

# WORKSHOP on AGILE: Towards "Plug-and-Play" Control for Complex, Large-Scale Real-Life Systems

25 June 2013

Room 148, Computer Science Department, University of Cyprus

One of the main reasons for the limited deployment of control systems to complex, real-life Large-Scale Systems (LSS) and especially to Systems of Systems (SoS) and Large-Scale Cyber-Physical Systems (LS-CPS) is the inability of conventional control methodologies to provide efficient control designs for such systems unless a very tedious procedure is employed. Such a tedious procedure typically requires an "expensive" and consuming initial design phase as well as constant calibration and re-configuration of the control system throughout its lifetime. Within AGILE, a generic control design tool has been developed that overcomes these shortcomings. Such a generic tool can be implemented via three different ways: As a model-based control design tool; As an automated fine-tuning tool; and as a model-free control design tool.

AGILE<sup>1</sup> is a "plug-n-play" control design tool that does not require the control designer to get involved into tedious analysis or fine-tuning operations (<http://www.agile-fp7.eu>).

The workshop will present its achievements this far, presenting results from two different applications of energy management and road traffic control, plus discuss in detail the control of congestion in communication networks, an area which AGILE has lately turned its attention towards.

## Workshop program

10:30-10:45	Registration and welcome
10:45-11:15	AGILE project overview, Andreas Pitsillides
11:15-11:30	COFFEE BREAK
11:30-12:00	AGILE controller general theory, Simone Baldi
12:00-12:30	AGILE controller for communication theory – early results using a fluid flow model of a communication network, Simone Baldi
12:30-13:00	Integrating MATLAB implementation of AGILE controller with ns-2 network simulator Marios Lestas, George Hadjipollas
13:00-14:00	LUNCH
14:00-16:00	Hands on demonstration and open discussion

Attendance is free, and all interested are welcomed.

**For more information and registration please contact [Andreas.Pitsillides@ucy.ac.cy](mailto:Andreas.Pitsillides@ucy.ac.cy)**

Workshop is organised by the Networks Research Lab (NetRL), Dept. of Computer Science, University of Cyprus. NetRL is a partner in AGILE project.



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<sup>1</sup> AGILE: rApidly-deployable, self-tuning, self-reconfigurable nearly-optimal control design for large-scale nonlinear systems project is funded by the European Community, 7th Framework Programme, 257806, FP7-ICT-2009-3.5,