A.Y. 2018-19

ADVANCED TELECOMMUNICATION NETWORKS
WORKSHOP REPORT

DATE:20th and 21st June 2018
EVENT: Workshop
TIME:9.50 AM
VENUE:Seminar Hall, KITS Guntur
ORGANIZED BY:SPACE, E.C.E Dept.
FACULTY INCHARGE:P.AshokBabu

EVENT DESCRIPTION:

The ECE department association "SPACE" conducted a two day work shop on20th and 21st June 2018 in Seminar Hall.The resource persons for this work shop are **Er. Raman Grover, Director Operations Cinif Technologies** and **Er. Sahil Saini, Assistant Manager (Technical),Cinif Technologies**. The topic of work shop is "**ADVANCED TELECOMMUNICATION NETWORKS WORKSHOP**". This work shop is conducted to bring the awareness about Telecommunication Technologies used around the world.

ABOUT CINIF TECHNOLOGY:

CTL (CINIF TECHNOLOGIES LIMITED) has strategic business alliances for broad spectrum of products and services which allows us to offer most cost effective solutions to the customers. We provide business and Telecom solutions. In order to serve our existing customers, we have support service arrangements in various cities across the country. CINIF Technologies established in 2009 and recently company becomes a Public Limited Registered under the Companies Act, 2013. CTL is one of the world's leading communication service providers. Focused primarily on the telecommunication's industry, Cinif Technologies Limited is a leading global systems integrator and business transformation consulting group.

We aim at raising standard of professionalism within the training industry and creating standards of excellence against which candidates are measured. Network Management Services training programs are continuously striving for the excellence education, training and development in the field of telecom technology. Our development team has range of knowledge and experience and always completes project in time. The company employed experienced, hard working responsible professional in different areas of knowledge.

SESSION ACTIVITIES:

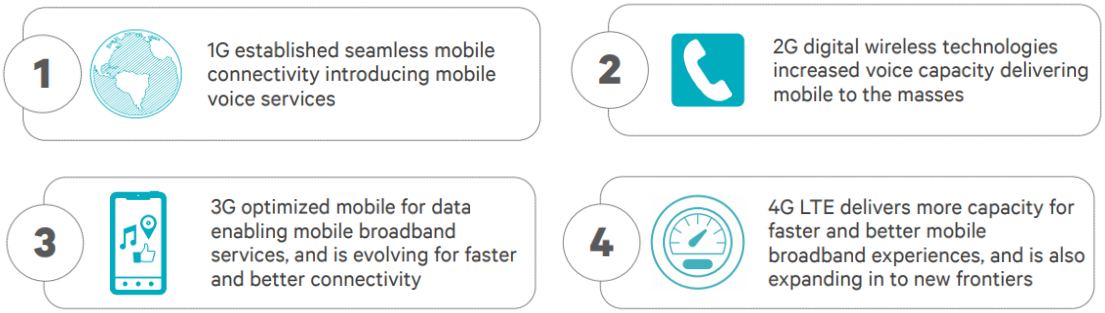
DAY 01:

As per the given instructions by the Dr. Siva Ganga Prasad, HOD ECE dept., the student and faculty incharges made proper arrangements for the work shop.At 9.50AM participants enter into the Seminar Hall. At 10.00 AMthe resource persons enter into the lab along with HOD & other faculty. The workshop is started with opening remarks of Dr. Siva Ganga Prasad . After soothing message of Ch.Chandrashekar Reddy the work shop started at10.20 AM**Er. SahilSaini, Assistant Manager (Technical),Cinif Technologies,**Started the workshop with the explanation of telecommunication.

On first day the resource person explained about Evaluation of telecommunication along with

- Triple C concept : Circle, Cluster ,cell
- Cell sectorization
- RF planning
- GSM
- LOS (Line of Sight)

He neatly explained about the generation along with the technologies involved in them



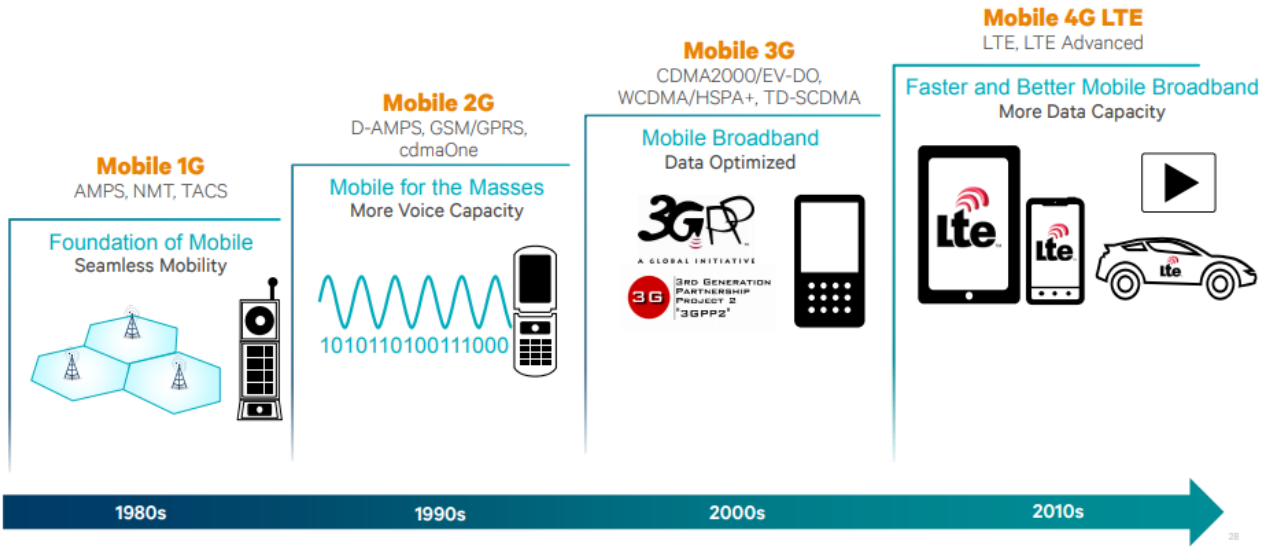
Er. SahilSaini gave the clear information about 4G technology. According to him "The 4G is an emerging technology in the field of communication. As the data requirements increased, efforts were made to improve the downlink and uplink throughput rates by employing higher modulation techniques." Third Generation Partnership Project (3GPP) launched the Long Term Evolution (LTE) project in November 2004 in order to ensure the continued competitiveness of the UMTS in the future. As LTE is considered as the evolution of universal mobile telephone system (UMTS), hence LTE's equivalent components are thus named evolved UMTS terrestrial radio access (EUTRA) and evolved UMTS terrestrial radio access network (EUTRAN). The basic architecture of LTE contains a separate IP connectivity layer for all the IP based services and Evolved Packet System (EPS) which handles the overall communication procedure. LTE is completely an all IP based system. Since there are provisions in LTE for inter-operation with existing systems, there are various paths available to connect toLTE. An operator with a GPRS/EDGE network or aNon3GPP systems can connect to a LTE network. Due to this increased flexibility, LTE is the choice of majority of operators worldwide. By using Orthogonal Frequency Division Multiple Access (OFDMA), LTE will be able to provide download rates of about 100 Mbps for multiantenna (2x2), multiple-input multiple output (MIMO) for the highest category terminals. For these terminals upload rate is about 50 Mbps. Moreover, it provides better mobility, efficient radio usage, high level of security, flexible spectrum utilization, reduced delay/latency, cost efficient deployment and various other advantages which makes LTE more reliable and user friendly.

Key features and facilities of 4G High spectral efficiency

- ✓ High voice quality.
- ✓ Easily access internet, streaming media, video calling etc.
- ✓ Very low latency.
- ✓ Simple protocol architecture.
- ✓ Efficient multicast/broadcast.

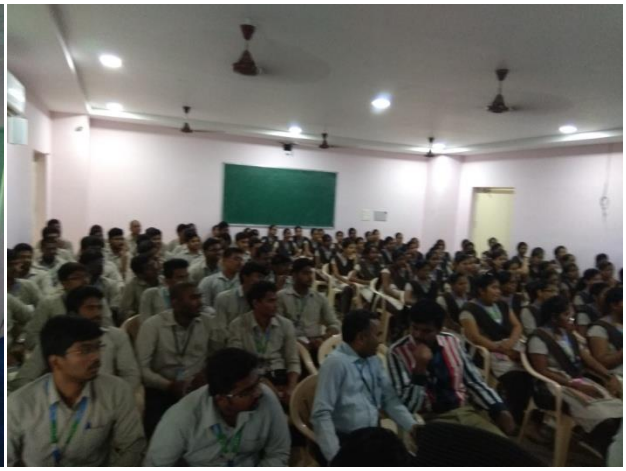
Basic disadvantages of 4G Higher data prices for consumers.

- ✓ It is very expensive and hard to implement.
- ✓ Complex hardware.
- ✓ Power usage is more.



Day 02

On the second day **Er.SahilSaini** focused on the 5G technology. He explained What is (and what isn't) 5G, and what is the difference between 4G / LTE and 5G?andHow 5G works.



What is (and what isn't) 5G, and what is the difference between 4G / LTE and 5G?

The next (5th) generation wireless network will address the evolution beyond mobile internet to massive IoT (Internet of Things) for the horizon 2020. The main evolution compared with today's 4G and 4.5G (LTE advanced) is that beyond data speed improvements, new IoT and critical communication use cases will require new types of improved performance. For example

“low latency” is what provides real-time interactivity for services using the cloud: this is key for the success of self-driving cars for example. Also, low power consumption is what will allow connected objects to operate for months or years without the need for human assistance.

Unlike current IoT services that make performance trade-offs to get the best from current wireless technologies (3G, 4G, WiFi, Bluetooth, Zigbee, etc…), 5G networks will be designed to bring the level of performance needed for massive IoT. It will enable a perceived fully ubiquitous connected world.

How 5G works

Wireless networks are composed of cell sites divided into sectors that send data through radio waves. Fourth-generation (4G) Long-Term Evolution (LTE) wireless technology provides the foundation for 5G. Unlike 4G, which requires large, high-power cell towers to radiate signals over longer distances, 5G wireless signals will be transmitted via large numbers of small cell stations located in places like light poles or building roofs. The use of multiple small cells is necessary because the millimeter wave spectrum -- the band of spectrum between 30 GHz and 300 GHz that 5G relies on to generate high speeds -- can only travel over short distances and is subject to interference from weather and physical obstacles, like buildings.

Previous generations of wireless technology have used lower-frequency bands of spectrum. To offset millimeter wave challenges relating to distance and interference, the wireless industry is also considering the use of lower-frequency spectrum for 5G networks so network operators could use spectrum they already own to build out their new networks.

Important Advantages

There are several advantages of 5G technology, some of the advantages have been shown in the above Ericsson image, and many others are described below −

- High resolution and bi-directional large bandwidth shaping.
- Technology to gather all networks on one platform.
- More effective and efficient.
- Technology to facilitate subscriber supervision tools for the quick action.

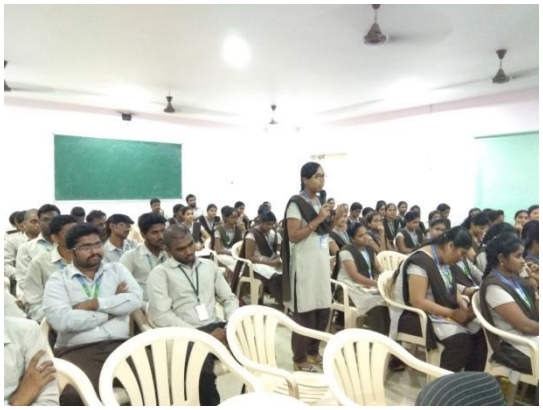
- Most likely, will provide a huge broadcasting data (in Gigabit), which will support more than 60,000 connections.
- Easily manageable with the previous generations.
- Technological sound to support heterogeneous services (including private network).
- Possible to provide uniform, uninterrupted, and consistent connectivity across the world.

Disadvantages of 5G Technology

Though, 5G technology is researched and conceptualized to solve all radio signal problems and hardship of mobile world, but because of some security reason and lack of technological advancement in most of the geographic regions, it has following shortcomings –

- Technology is still under process and research on its viability is going on.
- The speed, this technology is claiming seems difficult to achieve (in future, it might be) because of the incompetent technological support in most parts of the world.
- Many of the old devices would not be competent to 5G, hence, all of them need to be replaced with new one — expensive deal.
- Developing infrastructure needs high cost.
- Security and privacy issue yet to be solved.

In the valedictory function, Some of our of our students gave the feedback on the workshop and expressed their gratitude of thanks to the Resource persons, Department and College. They requested the Principal and Hod to Organize hands on experience work shop on telecommunication. And they are very interested to participate hands on experience workshop on the telecommunication network.



After the messages of Principal sir and HoD the chief guest honored by the Principal sir with a Shalv and Memento.

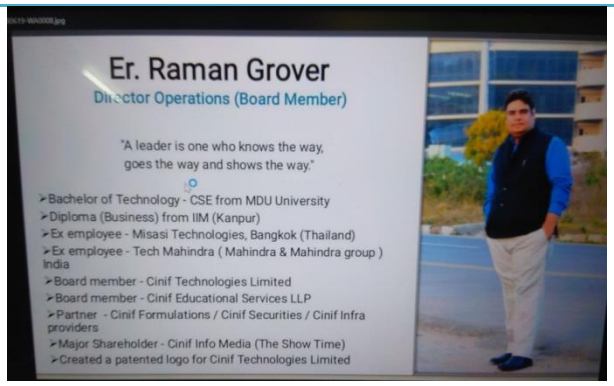



The Vote of Thanks was delivered by **Mr.Ch.ChandraSekharReddy,**Assistant Professor of ECE. On behalf of the department of Electronics and communication engineering, the hosting department, He extended her gratitude to the College Management, Principal, Vice Principal, HoD, Delegates, Panelists and Organizing Committee. The Conference came to end with the National Anthem.

Edited By/-
Mr. Maduguri Sudhir
Asst. Prof.

Gallery


A Two day WorkShop
ON
ADVANCED
TELECOMMUNICATION
NETWORKS
By
CINIF Technologies Limited (CTL) - Chandigarh
CTL
Dates : 20th & 21st June 2018
Organized by
Department of ECE
Venue: Seminar Hall
KITS
KKR & KSR INSTITUTE OF
TECHNOLOGY AND SCIENCES
Vinjanampadu, Vatticherukuru Mandal, Guntur - 522 017, A.P.


Er. Raman Grover
Director Operations (Board Member)
"A leader is one who knows the way,
goes the way and shows the way."
Bachelor of Technology - CSE from MDU University
Diploma (Business) from IIM (Kanpur)
Ex employee - Misasi Technologies, Bangkok (Thailand)
Ex employee - Tech Mahindra (Mahindra & Mahindra group) India
Board member - Cinif Technologies Limited
Board member - Cinif Educational Services LLP
Partner - Cinif Formulations / Cinif Securities / Cinif Infra providers
Major Shareholder - Cinif Info Media (The Show Time)
Created a patented logo for Cinif Technologies Limited


Er. Sahil Saini
Assistant Manager (Technical)
"I never dreamed about success, I worked for it."
B. Tech (ECE)
M. Tech (Specialization in Communication)
17th Annual ISTE (Best all rounder student)
Ex - BTS Engineer – ZTE
Ex - BSS Engineer - ZTE
Ex - OMCR Engineer - ZTE
AM Technical (Telecom) - CTL


ADVANCED TELECOMMUNICATION NETWORKS
CINIF Technologies Limited (CTL) - Chandigarh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