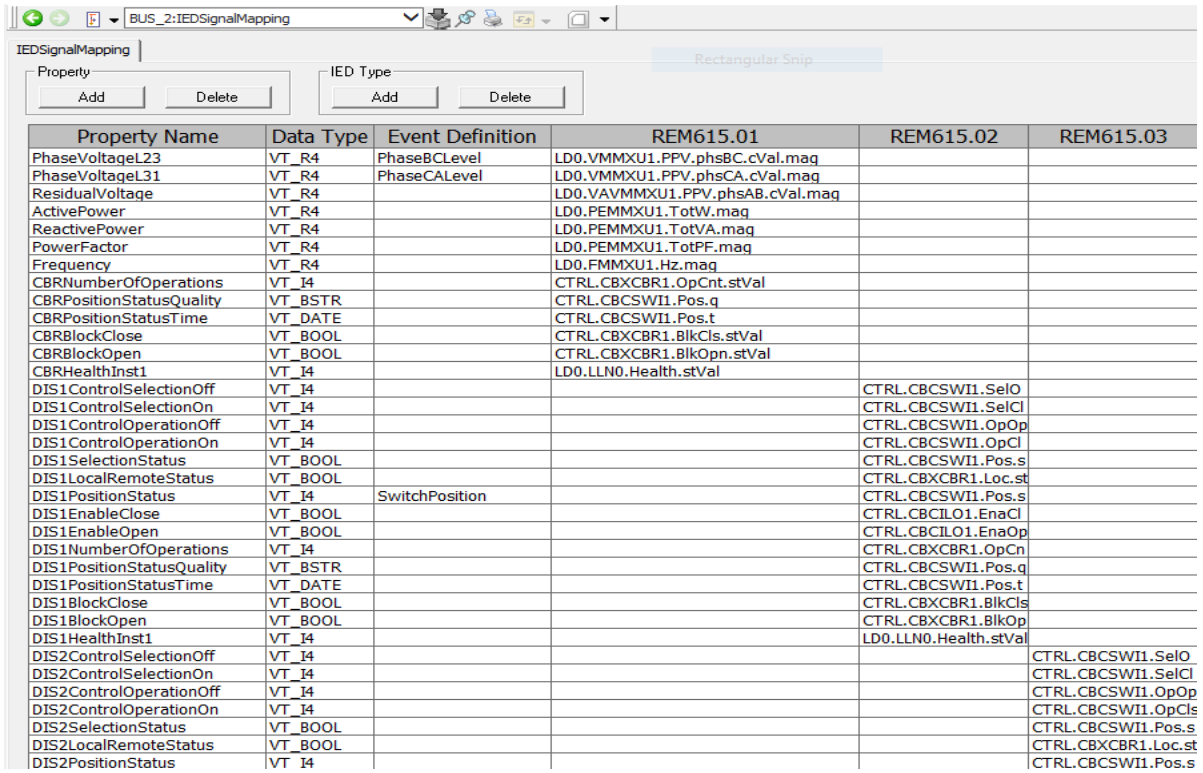
Define IED typical

Templates creation IED typical

IED typical

- Property name mapped with IED signals
- Event definition assigned for each signals
- Same IED type with multiple signal variants can be mapped

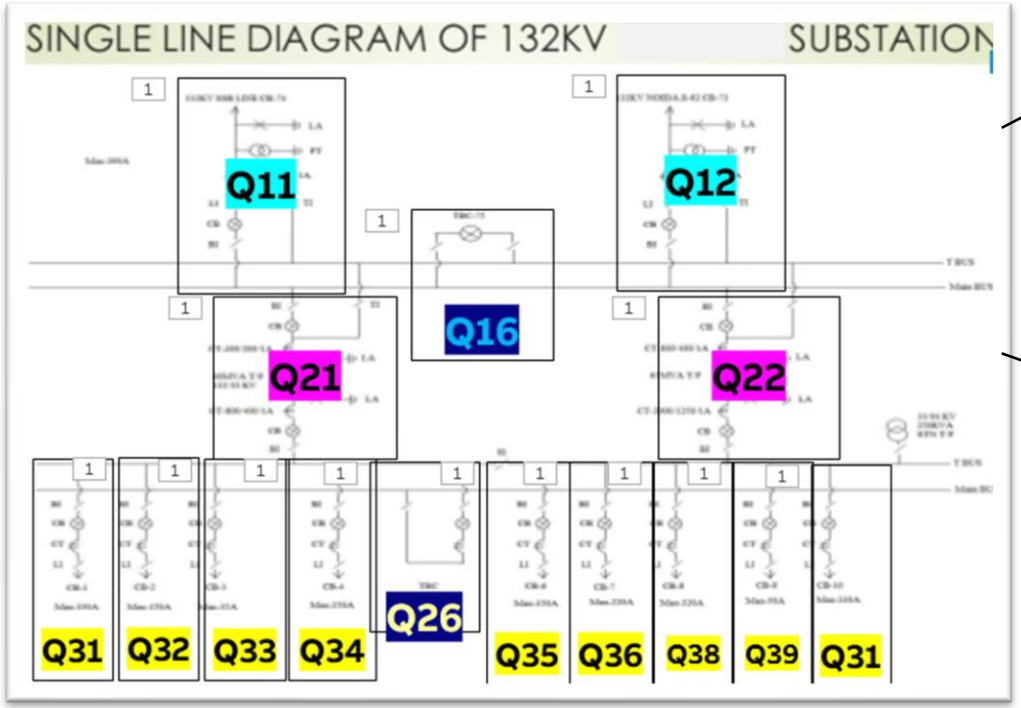
IED Signal Mapping Aspect

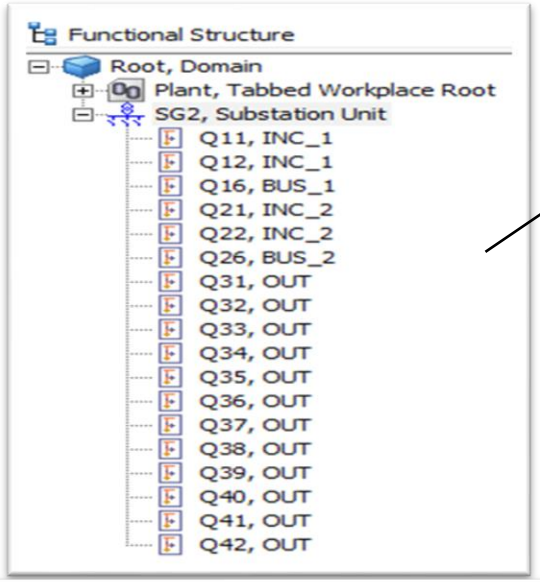


Property Name	Data Type	Event Definition	REM615.01	REM615.02	REM615.03
PhaseVoltageL23	VT_R4	PhaseBCLevel	LD0.VMMXU1.PPV.phsBC.cVal.mag		
PhaseVoltageL31	VT_R4	PhaseCALevel	LD0.VMMXU1.PPV.phsCA.cVal.mag		
ResidualVoltage	VT_R4		LD0.VAVMMXU1.PPV.phsAB.cVal.mag		
ActivePower	VT_R4		LD0.PEMMXU1.TotW.mag		
ReactivePower	VT_R4		LD0.PEMMXU1.TotVA.mag		
PowerFactor	VT_R4		LD0.PEMMXU1.TotPF.mag		
Frequency	VT_R4		LD0.FMMXU1.Hz.mag		
CBRNumberOfOperations	VT_I4		CTRL.CBXCBR1.OpCnt.stVal		
CBRPositionStatusQuality	VT_BSTR		CTRL.CBCSWI1.Pos.q		
CBRPositionStatusTime	VT_DATE		CTRL.CBCSWI1.Pos.t		
CBRBlockClose	VT_BOOL		CTRL.CBXCBR1.BlkCls.stVal		
CBRBlockOpen	VT_BOOL		CTRL.CBXCBR1.BlkOpn.stVal		
CBRHealthInst1	VT_I4		LD0.LLN0.Health.stVal		
DIS1ControlSelectionOff	VT_I4			CTRL.CBCSWI1.SelO	
DIS1ControlSelectionOn	VT_I4			CTRL.CBCSWI1.SelCl	
DIS1ControlOperationOff	VT_I4			CTRL.CBCSWI1.OpOp	
DIS1ControlOperationOn	VT_I4			CTRL.CBCSWI1.OpCl	
DIS1SelectionStatus	VT_BOOL			CTRL.CBCSWI1.Pos.s	
DIS1LocalRemoteStatus	VT_BOOL			CTRL.CBXCBR1.Loc.st	
DIS1PositionStatus	VT_I4	SwitchPosition		CTRL.CBCSWI1.Pos.s	
DIS1EnableClose	VT_BOOL			CTRL.CBCILO1.EnaCl	
DIS1EnableOpen	VT_BOOL			CTRL.CBCILO1.EnaOp	
DIS1NumberOfOperations	VT_I4			CTRL.CBXCBR1.OpCn	
DIS1PositionStatusQuality	VT_BSTR			CTRL.CBCSWI1.Pos.q	
DIS1PositionStatusTime	VT_DATE			CTRL.CBCSWI1.Pos.t	
DIS1BlockClose	VT_BOOL			CTRL.CBXCBR1.BlkCls	
DIS1BlockOpen	VT_BOOL			CTRL.CBXCBR1.BlkOp	
DIS1HealthInst1	VT_I4			LD0.LLN0.Health.stVal	
DIS2ControlSelectionOff	VT_I4				CTRL.CBCSWI1.SelO
DIS2ControlSelectionOn	VT_I4				CTRL.CBCSWI1.SelCl
DIS2ControlOperationOff	VT_I4				CTRL.CBCSWI1.OpOp
DIS2ControlOperationOn	VT_I4				CTRL.CBCSWI1.OpCls
DIS2SelectionStatus	VT_BOOL				CTRL.CBCSWI1.Pos.s
DIS2LocalRemoteStatus	VT_BOOL				CTRL.CBXCBR1.Loc.st
DIS2PositionStatus	VT_I4				CTRL.CBCSWI1.Pos.s

©ABB

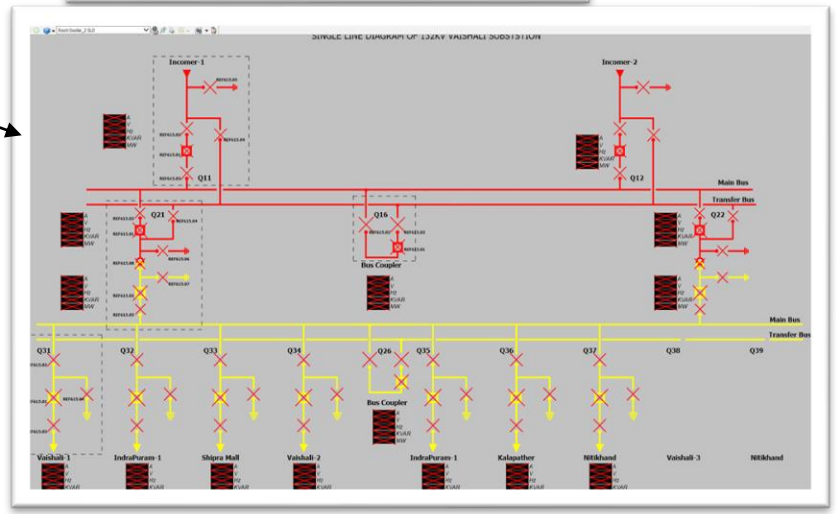
Instantiating Bay in Functional Structure





Multiple Bay created from typical

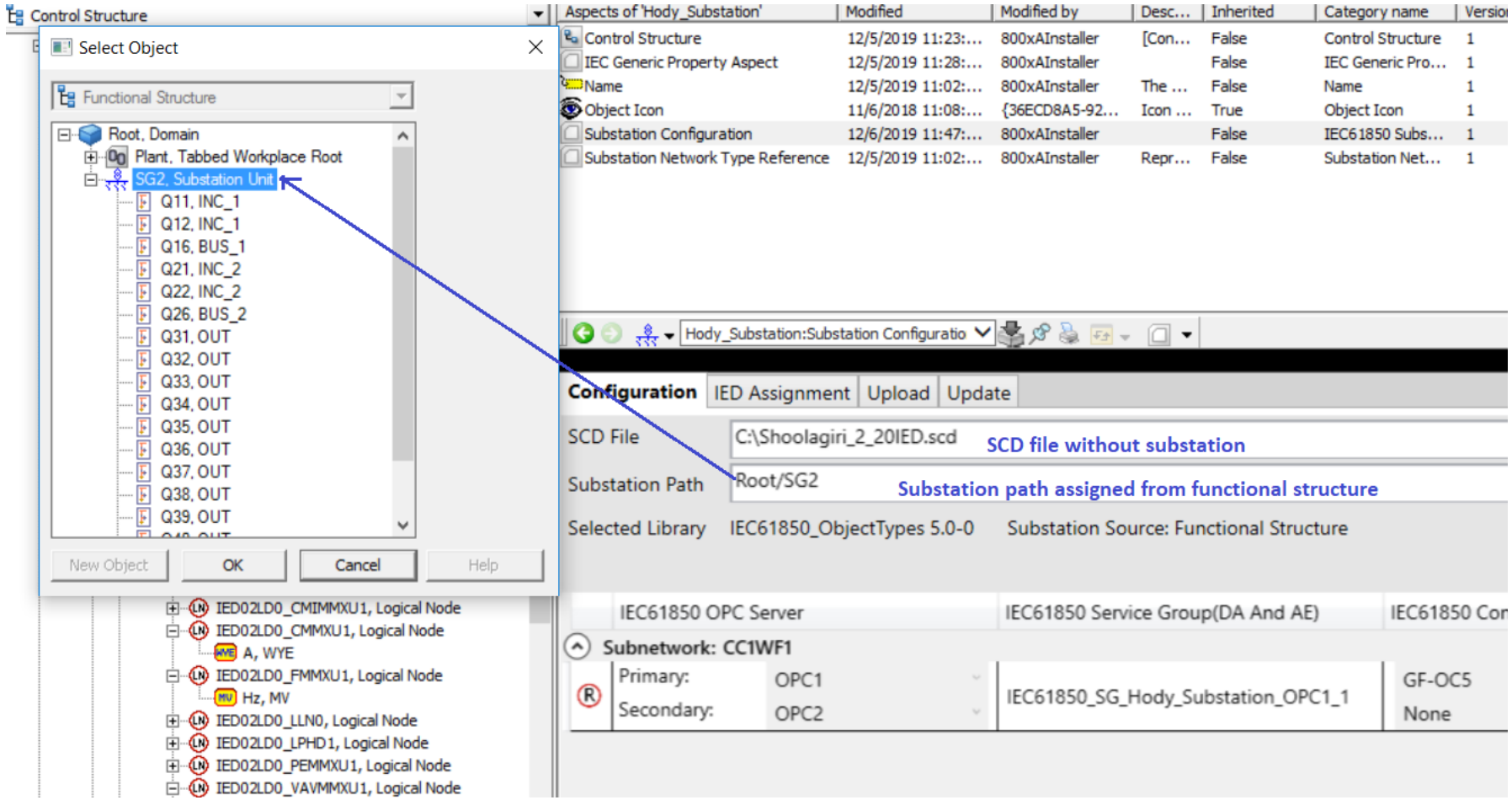
Graphics page created at earlier stage



Late binding –Assign substation path

Functional structure

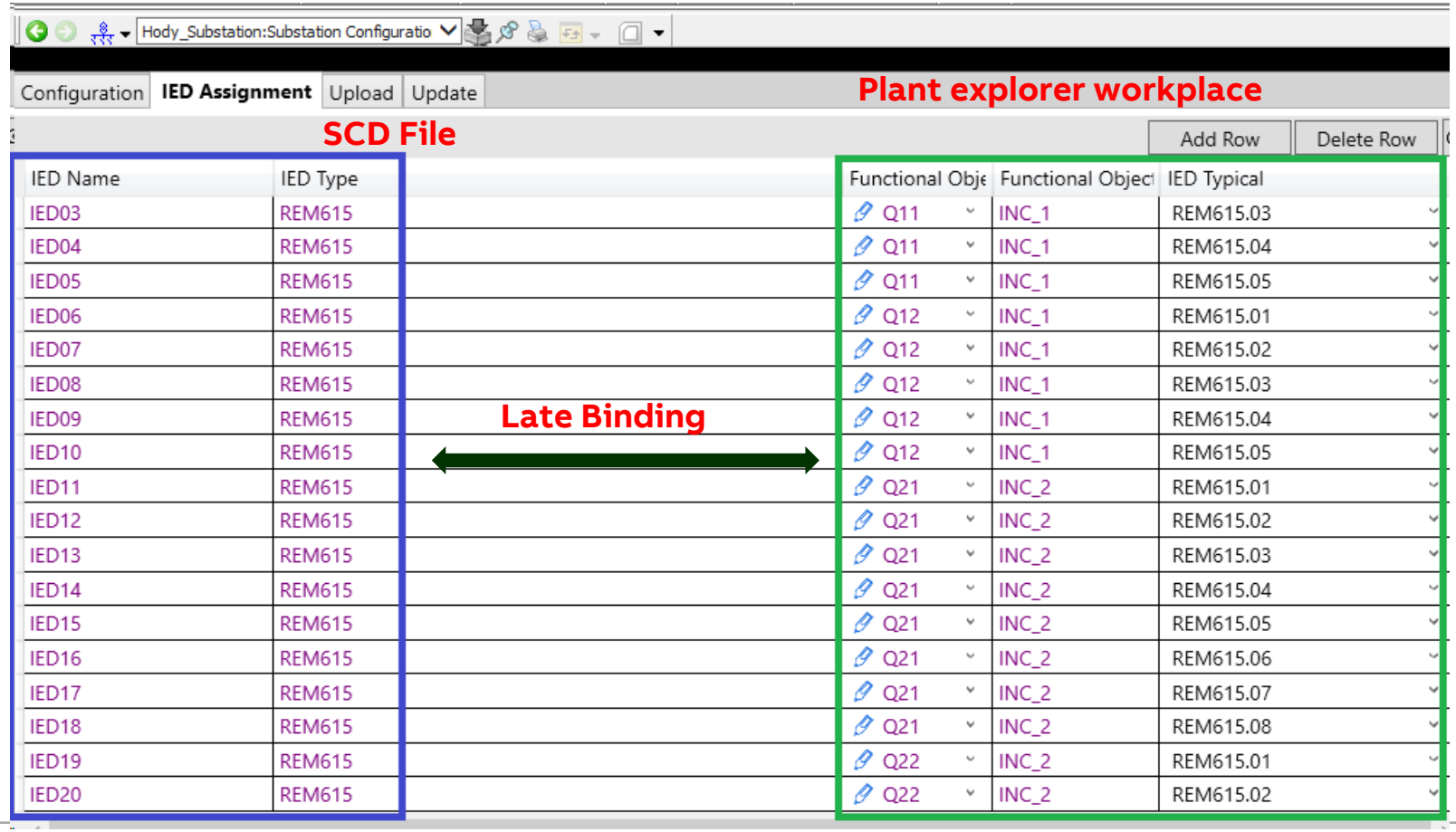
- SCD file has no substation section
- Substation section created in plant explorer workplace
- Substation section associated with SCD



Late binding –SCD file with Bay & IED typical

IED Assignment Tab for Bay Typical with IED Typical

SCD File



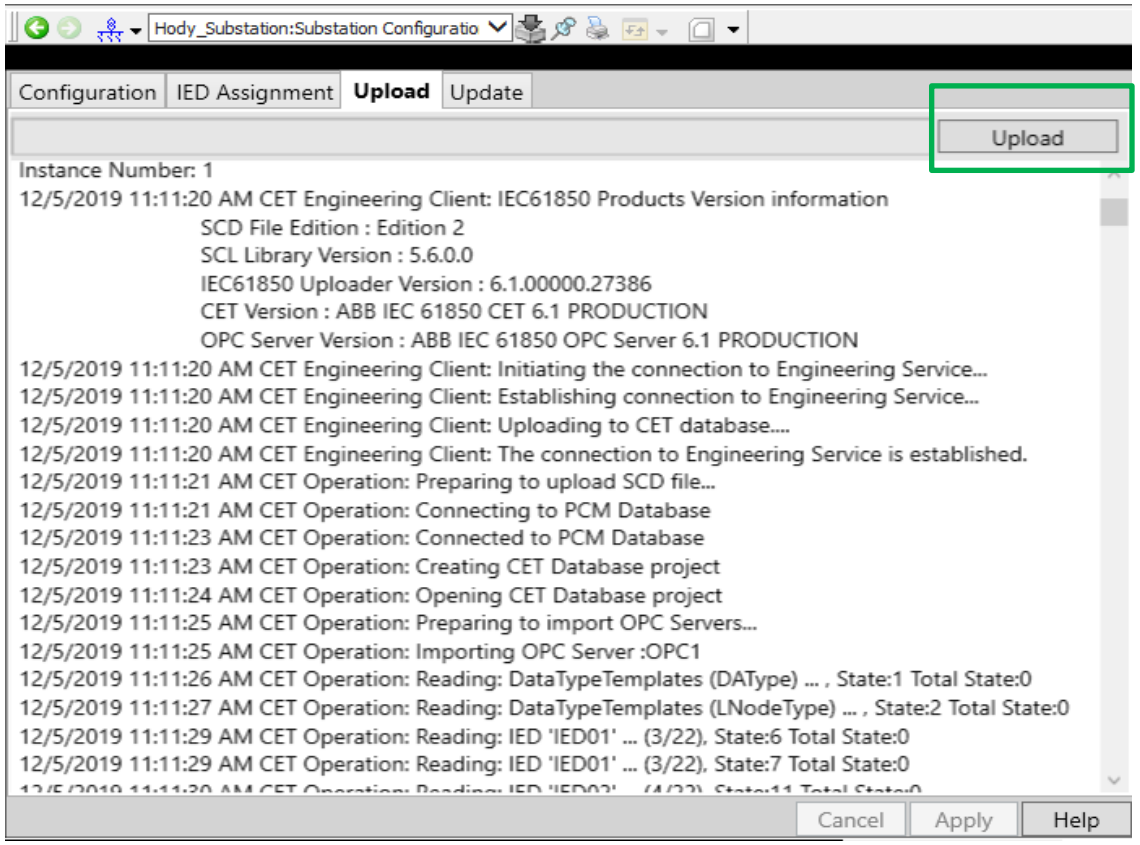
IED Name	IED Type	Functional Obje	Functional Object	IED Typical
IED03	REM615	Q11	INC_1	REM615.03
IED04	REM615	Q11	INC_1	REM615.04
IED05	REM615	Q11	INC_1	REM615.05
IED06	REM615	Q12	INC_1	REM615.01
IED07	REM615	Q12	INC_1	REM615.02
IED08	REM615	Q12	INC_1	REM615.03
IED09	REM615	Q12	INC_1	REM615.04
IED10	REM615	Q12	INC_1	REM615.05
IED11	REM615	Q21	INC_2	REM615.01
IED12	REM615	Q21	INC_2	REM615.02
IED13	REM615	Q21	INC_2	REM615.03
IED14	REM615	Q21	INC_2	REM615.04
IED15	REM615	Q21	INC_2	REM615.05
IED16	REM615	Q21	INC_2	REM615.06
IED17	REM615	Q21	INC_2	REM615.07
IED18	REM615	Q21	INC_2	REM615.08
IED19	REM615	Q22	INC_2	REM615.01
IED20	REM615	Q22	INC_2	REM615.02

©ABB

Sub-Station Configuration Aspect – Uploading SCD file

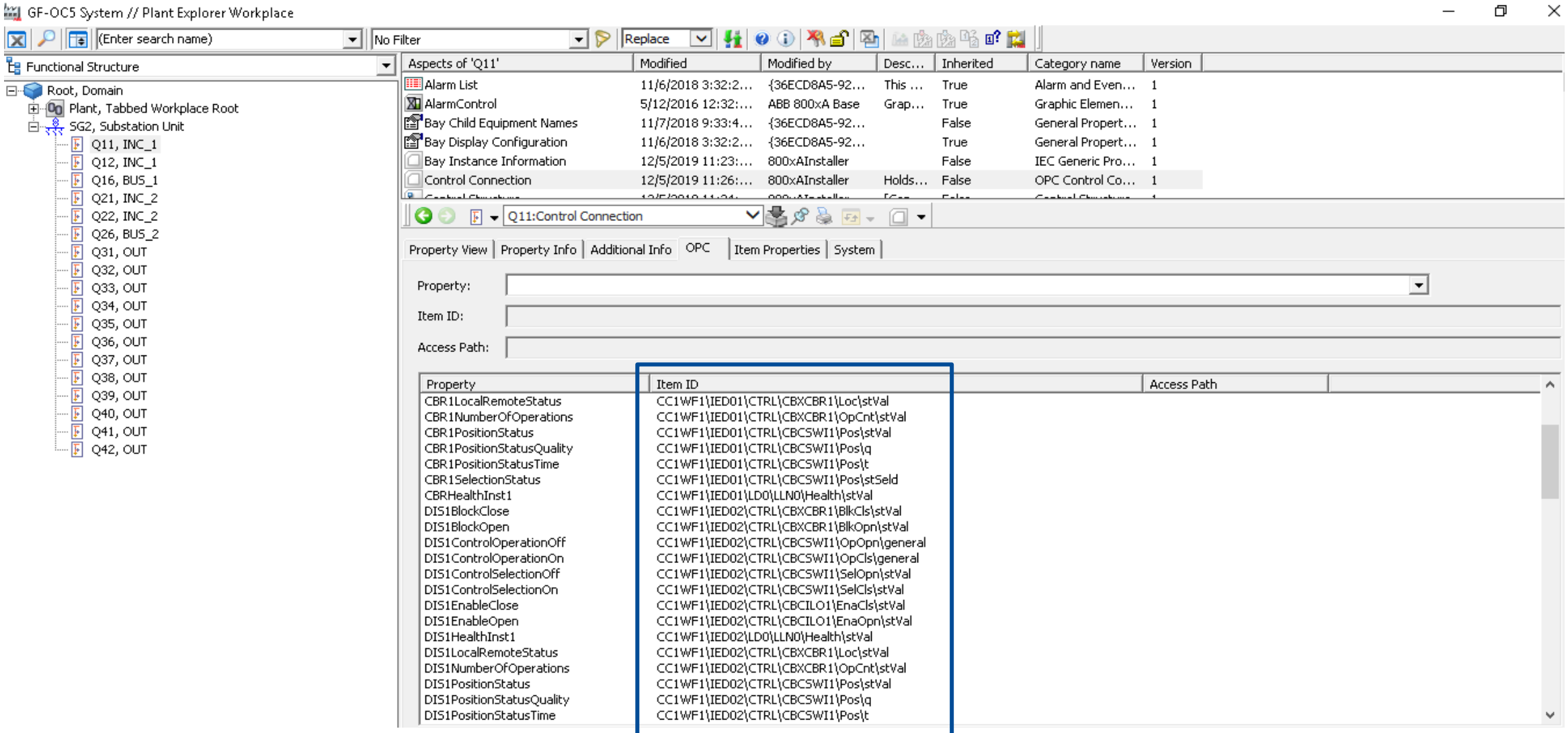
SCD Uploading Process

- A new CET project is created Automatically
- Automatically Imports SCD file to the CET project
- Generates OPC configuration file and transfers it to the Targeted IEC61850 Connectivity Server (Primary and Secondary)
- Retrieve Process that Generates the OCS file for Control Structure and Functional Structure
- After Retrieve, Append Process Starts to extract from the OCS file
  - in Control Structure IED communication objects are instantiated
  - in Functional Structure it fills the Control Connection Aspect for Bays , Breakers other conducting equipment's
- OPC -DA / AE Services For this Substation Networks are created
- Save's the SCD file to Aspect directory.



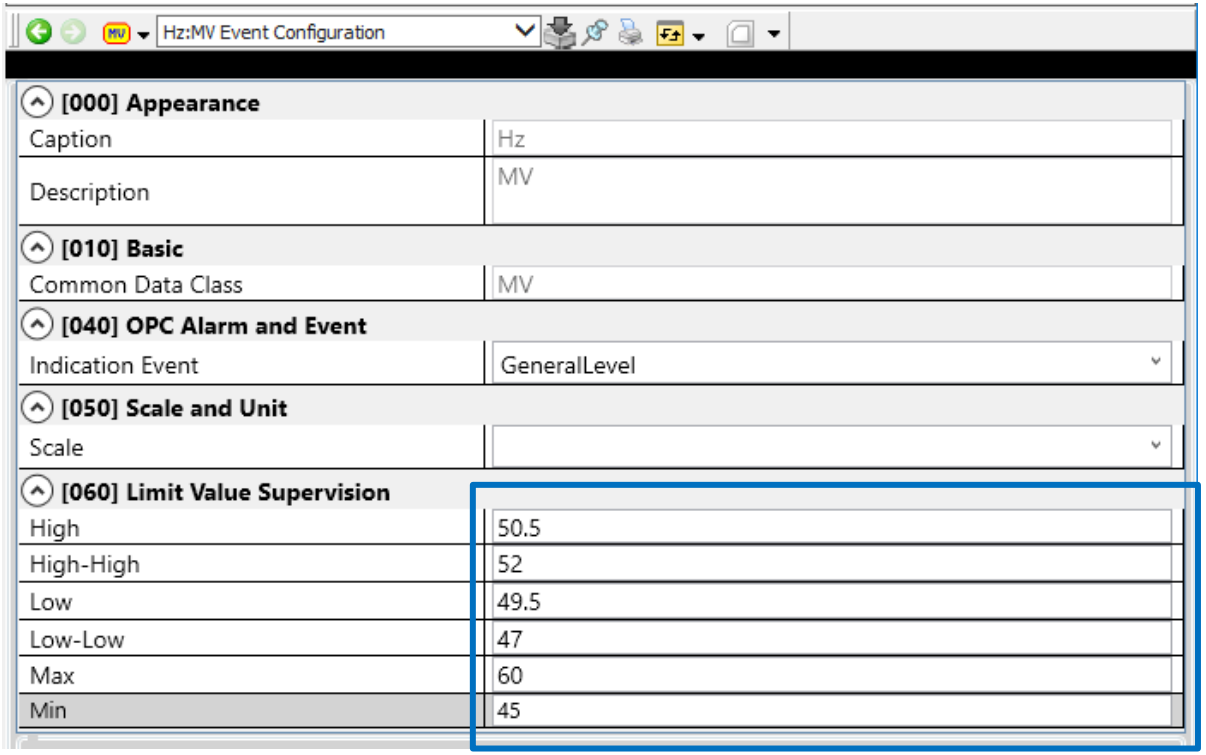
©ABB

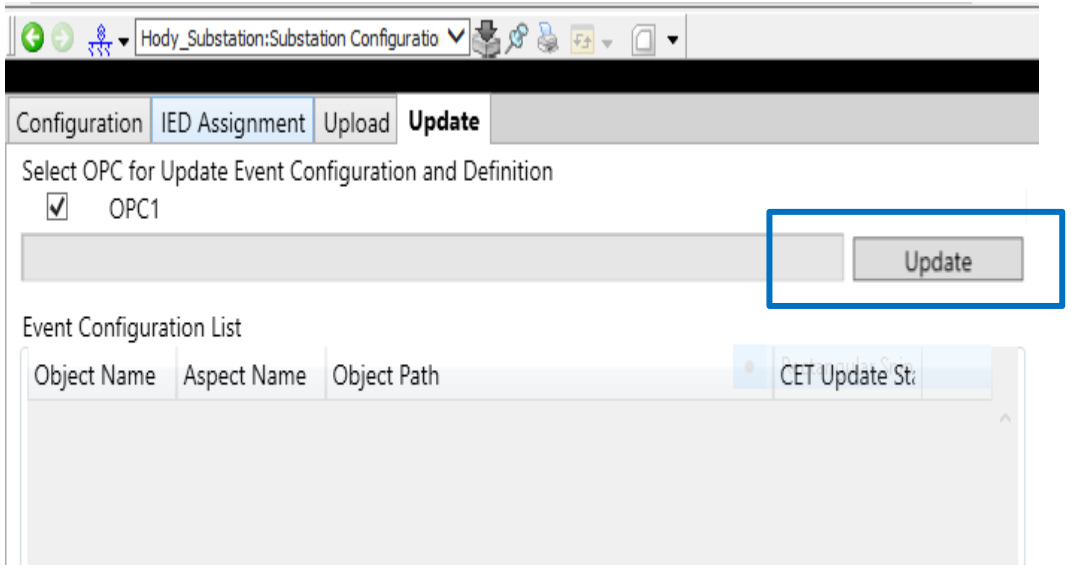
Bay-Control connection Aspect update



Substation Configuration

Update Tab



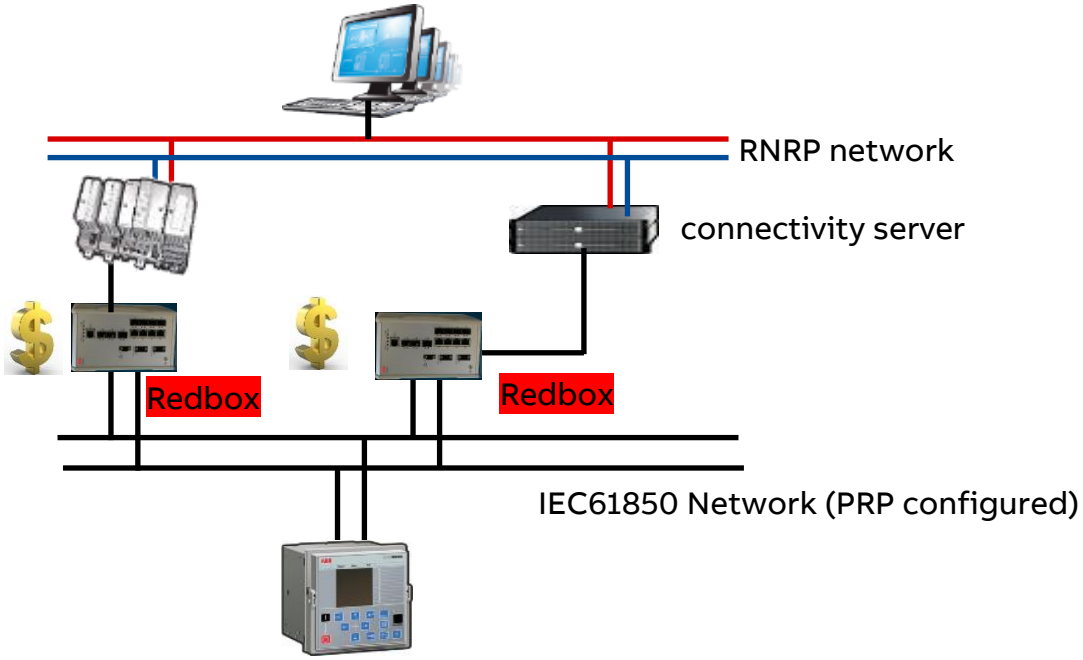


- Update required mainly for deploying alarm and event configurations
- Primary and secondary IEC61850 server Gets updated

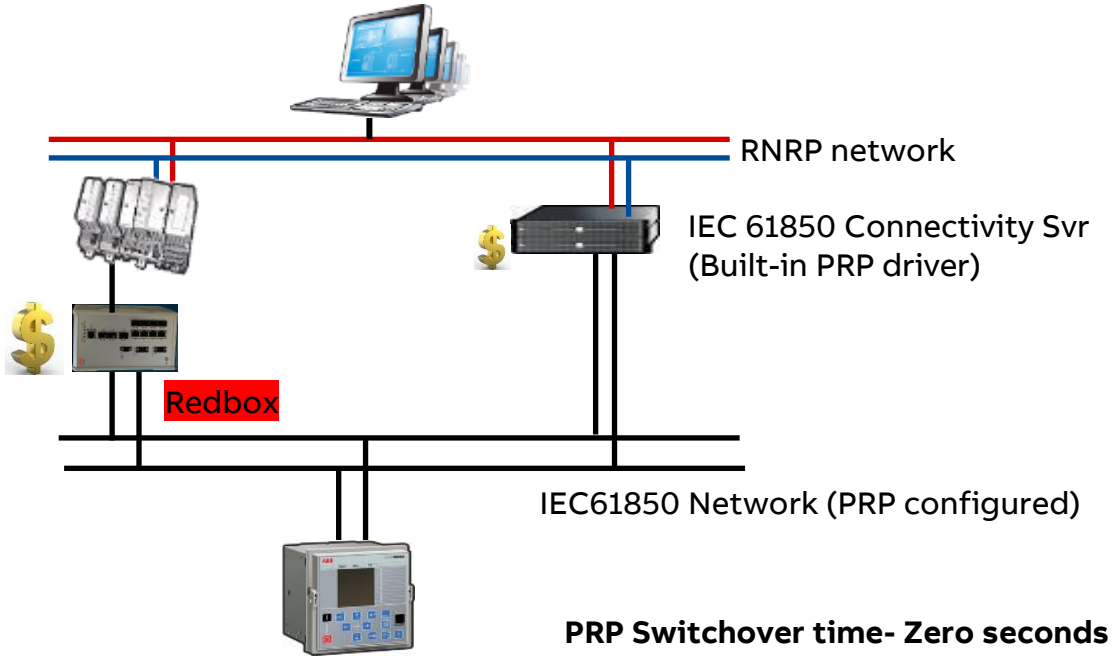
IEC 61850 Edition 2

Network redundancy-Parallel Redundancy Protocol

System 800xA v6.0.x



System 800xA v6.1



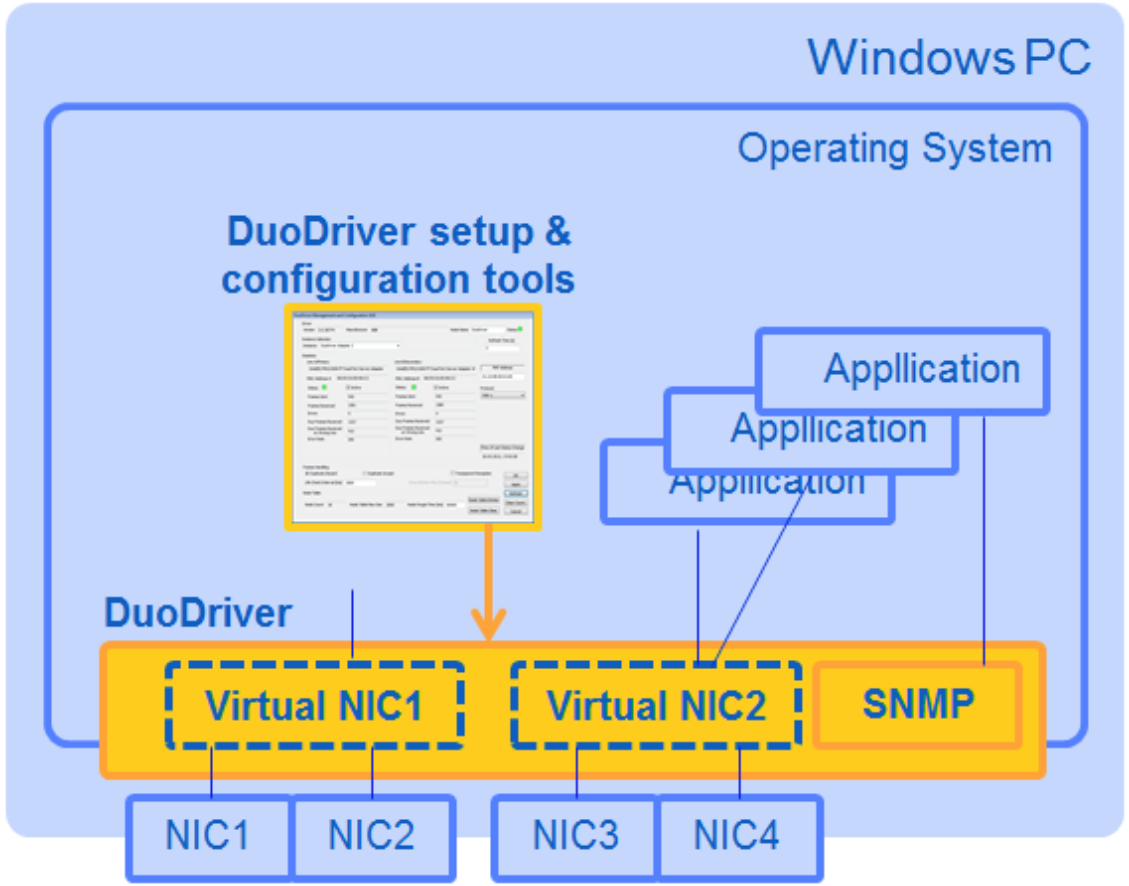
PRP Switchover time- Zero seconds

Improved redundancy schemes without extra hardware (only for vertical Integration).

Duo Driver

Support for PRP (network) Redundancy

- Supports IEC 62439 -2 PRP Standard
- Licensed application (Independent License Option)
- IEC61850 Connectivity Server Can Communicate to two Parallel redundant IEC61850 Subnetworks
- Duo Driver Pairs two physical network interface cards on Windows PC to work in redundant mode
- Once paired the Windows OS detects the two physical port as a single Virtual NIC Card.
- When any one network fails, there is no impact to 800xA IEC61850 Operations as the PRP switchover time is 0 seconds.

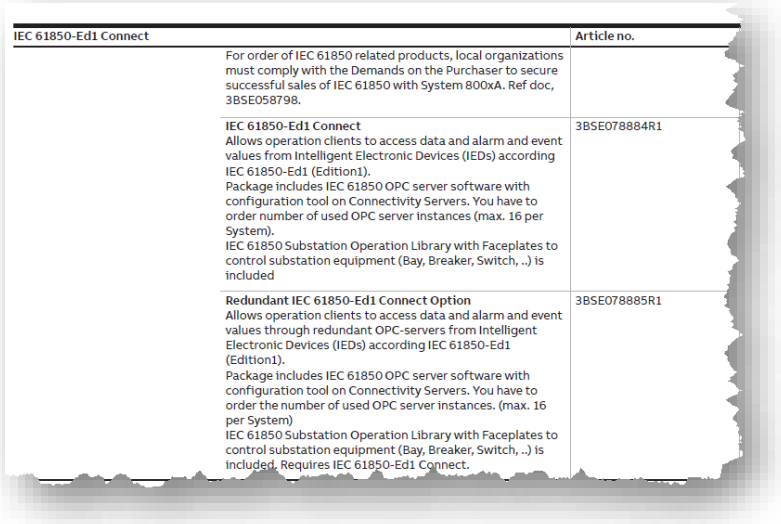


©ABB

Commercial Changes

IEC 61850 License

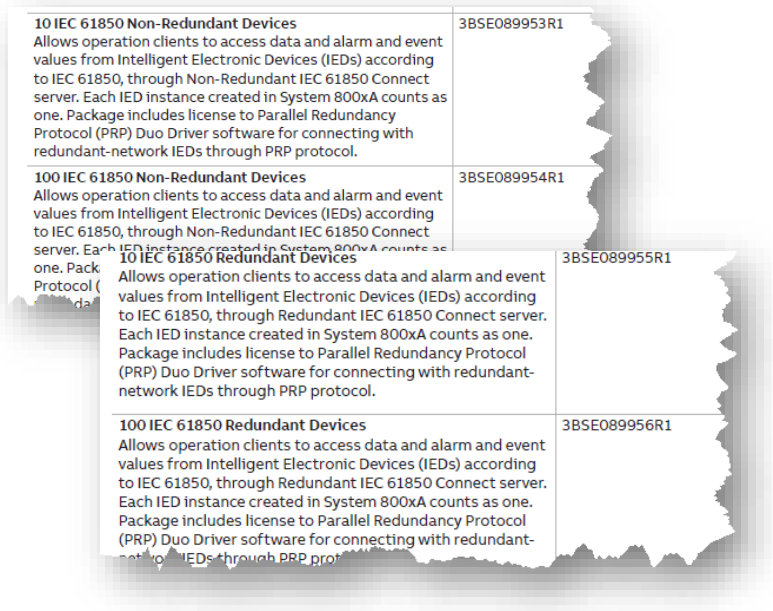
System 800xA v6



IEC 61850-Ed1 Connect	Article no.
For order of IEC 61850 related products, local organizations must comply with the Demands on the Purchaser to secure successful sales of IEC 61850 with System 800xA. Ref doc, 3BSE058798.	
IEC 61850-Ed1 Connect Allows operation clients to access data and alarm and event values from Intelligent Electronic Devices (IEDs) according IEC 61850-Ed1 (Edition1). Package includes IEC 61850 OPC server software with configuration tool on Connectivity Servers. You have to order number of used OPC server instances (max. 16 per System). IEC 61850 Substation Operation Library with Faceplates to control substation equipment (Bay, Breaker, Switch, ..) is included	3BSE078884R1
Redundant IEC 61850-Ed1 Connect Option Allows operation clients to access data and alarm and event values through redundant OPC-servers from Intelligent Electronic Devices (IEDs) according IEC 61850-Ed1 (Edition1). Package includes IEC 61850 OPC server software with configuration tool on Connectivity Servers. You have to order the number of used OPC server instances. (max. 16 per System) IEC 61850 Substation Operation Library with Faceplates to control substation equipment (Bay, Breaker, Switch, ..) is included. Requires IEC 61850-Ed1 Connect.	3BSE078885R1

-By IEC 61850 Connect

System 800xA v6.1



10 IEC 61850 Non-Redundant Devices Allows operation clients to access data and alarm and event values from Intelligent Electronic Devices (IEDs) according to IEC 61850, through Non-Redundant IEC 61850 Connect server. Each IED instance created in System 800xA counts as one. Package includes license to Parallel Redundancy Protocol (PRP) Duo Driver software for connecting with redundant-network IEDs through PRP protocol.	3BSE089953R1
100 IEC 61850 Non-Redundant Devices Allows operation clients to access data and alarm and event values from Intelligent Electronic Devices (IEDs) according to IEC 61850, through Non-Redundant IEC 61850 Connect server. Each IED instance created in System 800xA counts as one. Pack... Protocol (	3BSE089954R1
10 IEC 61850 Redundant Devices Allows operation clients to access data and alarm and event values from Intelligent Electronic Devices (IEDs) according to IEC 61850, through Redundant IEC 61850 Connect server. Each IED instance created in System 800xA counts as one. Package includes license to Parallel Redundancy Protocol (PRP) Duo Driver software for connecting with redundant-network IEDs through PRP protocol.	3BSE089955R1
100 IEC 61850 Redundant Devices Allows operation clients to access data and alarm and event values from Intelligent Electronic Devices (IEDs) according to IEC 61850, through Redundant IEC 61850 Connect server. Each IED instance created in System 800xA counts as one. Package includes license to Parallel Redundancy Protocol (PRP) Duo Driver software for connecting with redundant-network IEDs through PRP prot...	3BSE089956R1

- Now scaled by IEDs / Redundant IEDs

800xa 6.1 Licensing is based on the number of IED's

- If the Architecture has single connectivity server then Refer to the Article numbers 3BS089953R1 and 3BS089954R1
- If the Architecture has redundant connectivity server then Refer to the Article number 3BS089955R1, 3BS089956R1
- Network Redundancy –PRP driver License price is separate from this price book. It needs to be requested to Finland ABB- Consider separate cost when bidding. (PRP = Parallel Redundancy Protocol)

- For Ordering and activating PRP Duo Driver License please directly contact **pact.operationscenter@se.abb.com**.

- IET600 tool is part of substation automation price book , For ordering contact **support-sl@pl.abb.com**

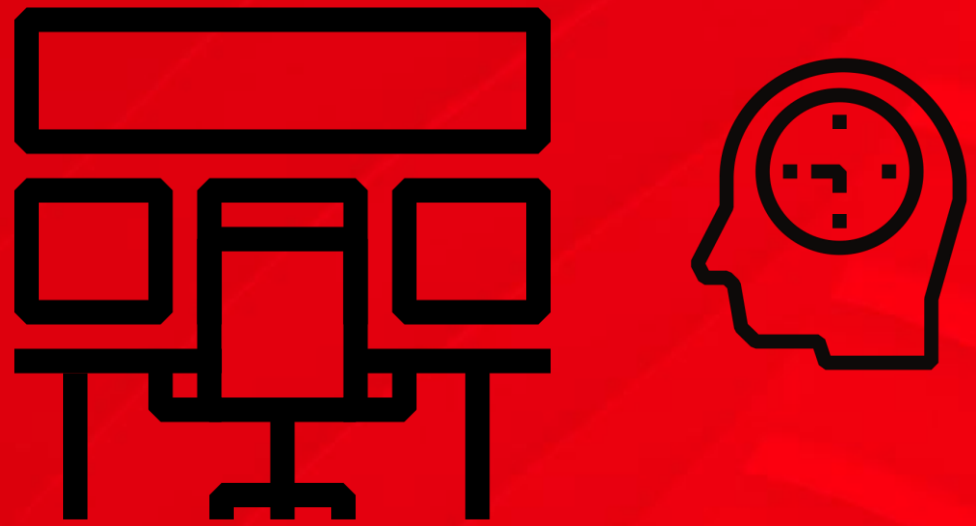
Summary

- System 800xA Electrical Control & Monitoring remains a market leader
- System 800xA v6.1 has many benefits that will help us retain our competitive position
  - Support for latest standards - IEC 61850 edition 2
  - Improved engineering workflow that aligns with engineering efficiency / late binding concepts
  - Improved performance of the Communications Interface module (CI868) to reduce infrastructure requirements
  - NOTE: coming soon… Web Tech Talk in Nov/Dec including details on engineering workflow.

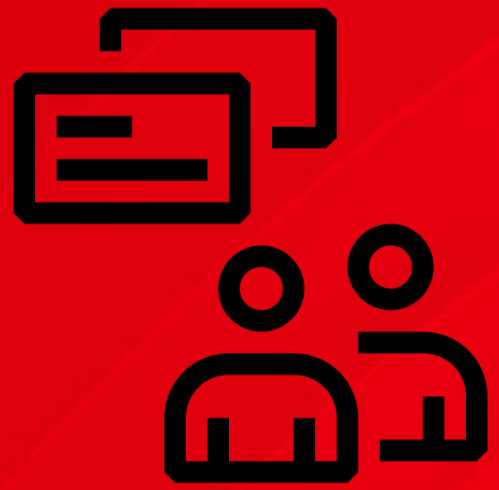
Happy Hunting!

©ABB

Live Demo



Q & A



ABB