



# HIRSCHMANN

A BELDEN BRAND

## Case Study

### CS 117HE

#### iGrid

Working with iGrid, a Telecontrol Systems manufacturer based in Barcelona, Spain, Belden created a technology breakthrough by applying Hirschmann™ Embedded Ethernet Switches EES25 to provide near drop-in Ethernet functionality. This dramatically decreased the time it took to develop a state-of-the-art Ethernet-enabled product.



**iGrid has introduced a new range of iRTU E Bay Controllers, offering state-of-the-art switch technology that supports seamless Ethernet redundancy. These iRTU telecontrol units combine excellent performance with the advanced functionality of Hirschmann™ switches to provide a modular, flexible and economical solution for substations. The OEM module includes HSR/PRP technology compliant with IEC 62439-3 (2012), providing seamless redundancy for mission critical application networks.**

- **Space saving:** compact design fits in the small RTU for MV (Medium Voltage) and HV (High Voltage) cells in distribution substations.
- **Cost efficiency:** six Fast Ethernet ports allow for the inclusion of switching capability in the RTU, reducing the number of devices in the telecontrol network.
- **Remote monitoring:** the RTU can be monitored remotely using HiVision software. This makes it possible to know the status of all devices in the network as well as the traffic at each port of the RTU.
- **Excellent installation support:** detailed documentation available.
- **Reduced time to market:** allowing OEMs to focus on other tasks and avoid delays.
- **Low risk:** fixed per unit cost reduces initial investment.

Many utilities are now ready to transform their networks from serial to Ethernet-based communications and flexible IEC 1850-compliant intelligent electronic devices (IEDs) are becoming widespread. However, integrating Ethernet technology from the ground up into critical substation systems is no easy task. It requires an open and flexible architecture that allows network infrastructure to adapt to current and future needs. After all, properly functioning automation systems are critical to good control of the electrical grid.

Hirschmann™ Embedded Ethernet EES25 switches have six Fast Ethernet ports that can be configured for either 10/100 BASE TX or 100 BASE FX. They also offer extensive management and filter functions plus a variety of redundancy protocols and port security. In addition, the Hirschmann™ EES25 supports precise synchronization as per IEEE 1588v2, plus PRP (Parallel Redundancy Protocol), which guarantees uninterrupted data communication.

Both versions can be integrated into the Hirschmann™ network management software Industrial HiVision.

#### System Requirements

- Redundancy protocols RSTP and MRP plus PRP (EES25)
- Precise synchronization as per IEEE 1588v2 (EES25)
- Extended temperature range from -40° to +85°C
- Compact construction (88 x 13 x 60 mm)
- IEC 61850-3 compliance (immunity to EMI)
- High levels of reliability and availability)

**Be certain.  
Belden.**



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## Belden® Solution

### Why Belden?

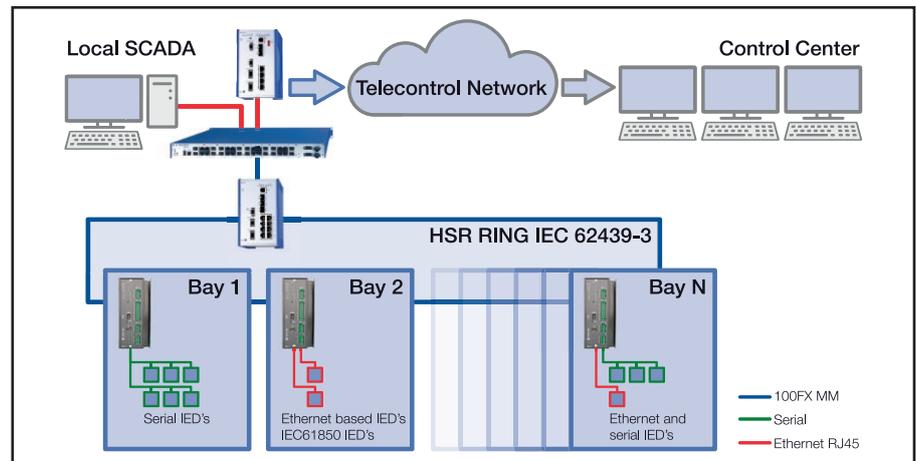
Hirschmann™ embedded Ethernet switches provide almost “drop-in” Ethernet functionality and dramatically decrease the time it takes for an automation component manufacturer to migrate an in-production design into a state-of-the-art Ethernet-enabled product. Component designers are no longer required to master a different technology (Ethernet), and can instead focus on their area of expertise. Not only do component manufacturers win from a time-to-market standpoint, but embedded Ethernet switching is considered a benefit to OEMs and their customers because it reduces the footprint of a solution in facilities where space is at a premium, and it saves in cost and complexity. (Lower design risks and increased perceived value to the customer make a powerful combination.)

The product is applicable from Electric Power Transmission to Distribution, to SmartGrid applications and control systems in Renewable Power Plants. The product is also suitable for use in Generation Plants for Scada systems and in other markets such as Intelligent traffic systems (ITS), as well as Rail or Water remote control systems. With a HSR network, substations can be expanded just chaining Bays, without affecting the current network.”, said David Bru, CTO of iGrid.



“From our very first meeting with Belden, we realized that this module was exactly what we had been looking for as it complied with all substation requirements. During the integration process, we received the necessary documentation and support from Belden to complete a successful integration in a very short time. This allowed us to focus on other activities around the launch of the product into the market.”

– Ferran Bohigas  
General Manager iGrid



With HSR technology substations networks can be expanded just chaining bays without affecting the current network.

### About iGrid

As an innovative Telecontrol Systems manufacturer, iGrid sets out to be a reference global player in the automation of the next generation of energy grids. It does so by helping utilities to automate their energy infrastructure, from power generation to secondary distribution grid. [www.igrd-td.com](http://www.igrd-td.com)

### Product Details

Hirschmann™ Embedded Ethernet EES25 switch

- Six Fast Ethernet ports that can be configured for either 10/100 BASE TX or 100 BASE FX
- Extensive management and filter functions plus a variety of redundancy protocols and port security
- Supports precise synchronization as per IEEE 1588v2, plus PRP (Parallel Redundancy Protocol) which guarantees uninterrupted data communication
- Both versions can be integrated into the Hirschmann™ network management software Industrial HiVision

