CONDIS®

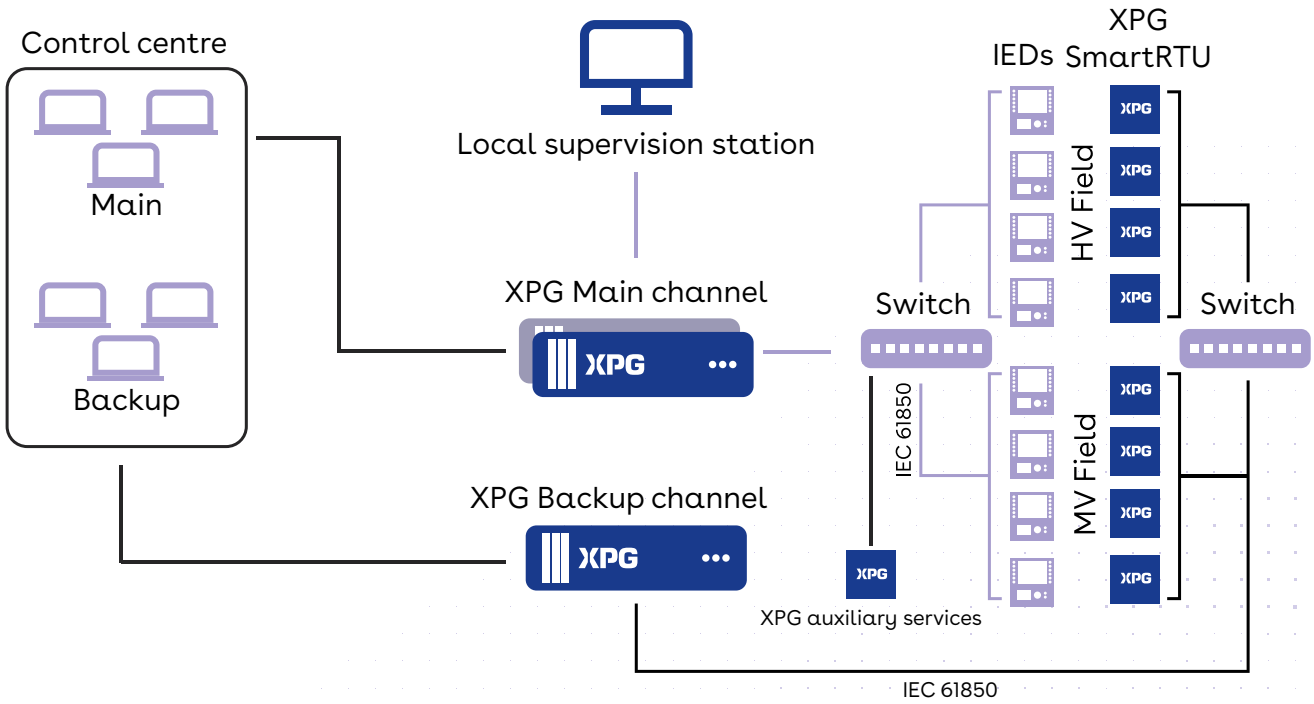
Reference Sheet

Grid Control

IEC 61850 Substation - Romande Energie

Context

Romande Energie, a DSO operating in Western Switzerland, is a key player in the national energy sector. As an early adopter of the **IEC 61850** standard, the company has implemented a structured **top-down engineering** process, progressively rolled out since 2009. For over 20 years, Romande Energie has used **XPG** in many of its distribution and generation facilities to exchange data with its control centre and external partners. This reference sheet focuses on the use of XPG in **HV and HV/MV substations**, where it supports multiple functions and has met the evolving needs of digitalisation and IEC 61850 standardisation.



Main gateway (RTU)

XPG collects signals from substation equipment (IEDs, transformer and coil regulators, auxiliary system PLCs, centralised remote control, etc.) using various protocols and transmits them to the remote-control centre.

Key features

- Protocol conversion
- Signal grouping and processing
- Data formatting
- Configuration via an IEC 61850 SST/SCT engineering tool

XPG is deployed on **qualified industrial servers**.

CONDIS®

Reference Sheet

Grid Control

Supervision (HMI)

SCADA and HMI modules of XPG, hosted on the same servers as the main gateway, provide full substation supervision. With StreamViewBox, there is no need for dedicated office PCs. Supervision stations can be flexibly placed or moved within the substation as needed.

Auxiliary & general services

On a compact industrial PC with I/O cards, XPG manages :

- Physical access, command rights and alarm systems
- Monitoring of primary equipment, building systems and specific functions

Backup gateway (RTU)

Romande Energie applies a fully decoupled backup path concept, starting from the primary system. A dedicated XPG gateway collects essential signals (switchgear positions, key measurements, alarm groups) and transmits them to a backup control centre. At the backup control centre, an XPG application is also used as a SCADA system.

Smart RTU in bays

For the backup path, XPG is deployed in each bay on compact industrial PCs with I/O cards. These modules collect signals in parallel with the IEDs and send them to the backup gateway. XPG acts as an IEC 61850 MMS server, seen as an IED by the backup gateway, simplifying configuration via the SST/SCT tool.

Automated collection of distrubance & power quality files

Romande Energie has deployed a dedicated XPG solution for the automatic collection of COMTRADE and PQDIF files, along with event logs, measurements, and alarms. This data feeds a third-party centralised analysis system used by operations engineers.

Collaboration

Romande Energie and CONDIS have built a long-standing collaboration. Romande Energie's engineers actively contribute to the development of the XPG solution, which has helped them strengthen their expertise and improve both project execution and maintenance efficiency. On its side, CONDIS provides technical support, helps define standards, and ensures effective knowledge transfer.

Find related content
in our library