THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**HIL simulation of driving cycles and its validation.**
Author's name:	**Bc. Harshaan Singh**
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Dept. of Automotive, Combustion Engine and Railway Engineering
Thesis reviewer:	Assoc. prof. Jiří Novák, Ph.D.
Reviewer's department:	Dept. of Measurement, Faculty of Electrical Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**challenging**
How demanding was the assigned project?	
I am convinced that the theses topic is rather difficult for student of mechanical engineering program.	

Fulfilment of assignment	**fulfilled**
How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.	
Student fulfilled the assignment completely, all points are done.	

Activity and independence when creating final thesis	**A - excellent.**
Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.	
From the early beginning student has been working hard. He spent lot of time studying the principles of in-vehicle electronics and networking and learning about methods and tools for diagnostics, simulation and testing. He was continually discussing with supervisors and really focused on the final goal.	

Technical level	**B - very good.**
Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?	
As I have stated above, theses topic is not easy for student of mechanical engineering program. Especially the initial technology overview provides a comprehensive bulk of knowledge and could be used as a basis for his followers. Fuel consumption and emissions estimation based on a HIL simulations provide only rough results and can be used to point out the weaknesses of HIL implementation.	

Formal level and language level, scope of thesis	**B - very good.**
Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?	
The theses are written in good English with minimum errors and mistypes. They are well structured and provide enough detailed overview of the work done.	

Selection of sources, citation correctness	**A - excellent.**
Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?	
Theses cite more than 40 sources, which are carefully referenced within the text. Also the figures are cited correctly.	

Additional commentary and evaluation (optional)
Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Summarize your opinion on the thesis and explain your final grading.

Mr. Singh was systematically working on his thesis topics and he has used proper implementation and testing methods. Final results clearly show the weaknesses of HIL simulation implementation, they are analyzed and recommendations for improvement are given. Also the theses itself are well structured, easy to read and provide comprehensive description of his results.
With respect to some less important issues mentioned above,

the grade that I award for the thesis is **B - very good.**

Date: **31.8.2020**   Signature: Jiří Novák