



Review report of a final thesis

Student: Bc. Filip Machala
Reviewer: Ing. Alexandru Moucha, Ph.D.
Thesis title: Tesla Model 3 Internal Network Security Analysis
Branch of the study: Computer Security

Date: 5. 6. 2020

<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
1. Fulfilment of the assignment	<u>1 = assignment fulfilled,</u> 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled
<i>Criteria description:</i> Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.	
<i>Comments:</i> The first fields of this assessment are a simple formality. It is obvious that the student did an excellent job in his project and is able to achieve engineering tasks.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
2. Main written part	80 (B)
<i>Criteria description:</i> Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies? Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 26/2017, Art. 3. Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.	
<i>Comments:</i> The written part has some minor flaws which, fortunately, do not affect its content or clarity. 1. In (too) many places in the text, the definite/indefinite articles (a/an/the) are missing, giving the text the impression of a 20th century telegram paid per word. Sometimes, the article is put in the wrong place: "The Evolution of Cars" is better than "Evolution of the Cars". BTW - capitalisation in titles. 2. There are capitalised sections of text which I was not able to understand to whom they were addressed. Maybe this was part of the job of the opponent. Page 14 - "HERE CAN BE MORE ABOUT VPN AND OTHER" or "CAN BE MORE HERE". 3. One reference is missing: OpenBTS [?] on page 36. 4. Never start a sentence with "but" - it is rude. Also, "but" can be avoided with "although", "in spite of" ... 5. In formal text don't use shorts' because you can't or you haven't been told so. Do not, cannot, have not.... are far more appropriate. 6. Page 13: LEAST and MOST should have been capitalised NOT IMPORTANT. Ergonomics of reading - as LEAST and MOST are the key words. 7. Page 22 point 7. "measures are" not "measures is" - plural and singular. 8. MORE CAN BE HERE ;)	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
3. Non-written part, attachments	90 (A)
<i>Criteria description:</i> Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.	
<i>Comments:</i> Excellent research work.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>

4. Evaluation of results, publication outputs and awards

100 (A)

Criteria description:

Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.

Comments:

Obviously the work is EXTREMELY interesting and current, with huge implications. For the moment this is only the beginning, as more research is needed until a substantial scientific content is publishable. Most certainly, this is the first set of steps on a long path which will continue. In conclusion: the work has enormous momentum.

Evaluation criterion:

No evaluation scale.

5. Questions for the defence

Criteria description:

Formulate questions that the student should answer during the Presentation and defence of the FT in front of the SFE Committee (use a bullet list).

Questions:

It is not necessary to prepare separated slides to be presented, the shorter the answers the better.

1. Why in your opinion Tesla chose Ethernet?
2. Are the design plans of the circuit interconnections officially public (made public by Tesla)? Y/N
3. Who is the "client" referred in the text: the owner of the car, the project manager, Tesla, the car dealer?
4. Does the car come equipped with a SIM card by default? If not does it use eSIM? If it does, who is the owner of the SIM (Czech operator, Tesla, generic)?
5. Surely after connecting to LTE the Tesla got a public IPv4 address? Usually this is far more difficult to achieve and requires special tunnelling as Czech operators (as any operator) generate private IP addresses - due to obvious reason(s).
6. Are the internal IP addresses on the ETH (192.168.90.x) network fixed?

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

6. The overall evaluation

85 (B)

Criteria description:

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.

Comments:

I simply loved the content and I enjoyed reading it. Unfortunately I cannot quantise the text at an excellent level as it needed some final polishing (most probably time was running short). Thus, even if I grade the whole activity (especially due to how it came packaged - the written part) as very good (B), I have nothing against the student to defend an excellent grade (A) at the exam. I really do appreciate (even with the imperfections) the ability of the student to write a large report in English. My Czech is worse than his English, as I learned from zero.

Although, and this is important for the exam committee, I would condition granting an excellent grade only if I shall be officially bribed by being allowed a test drive in the Tesla car. :)

Signature of the reviewer: