



CK.Proxy

Secure Data Exchange Gateway for Critical Infrastructure



A comprehensive, turn-key solution for secure data acquisition and exchange, providing flexible orchestration and intelligent routing of information flows across your energy assets.

Composition of the solution is determined by enterprise needs and provides the following functionality:

- Secure reception, exchange and retransmission of telemetry data and remote control commands from various devices and data acquisition systems
- Secure data exchange between control centers and energy enterprises

An integrated solution for secure data collection and exchange, flexible organization and routing of information flows at energy facilities

- Enabling secure remote control at critical infrastructure facilities.



RECEPTION, EXCHANGE AND RETRANSMISSION OF TELEMETRY



Problems Solved

- Enabling telemetry data exchange with any SCADA, FEP, RTU or CCPP systems, regardless of vendor
- Organizing telemetry information exchange in compliance with cybersecurity requirements, utilizing intermediate access layers (DMZ)
- Retransmitting telemetry data and remote control commands to neighbor control centers without data modification
- Converting data packets between various digital telemetry protocols
- Enabling data acquisition from AMI (Advanced Metering Infrastructure)

The screenshot displays the 'Information Exchange Monitor SK-11' interface. The top bar shows the server 'qa-prxdev-1' and user 'ck11service@PROXY.LOCAL'. The main window is divided into several panels:

- Information Exchange Structure:** A tree view on the left showing objects like 'NT104_SSSIM T11000 TS1', 'ASDU20000 General', and various RTU objects.
- Incoming Parameters:** A table showing data exchange details.

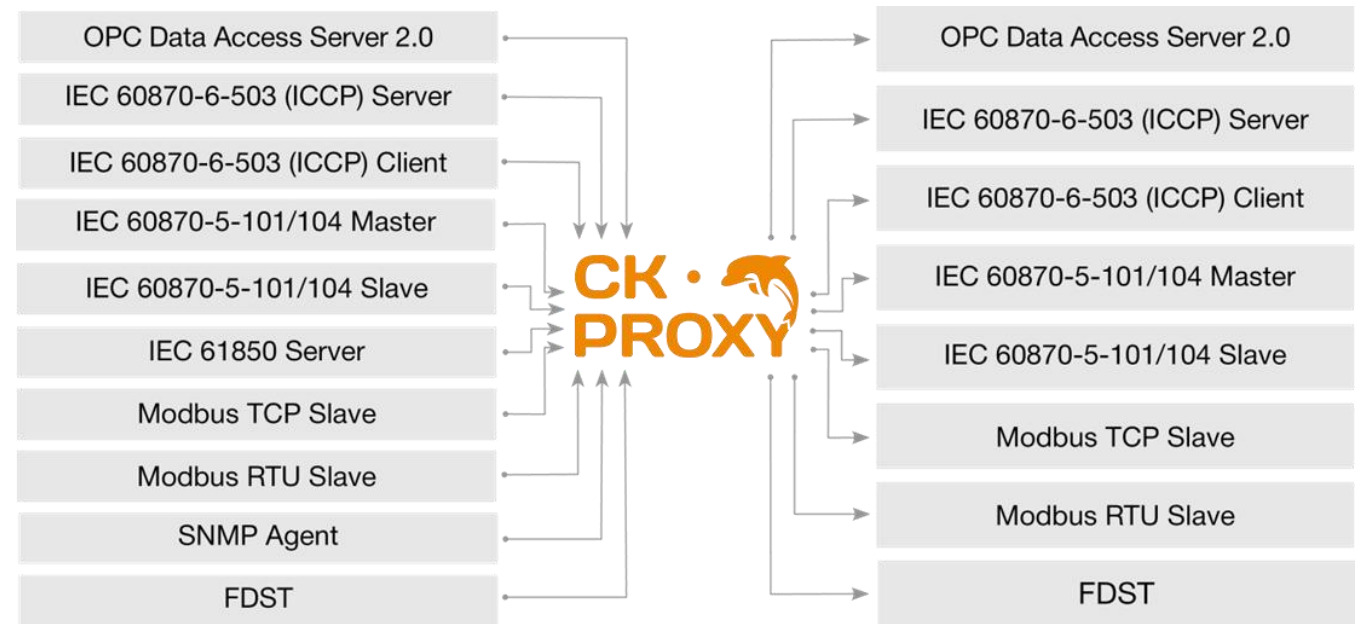
Name	Analog	Value	Quality	Coms	No Description	Address
<PS 35kV Novonadezhdenka> I VL 10 No.1	337	11:15:21:025	08:15:20:698	0x0	30	
<PS 35kV Novonadezhdenka> I VL 10 No.2	337	11:15:21:025	08:15:20:698	0x0	31	
<PS 35kV Novonadezhdenka> I VL 10 No.1	337	11:15:21:025	08:15:20:698	0x0	32	
<PS 35kV Novonadezhdenka> I BL 10 No.4	337	11:15:21:025	08:15:20:698	0x0	33	
<PS 35kV Novonadezhdenka> Рк. 10кв pese	337	11:15:21:025	08:15:20:698	0x0	34	
<PS 35kV Novonadezhdenka> Рк. 10кв pese	337	11:15:21:025	08:15:20:698	0x0	35	
<PS 35kV Novonadezhdenka> 10kV spare bi	337	11:15:21:025	08:15:20:698	0x0	36	
<PS 35kV Novonadezhdenka> 10kV spare bi	337	11:15:21:025	08:15:20:698	0x0	37	
- Channel Control:** A panel on the right showing channel status and values.

Channel Info	Adpec	Status	Values per Minute
10.81.146.113:52734	10.81.146.113:52734	Online, priority auto-select	Analog: 37168/min Discrete: 27262/min
10.81.146.113:52734	10.81.146.113:52734	Online, priority auto-select	Analog: 36864/min Discrete: 27271/min
- Information Exchange Structure (Bottom):** A table showing the mapping of objects to protocols.

Object	Type	Protocol
New Data Set for Transfer		ICCP
SAV MEC-101	UTM (RTU)	IEC101
No Description		
RTU 61850		61850
ICCP Reception	ICCP	ICCP
SAV SNMP		SNMP
SVAA MODBUS	UTM (RTU)	MODBUS
Telecontrol	UTM (RTU)	IEC104
Telecontrol Data Source		
SSSim_PolziScada		IEC104
SSSim_RTU	UTM (RTU)	IEC104
SmartNT_RTU		IEC104
SVAA IEC104 Slave	UTM (RTU)	IEC104

Functional Capabilities

- Support for international digital data exchange protocols
- Handling large volumes of simultaneous telemetry streams
- Secure retransmission of remote control commands
- Configuration directly within the SCADA environment
- Advanced monitoring capabilities for incoming and retransmitted telemetry and remote control commands
- Data buffering during communication link interruptions with the receiver
- Hot-standby hardware with instant, seamless failover



**SCADA
Cluster**



CK-PROXY



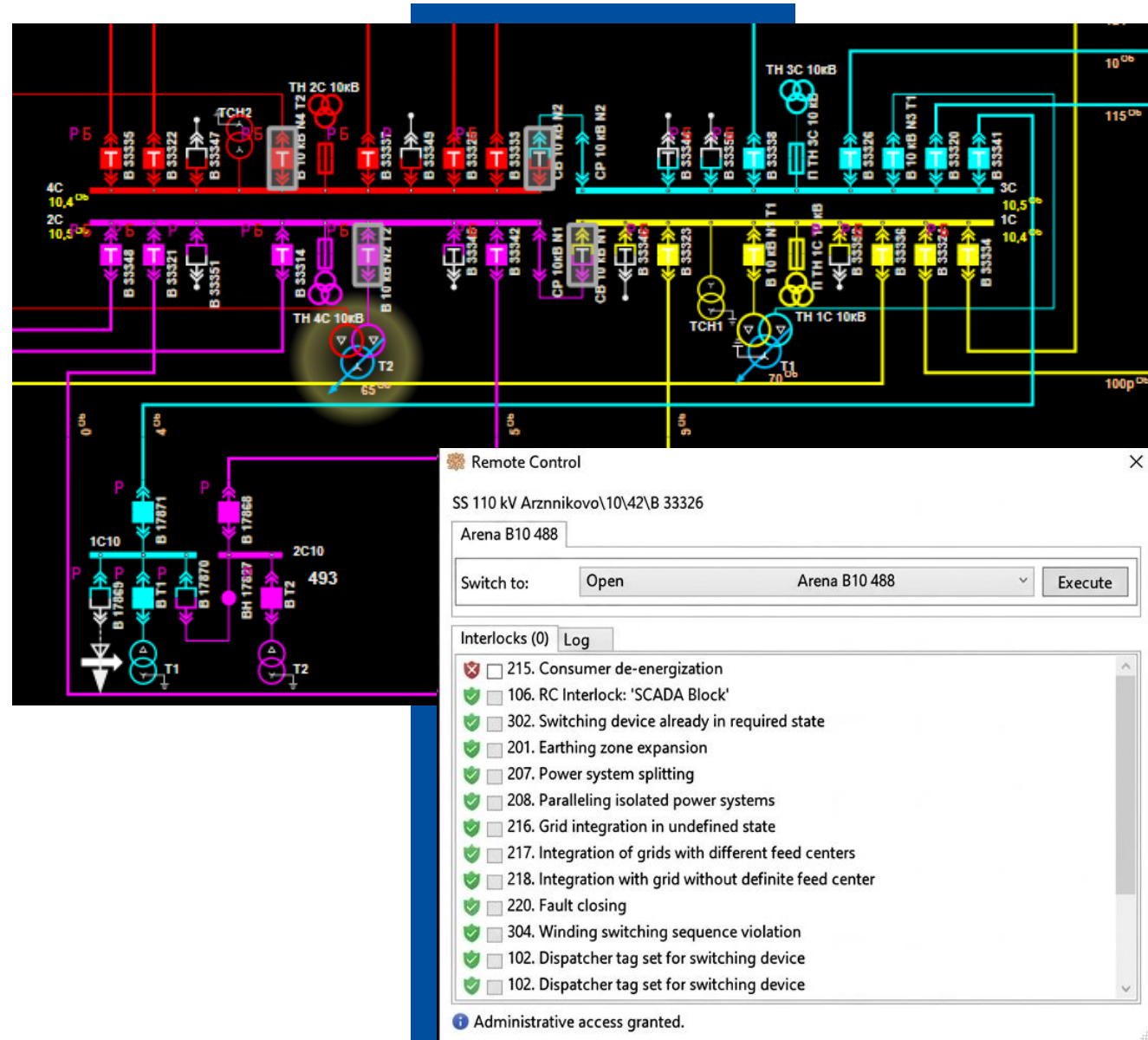


SECURE REMOTE CONTROL



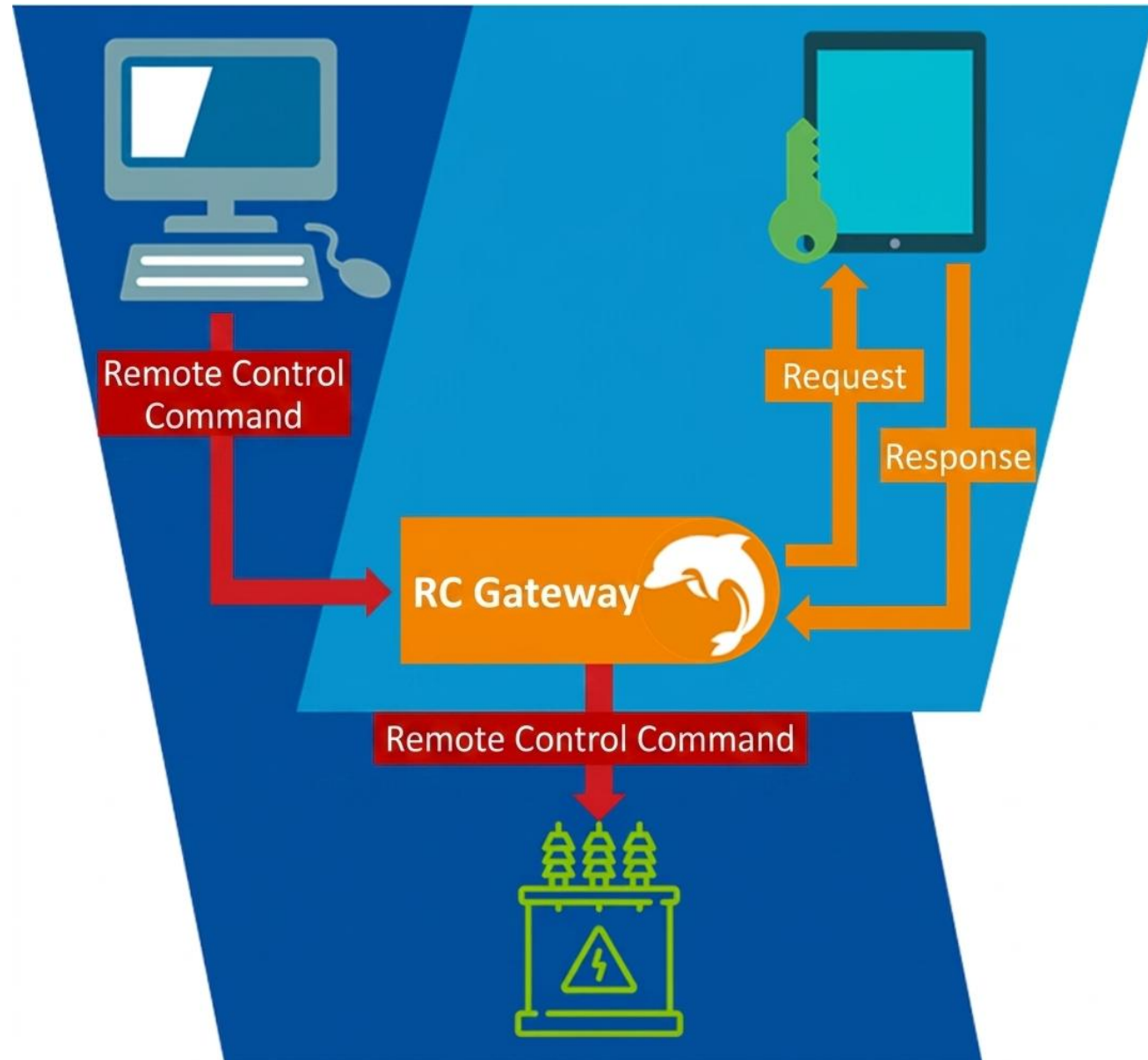
Problems Solved

- Enabling secure remote control at critical infrastructure facilities:
 - Multi-factor authorization of remote control commands issued from control centers
 - Separation of the remote control command confirmation mechanisms from the operational process control loop
- Reducing the scope of systems subject to categorization, and lowering the critical information infrastructure (CII) category assigned to the operational process control system and its individual components



Process Description

- Remote control commands are issued via the familiar SCADA dispatcher interface
- The issued command is forwarded to the secure CII protection circuit, where it is automatically cross-referenced against directories of permitted MAC addresses for available remote commands
- On a dedicated (auxiliary) device, the content of the remote control command is displayed for subsequent verification and authorization by the dispatcher
- Dispatcher identification is performed using a hardware token (USB token, smart card, or other key storage device)
- Bulk remote control operations are supported (e.g., switching orders)





THANK YOU FOR YOUR ATTENTION!

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