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Preface

The concept of CAST as Computer Aided Systems Theory, was introduced by F. Pichler of Linz in the late 80's to include those computer theoretical and practical developments as tools to solve problems in System Science. It was considered as the third component (the other two being CAD and CAM) that will provide for a complete picture of the path from Computer and Systems Sciences to practical developments in Science and Engineering.

The University of Linz organized the first CAST workshop in April 1988, which demonstrated the acceptance of the concepts by the scientific and technical community. Next, the University of Las Palmas de Gran Canaria joined the University of Linz to organize the first international meeting on CAST, (Las Palmas February 1989), under the name EUROCAST'89, that was a very successful gathering of systems theorists, computer scientists and engineers from most of European countries, North America and Japan.

It was agreed that EUROCAST international conferences would be organized every two years. Thus, the following EUROCAST meetings took place in Krems (1991), Las Palmas (1993), Innsbruck (1995), Las Palmas (1997), Vienna (1999) and Las Palmas(2001), in addition to an extra-European CAST Conference in Ottawa in 1994. Selected papers from those meetings were published by Springer-Verlag Lecture Notes in Computer Science nos. 410, 585, 763, 1030, 1333, 1728 and 2178 and in several special issues of Cybernetics and Systems: an lnternational Journal. EUROCAST and CAST meetings are definitely consolidated, as it is demonstrated by the number and quality of the contributions over the years.

EUROCAST 2003 (Las Palmas, February 2003) continued with new approach to the Conferences which was adopted in 2001. Besides the classical core on generic CAST, there were other specialized workshops devoted to Complex Systems (chaired by Pichler and Moreno-Díaz), Neuroimaging and Neuroinformatics, (chaired by Alzola and Westin), Computational Methods in Biomathematics (chaired by Ricciardi), Natural and Artificial Neural Nets (chaired by Mira and Moreno-Díaz), Distributed Computing (chaired by Freire) and a Special Session on Autonomous Systems, promoted by García de la Rosa and Maravall.

This volume contains sixty selected full papers from the oral presentations of the different Sessions. The editors would like to thank all contributors for their quickness in providing their material in hard and electronic forms. Special thanks are due to Dr. Alexis Quesada, from the Institute of Cybernetics of the University of Las Palmas, for his great help in the preparation of the volume and to the Staff of Springer-Verlag Heidelberg for their valuable support.

July 2003 Roberto Moreno-Díaz and Franz Pichler

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