Knowledge Elicitation Approach for Formal Ontology Design: An Exploratory Study Applied in Industry for Knowledge Management

Authors : Ouassila Labbani-Narsis, Christophe Nicolle

Abstract : Building formal ontologies remains a complex process for companies. In the literature, this process is based on the technical knowledge and expertise of domain experts, without further details on the used methodologies. Possible problems of disagreements between experts, expression of tacit knowledge related to high level know-how rarely verbalized, qualification of results by using cases, or simply adhesion of the group of experts, remain currently unsolved. This paper proposes a methodological approach based on knowledge elicitation for the conception of formal, consensual, and shared ontologies. The proposed approach is experimentally tested on industrial collaboration projects in the field of manufacturing (associating knowledge sources from multinational companies) and in the field of viticulture (associating explicit knowledge and implicit knowledge acquired through observation).

Keywords : collaborative ontology engineering, knowledge elicitation, knowledge engineering, knowledge management

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