Exam 18.02.2014

T-110.5121 Mobile Cloud Computing (5 cr)

A calculator in addition to basic writing instruments is allowed in the exam.

Mark clearly on each paper:

- T-110.5121 Mobile Cloud Computing
- Exam 18.02.2014
- Family name, first name
- Degree programme, student number

Questions 1 and 5 are compulsory to all. Answer to two of the questions 2 – 4. All answers should only be based on the content of the required material and lectures. Try to structure your answer before starting to write and pay special attention to clear handwriting. Each question will be reviewed in scale 0-6 and the maximal score is accordingly 24.

1. Define the following concepts, in (mobile) cloud computing context, shortly (1p / each):

   a) Deployment model
   b) CAP Theorem
   c) MapReduce
   d) IAM
   e) PUE
   f) Scaling up vs. scaling out

Answer **only** to **two** of the questions 2-4:

2. Describe the basics of SDN

3. Review how mobile devices and networks can benefit from cloud computing

4. Describe the key technologies for scalable web services

5. A new startup company called Event Experience limited (EE ltd) will start in 2014 to sell globally tickets to social network events. The service is tailored to event organizers and their customers. When a user clicks an "Attend" button in a social network, she or he will be offered an opportunity to buy a ticket or other auxiliary services relating to the event. In the first year EE ltd plans to sell 10 Million tickets, but already within three years a market size of 1 Billion tickets should be reachable. When popular tickets are released for purchasing, service demand peaks can be 1000 times larger than during normal load.

   EE ltd is currently planning their service implementation. Define your high level proposal to the architecture and ticket delivery system. You might consider how they can utilize cloud computing technologies and, for example, open innovation in their service architecture. What is the business model? How does EE ltd differentiate from the current ticket providers such as Ticketmaster? What is the role of mobile devices? How to balance risks?