FACULTY OF INFORMATION TECHNOLOGY CTU IN PRAGUE

Review report of a final thesis

Student:	Bc. Simon Štefunko
Reviewer:	Ing. Dominik Soukup
Thesis title:	Honeypot for wireless IoT networks
Branch of the study:	Computer Systems and Networks

Date: 26. 5. 2019

Evaluation criterion:	*The evaluation scale: 1 to 4.*
1. Fulfilment of the assignment	***1 = assignment fulfilled,*** *2 = assignment fulfilled with minor objections,* *3 = assignment fulfilled with major objections,* *4 = assignment not fulfilled*

Criteria description:
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.

Comments:

All requirements are fulfilled with a very good quality level. Results are clearly described. The solution combines software and hardware tools and real IoT devices, which is very hard.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
2. Main written part	*75 (C)*

Criteria description:
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.

Comments:

The work size corresponds to the expected size of a diploma thesis. Also, the structure of this thesis is well-defined. The student logically explains all parts with relevant examples. Even if English is not the student's native language the thesis is well-written with a just few typing errors. All sources are relevant and properly cited. The evaluation is lower due to the following points:

1) Figures 1.1, 3.1, 3.2 are not referenced from the text
2) Referenced figures have inconsistent labels before a reference in the text (figure 3.3 has label Figure, figure 3.5 has none label and other figures have label Fig.)
3) Depicted tables have inconsistent labels before a reference in the text (table 2.2 has label Fig., table 5.1, 2.1 has label Table and others tables have label Tab.)
4) Enumerate lists in sections 3.1 and 4.1.2.4 has an inconsistent indentation
5) Table 5.6 has a wrong caption. Based on the section content, 100 messages were sent instead of 20. Also, the cell containing the number 885 is obviously wrong.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
3. Non-written part, attachments	*95 (A)*

Criteria description:
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.

Comments:

This work combines software and hardware tools, which increases its difficulty. The source code is well-organized and ready for additional extensions. Also, installation and usage steps are precise. The only deficit is a low number of comments in the source code, which could limit further improvements.

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

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:

The benefit of this thesis is very promising because it covers actual problems in sensor wireless protocols. To my best knowledge, I don't know similar work that is able to analyze communication traffic of the Z-Wave network in detail, create datasets and allow an extension to additional protocols. This work is built on the current state-of-the-art in this field, therefore, I see a big publication potential.

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:

Is it possible to apply designed honeypot on encrypted Z-Wave traffic?

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
6. The overall evaluation	*95 (A)*

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:

This work covers and extends current state-of-the-art. Even though there are small drawbacks, I evaluate this work very positively because this area is very complicated and the student did an excellent engineering work.

Signature of the reviewer: