The foundational ontology library ROMULUS

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Abstract

A purpose of a foundational ontology is to solve interoperability issues among domain ontologies and they are used for ontology-driven conceptual data modelling. Multiple foundational ontologies have been developed in recent years, and most of them are available in several versions. This has re-introduced the interoperability problem, increased the need for a coordinated and structured comparison and elucidation of modelling decisions, and raised the requirement for software infrastructure to address this. We present here a basic step in that direction with the Repository of Ontologies for MULtiple USes, ROMULUS, which is the first online library of machine-processable, modularised, aligned, and logic-based merged foundational ontologies. In addition to the typical features of a model repository, it has a foundational ontology recommender covering features of six foundational ontologies, tailor-made modules for easier reuse, and a catalogue of interesting mappable and non-mappable elements among the BFO, GFO and DOLCE foundational ontologies.