ERL eNews
ERLPhase Power Technologies
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Best in Class Technology
Power System Focus
Elegant
Efficient
Easy to Use

ERLPhase Power Technologies: April 2013 Update

Welcome to this month's update!

At GA TECH next month?
Come visit our booth!
Hear René Midence present *"IEC 61850 Interoperability Between Recorders and Relays"*

New App Note

Evaluation of L-PRO 4000 for End-To-End Communication Using IEC 61850

This document evaluates L-PRO 4000's IEC 61850 GOOSE messaging capabilities, applicable to several communication-aided protection (Trip/Block) schemes, such as Permissive Over-Reaching Transfer Trip (POTT), a combination of POTT with Weak Infeed (WI), Directional Comparison Blocking (DCB) and Permissive Under-Reaching Transfer Trip (PUTT). RFL IMUX 2000 multiplexers with standard LAN bridge adapters (MA-427 units) were used as the interfacing device, and testing was carried out with all the other standard functionalities (protection, recording, etc.) enabled on the L-PRO 4000 relays.

This study concludes:

- Using point-to-point serial connections between relays with RFL IMUX multiplexers operating at a 1536 Kbps bandwidth results in a 61850 GOOSE message taking an additional 2-4 ms transfer time.
- When the RFL IMUX 2000 multiplexers were loaded with traffic in addition to a relay to relay line protection application, the 61850 GOOSE messages between these relays was delayed by 4-6 ms.
- Using the RFL IMUX 2000 multiplexers with the standard communication (just serial inputs and outputs of the relays) results in near zero delay in communication transfer times. However, output contact operation and digital input hardware delays in the relays can add 6-8 ms (3-4 ms per relay) to the total time delay between relays.

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Welcome our Newest Applications Engineer Anderson Oliveira

ERLPhase is pleased to welcome Anderson Oliveira as a Field Applications Engineer in our Technical Services Group. Mr. Oliveira has over 10 years' experience in power transmission and distribution systems. He is a well-rounded engineer with experience in power systems studies, design and commissioning of Protection & Control systems, as well as detailed design of power plants and substations. Mr. Oliveira also has experience implementing training; technical communication with ERLPhase customers, both in North America and Latin America, will be a significant part of his role.

Prior to joining ERLPhase Power Technologies, Mr. Oliveira was a Design Engineer for Genivar in Toronto where he was involved in the design of generating stations, transformer stations and distributed generator in accordance to the technical interconnection requirements of the owner of the power grid. He has also worked as an Electrical Engineer for CHESF, one of the largest utilities in Brazil, coordinating and supervising implementation of maintenance programs for substation equipment. Anderson is a Professional Engineer, registered in the Province of Ontario. He holds a B.Sc. degree in Electrical Engineering from the University of Pernambuco, Brazil and he is working on his M.Eng. in Electrical Engineering from the University of Waterloo. Anderson is fluent in both English and Portuguese and can converse in Spanish as well.

Mr. Oliveira enjoys working in partnership with customers on technical planning to choose appropriate power systems equipment. He looks forward to meeting you all!

TESLA 3000 & 4000 Firmware Updates Available

New firmware versions are available for TESLA 3000 and TESLA 4000 which provide important enhancements including:

TESLA 3000 firmware version v2.6:

- filter to eliminate spikes in the calculated frequency due to the loss and reacquisition of the IRIG-B signal
- support of IANA communication on port 7631, an exclusive ERLPhase port. Previous firmware versions had used port 2000, which is also used by Cisco for Voice Over IP (VoIP). Switching IANA communication to port 7631 will help those users who may have encountered communications firewall related issues using port 2000.

TESLA 4000 firmware version v1.5:

- filter to eliminate spikes in the calculated frequency due to the loss and reacquisition of the IRIG-B signal
- new PMU configuration allowing Integer or Floating Point data format selection
- COMTRADE file support in primary quantities
- Cooperative and Connect-Through mode operation on IANA port 7631. Note this firmware includes changes introduced in the previous TESLA 4000 firmware update (v1.4), which moved IANA communication to communication port 7631 rather than port 2000, which is also used by Cisco for VOIP.

TESLA Customers, please contact our Customer Service team at support@erlphase.com or 204-477-0591 letting us know the address to which we should send your CD containing the latest firmware.

For a complete list of all new features and enhancements, more information and release notes visit our Software page at http://www.erlphase.com/support.php?ID=software.

Conference Presentation at DistribuTECH

ERLPhase also showed off the relay and recorder product line at DistribuTECH, which took place at the end of January in San Diego, California. At the conference, René Midence, Director of Technical Services, presented *"IEC 61850 interoperability between recorders and relays"*, co-written with Hugo Davila and Nan Zhang. The presentation room was almost full, with about 40 to 50 attendants some active members of the working group responsible for IEC 61850. The presentation went well with active participation by the audience. Mr. Midence's paper entitled *"IEEE C37.238 Standard Profile for Use of IEEE 1588 Precision Time Protocol in Power System Applications"* was also included in conference proceedings.

- Learn more about DistribuTECH

Conrad Garrett, Northeast Regional Sales Manager, shows off TESLA Power System Recorder at DistribuTECH in San Diego.

Careers... Consider Joining Us!

Do you know a protection engineer with great communication skills? We're always on the lookout for experienced professionals to join our team...

- Customer Service Representative
  Location: Winnipeg or flexible
- Sales Engineer
  Location: Winnipeg or flexible

Upcoming Events

Looking forward to seeing you at an event in your area...

GA Tech

May 6-10, 2013
Fault & Disturbance Analysis Conference
Protective Relaying Conference
Atlanta, GA
Visit our booth!
Hear René Midence present *"IEC 61850 Interoperability Between Recorders and Relays"*
Learn more about GA Tech

Cigre ERIAC

May 19-23, 2013
Foz do Iguacu, Brazil
Hear Anderson Oliveira present *"IEC 61850 Interoperability Between Recorders and Relays"* and *"Sub-Harmonic Protection Application for Interconnections of Series Compensated Lines and Wind Farms".*
Learn more about Cigre ERIAC

Simposium Iberoamericano de Protecciones

May 20-25, 2013
Mexico City, Mexico
Hear René Midence present *"IEC 61850 Interoperability Between Recorders and Relays"* and *"Sub-Harmonic Protection Application for Interconnections of Series Compensated Lines and Wind Farms".*
Learn more about SIPSEP

PAC World

Jun 24-27, 2013
Dublin, Ireland
Visit our booth!
Hear René Midence present *"Sub-Harmonic Protection Application for Interconnections of Series Compensated Lines and Wind Farms".*
Learn more about PAC World Dublin

ERLPhase Power Technologies Ltd

- North American centre of excellence within a strong and dynamic global organization
- Driven by innovation and best-in-class technology to provide smart solutions to customers needs
- Singular focus on power system protection and recording

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