SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

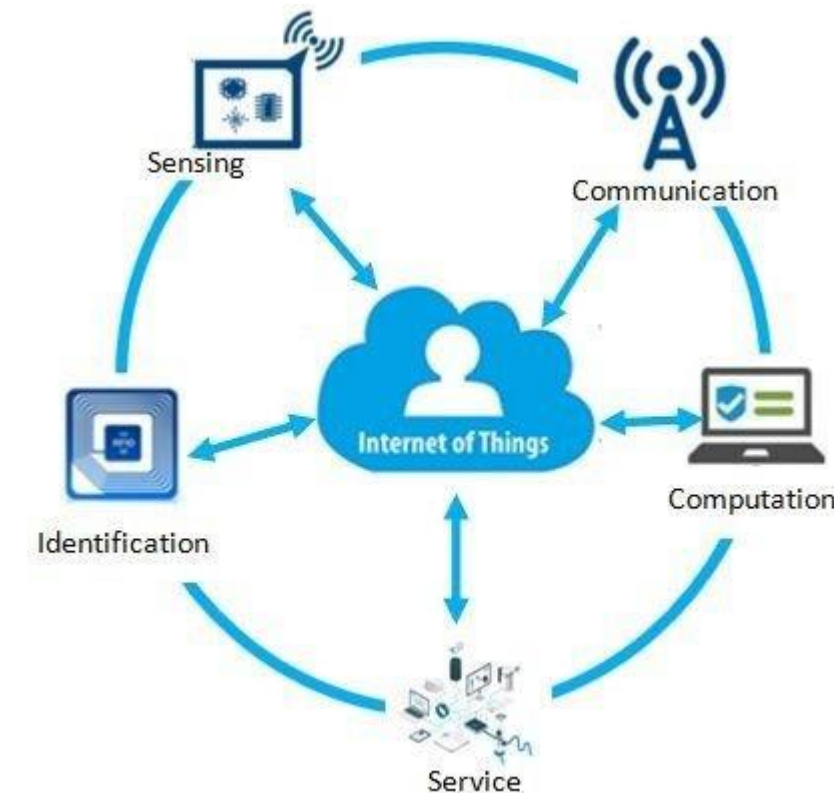## 16EET304/ IOT for Electrical Sciences
III YEAR VI SEM

UNIT 3 COMMUNICATION INTERFACE

TOPIC 1 – Elements of communication and networking
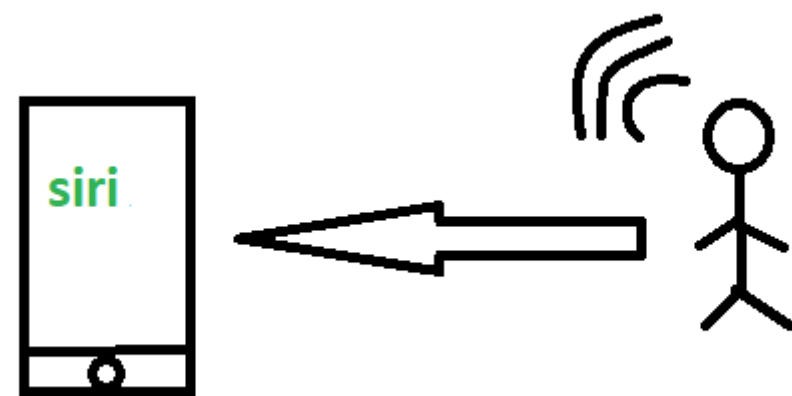
WHAT IS COMMUNICATION IN IOT?

IoT Communication defines the infrastructure, technologies and protocols used to connect IoT devices to each other, gateways and cloud platforms.

TYPES OF COMMUNICATIONS IN IOT

Human to Machine (H2M):

In this human gives input to IOT device i.e as speech/text/image etc. IOT device (Machine) like sensors and actuators then understands input, analyses it and responds back to human by means of text or Visual Display.
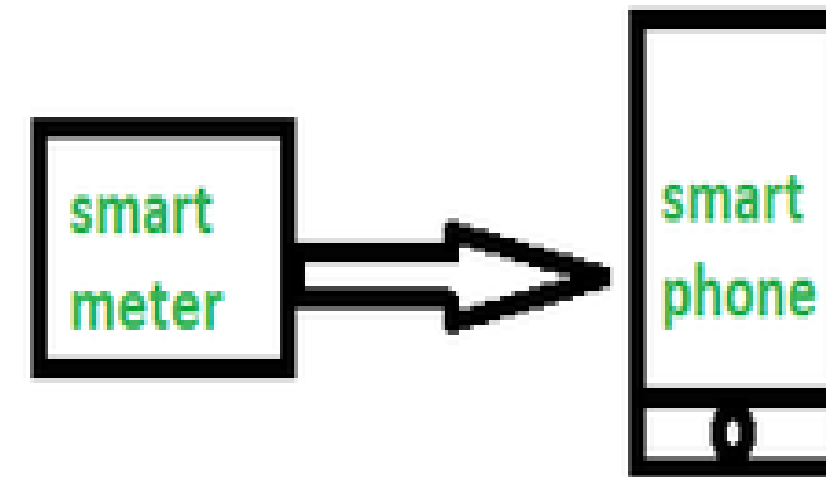
MACHINE TO MACHINE (M2M)

The process of exchanging information or messages between two or more machines or devices is known as Machine to Machine (M2M) communication.

It is the communication among the physical things which do not need human intervention.
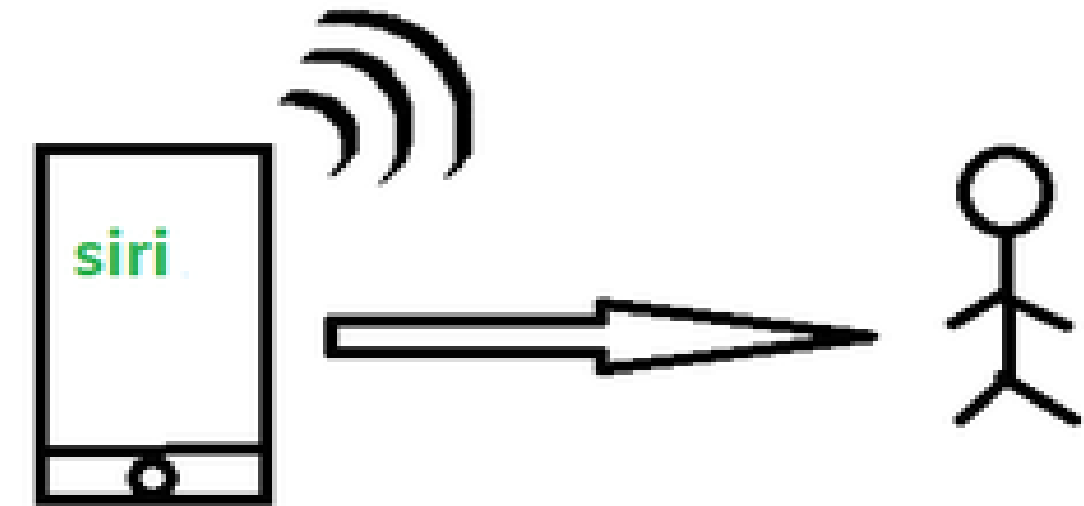
MACHINE TO HUMAN (M2H)

In this machine interacts with Humans. Machine triggers information (text messages /images /voice /signals) respective / irrespective of any human presence.

This type of communication is most commonly used where machines guide humans in their daily life.
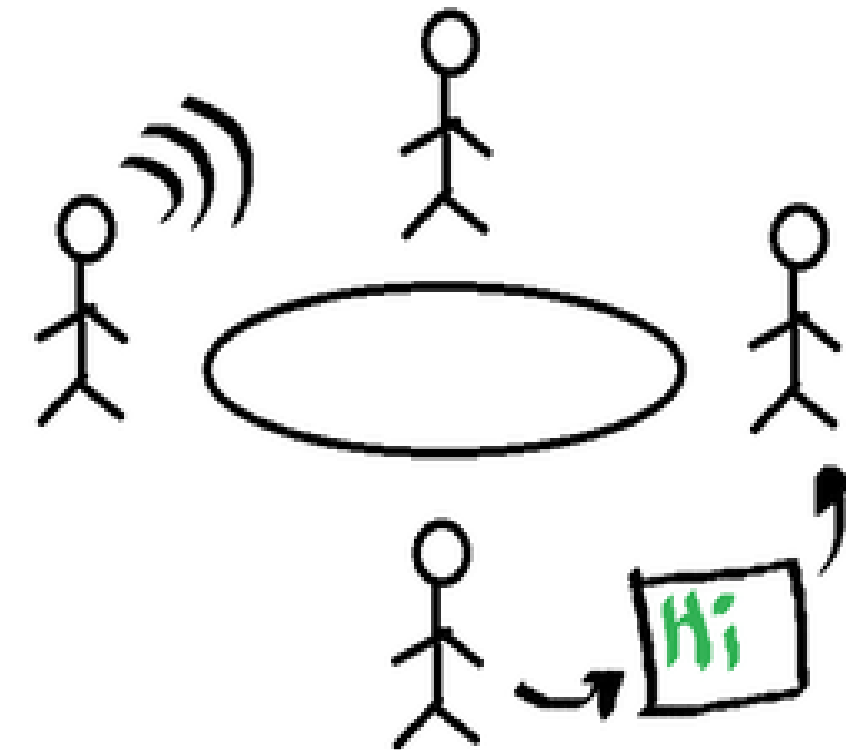
HUMAN TO HUMAN (H2H)

This is generally how humans communicate with each other to exchange information by speech, writing, drawing, facial expressions, body language etc.
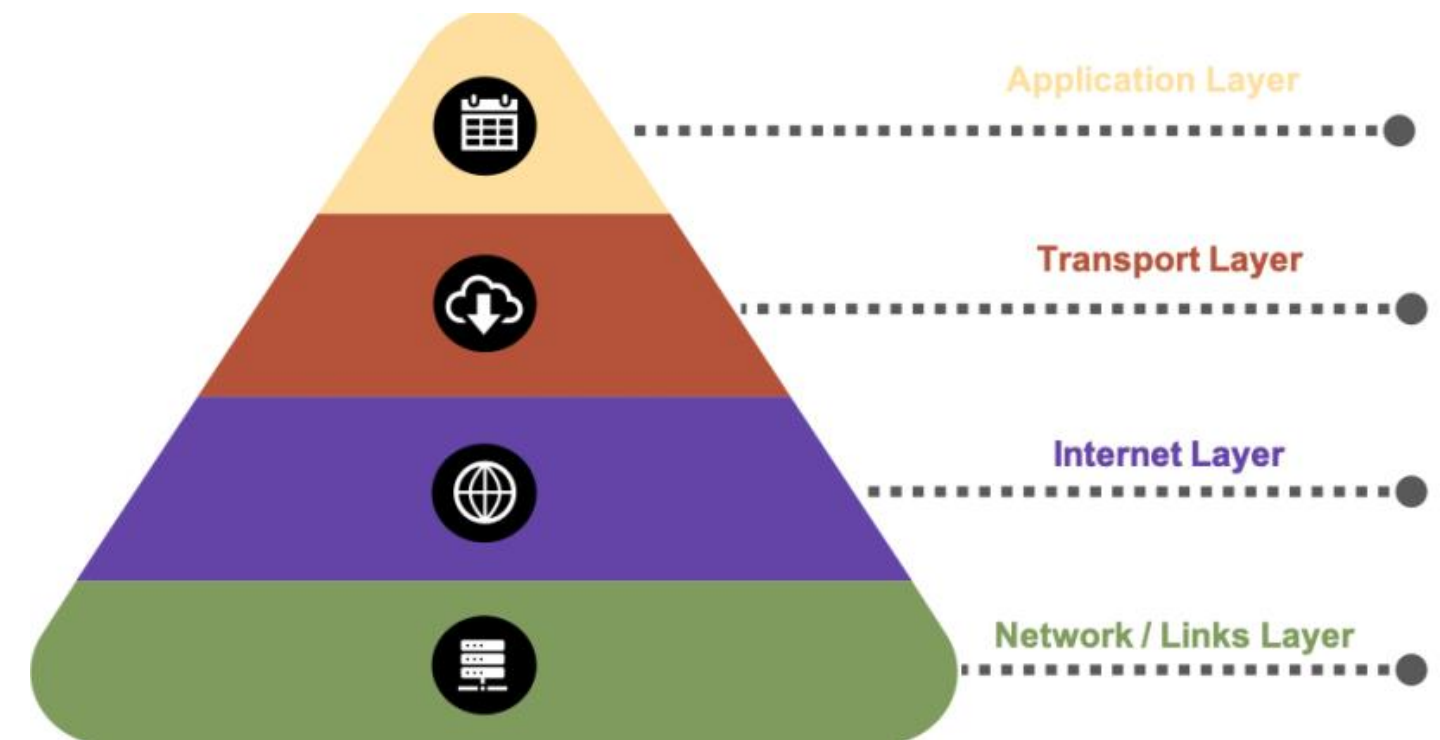
Without H2H, M2M applications cannot produce the expected benefits unless humans can immediately fix issues, solve challenges, and manage scenarios.
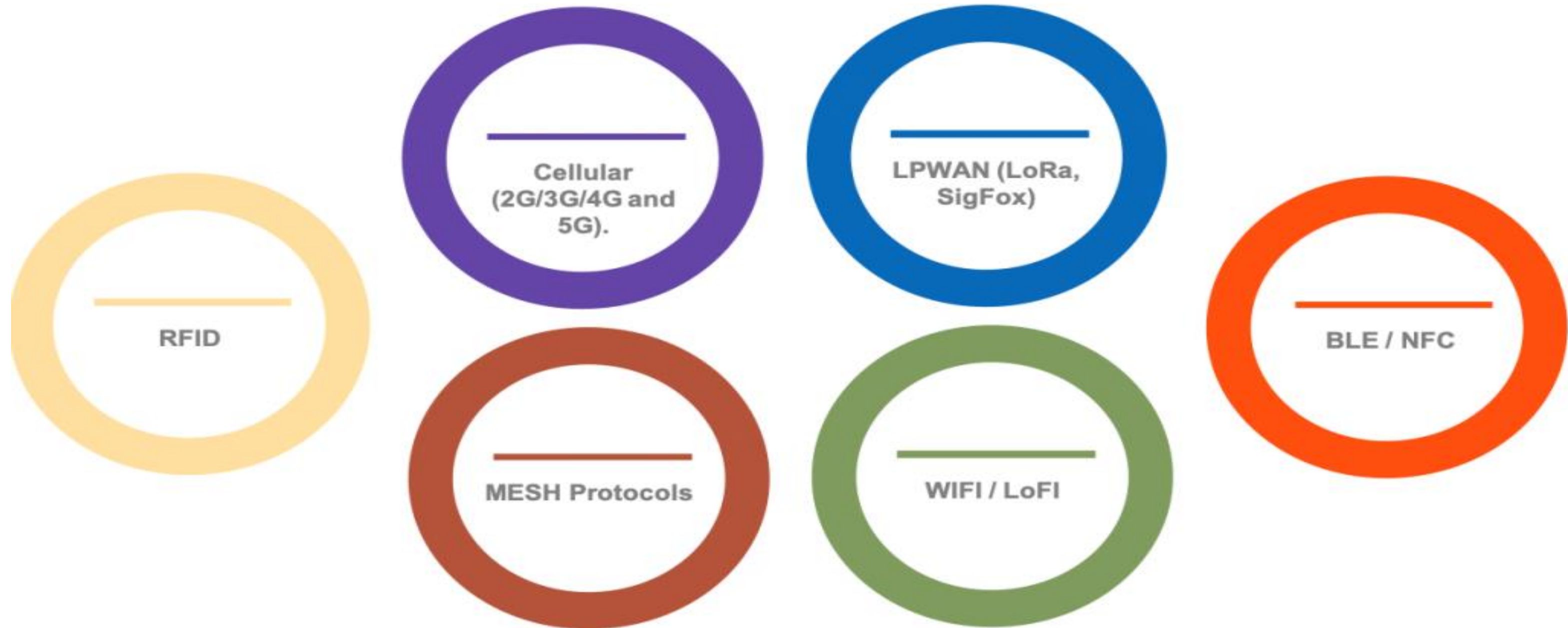
WHAT IS IoT NETWORK?

IoT Network refers to the communication technologies used by Internet of Things (IoT) devices to share or spread the data to other device or interfaces available within reachable distance. There are various types of IoT networks available for IoT devices / IoT sensors to communicate.

It is critical to choose proper networking protocol for given requirements in order to be able to collect data at real-time and access insights through IoT applications.
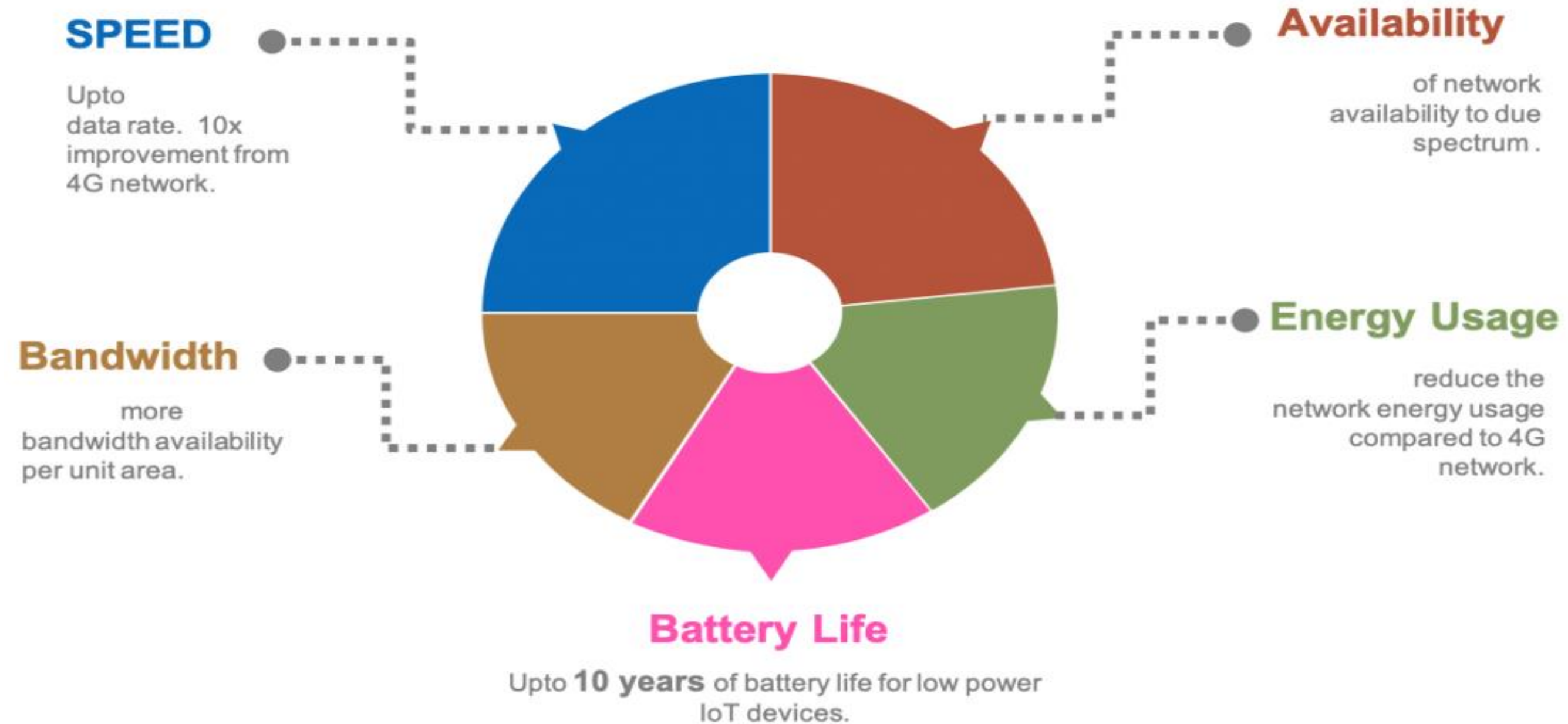
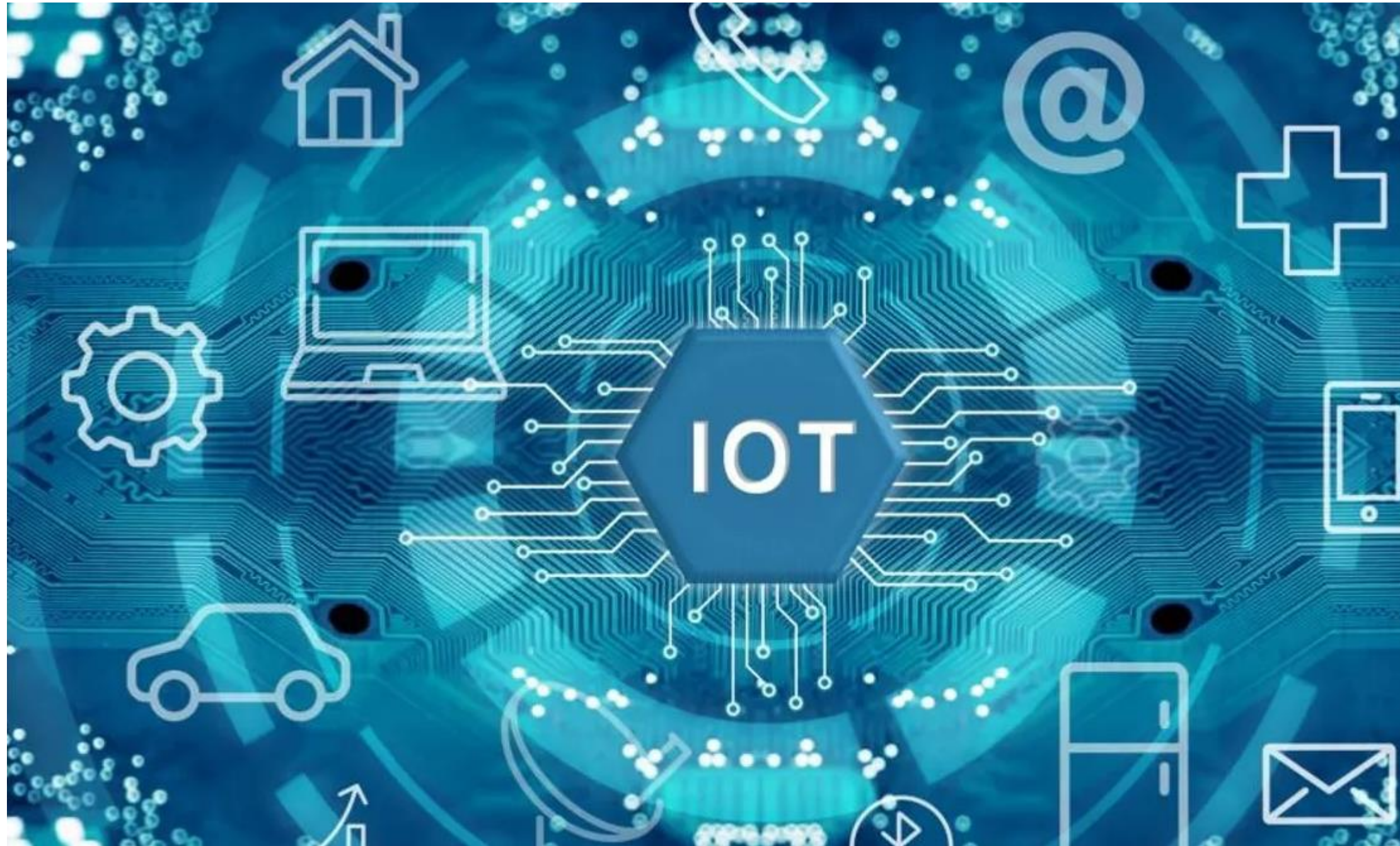# TYPES OF IOT NETWORKS

REVOLUTION OF 5G NETWORK

SPEED
Upto data rate. 10x improvement from 4G network.

Availability
of network availability to due spectrum.

Bandwidth
more bandwidth availability per unit area.

Energy Usage
reduce the network energy usage compared to 4G network.

Battery Life
Upto **10 years** of battery life for low power IoT devices.

ELEMENTS OF COMMUNICATION AND NETWORKING /16EET304 - IOT FOR ELECTRICAL SCIENCES /VIJAYAKUMAR R/EEE/SNSCT

WHAT ARE THE NETWORKING DEVICES USED IN IOT?

Can you explain the 5 IoT communication technologies?

References

- https://www.fogwing.io/types-of-iot-networks/

- https://www.techtarget.com/whatis/feature/IoT-basics-A-guide-for-beginners#:~:text=IoT%20works%20through%20a%20combination,and%2For%20a%20central%20area.

- https://www.geeksforgeeks.org/types-of-communications-in-iot/