SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
Accredited by NAAC-UGC with 'A' Grade
Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai

Department of Information Technology

Course Name – 19IT503 Internet of Things

III Year / V Semester

Unit 3 – EVOLVING IoT STANDARDS & PROTOCOLS

Topic 5 - 6LoWPAN

6LoWPAN

IETF IPv6 OVER LOWPOWER WPAN (6LoWPAN)

- 6LoWPAN is an IPv6 adaption layer for low power wireless PAN (LoWPAN).
- A link in a LoWPAN is characterized as lossy, low power, low bit-rate, short range, with many nodes saving energy with long sleep periods.
- 6LoWPAN provides a means of carrying packet data in the form of IPv6 over IEEE 802.15.4 and other networks
- A LoWPAN is potentially composed of a large number of overlapping radio ranges works on 2.4 GHz
- It uses AES-128 link layer security for authentication and encryption and TLS

6LoWPAN

IETF IPv6 OVER LOWPOWER WPAN (6LoWPAN)

- 6LoWPAN (IPv6 over Low-Power Wireless Personal Area Networks), is a low power wireless mesh network where every node has its own IPv6 address.
- This allows the node to connect directly with the Internet using open standards.
- It works great with open IP standard including TCP, UDP, HTTP, COAP, MATT and web-sockets.
- It offers end-to-end IP addressable nodes.
- There’s no need for a gateway, only a router which can connect the 6LoWPAN network to IP.
- In a 6LowPAN network, leaf nodes can sleep for a long duration of time.

6LoWPAN

6LoWPAN Application Areas

- Automation: There are enormous opportunities for 6LoWPAN to be used in many different areas of automation.

- Industrial monitoring: Industrial plants and automated factories provide a great opportunity for 6LoWPAN. Major savings can be made by using automation in every day practices. Additionally, 6LoWPAN can connect to the cloud which opens up many different areas for data monitoring and analysis.

- Smart Grid: Smart grids enable smart meters and other devices to build a micro mesh network. They are able to send data back to the grid operator’s monitoring and billing system using the IPv6.

- Smart Home: By connecting your home IoT devices using IPv6, it is possible to gain distinct advantages over other IoT systems.

THANK YOU