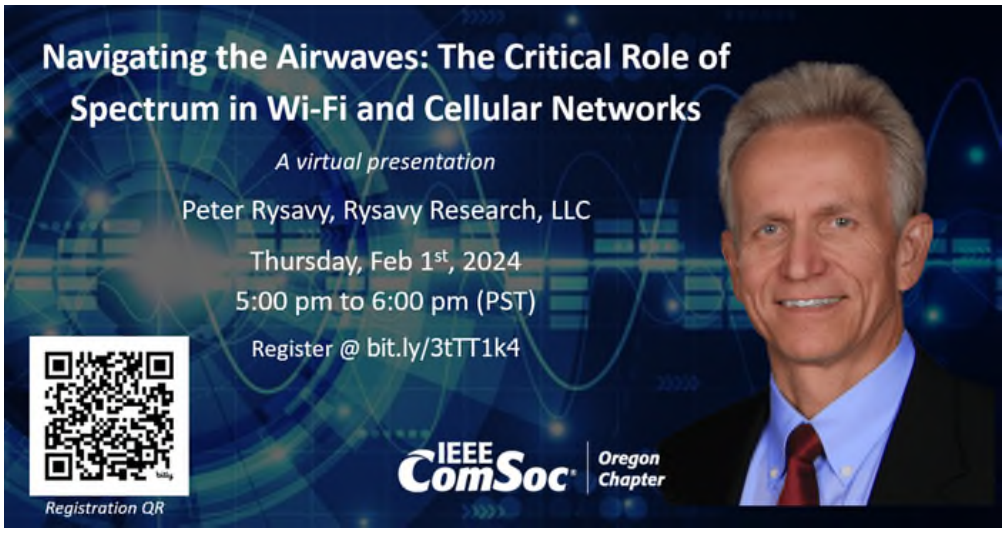
Navigating the Airwaves: The Critical Role of Spectrum in Wi-Fi and Cellular Networks



Wireless communication is fundamental to our digital society, with radio spectrum the key enabling resource. Understanding the critical role of spectrum provides deep insight into how wireless technologies function and how they will evolve. This enlightening talk delves into the ingenious advancements in Wi-Fi and cellular networks to harness spectrum, including increasing efficiency, deploying new bands, aggregating channels, and dynamically sharing spectrum. Despite huge progress, formidable challenges remain in meeting soaring demands for capacity, achieving global harmonization, and ensuring coexistence with existing services. Highlights of this session include:

1. The tradeoffs between different types of spectrum bands
2. Spectrum innovations in Wi-Fi and 5G to improve performance and reliability.
3. Forecasts illustrating the insatiable demand for more spectrum.
4. Balancing the scales between Wi-Fi and 5G allocations
5. Insights from the World Radio Communication Conference (WRC) 23
6. Details on the recently announced U.S. National Spectrum Strategy
7. United States versus the rest of the world in spectrum assignments and associated risks
8. Lessons learned and the future of Citizens Broadband Radio Service (CBRS)
9. Pioneering approaches in dynamic spectrum sharing.

Biography

Peter Rysavy, the president of Rysavy Research LLC, has led the consulting firm since 1993, focusing on computer networking, wireless technology, and mobile computing. His firm's wide range of projects include spectrum and capacity analysis, wireless technology evolution reports, network security assessments, strategic consultations, system design, article and report writing, course and webcast development, network performance measurements, and serving as an expert in patent litigation. Over his career, Peter has published 200 articles and reports and worked with over 100 organizations. Additionally, he served as the executive director of the Wireless Technology Association from 2000 to 2016, focusing on evaluating wireless technologies, studying mobile communications architectures, and advocating for wireless data interoperability.

Peter holds BSEE and MSEE degrees from Stanford University, graduating in 1979. For more information about his contributions to wireless technology, visit https://www.rysavy.com.