VASIREDDY VENKATADRI INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

(NBA Accredited and DST-FIST Sponsored Department)   **FEBRUARY 2024**

DEPARTMENT VISION

To produce globally competitive and socially responsible engineering graduates and to bring out quality research and education, generating knowledge in the frontier areas of Electronics and Communication Engineering

DEPARTMENT MISSION

1. To achieve self-sufficiency on all fronts to ensure qualitative Teaching-Learning practices.
2. To provide quality education, student-centred Teaching-Learning processes and state of art infrastructure for professional aspirants hailing from both rural and urban areas.
3. To impart technical education that encourages independent thinking, developing strong domain knowledge, contemporary skills and attitude towards holistic growth of young minds.
4. Responsiveness to both local and global industry needs and creating opportunities through incubation and implementation of innovative programs
5. To serve the community as disciplined responsible citizens in a rapidly changing and expanding global community.
6. Evolving this organization into a centre of academic and research excellence.

NAVIGATING 5G NETWORK LANDSCAPE

In telecommunications, **5G** is the fifth-generation technology standard for cellular networks, which cellular phone companies began deploying worldwide in 2019, and is the successor to 4G technology that provides connectivity to most current mobile phones.Like its predecessors, 5G networks are cellular networks, in which the service area is divided into small geographical areas called cells. All 5G wireless devices in a cell are connected to the Internet and the telephone network by radio waves

through a basestation and antennae in the cell. The new networks have higher download speeds, with a peak speed of 10 gigabits per second

5G has higher bandwidth to deliver faster speeds than 4G and can connect more devices, improving the quality of Internet servicesin crowded areas.Due to the increased bandwidth, it is expected the 5G networks will increasingly be used as general internet service providers (ISPs), competing with existing ISPs such as cable internet, and also will make possible new applications in internet-of-things (IoT) and machine-to-machine areas. Cellphones with 4G capability alone are not able to use the 5G networks. 5G networks will enable the connection for billions of new devices, sensors, and systems that will intelligently connect to the network based on their time sensitivity and computational needs. 5G networks will leverage low, mid, and highband spectrum , requiring the deployment of smalls cells in addition to macro towers. These small cells will

5G launch in India was done by Prime Minister Narendra Modi at the India Mobile Congress, New Delhi on October 1st. The fifth-gen cellular connectivity is now live in the country and will be available to 75 percent of the population by the end of 2022. Airtel has announced the launch of 5G services in eight cities across India, while Jio 5G services will kick off later this month. This will be followed by Vi 5G rollout in the country. BSNL 5G launch in India has also been announced. That said, don't expect the countrywide availability of the network just yet. The 5G services will take time to mature and initially be available in a handful of cities. 5G, short for the fifth generation, is a new global wireless standard that succeeds the 4G

5G Connections & Devices

> *"5G IS COMING ANYWAY, AND IT GOING TO BLOW YOU AWAY."*

-MIT Technology Review