

Case study

AEW Energie AG

RTU520-based monitoring and control for substations

Cost-effective remote monitoring of a secondary transformer station

The increasing utilization of renewable energy sources is changing the behavior of electrical distribution networks, such that the network is becoming potentially less stable.

This requires closer monitoring and control of the network than in the past. The increasingly complex power flows in the network must be taken account of in the network control system.

The customer

The Swiss utility AEW Energie AG based in Aargau is responsible for operating and maintaining a large number of substations as well as the medium- and low-voltage networks in its region.

Challenges

AEW commissioned Hitachi Energy Switzerland to develop, engineer and commission a concept for monitoring a secondary transformer station. The solution needed to be price-wise competitive and future-proof, being the basis for extending further transformer stations, which must be refurbished in the future.



Hitachi Energy solution

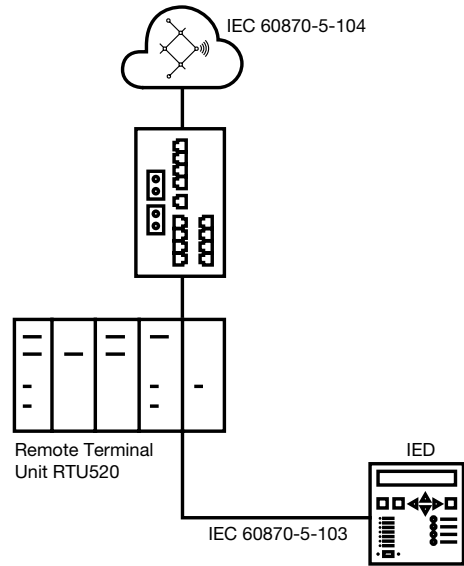
Hitachi Energy offered a cost-effective solution that monitors the transformer station remotely. Important information such as the status of the control and protection IEDs is made available to AEW's control system in real-time. Additionally, commands to the relays can be sent remotely from the control system. Common alarms are hard-wired to the binary input card and also sent to the control system.

Customer feedback

The customer AEW says that Hitachi Energy has provided them with cost-efficient solution for transferring digital and analog values from digital protection devices (IEDs) in transformer stations to their SCADA system.



01 Ready to install wall-mounted cabinet



02 System overview

Hitachi Energy scope of delivery

- RTU520 Remote Terminal Units
- Integration of protection IED's with RS-485 communication (IEC 60870-5-103)
- Ethernet Switch for the IEC 60870-5-104 communication to the control system
- Binary input card for common alarms
- Wall mounted cabinet
- HW schematics
- Option: Remote control and status supervision of the primary equipment with digital I/O modules.

The RTU product family allows a modular design which maximizes the possibilities to maintain and extend the system. The finalized solution is fully configured, wired and tested by Hitachi Energy and delivered ready to be installed.

Customer advantages

- Future proof system with easy and fast extension options for further projects
- Increased grid visibility enabling AEW to take the right decision at the right time
- The solution allows for operational cost reductions, as the transformer can be monitored and controlled remotely
- Cost effective solution thanks to the small and compact RTU520