Pitfalls of OWL-S – A Practical Semantic Web Use Case

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ABSTRACT

OWL-S is a combined effort of the Semantic Web and the Web Service community to facilitate an intelligent service provisioning on the Semantic Web. The vision of OWL-S includes automatic service discovery, invocation, composition, orchestration and monitoring of Web-Services through their semantic descriptions. In this paper, we investigate the practical applicability of the current OWL-S specification and show that, in spite of the large momentum of OWL-S, significantly more work needs to be done before the vision of truly intelligent Semantic Web Services can become true. We therefore study the case of an autonomous travel agent that helps users with online hotel arrangements. The aim of our work is twofold: on the one side, we show step-by-step how a prototypical implementation can be realized based on current semantic technologies around UDDI, WSDL, and SOAP. On the other hand, we reveal pitfalls in the current version of OWL-S that severely limit its support for mechanizing service discovery, configuration, combination and automated execution. Throughout the paper, we present practical solutions and workarounds to existing OWL-S shortcomings and hope to therewith further stimulate the ongoing work on Semantic Web Services.