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Newsletter

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Scopes of IFAC Technical Committees 1996 – 1999

The heart of IFAC are its Technical Committees. It is there that the grassroot work is done in the various technical areas which then finds its expression in the IFAC Symposia, Workshops, Conferences and, of course, the triennial IFAC World Congress. The Technical Committees are not static but constantly develop further which also requires that the scopes of the technical committees are subjected to changes and adaptations as required by developments in the respective field. To give you an overview of the activities in which IFAC currently concentrates its work we here publish the scopes of all technical committees as revised and updated after the last IFAC World Congress in San Francisco in 1996. This information can also be obtained from the IFAC homepage with links to those Technical Committees which have their own homepages already.

COORDINATING COMMITTEE: MANUFACTURING AND INSTRUMENTATION (MI) (Tian You Chai)

TC: Manufacturing, Modeling, Management and Control
Chair: A. Villa

Development of descriptive and prescriptive formal models of Computer Integrated Manufacturing Systems. Simulation and design of management and control strategies including process and production planning, control, supervision, and maintenance. Includes systems, manufacturing components, management, and quality related to improvements in manufacturing technology.

TC: Architectures for Enterprise Integration
Chair: P. Bernus

Investigation of the framework for enterprise architectures and methods for development and management of the complete enterprise life cycle. Enterprise modeling tools and languages; methodology for use; and requirements, characteristics and use of generic building blocks and models of enterprise engineering.

TC: Robotics
Chair: F. Nicolo

Sensor-based robotics for operation in structured and unstructured environments, specifically robot architecture, components and elements, modeling, control, task planning and programming, reasoning and learning, mobility and locomotion, and telepresence. Robotics application in industry and other fields. Includes robotic applications underwater, in space, as well as on surface operations.

TC: Components and Instruments
Chair: A. Ollero

Hardware and software components and instruments for process control, robotics and automation, environmental systems, automobiles and other vehicles, and perception systems. Includes intelligent devices, intelligent controllers, and new control technologies to be embedded in intelligent components and instruments. Component and instrument diagnosis, auto-configuration, measurement validation, data fusion, and learning.

TC: Low Cost Automation
Chair: A. Cipriano

Control strategies, measurement instruments, control devices, and control systems that can be easily implemented and which will lower costs in existing production processes. Analyses of improvements in productivity, reliability, flexibility, as well as process and system quality afforded by low cost automation.

TC: Advanced Manufacturing Technology
Chair: M. Zaremba

Applications of control strategies, performance evaluation and monitoring, Computer Integrated Manufacturing (CIM), concurrent engineering, and information technology for modern manufacturing systems and processes. Issues related to knowledge-based management and control, intelligent manufacturing systems, flexible manufacturing systems, novel manufacturing technologies, and factories of the future.

COORDINATING COMMITTEE: DESIGN METHODS (DM)(Alberto Isidori)

TC: Control Design
Chair: S. Engell

All aspects of control system design including specification, computation, simulation, implementation, and testing. Development and evaluation of methodologies for design of feedback systems. Includes issues of problem description

(model quality and uncertainty description, performance specification, controller complexity, operability), control structure selection, numerical and analytical techniques for computation of controllers, and implementation and validation.

TC: Linear Systems
Chair: J.M. Dion

Analysis, synthesis, and design of control systems described by linear differential or difference equations. Includes study of finite dimensional time-invariant and time-varying linear systems, implicit systems, systems with time delays, and infinite dimensional linear systems. Considers structural properties of linear systems; design methods for decoupling, disturbance rejection, and model following. H-infinity and other linear robust design methods.

TC: Nonlinear Systems
Chair: T. Glad

Methods for analysis and design of control systems described by nonlinear differential or difference equations. Considers design methods for asymptotic stabilization, regulation and tracking, noninteracting control, feedback-linearization, disturbance attenuation. Includes robust control of nonlinear systems in the presence of structured and unstructured perturbations and methods for shaping the response of a nonlinear system.

TC: Optimal Control
Chair: R. Bars

Classical and modern optimization methods used for solving optimal control problems (calculus of variations, dynamic programming, nonlinear programming, optimal control, differential games, evolutionary algorithms). Includes modeling for control optimization; large scale optimization problems and methods; and static optimization problems, nonsmooth and discontinuous problems. Considers optimization under uncertainties (perturbations, uncertainty in dynamics, H-infinity theory); singularities in optimization; algorithms and software; and industrial applications of optimal control.

TC: Robust Control
Chair: C. V. Hollot

Robust control system analysis and design, robust stability, and the connection between model quality and guaranteed performance bounds for feedback systems. Includes computational issues related to complexity and solvability of robust controllers as well as the interaction and compromise between problem specification and achievable performance. Considers the relationships between modeling, identification, model quality, and eventual feedback control behavior.

COORDINATING COMMITTEE: SYSTEMS AND SIGNALS (SS) (Han-Fu Chen)

TC: Modeling, Identification, and Signal Processing
Chair: B. Wahlberg

All aspects of system modeling and identification, from theoretical and methodological developments to practical applications. Considers model selection, model fitting, identification methods, parameter estimation, measures of model fit, model validation, linear/nonlinear models, experiment design, and automatic identification methods. Includes nonparametric, state-space, and frequency domain methods as well as distributed parameter models. Promotes interactions between signal processing and control.

TC: Adaptive Control and Tuning
Chair: R. Ortega

Analysis, synthesis, and design of adaptive systems. Development of sound theoretical bases for adaptation and autotuning. Guidelines for modification of basic designs, commissioning, and tuning. Stability, convergence, robustness, and performance. Safety critical implementations, introduction of intelligence into adaptive systems, and total system integration. Identification of adaptive techniques for robust control. Considers the full range of industrial, aerospace, and marine applications.

TC: Discrete Event Dynamic Systems
Chair: X. R. Cao

Analysis and control of discrete event dynamic systems (DEDS). Systems characterized by (countably) finite state spaces with evolution by "jumps" (discrete events) from one state to another. Almost man-made systems with a finite number of resources shared by several users. Dynamic interactions characterized by (a)synchronization, concurrency, and conflicts. Considers both timed relationships based on algebraic approaches, queuing theory, perturbation analysis, etc., and untimed relationships based on formal languages, Petri nets, etc. Applications include manufacturing systems, computer and communications networks, and traffic control.

TC: Stochastic Systems
Chair: G. Picci

Probabilistic and statistical methods of modeling, identification, estimation, and control of uncertain systems. Classical stochastic control and dynamic estimation theory including modeling, realization, and structural properties of both linear and nonlinear stochastic systems. Modeling, realization, identification, and control of discrete stochastic systems (especially Hidden Markov Models). Statistical methods in analysis/simulation of complex dynamic systems and identification of stochastic systems (especially methodological and conceptual aspects of identification).

TC: Fuzzy and Neural Systems
Chair: K. J. Hunt

All aspects of fuzzy and neural systems relevant to control theory and applications: modeling, identification, control design, adaptation, stability analysis, implementation, and evaluation. Definition of operating constraints and multiple performance objectives; motivation for development of theoretical foundations; awareness of computational issues and software support. Promotes information exchange among practicing industrial engineers and the academic community to articulate industrial state-of-the-art applications.

COORDINATING COMMITTEE: LIFE SUPPORT SYSTEMS (LS) (Yasushi Hashimoto)

TC: Modeling and Control in Agricultural Processes
Chair: I. Farkas

All aspects of modeling and control of agricultural processes. Modeling methodology for growth of farm animals and crops such as photosynthesis of crops under environmental stresses, metabolism of farm animals, and SPAC (Soil-Plant-Atmosphere-Cycle). Modeling for post-harvest heating and cooling processes; drying of rice crops and storage control of mature fruits. System identification and environmental control of animal houses, greenhouses, grading, and storage such as heating models for greenhouses and animal houses; humidity control of storage facilities.

TC: **Intelligent Control in Agricultural Automation**
Chair: H. Murase

Intelligent control applications and information technologies as they are applied to agricultural automation. Intelligent mechanization and sensor-fusion as applied to agricultural robotics and automated agricultural mechanization; expert systems for agricultural operation, artificial neural network for modeling, fuzzy control, and genetic algorithms. Intelligent control for crop & vegetable factory systems, post-harvest and processing technology, and agro-biotechnology including intelligent control of cultivation processes, and computer networks for image diagnosis for post-harvesting and processing operations. Control systems for Controlled Ecological Life Support System (CELSS), including CELSS in space.

TC: Modeling and Control of Biomedical Systems
Chair: E. R. Carson

Application of systems and control concepts, methodology, and techniques to medicine, biology and healthcare. Physiological modeling, simulation, identification, experimental design, control and knowledge-based methods. Modeling and control of structure and function in cellular, neuromuscular, neurosensory, metabolic, endocrine, respiratory and circulatory systems both in healthy and diseased states. Pharmacokinetics and pharmacodynamics, drug delivery for optimal therapy, control of physiological and clinical variables in intensive care, and management of chronic disease. Rehabilitation engineering, healthcare delivery, and human-machine interactions.

TC: Modeling and Control of Environmental Systems
Chair: A. Sano

All aspects of modeling and control of environmental systems to attain symbiosis between environment and technology.

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Development of modeling and control methodologies for environmental systems, prediction of global warming,management and processing of environmental observation data, and risk analysis and management of environmental systems. Control, optimization, and management for environmental quality, global environmental issues, and socio-structure. System reform and integration for environments, control systems technologies for energy saving and cogeneration, energy conservation, and industrial environmental management.

COORDINATING COMMITTEE: SYSTEMS ENGINEERING AND MANAGEMENT (SM) (Manfred Deistler)

TC: Large Scale Systems
Chair: P.D.Roberts

Dynamics and control of large scale systems; definition, analysis, methological development, design, and applications. Includes modeling-model reduction, decomposition, stability, decentralized control-estimation, hierarchical control, optimization (including multicriteria), complex systems theory, intelligent control, decision support systems, production planning-scheduling, plant wide control-management, computer integrated manufacturing-engineering, distributed and hierarchical computer systems. Applications include manufacturing systems, utilities (water, power, gas), communications and information systems, agriculture and food, management, socio-economic, environmental, and transportation systems.

TC: Computer Aided Control Systems Designs
Chair: J.O.Gray

All aspects of computer aided design of control systems. Efficient algorithms, robust numerical procedures, and human-computer interfaces to allow ready access to computational tools. Includes software tools for CACSD and system modeling and simulation techniques (both symbolic and numerical methods). Special architectures to host various analysis and design packages and associated data bases and data structures to allow easy use and manipulation of system data. Addresses hybrid discrete event and real time systems as well as design of intelligent controllers, non-linear systems, and computer graphical procedures. Applications include automotive systems, process control, automation and various educational aspects of CACSD.

TC: Business and Management Techniques
Chair: S.Mittnik

Development and promotion of problem-solving techniques for management, business, financial and economic systems. System engineering methods, identification, signal processing, control and optimization, as well as quantitative methods from business, finance and economics (such as operations research, econometrics, and event studies). Particular areas of interest include forecasting, monitoring, optimization, policy analysis, evaluation, risk analysis, portfolio management, and asset and derivative pricing.

TC: Computation in Economic, Financial&Engineering-Economic Systems
Chair: B.Rustem

Computational methods for economic, financial and engineering-economic systems. Use of modeling, optimization, control and game theory to address fundamental analysis, forecasting and planning for global, national, regional, and sectoral economies and markets. Quantitative analysis or formal qualitative methods to solve economic and socio-political problems. Promotion of development and increased awareness of approaches and techniques from economics, finance, and econometrics (rational expectations, stability, incentives, equilibrium schemes).

TC: Supplemental Ways for Improving International Stability
Chair: P. Kopacek

Identification, definition, and improvement of factors and elements which significantly influence international stability. Interact with other national and international organizations to monitor efforts to improve stability and peace. Inform IFAC TCs about ideas and IFAC activities to improve stability; outline ways in which IFAC can use systems and control capabilities for further development of international stability and a more peaceful world.

TC: Man-Machine Systems
Chair: H. G. Stassen

Analysis, design, and evaluation of human-machine systems: manual and supervisory control, decision making and cognitive processes, modeling of human performance (reliability, mental load, predictibility), and analysis and modeling of human-machine interaction in real and virtual environments. Human-machine systems: design methodology, task allocation-sharing, job design, intelligent interfaces, human operator support, work organization, and selection and training criteria. Human-machine system feasibility evaluation: performance and mental loading, training, education, and skill preservation.

COORDINATING COMMITTEE: GLOBAL AND EDUCATIONAL ISSUES OF AUTOMATION (GE) (Lena Martensson)

TC: Social Impact of Automation
Chair: D. Brandt

All aspects of the relation of automation to social environments. Social effects of automation, socially desirable requirements for the development of automated systems, socially acceptable alternatives for design of automated systems. Includes environmental, health, and safety implications of automation,engineering ethics, professional responsibility, and public policy.

TC: Control Education
Chair: K. H. Fasol

University education and continuing education issues in control engineering. Methodology for improving the theory, practice, and accessibility of control system education. Control engineering laboratories, experiments, computer aided design, and promotion of teachware. Cooperation and technology transfer between academia and industry. Control engineering education in developing countries.

TC: Aspects of Developing Countries and Culture for Automation
Chair: A. T. Dinibutun

Development of automation and related topics (such as education and training for automation) in developing countries. Control and automation compatibility with backgrounds and economic structures of developing countries (which varies from one to another). Stimulate developing countries interest in IFAC; invite and assist NMOs from developing countries to organize workshops, symposia, and regional conferences.

COORDINATING COMMITTEE: INDUSTRIAL APPLICATIONS (IA) (Tom McAvoy)

TC: Chemical Process Control
Chair: C.G. Georgakis

Development of new control techniques and algorithms related to chemical processes and for their application in pilot and industrial sized plants. Processes of interest include all techniques used in petroleum, chemical, petrochemical, specialty chemical, pharmaceutical, food, cement, paper and pulp industries. Considers system descriptions, component and system modeling, sensor and actuator selection, as well as tuning, local control, plant-wide control, and technology transfer.

TC: Control of Biotechnological Processes
Chair: S. Shioya

Control engineering research and applications in biotechnology. Includes cell internal metabolic conversion modeling, process supervision, diagnosis, operation, optimization, and control of biotechnological production plants. Microorganisms, animal and plant cells, tissue culture, up- and downstream processing. Also considers waste water treatment plants and other processes related to environmental engineering, sanitation control, and hygiene control.

TC: Power Plants and Power Systems
Chair: H. W. Weber

All aspects of modeling, operation, and control of power plants and power systems. Includes load forecast and flow calculation, dynamic interactions of power plants and power systems, constraint and security control concepts, tools for control system design, test and documentation, real time simulation and dispatching, technical impact of deregulation on power system control, security monitoring, as well as analysis and control in deregulated power systems.

TC: Fault Detection, Supervision and Safety of Technical Processes
Chair: R. J. Patton

Fault detection and isolation (FDI), fault decision theory and diagnosis, monitoring, supervision, and fault-tolerant control.

Enhanced reliability and safety for industrial processes and vehicle systems. Quantitative and/or qualitative mathematical modeling, heuristic knowledge, and artificial intelligence. Integration of robust control and robust FDI. Online fault-tolerant operation, fault prediction, reconfigurable control. Predictive maintenance, reliability centered maintenance, maintenance and repair strategies, and life-cycle cost considerations. Includes human factors, human reliability analysis, and operator support systems.

TC: Mining, Mineral and Metal Processing
Chair: S. L. Jamsa-Jounela

All aspects of process control in the fields of mining, mineral processing, and metal processing. Includes control theory, measurements, automation, and optimization. Process goals, loop design, multiple control objectives. Variability minimization, uniformity control, and process design. Includes exploration for fossil materials, but excludes petroleum refining.

COORDINATING COMMITTEE: TRANSPORTATION AND VEHICLES (TV) (Mogens Blanke)

TC: Aerospace
Chair: E. Gottzein

Dynamics and control of aeronautical and space-related systems including missiles, launch vehicles, and autonomous aerospace systems. Conceptual definition, design, test, verification, operations, and post-operation analysis. Addresses control systems in vehicles (pointing systems and manipulators) including man-in-the-loop problems; guidance, navigation, and control of vehicles in their specific environment (satellites, space probes, airplanes); and mission control to ensure proper utilization of space/air and related ground segments.

TC: Air Traffic Control Automation
Chair: S.C. Mohleji

Concept definition, design, testing, and evaluation of automated aircraft and air traffic control systems including: time/fuel optimization, navigation and guidance, digital communications, artificial intelligence, and expert systems. Resolution of safety, reliability, environmental, regulatory and system integration problems in the field of air transportation.

TC: Automotive Control
Chair: U. Kiencke

Modeling of, signal processing in, and control of automobile powertrains, vehicle dynamic systems, electric and alternative drive vehicles. Includes intelligent vehicle highway systems, integrated traffic management, general automobile-highway strategies, and distributed discrete-event systems. Automotive sensors, in-vehicle communication networks, man-machine interfaces, and information displays/systems.

TC: Marine Systems
Chair: G. N. Roberts

Theory and applications of automatic control for the maritime field. Techniques include guidance and control, monitoring and surveillance, optimization and operations planning, modeling and identification, and operational safety. Applications include surface vessels, floating structures, sub-sea vehicles, and other devices within the marine environment. Activities span from total vessel overall control to detailed control of ancillary and auxiliary subsystems.

TC: Transportation Systems
Chair: J.P. Perrin

Automatic control, information processing, decision support, system components, and man-machine interfaces for all modes of transportation (road, rail, air, marine). Special emphasis on ground transportation systems (road and guided transport) for passengers and goods. Identification of similarities/analogs and transfer of methods or techniques (logistics, simulation, control & supervision, safety) among various modes of transportation.

TC: Intelligent Autonomous Vehicles
Chair: M. Salichs

Generic system methodologies and technologies applicable to intelligent autonomous vehicles or robots on land, at sea, or in space. Includes development and applications of sensing and perception, sensor integration and data fusion, task planning, motion planning and control, navigation techniques, and teleoperations.

COORDINATING COMMITTEE: COMPUTER CONTROL (CC) (Juan de la Puente)

TC: Artificial Intelligence in Real-Time Control
Chair: R. Vingerhoeds

Considers artificial intelligence methods within the framework of real-time control. Promotes interactions between Control Engineering and Computer Science: Control Engineering includes applications of knowledge-based systems, neural networks, genetic algorithms, fuzzy control, and modeling for low level control, supervision, monitoring, optimization, dynamic planning, and scheduling. Computer Science includes temporal reasoning, verification methods, software and hardware requirements for real-time applications as well as parallel methods and structures.

TC: Distributed Computer Control Systems
Chair: I. MacLeod

Fundamental concepts and theoretical issues in modern distributed computer control systems. Includes system architectures, inter-computer communications, algorithms, scheduling, programming, and man-machine interfaces for real-time distributed computer control systems. Theories/techniques for ensuring predictable timing, predictable behaviour under failure conditions, reliability, and maintainability. Methodologies and tools for specification, logical design, physical design, implementation, validation, verification, and testing/evaluation. Computer architectures, local-area networks, programmable logic controllers (PLC's), Fieldbus and standards-based platforms and environments.

TC: Real-Time Software Engineering
Chair: W. Halang

All aspects of real-time software for computer control applications, including software engineering techniques for real-time systems, specification and design of real-time software, methods, environments, languages, databases, and operating systems. Management of software projects, collection and dissemination of qualitative and quantitative information relating to use of methods and tools, and identification and monitoring of real-time computer control trends.

TC: Safety of Computer Control Systems
Chair: G. J. Suski

Safety-related aspects of computer hardware and software in critical applications. Applications include nuclear systems, aerospace, transportation, chemical processes, and medical treatment systems. Addresses issues where computers in a system may impact human safety or availability of mission critical facilities; computers used to provide essential safety functions; design and life cycle requirements, verification and validation, vulnerability analysis, system design, diversity, defense-in-depth, and certification.

TC: Algorithms and Architectures for Real-Time Control
Chair: W. H. Kwon

Addresses design and development of new algorithms, control methodologies, and hardware architectures for real-time control applications. Considers new computer hardware and software developments, including parallel processing, "soft" computing (neural, fuzzy, evolutionary), scheduling and operating system issues, Digital Signal Processors (DSP), Application Specific Integrated Circuits (ASICs) and Very Large Scale Integration (VLSI) custom devices.

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Papers from the April 1997 Issue

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Real Time Programming IFAC/IFIP Workshop (21st)

Gramado, Brazil

4 – 6 November, 1996

In recent years, the interest in all aspects of real time computing has increased significantly. This is not only due to accelerated research efforts undertaken in this area, but also to an expanding worldwide market for various types of real time computing systems.

The Workshop on Real Time Programming provides an opportunity to assess the state of the art, to present new results, and to discuss possible lines of future development. Its primary focus is on software development for real time systems and real time operating systems. The IFAC/IFIP Workshop on Real Time Programming has a tradition of more than 30 years, and is now conducted annually. As a truly international event, it is held in different parts of the world. This year the meeting was held in Brazil. It was organised together with the ‚Sociedade Brasileira de Automatica - SBA' (Brazilian Automation Society) and the ‚Sociedade Brasileira de Computacao - SBC' (Brazilian Computer Society), which are the Brazilian National Member Organisations of IFAC and IFIP, respectively.

The 25 contributed papers in these Proceedings were selected out of 52 submissions to the workshop. The contributions came from Europe, North and South America, and from the Far East: 44 from academia, 6 from industry, and 2 from government research agencies. The event's primary focus was on software development and methodologies appropriate for real time systems. The eight sessions addressed the subject areas object oriented real time systems, complex real time systems, scheduling, programming languages, requirements engineering and prototyping, modeling, specification and verification. A poster session held after the opening ceremony was included in order to allow papers with marginal acceptance ratings to be presented at the workshop. This new feature of introducing posters was quite successfull.

In addition to the discussions that took place in each of these sessions and during the breaks, the Workshop devoted ample time for focused discussions by inviting three world-class Keynote Speakers to give talks on interesting topics: Prof. Leo Motus, from Tallinn University - Estonia, gave an invited talk on the specification and verification of real time systems, Prof. David Russel, from Penn State University - USA, presented a keynote speech on Real Time Production Monitoring Systems, and Bran Selic, Vice President of Research and Technology of ObjecTime Ltd, gave a talk on the object oriented method ROOM.

As chair of the International Programme Committee we should like to thank all members of the Committee for their advice and assistance in setting up the programme. Many thanks are also due to the authors of the papers and the session chairpersons. SBA and SBC Members served in the National Organising Committee. To them we express our sincere appreciation for carrying out the local arrangements. These, the scientific programme, and the beauty of the greenish mountains area of Gramado ensured the Workshop's success.

Carlos E. Pereira and Wolfgang Halang
WRTP96 - Chairmen

Control Engineering Practice
Volume 5, Number 3, March 1997

Preview

Special Section on the Analysis, Design and Evaluation of Man-Machine Systems

Control Engineering Practice
Volume 5, Number 4, April 1997

Preview

Special Section on Modelling and Control of National and Regional Economies

WHO IS WHO IN IFAC

G.J. Olsder – IFAC Council member

Geert Jan Olsder was born in Muntendam, the Netherlands in 1944. He studied applied mathematics with minors in astronomy, mechanics and pure mathematics at Groningen University, where he obtained his M.Sc. degree in 1968 and Ph.D. degree in 1971, both with honors. The Ph.D. thesis was about time-optimal control with applications in ship manoeuvring.

From 1971 - 1981 he was employed at Twente University of Technology, from 1981 - 1983 at Hollandse Signaalapparaten, a high-tech firm based in Hengelo (the Netherlands) which, at that time, was a subsidiary of Philips. In 1983 he was appointed (full) professor of Mathematical Systems Theory at Delft University of Technology. He spent sabbatical leaves at Stanford University, department of aero- astronautics, USA (1972 - 1973), at Harvard University, department of applied sciences, USA (1979 - 1980), at INRIA (Institut National de Recherche en Informatique et en Automatique) Sophia-Antipolis, France (1992 - 1993). Shorter periods were spent at USC Los Angeles (1984), Shenyang, China, P.R. (1984), Ecoles des Mines de Paris in Fontainebleau (1989), UC in Berkeley (1990). He is a consultant for the National Aerospace Laboratory, Amsterdam.

The research activities gradually moved from optimal control theory (1968 - 1975) to dynamic game theory (1973 - 1985), to filter theory (1980 - 1984), to the theory of discrete event systems (1985 onwards). He is a member of the editorial boards of four international scientific journals. He has been on the program committees of various conferences. He has served IFAC in various functions. He started as Vice-Chairman of the Mathematics of Control Technical Committee during 1978 - 1981 (with Hank Kelley as Chairman), currently (1996 - 1999) he is a Council member. He is a member of IEEE and of some Dutch scientific and/or engineering organisations. The scientific output comprises about 45 papers in international scientific journals, about 40 papers in conference proceedings. He is co-author of two books (Dynamic Noncooperative Game Theory, Academic Press, 1982, revised edition 1995; Synchronisation and Linearity, an Algebra for Discrete Event Systems, Wiley, 1992).

Since 1994, Professor Olsder has been chairman of the Department of Applied Analysis, which has about 50 employees, of the faculty of Technical Mathematics and Informatics at Delft Unversity of Technology. He is the network coordinator of a European Union project within the framework of training and mobility of researchers. The theme of this project is: The algebraic approach to performance evaluation of timed discrete event systems. He has supervised about 12 Ph.D. theses and about 65 M.Sc. theses.