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(AUTONOMOUS)
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DEPARTMENT OF INFORMATION TECHNOLOGY

Report on "5G Technology and IOT"

Event Type: Workshop (Online)

Date / Duration: 27th – 29th May,2021, Three days

Resource Person: N. Surendra Babu

Application Engineer, SAARC Region

Calnex Solutions Limited, Scotland, UK.

Name of Coordinator(s): Mrs.S.Nagamani, Assistant.Professor., Dept.of IT, LBRCE-Mylavaram.

Co-Cordinators: Mrs. M.Hemalatha, Sr.Assistant.Professor., Dept. of IT, LBRCE-Mylavaram.

Mr.K.Phaneendra,Assistant Professsor,Dept.of.IT,LBRCE-Mylavaram.

Target Audience: B.Tech. (Second year& Third year) and MCA Students

Students Total no of Participants: Internal – 190 External-110

Objective of the event: To extend practical knowledge in 5G Technology and IOT

Outcome of event:

At the end of the event students can able to Understand

- The Evolution of Telecommunications till 5G
- Working of Wired Telephones
- Network Devices
- Network Devices Cabling and Connectivity
- Network Sniffers
- How Internet works?
- Synchronization of Computer Network, PTP -1588V2 and SyncE protocols
- Applications of Computer Network Synchronization
- Global Navigation Satellite System (GNSS)
- Why 5G is better for IoT

Description / Report on Event:

The three-day workshop conducted through Microsoft Teams on the first day and through Cisco Webex on remaining 2 days from 10.00A.M to 4.00.P.M

Day 1 (27/05/2021):

This Workshop was inaugurated on 27th May,2021 by Dr. B. Srinivasa Rao, HOD of IT department. The day started with the welcome speech given by the II-year student and continued the workshop. Next, Day 1 sessions and the following topics covered:

- Update on Evolution of Tele Communicaitons
- start with Telegraph, advances in Wired Telephone, manual switching,
- automated switching, Modem, ISDN, Internet, Email, VoIP Calls and Internet Calling,Virtual Reality, Augumented reality.
- Update on Evolution of Mobile Communications
- Given update on 1G, 2G, 3G, 4G, 5G
- Role Of Electronics and Computer Engineering in the Evolution

Day 2 (28/05/2021): Next, in day-2 sessions covered the following topics :

- **About Roters, Switches, HUB,IoT**
- About Rj11, RT45, BNC, OPtical Cables
- what is data speed? what are the differnet data speeds available.
- How much fiber optical cable can handle bandwidth.
- **Practical Session:**
- What address of the computer.
- What is MAC address
- What is IP address
- How check MAC and IP address of computer?
- How to configure IP address?
- Is it possible to configure/Modify MAC address?
- Why computer requires two address(MAC and IP addresses)
- About Wireshark
- How to capture Wired packets and Wireless pacekts
- Wireshark Demo – Capture ARP and PING packets in LAN
- Wireshark Demo – Capturing packets going to WAN
- Wireshark Filters, saving packets and sending PCAP over Email.

Day 3 (29/05/2021): Last day, regular sessions, quiz, feedback and valedictory completed

The topics covered in the last sessions include:

- Synchronization.
- How Synchnization achieved in 1G, 2G and 3G?
- What is GNSS?
- What are different GNSS systems?
- what is GPS (US), GLONASS (Russia), Galileo (EU), BeiDou (China)?
- what is QZSS (Japan) and IRNSS or NavIC (India)?
- How the 4G and 5G netwrok looks like?
- What is PTP protocol?
- What is SyncE?
- How SyncE and PTP help to achieve Synchronization in ethernet based networks
- Why 5G is good for IoT
- Real strong reason behind every G
- 5G deployment status
- 5G Requirements
- Connecting all Generations
- Different flavours of 5G
- 5G Umbrella
- IoT Applications

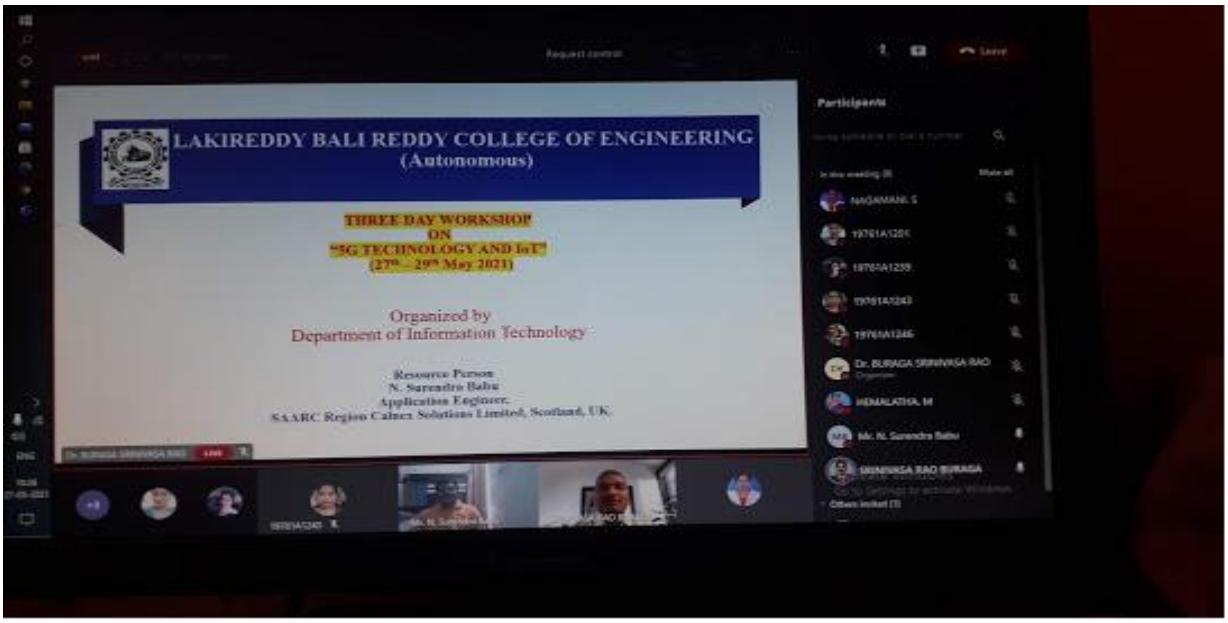
Feedback / Suggestions: The feedback survey (through Google sheets) was completed by 200 attendees, a response rate of about 75 percent. The survey's findings on outcomes, satisfaction, overall workshop feedback, and recommendations for improvement.

S.No	Content	Excellent	Good	Normal
1	**Content covered and Time management**	98	100	2
2	**Workshop fulfilled your Expectations.**	115	82	3
3	**Workshop was applicable to your career.**	112	80	8
4	**Presenters speak clearly and audibly**	131	65	4
5	**Knowledge gained**	102	94	4
6	**Command of expert over the content.**	114	82	4
7	**Worthiness of workshop**	106	88	6
8	**Overall Workshop rating.**	128	66	5

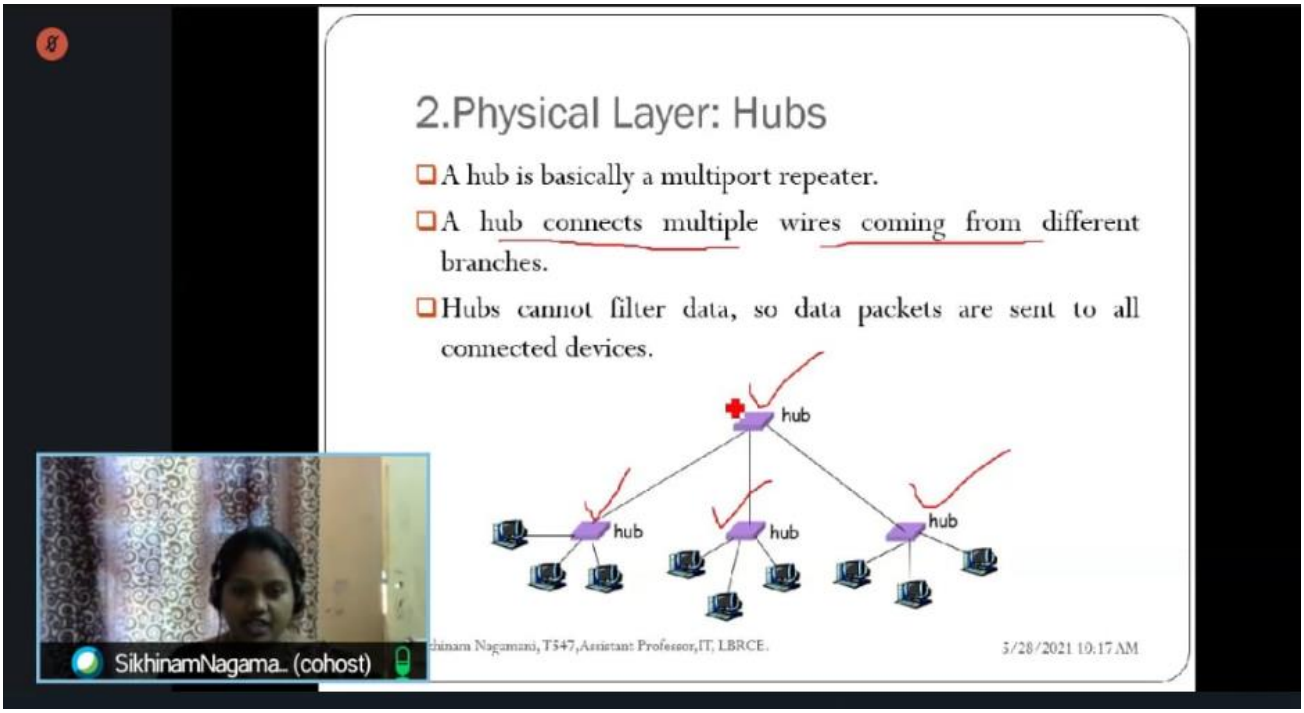
- Suggested to organize this kind Workshops frequently.
- Recommendations for improving future workshops by providing more time, background information, and documentation.

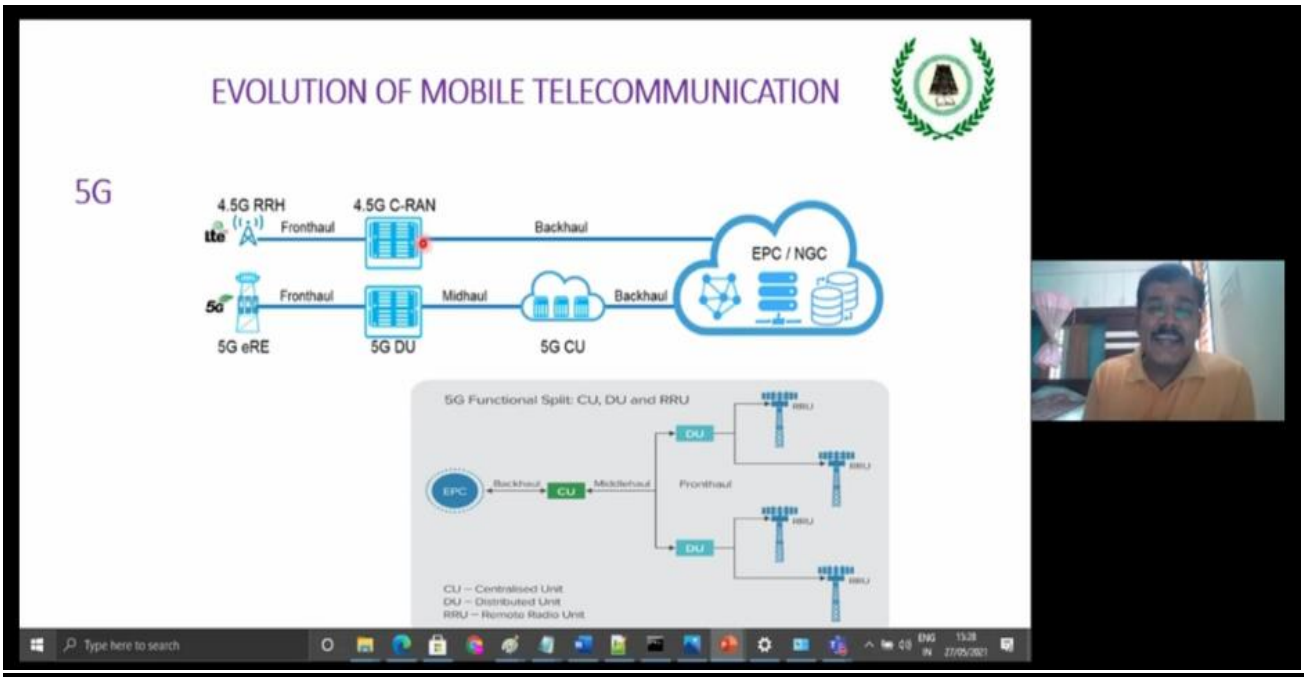
Photographs :(Max 10 limited)

Day-1(Inaguration)



Day-2:


2.Physical Layer: Hubs
A hub is basically a multiport repeater.
A hub connects multiple wires coming from different branches.
Hubs cannot filter data, so data packets are sent to all connected devices.
hub
hub
hub
hub
SikhinamNagama.. (cohost)
Sikhinam Nagamani, T547,Assistant Professor,IT, LBRCE.
5/28/2021 10:17 AM


EVOLUTION OF MOBILE TELECOMMUNICATION
5G
4.5G RRH
4.5G C-RAN
Fronthaul
Backhaul
EPC / NGC
Fronthaul
Midhaul
Backhaul
5G eRE
5G DU
5G CU
5G Functional Split: CU, DU and RRU
EPC
Backhaul
CU
Middlehaul
Fronthaul
DU
DU
RRU
CU – Centralised Unit
DU – Distributed Unit
RRU – Remote Radio Unit
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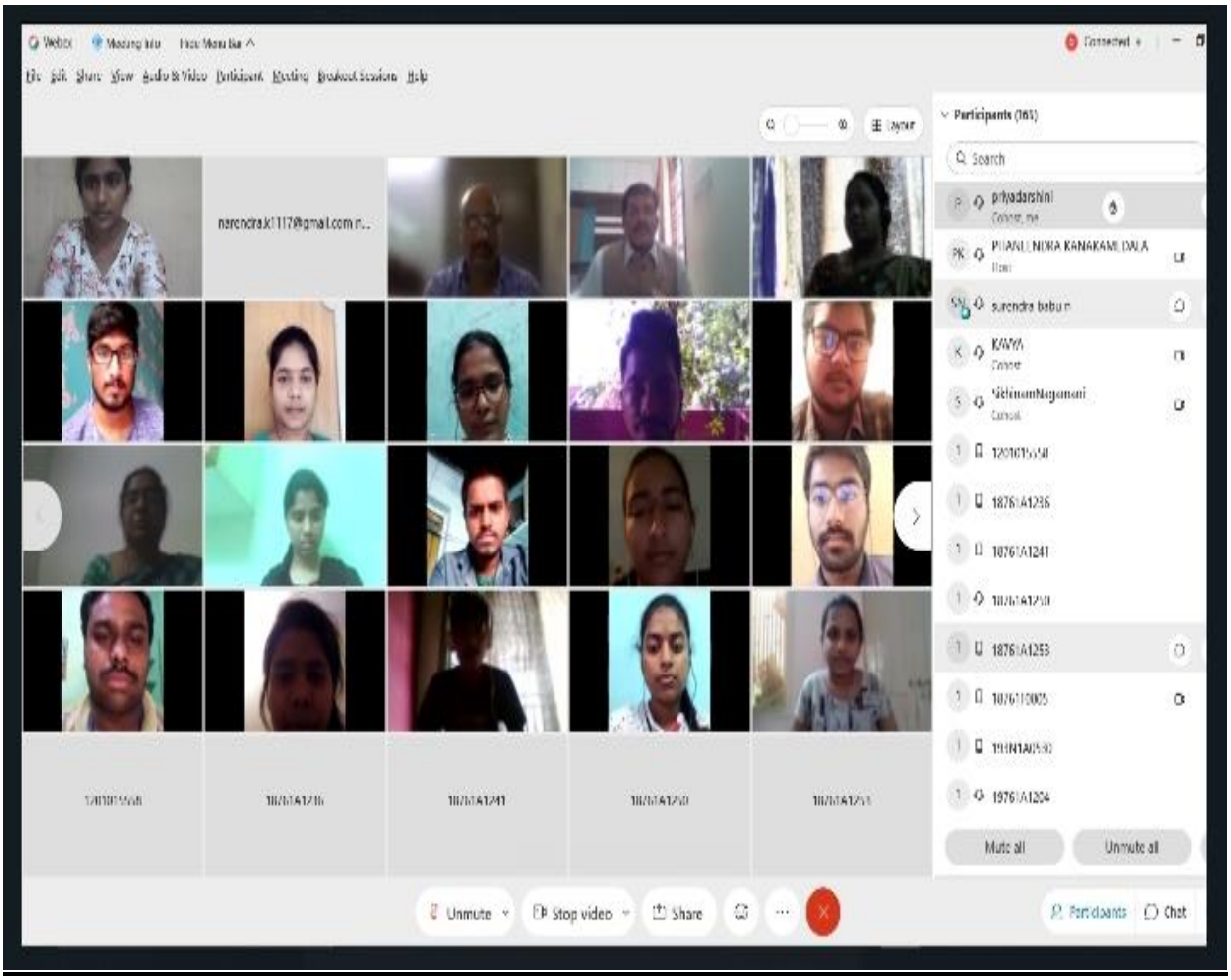
Day-3(Feedback and Valedictory)



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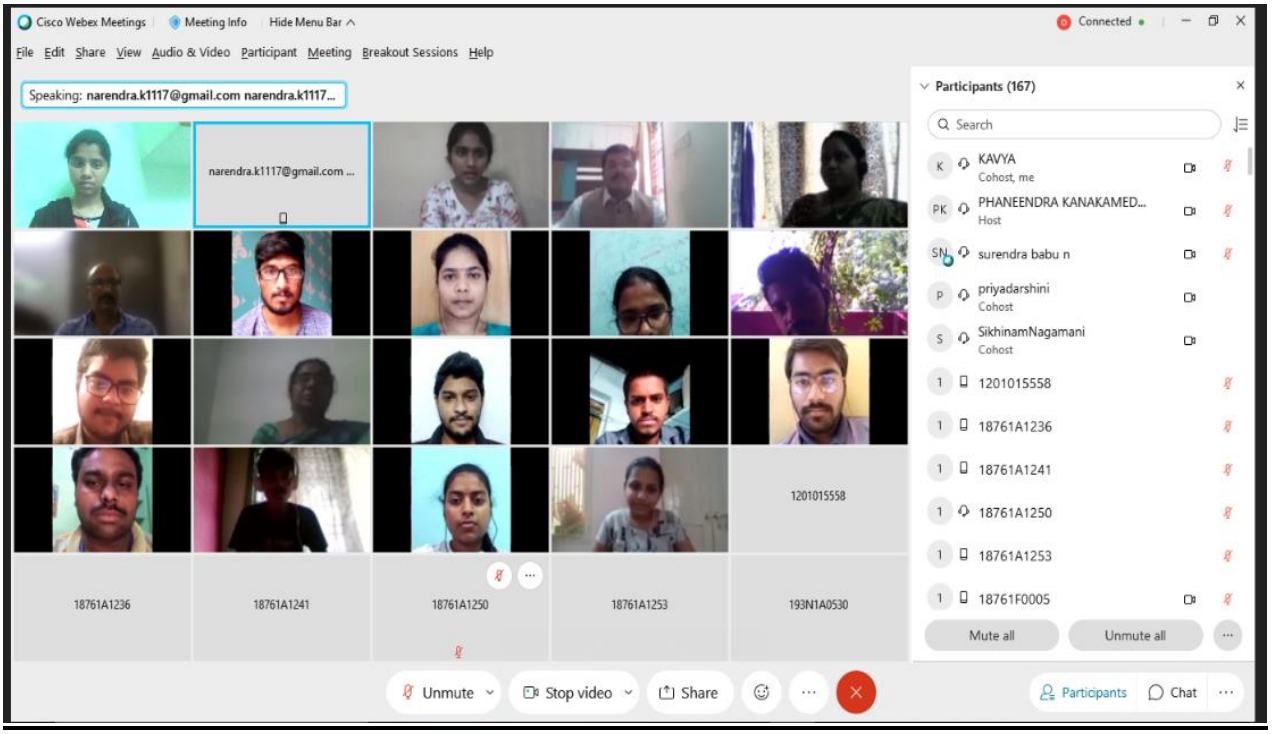

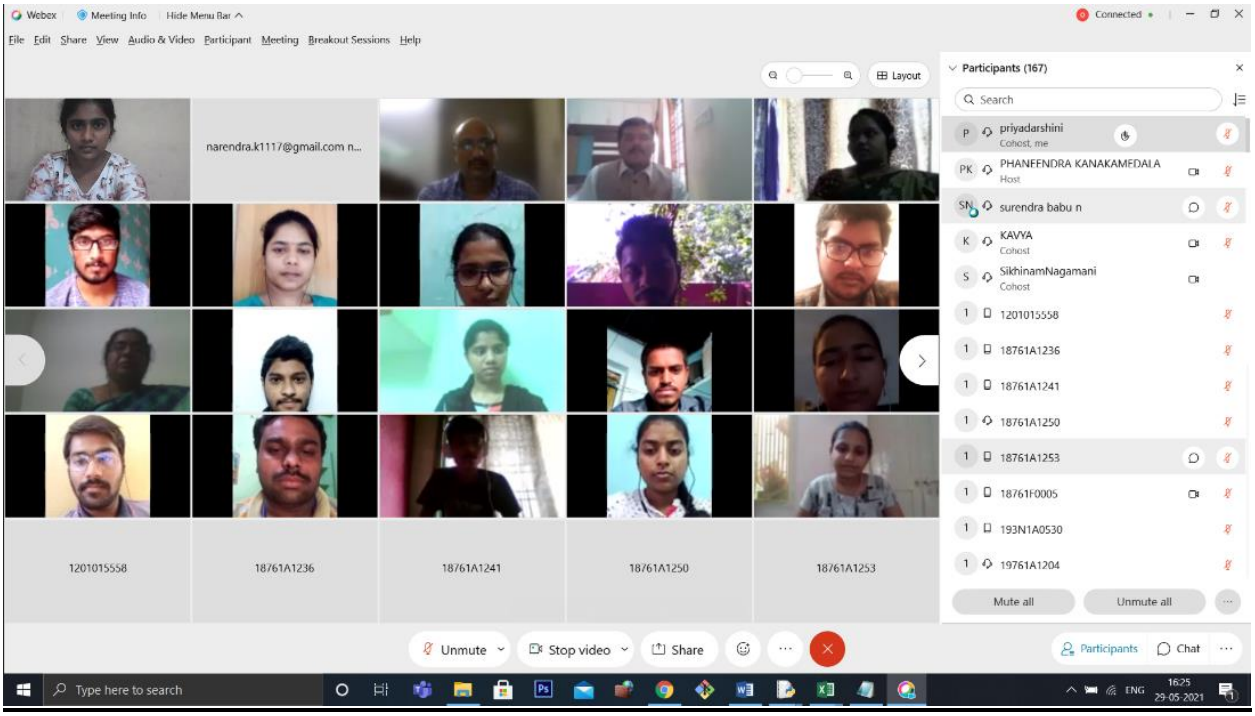

Coordinator

Mrs.S.Nagamani

Mrs.M.Hemalatha

Mr.K.Phaneendra

Convener

(Dr. B. Srinivasa Rao)