SCHOOL OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING – DATA SCIENCE

Report on
"Guest Lecture on
Mobile Communications"

Academic Year: 2025-2026

Activity: Report on Guest Lecture   **Date: 29-01-2026**

Title: Mobile Communications **Date**: 29th

January 2026

Venue: Conference Hall

Name of the Guest Speaker: A. Devender Reddy (Sub Divisional Engineer, BSNL, Hyderabad)

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Objectives:

- To explain the fundamentals of mobile communication systems, including architecture, protocols, and network types (2G, 3G, 4G, 5G, and emerging 6G technologies).

- To analyze the evolution and current trends in mobile communication technologies, including wireless standards, spectrum allocation, and network optimization.

- To examine the applications and impact of mobile communications on society, business, healthcare, and daily life.

Highlights of the discussion:

- Introduction to Mobile Communications: Basics, history, and evolution from 1G to 5G and emerging 6G.

- Mobile Network Architecture: Cellular networks, base stations, core networks, and protocols.

- Wireless Communication Technologies: 2G, 3G, 4GLTE, 5GNR, Wi-Fi, and IoT integration.

- Role of BSNL in State Government Projects

- Mobile Communication Applications: Healthcare, business, social connectivity and IoT.

- Security and Privacy in Mobile Networks: Encryption, authentication, and potential threats.

Learning Outcomes:

- Understand the fundamentals of mobile communication systems, including architecture, protocols, andnetworktypes (2G to 5G/6G).

- Gain knowledge of wireless communication technologies and their evolution, applications, and real-world impact.

- Develop awareness of spectrum management, security, and privacy issues in mobile networks.

- Analyze challenges and emerging trends in mobile communications, such as IoT integration, network optimization, and low-latency applications.

Conclusion:

This report provided a comprehensive overview of mobile communications, tracing its evolution from 2G to 5G, including network architecture, protocols, and wireless technologies. Key applications in business, healthcare, and smart cities were discussed, along with challenges like security, coverage, and latency. Students gained practical insights into emerging trends, IoT integration, and future innovations, understanding the vital role of mobile networks in shaping a connected, technology-driven world.

FACUTLY CO-ORDINATOR   **HOD–CSE (DS)**