



AUTC 2020 Meeting
October 28-29, 2020
All events held in
South African Time Zone

Wednesday, October 28th

1:45pm Welcome Remarks
Sheryl Riggs, UTC President & CEO
Greg Angst, UTC Chairman of the Board/CenterPoint Energy

2pm – 3pm Augmented MPLS-TP packet-based networks enabling reliable transmission of teleprotection communications and new revenue streams

Grid Protection communications is amongst the most time critical applications and requires high telecom network availability, low bit error rates, extremely accurate transmission and latency control by the telecoms network. In this presentation there will be a brief overview of the eligible packet-based networks. MPLS-TP being the best packet-based network, both endorsed by the power utility sector and suppliers, will be compared with the traditional SDH in the specific cases of teleprotection and current differential protection. Specific augmented MPLS-TP features will be described and discussed. Further on there will be focus on how this new network can enable new revenue streams for utilities.

Speaker: Francis Baestaens, Business Development Manager, OTN Systems

3:30pm – 4:30pm **When Worlds Collide – Perspectives of scheduling Telecom construction and Maintenance**

As utility telecom networks grow in size and the number of critical business applications running on those networks increase, routine construction and maintenance activities have increasing potential to disrupt utility operations. Coordination that previously may have previously taken place in ad hoc manner now must be carefully orchestrated. Furthermore, business units that have their own procedures, priorities, and even vocabularies all of a sudden need to cooperate to meet their objectives. This presentation will highlight some of the activities that American Electric Power undertook to address the different and sometimes conflicting perspectives of the Telecommunications and Transmission organizations. By formalizing the telecom outage scheduling process, AEP was able to reduce the number of last-minute work cancellations while improving transmission reliability.

Speakers: Sandra Loy, Manager, Telecom Processes & Reporting – American Electric Power Company, Inc.
Paul Zawada, Staff Engineer – American Electric Power Company, Inc.

5pm – 6pm **5G/4G LTE Cellular and Field Area Network**



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The industry wide effort to improve reliability and efficiency of the grid is forcing the evolution of FANs to an unprecedented scale. This session will have three speakers from two utilities. Topic 1 – How to build a multi-service FAN to support a range of critical applications including DMS, AMI, DR, DER and DA. The time per site, per pole, setting up, tracking, and deploying devices must be reduced. The scale and security challenges in the FAN are independent of available technologies i.e., 5G, pLTE, WiSUN, LORA, NB-IOT, etc. Topic 2 - Hardware supporting “zero-touch” (ZT) provisioning, configuration, and management are essential to improve efficiency while advancing security requirements for a connected world. Achieving advanced provisioning and security requires solutions capable of secure boot via Trusted Platform Management (TPM) and communication utilizing Public Key Infrastructure (PKI). Topic 3 - Network orchestration will provide automation needed to reduce OpEx, time to deploy and limit human interaction increasing reliability and security.

Speakers: **Brian Ciccariello, Senior Telecommunications Engineer**
 Kenneth Cooper, Network and Transport Specialist III – FirstEnergy Corporation
 Noel Marrero, IT Network Engineering & Operations – Enterprise Architect V, OT Networks – FirstEnergy Corporation
 Brian Rutherford, Senior Electrical Engineer – Burns & McDonnell

Thursday, October 29th

2pm – 3pm **Case Study: Engineering and Installation of a 100G DWDM Backbone ring from start to finish**

A Case Study; Engineering and Building a 100 Gigabit DWDM backbone fiber ring for critical infrastructure requirements. The case study will include how vendor was chosen, engineering the ring, fiber characterization of fiber, how the new system was tested, what training looked like, the installation phase, and the operational phase. Case Study will include LightRiver Technologies as the vendor presenter.

Speaker: **Chris Peyatt, Telecom Engineer – Nebraska Public Power District**
 Mac Stecko, Outside Sales Engineer – LightRiver Technologies, Inc.

3:30pm – 4:30pm **A few studies evolving Utility networks from SONET/SDH to MPLS**

This presentation examines some distinct utility private OT network evolutions from SONET/ SDH to Packet/ Hybrid-Switched technologies. In each of these case studies, the utility took a different approach on evolving their networks; a complete Network Upgrade, two different Ring-by-Ring upgrade approaches, the insertion of an MPLS Node into a SONET network for an eventual Node-by-Node upgrade. Also, examined are some unique approaches for maintaining enduring services; POT, SCADA and teleprotection (Including



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electromechanical current differential relaying), as well as future proofing their networks for RAS and SIP applications.

Speaker: **Tim Phillippe, Senior Product Manager – GE Industrial Communications**

5pm – 6pm **Rethinking the FAN**

As distribution utilities strive to improve grid performance and becoming green, they need to modernize their distribution grids. Underpinning the modernization efforts is a shift in the communications technologies utilized in field area networks (FAN). The current approach of deploying multiple purpose-built, application-specific FANs incurs high operational cost, impeding the ability to converge into a unified communications infrastructure for advanced grid automation. Without a converged FAN, application integration and future innovation stalls, or is impossible. This session will discuss a new converged FAN architecture based on IP/MPLS and LTE. By extending layer 2 and 3 IP/MPLS services from WAN to FAN to support GOOSE-based and IP-based applications, it provides secure and reliable communications locally among field devices, as well as with operations centers and data centers.

Presenter: **Hansen Chan, Senior Marketing Manager - Nokia**