SILK: Higher Level Rules with Defaults and Semantic Scalability (Abstract of Invited Talk)

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1 SILK and its KR Overall

We overview the technical approach and motivations of the SILK system for semantic rules and ontologies, that radically extends the knowledge representation (KR) power of currently commercially important business rule systems, including not only Prologs but also production rules and event-condition-action rules, database systems, and semantic web.

The newest part of Vulcan Inc.'s Project Halo, SILK is a new, highly ambitious effort that aims to provide key infrastructure for widely-authored VLKBs (Very Large Knowledge Bases) for business and science that answer questions, proactively supply information, and reason powerfully.

Practical semantic rules and ontologies KR today is based primarily on declarative logic programs.

SILK's KR is *hyper* logic programs, which adds:

- prioritized defaults and robust conflict handling;
- higher-order and flexible meta-reasoning;
- sound interchange with classical logic (including OWL, Common Logic, and SBVR); and
- actions and events, cf. production rules and process models.

SILK thus provides a significantly higher expressive abstraction level than previous approaches to semantic rules.

The SILK system includes components for:

- large-scale reasoning;
- web knowledge interchange; and
- (in future) collaborative knowledge acquisition.

We survey use cases for SILK in business and science. We discuss prospects for the SILK approach to effectively interchange and integrate a high percentage of the world's structured knowledge starting from today's legacy forms.

2 Defaults for Semantic Scalability

We focus particularly on how SILK can overcome previous fundamental obstacles to semantic scalability, not just inferencing performance scalability, of semantic rules and ontologies on web scale. To do so, SILK newly combines Courteous style defaults, HiLog style higher-order, well founded semantics, and sound interchange with first-order logic via a hypermonotonic mapping from Courteous.

"SILK" stands for "Semantic Inferencing on Large Knowledge". It hopes to be what much of the next generation Web will be spun from.

For More Info

For more info about SILK, please see: `http://silk.semwebcentral.org`.
For more info about Project Halo and Vulcan Inc., please see
`http://www.projecthalo.com` and `http://www.vulcan.com`, respectively.