An Approach to Dynamic Ontology Modification in Mediator Service-Oriented Information Systems[1]

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Abstract: The paper proposes the approach to cope with the maintenance of dynamically changing resource ontologies of autonomously maintained, distributed, heterogeneous, wrapped information resources and their mappings to common mediator IS ontology. The approach intends to do the work in economical way reducing efforts to matching and aligning only modified ontology elements. Proposed is ontology model comprising both descriptive part and the set of modification primitives for each ontology structural element. The set of ontology modification invariants and the corresponding set of modification conflicts resolution rules are formulated for taxonomies. The way to provide IS services for ontology changes monitoring, matching and alignment is outlined.