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Nota di contenuto	and Motivation -- Holonic Rationale and Self-organization on Design of Complex Evolvable Systems -- Service-Oriented Agents for Collaborative Industrial Automation and Production Systems -- Usability of Multi-agent Based Control Systems in Industrial Automation -- Knowledge-Centered Approaches -- An Organizational Knowledge Ontology for Automotive Supply Chains -- Semantic Extension of Agent-Based Control: The Packing Cell Case Study -- Product Design Network Self-contextualization: Enterprise Knowledge-Based Approach and Agent-Based Technological Framework -- Selected Theoretical Aspects -- Collaboration of Metaheuristic Algorithms through a Multi-Agent System -- Functional Integrity of Multi-agent Computational System Supported by Component-Based Implementation -- On the Empirical Evaluation of an Interdisciplinary Framework for Automated Negotiation -- MAS Scheduling and Simulation -- A Decentralized Scheduling Policy for a Dynamically Reconfigurable Production System -- A Study on Real-Virtual Interaction Method for Production

Scheduling Using Model Plant -- Using an Agent-Supported Simulation Environment for Intelligent Manufacturing Systems -- A Study on Real-Time Scheduling for Holonic Manufacturing Systems – Determination of Utility Values Based on Multi-agent Reinforcement Learning -- MAS Control -- An Open-Control Concept for a Holonic Multiagent System -- Plan, Commit, Execute Protocol in Multi-agent Systems -- Distributed Sensing and Control Architecture for Automotive Factory Automation -- MAS-Based Cooperative Control for Biotechnological Process-A Case Study -- Design and Implementation of LabVIEW-Based IEC61499 Compliant Device -- Holonic Systems for Manufacturing -- Holonic-Based Environment for Solving Transportation Problems -- Holonic Manufacturing Paint Shop -- Development of a Holonic Free-Roaming AGV System for Part Manufacturing -- Safety Discrete Event Models for Holonic Cyclic Manufacturing Systems -- A Holonic Chain Conveyor Control System: An Application -- MAS and Holonic Applications -- A Multiagent System for Self-organisation of an 802.11 Mesh Network -- Mobility Model for Tactical Networks -- Holonic Modelling of Large Scale Geographic Environments -- Holonic Models for Traffic Control Systems -- A Multi-Agent System for the Pay-As-You-GO (PAYGO) Social Security Scheme -- Contract Monitoring in Agent-Based Systems: Case Study -- A Multi-agent Scheduler for Rent-a-Car Companies -- A Framework for Multi Robot Guidance Control.

Sommario/riassunto

This book constitutes the refereed proceedings of the 4th International Conference on Industrial Applications of Holonic and Multi-Agent Systems, HoloMAS 2009, held in Linz, Austria, August 31 - September 2, 2009. The 31 revised full papers presented were carefully reviewed and selected from 47 submissions. The papers are organized in topical sections on introduction & motivation, knowledge-centered approaches, selected theoretical aspects, MAS scheduling & simulation, holonic systems for manufacturing, and MAS & holonic applications.