Title: Universal Constraint Language

Author: Peter Piják

Department / Institute: Department of Software Engineering

Supervisor of the master thesis: Mgr. Martin Nečaský, Ph.D.

Abstract:

Today's software applications are typically compound of system of more application components. By modeling of software, various integrity constraint languages are used for particular parts of model (e.g. OCL for UML class diagrams, Schematron for XML or SQL triggers for relational databases). Constraint expressions need to be converted to expressions over different meta-models. These tasks are non-trivial.

In this thesis, a new common language Universal Constraint Language (UCL) for expressing integrity constraints over various data meta-models is introduced. It is formally defined and also its parser is implemented. We also present semi-automatic translating between constraints over various meta-models; and deriving constraints from the introduced language to constraints in specific constraint languages.

Keywords: constraint language, model-driven architecture, universal formalism