Meeting Agenda

Monday, October 16th

2 pm – 4 pm	**Nokia User Group – open to Utilities Only**
4 pm	**Registration – Holiday Inn Downtown Duluth**
4:30 pm – 6:30 pm	**Welcome Reception – Holiday Inn Downtown Duluth**

Tuesday, October 17th

Except for the Group Dinner at Glensheen Manion all events on Tuesday & Wednesday will be held at the Duluth Entertainment Convention Center (DECC). DECC is connected to the Holiday Inn via Skywalk.

7 am	**Breakfast & Registration**
8 am – 8:15 am	**Welcome**
8:15 am – 9:45 am	**State of the Union Presentations**
9:45 am – 10 am	**Break**
10 am – 11 am	**Navigating Utility Broadband Networks: Evaluating Cellular-Based FAN Solutions in a Spectrum-Rich Landscape**
Speaker:	**John Yaldwyn, Chief Technology Officer and Founder, 4RF**

Without spectrum for utility private networks, dedicated utility broadband networks will not become a reality. The remarkable progress being made in private LTE deployments has been made possible by a number of pragmatic FCC spectrum decisions. Despite this progress, there has been some natural reluctance to invest in 4G when 5G is rapidly rolling out in commercial carrier networks. What are the strengths and weaknesses of these cellular-based (LTE 4G, NR 5G NR, and NB-IoT) field area network (FAN) solutions compared to established QAM-based private radio field area network technology when considering critical factors like availability, coverage, resilience, latency, and data rates? Which technology is best suited to various distribution automation applications and what should a sensible FAN strategy be? The electric utility industry has always been pragmatic and quick to deploy the appropriate and available fit-for-purpose technology. But now, there is more choice than ever while the financial, spectrum, and regulatory landscape has become ever more complex. This presentation will review the current state of the spectrum, consider 4G vs. 5G, and review the strengths of the various FAN solutions.

11 am – 12 pm	**Supporting Teleprotection Services in SR (Segment Routing) Networks**
Speaker:	**Rob Wright, Senior Consultant, Nokia**

Networks supporting teleprotection are required to offer very low latency, very low jitter, and in most cases, symmetry. Previously, the only MPLS transport protocol that could offer these needs was RSVP using Explicit Hops. Segment routing-based MPLS (SR-MPLS) is a protocol that has been gaining interest as it supports the creation of Explicit Hops just like RSVP but has advantages in terms of scalability. This discussion will explore the differences between teleprotection services signaled using RSVP vs. Segment routing and the impact on the existing MPLS network.

12 pm – 1 pm   Attendee Lunch

1 pm – 2:30 pm Utility Only Panel/Questions

An open discussion for utilities only to discuss industry topics, products, workflow, and how we each accomplish common goals. A moderator will present topics, but this is planned to be an interactive session. Topics include battery charging and storage, end of life replacement cycles, antenna/dish procurement, system documentation, etc.

2:30 pm – 6 pm   Vendor Hall

7 pm – 9 pm   Dinner & Tour of Glensheen Mansion

Transportation will be provided from the Holiday Inn Downtown. Buses will depart at 6:30 pm. RSVP Required, please click here to RSVP now.

Wednesday, October 18th

7 am   Breakfast & Registration

8 am – 9 am   DMR Panel

Speakers: Gord Echlin, Director of Business Development, Tallysman Wireless
Ramin Hafezi, Solutions Engineer Manager, TAIT Communications
Tim Romanelli, Business Development Manager, Central Region for RACOM
Scott Skibness, Sales Manager, RACOM

Topics to review:
- DMR Tier 3 Standards.
- Update on Standards Body.
- Deployment of advanced features across the U.S.
- More than just location, advanced vehicle reporting.

9 am – 9:30 am	**MP Drone Use**

A look into Minnesota Power's drone program. Topics will include use cases, benefits of the program, what is in the fleet, software applications, and a Q&A.

Speaker:	**Ryan Creurer, UAS Program and Contract Administrator, ALLETE, Inc.**

9:30 am – 9:45 am	**Break**

9:45 am – 10:40 am	**UTC Leadership & Advocacy Update**

Speakers:	**Ron Beck, Interim President & CEO – UTC**
	Brett Kilbourne, Senior Vice President of Policy & General Counsel – UTC

10:40 am – 11:30 am	**A Different Way to Address Increasing Demand for Wireless**

Speakers:	**Tyler Spindler, Principal IT Solutions Analyst, WEC Energy Group**
	Richard W. Schertz, P.E., Senior Engineer, Lockard & White, Inc.
	Travis Whitlock, Senior Engineer, Lockard & White, Inc.

New technologies, new priorities and evolving regulatory requirements all contribute to increasing pressure on electric utilities to accommodate new applications and demands that can only be enabled with updated and expanded wireless networks.

Much has been written about private LTE (PLTE) as the preferred wireless network solution, and for good reasons, including capacity, security, and a massive ecosystem of devices and support. PLTE is a great solution for utilities, but does it make sense for all of them? The operational and business realities of some, along with the current landscape of options, don't fit within the constraints all utilities must consider.

This panel of experts will describe an approach we call Heterogeneous Spectrum Layering used by WEC Energy Group to address the need to increase wireless network capacity. It is a strategy that can be used for increasing data throughput for a growing number of field data devices by adding network capacity and maintaining current investments in traditional narrowband systems when broadband PLTE isn't the right fit today but may be in the future.

11:30 am – 2:00 pm	**Vendor Hall and Lunch**

1 pm – 2 pm	**Region 5 Business Meeting – Open to Utility Members Only**

2 pm – 3 pm	**6GHz Interference**

Speaker:	**David Hattey, Senior Associate Consultant, Lockard &White**

Three years ago, the FCC approved the highly controversial rule changes that enable the operation of automatic frequency-controlled (AFC) outdoor devices and unlicensed indoor devices in the 6 GHz band. Real-world testing of these unlicensed Wi-Fi 6E devices has confirmed them to be a source of harmful interference to licensed microwave systems commonly used by utilities.

The industry is at another crossroads as the unlicensed proponents are on the verge of getting FCC approval for the Automatic Frequency Coordination servers that will enable the deployment of Standard Power access points outdoors and are pressing the FCC to increase power levels for Low Power Indoor access points and allow Very Low Power access points to operate anywhere. The unlicensed proponents have also asked for the Federal Government microwave allocation at 7 GHz to be opened to unlicensed use in the same manner as 6 GHz.

Lockard & White has been on the forefront of this issue since the first Notice of Proposed Rulemaking in 2018, providing dozens of inputs to the FCC as well as performing paper analysis, real-world testing, and supporting industry incumbents in their work and testing. This presentation will provide an overview of these issues, an update on current FCC activities, the increasing risk of interference, and recommended Industry efforts to influence the process to minimize interference and avoid our other microwave allocations (i.e., 11 GHz) being opened to unlicensed use.

3 pm – 3:50 pm   **Surge Protection Best Practices**

Speaker: **Tom Baker, Strategic Market Manager – Utilities + Transportation, Infinite Electronics**

A technical but easy to understand review of the key elements of a surge protection system with emphasis on best practices for protecting communications used in the Utility world.
- Surges and surge environments.
- Surge protection components and how they work.
- Applicable Surge Protection Standards.
- The differences between a surge vs. overvoltage event.
- Introduction to Surge Protective Devices for:
  - AC Power to the site.
    - 120V-480V Protection
  - DC Powered radios.
    - 48V DC protection
      - Tower top and at the rack.
- Protection for Ethernet fed radios:
  - POE/POE++ Ethernet lines.
- RF Surge Protection for:
  - DC pass and DC block coaxial fed radio applications.

3:50 pm – 4 pm   **Break**

4 pm – 5 pm	**Why IT/OT Security Doesn't Stop at the Perimeter**
Speaker:	**Simon Hill, Vice-President, Certes Networks**

This year's Red Report identified that credential access is one of the most prominent attack trajectories under the MITRE Attack Framework used by adversaries in cyber-attacks. Techniques such as 'adversary in the middle' and credential dumping allow bad actors to gain unauthorized access to critical infrastructure.

Lateral movement is also on the rise which allows attackers, once inside, to move from one system to another until sensitive data is compromised with new techniques now in play, that enable attackers to abuse built in tools and protocols and weaponize legitimate software.

This emphasizes that perimeter-based security is not enough – organizations must strengthen their resilience by developing strong policies and defensive techniques that protect both critical application data flows in IT networks and interconnects between IT and OT networks.

This session will consider:
- Several common attack trajectories used to penetrate critical infrastructure.
- Common risks and security gaps that adversaries continue to leverage.
- What to do about it.