Overview

The MDC data analysis carried out focuses mainly on the mobile users’ Application Usage in context of their wireless access network Connectivity and Mobility patterns, as these patterns relate to the Quality of Service (QoS) provided to the user, and the overall Quality of Experience (QoE).

The analysis was focused only on applications, which are network-dependent and make use of online application data exchange, with distinctive traffic models, like:

- Email
- Web
- Maps
- VoIP
- Search
- MMS
- Sharing

The main algorithm used GPS, GSM, WLAN and Application MDC log’s data.

Locations (indoors/outdoors) and Semantic Places

Location status types: indoors, outdoors, non-indoors

Users are indoors an average 90% for the overall application usage.

Wireless access network types:
- Cellular
  - 2G (+): GPRS, EDGE
  - 3G (+): UMTS, CDMA, HSPA
- WLAN

Connectivity vs. Applications

- 70% of the time using cellular network: 2G(+) - 19%, 3G(+) - 51%
- When on cellular network: 60%+ applications used are Maps, Web, Search and MMS
- Certain application types’ activity is highly influenced by the user’s connectivity type, e.g.:
  - Maps over 2G (+)/3G (+)
  - VoIP over WLAN (but used by only 9/38 users)

Connectivity vs. Location

The application usage was correlated with the user connectivity, as well as with the current location status.

- When outdoors, mainly the 3G(+) network type is used
- When indoors, mainly the WLAN network type is used

Applications Usage in Time

There are no significant differences per application type and location status. Users seem to be more active during work hours, with an exception of early afternoon.

Different types of applications show different temporal activity pattern, e.g. E-mail vs. Maps.