Industrial Data Access

What are the Reasoning Problems? And is Reasoning the Problem?

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Optique (http://optique-project.eu) [2] was an EU FP7 project that ran from November 2012 to October 2016. The main objective was to test the idea of "Ontology Based Data Access" (OBDA) on real industrial applications. Concretely: to support the work of geologists and geophysicists in the oil & gas company Statoil, and the work of turbine engineers at Siemens AG. This line of work now continues in the nationally funded 'Centre for Research-based Innovation' SIRIUS (http://sirius-labs.no) at the University of Oslo, with participation from the Universities of Oxford and Trondheim, as well a large number of participating companies.

The software produced by the project features elaborate user interfaces, and no $\forall$ or $\exists$ can be seen on the surface. Still, most of the functionality is controlled by an ontology, which is nothing more than a set of axioms in a particular description logic. As a consequence, a variety of reasoning tasks takes place under the hood, all the way from query optimisation [1], via entity alignment [4] and up to the user interface control code [3]. This talk presents a selection of these problems, both solved and as-yet unsolved.

Though logic and reasoning are close to the hearts of many of the researchers involved, the success of the project was also dependent on other factors: interdisciplinary communication, usability considerations, and many pragmatic compromises, to name some. And sometimes, these would again lead to 'nice' research. The talk also covers some of these extra-logical aspects of the project.

References

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