



# **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 ELECTRONICS & COMMUNICATION ENGINEERING**

### **19ECE308- WIRELESS TECHNOLOGIES FOR IOT**

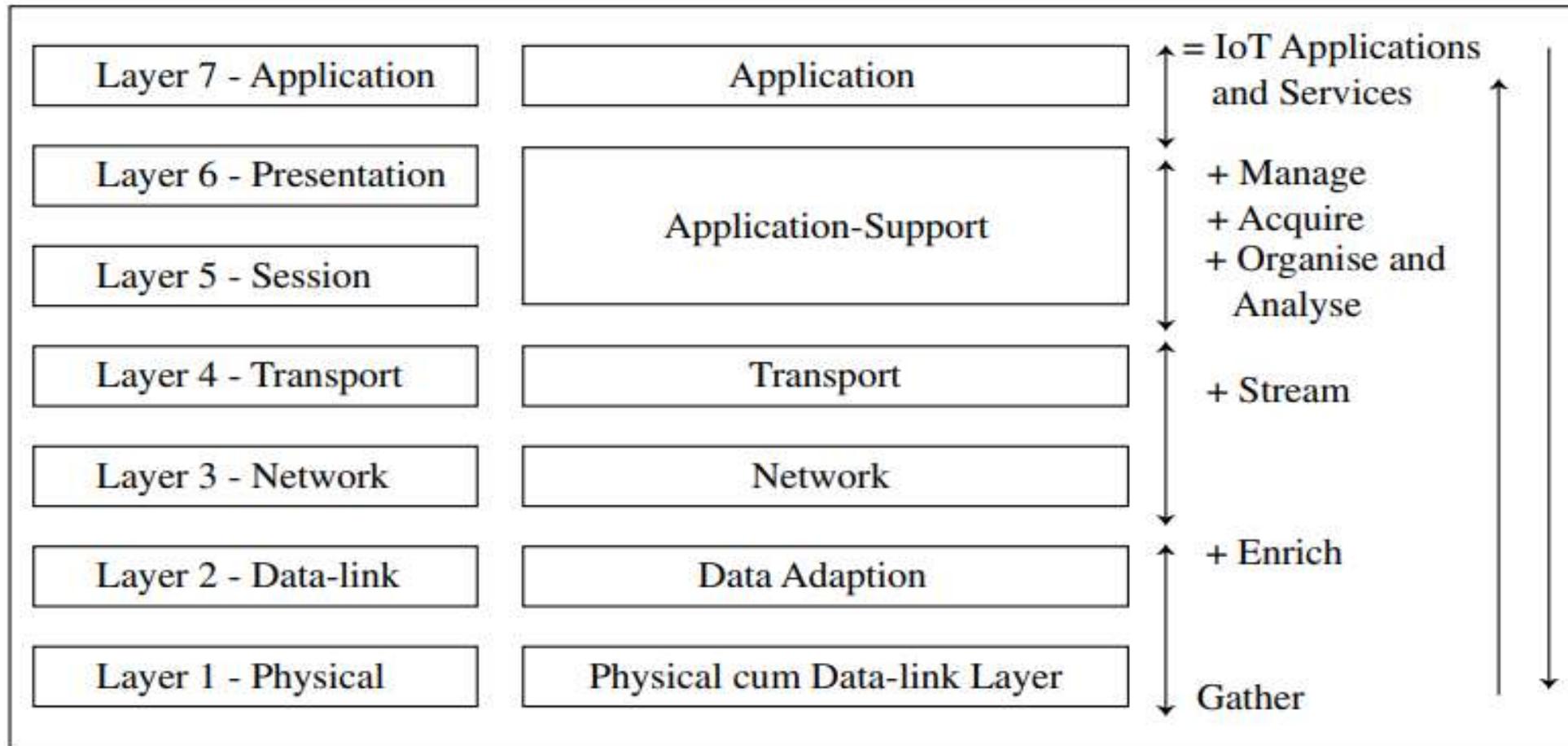
III ECE / VI SEMESTER

UNIT 1 – OVERVIEW OF INTERNET OF THINGS

### **TOPIC 7 –Modified OSI Model for the IoT/M2M Systems**



**Seven-layer generalised OSI model (on left) and IETF six layer modified OSI model for IoT/M2M (in the middle), and similarity with the conceptual framework Equation 1.2 (on right) for IoT applications and services**





# IETF Modified-OSI Six Layers



- Data communicate at source end from Application end (Layer 6) device-end (Layer 1)
- Stack means Data part + protocol header bits/words which transfer at one go
- Data stack creates by the processes at in between layers from top layer 6 to bottom functional-layer 1 for communication



# IETF Modified-OSI Six Layers



- Data transmits from the device end (layer1) from an Application, Service or Process end (Layer 6) and
- Data stack communicate between the physical layers at source and destination ends.



# IETF Modified-OSI Six Layers



- Data stack receives at the device end (layer 1) and to an Application, Service or Process end (Layer 6)
- Data stack processes during the communication between the physical and application layer



# Data Interchange in Streetlight Example Layer 1



- Layer 1: smart sensing and data-link circuit with each streetlight for transferring the sensed data to the layer 2



# Data Interchange in Streetlight Example Layer 2



- Group controller controls a group of streetlights as per the program commands from a Central station
- Layer 2: Data Adaptation the group controller receives data of each group through Bluetooth or ZigBee, then aggregates and compacts the data for communication to Internet,



# Data Interchange in Streetlight Example Layers 3,4 and 5



- Layer 3: Network stream on the Internet to next layer
- Layer 4: Transport layer for device identity management, identity registry and data routing to next layer
- Layer 5: Application support by data managing, acquiring, organising and analysing



# Data Interchange in Streetlight

## Example Layer 6



- Layer 6: Application a remotely stored service program which issues the commands or programs the firmware at the service controllers
- Service controllers switch on-off, and monitor each group of streetlights in whole of the city.