



Collaborative Project
Small-medium-scale focused research project (STREP)

Grant Agreement n. 224168

FP7-ICT-2007-2

WIDE **Decentralized and Wireless Control of Large-Scale Systems**

Starting date: 01 September 2008

Duration: 3 years

Deliverable number	D6.6
Title	WIDE final workshop
Work package	WP6 – Dissemination and exploitation
Due date	M36
Actual submission date	1/9/2011
Lead contractor	KTH
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Nature	Report
Revision	v1.0 (1/9/2011)

Dissemination level	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
→CO	Confidential, only for members of the consortium (including the Commission Services)

Executive summary

The final WIDE workshop was held in conjunction with the IFAC World Congress in Milan, Italy, 2011. Several researchers from the WIDE consortium, complemented by a few world-leading experts in the area of decentralized wireless control, presented research that has been developed within the framework of WIDE and related projects outside of Europe.

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1 The WIDE final workshop

The Triennial IFAC World Congress is one of the major events in the control community. In 2011, the congress took place in Milan, Italy late August, and we saw it as an opportunity to collocate the final WIDE workshop with the IFAC congress. After discussions with the congress chairs, it was decided that the most appropriate venue was to host a full-day tutorial, showcasing the work carried out within WIDE, complemented by research carried out in related projects outside of Europe. To this end, four WIDE researchers, Profs. Bemporad, Havlena, Heemels and Johansson, along with renowned international experts Dragan Nesic and Joao Hespanha delivered a one-day tutorial on networked control at the IFAC congress.

The precise set of lectures given was

1. Mikael Johansson (KTH, Stockholm, Sweden): Title: Control relevant models for wireless communication
2. Maurice Heemels (Eindhoven University of Technology, Eindhoven, The Netherlands) Title: Stability and stabilization of networked control systems
3. Dragan Nesic (University of Melbourne, Melbourne, Australia) Title: Emulation-based controllers for networked control systems
4. Joao Hespanha (University of California at Santa Barbara, Santa Barbara, USA) Title: Stochastic networked control systems and stochastic hybrid systems
5. Alberto Bemporad (University of Trento, Trento, Italy) Title: MPC design methods for networked systems
6. Vladimir Havlena (Honeywell, Prague, Czech Republic) Title: Distributed and network-aware estimation

Johansson presented the work that has been carried out in WIDE WP2, with particular focus on reliable real-time over wireless and co-design considerations, while Bemporad and Havlena presented work from WP3 on networked estimation and MPC. Finally, Heemels presented work from WIDE WP4 on networked control systems.

The workshop schedule, along with PDF versions of the presentations and other materials distributed in conjunction with the workshop, is available on-line at

<http://ist-wide.dii.unisi.it/index.php?p=IFACworkshop>

While we had hoped for a larger audience, the atmosphere was very appreciative and constructive. Many interesting questions were posed, ideas for new research problems and industrial applications were discussed, and many positive comments were given to the organizers after the workshop.

2 List of participants

The following participants registered (at last one week) prior to the workshop, but about ten additional participants joined the workshop, most probably through on-site registrations. Note that speakers and other participants from the WIDE consortium did not need to register with the congress organizers.

Bernat Jakub

Lunze Jan

Marin Raul

Yamaguchi Hiroaki

OKHUELEGBE CHRISTOPHER

Khoshfetrat Pakazad Sina

Trimpe Sebastian

WU SHINN-SHYAN

Ramesh Chithrupa

Schöllig Angela

Hill David J.

Fodrek peter

Rosinova Danica

Sampei Mitsuji

Wolff Eric