



## Booth Participants

### Diamond



### GOLD



### Silver



## UCA International Users Group

### IEC 61850 Interoperability Demonstration

August 24-29, 2014

CIGRÉ Exhibition

Booth #370

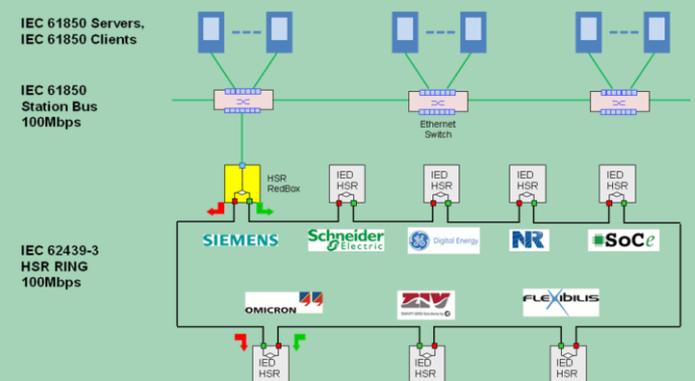
Palais des Congrès, Paris, France

The UCA International Users Group is sponsoring an IEC 61850 interoperability demonstration at the 2014 CIGRÉ exhibition in Paris, France on 25-29 August, Booth #370. There are two main topics of the demonstration:

- HSR Network Redundancy according to IEC 62439
- Breaker Failure application using IEC 61850 GOOSE

### HSR Network Redundancy Demonstration:

The IEC 62439-3 standard provides zero recovery time in case of failure thus fulfilling the most demanding real-time requirements of substation automation. Using IEC 62439-3 all end nodes have two Ethernet ports each sending the same data over two independent links. Because the data is always available to the receiver via at least one of the two ports, no topology re-configuration is required to recover from communication failure on any one port/link. The High Availability Seamless Redundancy Protocol (HSR) applies the principle of parallel operation to a ring of bridging nodes interconnected by full-duplex links to provide instantaneous recovery to a single port/link failure.



IEC 62439-3 HSR Network Redundancy Interoperability Demonstration at UCAIUG Booth

# Interoperability Demonstration - Breaker Failure application using IEC 61850 GOOSE



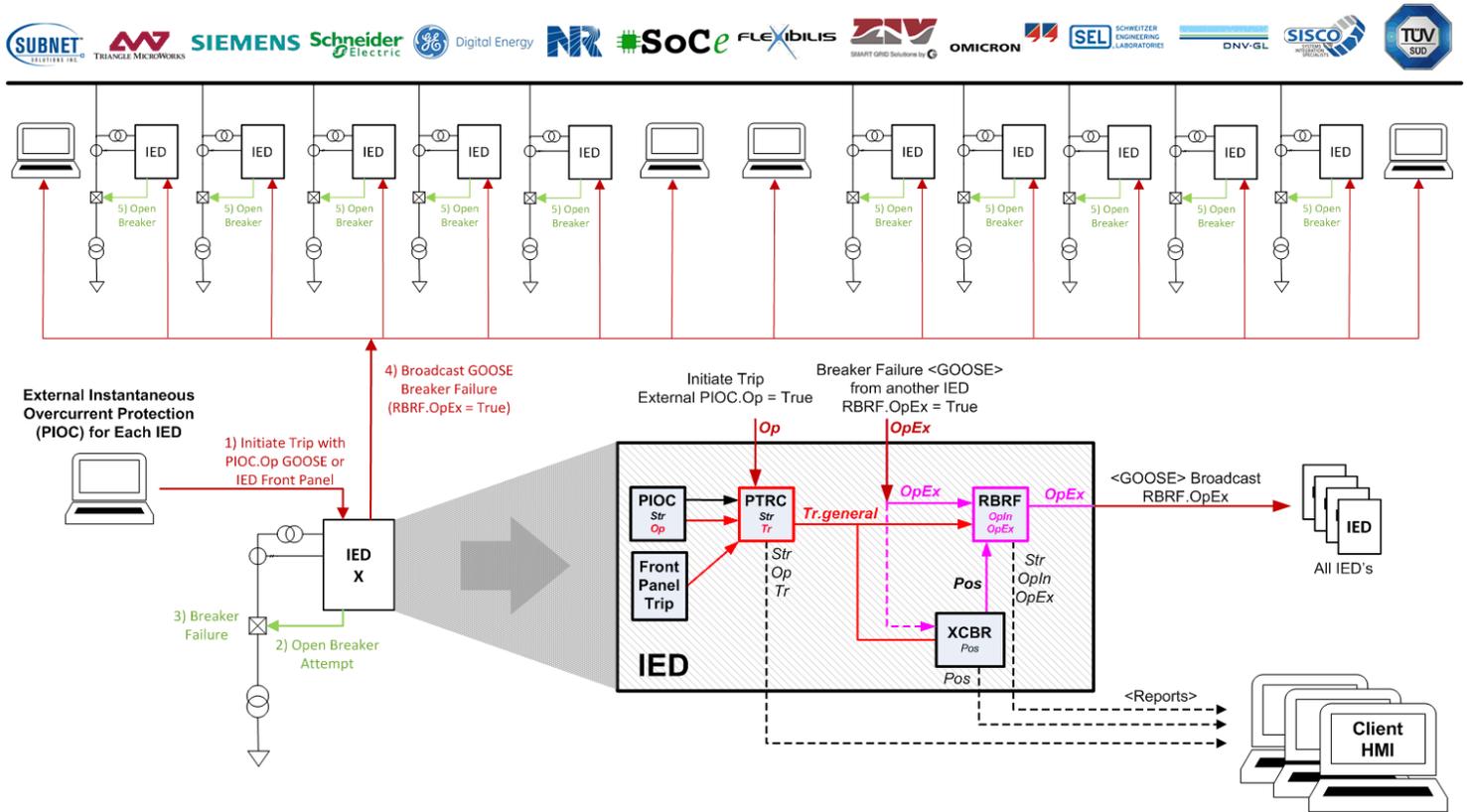
## Background

The IEC 61850 standards define a new approach for communications that promises to deliver increased productivity, better performance, new capabilities and interoperability for multi-vendor power system automation systems. IEC 61850 is field proven in many hundreds of substations world-wide. ENTSO-E members have acknowledged the benefits of IEC 61850 while identifying gaps in the specifications that make implementation of multi-vendor systems more challenging than they should be. The IEC 61850 Users Group of UCAIug, the IEC working groups and the ENTSO-E IEC 61850 Task Force have been working together to identify and fill these gaps. The IEC 61850 Breaker Failure Demonstration at the CIGRÉ Session 2014 in Stand #370 is a demonstration of the results of that cooperation that is leading towards improving interoperability of IEC 61850 based multi-vendor systems.

Please come in and take a test drive of IEC 61850 by visiting the various displays to take a look under the cover at how multi-vendor interoperability can work for you.

## Breaker Failure Demonstration

1. There are 3 applications that are programmed to simulate an external current fault by publishing a single GOOSE dataset containing the status of 14 PIOC logical nodes.
2. Each IED in the demonstration is configured via a Substation Configuration Description (SCD) file to subscribe to the GOOSE message and use one of the specific PIOC operate status bits to trigger a breaker operation.
3. When the programmed breaker operation fails in a given IED it will send a GOOSE message with the breaker failure status (RBRF.OpEx) that is subscribed to by all other IEDs.
4. When the other IEDs receive that breaker failure status they will all open their breakers showing multi-vendor interoperability using GOOSE over switched Ethernet network based on RSTP and HSR redundancy.
5. In addition to those devices and applications you will also find client applications, test software, simulators, network monitors and much more by visiting the various stands in the display area.



IEC 61850 Breaker Failure Demonstration – Application Diagram