

## Computer Networks and Distributed Systems Exercise Sheet 13

### Exercise 13.1

In a wireless LAN (WLAN, IEEE 802.11) CSMA/CD is not used.

- (a) Give the reasons for not using CSMA/CD.
- (b) Which method is used in wireless LAN and how does it work?

### Exercise 13.2

Download the file „aufgabe-13-2.pcap“ from our website and open it with Wireshark. The software is available from <http://www.wireshark.org>.

- (a) Create the corresponding time sequence diagram for TCP. Specify the ACK and sequence numbers, flags and number of transmitted bytes.
- (b) Divide the TCP transmissions into meaningful parts considering the transmitted data. Hint: There are more than 3 parts.
- (c) Which files are requested via HTTP and what answers does the client get from the server?
- (d) Take a look at the IP datagrams. Why do they have different sizes and how are they composed in this example?

### Exercise 13.3 Multimedia (Bonus Exercise)

- (a) What are the functions and applications for the protocols RTP, RTSP, RTCP and SIP?
- (b) What messages are exchanged between users ALICE and BOB when establishing and terminating a connection with SIP 2.0, respectively? (cf. RFC 3665)