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Reasoning about merged information. (English) Zbl 0928.03017

Dubois, Didier (ed.) et al., Handbook of defeasible reasoning and uncertainty management systems. Vol. 3: Belief change. Dordrecht: Kluwer Academic Publishers. 233-263 (1998).

Summary: This paper presents some logics for reasoning about merged information. In a first step, we focused on the problem of merging databases or, more generally belief bases, which may be contradictory. The problem is to build a consistent representation of the real world which gathers as much as possible the different representations owned by the different agents (databases, belief bases). We present different versions of a logic which allows us to reason about beliefs provided by several agents which may be contradictory. In a second step, we focuse on the problem of merging regulations which may be contradictory. Here, the problem is to build a consistent set of norms which specify a consistent representation of the ideal real world, i.e., which consistently specify how the real world should be. This set of norms is obtained by gathering as much as possible the different sets of norms associated with the regulations to be merged. We present a logic for reasoning about merged norms which may be contradictory.

For the entire collection see [Zbl 0908.90003].

MSC:

03B42 Logics of knowledge and belief (including belief change)
68T35 Theory of languages and software systems (knowledge-based systems, expert systems, etc.) for artificial intelligence
68T30 Knowledge representation
68P15 Database theory

Keywords:

contradiction; consistency; merging of norms; logic for reasoning about merged information; belief bases