SUBSTATION AUTOMATION

Integrated Digital System
Compliant with IEC 61850

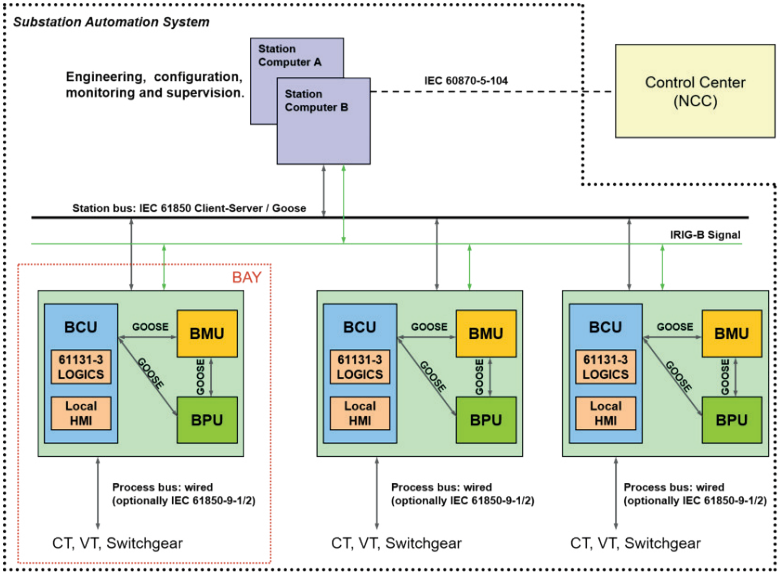
Integration with smart grids: compliance with IEC 61850 standards enables integration with smart grids and flexible management of energy resources.
The **BCU** of **DP Selta** for electricity substations includes cybersecurity features to ensure data and network protection.

PERFORMANCE

- Integrated digital control system for the automation of electrical stations.
- Control, automation, protection, monitoring and maintenance functions.
- Compliant with the IEC 61850 standard.

MAIN FEATURES

- Unique scalable architecture is built on the principle of interoperability between various control, monitoring, and protection units. Highly adaptable system that can grow and change, while ensuring seamless communication between all components.
- Automation based on IEC 61131 standard, enables centralized control from the station computer and distributed control at the bay level using Bay Control Units.
- Interoperability between the different protection relays, ensuring the evolution of the system and the integration of devices from different manufacturers.
- Synchronization of the entire system via GPS receiver based on NTP or IEEE1588 network protocols.
- System management and control by the station operator (HMI workstation and Engineering workstation).
- Integrated gateway functionality in compliance with the IEC 60870 (101 and 104) standard protocols.
- High reliability, long life performance and quality assurance.



BAY CONTROL UNIT STCE SA-100

The BCU STCE SA-100 allows you to manage all bay functions:

- Bay and bay-bay interlocking.
- Automation functions based on the IEC 61131 standard.
- Digital event registration with 1 ms resolution.
- Measured value processing (voltage, current, active power, reactive power, frequency) with direct connection to secondary of CT an VT.
- Syncrocheck function.
- 12” LCD display integrated with a simple functional keyboard for commands.
- Key selection of local/remote/excluded/out of service control modes.

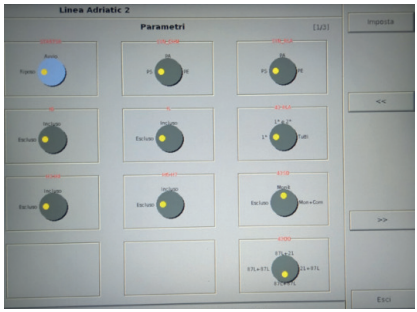
TECHNICAL DETAILS

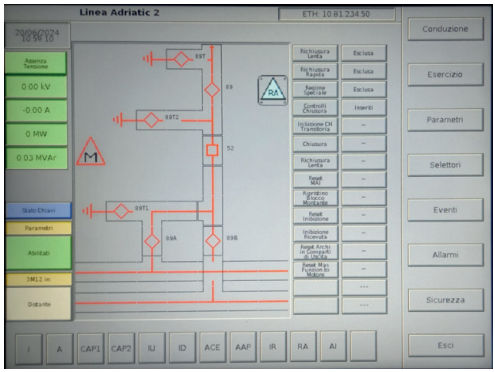
Central Unit based on Cyber Secured CPU4000 equipped with:

- 2 x RJ45 100/1000BASE-T.
- HTTPS Web server.

Peripheral Units

- 44 x 110 VDC/220VDC Optoisolated digital inputs.
- 20 x Relay-based Outputs 20DCO.
- 16 x DC Analog inputs.
- 8 x AC Analog inputs (3A+5V, 4A+4V, 4V+4V).
- 2ETH (IEC 61850 Client, IEC 870-5-104 Master, Modbus Master) communication Unit.





The electric boards are manufactured in compliance with Directive 2011/65 / EU (RoHS-2).

BAY MONITORING UNIT STCE SA-200

The BMU STCE SA-200 actively monitors electrical systems and operating parameters, and performs component diagnostics. STCE SA-200 performs various important functions:

- Records disturbances (DFR) and stores COMTRADE files.
- Monitors system components (switches, transformers, etc.) via direct transducerless connection.
- Registers digital events with 1 ms resolution.
- Directly connects to monitoring devices.

STATION COMPUTER

The station computer performs all the necessary functions for the supervision, management, automation, and maintenance of the station.
For high resilience of the system, station computer is equipped with a server in redundant hot backup configuration. Moreover, each server has a double power supply, HD in RAID configuration, and redundant ETH cards.

The main features:

- SCADA functions.
- HMI provides a comprehensive visualization of the entire station layout, including: real-time status, detailed alarms, live measurements, in-depth monitoring.
- Station automation functions configurable according to the IEC 61131 standard.
- Gateway functions for interfacing with remote management or maintenance centers or with any local RTUs via IEC 60870-5-104 protocols.
- Management of historical data for archiving and extracting the collected information, specifically, the chronological recording of events and perturbations of the electrical grid for subsequent offline analysis.

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