SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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Grade
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
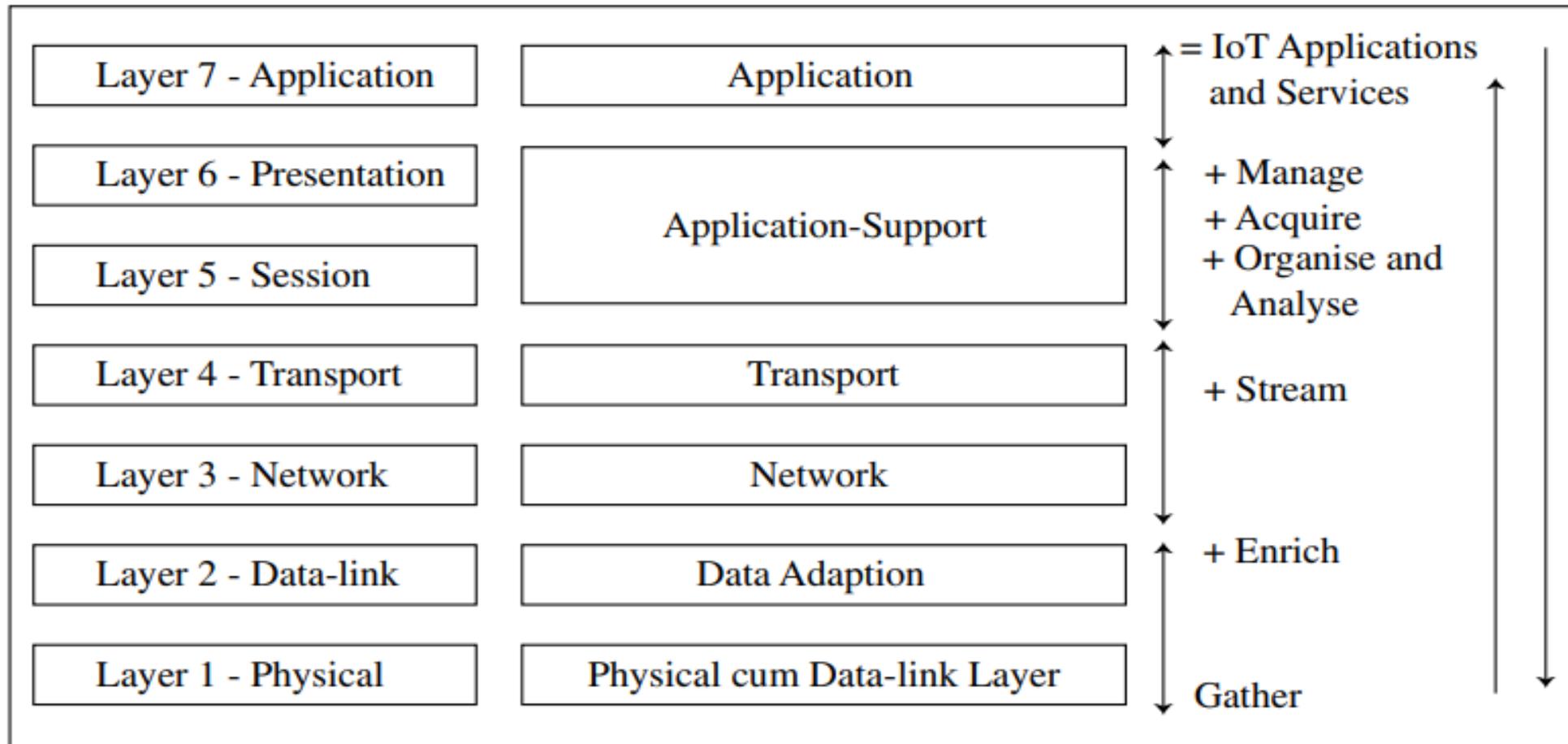
19ECE308- WIRELESS TECHNOLOGIES FOR IOT

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

Layer 7 - Application	Application	= IoT Applications and Services
Layer 6 - Presentation	Application-Support	+ Manage + Acquire + Organise and Analyse
Layer 5 - Session		
Layer 4 - Transport	Transport	+ Stream
Layer 3 - Network	Network	
Layer 2 - Data-link	Data Adaption	+ Enrich
Layer 1 - Physical	Physical cum Data-link Layer	Gather

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.