

# Pragmatic Views on Ontology Integration

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Conceptualization explicitly represented in the form of an ontology enables agents to exchange meaningful information across applications by reducing the ambiguities of the meanings of the terms used for a given task. An ontology is the result of cooperatively constructing the knowledge by the group of people who are ontology designers, knowledge engineers, or domain experts. An ontology provides *semantic interoperability* among heterogeneous information systems by means of semantic level content explication rather than the syntactic level standardization in representing information. Recently, a large number of ontologies have been developed and are commonly used on the Web. The integration of distributed and heterogeneous ontologies is one of the basic problems in the development of techniques for the Semantic Web. *Ontological interoperability* is not obtained simply by making a global level common ontology that captures the mapping between different local ontologies. It is very common in the Semantic Web that concepts represented in different ontologies are mutually inconsistent.

Since a single ontology represents a model of a certain knowledge domain, the meaning of a term needs to be coordinated or negotiated across ontologies to bring together different mental models into a task domain. The process of ontology integration, whether it is carried out in the form of ontology mapping, merging, or alignment, is very similar to the process of ontology creation in the sense that both processes have communicative features. While in the process of ontology creation the human developers work together to draw a shared concept, the process of integrating ontologies involves either automatic or semi-automatic processes of semantic mapping and conflict resolution. The ontology as conceptual structure is a static model containing common assumptions shared by the community of a certain domain, and yet *ontologizing* as conceptualization process is dynamic and involves context dependent interpretation.