

1. Record Nr.	UNISA996465542303316
Titolo	Software Engineering for Multi-Agent Systems II [[electronic resource] ] : Research Issues and Practical Applications // edited by Carlos Lucena, Alessandro Garcia, Alexander Romanovsky, Jaelson Castro, Paulo S.C. Alencar
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2004
ISBN	1-280-30702-1 9786610307029 3-540-24625-8
Edizione	[1st ed. 2004.]
Descrizione fisica	1 online resource (xii, 278 p. ) : ill. ;
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 2940
Disciplina	005.1
Soggetti	Software engineering Computer communication systems Computer programming User interfaces (Computer systems) Artificial intelligence Software Engineering/Programming and Operating Systems Software Engineering Computer Communication Networks Programming Techniques User Interfaces and Human Computer Interaction Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Based on the 2nd International Workshop on Software Engineering for Large-Scale Multi-Agent Systems (SELMAS 2003) held May 2003, Portland, Ore.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Requirements Engineering -- The Agent at the Center of the Requirements Engineering Process -- Lexicon Based Ontology Construction -- Multi-agent Systems and Security Requirements Analysis -- Software Architecture and Design -- Separation of Concerns in Multi-agent Systems: An Empirical Study -- Architecting

the Design of Multi-agent Organizations with Proto-frameworks -- A Basic Taxonomy for Role Composition -- Modeling -- Object-Oriented Modeling Approaches to Agent-Based Workflow Services -- Using the MAS-ML to Model a Multi-agent System -- Software Engineering Challenges for Mutable Agent Systems -- Dependability -- Improving Exception Handling in Multi-agent Systems -- On Manageability and Robustness of Open Multi-agent Systems -- Security Mechanisms for Mobile Agent Platforms Based on SPKI/SDSI Chains of Trust -- MAS Frameworks -- Farm: A Scalable Environment for Multi-agent Development and Evaluation -- Role-Based Approaches for Engineering Interactions in Large-Scale Multi-agent Systems -- Evaluating Agent Architectures: Cougaar, Aglets and AAA.

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## Sommario/riassunto

Advances in networking technology have revitalized the investigation of agent technology as a promising paradigm for engineering complex distributed software systems. Agent technology has been applied to a wide range of application domains, including e-commerce, human-computer interfaces, telecommunications, and software assistants. Multi-agent systems (MASs) and their underlying theories provide a more natural support for ensuring important properties such as autonomy, mobility, environment heterogeneity, organization, openness, and intelligence. As a consequence, agent-based systems are likely to provide new approaches to dealing with the complexity of developing and maintaining modern software. However, developing robust large-scale agent-based systems will require new software engineering approaches. There are currently many methods and techniques for working with individual agents or with systems built using only a few agents. Unfortunately, agent-based software engineering is still in its infancy and existing software engineering approaches are unable to cope with large MASs. The complexity associated with a large MAS is considerable. When a huge number of agents interact over heterogeneous environments, various phenomena occur which are not as easy to capture as when only a few agents are working together. As the multiple software agents are highly collaborative and operate in networked environments, they have to be context-aware and deal with environment uncertainty. This makes their coordination and management more difficult and increases the likelihood of exceptional situations, such as security holes, privacy violations, and unexpected global effects. Moreover, as users and software engineers delegate more autonomy to their MASs, and put more trust in their results, new concerns arise in real-life applications.

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