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PRESS RELEASE

Oscillators, Clocks and Times Impact on Wireless Performance and Security

The properties of various oscillators and their effects on digital and simulcast radio networks and systems will be discussed in an upcoming technical session at Education Forum 2017, co-locating with International Wireless Communications Expo March 27-31 in Las Vegas. Introducing attendees to oscillators from quartz crystals to atomic clocks, an exploration of time as a unit and its effect on wireless communications and navigation will be explored.

Greencastle, March 15, 2017: ETA International's annual Education Forum will feature a 75-minute technical session on oscillators' circuits through atomic clocks necessary to digital and synchronized communications. Timing performance as crystals age or a clock's wandering all impact wireless systems. Metrics necessary for maintaining and verifying clock performance and selecting clocks and signal references will be discussed along with test equipment for testing time and performance metrics of clocks in short and long-term stability in the time and frequency domain will also be reviewed.

Tom Reese Janca, CETsr, works out of the NRAO's Array Operations Center (AOC) in Socorro, NM, and recently traveled to the Very Large Array (VLA). The VLA is the most advanced radio telescope array on Earth, a variable aperture radio interferometer with baseline spans up to 22 miles across. Recently returned from completing his first work at on Mauna Kea, HI on the Very Long Baseline Array (VLBA) MASER (Microwave Amplification by Stimulation Emission of Radiation), he will share the repair experience on the most precise clocks on the planet.

A MASER is a device that produces coherent electromagnetic waves through amplification by stimulated emission. Masers are used as the timekeeping device in atomic clocks, and as extremely low-noise microwave amplifiers in radio telescopes and deep space spacecraft communication ground stations. The Mauna Kea site is part of the VLBA, whose eastern-most radio telescope is in St. Croix Islands, and is a facility of the National Radio Astronomy Observatory (NRAO), operated by Associated Universities, Inc., under a cooperative agreement with the National Science Foundation.

With previous experience in a research and development environment for global wireless communications at Bell Labs Global Communications Lab, Janca solved several test and measurement anomalies between labs caused by timing issues and designed the labs timing reference distribution network,

which was vital in improving lab test and measurement performance and winning further client projects.

Janca will describe the way that the measurement of physical time has evolved over human history along with how the advancement of time advances our exploration capabilities in navigation, communication and radio astronomy. He will aim to raise awareness of oscillator, clock and times interval accuracies importance to wireless performance and security while giving attendees the terms and tools necessary to enrich their professional knowledge of time's science. Attendees will come away with a better understanding of oscillators, clocks' and times' impact on wireless equipment, test and measurement, system performance and security. Security looks at how exploiting time has and can be used to slip in to networks, grab key exchanges and infiltrate.

To attend this session, and many more, please register at www.iwceexpo.com.

About ETA - Since 1978, ETA has delivered over 200,000 professional certifications plus nearly 40,000 FCC license exams. Widely recognized and frequently used in worker job selection, hiring processes, pay increases, and advancements, ETA certifications are often required as companies bid on contracts. ETA's certifications are personal and portable worldwide, thus travel with the individual, regardless of employment or status change. ETA certifications measure and validate competencies of persons, not products or vendors. All ETA certifications are accredited through the International Certification Accreditation Council (ICAC) and align with the ISO-17024 standard. www.eta-i.org

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