First interim review report – D1.2

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Abstract

This OneFIT Deliverable D1.2 “First interim review report” presents an overview of the project stating its objectives and its major goals to which it has committed, a complete report on the work performed in 2010 (including the objectives, project achievements, standardisation and regulation contributions), the impact (including dissemination work) and exploitation plans of the project, as well as a comprehensive self-evaluation. Information on the websites of the project (both public and private) is given and the objectives of the forthcoming period are also presented.

Keywords List

Audit, Achievements, Cognitive Management Systems, Future Plans, Opportunistic Networks, Self-Evaluation

Executive Summary

Opportunistic networks and Cognitive Management Systems for Efficient Application Provision in the Future Internet (OneFIT) aims at developing and validating the vision of opportunistic networks that are managed, and coordinated with the infrastructure, by advanced cognitive systems. Validation will show enhanced wireless service provision and extended access capabilities for the Future Internet, through higher resource utilization, lower costs, and management decisions with a larger "green" footprint. OneFIT leads to better services for the user and creates market opportunities for manufacturers, operators and service providers. OneFIT efficiently addresses several technical challenges, and evolves, bundles and exploits different types of approaches, ranging from dynamic spectrum management and infrastructureless networks to social networks.

The main requirements which define the Future Internet, and intrinsically influence the socio-techno-economic future of Europe, provide the incentive for OneFIT:

- Demand for new applications/services and expanded use of wireless,
- Support for diversified applications/services, and
- Need for increased efficiency in resource provisioning and utilization.

OneFIT aims at addressing the requirement to satisfy the demand for applications/services and respective resources, through increased efficiency in resource provisioning and utilization. OneFIT will achieve its target by advancing the state of the art through the development and validation of a *solution* that comprises:

- *Opportunistic networks*, which are operator-governed, temporary, coordinated extensions of the infrastructure. They are dynamically created, through operator spectrum/ policies/ information/ knowledge, in places and at the time they are needed to deliver multimedia flows to mobile users, in a most efficient manner (with respect to the targets outlined above). They can comprise network elements of the infrastructure, and terminals/devices potentially organized in an infrastructureless manner.
- *Cognitive management systems*. Two types of systems are envisaged called "*Cognitive systems for Managing the Opportunistic Network*" (CMONs) and "*Cognitive management Systems for Coordinating the Infrastructure*" (CSCIs). A fundamental idea of the OneFIT concept is to provide the means to facilitate close cooperation between the infrastructure and the opportunistic networks. Such collaboration is essential for ensuring viability, deployment and value creation for all the stakeholders.
- *Control Channels for the Cooperation of the Cognitive Management Systems* (C4MS).

The OneFIT cognitive management entities (CMONs and CSCIs) provide the means for determining the suitability, creating, modifying and handling forced terminations of opportunistic networks. The two entities will have synergies for accomplishing the role.

In the light of the above, this OneFIT Deliverable D1.2 "First interim review report" is an overview of the project stating its objectives and its major goals to which it has committed, a complete report on the work performed in 2010 (including the objectives, project achievements, standardisation and regulation contributions), the impact (including dissemination work) and exploitation plans of the project, as well as a comprehensive self-evaluation. Information on the websites of the project (both public and private) is given and the objectives of the forthcoming period are also presented. Following the contractual project overview, this deliverable is introducing the work undertaken by OneFIT partners in the first six months of the project (July – December 2010), depicting the objectives for 2010, the relationship of the project with the Programme, the work and achievements in current period (2010), the standard impact and the public demonstration and dissemination events, as well as the future plans for 2011 and the project self-evaluation.

In particular, as presented herein, on top of the research development and workpackages achievements, the **major OneFIT project achievements** include:

1. Business scenarios, technical challenges and system requirements
2. High level functional and system architecture with reference points
3. ETSI RRS Work Item “Feasibility Study on Control Channels for Cognitive Radio Systems”
4. Proposal of C4MS and inherent technical challenges
5. Demonstration of the OneFIT Platform
6. Training activities
7. Dissemination activities

In terms of standardisation activities within ETSI, a new Work Item has been proposed by the OneFIT consortium and approved during the ETSI RRS meeting in Munich - RRS(10)0161r7 "Feasibility Study on Control Channels for Cognitive Radio Systems". This activity will continue in 2011, by providing a Table of Contents by the Rapporteur (Dr V. Stavroulaki, UPRC).

Ensuring dissemination and exploitation of the results is a major objective of the different partners of the OneFIT consortium. It is also the best way to keep the competences and skills of such a technology in Europe as far as practicable. Hence, the partners are very attentive to promoting a rapid technology transfer. OneFIT is supporting and cross-fertilising related activities so that they collectively benefit from each other technical know-how and expertise. Additionally, the OneFIT consortium is always proactively taking additional measures to raise awareness and promote the adoption of the OneFIT technical concepts though the development of the OneFIT public website https://www.ict-onefit.eu/, that is on-line since the very beginning of the project in July 2010, and is being continuously updated and enhanced with the OneFIT upcoming events and activities.

This document also presents the changes that three of the OneFIT partners requested to be done (IFX, VTT and UNS). The specific procedure to be followed in such cases is thoroughly analysed in the Annex.

During the first six months, the dissemination activities were focusing on the quick establishment of a framework that will facilitate the widest possible degree of dissemination of initial results and awareness raised inside the project. The OneFIT dissemination approach and achievements are presented in terms of publishing of journal papers, book chapters, conference contributions, tutorial, presentations in concertation and cluster meetings, standardisation contributions and regulatory contributions.

In terms of organisation and participation to events, the very active role of OneFIT is highlighted. The OneFIT project proposed the (co-)organisation of workshops during 2010 that will take place in 2011, with participants from the wider 7th Framework Programme, and worldwide experts in the field of SDR, CR, Future Internet and Opportunistic Networks, in order to facilitate effective communication within the related research and technical community.

Furthermore, the OneFIT project is actively participating in the activities organised at programme level relating to the ICT area with the objective of providing input towards common activities and receiving feedback (e.g. from clusters), offering advice and guidance and receiving information relating to ICT programme implementation, standards, policy and regulatory activities, national or international initiatives, etc.

Based on the conclusions from the first internal evaluation over the complete consortium, it is clear that the project is very strong from focus, consortium skills, coherence, structure, and management perspectives. The quality of the work performed in 2010 is very good and all contractual

commitments have been respected. The research and outcomes are widely disseminated and the project has even been already introduced to several standardization and regulatory bodies.

In conclusion, during the first reporting period, the Project and consortium dimensions have been developed, and therefore OneFIT has fully reached its objectives. The project achievements in 2010 are huge and the potential for 2011 is also very promising. Building on the successful achievements of the first year of OneFIT, the project will pursue in 2011 the demonstration of its full dimension and potential, through various streams, including more impacting dissemination of OneFIT results, major standardisation and regulation contributions as well as organisation of OneFIT events across the world and proof-of-concept demonstration of the OneFIT platform.