THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Network-aware Distributed Deep Neural Networks for Slice Resource Allocation in 6G**
Author's name:	**Bc. Ondřej Šmíd**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Departments of Telecommunication Engineering
Thesis supervisor:	Doc. Ing. Zdeněk Bečvář, Ph.D.
Supervisor's department:	Departments of Telecommunication Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

How demanding was the assigned project?

Knowledge of up to date slicing concept and slice resource allocation together with knowledge of distributed deep neural networks go beyond common knowledge acquired by students within university courses, hence, a large amount of self-studies was required.

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.

The objectives are fulfilled.

Activity and independence when creating final thesis **A - excellent.**

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.

The student demonstrated excellent capabilities in research and engineering work. He has managed to solved even complicated problems and found interesting solutions and approaches. He also demonstrated creativity when solving new problems. He was well prepared for the meetings and come up with his ideas and findings, which he was able to explain and defend.

Technical level **A - excellent.**

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?

The thesis demonstrates a novel solution for slice resource allocation via DDNN. The solution itself is of a high novelty with respect to state of the art. Such novelty is not common in diploma thesis. Also the thesis provides an extensive evaluations and performance analysis demonstrating benefits of the proposal. To develop such solution, the student managed to not only exploit knowledge gained at the university, but also complement it with many other related and up to date topics to develop and deeply analyze the proposed solution.

Formal level 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?

The thesis is written in English and, in general, whole thesis is well organized and written with acceptable amount of complicated or unclear sentences. There are also some typos along the thesis and missing/wrong cross-references. However, all these problems are not too often to complicate reading.

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?
There are only 21 reference overall in the thesis and in some parts, additional references should be included to provide more details or to provide support for statements. For example, half of Introduction is written with no reference at all, even if there are some statements that would deserve a support in terms of references. Nevertheless, key related works are included and cited properly.

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.
The thesis was carried out in frame of double degree in EURECOM under supervision of prof. Thrasyvoulos Spyropoulos, Ph.D. The amount of work carried out by the student and resulting novelty of the proposed solution are way above common diploma theses at our university and correspond rather to a work of doctoral student especially in terms of innovation.

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.

The thesis provides novel solution for slice resource allocation in beyond 5G and 6G networks. The solution is based on distributed deep neural networks and the student managed to not only propose, but also evaluate the solution in a comprehensive manner.

During work on the thesis, the student was very active and inventive.

The student has proven capabilities to carry our independent research and engineering work and to solve complex problems.

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

Date: **24.1.2022** Signature: