

Utilities Technology Forum April 12 – 15, 2021 Silver Legacy, Reno, NV

Meeting Agenda – all times listed are Pacific Daylight Time

Monday, April 12th

5pm – 7pm Welcome Reception – Silver Legacy – Rum Bullions – Lobby Level

Tuesday, April 13th

8:00AM Registration & Breakfast

9:00 – 9:15AM Welcome Remarks

Speakers: Greg Angst, UTC Chairman of the Board (joining virtually)

Sheryl Riggs, President & CEO – UTC

Karnel Thomas, SVP, Meetings & Membership – UTC Brett Kilbourne, General Counsel and VP of Policy – UTC

9:15 – 10:15AM Got Fiber? – The core telecommunication infrastructure to support the

modern utility

Modern electric utilities are rapidly adopting new technology to support the dynamic shift toward grid modernization and the growing demand for managing distributed energy resources. This shift requires a robust and reliable communications infrastructure to support the flow of real-time data to support these applications. Think Fiber! Do you have a robust fiber network in place to support the future needs of your electric grid?

In this session you will learn how a fiber network deployed throughout your electric grid footprint can support a wide array of grid modernization applications as well as help you manage the growing need for renewable energy resources. You will also learn how you can further leverage this fiber network to support Smart Grid applications and even Broadband services in your serving area.

Expert speakers will provide Regulatory and Funding insights as well as discuss fiber Architecture and Technology options.

Join Brett Kilbourne General Counsel and Vice President of Policy at UTC and Carl Meyerhoefer, Sr Director of Strategic and Solutions Marketing at Calix to learn more about the value of deploying fiber to support your future.

Speakers: Brett Kilbourne, General Counsel and VP of Policy – UTC

Carl Meyerhoefer, Sr. Director of Strategic & Solutions Marketing -

Calix

10:15 – 10:45AM Networking Break

10:45 – 11:45AM 100Gig: Path to Implementation

An overview of some of the success stories & lessons learned from NPPD's recent deployment of their 100 Gig DWDM solution.

Presented virtually by Chris Peyatt, Telecom Engineer - Nebraska Public Power District

11:45 – 1:00PM Networking Lunch

1:00 – 2:00PM The role of fiber Broadband Networks for 4G/5G Rollout

Faster wireless speeds are desired around the world for communications. As 4G LTE networks roll out in the utility space and the new 5G deployments begin in the carrier space, an engineer may ask where does my fiber optic cable fit in my network? Utilities have invested money in fiber for the last 30 years or more wanting the high-speed unlimited bandwidth capabilities it has to offer. This high-speed unlimited bandwidth capability is why fiber will stay relevant in the telecommunications industry. This presentation will highlight the role of fiber in the 4G LTE/5G deployments. From the backhaul to the fronthaul, fiber will provide service for wireless densification. Together the wireless and fiber combination will lead to further rural broadband deployment.

Presented virtually by Amy Bartak, Telecom Engineer – Burns & McDonnell

2:00 – 2:30PM Networking Break

2:30 – 3:30PM Antennas for Wireless Distribution Automation Systems

Wireless technology plays a major role in utility automation systems. A wide variety of antenna types are applicable to support the wireless automation devices, whether in a point-to-point, mesh or point-to-multipoint system and over a wide range of radio frequencies. This session reviews some basic antenna theory and then explores a variety of antenna types, including both their physical and electrical properties, and suggests appropriate applications. While emphasizing automation systems much of the content is applicable to land mobile and other wireless technology operating in the VHF to Wi-Fi spectrum.

Speaker: George Stoll, Vice President – Utility Telecom Consulting Group

3:30 – 4:30PM Lightning Mitigation

A careful look at what can be done to mitigate or manage the pre-strike, mid-strike and post-strike voltages and currents associated with lightning. This presentation will also look at the grounding and bonding associated with ideal communications site design and the real world compromises we choose to make in our communications site designs.

Speaker: E. Robin Smyth, PE, Owner and President - Gillespie, Prudhon &

Associates, Inc.

5:00 – 7:00PM Exhibit Hall Grand Opening Reception

Wednesday, April 14th

7:00AM Registration & Breakfast

8:00 – 9:00AM Pole Attachments and Rural Broadband, Using Technology to Prepare

your Plant to Maximize Opportunity and Minimize Risk - Part I

Billions of dollars of federal and state funding for broadband deployments, new technology like 5G wireless, and regulatory changes designed to facilitate easier and faster access to poles are putting increased pressure on pole owners. Pole owners may not have the resources to respond to the increased volume of requests to attach to poles. Failure to comply with attachment requests in a timely manner may lead to penalties and risks to your pole plant. This workshop will provide pole owners and broadband providers solutions to help understand the status of your pole plant, who is attached where, and develop platform based, streamlined processes to ensure, compliance with regulations, proper cost recovery, and a favorable public opinion.

Learning Outcomes

- Understand the current state of pole attachments and their impact on poles and organization resources.
- Understand the loading and capabilities of a wood pole.
- Easily identify the types of wires, cables and equipment currently attached to and forecast to be attached to poles.
- Understand from an operational perspective what a Joint Use program looks like
- Determine methodologies to streamline and make joint use processes more efficient.

Speaker:	Ron Bilodeau, Director, Strategic Solutions - Osmose Utilities Services, Inc.
9:00 – 9:30AM	Networking Break
9:30 – 10:30AM	Pole Attachments and Rural Broadband, Using Technology to Prepare your Plant to Maximize Opportunity and Minimize Risk – Part II
10:45AM – 12:00PM	Combined Regional Meeting – Open to Utilities Only
12:00 – 2:00PM	Networking lunch & Exclusive Exhibit Time
2:00 – 2:30PM	UTC Leadership Address & Advocacy Update
2:30 – 3:00PM	Networking Break
3:00 – 4:00PM	State of the Union Utility Presentations
Presented onsite by:	Travis Phifer, Network System Engineer – Tri-State Generation & Transmission
Presented virtually by:	Casey Hutchinson, Telecom Engineer – Puget Sound Energy Mitchell Crocker, Project Manager/Sr. Technical Analyst – CenterPoint Energy

4:00 – 4:30PM Roundtable, Wrap-Up & Prize Drawings

5:00 – 7:00PM Networking Reception at Top Golf on the Lobby Level

Thursday, April 15th

7:00AM Breakfast

8:00 – 9:00AM Protective Relaying over Packet Network – A JEA Case Study

In the past 10 years, the power utilities operational technology (OT) telecommunications infrastructures have been migrating towards an all-packet-based transport network, moving away from the legacy TDM-based system. Addressing the challenges of IP migration has not been easy since the applications carried over these networks are real-time mission-critical in nature. Most importantly, protective relays and teleprotection devices using data communications as part of their operating principles have very stringent requirements with regard to latency and reliability. Providing that channel over packet-based infrastructure poses a challenge for these existing devices that were designed for direct fiber, T1/E1 or SONET/SDH networks. Nevertheless, as more features are developed to address these challenges, we are seeing very successful migration, and JEA is one of those successful deployments.

This presentation explores in detail the JEA OT communications system IP migration as one of those successful deployments that transport Current Differential Relay over a packet-based system. It outlines the basis for the migration, the criteria to which the particular technology was chosen, and the overall system design. The presentation points out the various features that enabled the network deployment to be highly reliable and performed well. It also identifies the challenges encountered, and how they were addressed. Furthermore, the presentation analyzes the various options that could be employed in mitigating the challenges that are associated with IP migration along with some pros and cons. Finally, it presents some key insights in order to have a successful migration, both during and after the migration process.

Presented virtually by Manny Duvelson, Product Manager – RFL/Hubbell Power Systems

Louis Fleming, Principal IT Solutions Architect – Telecom - JEA

9:30 – 10:30AM Network Traffic Optimization for Wireless Networking

Many wireless SCADA/ DA networks are now supporting a mixture of device interfaces and communications protocols. With the inclusion of Ethernet traffic from the corporate network many SCADA OT networks begin to experience capacity issues, congestion and high latencies.

In our presentation we will discuss the different types of data traffic that is now being introduced to the wireless SCADA network through these interconnections. We will show how to recognize these types of conditions, how to identify the sources and different techniques to remediate this capacity-robbing traffic from the wireless system. Additionally, we will demonstrate some software tools that can be similarly created by the utility, consulting engineering firm or device manufacturer to simplify the predeployment planning of a wireless network and to model behaviors based upon planned increases in devices or changes in SCADA parameters or message types.

Presented virtually by Tisha Hayes, Senior Engineer, North America - 4RF USA, Inc.

11:00AM – 12:00PM Direct Transfer Trip (DTT) of Distributed Generation Utilizing Cellular Networks

Join us to explore an application that utilizes cellular networks to provide a low-cost solution for Distributed Energy Resource (DER) communications. Increase your knowledge and gain confidence in using cellular communications for teleprotection applications such as Direct Transfer Trip (DTT). We'll discuss the use case's performance results and cost comparison of cellular with T1 leased service.

Who Should Attend:

Individuals with a role in Teleprotection communications systems and integration of Distributed Energy Resources (DER) from either the system protection or communications side of the business.

Presented virtually by Tom Schwartz, Technical Application Engineer – GE Industrial Communications

Ty Nelson, Regional Sales Engineer – RFL/Hubbell Power Systems