TTY/TITE/JH
TLT-2486 Advanced topics in broadband networks
Exam 26.11.2008

You may answer in English or Finnish. You'll get 0 – 6 points from each of the five questions. Typically, 50 %, i.e., 15 points, is the requirement for passing the exam.

1. Describe and compare the two TCP based live streaming techniques, HTTP streaming and RTSP interleaving. What are the drawbacks and benefits of these methods?

2. Explain how the receivers of RTP based streams can benefit from the RTCP sender reports. What is the purpose of RTCP receiver reports?

3. What are the differences between IPTV and Internet TV? Describe a delivery model for IPTV service.

4. Compare the tree-based delivery architecture with the pull-based (data driven) architecture in P2P streaming systems.

5. Below there are six statements. Which of them are true and which are false? For each statement, a correct answer gives you +1 point, incorrect -1 point. If you don't answer anything, you get 0 points. Hence, you can collect a maximum of 6 points, while a minimum is 0 (instead of -6 points).

    a) In the HTTP streaming of stored content, pressing the pause button typically only stops the player to show the stream, but the data transfer from the server to the player's buffer continues without interruption.

    b) RTSP is the protocol that provides the synchronization information for playing, e.g., related audio and video streams properly.

    c) RTCP must use at least 5 % of the bandwidth of the related RTP session for sender and receiver reports.

    d) The payload type field in RTP makes it possible to change the encoding of the stream on-the-fly.

    e) Uncompressed HDTV transmission requires a bandwidth of more than 1 Gbps.

    f) CDNs make intelligent use of DNS in their operation.