Botti / Giret Boggino

Anemona

A Multi-Agent Methodology for Holonic Manufacturing Systems

ANEMONA is a multi-agent system (MAS) methodology for holonic manufacturing system (HMS) analysis and design. ANEMONA defines a mixed top-down and bottom-up development process, and provides HMS-specific guidelines to help designers identify and implement holons. The analysis phase is defined in two stages: System Requirements Analysis, and Holon Identification and Specification. This analysis provides high-level HMS specifications, adopting a top-down recursive approach which provides a set of elementary elements and assembling rules. The next stage is Holon Design, a bottom-up process to produce the system architecture from the analysis models. The Holons Implementation stage produces an Executable Code for the SetUp and Configuration stage. Finally, maintenances functions are executed in the Operation and Maintenance stage. The book will be of interest to researchers and students involved in artificial intelligence and software engineering, and manufacturing engineers in industry and academia.

ANEMONA is a multi-agent system (MAS) methodology for holonic manufacturing system (HMS) analysis and design, based on HMS requirements. ANEMONA defines a mixed top-down and bottom-up development process, and provides HMS-specific guidelines to help the designer in identifying and implementing holons. In ANEMONA, the specified HMS is divided into concrete aspects that form different "views" of the system. The development process of ANEMONA provides clear and HMS-specific modeling guidelines for HMS designers, and complete development phases for the HMS life cycle. The analysis phase is defined in two stages: System Requirements Analysis, and Holon Identification and Specification. This analysis provides high-level HMS specifications from the requirements, adopting a top-down recursive approach. An advantage of this recursive analysis is that its results, i.e. the analysis models, provide a set of elementary elements and assembling rules. The next stage is Holon Design, a bottom-up process to produce the system architecture from the analysis models of the previous stage. The Holons Implementation stage produces an Executable Code for the SetUp and Configuration stage. Finally, maintenances functions are executed in the Operation and Maintenance stage.
ANEMONA: A Multi-agent Methodology for Holonic Manufacturing Systems will be of interest to researchers and postgraduate students involved in artificial intelligence and software engineering, as well as to manufacturing engineers in industry and academia.
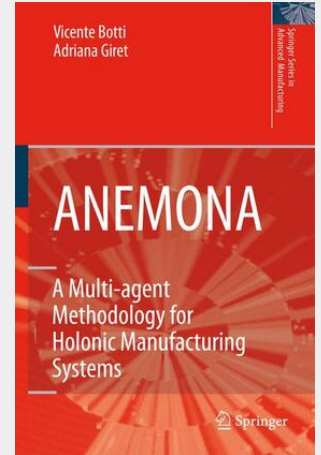
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