

Master's Thesis

Analysis and optimization of multi-interface mobile networks

Current mobile devices support several wireless technologies to communicate with the outer world. To this end, these devices often include multiple LTE, WiFi, or BlueTooth interfaces. In addition, base stations also have several wired or wireless interfaces to communicate with one another or with the core network. This adds a new degree of freedom to the problem of optimally selecting data flows within a mobile network, which is motivated by the ever-changing nature of wireless channels. In this thesis, a flexible mobile network supporting live selection of interfaces will be analyzed. Available algorithms to adaptively select interfaces and reconfigure data flows will be explored. A flexibility framework will be used in order to highlight the importance of request changes and reaction time.

Prerequisites

Familiarity with mobile and wireless networks. Experience with MATLAB, Python or other programming languages or simulation environments.

Advisors

Alberto Martinez Alba
Ingo Bauer (Micronova)