Project FCT User-Centred Mobility Management (UMM)

Context
Currently and in the future, users demand for ubiquitous network connection to interact with the world. Moreover, the mobile devices are increasingly widespread and are better equipped in terms of access connections and services support. Mobility management is therefore an intrinsic feature of mobile networks; however, it is not yet ready to support the so called User-provided networks (UPNs), where the network elements can be devices controlled by regular users, or providers, and share subscribed access. In these scenarios, mobility has to be rethought to consider user-centric approaches.

Objectives of the Project
The work to be developed in this project relates to the topic of global mobility management in spontaneous wireless environments, i.e., environments that self-adjust to any network topology change, with the purpose to ensure a transparent access to Internet services (e.g Triple Play) for the end-user. In addition, global mobility management is to be analyzed from a de-centralized perspective, given that environments to be considered will incorporate wireless local-loops that are based upon end-user willingness to cooperate.

Objectives of the PhD Work
The objectives of this work are: to investigate and validate algorithms for a self-organized selection of anchor-points, aiming to ensure system robustness to highly frequent changes; and to devise a global mobility management mechanism taking into consideration the aspects related to handover optimization and incorporating mobility models that support adequate anchor point selection.

Responsible of the Project:
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Current areas of research: Network Architectures and Future Internet
This group participates in national and international projects, from Portuguese Government, Carnegie-Mellon Programme and European Commission.

Candidate Student Profile
The candidates shall have knowledge, experience and interest in the area of communication networks, with relevance on mobility aspects.