Comenius University in Bratislava
Faculty of Mathematics, Physics and Informatics

THESIS ASSIGNMENT

Name and Surname:	Bc. Katarína Fabianová
Study programme:	Applied Computer Science (Single degree study, master II. deg., full time form)
Field of Study:	Applied Informatics
Type of Thesis:	Diploma Thesis
Language of Thesis:	English
Secondary language:	Slovak

Title: Optimization of an abductive reasoner for description logics

Annotation: Abductive reasoning is still a novel and non-standard reasoning technique in the area of description logics. Several work have yielded abductive reasoners, however such approaches often have to search through a vast space of possible explanations. This opens space for heuristic and other techniques which would enable to cut down the search space and improve effectivity.

Aim: To develop optimization techniques for an existing abductive description logics reasoner with the aim to improve computational effectivity.

Literature:

1. Elsenbroich, C., Kutz, O. and Sattler, U., 2006. A case for abductive reasoning over ontologies. In OWLED*06 Workshop on OWL: Experiences and Directions, Athens, Georgia, USA. Vol. 216 of CEUR-WS, 2006.
2. Pukancová, J. and Homola, M., Tableau-based ABox abduction for the ALCHO description logic. In: 30th International Workshop on Description Logics Montpellier, France. Vol. 1879 of CEUR-WS, 2017.
3. Halland, K. and Britz, K. ABox abduction in ALC using a DL tableau. In: South African Institute for Computer Scientists and Information Technologists Conference, Pretoria, South Africa. ACM, 2012.
4. Reiter, R. A theory of diagnosis from first principles. Artificial Intelligence, 32(1):57-95, 1987.

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Assigned:	13.10.2017
Approved:	13.10.2017 prof. RNDr. Roman Ďurikovič, PhD. Guarantor of Study Programme

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