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

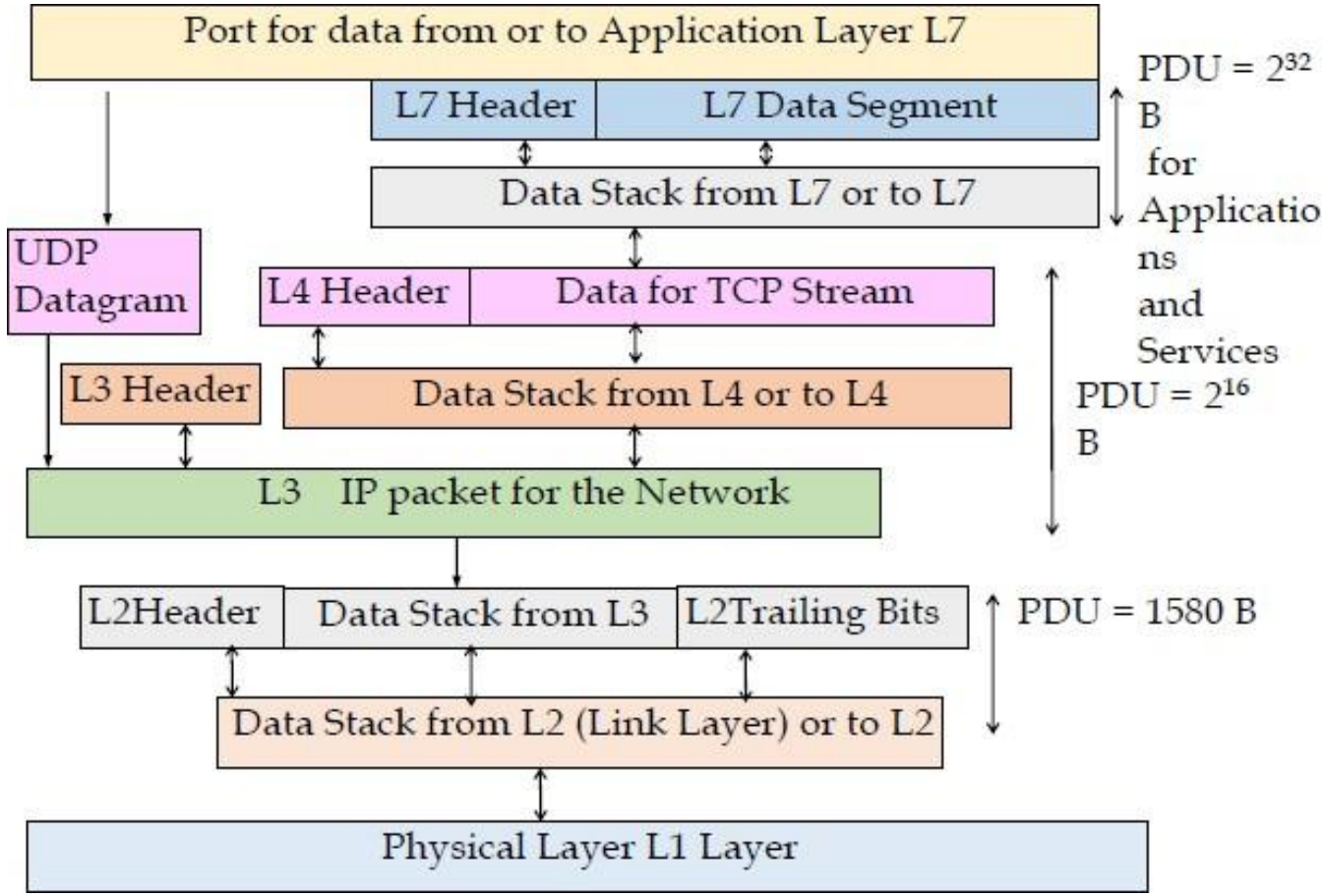
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE308- WIRELESS TECHNOLOGIES FOR IOT

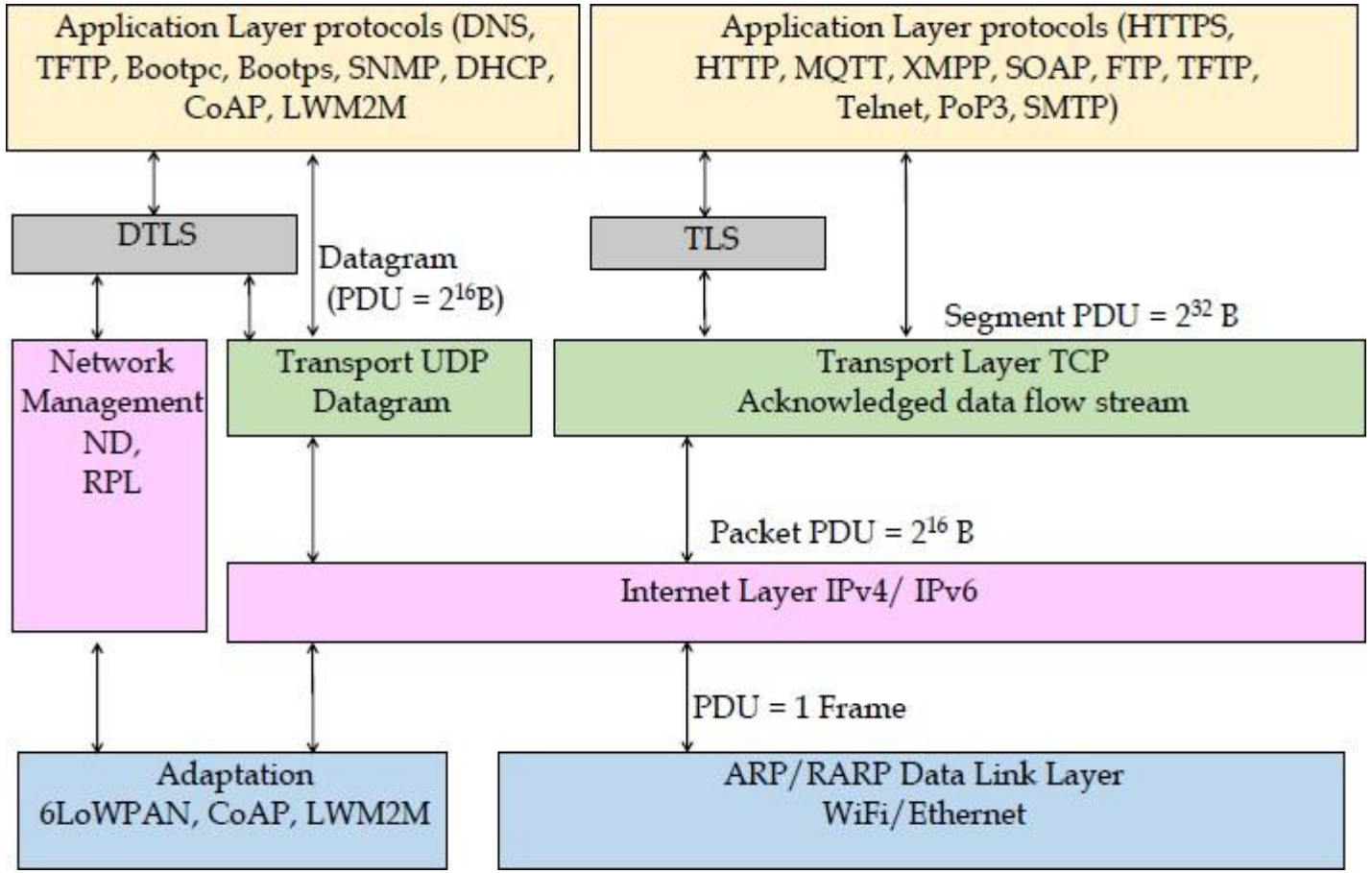
UNITII ARCHITECTURE AND DESIGN PRINCIPLES FOR IOT

TOPIC 6 –Application layer protocols: HTTP

TCI/IP suite four layers model generating data stack for the network, and for physical layer during Internet communication



IoT TCP/IP Suite of Protocols for Internet



TCP/IP suite number of Application layer protocols

- Sent from specified port at transmission end and to the specified port at the receiver end, else receiver port does not listen
- HTTP, HTTPS, FTP, Telnet and Others
- A concept of Port: Each port uses a distinct protocol at an Application layer
- A port uses a protocol for sending and receiving messages.

Application layer HTTP Port

- **HTTP** (Hyper Text Transfer Protocol)
- Port number = 80
- HTTP port sends Application data stack at the output to the lower layer using the HTTP protocol
- An HTTP web server listens to port 80 only and responds to port 80 only
- Uses a URL for example http://www. mheducation.com/.
- Default port taken as 80 for the URL Port number can be specified after the TLD, for example, after .com in URL http://www. mheducation.com:80/.

HTTPS (HTTP over Secure Socket Layer or TLS)

- Port number = 443. An HTTPS port sends a URL, for example, https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers.
- Here, TLD is .org
- https://en.wikipedia.org/wiki/List_
- domain name is wikipedia.org.
- Sub domain name is en.
- Resource relative URL is /wiki/List_of_TCP_and_UDP_port_numbers

HTTP Client and Server

- HTTP standard protocol
- Requests a URL specified web page (resource)
- Web-Server sends in response the requested resource
- The HTTP client requests an HTTP server on the Internet
- The server responds by sending a response
- The response may be with or without processing

HTTP a Stateless Protocol

- An HTTP request assumed a fresh request as per the protocol
- No session or sequence number field or no field that is retained in the next exchange
- A current exchange by an HTTP request independent of the previous exchanges. The later exchanges do not depend on the current one.

Cookie

- A text file which creates during a particular pair of exchanges of HTTP request and response
- The creation is either at a CGI or processing program, for example, JavaScript or script or at a client.
- A prior exchange may then depend on this cookie
- An HTTP state management mechanism

Assessment

List the applications of HTTP Protocol Features

- Used more efficiently than the FTP
- On the other hand HTTP no command line overheads
- Very light (a small format)
- Speedy as compared to other protocols, such as FTP
- Able to transfer any type of data to a client provided it is capable of handling that data.
- Based on Object Oriented Programming System (OOPS)
- Eight HTTP specific specified methods 1. GET. 2. POST. 3. HEAD. 4. CONNECT. 5. PUT. 6. DELETE. 7. TRACE. 8. OPTIONS

Thank You