

## Report of the IEEE CSS on CACSD

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Here is a summary of the activities of the TC during the second semester of 2007.

### \*\*\* New AG webpage \*\*\*

The Action Group (AG) on Probabilistic and Randomized Methods in Control was started in 2005 by F. Dabbene and G. Calafiore. A webpage collecting information and news about randomized algorithms and stochastic optimization methods for the analysis and control of dynamic systems, with special focus on the computational aspects, is hosted by Politecnico di Torino, Italy. The link is: <http://staff.polito.it/fabrizio.dabbene/CACSD/>.

A full bibliography in BibTeX format is available for free download at the above link. The .bib file collects many references relevant to the fields of Randomized Algorithms for Control, Stochastic Optimization, Statistical Learning and Robust Control. The page was last updated in November 2007.

### \*\*\* Software developments \*\*\*

The first release of the Matlab toolbox RACT -- "Randomized Algorithms Control Toolbox" will be officially released in December 2007. For details, visit the RACT webpage at <http://ract.sourceforge.net/>

The Toolbox was developed by A. Tremba, P. Shcherbakov, E. Gryazina, B.T. Polyak (Russian Academy of Science - RAS) and F. Dabbene, G. Calafiore, R. Tempo (National Research Council of Italy - CNR) under a cooperation project between RAS and CNR.

### \*\*\* Publications \*\*\*

A special issue on polynomial design methods was edited by M. Hromcik and M. Sebek (AG on polynomial methods): International Journal of Robust and Nonlinear Control, Vol. 17, Issue 8, 25 May 2007, pp. 679-802.

### \*\*\* Technical sessions at conferences \*\*\*

H. Trentelman (AG on behavioral methods) organized an invited session on behavioral system theory at the European Control Conference ECC'07, Kos, Greece.

P. Rocha (AG on behavioral methods) together with E. Rogers and K. Galkowski organized a Workshop on Multidimensional Systems, Aveiro, Portugal, June 2007.

F. Dabbene and G. Calafiore have organized a tutorial session at ACC'07 entitled Probabilistic Methods in Control.

P. Mosterman (AG on hybrid dynamical systems) organized a workshop on Multiparadigm Modeling: Concepts and Tools at the ACM/IEEE 10th International Conference on Model Driven Engineering Languages and Systems (MODELS 2007).

M. Hromcik and M. Sebek organized an invited session (polynomial design methods) during the European Control Conference, 2-5 July 2007, Kos, Greece. They are also organizing an invited session on the same topic for the IFAC World Congress,

Seoul, Korea, 2008. M. Hromcik and V. Kucera are organizing an invited session on the same topic for the Mediterranean Control Conference MED 2008, Ajaccio, France, 2008.

V. Sima and D. Kressner (AG on numerics) organize an invited session at the IEEE CACSD Symposium to be held in San Antonio, Texas, September 3-5, 2008.

D. Peaucelle and Y. Ebihara (AG on LMIs) organize an invited session (Reducing conservatism of LMI conditions) for the IEEE CDC 2007. They also submitted an invited session proposal (LMIs and Algebraic Methods in Control) to the IFAC World Congress 2008, in cooperation with Y. Oishi, Nanzan University, Japan.

A. Vardulakis and N. Karampetakis (AG on symbolic methods) organized two invited sessions (Computational and Optimization Methods and Software for Control Systems) during the European Control Conference, 2-5 July 2007, Kos, Greece.

N. Karampetakis is the invited session chair of the IEEE International Symposium on CACSD that will be held in the city of San Antonio, Texas, USA on September 3-5, 2008.