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Volume 1

Session 1 Systems Engineering
Session 2 Control Engineering
Session 3 Control Theory

Technische Universität Ilmenau

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Synergies between Information and Automation

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Preface

Over recent decades, automation has had an significant influence on the development of industry, and, in the nineties, there has been an accelerated impact on society of information technology because of the new forms in which it has appeared.

Looking at these two developments, of automation and information technologies, one may conclude that industrial progress has been driven by a close interconnection of automation techniques and methods of information processing, and that new impulses for industry are still in store. It is for that reason that the theme of "Synergies between Information Processing and Automation" has been chosen as the main topic of the IWK conference in 2004.

The IWK is a conference with a long tradition - indeed, it goes back to 1953. The 49th anniversary is not only a pleasant recurring duty but also a chance for a new definition of the goals of the colloquium. In the years before 1989, a major function of the colloquium was to bring together scientists from the eastern and western states across the Iron Curtain as well as to deepen the existing relations between those from eastern states. Meanwhile, in a similar but extended pattern, the IWK has become a platform for wider international discussion of current trends in fields of academic interest to the TU Ilmenau, to its partners in research and to the general scientific community. Our IWK is a well-established landmark.

To address the theme of "Synergies between Information Processing and Automation", four Faculties have joined forces, contributing work from the departments of the Faculty of Computer Science and Automation and those of the Faculties of Mechanical Engineering, of Mathematics and Natural Sciences, and of Economic Sciences. Together they present an interesting spread of information and information technology subjects. Issues in control, information science, cybernetics, communication technology and systems engineering are addressed – as is their application to fields which range from biological systems to technical processes.

Together with all the other organisers, I should like to thank all contributors to the conference. You come from all over the world, from both scientific and industrial institutions, and you have submitted highly interesting contributions. I am grateful for all the resulting rich scientific discussion. This colloquium is one step further to a future which sees true progress.

Professor Peter Scharff
The Rector of Ilmenau TU

Professor Oliver Sawodny
Chairman of the Conference

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