JSS MAHAVIDYAPEETHA

JSS SCIENCE AND TECHNOLOGY UNIVERSITY

SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING

- Constituent College of JSS Science and Technology University
- Approved by A.I.C.T.E
- Governed by the Grant-in-Aid Rules of Government of Karnataka
- Identified as lead institution for World Bank Assistance under TEQIP Scheme

Workshop on 5G evolution - Experiential learning through simulations and real-time LTE and 5G networks held on 18th, 19th, 25th and 26th March 2021

Program

Introduction to LTE, Channel Structure of LTE, Downlink OFDMA Radio Resource, Uplink SC FDMA Radio Resource.

- Overview, Downlink shared channels, Downlink Control Channels, Broadcast channels, Multicast channels, Downlink physical channels, H ARQ on Downlink

- Overview, Uplink shared channels, Uplink Control Information, Uplink Reference signals, Random Access Channels, H ARQ on uplink

- Hybrid ARQ procedures, Channel Quality Indicator CQI feedback, Precoder for closed loop MIMO Operations, Uplink channel sounding, Buffer status Reporting in uplink, Scheduling and Resource Allocation, Cell Search, Random Access Procedures, Power Control in uplink

- Decoding of the physical layer messaging for each of these procedures from the call flow traces from a real network

- PDCP overview, MAC/RLC overview, RRC overview, Mobility Management, Inter cell Interference Coordination

- Everything about 5G with an end-to-end call demo!

- Hands-on experiential learning through simulation

About the workshop

This is a unique skill development workshop for academicians, from the industry experts. This partnership program is targeted for postgraduates who aim to upgrade their know how on LTE/5G technologies and its application in real time use cases. This workshop ranges from theoretical overview to practical understanding that imparts participants with an idea of how the network can be designed and implemented in real use cases. It is an exclusive platform where

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industry experts and hands on practitioners will share experience and knowledge. The workshop offered by Nokia is beyond theory! The workshop is conducted by an experienced team of R&D experts who work with operators, vendors, systems integrators and enterprises around the world, and innovate. The workshop will bring a clear understanding of how 5G delivers faster speed, less latency, when connecting to the network and the ability to connect many devices to the internet handling many users with heavy traffic without bogging it down.

Program outcome...

• Associate terms in the system architecture to the functional standard specified in LTE.

• Analyze the role of LTE radio interface protocols and EPS Data convergence protocols to set up, reconfigure and release data and voice from users.

• Demonstrate the UTRAN and EPS handling processes from set up to release including mobility management for a variety of data call scenarios.

• Test and Evaluate the Performance of resource management and packet data processing and transport algorithms.

Speakers

• Wireless fundamentals up to evolution of LTE - Vivek R Anand, Nokia
• Overview and Channel Structure of LTE - Rajiv Narahari, Nokia
• Downlink Transport Channel Processing - Kiran C P, Nokia
• Hands on session virtually through Simulations - Arasu M, Nokia
• Uplink Channel Transport Processing - Kiran C P, Nokia
• Physical Layer Procedures - Rajat Duggal, Nokia
• Hands-on through virtual session - Rajat Duggal, Nokia
• Radio Resource Management and Mobility Management - Prateet Erayi, Nokia
• Hands on through virtual session - Prateet Erayi and Vivek R Anand, Nokia
• 5G evolution, 5G architectures, call flows - Shilpa Puttegowda, Nokia
• Introduction to IMS and call scenario - Maneesh K P, Nokia