

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Future body structure concept for Hess busses</b>
<b>Author's name:</b>	<b>Grégoire Bis</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 reviewer:</b>	Ing. Lukáš Kazda
<b>Reviewer's department:</b>	Department of Automotive, Combustion Engine and Railway Engineering

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>challenging</b>
<i>How demanding was the assigned project?</i>	
It was challenging to design new type of connection and fulfil all the criteria such as reducing weight, assembly time and costs.	

<b>Fulfilment of assignment</b>	<b>fulfilled</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>	

<b>Activity and independence when creating final thesis</b>	<b>B - very good.</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>	
Student worked on his project as part of his internship, so the work was primarily consulted with his supervisor in the company. Maybe if it was consulted with university more often, some formal issues that are mentioned in following sections could have been avoided.	

<b>Technical level</b>	<b>A - excellent.</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>	
I view the technical level very positively. Determining load on beam profiles was crucial and it was determined correctly. I also appreciate creating and evaluating decision matrices. Designing the connections with respect to professional methodologies also deserves praise.	

<b>Formal level and language level, scope of thesis</b>	<b>B - very good.</b>
<i>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?</i>	
The English grammar was correct and the text was stylistically well written. The introduction and motivation were telling and the results were thoroughly and clearly summarized. However, there are numerous issues in the thesis that I find problematic. It primarily concerns passing the information about the work that was (without a doubt) well done to someone who isn't familiar with it yet. To be more specific, all the variants of the new connection are presented as screenshots from CAD software (Figure 31.). Communication with other engineers should be done using drawings or at least schemes that unlike screenshots provide sufficient information about design, function and principle and where all parts can be visible and differentiated. Also FEM models should be presented in more detail, which includes mesh (size and element types), material model or contacts (if they are used). And lastly, I would appreciate to have a chapter that would introduce the CO-BOLT connection system (again with drawings or schemes) so the reader can clearly understand what the subject of improvement is. Don't get me wrong, I don't question the work itself and its results, but the way some parts were presented requires improvements.	

**Selection of sources, citation correctness****D - satisfactory.**

*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?*

The citations don't meet standards for publishing. All pictures that are taken from elsewhere don't have citation (although the sources of the pictures are cited elsewhere in the text). Most of the citations have hyperlink instead of web address. In [5] ISBN of the book is missing.

**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

Buses must pass ECE R66 regulation that tests the bus structure in case of rollover. The load you consider in the thesis is from static or inertia forces. Have you considered what load would be generated on the beams in case of rollover. If so, what was your conclusion and why was it left out? If not, could you elaborate now?

Why did you decide to choose 3 boundary conditions that remove 6 degrees of freedom each in your FEM model? Isn't it too much of a simplification?

I consider this work to be on high technical level and it's apparent that a lot of thorough effort was dedicated to it. The assignment was fulfilled with positive results which was not guaranteed at the beginning. I recommend improving the description of the proposed connections for the defense presentation.

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

Date: **23.8.2023**

Signature: