

## PUBLIC



FP7-ICT Future Networks  
SPECIFIC TARGETTED RESEARCH PROJECT  
Project Deliverable

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**Abstract:** During this first year, the dissemination activity has mainly consisted in the publication of papers at the conferences whose scope includes the technical area of the project and the participation in the organization of special events. In the second year, simulation results will become available and the demonstration will take shape. This will give opportunities for additional forms of dissemination, particularly through the website

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## 1 INTRODUCTION

This document describes the actions of dissemination taken by the phydyas project members during the first year.

List of partners:

<b>Beneficiary Number *</b>	<b>Beneficiary name</b>	<b>Beneficiary short name</b>	<b>Country</b>
1(coordinator)	Conservatoire National des Arts et Métiers	CNAM	France
2	Technische Universität München	TUM	Germany
3	Tampere University of Technology	TUT	Finland
4	Université Catholique de Louvain	UCL	Belgium
5	SINTEF - Trondheim	SINTEF	Norway
6	Centre Tecnologic de Telecomunicacions de Catalunya	CTTC	Spain
7	Research Academic Computer Technology Institute	RA-CTI	Greece
8	University of Napoli Federico II	UNINA	Italy
9	CEA-LETI	LETI	France
10	Agilent-Belgium	AGI	Belgium
11	Alcatel-Lucent Swindon	ALUK	United Kingdom
12	Alcatel-Lucent Deutschland	ALUD	Germany
13	COMSIS	COMSIS	France

The dissemination activities have consisted in the presentation of papers at conferences, the participation to the organization of special events, a proposal for a journal special issue and the contribution to the work of the FP7-RAS cluster.

## 2 CONFERENCE PAPERS

The following papers were presented or submitted during the year 2008 by the partners in relation with their work in the project.

### *CNAM and TUT*

M.Bellanger, T.Ihalainen and M.Renfors, “Filter bank based cognitive radio physical layer”, submitted to ICT-mobile summit, June 2009.

### *CNAM*

H. Zhang, D. Le Ruyet, M. Terré, " On spectral efficiency analysis between OFDM/OQAM and OFDM based CR networks", submitted VTC-spring 2009.

- [4] H. Zhang, D. Le Ruyet, M.Terré « Spectral efficiency comparison between OFDM/OQAM and OFDM based CR networks", to be published in “Wireless Communications and Mobile Computing”, Wiley, 2008.
- [3] H. Zhang, D. Le Ruyet, M.Terré, " Signal Detection for OFDM-OQAM System Using Cyclostationary Signatures" , conf. PIMRC’08, Cannes, 15-18 Sept. 2008.
- [2] M.Bellanger, “Transmit diversity in multicarrier transmission using OQAM modulation”, conf. ISWPC’08, Santorini, 07-09 May 2008.
- [1] M.Bellanger, “Filter banks and OFDM/OQAM for high throughput wireless LAN”, conf. ISCCSP’08, Malta, 12-14 March 2008.

### *TUM*

L.G. Baltar, D. Waldhauser and J. Nossek, “MMSE subchannel decision feedback equalization for FBMC systems”, accepted ISCAS’09.

D.Waldhauser, L.G. Baltar and J. Nossek, “Adaptive decision feedback equalization for FBMC systems”, accepted ISCAS’09.

Q. Bai and J. Nossek, “A cross-layer assisted resource allocation scheme in multicarrier systems”, submitted IWCLD’09.

- [2] D. S. Waldhauser, L. G. Baltar, and J. A. Nossek, “MMSE subcarrier equalization for filter bank based multicarrier systems,” *Proc. IEEE SPAWC 2008*, pp. 525–529, July 2008.
- [1] D. Waldhauser, L. G. Baltar, and J. Nossek, “Adaptive equalization for filter bank based multicarrier systems,” *Proc. IEEE ISCAS 2008*, pp. 3098–3101, May 2008.

### *TUT*

T.H.Stitz, A.Viholainen, T.Ihalainen and M.Renfors, “ CFO estimation and correction in a WiMAX-like FBMC system”, submitted to ICC’09.

U.Rahim, T.H.Stitz and M.Renfors, “Analysis of clipping-based PAPR reduction in multicarrier systems”, submitted to VTC-spring 2009.

- [3] T.Ihalainen, A.Viholainen and M.Renfors, “On spectrally efficient multiplexing in cognitive radion systems”, *Proc. ISWPC’08* (Santorini), May 2008.

- [2] T. Ihalainen, Yuan Yang, M. Renfors, "Filter Bank Based Frequency-Domain Equalizers with Diversity Combining", *Proc. IEEE ISCAS 2008*, pp. 93-96, May 2008.
- [1] T. Stitz, T. Ihalainen and M. Renfors, "Practical issues in frequency domain synchronization for FBMC transmission", *Proc. IEEE ISCCSP'08* (Malta), March 2008.

### CTTC

- N. Zorba and S. Pfletschinger, "Filter Bank Based Multicarrier Modulation with Spectral Diversity", submitted ICC'09.
- M. Shaat and F. Bader, "Power Allocation and Throughput Comparison in OFDM and OFDM/OQAM Based Cognitive Radio systems", submitted VTC Spring '09. Barcelona, Spain.
- I. Gutierrez, F. Bader, J. L. Pijoan, "Mixed TUSC and Band AMC Permutation Zone in OFDMA Systems with Limited Feedback," submitted VTC-Spring '09. Barcelona, Spain.
- [3] I. Gutierrez, F. Bader, J. L. Pijoan, "New Prioritization function for User Scheduling in OFDMA Systems", *IEEE Radio Wireless Symposium (RWS'2009)*, San Diego, California, USA. Jan 2009.
- [2] I. Gutierrez, F. Bader, J. L. Pijoan, "Prioritization Function for Packet Data Scheduling in OFDMA Systems" *The Fourth International Wireless Internet Conference (WiCON 2008)*, Maui, Hawaii, USA. Nov 2008.
- [1] N. Zorba, A. Perez-Neira, "Spatial Sharing for QoS Guarantees in Cognitive Radio Scenarios", in *Proc. ICT Mobile Summit 2008*. Stockholm (Sweden), June 10-12 2008.

### UNINA

- T. Fusco, A. Petrella and M. Tanda, "Preamble based CFO estimation in multiuser OFDM/OQAM systems", submitted SPAWC'09
- T. Fusco, A. Petrella and M. Tanda, "Data-aided symbol timing estimation for multiple access OFDM/OQAM systems", accepted for presentation at ICC'09.
- T. Fusco, A. Petrella, and M. Tanda, "A data-aided symbol timing estimation algorithm for OFDM/OQAM systems", accepted for presentation at ICC'09.
- [4] T. Fusco, A. Petrella, M. Tanda: "Data-aided time-domain synchronization for filter bank based multicarrier systems," *proc. EUSIPCO 2008*, Lausanne, Switzerland, August 25-29, 2008.
- [3] T. Fusco, A. Petrella, M. Tanda: "Blind carrier-frequency offset estimation for pulse shaping OFDM/OQAM systems," *proc. conf. IEEE-ISCCSP'08*, Malta, March 12-14, 2008.
- [2] T. Fusco, L. Izzo, A. Petrella and M. Tanda, "Blind symbol timing estimation for OFDM/OQAM systems", *proc. conf. IEEE-ISCCSP'08*, Malta, 12-14 March 2008.
- [1] T. Fusco, A. Petrella and M. Tanda, "Sensitivity of multi-user FBMC systems to synchronization errors", *proc. conf. IEEE-ISCCSP'08*, Malta, 12-14 March 2008.

### ALUK

A.Kuzminskiy and Y.Abramovich, “Space-time spectrum sensing for decentralized dynamic spectrum allocation based on adaptive antenna array interference mitigation diversity”, submitted RAS-workshop at ICT mobile summit 2009.

A.Kuzminskiy and Y.Abramovich, “Adaptive antenna array interference mitigation diversity for decentralized DSA in licence-exempt spectrum”, submitted ICC’09.

Y.Abramovich and A.Kuzminskiy, “DSA based on adaptive antenna array interference mitigation diversity: performance bounds”, submitted ICASSP’09.

A.Kuzminskiy and Y.Abramovich, “DSA based on adaptive antenna array interference mitigation diversity: algorithms and Markov chain analysis”, submitted ICASSP’09.

### **3 SPECIAL EVENTS**

#### *Invited session at ISCCSP’2008*

Partner TUT organized an invited session entitled “Filter banks for flexible and spectrally agile signal processing for future wireless communications” at the conference ISCCSP’2008 which was held in Malta, on March 12-14. Speakers from the FP6 URANUS project and from France Telecom participated.

#### *Panel session at ISWPC’2008*

Partner CNAM had been invited to a panel session at the conference ISWPC’2008 (wireless pervasive computing) on May 7-9. It was an opportunity to present the objectives of Phydyas. Several partners were represented at this conference.

#### *Organizing committee of CROWNCOM’2009*

Recognizing the relevance of the project with the scope of the conference ( 4<sup>th</sup> international conference on cognitive radio oriented wireless networks and communications), the conference organizers invited the coordinator to join the team, as a tutorial chair.

#### *Phydyas workshop- 21 June 2009*

The project workshop will take place at Perugia, Italy, on 21 June 2009, in connection with the IEEE SPAWC conference, scheduled on 22-24 June 2009. The workshop will consist of talks delivered by project partners and invited presentations by renowned scientists in the field of advanced wireless techniques. It will be concluded by a panel discussion and followed by a cocktail organized jointly with the SPAWC conference, to foster discussions and exchanges. The SPAWC conference is a medium size event, typically 200 participants, which usually attracts the top researchers and designers in the area of techniques and algorithms for the physical and medium access control layer in wireless systems. The papers published on this occasion have a major impact in the scientific community.

#### *ICT-Mobile Summit 2009*

The project coordinator is a member of the technical program committee of the conference. Two papers have been proposed for the conference by CNAM and TUT and by ALUK. Most of the partners have expressed their willingness to attend the event.

*Participation at the activities of the FP7-RAS cluster*

The project participates in the activities of the FP7-RAS cluster, particularly in the group SEG (spectrum and enablers group).

On behalf of the project, two presentations will be given at the ICT-preconference workshop, organized by RAS/SEG on Tuesday 9 June at Santander, Spain.

**4 Special issue of the EURASIP journal on advances in signal processing**

A special issue of the journal has been proposed and accepted, with the title:

”Filter banks for flexible communication waveform generation and signal processing”.  
M.Renfors (TUT) and F.Bader (CTTC) are among the 5 guest editors. The publication is scheduled for the end of 2009.

**5 WEBSITE (<http://www.ict-phydvas.org>)**

The website is an important means of dissemination of the work of the project. It contains information, news and the formal publications of the partners. As soon as they become public, the deliverables will also be available, as well as the results of the simulations and the demonstrations.