

# ***Systems and Control: Challenges in the 21<sup>st</sup> Century***



**Organized by  
Delft Center for Systems and Control**

**June 7-8, 2004**

**Aula Congress Centre  
Delft University of Technology  
The Netherlands**

# ***Systems and Control: Challenges in the 21<sup>st</sup> Century***

**Design, control and optimization of complex dynamical systems and processes is of vital importance in many technological application areas as e.g. in mechatronic and microsystems, sustainable industrial processes, communication and traffic control, aerospace, physical imaging systems, as well as in emerging areas like bioinformatics. Increasing complexity of systems, as well as higher demands on their performance for optimal use of resources, maximum accuracy and reliability, minimum environmental load, together with continuous developments for sensing and actuation, create major challenges for the systems and control field to contribute to high-tech developments in the several domains of application.**

**In this symposium academic and industrial experts will share their views on the current and future challenges for the systems and control field, both in terms of generic modelling, control and optimization problems, and in terms of high-tech applications in a wide range of application domains. The full program will consist of 18 plenary lectures.**



## ***Delft Center for Systems and Control***

Three systems and control groups within Delft University of Technology have recently merged into the Delft Center for Systems and Control (DCSC). The former groups of mechanical engineering (Okko Bosgra), electrical engineering (Michel Verhaegen), and applied physics (Paul Van den Hof) constitute the new Center, which is hosted by the Department of

Mechanical Engineering. The Center has a Delft-wide role in education and research and it coordinates the newly started MSc program in Systems and Control, as of September 1, 2003. At the occasion of the start of the Center, the two-day symposium is organized on June 7,8 2004 in the Aula Congress Centre of Delft University of Technology.





## List of speakers:

### **Prof. Karl Johan Åström**

*University of California at Santa Barbara, USA, and Lund Institute of Technology, Sweden*

**Control Engineering: The Hidden Technology**

### **Prof. Lennart Ljung**

*Linköping University, Sweden*

**University Cooperation with Industry: Formats and Results**

### **Prof. Wolfgang Marquardt**

*RWTH - Aachen University, Germany*

**From Feedback Control to Real-Time Business Decision Making in the Process Industries**

### **Prof. Gary Balas**

*University of Minnesota, Aerospace Engineering and Mechanics*

**The Future of Aerospace Control: Opportunities and Challenges**

### **Prof. Dirk van Dyck**

*RUCA, University of Antwerp, Belgium*

**Physical Measurements in the 21st Century**

### **Prof. Maarten Steinbuch**

*Eindhoven University of Technology*

**Challenges in Advanced Motion Control**

### **Prof. Bart De Moor**

*Katholieke Universiteit Leuven, Belgium*

**Systems Theory in Systems Biology**

### **Ir. Gregor van Baars**

*Philips CFT - Mechatronics Research Department*

**Advanced Servo Control Research at Philips CFT: Status and Future Challenges**

### **Dr. Stefano Stramigioli**

*University of Twente*

**Port-Based Control of Nonlinear Systems**

### **Dr. Richard van der Linde**

*Delft University of Technology and Altran Corporation*

**Systems and Control Inspired by Biology**

### **Prof. Hans Hellendoorn**

*Delft University of Technology and Siemens Nederland*

**The Smart Highway - Modern Traffic Control**

### **Dr. Marcel Reinders**

*ICT, Delft University of Technology*

**Discovering Genetic Regulatory Networks**

### **Prof. Arjan van der Schaft**

*University of Twente*

**Putting Energy in Control**

### **Ir. Bernie van Leeuwen**

*SKF Engineering & Research Centre*

**Drive by Wire**

### **Ir. Guido ten Hacken**

*Shell Global Solutions International BV*

**The Well Kept Secret of Successful Automation**

### **Prof. Okko Bosgra**

*Delft Center for Systems and Control*

**The Integration of Control and Optimization in Process Control**

### **Prof. Paul Van den Hof**

*Delft Center for Systems and Control*

**Data-Based Modelling for Control and Optimization**

### **Prof. Michel Verhaegen**

*Delft Center for Systems and Control*

**Dealing with Complexity via Exploitation of Structure in Control Design**

# **General Information**

## **Date**

June 7-8, 2004

## **Venue and Registration**

Delft University of Technology  
Aula Congress Centre  
Mekelweg 5  
Delft  
The Netherlands  
Tel: +31 15 278 80 22  
Fax: +31 15 278 67 55  
Email: congressoffice@fd.tudelft.nl

## **Registration**

Registration can be done via the attached form or online via:  
[www.dcsc.tudelft.nl/Symposium/index.html](http://www.dcsc.tudelft.nl/Symposium/index.html)  
At the end of the first day a dinner is organized. Registration for the dinner only is possible, please contact:  
[n.vandenberg-moor@dcsc.tudelft.nl](mailto:n.vandenberg-moor@dcsc.tudelft.nl)

## **Registration and Information Desk**

All Participants are requested to check in at the registration and information desk on June 7<sup>th</sup> 2004 from 08.45 hours on. The opening session will start at 09.45 hours.

The telephone number at which you can be reached during the symposium is:  
+31 15 278 80 22.

Urgent fax messages should be headed *Systems and Control: Challenges in the 21<sup>st</sup> Century* and should be sent to:  
+31 15 278 67 55.

The E-mail address is:  
[congressoffice@fd.tudelft.nl](mailto:congressoffice@fd.tudelft.nl)

## **For further information on this symposium:**

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*Dr. Jacquélien Scherpen*  
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tel: +31 15 2786152

*Prof. Paul Van den Hof*  
email: [p.m.j.vandenhof@dcsc.tudelft.nl](mailto:p.m.j.vandenhof@dcsc.tudelft.nl)  
tel: +31 15 2784509

*Dr. Ton van der Weiden*  
email: [a.j.j.vanderweiden@dcsc.tudelft.nl](mailto:a.j.j.vanderweiden@dcsc.tudelft.nl)  
tel: +31 15 2785609

[www.dcsc.tudelft.nl/Symposium/index.html](http://www.dcsc.tudelft.nl/Symposium/index.html)

Please fill out this form either online via the registration button on <http://www.dcsc.tudelft.nl/Symposium/index.html> or return it by telefax: +31(0)15 278 67 55, or by post.

## DCSC Symposium: Systems and Control: Challenges in the 21st Century

Symposium presenting the visions from leading academic and industrial institutes

June 7-8, 2004

Aula Congress Centre, Delft University of Technology, Delft, The Netherlands

### Personal Information

Name:<sup>1</sup>  Mr.  Mrs.

Initials: First name(s):

Company/Institute:

Address:

City: Postal code:

Country:

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E-mail:

### Registration

**I will participate in the DCSC Symposium: *Systems and Control: Challenges in the 21st Century***

**7 and 8 June 2004 (2 days) - € 240**

**7 June 2004 (1 day) - € 150**

**8 June 2004 (1 day) - € 150**

**I will participate in the dinner\* on 7 June 2004 at the Aula Conference Centre - € 60**

The registration fee for two days covers only participation in all symposium sessions, lunches, coffee, tea and refreshments during breaks on 7 and 8 June 2004. The registration fee for one day covers the above for only one day.

\* If you **only** want to register for the dinner on 7 June 2004, **please do not fill out this registration form!**

Please send an email to: [n.vandenberg-moor@dcsc.tudelft.nl](mailto:n.vandenberg-moor@dcsc.tudelft.nl)

**If you are a student/employee of the Delft University of Technology, please send this form to: Delft Center for Systems and Control, Mekelweg 2, 2628 CD Delft, or mail to [n.vandenberg-moor@dcsc.tudelft.nl](mailto:n.vandenberg-moor@dcsc.tudelft.nl) or return it by telefax: (015) 278 66 79**

### Method of payment

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