SCAMPI

Project Overview

The SCAMPI project envisions an environment where users will carry personal mobile devices such as cameras, smartphones and PDAs, with a number of resources (several wireless interfaces, a lot of memory, powerful CPUs, components able to generate multimedia content). The resulting networking environment, viewed as a whole, will therefore feature a multitude of heterogeneous resources. The goal of SCAMPI is to enable each user to avail not only of the resources available on its own device, but also to opportunistically exploit the other resources of the environment, including those on the other users’ devices, in a trustable and secure way. SCAMPI will thus enable users to compose the functionality of the different resources available in the network, enjoying much richer functionality than what available on their own device.

Research Description

SCAMPI will investigate technical solutions for a service platform in mobile and pervasive opportunistic networks. Service is used as the main abstraction for using resources. The project focuses on opportunistic networking environments, where the network is formed by the devices spread in the environment, events such as long disconnections and partitions are the rule, and no simultaneous multi-hop paths can be guaranteed. Thus, SCAMPI generalises the pure opportunistic networking concept, and investigates the novel concept of opportunistic resource usage in challenged networks.

The “human factor” (information about the social relationships among users) is a key dimension of the project. On one hand, because SCAMPI leverages social awareness to optimise its technical solutions, and on the other hand, because SCAMPI will enable novel services enhancing current mobile online social networking applications.

The project will implement the SCAMPI platform and example applications to experiment with the proposed solutions. The experimentations will use the existing FIRE facilities to assess the applicability of the approach.

Testbed Infrastructure

SCAMPI will establish an opportunistic platform and exploit FIRE-facilities.

Contract number
FP7 258414

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Project website
To be announced

Community contribution to the project
2’759’549 Euro

Project start date
1 October 2010

Duration
36 months
Target Users and Benefits

SCAMPI will investigate the service-oriented paradigm in networking environments that may be severely challenged. As a result, SCAMPI will provide a practical implementation of an opportunistic service creation platform for mobile application developers, and eventually the mobile users. The platform will serve as a novel architecture for distributed systems, by including mobile and pervasive networking environments to the scope of social networking services. This will mark significant innovation by complementing the traditional area of service oriented architectures, but in a network environment in which the traditional solutions are not applicable.

SCAMPI will include social awareness as a key contextual information for the technical solutions implementing the service-oriented platform, as well as a way to design innovative social-oriented services. This will provide significant innovation in the field of mobile computing and social-aware networking.

### Project partners

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### Key Objectives

- Analysing the performance bounds of the opportunistic service provisioning paradigm in pervasive and opportunistic networks.
- Analysing the probabilistic service guarantees in unstable mobile networking environments.
- Designing SCAMPI algorithms and implementing a SCAMPI architecture that efficiently addresses the reference applications requirements.
- Platform prototyping and experimental evaluation (with feedback to the design of models and algorithms).
- Understanding the advantages and possible setbacks of the use of social information in the SCAMPI technical solutions.