GTU & ASEPL Brings a One Day Workshop On

Emerging Wireless Standards

A One day workshop, with the help of Automation System Engineers Pvt. Ltd (ASEPL) on **Emerging Wireless Standards** is being organized for the faculties of the GTU affiliated institutes as per the following schedule. All interested faculties from Electronics, Electrical etc. department who are teaching wireless network at UG / PG are invited to register themselves for the same before 19th June, 2012.

Registration is based on first cum first serve, since only 50 seats are available. Please register at the earliest.

Date: 21st June 2012

Venue: AMA Hall, Ahmedabad

Time: 9:00 am to 16:45 pm

For registration, kindly visit the following link:

https://docs.google.com/spreadsheet/viewform?formkey=dG5sZUFTU21IeFZxN2lYYTBJSDBsOHc6MQ

Knowledge partner

Automation System Engineers P. Ltd.
**4,SP Nagar, CG road Navarangpura Ahmedabad-6
Ph:079-26409686 Email: agilent@asepl.in**

Agilent Technologies
Authorized Technology Partner

Agenda:

Timing	Paper
09:00 – 09:15	Registration
09:15 – 9:30	Key Note Address by Hon. VC
9:30 -10:00	Agilent - Academia & Exposure on Research Area
10:00 – 11:15	Next Generation Signal Creation & Signal Analysis Tools
11:15 – 11:30	Tea Break & Demo
11:30 – 13:00	Wireless evolution from 2G to 4G and beyond
13:00 – 13:30	Lunch & Demo
13:30 – 15:00	Creating Flexible Test Benches for Wireless Communication Lab
15:15– 16:15	RF & MW Component Characterization
16:15 – 16:30	Wrap up & Valediction in presence of Hon.VC

Abstract for Each Paper Follows

Next Generation Signal Creation & Signal Analysis Tools

Abstract:

Signal generation and signal analysis form the basis of any receiver and transmitter testing, whether it be for commercial wireless communications or military communication or research applications.

Agilent offers the widest selection of signal generators from baseband to 67 GHz, with frequency extensions to 500 GHz. Each offers synthesized frequency accuracy and stability, excellent calibrated level accuracy, and remote programmability. Modulation capabilities vary from general-purpose AM, FM and digital I/Q to standard-specific formats such as GSM, W-CDMA, HSPA, LTE, GPS, and wireless LAN.

Agilent Technologies' spectrum and signal analyzers include an extensive array of products, from DC to 325 GHz and beyond, designed to accurately measure frequency, amplitude, and modulation, including distortion, spurious, phase noise, and 2G to 4G wireless communications signals. By combining a spectrum or signal analyzer with 89600 VSA software, flexible modulation analysis software, or measurement applications, an instrument's capabilities can be expanded to demodulate a broad range of standard-based and general-purpose digital signals and formats.

During the course of the presentation we'll discuss the importance of key attributes which define the next generation signal creation and signal analysis tools. We'll also showcase the industry leading vector signal analyzer software to demonstrate the analysis of various standard and non-standard digitally modulated signals.

Wireless evolution from 2G to 4G and beyond

Abstract:

Mobile Communications transformed the way people communicate, joining together communications and mobility. Wireless technologies mainly targeted basic mobile voice in the first generation and slowly introduced data in 2nd generation. Third Generation (3G) opened the gates for "true mobile broadband experience" and 4G takes it forward to a higher level of user experience with blistering speeds. The underlying fact is that – throughout we are targeting for spectral efficiency by providing services to the user without sacrificing the QoS.

This paper will primarily focus on the key aspects which make the advancement in technology possible to meet the expectations. It is not intended to cover the network side in detail.

Last but not the least, Agilent wishes to bring the new grads to the "world of opportunities" with a proper practical exposure at the right time and right place.

Creating Flexible Test Benches for Wireless Communication Lab

Abstract:

Very often students/researchers use various hardware instruments for generation and analysis of communication signals. While standards instruments offer great support for standard signals but lack the ability to perform the modulation customization which may be necessary for certain applications. Custom OFDM modulation is one of the examples of the same whereby standard OFDM technology can be adopted for specific waveform generation. Modeling realistic operating conditions of a Wireless Radio so that the signal generated in lab environment contain the effects of real wireless transmission like AWGN, Phase Noise, Multipath Fading, AM-PM compression etc.

During the course of this presentation we shall showcase how SystemVue can model all these realistic behavior of the communication link and then integrate with Agilent instruments to recreate these signals in real world for testing purposes paving the way for advanced testing and research in the lab environment.

RF & MW Component Characterization

Abstract:

Network analysis is the process by which researchers and engineers measure the electrical performance of the components and circuits used in more complex systems. When these systems are conveying signals with information content, we are most concerned with getting the signal from one point to another with maximum efficiency and minimum distortion. Vector network analysis is a method of accurately characterizing such components by measuring their effect on the amplitude and phase of swept-frequency and swept-power test signals.

Agilent Technologies offers a wide range of vector network analyzers for characterizing wafers, components, systems, antennas and materials from 5Hz to 2 THz. The PNA Series of microwave network analyzers are the culmination of Agilent's 45-year legacy of technical leadership and innovation in radio frequency (RF) network analysis. More than just a vector network analyzer, the PNA series is the world's most integrated and flexible microwave test engine for measuring active and passive devices.

During the course of presentation we'll review the fundamental principles of vector network analysis. We'll also discuss new advancements in the measurement technology and how it helps in more accurate and more reliable vector network analysis.