

Assignment # 4

✍ Text book, chapter Seven:

- » 7.1, 7.2, 7.3, 7.6, 7.11
- » Due on Sunday 28/04/2002
- » Quiz on next Tuesday

1

Narrowband Microwave LAN

- ✍ Microwave frequency band $> 1\text{GHz}$
- ✍ Licensed narrowband RF 18 GHz range
- ✍ Unlicensed bands (in USA):
 - » 902 – 928 MHz
 - » 2.4 – 2.48 GHz (international)
 - » 5.7 – 5.85 GHz

2

Wireless LAN Standards

- ✍ DECT (Digital European Cordless Telecommunication)
- ✍ Published in 1992 by ETSI
- ✍ Open, non-proprietary standard

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DECT Standard

- ✍ 1880 - 1900 MHz
- ✍ Voice and data communications
- ✍ Variable bandwidth channel
- ✍ Offers speech quality
- ✍ 1 Mbps for each terminal
- ✍ Overall throughput in the range of Ethernet LAN
- ✍ Compatibility with existing LAN standard
- ✍ Offers high portability and flexibility
- ✍ Reasonable security

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Wireless LAN Standards (Cont.)

- ✍ Work started in 1987 to standardize WLAN within IEEE 802.4
- ✍ In 1990, a special group formed for this purpose; IEEE 802.11

5

IEEE 802.11 Architecture

- ✍ Basic service set (BSS)
- ✍ Extended service set (ESS)
- ✍ Mobility issue
 - » No transition
 - » BSS transition
 - » ESS transition

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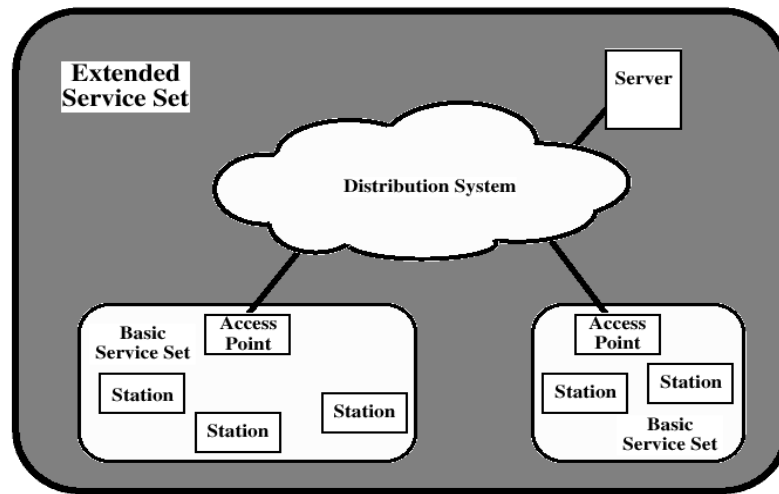


Figure 10.15 IEEE 802.11 Architecture

IEEE 802.11 services

- ✍ Association
- ✍ Reassociation
- ✍ Disassociation
- ✍ Authentication
- ✍ Privacy

IEEE 802.11

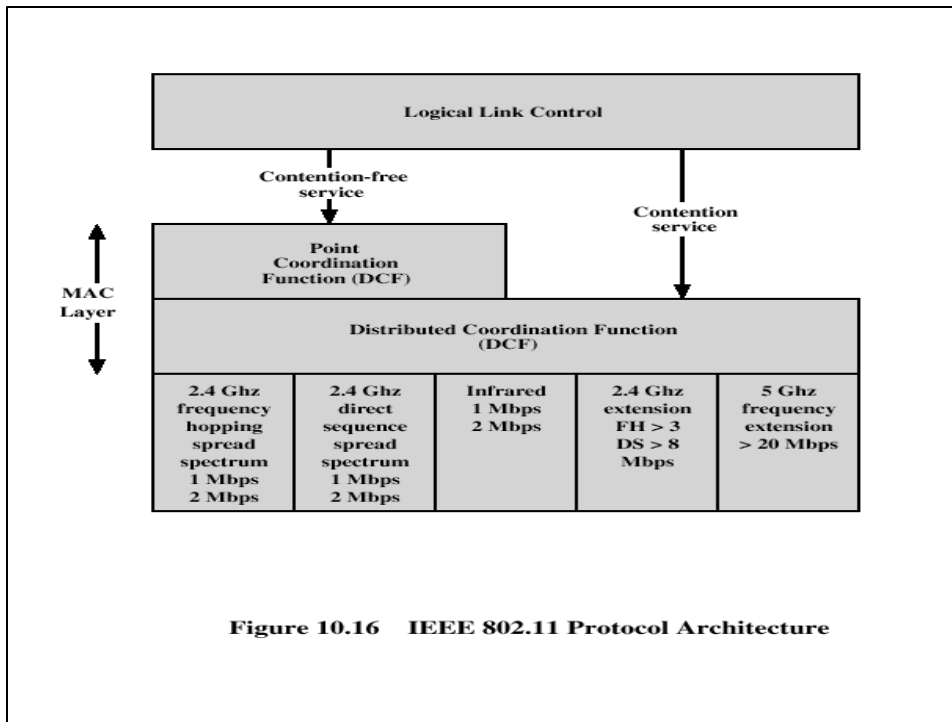
- ✍ Physical medium specification
 - » infrared
 - » Spread spectrum
 - Direct sequence
 - Frequency hopping

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IEEE 802.11 MAC

- ✍ Distributed Access
 - » Example: ad hoc network
- ✍ Centralized Access
 - » Time sensitive data
- ✍ Distributed Foundation Wireless LAN
 - » Provide a centralized access as an option

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Urgent Messages

- ✍ Acknowledgment
- ✍ Clear to send (CTS)
- ✍ Poll response

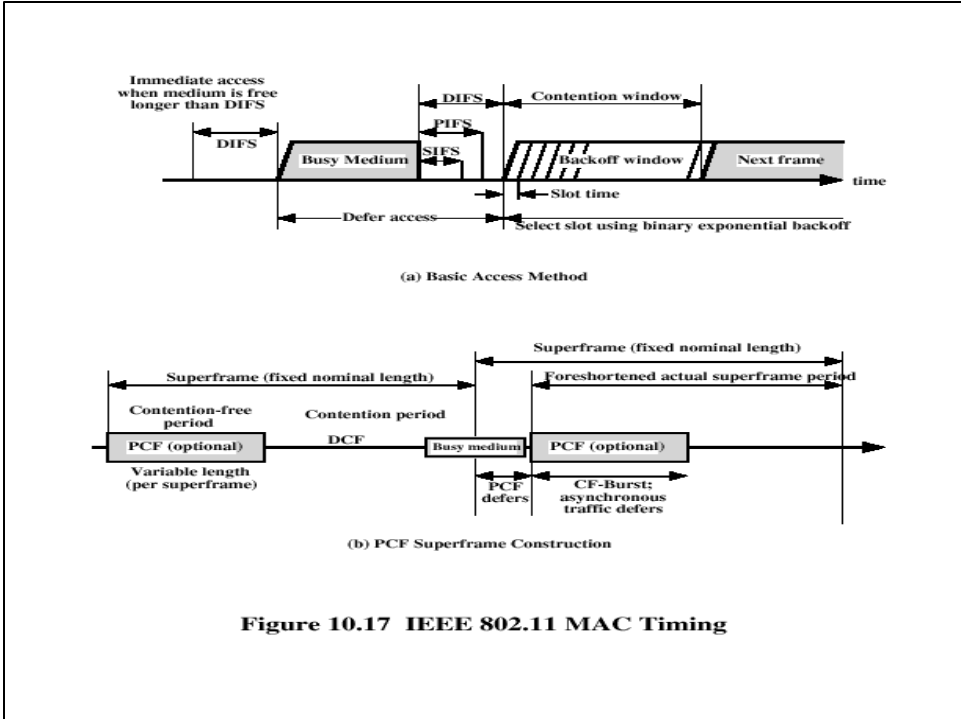


Figure 10.17 IEEE 802.11 MAC Timing

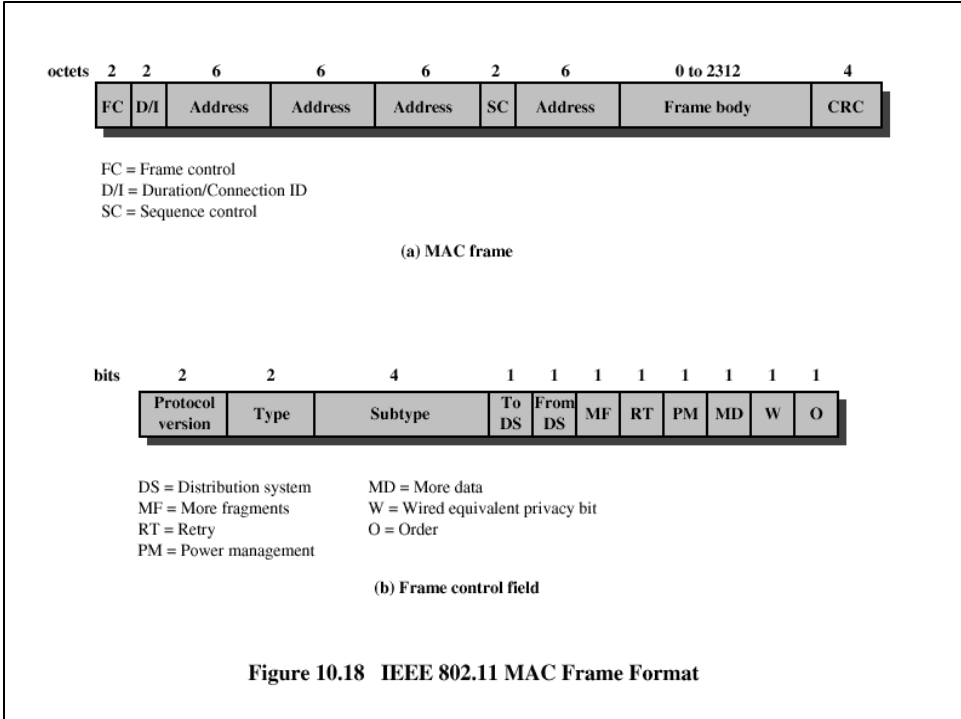


Figure 10.18 IEEE 802.11 MAC Frame Format