Inconsistencies in Hybrid Knowledge Bases

Daria Stepanova
Supervisor: Dr Prof Thomas Eiter
Co-supervisor: Dr Michael Fink

Knowledge-Based Systems Group,
Institute of Information Systems,
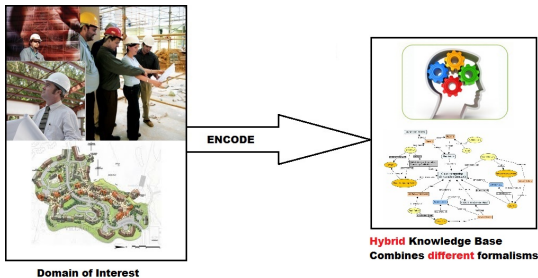Vienna University of Technology
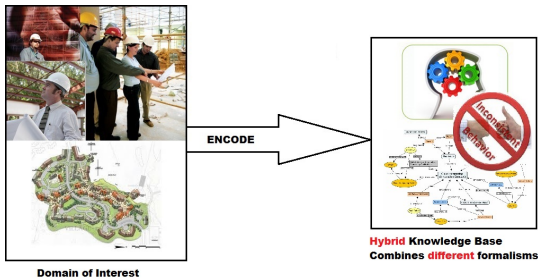http://www.kr.tuwien.ac.at/

July 22, 2014

kbs

Description of Research Area

- Hybrid Knowledge Bases: DL ontology + nonmonotonic rules

Description of Research Area

- Hybrid Knowledge Bases: DL ontology + nonmonotonic rules
- Inconsistencies often arise as a result of combining formalisms

Domain of Interest

Hybrid Knowledge Base
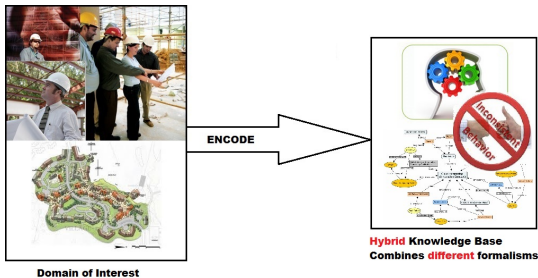Combines different formalisms

ENCODE

Description of Research Area

- **Hybrid Knowledge Bases**: DL ontology + nonmonotonic rules
- **Inconsistencies** often arise as a result of combining formalisms

ENCODE

Domain of Interest

Hybrid Knowledge Base
Combines different formalisms

- **In this thesis:** Approaches to dealing with **inconsistencies** in HKBs
    - Focus on DL-programs [Eiter *et al.*, 2008] (loose coupling)
    - Repair semantics and its complexity
    - Algorithms for repair answer set computation
    - Implementation within DLVHEX framework
    - Thorough evaluation on a set of benchmarks

References I

Thomas Eiter, Giovambattista Ianni, Thomas Lukasiewicz, Roman Schindlauer, and Hans Tompits.
Combining answer set programming with description logics for the semantic web.
Artificial Intelligence, 172(12-13):1495–1539, August 2008.