SWSL Rules
Sketch of the proposed language

Benjamin Grosof & Michael Kifer

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Main Features

• Logic Program based rule language
  – First order (not higher order)
• Expressiveness merges the KR features of:
  – Situated Courteous Logic Programs (SCLP)
  – HiLog and F-Logic LP
• Plus more Webizing, a few other refinements
• Designed to meet requirements of Semantic Web Services
• Initially a presentation syntax
• Plan to use (extended version of) RuleML as markup syntax
KR features

- Horn LP
- + Negation As Failure
- + Courteous Prioritization (mutex’s, limited classical/strong negation, rule labels)
- + Situated Sensing, built-ins
- + Higher order syntactic sugar cf. HiLog
- + Frame syntax cf. F-Logic
- + Lloyd-Topor syntactic sugar
- + Reification (limited)
- + integrity constraints for type checking [somewhat experimental feature]

- URI’s, namespaces
- Include’ing mechanism for importing of knowledge bases (e.g., rules or ontologies)
Semantic Web Services Tasks

• Targeted towards especially the “Profile” (non-executable aspects of) service descriptions
  – Discovery, advertising, matchmaking
  – Contracts, negotiation
  – Policies, e.g. in contracts or for trust (security, privacy, authorization, access control), and their Monitoring
  – Mapping of information, e.g., between output of one service to input of another, mediation between different ontologies

• Bridge to “Process Model” (executable aspects of) service descriptions which are modeled in FOL.
  – 90% overlap in syntactic constructs between LP and FOL
    • NAF, implication-connective differ
Relationship to OWL

• Includes Description Logic Programs plus some extensions
  – E.g., OWL Lite (extension of DLP)
    • See the paper by de Bruijn, Polleres, Fensel
      http://www.wsmo.org/2004/d20/v0.2/20040630/
    • OWL Lite includes the most significant features of OWL Lite

• Includes some of the features of OWL Full
  – Classes as instances

• The exact intersection of SWSL Rules and OWL is not known at this time
Further Features being considered

• Considering Side-effectful Procedural attachments
  – Situated effectors
  – State changing operators (a la SQL bulk updates)
  – Triggers
  – Based on Transaction Logic (and possibly some non-logical)