FLAVIA Project

FLexible Architecture for Virtualizable future wireless Internet Access

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What's new on FLAVIA?

Updates on the project activities, outcomes and work progress

The FLAVIA project is driven by the belief that the future wireless internet will be boosted by a paradigm shift in the way access/networking protocols for wireless networks may be deployed. We support a vision where operators, wireless access/network deployers, scientific communities, and possibly even end customers, will be able to program, with relative simplicity, selected parts of the MAC and PHY resource control functionalities. FLAVIA will foster a paradigm shift towards the Future Wireless Internet, by revising the Internet architecture from a perspective of the functionalities of wireless access interfaces: from pre-designed link services to programmable link processors

The project is now entering the phase of integration and implementation after a the promising work realised during the first year (also corroborated by the introduction of AGH University of Science and Technology from Poland (funded by the EU through the Enlargement scheme) with the aim of working on Specification of an architectural framework with support for interoperability, backward compatibility and technology extensions.

Current work is focussed on the design and set up of the project demonstration activities (which will also be the main topic to be presented during the incoming II Year technical review, in September 2012). The planned demonstration activities include

the Wireless MAC processors opensource implementation that has been developed on a specific commercial card. You can programme your MAC, download and run the components at the following link of the project website: *http://www.ict-flavia.eu/flavia-demos-downloads*

Enjoy your programming!

Highlights on FLAVIA dissemination activities

Scientific contributions. Since its begging (June 2010) FLAVIA has produce a large number of contribution to the scientific community with papers on both journal and conferences, invited talks and participation to other scientific events and initiatives. Also during 2012 FLAVIA has been very active, in particular participating to the most relevant events in the area of telecommunications. In particular FLAVIA is about to present during the Future Network and Mobile Summit 2012 3 papers (also coordinating a thematic workshop) and 3 papers as well during the INFOCOM 2012. The full list of published and accepted papers is available on the project website.

Standardisation With respect to the standardization activities of Task 8.1, contributions to IEEE 802.11 and IEEE 802.16 have been done as planned and a very positive feedback received. This resulted in some of the contributions being already accepted in current draft specifications of IEEE 802.11 and 802.16. In the 3GPP RAN standardization side, the activities have consisted in the monitoring of relevant work items. In particular for 802.11 FLAVIA contribution to Working Group 11 of the

IEEE 802 LAN/MAN Standards Committee focuses on the promotion of new functionality for IEEE 802.11s mesh networks which was recently developed in framework of FLAVIA WP6, namely parameterized QoS service. In regard to 802.16 FLAVIA is participating to following working groups: Maintenance Task group, the GRIDMAN Task Group, Machine-to-Machine (M2M) Task Group, Study group on Broadband Wireless Access Metrology (Met), and the Study group on Heterogeneous Networks.

Follow our latest publications and scientific updates on *www.ict-falvia.eu*

Events

http://www.futurenetworksummit.eu/2012/. Future Network and Mobile Summit 2012 takes place in the Estrel Berlin, Germany, 04 - 06 July 2012. This is the twenty-first in a series of Annual Conferences supported by the European Commission, which regularly attracts over 500 delegates from industry and research to share experiences and research results, identify future trends, discuss business opportunities and identify opportunities for international research collaboration under the ICT Theme of Framework Programme 7 (FP7).

www.ieee-infocom.org/ The IEEE Conference on Computer Communications addresses key topics and issues related to computer communications, with emphasis on traffic management and protocols for both wired and wireless networks.

Related R&D projects

CARMEN, CARrier grade

MEsh Networks, studies and specifies a wireless mesh network supporting carrier grade triple-play services for mobile/fixed network operators. Future operator networks will be comprised of a common core network and several access networks, and the CARMEN access network will complement other access technologies by providing a low cost and fast deployment mesh network access technology. The project proposes the integration of heterogeneous wireless technologies in a multi-hop fashion to provide scalable and efficient ubiquitous quad-play carrier services. To address the integration complexity of heterogeneous radio technologies, CARMEN introduces a layer 2.5 located between the subnet layer and the routing layer (the **abstract interface** in the architecture figure below), in order to abstract technology specific issues into a common set of events and

commands. Upper layers will use the abstract interface of layer 2.5 to dynamically adapt functions such as **routing**, **mobility** and **monitoring**. One relevant issue is that CARMEN will provide **capacity handling** algorithms to exploit specific features of the mesh networks such as the availability of multiple links between two peers (i.e. multipath) or the use of radio broadcast instead of unicast to alleviate the load of broadcast services (e.g. video) in the mesh network. CARMEN will focus on three planes: technology, message transfer, and **self-configuration** and management, to provide a complete solution for setting up and maintaining a cost-effective carrier grade wireless mesh access network.

About FLAVIA…

Dissemination possibilities

In our future newsletter, we would like to support R&D projects working in similar areas with dissemination information about your project. Feel free to send us more information about activities, events, and news related to your project and we'll try our best to disseminate it and create links with our work!

SEVENTH FRAMEWORK PROGRAMME