THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	NuttX RTOS CAN Bus Driver for Espressif ESP32C3
Author's name:	Charvát Jan
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Measurement
Thesis reviewer:	Martin Vychodil
Reviewer's department:	Espressif Systems (Czech) s.r.o.

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**challenging**
How demanding was the assigned project?	
Device driver implementation is not a trivial thing	

Fulfilment of assignment	**fulfilled**
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.	

Whole thesis has been implemented at high technical level and all the primary goals have achieved. The points to highlight:

1. The implementation followed the NuttX/driver coding standard
2. The configuration options have been provided for all which can be configured
3. The author provided the *defconfig* file and necessary board logic for testing by other developers/users
4. The testing part includes multiple examples
5. The code has been published as NuttX Pull-Request and has been successfully merged to the NuttX master branch on April 15 (see https://github.com/apache/incubator-nuttx/pull/6005). Great achievement!

However, few minor discrepancies were found (mentioned in Additional commentary section). As those are not directly related to the thesis' core, the reviewer thinks these imperfections shouldn't influence the final score.

Methodology	**outstanding**
Comment on the correctness of the approach and/or the solution methods.	
See *Fullfilment of assignment* section	

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?	
See *Fullfilment of assignment* section	

Formal and language level, scope of thesis	**B - very 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?	

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?	

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.

Few inexact points noticed:

1. <u>Chapter 3.1</u>: ESP32C3 provides only 400KB of SRAM memory (384KB I/D + 16KB I/cache), not 800KB. See TRM
2. <u>Chapter 3.2.1</u>: bit misleading info about the development environment. First step required is actually ESP-IDF installation, so the instruction should start with 'git clone https://github.com/espressif/esp-idf.git', 'cd esp-idf', './install.sh', etc. Stating 'git pull' is not an exact way to go and would be confusing for potential users
3. <u>Chapter 5.2</u>: confusing info about licensing: "The project has been developed for a long time under the BSD license..." and then "The actual used in NuttX is Apache 2.0 License...". Maybe it would be clearer to say the project has started under the BSD license and switched to the Apache license after joining the Apache Software Foundation

The above-mentioned points are basically cosmetics and play no important role in the thesis quality.

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.

Despite of few minor imperfections, the overall quality of this diploma thesis is very high. Especially the code being accepted by official NuttX distribution is a great success.

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

Date: **30.5.2022**   Signature: Martin Vychodil