R V COLLEGE OF ENGINEERING, Bengaluru-59
(Autonomous Institution Affiliated to VTU, Belagavi)

Five Days Workshop on
"Fundamentals of Long Term Evolution (LTE)-4G"
26th -30th September 2018

Under IEEE Communication Society, RVCE student Chapter

Jointly Organized by
Dept. of Electronics & Communication Engineering
and
Dept. of Telecommunication Engineering

About the Institute

R.V. College of Engineering (RVCE) established in 1963 is one of the earliest self-financing engineering colleges in the country. The institution has set itself a Vision as *Leadership in Quality Technical Education, Interdisciplinary Research and Innovation, With a Focus on Sustainable and Inclusive Technology*. Recent awards and achievements includes *Engineering College of the Year-2017* by the Higher Education Review Magazine, Ranked 58th in the Country by National Institutional Ranking Framework (NIRF), Ranked 7th among the top 113 Pvt. Engineering Colleges by The Week Magazine, Ranked in top 10 Private Engineering Colleges in the Country by Education World Magazine. All the UG programs and eligible PG programs have been accredited multiple times by NBA. The College currently has student strength of about 5600, faculty strength of over 400, Technical & Administrative Staff of 245 and about 250 Research Scholars are pursuing Ph.D.

About the Departments

The Electronics & Communication Engineering Department was started in the year 1972 and now conducts one undergraduate program, two postgraduate programs with academic autonomy and Ph.D program with affiliation to VTU. The students are encouraged to take up interdisciplinary research in various domains and are placed in reputed companies like Intel, NXP Semiconductors, SanDisk, Cisco IT, Qualcomm, Robert Bosch and Deloitte. The department has MOU with various leading industries like Texas Instruments, NXP Semiconductors, Intel, Keysight technologies and research establishments like Department of Sericulture, Govt. of Karnataka. The department has full-fledged anechoic chamber facility for antenna and RF characterization.

The Telecommunication Department started in the year 1992, conducts one undergraduate, two post graduate programs with academic autonomy and PhD affiliated to VTU. Students are trained in core areas of Wireless Communication, Computer Networking, Signal Procesing and Embedded Systems. Industry specific laboratories by Tejas Networks private Ltd and Keysight Technologies are established to carry out research and development.

About the workshop

The Long Term Evolution offers significant improvements over previous mobile wireless systems in terms of data speeds and capacity, through the use of technologies such as OFDMA and multiple antenna techniques. This hands-on workshop guides participants through the theory and practice of RF design for LTE RANs. This workshop is organized to enlighten the participants about the progress of LTE with specific reference to 4G and also to bridge the gap between industry and academia. Although course on LTE 4G has been introduced in the curriculum for both Undergraduate and Postgraduate programs in communication related streams, there is still gap for hands training. The workshop is intended to facilitate researchers and students to understand the technological advancements in 4G and also aiming at knowledge sharing and networking.

Objectives of the Workshop

- Comprehend the basics of multicarrier modulation.
- Elucidate LTE 4G system architecture.
- Explain the physical layer of LTE 4G.
- Interpret LTE 4G Protocol stacks for various events.
- Introduce the network side of LTE 4G.

Prerequisite: Fundamentals of Communication Engineering.

Program Schedule

Day 1	**Session 1**: Fundamentals of OFDM by Dr.Ravishankar S, RVCE **Session 2**: Lab session using SDR kits by Dr.Mahesh A, RVCE
Day 2	**Session 1**: Physical layer of LTE by Dr.Ravishankar S, RVCE **Session 2**: Lab session using SDR kits by Dr.Mahesh A, RVCE
Day 3	**Session 1**: : **LTE overall system architecture** - Network elements & Interfaces, Protocol stack diagram for both user and control plane, brief introduction to the functions of protocol stack components. **Physical Layer** - Frame structure, Physical Channels, HARQ, MIMO and Lab sessions by Mr. Sudhish, Nokia. **Session 2**:Lab session using SDR kits by Prof. Nagendra N N, RVCE
Day 4	**Control plane procedures** - Overview of control plane functions including Access and non-access stratum, Cell selection/reselection, Random Access, RRC connection and reconfiguration, Attach, Measurements, Handover, Track Area Update, IP Address Allocation. **User Plane** - Logical, transport and physical channel mapping, Addressing the devices on the radio layer, User plane layer 2 (PDCP+RLC+MAC) functions, End to end user plane data flow and Lab sessions with Network Simulator Mr. Sudhish, Nokia.
Day 5	Overview of QoS principles in LTE, Overview of MAC Scheduler functions and Lab sessions with Network Simulator by Mr. Sudhish, Nokia.

Who can register?: UG/PG Students, Faculty and Industry persons

Registration Fee (Inclusive of GST):

For Faculty: Rs. 5000/- (Non IEEE members)
Rs.3750/- (IEEE members)
For Students: Rs. 3750/- (Non IEEE members)
Rs. 3250/- (IEEE members)
For Industry Participants: Rs. 5000/-

Last Date for Registration: 20th September 2018

Kindly send the filled registration form along with DD.
DD should be drawn in favor of **PRINCIPAL, RVCE** payable at Bangalore.
Registration fees includes: Lunch and refreshments for all five days, Registration kit and study material.

Coordinators

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Student Coordinators

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Registration Form

Name _____

Designation _____
Industry/Research/Faculty_____Organization_____
Address for Communication _____

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Phone_____ Email_____

Gender: Category:

Registration Fee Details

DD No./Date _____Amount_____

Name of the Bank/Branch _____

Place _____ Date _____

Applicant's Signature Signature of Head of Institute/
Sponsoring Authority
(for sponsored candidates)