Symposium Report

7TH IFAC SYMP. ON COST ORIENTED AUTOMATION (COA 2004), JUNE 7–9, 2004, OTTAWA/GATINEAU (CANADA)

The symposium was held in Gatineau/Ottawa, Canada on the campus of the University of Quebec and was well organized by the members of the NOC. It brought together researchers and industrialists of 19 countries, the majority from France and Canada, in four plenary sessions, nine regular sessions, and two industrial workshops.

The plenary lectures on:

– Cost-effective Product Realization: service-oriented architecture for integrated product life-cycle management
– Performance Oriented System Engineering: Rationales, Experiments and Open Issues
– High Technology in Low Cost Manufacturing – with special emphasis on SMEs
– Ubiquitous Computing and New Frontiers for Automation

were given by well known experts in these fields. Nine regular sessions of five to six contributions each covered the following topics:

– Cost Reducing Engineering Strategies and Cost Impacts of International Standards on Automation
– Smart Devices
– Sensor- and Data-fusion
– Architectures for Enterprise Integration and Networking
– Human Cooperation with Automation Systems
– Plant and Building Automation
– Cost Reduction with E-maintenance Systems in Manufacturing
– SME-Oriented Decision Support Systems
– Network Reliability

The third day of the symposium was an Industry Day with two workshops

– Cost-reducing Engineering Strategies in the Automotive Industry
– Automation in Mining

Statements of the panellists of industry and research trigeered a discussion with the audience. Thereafter the participants visited a plant of Scott Paper in Gatineau with automated packaging of special papers.

The symposium was honoured by the participation of the present president of IFAC and the immediate past president. It was co-sponsored by nine IFAC Technical Committees, and four of them were represented through their chairs (TC's 4.3, 5.1, 5.3, 9.3). Also IFIP TC 5 – Computer Application in Technology was a sponsor of the symposium.

The presented regular papers and the plenary lectures fitted very well with the scope of the symposium; the discussion resulted in a strong suggestion to consider cost-reducing strategies with automatic control more seriously. COA is not a special community in IFAC, but is a cross section of technology and application with theory; this should be well understood in the IFAC community; cost aspects of automatic control, i.e. how can automatic control under systems aspects contribute to cost reduction in production, maintenance, energy generating and distribution, global networking of enterprise, etc. are demanded by industry.

The two industrial workshops with written contributions, as well as power point presentations of the panellists, considered automatic control as a means to save cost when considered as an integral part of a system, and not only for an individual component or instrument.

The session "Cost Reduction with e-Maintenance in Manufacturing" together with the respective plenary lecture on "Performance oriented System Engineering" presented new theoretical findings and applications.

The plenary lecture on "Cost effective Product Realization" together with the industrial workshop on engineering strategies "Cost reducing Engineering Strategies" discussed the advantage of an integrated Product- and Process-Development.

An emergent area is Human-Machine/Robot collaboration, i.e. e-work understood as e-design, e-manufacturing, and e-maintenance; new control strategies are necessary to support a cost effective human collaboration with automation systems. Also, the development of "Smart Devices" is still of great interest regarding the cost aspect of sensors and actuators. Cost aspects should not be reduced to hardware cost; instead, the whole automation system has to be considered.

Ubiquitous Computing with respect to automatic control and the vision of future developments presented new ideas, as to consider information and physics universally; then, switching from virtuality to reality, and *vice versa*, is easy to realize, generating new insights in control aspects, Mixed reality, bond graph and hyperbond are the new keywords of this development.

The 8th Symposium is planned for 2007 in La Habana, Cuba.

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