

Computer Networks and Distributed Systems

Exercise Sheet 13

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Quiz questions

1. Describe the use case for PPP.
2. Describe the *exponential backoff* mechanism.
3. Are the 802.3 (Ethernet) frames and 802.11 frames equivalent?
4. Why are ACKs used in WLAN, but not in Ethernet?

Exercise 13.1

- (a) IEEE 802.3 (Ethernet) is a bundle of standards. What part of these standards is equal, what is different?
- (b) Describe the Manchester coding mechanism. What are the benefits?

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

- (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)