

Preface

Mobile devices and services are gaining every day more and more users with new services and applications appearing every day. The high success of new powerful mobile hardware able to support innovative services, like the iPhone and its competitors Blackberry and HTC, has shown that the users are anxiously waiting and are ready to adopt new (mobile) services and applications. Today mobile services are more complementary of the fixed network services, allowing the users to access traditional fixed network based services, while being mobile. However now that the users have been accustomed in mobile services and content access and in response to their needs, new services and new challenges start appearing that do not have an equivalent fixed wire service, ranging from location based trust services to middleware for network handover. In addition mobile users are recreating the very successful operation of internet, where services are based on a collaborative model for the creation and exchange of (mobile) content.

The main research effort of our group is based on the vision of the future needs of collaborative mobile services. In this report we present 10 papers and one position paper, representing the main work areas of the group. Our work is mostly based on the notion of virtual tags as the basic collaboration unit of mobile users.

The first paper, *The Uncertainty of the Truth*, provides investigates the issues related to the trust level one must have into mobile tags, in the absence of any reference regarding the author of the tag, and how a collaborative service can be implemented on this basis.

The second paper, *Mobile Location Based Services for Trusted Information in Disaster Management*, presents a prototype service for disaster management in road traffic control, discussing the related issues and problems.

In the third paper, *User-centric Mobile Identity Management Services*, we discuss the issues related to mobile identity management, providing a survey how the requirements have evolved for mobile user-centric identity management and their associated technologies.

In the fourth paper, *LSPEnv: Location-based Service Provider for Environmental Data*, we present an approach for forecasting environmental data for location based services and we propose a system for making predictions for spatial-temporal variables using the Bayesian Network method as a machine learning.

In the fifth paper, *Context-Aware Middleware Architecture for Vertical Handover Support to Multi-homed Nomadic Mobile Services*, we propose a context-aware middleware architecture supporting vertical handover for the Nomadic Mobile Service providers hosted on the handheld mobile devices, based on a context-aware computing approach.

In the sixth paper, *Collaborative QoS-information Sharing for Mobile Service Users: A Web 2.0 Business Model proposal*, we discuss the business related issues and problems, and present different business scenarios for the commercial implementation and exploitation of a mobile network QoS prediction service.

In the seventh paper, *Power- and Delay-Aware Mobile Application-Data Flow Adaptation: the MobiHealth System Case Study*, we report on a case study of a

cardiac telemonitoring application delivered by the MobiHealth system. Our results show the trade-off between the delay and battery savings achieved by various network interface activation strategies in combination with application-data flow adaptation

The next two papers present the continuation of our research in the concept of Hovering Information. In the eighth paper, *Hovering Information - Self-Organising Information that Finds its Own Storage*, we discuss results of simulations performed for two algorithms aiming to ensure the availability of a piece of hovering information at its anchor area.

In the ninth paper, *Hovering Information - Infrastructure-Free Self-Organising Location-Aware Information Dissemination Service*, we discuss issues related to the scalability of Hovering information and presents the results on a series of simulations involving multiple pieces of hovering information.

The last two papers present an overview of two 7th framework European projects in which we participate. In the tenth paper, *PlayMancer : A European Serious Gaming 3D Environment*, we present the project PlayMancer, targeting in the design and implementation of a platform facilitating the development of multiplayer, network serious 3D games and its validation in two different medical cases. The last paper, *User Experience and Emotion-Aware Business Network Service Selection*, gives a short of the PERIMETER project, targeting the establishment of a new paradigm of user-centricity for advanced networking, putting the user at the centre rather than the telecom operator.

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