

Wireless Systems Group

Department

Electronics, Computers, Telecommunications and Control.

Main Team Members

- Andreas Polydoros, Professor.
- Ioannis Dages, Research Associate.
- Nikos Dimitriou, Research Associate.
- Andreas Zalonis, doctoral student.

Short Description

The Wireless Systems Group performs research on wireless communication systems. The research work of the group includes wireless system studies pertaining to topics such as baseband digital processing, modulation/waveform design, error-correction and space-time coding/decoding, channel estimation, advanced data detection, radio resource management, and link/system level simulations.

Selected Publications

- N.Dimitriou, A.Polydoros and A.Barnawi, *Cooperative schemes for path establishment in mobile ad-hoc networks under shadow-fading*, Elsevier Ad Hoc Networks, Volume 11, Issue 8, Nov. 2013.
- G.Baldini, O.Holland, V.Stavroulaki, K.Tsagkaris, P. Demestichas, A.Polydoros, S. Karanasios and D.Allen, *The evolution of Cognitive Radio technology in Europe: regulatory and standardization aspects*, Telecommunications Policy journal, Volume 37, Issues 2-3, March-April 2013.
- I.Dages and A.Polydoros, *Decision-directed least-squares phase perturbation compensation in OFDM systems*, IEEE Transactions on Wireless Communications, vol. 8, No 9, Sept. 2009.
- I.Dages, A.Polydoros, D.Denkovski, M.Angjelinoski, V.Atanasovski, L.Gavrilovska, *Algorithms and Bounds for Energy-based Multi-source Localization in Log-normal Fading*, GLOBECOM workshop on Green Internet of Things 2012, California, USA, Dec. 2012.
- A.Zalonis, N.Dimitriou, A.Polydoros, J.Nasreddine, P.Mahonen, *Femtocell Downlink Power Control based on Radio Environment Maps*, IEEE Wireless Communications and Networking Conference (WCNC 2012), Paris, France, April 2012.

Research Projects

- Network of Excellence in Wireless COMMunications # (NEWCOM#), EU - FP7-ICT, Nov. 2012 – Oct. 2015. Partners: Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT), Aalborg Universitet (AAU), Bilkent Üniversitesi (Bilkent),

Centre National de la Recherche Scientifique (CNRS), Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Institute of Accelerating Systems and Applications (IASA), Inesc Inovacao, Instituto de Novas Tecnologias (INOV), Poznan University of Technology (PUT), Technion - Israel Institute of Technology, Technische Universitaet Dresden (TUD), University of Cambridge (UCAM), Universite Catholique de Louvain (UCL), Oulun Yliopisto (UOULU), Technische Universitaet Wien (VUT). Description: NEWCOM# project investigates long-term, interdisciplinary research on the most advanced aspects of wireless communications, including the thematic areas of Ultimate Limits of Communication Networks, Opportunistic and Cooperative Communications, and Energy- and Bandwidth-Efficient Communications and Networking.

- Advanced coexistence technologies for radio optimisation in licensed and unlicensed spectrum (ACROPOLIS), EU - FP7-ICT, Oct. 2010 – Dec. 2013. Partners: King's College London, RWTH Aachen University, University of Rome "La Sapienza", Institute of Accelerating Systems and Applications, Technical University of Dresden, University of Piraeus Research Center, Wroclaw Research Centre EIT+, KTH Royal Institute of Technology, Ss. Cyril And Methodius University in Skopje, Centre Tecnologic De Telecomunicacions De Catalunya, Joint Research Centre (JRC) European Commission, Poznan University of Technology, University of Surrey, Eurecom, University of Leeds, EADS Innovation Works. Description: The purpose of ACROPOLIS is to link experts from around Europe working on coexistence technologies such as spectrum sharing and cognitive radio. Such coexistence technologies within ACROPOLIS are aimed towards the optimisation of radio spectrum usage.
- Flexible and spectrum-Aware Radio Access through Measurements and modelling In cognitive Radio systems (FARAMIR), EU - FP7-ICT, Jan. 2010 – Sept. 2012. Partners: Institute for Networked Systems RWTH Aachen University, Interuniversitair Micro-Electronica Centrum VZW, Universitat Politècnica de Catalunya, Huawei Technologies Sweden AB, Toshiba Europe, Institute of Accelerating Systems and Applications, Thales Communications SA, University Ss. Cyril & Methodius, Skopje, France Telecom, Bundesnetzagentur. Description: FARAMIR is developing techniques for increasing the radio environmental and spectral awareness of future wireless systems. The project has a holistic approach, carrying out activities ranging from hardware development to implementation of a reference design for radio environmental map (REM) solutions.

Webpage

<http://wireless.phys.uoa.gr>