

# M V J COLLEGE OF ENGINEERING

## DEPARTMENT OF TELECOMMUNICATION ENGINEERING

### SEMINAR REPORT

#### Seminar on “Recent Developments in Telecommunication Engineering”

MVJ College of Engineering, Department of Telecommunication Engineering had conducted “Seminar on Recent Developments in Telecommunication Engineering” at Smt. Rajalakshmi Seminar Hall, MVJCE which is an intra- department program to update the faculty members and students on 22<sup>nd</sup> September 2016.

**Speaker:** Mr. C. S. HANCHINAL, SDE (Lecturer), RTTC MYSORE.

The Seminar was emphasized on the following:

Telecommunication is a diverse field of engineering which is connected to electronics, civil, structural, and electrical engineering. It provides the method for customers to have telephone and high-speed data services. The Lecture gave a brief insight to students about the Recent Developments in the field of Telecommunication Engineering. The topics which were covered are Evolution of switching system (manual s/w, electromechanical switch, Digital SPC Exchange). Complete evolution of switching system was explained. How the calls are being made with the help of the switches like manual, cross bar switch, strowger, and electronic switches was explained. Discussion on different transmission media was done which included Optical Fibre communication and the developments occurring in the same. Fiber-optic communication is a method of transmitting information from one place to another by sending pulses of light through an optical fiber. The light forms an electromagnetic carrier wave that is modulated to carry information. First developed in the 1970s, fiber-optics have revolutionized the telecommunications industry and have played a major role in the advent of the Information Age. Because of its advantages over electrical transmission, optical fibers have largely replaced copper wire communications in core networks in the developed world. Optical fiber is used by many telecommunications companies to transmit telephone signals, Internet communication, and cable television signals. Researchers at Bell Labs have reached internet speeds of over 100 petabit×kilometer per second using fiber-optic communication

The growth of the number of mobile subscribers over the last years led to voice-oriented wireless telephony. From a number of 214 million subscribers in 1997 to 1.162 millions in 2002, it is predicted that by 2010 there will be 1700 million subscribers worldwide. It was the time to explore new demands and to find new ways to extend the mobile concept. The steps which were taken were the development of 1G.To digitize it 2G came into existence. 2.5G gave users access to a data network (e.g. Internet access, MMS - Multimedia Message Service). However, users

and applications demanded more communication power. As a response to this demand a new generation with new standards were developed - 3G... This network has been deployed in Japan in 2001 using international standard IMT-2000, with great success. The objective of the 3G was to develop a new protocol and new technologies to further enhance the mobile experience. In contrast, the new 4G framework to be established will try to accomplish new levels of user experience and multi-service capacity by also integrating all the mobile technologies that exist (e.g. GSM - Global System for Mobile Communications, GPRS - General Packet Radio Service, IMT-2000 - International Mobile Communications, Wi-Fi - Wireless Fidelity, and Bluetooth). The main objectives of 4G networks can be stated in the following properties: Ubiquity; Multi-service platform; Low bit cost. 5G will build on the foundation created by 4G LTE. It's going to allow people send texts, make calls, and browse the web as always—and it will dramatically increase the speed at which data is transferred across the network. 5G will make it easier for people to download and upload Ultra HD and 3D video. There was a discussion on the different multiple access techniques serve the increased number of users like FDMA, TDMA and CDMA.



