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## Technical Papers Covering IEC 61850

Bruce Muschlitz, NovaTech Staff Research Engineer, has recently presented two papers, and will be presenting a third, covering various aspects of IEC 61850. The first was given at the Georgia Tech Fault and Disturbance Analysis Conference on April 27th titled "Multi-vendor Distributed Recorders Using Standardized IEC 61850 GOOSE Communication." A second paper "IEC 61850 Interoperability: The Good... the Bad... and the Ugly" was presented at the PAC World Conference 2015 in Glasgow, UK on June 30th. A third paper to be presented at the PAC World Americas Conference in Raleigh, NC in September, is titled "IEC 61850: What Are You Waiting For?"

Bitronics® has several products that support IEC 61850. The Bitronics 70 Series are used in distributed recording arrangements with several customers. The Bitronics 60 Series SCADA meters support IEC 61850, and the OrionLX and OrionLXm also support IEC 61850.

These three papers explore IEC 61850 from three different angles. The first paper highlights an existing 61850 application that delivers real savings in wiring and engineering. The second paper is a frank analysis of the challenges of implementing 61850, notably on your first attempt. The third paper is a call to action with a summary of advantages and a guide for making your first installation a success.

NovaTech offers recording, metering, and substation automation products with 61850. The Bitronics 70 Series DFRs use 61850 cross-triggering in distributed recording. The Bitronics 60 Series brings 61850-based panel metering to automation systems. The OrionLX and OrionLXm substation automation platforms access data from IEC 61850 IEDs and forward this data to SCADA and engineering clients using legacy protocols.

The two most recent presentations can be found on the NovaTech website at:  
<http://www.novatechweb.com/documentation/members/presentations/>

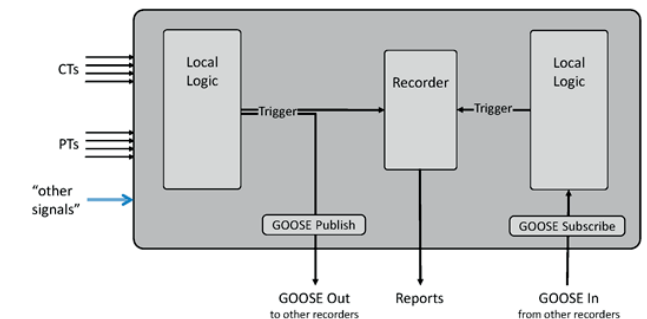
Please note, the third presentation will be added once it is presented in September at PAC World Americas Conference.



Bruce Muschlitz presented at PAC World Americas Conference in Raleigh, NC on the status of development and the finer points of the IEC 61850 standard.



Bruce Muschlitz sitting on the "Ask the Experts" panel at the 2015 PAC World Conference in Glasgow, UK.



A slide from the "Multi-vendor Distributed Recorders" presentation illustrates the advantages of GOOSE messaging in distributed recording.

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### LATEST SOFTWARE

**OrionLX Release:** 8.7  
**Orion NCD3 Version:** 3.28  
**Bitronics M87x firmware:** v4.09  
**Bitronics 70 Series Configurator:** v4.09  
**Bitronics M57x firmware:** v4.09  
**Bitronics 50 Series Firmware:** v3.09  
**Bitronics 60 Series Firmware:** v2.02  
**Bitronics PowerPlex II Firmware:** v2.06  
**BiView:** v3.05

### UPCOMING TRAINING

**OrionLX / OrionLXm Automation Platform**  
September 22 - 23, 2015  
December 8 - 9, 2015  
To register for these upcoming classes, please visit our website.

### UPCOMING EVENTS

**The Anfield Group's 4th Annual Technologies for Security and Compliance Summit**  
August 5 - 6, 2015  
Barton Creek resort in Austin TX

**PAC World Americas Conference**  
September 1 - 3, 2015  
Raleigh, North Carolina

**Energy Association of Pennsylvania**  
September 15, 2015  
Lancaster, Pennsylvania

**ECNE's Fall Engineering & Operations Conference**  
November 4 - 6, 2015  
Leominster, Massachusetts

## Did You Know?

A spreadsheet of Alias names can be loaded into NCD, so Alias names do not have to be typed in.

The standard Alias feature in the OrionLX enables any OrionLX database point to be given an alternate name. The assigned name remains available, so the user can view either the assigned name or Alias name when setting up Orion applications. To reduce the time to set up Alias names, a spreadsheet of Alias names can be loaded into Orion and names can be simply dragged over. The following screen captures describe the steps:

1. Create a spreadsheet of Alias names offline. Use a single column with the specific headers [Input Alias] and [Output Alias] as shown below to make the file usable by NCD.

2. Name and save the spreadsheet as a .csv file

3. Open up "Alias" under "Add Ons" and view points to be given an Alias. In this example, the "Sensor" points are to be assigned an Alias.

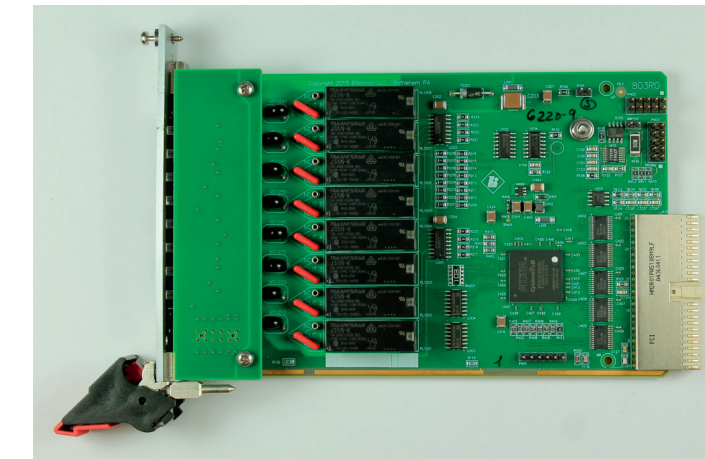
4. Load .csv file. Alias names will appear in the right column as shown here.

5. Drag Alias names over. Done.

## Bitronics P33 Output Only Module

To meet the demand for separate dedicated input and output devices, Bitronics has developed the P33 Digital Output Module that provides eight relay outputs and will allow up to 48 outputs per each 878 High Density I/O device. Previously the maximum number of outputs was four in either the P30A or P31 modules. The eight relay outputs are high performance, having the same characteristics as those in the P30A and P31 modules mainly:

- Digital outputs have protection and control industry standard-type output relays and circuitry to ensure system reliability.



- Outputs are rated for 2000Vac, 1 min isolation, I/O to I/O, and I/O to case.
- The outputs are jumper-selectable for "normal" output state (Normally Open or Normally Closed) and for relay condition (energized or de-energized).
- The digital outputs are controlled via CONTROL RELAY OUTPUT BLOCK objects and support LATCH-ON, LATCH-OFF, PULSE-ON, PULSE-OFF, and TRIP/CLOSE commands.
- The Output Maximum Switched Current (Resistive):

Voltage	Tripping (C37.90 Resistive)	Continuous Carry	Break (Inductive)
24Vdc	30A	5A	8A
48Vdc	30A	5A	700mA
125Vdc	30A	5A	200mA
250Vdc	30A	5A	100mA

- The Output Operate Time (time from command by Host, does not include protocol delays):
  - Assert (Close time with "N.O." jumper): 8ms
  - Release (Open time with "N.O." jumper): 3ms

## Check Out the New I/O Selection Tool on NovaTech Website

- 1) Go to <http://www.novatechweb.com/substation-automation/overview-distributed-io/>
- 2) "Select" at bottom of page
- 3) Enter your application-specific information
- 4) Enter requestor information
- 5) Submit

NovaTech now offers four substation I/O solutions: Bitronics 878, DDIO, DCIO and built in OrionLXm I/O (12in/4out).

An I/O selection tool is available on our website to help us work with you to determine which I/O solution is best for your application. Follow the steps on the left.