S. Balemi
P. Kozák
R. Smedinga

Editors

# Discrete Event Systems: Modeling and Control 

Proceedings of a Joint Workshop
held in Prague, August 1992

## Contents

Preface ..... VII
Logical Models
Augmented Language and Supervisory Control in Discrete Event Systems T. Ushio ..... 3
Input/Output Discrete Event Processes and System Modeling S. Balemi ..... 15
Supervisory Control and Formal Methods for Distributed Systems K. İnan ..... 29
An Overview of Results in Discrete Event Systems Using a Trace Theory Based Setting R. Smedinga ..... 43
A Minimally Restrictive Policy for Deadlock Avoidance in a Class of FMS Y. Brave and D. Bonvin ..... 57
Similarity of Events in Discrete Event Systems J. Pik ..... 71
Control of Discrete Event Systems by means of the Boolean Differential Calculus R. Scheuring and H. Wehlan ..... 79
A Unifying Framework for Discrete Event System Control Theory P. Kozák ..... 95
Optimisation
Synchronized Continuous Flow Systems G. J. Olsder ..... 113
On a Generalized Asymptoticity Problem in Max Algebra J. G. Braker and J. A. C. Resing ..... 125
Conditions for Tracking Timing Perturbations in Timed Petri Nets with Monitors
K. J. Williams, J. A. Gannon, M. S. Andersland, J. E. Lumpp, and T. L. Casavant ..... 141
Extensions to the Theory of Optimal Control of Discrete Event Systems R. Sengupta and S. Lafortune ..... 153
The Workshop Exercise
The Workshop Exercise: An Introduction ..... 163
The Workshop Exercise Using a Trace Theory Based Setting R. Smedinga ..... 167
A Petri Nets-Based Approach to the Maze Problem Solving F. Čapkovič ..... 173
The Cat-and-Mouse Problem as a System of Boolean Equations O. Křiž ..... 181
Symbolic Supervisory Synthesis for the Workshop Exercise G.J. Hoffmann and H. Wong-Toi ..... 189
The Cat-and-Mouse Problem with Least Delays P. Kozák. ..... 199
Supervisory Control with Variable Lookahead Policies: Illustrative Example S. L. Chung, S. Lafortune and F. Lin ..... 207
Selected Bibliography ..... 217

