Efficiencies in system integration and testing

ABB’s substation automation tools PCM600, IET600 and ITT600

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Presenters

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ABB’s substation automation tools portfolio

Introduction

System engineering
IET600

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IED configuration
PCM600

Substation Automation System

Station Bus

Process Bus
Introduction

Protection and Control IED Manager PCM600

Integrated Engineering Tool IET600

Integrated Testing Tool ITT600

Questions and answers
Protection and control IED manager PCM600

Introduction

What is PCM600?
- PCM600 is the tool to configure and manage ABB protection and control IEDs.
- PCM600 enables users to access the ABB Relion® Protection and Control IED portfolio.
- PCM600 enables substation communication engineering.

One tool
One tool for the life cycle of the Relion® IED
- For engineering, commissioning, operation and maintenance of IEDs

One tool, for life cycle of all the Relion® IEDs
Protection and control IED manager PCM600

Homologation

IEC 61850 Certificate Level A

ABB recognized for the world’s first IED configuration tool certified for IEC 61850

- To read more please visit following pages:
  - ABB
  - DNV-GL
Protection and control IED manager PCM600

Main customer benefits

Clear visualization of the power system

Plant structure as replica of your power system in tree-structure with
- Substations
- Voltage levels
- Bays
- IEDs

Outstanding plant structure navigation
- Easy to locate the IED in the structure

Unified intuitive IED navigation node structure

User guidance with context menus, tool tips and tools
Protection and control IED manager PCM600

Main customer benefits

High flexibility in engineering

One configurator tool for all ABB’s protection and control IEDs, provides versatile functionalities for the entire lifecycle of ABB’s protection and control IED applications.

It offers high flexibility in engineering of advanced applications.

Ensures efficient configuration and validation of IED applications via

- The graphical application configuration that enables state of the art configuration and monitoring of the complete IED application.
- Informative graphical support of protection parameter settings.

Only tool on the market which realizes complete application logic with I/O signals within the application configuration
Protection and control IED manager PCM600

Main customer benefits

Efficient functionalities

Efficient configuration functionalities for our extremely flexible Relion® family of protection and control devices.

Easy GOOSE engineering, it is as simple as making a connection from signal to another signal in any other IED by just using application configuration of PCM600.

Online debugging, helps you to realize what value goes out from output and what value comes in input and also visually compare application logic.
Protection and control IED manager PCM600

Main customer benefits

**In defense of cyber attack**

PCM600 supports following cyber security features

- Secure communication between IED and PCM600
- Reading and viewing IED security events from IEDs supporting security or activity logs
- IED user account management

Find more info about Cyber Security on ABB Cyber Security page: www.abb.com/cybersecurity
Easy GOOSE engineering demo

Easy GOOSE engineering is as simple as making a connection from signal to another signal in any other IED by just using application configuration of PCM600.
Protection and control IED manager PCM600

Further information

PCM600 on internet

Efficiencies in system integration and testing - Substation automation tools movie - Functional highlights of PCM600

How to install and setup movies:
- Download PCM600 from ABB website,
- Install PCM600 and a ConnPack,
- PCM File Management, How to connect an IED to your computer

Introduction of PCM600 tool components
- General introduction (webinar)
  - Introduction to PCM600
- Monitoring tools
  - Disturbance Handling, Event Viewer
- Configuration tools
  - Parameter Setting, Signal Matrix, Graphical Display Editor, Communication Management

Recommended PCM600 training videos on YouTube

Collection of PCM600 training videos:
- Please click here

Training material in German language:
- Please click here

Other various useful PCM600 tool videos:
- Please click here
Protection and control IED manager PCM600

Further information

Where to get PCM600 and Update Manager*?

PCM600 is available for download from ABB Substation Automation Software Library on the Internet**

Link to ABB SA Software Library:
https://www143.abb.com/SoftwareLibrary

*Update manager is part of PCM600 installer.
**Please note, registration is required to validate download.

PCM600 is free of charge
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IET600

Main functionality

**Complete system engineering**

A comprehensive engineering tool to design and configure the complete IEC 61850-based substation automation system

- Graphical editors to design
  - Substation topology
  - Physical communication network
- Efficient bulk engineering using rich tables
- Import, utilization and creation of IEC 61850 SCL files
- IEC 61850 dataflow configuration (GOOSE, Client Server, Sampled Values, Logs)
- Generate a complete description of the substation (SCD file)
- MicroSCADA Pro signal database engineering
- Generation of XLS spreadsheets documenting the complete IEC 61850 dataflow, HMI signals and NCC communication
IET600 – IEC 61850 System configuration and beyond
World’s first awarded IEC 61850 Ed. 2 System Configuration Tool (SCT)

Certified experience

A true highlight in ABB’s active role and expertise in IEC 61850 standardization and implementation

- IET600 5.3 has been tested by DNV-GL for IEC 61850 Edition 2 conformity
- First certified IEC 61850 System Configuration Tool
- Proven by experience. Thousands of engineered IEC 61850 systems
- ABB’s UCA International certified in-house System Verification Center continuously ensures that IET600 meets the integration and system performance requirements of ABB and third-party protection and control devices.

First certified IEC 61850 Ed. 2 system configurator
## Your benefits

### IET600 - Why bother with IEC 61850 system engineering and integration?

<table>
<thead>
<tr>
<th>Certified IEC 61850 System Configuration</th>
<th>MicroSCADA Pro Database Engineering</th>
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<tbody>
<tr>
<td>– Tested and approved</td>
<td>– Consistency ensured</td>
</tr>
<tr>
<td>• Complete dataflow engineering</td>
<td>• Relation to IEC 61850 Definition</td>
</tr>
<tr>
<td>• Green Tissues* implemented</td>
<td>• Sanity checks</td>
</tr>
<tr>
<td>• ABB’s own choice for Grid Automation Projects</td>
<td>• Signal List exchange via Excel Tables</td>
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</tbody>
</table>

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<tr>
<th>Efficiency by design</th>
<th>System Integration for ABB and 3rd Party</th>
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</thead>
<tbody>
<tr>
<td>– Feature rich implementation</td>
<td>– Flexible integration of 3rd party products</td>
</tr>
<tr>
<td>• Graphical data Editors</td>
<td>• IED capability management</td>
</tr>
<tr>
<td>• Bulk Engineering using tables</td>
<td>• .cid / .iid file import</td>
</tr>
<tr>
<td>• Copy / Paste on all levels</td>
<td>• Validated by ABB’s System Verification Center</td>
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*) Tissue = IEC 61850 Technical Issue, see http://tissue.iec61850.com/default.mspx
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Main functionality

Most versatile IEC 61850 testing

Trouble-shooting in a IEC 61850 based SA system can become cumbersome and complex.
- ITT600 allows you to focus on the application level and not on bits and bytes
  - Browse and inspect IEC 61850 IEDs from any vendor
  - Visualization of dataflow and Process Bus values
  - Simulation of IED and client
  - Substation Automation protocol analyzer
  - Fault finding and root cause isolation made easy
Digitalization requires the right tools for testing and commissioning tasks – not only for experts.

- ITT600 SA Explorer allows you to
  - Simulate GOOSE and MMS signals based on a .scl file
  - Pre-test individual components before plugging them together
  - Online check for system wide data consistency before starting tests
  - Visualizing data from NCITs (based on IEC 61850-9-2 LE)
  - Visualizing GOOSE Data instead of protocol details

One tool to test and commission digital substations
**ITT600**

Your benefits

**Significantly reduce overall testing and commissioning time**

- **Isolate the root cause of communication issues**
  - Drill down to the required level
    - Offline dataflow analysis
    - Online browsing and visualizations
    - Protocol analyzer

- **Ensure system consistency**
  - Check the configuration of the individual IEDs with a mouse click, before start of testing
    - Quick checker functionality
    - Export current state

- **Decouple individual users**
  - Allow everyone to pre-test a part of the system
    - Simulation of IED (MMS, GOOSE)
    - Simulation of IEC 61850 Clients

- **IEC 61850 Intelligence**
  - Translating the complex protocols to SA terminology
    - Focus on applications rather than bits and bytes
    - All aspects combined in one tool
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Goodbye & takeaway

Comprehensive and intuitive tools for substation automation

Simplifying management of protection and control relays

Simplifying substation automation system engineering

Simplifying IEC 61850 diagnosis and application testing

Visit substation automation tools page for more information about PCM600, IET600 and ITT600