



Case studies

# SACE Emax 2 IEC 61850 integration with MV systems

## The customer

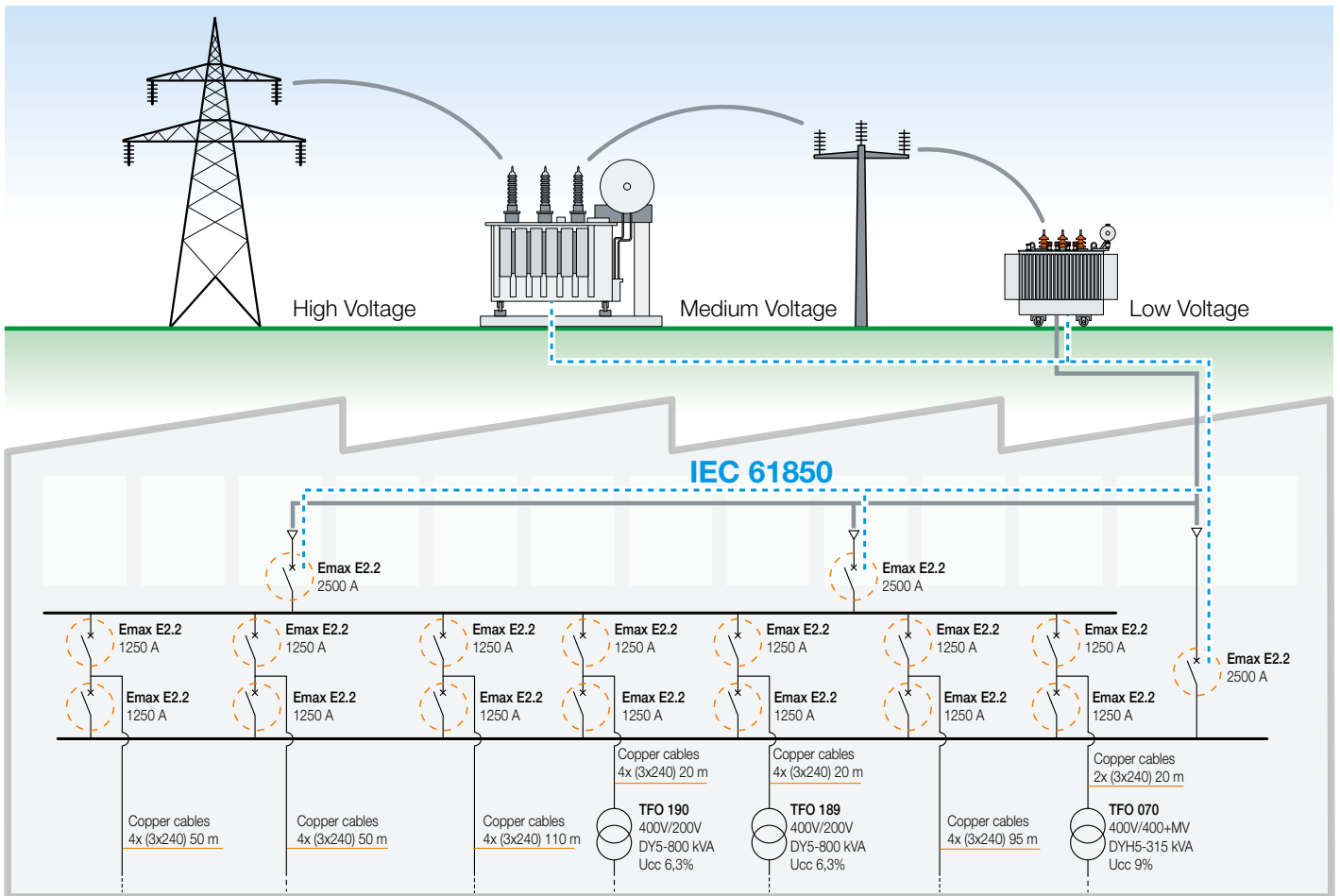
SolVin is an uncontested leader on the vinyl market. Currently owned 75% by Solvay and 25% by BASF, SolVin covers the entire vinyl chain, from salt to chlorine and soda through dichlorethane, PVC and vinyl.

SolVin products are sold from manufacturing plants in Belgium, Germany, Italy, France and Spain and through commercial agencies elsewhere in Europe and on export markets.

## The challenge

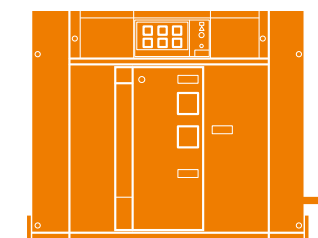
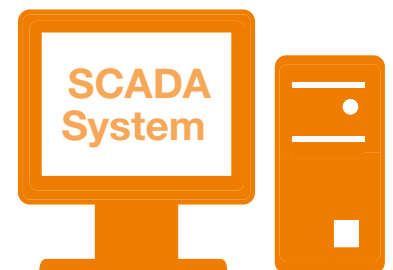
PVC plant in Jemeppe needed to upgrade the LV side of the electrical plant, so that it could be fully integrated into IEC 61850 protocol used in MV switchboards. Not only customer needed to monitor status and parameters from air circuit breakers installed in the LV switchboards, but also to control them remotely and to interlock them with MV ones.

Jemeppe plant was aiming at a higher system productivity, by avoiding protocol converters, and an increase of safety for technicians thanks to remote control for air circuit breakers.



MV-LV integration thanks to IEC 61850 Standard

**100%**  
supervision of the plant  
without additional devices.



Thanks to Ekip Com IEC 61850 module, LV Air Circuit Breakers could be integrated into existing HV-MV SCADA system with no need for additional converters or protocols to be used

## ABB solution

SACE Emax 2 is the only LV circuit breaker that can be integrated into an automated system of electrical substations based on the IEC 61850 standard, with no need for external interface devices. A specific communication module, Ekip Com IEC 61850, is available for Emax 2 circuit breakers, so that data can be exchanged between circuit breakers and MV SCADA system and among different protection devices on LV and MV side.

Jemeppe plant needed to interlock MV circuit breakers with main air circuit breakers in LV switchboard, so that, in case of fault on LV side, MV side would not be affected. Emax 2, fitted with Ekip Hi-Touch trip unit and Ekip Com IEC 61850, is able to detect a fault and to send a GOOSE message to the MV circuit breaker upstream the MV/LV transformer not to open. Ekip Com Actuator made Emax 2 opening and closing operations from remote possible completing the full supervision of the plant via SCADA system.

Thanks to IEC 61850, high baud rate and no protocol converters contribute to design a more efficient communication system. In addition to this, GOOSE messages are 30% faster than any other hardwired control solution.

# 30% FASTER

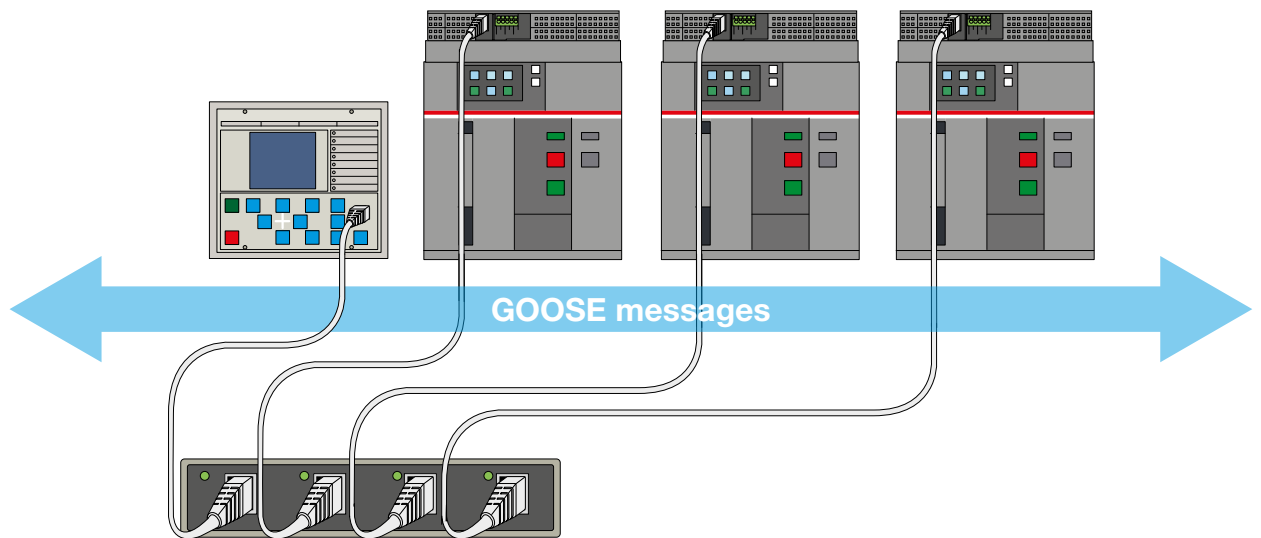


ABB solution for the first Jemeppe plant was to retrofit ABB Megamax air circuit breakers in the existing switchboards with Emax 2. In each Power Center three E2.2 2500A, equipped with Ekip Com IEC 61850 modules and Ekip Com Actuator, are now able to communicate with existing SCADA system and to be remotely operated.

## This solution requires the following accessories:



E2.2H 2500, 3 poles with Ekip Hi-Touch LSIG

Ekip Hi-Touch is a high-performance multifunction unit able to protect even the most complex electrical installations. With SACE Emax 2 retrofitting kits, ABB Low Voltage Breakers extends the product offering and gives customers the opportunity to immediately take advantage of the benefits of the Emax 2 circuit-breaker.



Ekip Com IEC 61850

The solution for integrating SACE Emax 2 circuit-breakers into the automated systems of electrical substations based on the IEC 61850 standard without the need for complex external devices.



Ekip Com Actuator

Ekip Com Actuator module enables SACE Emax 2 circuit-breakers to be opened and closed remotely. Ekip com Actuator is compatible with all Ekip Com modules.

# Contact us

For more information please contact:

**ABB SACE**

**A division of ABB S.p.A.**

**L.V. Breakers**

Via Pescaria, 5

24123 Bergamo - Italy

Tel.: +39 035 395 111

Fax: +39 035 395306-433

**[www.abb.com](http://www.abb.com)**