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Group**

**IEC 61850 Interoperability  
Demonstration**

August 26-31, 2018

CIGRÉ Session 47

Stand #335

Palais des Congrès, Paris, France

The UCA International Users Group (UCAIug) is once again sponsoring an IEC 61850 interoperability demonstration at the CIGRÉ Session in Paris, France on 26-31 August 2018, Stand #335. This is the 7<sup>th</sup> consecutive CIGRÉ Session that members of the UCAIug and the IEC 61850 Users Group have gathered together to present the power and flexibility of the IEC 61850 standard including:

- **Live IEC 61850 Multi-vendor Interoperability Demonstration** of products from Platinum sponsors including relay test/simulation systems, protection relays, simulated servers, HMI/ clients and a proxy server.
- **Fully Simulated Faults** using multi-vendor process bus merging units and protection relays with GOOSE and client/server communications.
- **In-Booth Presentations** from Platinum and Gold sponsors on the latest in IEC 61850 technical advancements and applications.

# Interoperability Demonstration - Breaker Failure application using IEC 61850 GOOSE



IEC 61850  
Users group



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## Breaker Failure Demonstration

1. Devices and applications are configured via a Substation Configuration Description (SCD) file generated using a System Configuration Tool (SCT) and IED Configuration Tools (ICT) supporting the IEC 61850-6 SCL standard.
2. An intelligent merging unit with protection functions (IMU) and two relay test sets acting as merging units are programmed to simulate a current fault by publishing sampled value signals over a VLAN segregated process bus.
3. Protection relays are subscribed to the process bus signals and will detect the fault conditions and initiate an internal breaker operation to protect the system.
4. When the programmed breaker operation fails the IED will send a GOOSE message with the breaker failure status (RBRF.OpEx) that is subscribed to by all the other IEDs, both simulated and real, in the system.
5. When the other IEDs receive that breaker failure status they will all open their breakers showing multi-vendor interoperability using GOOSE over a switched VLAN Ethernet network.
6. The signal exchange service level is verified and displayed via process bus and station bus message subscription statistics

## IEC 61850 Interoperability Demo Architecture

