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Non-monotonic reasoning in conceptual modeling and ontology design: A proposal

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Abstract

The Object Role Modeling language (ORM2) is nowadays the most widespread fact-based conceptual modeling language in the business world. Recently, it has been proposed an encoding of the core fragment of ORM2 (called ORM2^{zero}) into the description logic ALCQI, allowing the use of reasoning technologies in the analysis of the schemas. A number of services has been defined there based on the FO semantics of ORM2. On the other hand, in many application domains there is a need for the formalization and modeling of defeasible information and non-monotonic reasoning services. Here we formalize a possible way of introducing non-monotonic reasoning into ORM2 schemas, enriching the language with special set of new constraints.