

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Pneumatic System for Gear and Clutch Engagement</b>
<b>Author's name:</b>	<b>Sai Kalyan Achanta</b>
<b>Type of thesis:</b>	master
<b>Faculty/Institute:</b>	Faculty of Mechanical Engineering (FME)
<b>Department:</b>	Department of Automotive, Combustion Engine and Railway Engineering
<b>Thesis supervisor:</b>	Ing. Michal Jasný
<b>Supervisor's department:</b>	Department of Automotive, Combustion Engine and Railway Engineering

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>ordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
The work contained within the thesis consisted mostly of utilizing the curriculum of master studies, it did not require coming up with any new technical solutions. However, it was a work on a commercial car which is currently under development and the time limit was quite tight.	

<b>Fulfilment of assignment</b>	<b>fulfilled with minor objections</b>
<i>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.</i>	
I consider the assignment as mostly fulfilled. Mr. Achanta worked on all main thesis parts (design of the pneumatic system for clutch operation and a test bench for this system, Simulink simulation of the clutch dis/engagement and gearchanges). I have no remarks regarding the first part – mechanical design of the pneumatic system. However, in the following parts I miss a more specific description of what is the goal and how it can be validated that it has been fulfilled. And at the end of these parts verification that these requirements have been met. All these seem quite vague to me.	
E.g., at page 31: Requirements for the Clutch Actuation Mechanism – “Capable of achieving faster actuation speeds and high repeatability for cyclic usage.” Faster than what? And how much is “high repeatability”? Or at page 42: Requirements to perform the SIMULINK simulation – “To simulate the gear actuation for an automatic vehicle.” As far as I understand the Simulink model, it mainly decides when to change gear up and down. However, I would expect a deeper approach when talking about “gear actuation”.	

<b>Activity and independence when creating final thesis</b>	<b>A - excellent.</b>
<i>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.</i>	
Mr. Achanta worked very actively in cooperation with Corbellati Automobili and required little to no guidance from my side. He also regularly reported his progress.	

<b>Technical level</b>	<b>C - good.</b>
<i>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?</i>	
The thesis shows that the author understands the topic he is talking about quite well and that he had to do some research for his design. The theoretical part could be more precise in descriptive parts, especially in the section about clutches which is taught during the master studies. This relates to both text and images. The calculations always declare input values which is appreciated.	

**Formal level and language level, scope of thesis****C - 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 thesis uses readable English, which could be maybe more technical sometimes. Many graphs are hard to read because of extremely small fonts (especially in Simulink section). The thesis is logically structured. In the appendix, chosen variants are highlighted.

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

*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?*

My only remark is that in the theoretical part some images could be used with better visual and explanatory quality from some more prestigious sources.

### 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.*

I respect Mr. Achanta for the amount of work he has done in a limited amount of time. I believe he learned quite a lot during the cooperation with an industrial partner and wish him a successful continuation of this cooperation.

The grade that I award for the thesis is **C - good**.

Date: **16.8.2021**

Signature:

