I. IDENTIFICATION DATA

Thesis name:	**Modeling and optimization for traffic signal preemption for emergency vehicles using V2X communication**
Author's name:	Lukáš Pospíchal
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Control Engineering
Thesis reviewer:	Laura Bieker-Walz
Reviewer's department:	German Aerospace Center (DLR)

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**extraordinarily challenging**

Evaluation of thesis difficulty of assignment.

The assignment of the thesis was very challenging. The simulation and preemption of emergency vehicles is a very special research field so there is only a small researcher community which is focusing on this topic. Consequently, the amount of research studies is very limited. Furthermore, it was necessary to learn the functionalities of the used simulation framework SUMO.

Satisfaction of assignment	**fulfilled**

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.

The satisfaction of the assignment was fulfilled.

Method of conception	**correct**

Assess that student has chosen correct approach or solution methods.

The chosen methods were correct and appropriate.

Technical level	**B - very good.**

Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.

The existing research studies and models have been used very well. The simulation study is very good implemented and analysed.

Formal and language level, scope of thesis	**A - excellent.**

Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.

The thesis was written and structured very well. It is easy to understand and the ideas of the author can be clearly followed. There are only a few small typographical errors e.g. page 32: "should should" or page 37:" I have give".

Selection of sources, citation correctness	**B - very good.**

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.

The used literature was referenced very well and the bibliography includes relevant papers and studies of this field. The bibliography is relatively short. For an "excellent" rating a more extended literature review and summary of existing research studies would be expected.

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.*
>
> Please insert your commentary (voluntary evaluation).

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 author of the master thesis was structured and presented very well. The research topic is interesting and challenging. The student showed that he is able to set up a simulation scenario, evaluate and visualize the simulation results. There are only some small recommendations for improvement. As an external reviewer I can not compare this thesis to other master thesis and therefore rated it with "very good".

I evaluate handed thesis with classification grade **B - very good.**

Date: **8.6.2021**   Signature: