SCADA FOR ENERGY SYSTEMS

ES200
SUPERVISION, CONTROL AND COMMUNICATION RTU GATEWAY

www.epg.ro
We are a team of passionate engineers that love the IoT world and how it can improve our lives by making the things around us smarter.

**What we do**

We enjoy solving problems, but after we figure out the best way to fix an issue, we want to make sure it never occurs again. So, with experience in both SCADA and IoT fields, we develop reliable solutions for your needs.

**What drives us**

25 years ago, when Eximprod Grup was founded, no one could have predicted the future of communication. Sure, some people might have imagined that the way we communicate will change, but no one anticipated the huge impact the Internet will have on our lives.

Now we live in that future, where each day brings a new discovery. But every cutting edge technology has its own particular use, so there is no magical solution that can fix everyone’s problems. Many networks have a vast base of legacy and new devices, that use different communication methods. So we developed a solution that can connect all of them securely.

**Why chose us**

Our company grew developing solutions for the energy sector. And we decided to solve one of the problems we frequently encountered in this field: many networks have devices from multiple vendors, that use different communication protocols. So we developed a software that can connect all those different devices.

The reason we did this is because we believe that by putting things together, you get more than the sum of those things. There is strength in union and we love proving it to you. Allow us to empower your network by connecting all your devices and see how this can make your life easier.
Imagine if we could maintain the stability and reliability, while also empowering you to have the newest technology available.

**The challenge**

Nowadays, technology moves at a very fast pace. New solutions become obsolete after a short period of time, but the utilities field was never meant to be constantly upgraded and modified. People expect stability and reliability when it comes to their basic needs and networks. This is why equipment used in this field has a lifespan of at least 10 years. But innovation can really simplify the way we view the world around us.

**Our approach**

Every energy grid is different. Every renewable power plant has its own requirements. The oil and gas industry has particular needs. With a myriad of vendors to choose from, the equipment used today can vary greatly from client to client. So, we proposed versatility. We designed a software that allows you to connect SCADA to IT&C, regardless of equipment and protocols.

Our software can easily communicate with the devices used in the utilities industry and can seamlessly convert their data to the latest monitoring technology. Using its range of IT and OT protocol base (Modbus, DNP 3, IEC 60870-5-104/101, IEC 61850, OPC and MQTT), our software will match your existing equipment while allowing you to use cutting edge technology to improve your business.

**Benefits of the ES200**

- **Reduced Cost:**
  - It’s a multipurpose system, it has a small hardware footprint
  - We use a software defined infrastructure so you may upgrade instead of replacing
  - We offer interoperability with legacy systems from third-party vendors

- **State of the art integrated security**

- **Technological advantage over traditional SCADA hardware**
ES200 is a 4th Generation (Internet of Things) control, monitoring and data acquisition unit dedicated to applications in the utilities and industry field. ES200 is able to run, deploy and operate at the Network Edge, while securely isolating SCADA microservices from any other process. It enables data extraction, concentration, processing and storage by acting as a SCADA gateway. Using modern and secure communication and automation standards, the ES200 is designed to efficiently operate power grids, oil and gas devices, manufacturing units, smart city solutions and so on.

**Pick the hardware**

Our software runs in a docker container, so it can be uploaded on any IOx device, be it an industrial router or a simple computer. Whichever piece of hardware you want to use, the ES200 is ready to meet your needs.

**Pick the software**

Depending on your devices, we offer a great variety of communication options. Standard Communication Protocols (Modbus, DNP3, IEC 61850, IEC 60870-5-101, IEC 60870-5-104, OPC) and IoT Communication Protocols (LoRaWAN, MQTT) allow interoperability with any new or existing third-party equipment (protection relays, power quality devices, IEDs) and SCADA DMS dispatch. Master/Client communication protocols are available on both Ethernet (TCP/IP) and serial (RS232/485) connections.

**Order it!**

After you decide which hardware you want to run the ES200 on and which protocol you wish to use to communicate with your devices, just order your personal version!
ES200 USE CASE
FROM OT TO IT

Description
The ES200 was initially designed as a protocol gateway for the electrical energy industry. Focusing on the Enterprise OT, we developed an automation solution for power grids. But we saw the opportunity to expand to the whole utilities field, so we upgraded the ES200 to enable it to connect to cloud platforms like Cisco Kinetic or MindSphere. Now, our solution can deliver data to both OT and IT platforms, so it can bring your data wherever you need it.

Benefits
- Versatility – we offer a wide range of communication protocols and functionalities.
- Cost-effectiveness – one ES200 can connect multiple sensors and aggregate their data.
- Predictability – with constant monitoring of your devices, it can easily be determined whether some of them are not functioning properly and might need to be replaced.

Applications
- Aggregating data from multiple devices and sending to multiple command centers.
- Remotely monitoring assets and automatically taking actions based on user-defined conditions.
- Empowering infrastructures that require modern technologies.

Deployment

SCADA Edge Computing
ES200 on Cisco Ix

PROTOCOLS
Modbus/DNP3/IEC 6-850/MQTT/IEC 104/OPC-UA

Field equipment

Enterprise OT

Enterprise IT

MindSphere
IBM Cloud

SCADA command center
ES200 USE CASE
USING ES200 WITH CISCO KINETIC

Description
ES200 is an open platform and framework, ready to combine the power of the Cisco Kinetic with our SCADA Edge Computing. With a rich history in the energy field, the ES200 uses SCADA functions and protocols to gather and process data from multiple pieces of industrial equipment. Now, it can bring that data into the Cisco Kinetic environment, enabling automatic control over your equipment.

Benefits
- **Aggregation** – one ES200 Unit can connect to multiple devices and collect data from them all.
- **Pre-processing** – the ES200 can apply user-generated formulas on the data it gathers before sending it to the Cisco Kinetic platform.
- **Adaptability** – offering a wide range of communication protocols and data handling functions, the ES200 can communicate with already existing legacy and modern devices.

Applications
- Collecting and processing data from multiple devices.
- Monitoring assets based on user-defined conditions.
- Empowering infrastructures that require SCADA and IT technologies.

Deployment

![Diagram showing ES200 on Cisco Ix with PROTOCOLS: Modbus/OPC-UA, BACnet/OPC-UA, etc. Connected to Enterprise IT and Enterprise OT with Cisco Kinetic.]
**ES200 USE CASE**

**RENEWABLE ENERGY**

**Description**

With a rich history in the energy field, the ES200 provides reliable and secure SCADA connectivity, data normalization and data aggregation. Our device can gather and transform raw data from your sensors into useful information. Together with the command feature that allows for remote and automatic control, the ES200 can help you manage your windmill park or hydroelectric dam in a more predictable way.

**Benefits**

- **Small investment** – one ES200 unit can connect to multiple sensors.
- **Easy installation** – offering a wide range of communication protocols, the ES200 can communicate with already existing equipment.
- **State of the art security** – together with the Cisco Iox, the ES200 can establish the safest connections on the market.

**Applications**

- Monitoring a wide range of parameters.
- Permanently sending status information about monitored equipment.
- Collecting data from multiple sensors and processing it based on user-defined rules.

**Deployment**

- SCADA Edge Computing ES200 on Cisco Iox
- Hydroelectric dams
- Windmills
- Solar panels
- Offshore/Enterprise IT
ES200 USE CASE
USING LORAWAN FOR REMOTE COMMUNICATION

Description
When devices that should be connected to an aggregator are scattered around a large area, it is not feasible to physically connect them to a central equipment. Our solution can communicate with scattered devices by using LoRaWAN technology. This allows you to remotely command and gather data from your pieces of equipment, regardless of their location.

Benefits
- **Fast deployment** – you can use one single ES200 to connect to multiple scattered sensors.
- **Security** – data travels in an encrypted format between the sensors and the ES200.
- **Configurable** – with a payload decoder that you can customize, any LoRaWAN device can send data to the ES200.

Applications
- Aggregating data from industrial devices installed in remote locations.
- Maintaining connectivity with devices that often change their location.
- Empowering infrastructures that use LoRaWAN technologies.

Deployment

![Diagram showing LoRaWAN Application Server, SCADA Edge Computing ES200 on Cisco I0x, PROTOCOLS Modbus/DNP3/IEC 60870-5-104/OPC-UA, Enterprise IT, MindSphere, IBM Cloud, Enterprise OT, SCADA command center.]
ES200 USE CASE
USING LORAWAN AS BACKUP FOR GPRS

Description
If the GPRS signal strength is not good enough for data transmission, the ES200 can switch to using LoRaWAN technology as a backup for communication. This way the data from your devices will arrive at its intended destination regardless of GPRS coverage. LoRaWAN can also function as an alternative for GPRS, if you want to use it as your primary means of data transmission.

Benefits
- **Never lose connectivity** – you will always be able to communicate with your devices.
- **All in one solution** – GPRS and LoRaWAN communication are both features of the ES200.
- **No configuration required** – ES200 can automatically switch between GPRS and LoRaWAN, depending on signal strength.

Applications
- Industrial equipment installed in remote locations
- Devices that are designed to change their location often

Deployment

![Diagram of SCADA Edge Computing ES200 on Cisco Iox with GPRS and LoRaWAN backup connections to Enterprise IT and MindSphere/IBM Cloud.](image)
ES200 USE CASE
OIL & GAS INDUSTRY

Description
With a rich history in the energy field, the ES200 provides reliable and secure SCADA connectivity, data normalization and data aggregation. Our device can gather and transform raw data from your sensors into useful information. Together with the command feature that allows for remote and automatic control, the ES200 can help you manage your oil pumps or mining platforms in a more predictable way.

Benefits
- **Customizable** – offering a wide range of communication protocols and data handling functions, we can connect to your existing devices and offer multiple functionalities.
- **Reduced cost** – the ES200 can connect to multiple sensors.
- **State of the art security** – together with the Cisco IOx, the ES200 can establish the safest connections on the market.

Applications
- Aggregating data from multiple devices and sending to multiple command centers.
- Automatically sending commands based on user-defined conditions.
- Monitoring energy consumption levels.

Deployment

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SCADA Edge Computing
ES200 on Cisco IOx

**PROTOCOLS**
Modbus/DNP3/IEC 61850/MQTT/IEC 104/DPC-UA

Enterprise IT
MindSphere
IBM Cloud
Kinetic

Oil & gas field operations

Enterprise OT
SCADA command center