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FACULTY OF ENGINEERING AND TECHNOLOGY

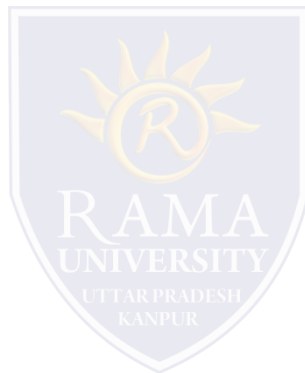
WSN (MCS-033)

LECTURE -20

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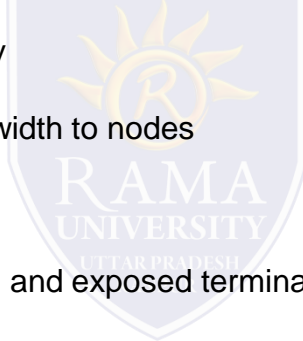
OUTLINE

- **Design goals**
- **Classification of MAC protocols**
- **MCQ**
- **Reference**



Design Goals of a Mac Protocol for Ad Hoc Wireless Networks

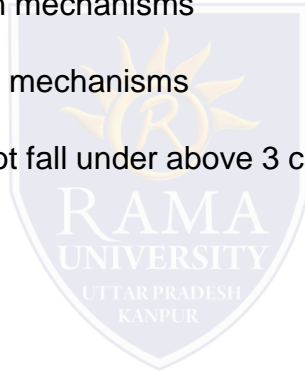
- The operation of a protocol should be distributed
- The protocol should provide QoS support for real-time traffic
- The access delay, which refers to the average delay experienced by any packet to get transmitted, must be kept low
- The available bandwidth must be utilized efficiently
- The protocol should ensure fair allocation of bandwidth to nodes
- Control overhead must be kept as low as possible
- The protocol should minimize the effects of hidden and exposed terminal problems
- The protocol must be scalable to large networks
- It should have power control mechanisms in order to efficiently manage energy consumption of the nodes
- The protocol should have mechanisms for adaptive data rate control
- It should try to use directional antennas which can provide advantages such as reduced interference, increased spectrum reuse, and reduced power consumption
- The protocol should provide time synchronization among nodes.



Classification of MAC protocols

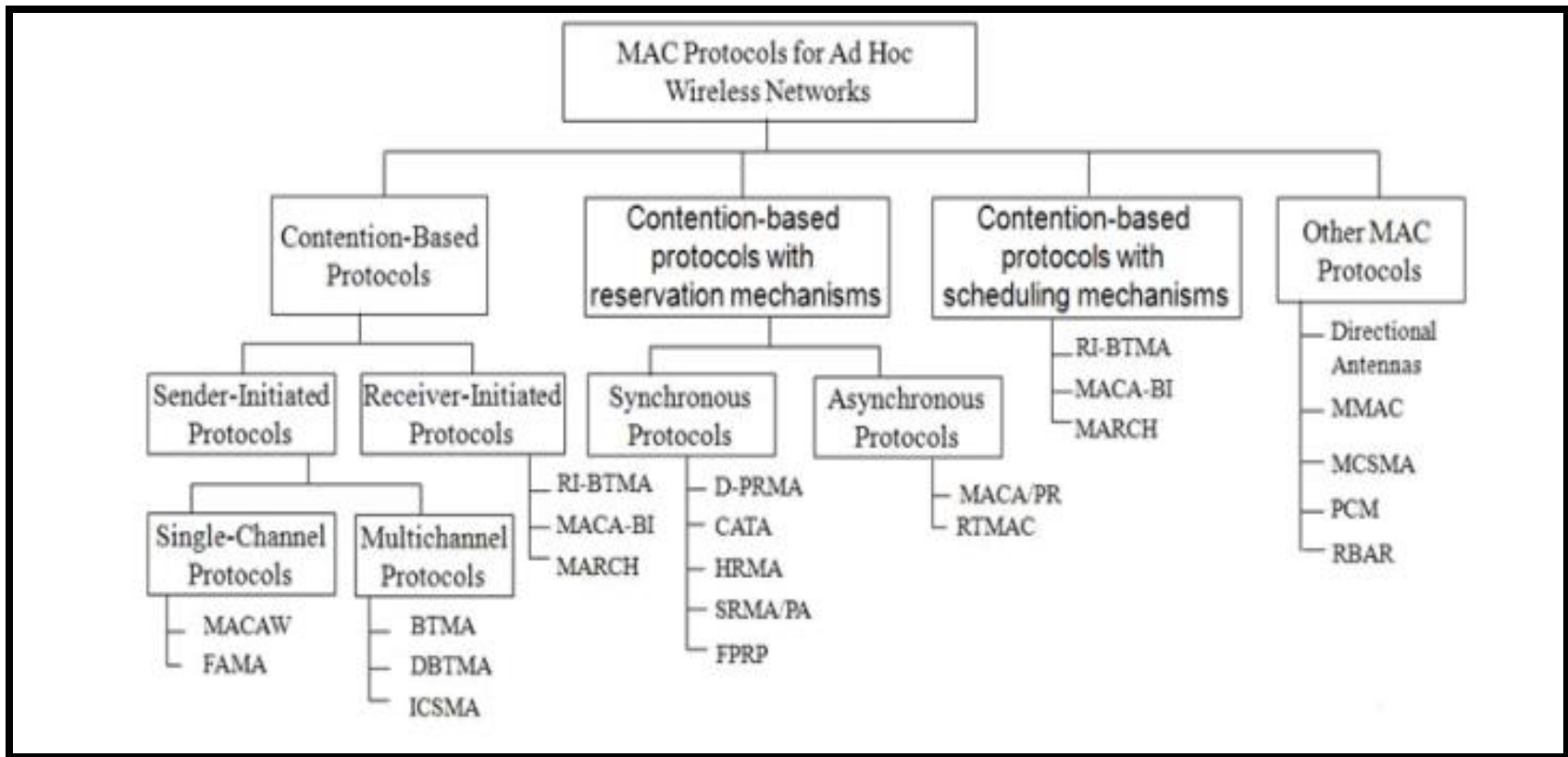
Ad hoc network MAC protocols can be classified into three basic types:

- Contention-based protocols
- Contention-based protocols with reservation mechanisms
- Contention-based protocols with scheduling mechanisms
- Other MAC protocols [protocols which do not fall under above 3 categories]



MAC PROTOCOL

Classification of MAC protocols



MCQ

1. What is the full form of WLAN?

a) Wide Local Area Network b) Wireless Local Area Network c) Wireless Land Access Network d) Wireless Local Area Node

2. WLANs use high power levels and generally require a license for spectrum use.

a) True b) False

3. What is the name of 300 MHz of unlicensed spectrum allocated by FCC in ISM band?

a) UNII b) Unlicensed PCS c) Millimeter wave d) Bluetooth

4. Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

a) IEEE 802.16 b) IEEE 802.3 c) IEEE 802.11 d) IEEE 802.15

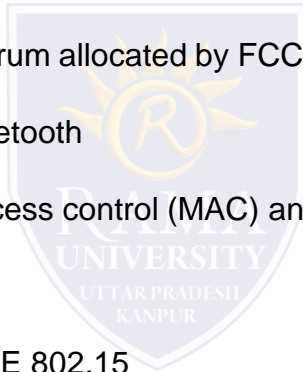
5. Which of the following is not a standard of WLAN?

a) HIPER-LAN

b) HIPERLAN/2

c) IEEE 802.11b

d) AMPS



REFERENCES

□ https://www.academia.edu/25414253/UNIT-2_MAC-

[1_2.1_Issues_in_Designing_Mac_Protocol_for_Ad_Hoc_Wireless_Network](#)

