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Performance measurement study of mobile data communication over cellular access.

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Executive summary / Internal release

Title: Performance measurement study of mobile data communication over cellular access.

This deliverable is a workshop paper at third COST TMA International Workshop on Traffic Monitoring and Analysis (TMA 2011). The work is in collaboration with external colleagues.

Content: Results of a measurement study of traffic captured at a large French ISP.

Contact info: See paper, link below

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In this paper, we address the problem of comparing the performance perceived by end users when they use different technologies to access the Internet. We focus on three key technologies: Cellular, ADSL and FTTH. Users primarily interact with the network through the networking applications they use. We tackle the comparison task by focusing on Web search services, which are arguably a key service for end users. We first demonstrate that RTT and packet loss alone are not enough to fully understand the observed differences or similarities of performance between the different access technologies. We then present an approach based on a fine-grained profiling of the data time of transfers that sheds light on the interplay between service, access and usage, for the client and server side. We use a clustering approach to identify groups of connections experiencing similar performance over the different access technologies. This technique allows to attribute performance differences perceived by the client separately to the specific characteristics of the access technology, behavior of the server, and behavior of the client.