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**WIDE**

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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

Report on invited sessions organised or co-organised by WIDE beneficiaries at major international control conferences.

Below all the invited sessions organised or co-organised by WIDE beneficiaries at major international control conferences are summarised.

## 1. Joint Conference on Decision and Control and European Control Conference 2011

Maurice Heemels (TU/e) organised two invited sessions on “Recent Advances in Event-Triggered Control” together with Prof. Kalle Johansson (KTH, Stockholm, Sweden) and Prof. Sandra Hirche (Technical University Munich, Germany) at the joint Conference on Decision and Control and European Control Conference 2011 in Orlando, FL, USA.

The session “Recent Advances in Event-Triggered Control I” consists of the following papers:

- C. Stöcker and J. Lunze, Event-Based Control of Nonlinear Systems: An Input-Output Linearization Approach.
- M. Mazo Jr. and M. Cao, Decentralized Event-Triggered Control with Asynchronous Updates.
- M. Guinaldo, D.V. Dimarogonas, K.H. Johansson, J. Sánchez Moreno and S. Dormido, Distributed Event-Based Control for Interconnected Linear Systems.
- R. Postoyan, A. Anta, D. Nešić, P. Tabuada, A Unifying Lyapunov-Based Framework for the Event-Triggered Control of Nonlinear Systems.
- R. Postoyan, P. Tabuada, D. Nešić, A. Anta, Event-Triggered and Self-Triggered Stabilization of Distributed Networked Control Systems.
- W.P.M.H. Heemels, M.C.F. Donkers and A.R. Teel, Periodic Event-Triggered Control Based on State Feedback.

The session “Recent Advances in Event-Triggered Control II” consists of the following papers:

- X. Wang and M. Lemmon, Attentively Efficient Controllers for Event-Triggered Feedback Systems.
- R. Blind and F. Allgower, On the Optimal Sending Rate for Networked Control Systems with a Shared Communication Medium.
- A. Molin and S. Hirche, Optimal Design of Decentralized Event-Triggered Controllers for Large-Scale Systems with Contention-Based Communication.
- M.C.F. Donkers, P. Tabuada and W.P.M.H. Heemels, On the Minimum Attention Control Problem for Linear Systems: A Linear Programming Approach.
- T. Henningson, Sporadic Event-Based Control Using Path Constraints and Moments
- C. Ramesh, H. Sandberg and K.H. Johansson, Steady State Performance Analysis of Multiple State-Based Schedulers with CSMA.

## 2. American Control Conference 2010

Maurice Heemels (TU/e) organised an invited session entitled “Stability and Stabilisation of Networked Control Systems” together with Prof. Mircea Lazar (TU/e) and Prof. Ilya Kolmanovsky (Ford, Dearborn, USA) at the American Control Conference 2010 in Baltimore, USA.

The session consisted of the following papers:

- M. Koegel, R. Blind and F. Allgower, Optimal Control Over Unreliable Networks with Uncertain Loss Rates.
- R. Postoyan and D. Nešić, A Framework for the Observer Design for Networked Control Systems (I).
- M.C.F. Donkers, W.P.M.H. Heemels, D. Bernardini, A. Bemporad and V. Shneer, Stability Analysis of Stochastic Networked Control Systems.
- A. Teixeira, H. Sandberg and K.H. Johansson, Networked Control Systems under Cyber Attacks with Applications to Power Networks.
- R. Gielen, M. Lazar and I.V. Kolmanovsky, On Lyapunov Theory for Delay Difference Inclusions.
- S. Di Cairano and I.V. Kolmanovsky, Rate Limited Reference Governor for Network Controlled Systems.

## 3. European Control Conference 2009

The EU-FP7 projects WIDE and FEEDNETBACK jointly organised the session “Wireless control systems” at the European Control Conference 2009 in Budapest, Hungary. Prof. Karl Johansson (KTH, Stockholm, Sweden) was the organiser from the side of FEEDNETBACK and Prof. Maurice Heemels coordinated the involvement of WIDE.

The session consisted of the following papers:

- M. Lopez-Martinez, C. Canudas-de-Wit and F.R. Rubio, Stability of asynchronous feedback-interconnected dissipative systems.
- W.P.M.H. Heemels, A.R. Teel, N. van de Wouw and D. Nešić, Networked control systems with communication constraints: tradeoffs between sampling intervals and delays.
- D. Bernardini and A. Bemporad, Energy-aware robust model predictive control with feedback from multiple noisy wireless sensors.
- P. Soldati and M. Johansson, Deadline-constrained transmission scheduling and data evacuation in wirelessHART networks.
- C. Ramesh, H. Sandberg and K.H. Johansson, Multiple access with attention-based tournaments for estimation over networks.
- A. Chiuso and L. Schenato, Performance bounds for information fusion strategies in packet-drop networks.

At the European Control Conference 2009 in Budapest, Hungary, Maurice Heemels (TU/e) was also involved in the organisation of the invited session “Event-Triggered Sampling and Control” together with Prof. Anton Cervin (Lund University, Lund, Sweden) and Prof. Maben Rabi (KTH, Stockholm, Sweden).

The session consisted of the following papers:

- M. Mazo Jr., A. Anta and P. Tabuada, On Self-Triggered Control for Linear Systems: Guarantees and Complexity.
- M. Velasco, P. Martí and B. Enrico, Equilibrium Sampling Interval Sequences for Event-Driven Controllers.
- M. Rabi and K.H. Johansson, Scheduling Packets for Event-Triggered Control.
- P. Wan and M. Lemmon, Distributed Network Utility Maximization Using Event-Triggered Barrier Methods
- T. Henningsson and A. Cervin, Comparison of LTI and Event-Based Control for a Moving Cart with Quantized Position Measurements.
- J.S. Baras, P. Hovareshti and S. Perumal, Event Triggered Distributed Collaborative Control.