

I. IDENTIFICATION DATA

Thesis name:	Development of a virtual car model and subsequent physical validation
Author's name:	Jakub Záhorský
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Automobiles, Internal Combustion Engines and Railway Vehicles
Thesis supervisor:	Ing. Václav Jirovský, Ph.D.
Supervisor's department:	Department of Automobiles, Internal Combustion Engines and Railway Vehicles

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
The topic aims on interdisciplinary area of testing ADAS and integrated safety systems. Its main goal is in design and validation of virtual model of a real vehicle to be used for ADAS virtual testing. Therefore, student had to gain knowledge not only in virtual models creation, but also in testing procedures and experiment evaluation not forgetting the ADAS system conceptual design specifics.	

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>	
Supervisor has no comments to this topic.	

Activity and independence when creating final thesis	A - excellent.
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
The student was very concerned with the work on the topic and performed well in all manners.	

Technical level	A - excellent.
<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 thesis shows a consistent engineering approach to fulfilling the desired goals. Introductory parts concern not only the ADAS system overview and their basic specification, but also virtual and real world testing specifics. Furthermore, legal regulations related to the topic are closing the chapter. Next, vehicle dynamics principles and real tests derived with a purpose of solid definition of virtual model are presented. The work is closed by virtual model development, optimization and virtual model evaluation showing comparison between the final virtual model and real vehicle in graphs with relevant quantities (i.e. speed in acceleration test, vehicle pitch in brake test, vehicle roll in ISO 3888 test etc.).	

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>	
Formal aspects of the work are on a higher quality level in comparison to standard.	

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>	
List of references contain 43 items relevant to the topic. Most of them are of technical or scientific nature and are correctly cited throughout the work.	

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

Student has pursued the assigned topic in very good engineering sense, not neglecting any aspect of the topic. The only slight negative may be too brief discussion of comparison of real and virtual model data in the dynamic tests performed by student. Nevertheless, student showed a very good engineering approach to solve a quite challenging assignment.

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

Date: **31.1.2019**

Signature: