

Preface

Inconsistent knowledge management (IKM) is a subject which is the common point of knowledge management and conflict resolution. IKM deals with methods for reconciling inconsistent content of knowledge. Inconsistency in the logic sense has been known for a long time. Inconsistency of this kind refers to a set of logic formulae which have no common model. However, inconsistency of knowledge has a larger aspect which may be considered on two levels: syntactic and semantic. On the syntactic level inconsistency may be treated in the same way as the inconsistency of logic formulae mentioned above, but in a larger context. On the semantic level, on the other hand, inconsistency appears when these formulas are interpreted in some concrete structures and some real world. For solving a large number of conflicts, and especially, for resolving inconsistency of knowledge on the semantic level, consensus methods have been shown to be useful.

This book is about methods for processing inconsistent knowledge. The need for knowledge inconsistency resolution arises in many practical applications of computer systems. This kind of inconsistency results from the use of various sources of knowledge in realizing practical tasks. These sources often are autonomous and they use different mechanisms for processing knowledge about the same real world. This can lead to inconsistency. This book provides a wide snapshot of some intelligent technologies for knowledge inconsistency resolution.

This book completes the newest research results of the author in the period of the last five years. A part of these results has been published in prestigious international journals and conference proceedings. In this book, along with other new results, the results are completed, extended, and presented in a comprehensive and unified way.

The material of each chapter of this book is self-contained. I hope that the book can be useful for graduate and PhD students in computer science; participants of courses in knowledge management and multiagent systems; researchers and all readers working on knowledge management and/or ontology integration; and specialists from social choice.

I wish to express my great gratitude to Professor Lakhmi C. Jain, the editor of this series, for his encouragement, inspiration, and interest. Thanks are also due to my colleagues at the Institute of Information Science and Engineering of Wroclaw University of Technology, for their nurturing of this project. Special thanks go to Catherine Brett for her kind contacts and advice in preparing this book. Finally, I cordially thank my wife Bich Ngoc and my sons Ngoc Trung and Ngoc Khanh for their great patience and understanding during the preparation of this book.

This work was supported by the Polish Ministry of Science and Higher Education under the grant no N516 013 32/1733.

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<http://www.springer.com/978-1-84628-888-3>

Advanced Methods for Inconsistent Knowledge
Management

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2008, XII, 352 p., Hardcover

ISBN: 978-1-84628-888-3