



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE308- WIRELESS TECHNOLOGIES FOR IOT

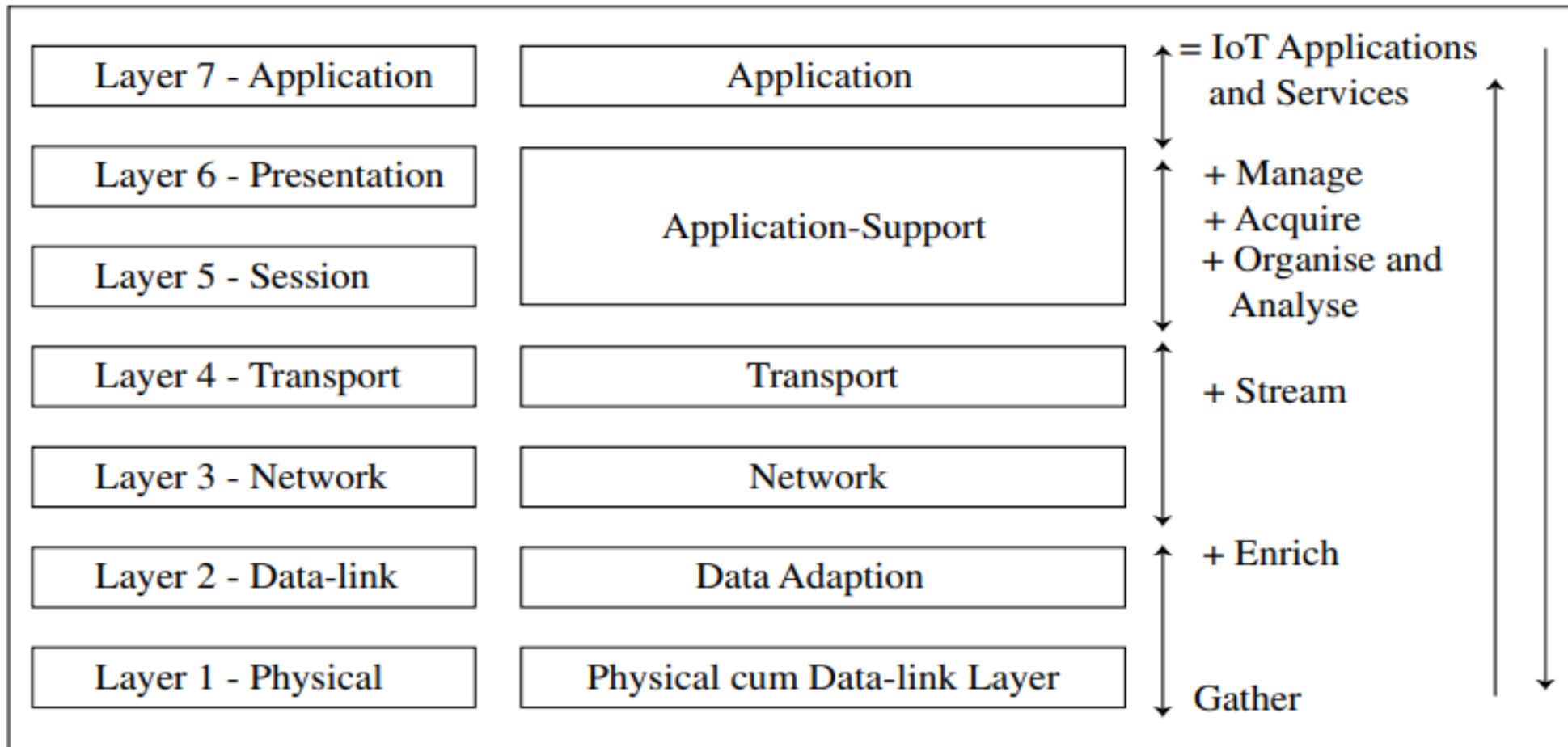
III ECE / VI SEMESTER

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





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.



THANK YOU