Computer Science : Software Engineering

Handbook on Agent-Oriented Design Processes

- First comprehensive overview of the 13 most important agent-oriented software design processes in a standardized format
- Includes the widely known Open UP design process, the de facto standard in object-oriented software engineering
- Descriptions are based on the IEEE-FIPA Design Process Documentation Template SC0097B, which allows different design processes to be easily compared
- Each design process is described by its original creators or well-known researchers in the field

To deal with the flexible architectures and evolving functionalities of complex modern systems, the agent metaphor and agent-based computing are often the most appropriate software design approach. As a result, a broad range of special-purpose design processes has been developed in the last several years to tackle the challenges of these specific application domains. In this context, in early 2012 the IEEE-FIPA Design Process Documentation Template SC0097B was defined, which facilitates the representation of design processes and method fragments through the use of standardized templates, thus supporting the creation of easily sharable repositories and facilitating the composition of new design processes. Following this standardization approach, this book gathers the documentations of some of the best-known agent-oriented design processes. After an introductory section, describing the goal of the book and the existing IEEE FIPA standard for design process documentation, thirteen processes (including the widely known Open UP, the de facto standard in object-oriented software engineering) are documented by their original creators or other well-known scientists working in the field. As a result, this is the first work to adopt a standard, unified descriptive approach for documenting different processes, making it much easier to study the individual processes, to rigorously compare them, and to apply them in industrial projects. While there are a few books on the market describing the individual agent-oriented design processes, none of them presents all the processes, let alone in the same format.

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