



## Customer

**ELIA Group NV** with headquarter in Brussels (Belgium) is a Belgian TSO. Elia is Belgium's high-voltage transmission system operator (30 kV to 400 kV), operating over 8,867 km of lines and underground cables throughout Belgium. With two TSOs – Elia in Belgium and 50Hertz in Germany – Elia Group is one of Europe's five leading transmission system operators. We are also a partner in the joint venture Nemo Link and provide consultancy services through Elia Grid International.

## Application

Back in 1997 ELIA was looking after a digital voltage regulator to standardize it in their substations. Before they used analog voltage regulators from ABB, SIEMENS and GOSSEN. Parallel operation with more than 2 regulators was very important. With the use of the E-LAN bus and E-LAN boosters we were able to connect up to 5 regulators over a cable distance of 10 km. Since 2018 we offer communication over ethernet.

Because we could find a solution with the back-up card, the watchdog function with the digital indicators ELIA standardized our solution for whole Belgium.

SCADA communication is not required at the moment but in 2010 we supplied some test systems with REG-PE and IEC61850. The newest 19" racks are already prewired for future expansion with REG-PE communication cards.

## Technical Solution A. Eberle

In 1997 we developed together with ELIA a 19" rack with a REG-D, back-up card and 2 digital limit relays indicators. The back-up card allow the customer to regulate the tap changer manually. The relays of the 2 limit switch indicators are in series with the higher and lower contact of the REG-D and are used as blocking contacts in case the REG-D module would fail. In the newest version we developed with ELIA, the rack is already prewired for SCADA communication.

- 1) Digital Voltage Regulator REG-D for OLTC in all substations.
- 2) Back-up card for manual regulation
- 3) Digital indicators as watchdog for REG-D and local voltage measurement (primary- and secondary voltage)

## Customer Feedback

ELIA is very happy with the REGSys. It fits for every application, even when REG-D should communicate over a long distance. The background programs help to realize special functions or applications (alarm contact when the circulation current (I<sub>kr</sub>) is too high).

Installations: **>1000 systems**  
Customer: **TSO**  
Country: **Belgium**  
Date: **08/2022**

