INGESAS IC3 consists of a high-performing gateway designed for substation environments, providing high reliability and availability thanks to the various redundancy mechanisms that it offers.

Its main functions are as follows:

· **Collects** all the substation information (alarms, states, measurements, counters, etc.) and **sends** it to different control centres, following telecontrol standards.
· **Receives commands** and set points from different telecontrol centres and transmits them to the corresponding IEDs.
· Performs **general logic operations** at substation level, receiving the necessary information from the IEDs at bay level.
· These logic operations are developed using IEC61131-3 compliant tools.
· It provides the most recent cybersecurity features such as: firewall, cryptographic techniques, role-based access, user accounts control...
· Acts as a **synchronisation pattern** for all the devices connected to the communications network via the SNTP protocol.

**Software**

All the equipment in the INGEPAC™ family can be accessed using powerful software tools developed by Ingeteam and which run on Windows®. The application software is specifically designed for simple and user-friendly access to the equipment.

**Substation Automation**

INGESAS™ IC3 is able to manage the following communication protocols:

· IEC 61850 Client and Server
· IEC 61400-25 Client and Server
· IEC 60870-5-101 Master and Slave
· IEC 60870-5-104 Client and Server
· IEC 60870-4-103 Master
· DNP 3.0 Master and Slave
· MODBUS RTU / TCP Master and Slave
· PROCOME Serial / TCP Master
Advantages

- Can be configured with IEC 61850 compliant tools
- One single device makes it possible to centralise all of the information for different main telecontrol centres, whilst also managing different protocols
- The information sent to each telecontrol centre can be configured
- Logic programming is carried out using IEC 61131-3 compliant tools
- Allows redundancy in devices, communications and power supply improving the system’s overall availability
- Easily expandable database, being possible to add new IEDs to the system simply and securely
- The device incorporates a firewall functionality through which any port communications can be blocked

Basic features

- 4 Ethernet ports, 2 individual and 2 switched with 2 inlets each (6 connectors)
- 2 RS232/RS485 serial ports
- Synchronization through IEEE1588, IRIG-B input, SNTP or telecontrol protocols
- USB front port
- Alphanumeric display
- 11 signalization LEDs, plus 5 status LEDs

Options

- PRP/HSR redundant network connection module
- RS232/RS485 or Fibre Optic serial ports up to 21
- Redundant power supply
- Digital input / output modules, up to 56 inputs and 21 outputs