THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	A Platform for Virtual Reality Applications
Author's name:	Jakub Hlusička
Type of thesis :	bachelor ▼
Faculty/Institute:	Faculty of Electrical Engineering (FEE) ▼
Department:	Department of Cybernetics
Thesis reviewer:	Ing. Tomáš Pastýřík
Reviewer's department:	Hangar 13 studio, 2K Czech s.r.o

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment
challenging ▼

How demanding was the assigned project?
Developing such a platform can be a difficult enough task without considering its virtualization. The author has investigated use of virtualization which has added another level of complexity.

Fulfilment of assignment
fulfilled with minor objections ▼

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.
While only static 3D models are supported by the *mapps*, use of scripts and other multimedia files was not addressed in this thesis. However author's focus on the API, justification of chosen solutions and exploring alternative approaches in fine detail makes the assignment fulfilled in my point of view.

Methodology
correct ▼

Comment on the correctness of the approach and/or the solution methods.
Virtualization of the platform was a surprising decision as VR is by definition very demanding considering framerate and use of the resources. Reasons for investigating this approach were well justified though, at the end measured and compared with the native solution, where performance was indeed identified as a drawback of the chosen solution. What I was missing is clear specification of performance expectations for ideal behavior of the platform for VR to put the measurements to perspective and context.

Technical level
A - excellent. ▼

Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?
Chosen technology and approach are well justified. API is clear and simple, application code is split to modules by functionality. I also do appreciate the additional content that was created along this thesis – well structured Github repository and a small website with technical blog posts on the problem.

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

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?
Language and the ability to express ideas clearly is excellent, above average.

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?

The selection of sources is adequate, in some cases it would be desired to be more specific then citing just the root server URLs. There are no citations in the chapter 1.1 about encryption and security to backup the given claims which makes it hard to judge which parts are common knowledge, verified facts, or author's opinion for readers not familiar with the topic.

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, ғ с.

- in overall pictures presented are very dark even on a good screen, which makes it very hard to understand also when printed.
- in 4.3 author is trying to identify the source of performance issues of the virtualized variant, pointing out the serialization and deserialization. While this is most likely to be correct, measurements would be better in this case to chase down the culprit and support the idea.
- As already mentioned, there is a broader context missing in the chapter 4.3 to make sense of the measurements better for the reader, such as feasible performance.
- Has the author considered adding simple API to place lights? With little work there would be much gain which could also solve the imagery being too dark.

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. Pose questions that should be answered during the presentation and defense of the student's work.

Reading of the thesis was indeed enjoyable, providing well described technical details, justified solutions and alternative approaches. Even though the performance of the final solution has showed up as a drawback of the chosen approach, reflection on the topic and providing possible solutions and future work was appreciated.

The grade that I award for the thesis is | A - excellent. ▼ |

Date: **7.6.2020**

Signature: Tomáš Pastýřík