

I. IDENTIFICATION DATA

Thesis name:	Novel Domains and Problems for Privacy-Preserving Multi-Agent Planning
Author's name:	Victoria Shmatova
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Katedra počítačů
Thesis reviewer:	Ing. Martin Svatoš
Reviewer's department:	Katedra počítačů

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
The student had to explore and understand the topic of classical planning, including base approaches used in planners and the underlying formalism, which is usually taught in a master course.	

Satisfaction of assignment	fulfilled
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
I consider all points of the assignment fulfilled.	

Method of conception	correct
<i>Assess that student has chosen correct approach or solution methods.</i>	
The elaboration approach to the assignment is correct. However in chapter chapters 3 and 6, there is a tendency to firstly write examples with definitions, leaving the motivation behind. For example, the motivation of privacy in planning (section 3.3.2) is correct, but it would be beneficial (from the reader point of view) to give it before the syntax notation of PDDL.	

Technical level	B - very good.
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
The student used correct mathematical formalism and papers from the field. However, it would be better to define core terms in Chapter 2 (e.g. <i>static predicate</i> , <i>ground predicate</i>), instead of the on-the-fly approach. Some other terms (e.g. <i>admissible heuristic</i>) could be explained at least at a shallow level.	
From the text, particularly the second paragraph in section 5.2, <i>MADLA planner combines two variants of FF</i> ; thereafter in section 7.2 two different heuristic for MADLA planner are used. The implementation of MADLA planner can be run with different heuristic. Thus, it is not clear what is the relationship between the <i>combination of two variants of FF</i> and the ones used in 7.2. Also, <i>MADLA-PPsaFF</i> is used without any prior description; the meaning of the term is described four paragraphs later.	

Formal and language level, scope of thesis	A - excellent.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The thesis is written with precise English with only a few typos (<i>withing</i>). In the appendix B, the tables lack unit (seconds) of the presented values.	

Selection of sources, citation correctness	A - excellent.
<i>Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.</i>	

The thesis contains references to relevant papers from the field.

Additional commentary and evaluation

Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.

Design and creation of benchmark instances is important for each branch of artificial intelligence, especially for multi-agent classical planning, for which only a few domains exist. Thus, the result of this thesis can be very beneficial to the planning community. The benchmarks were implemented in both factorized and unfactorized versions, which is another benefit of the work.

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation. Please present apt questions which student should answer during defense.

The presented thesis has aimed the goal of creating new planning problems for privacy-preserving multi-agent planning. The thesis describes three new domains, with several instances for each of them, and uses them as a simple benchmark for several multi-agent planners from the literature.

In my opinion, the thesis should elaborate a little bit more on the second point of assignment which says „analyze existing domains and problems used for privacy-preserving multi-agent planning“. In the last paragraph of section 4.2, it is written that benchmarks of CoDMAP comprised of *ten multi-agent versions of classical IPC domains and only two novel domains designed specifically for multi-agent planning*. What are these two domains? How do they differ from the multi-agent versions of classical IPC? What are the difference between the classical version of IPC domains and the multi-agent ones?

Section 6.4 describes complexity of problems in planning, which consists of several factors, and says which factors are aimed by each single proposed domain. Can you describe which factors are aimed by the twelve domains in CoDMAP? In other words, what factors are aimed by the previous benchmarks, e.g. with comparison with the proposed ones.

I evaluate handed thesis with classification grade **A - excellent**.

Date: **4.6.2018**

Signature: