

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Non-linear Four-wave Mixing in DWDM Systems</b>
<b>Author's name:</b>	<b>Aldair da Costa Baptista</b>
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Telecommunication Engineering
<b>Thesis supervisor:</b>	Ing. Michal Lucki, PhD.
<b>Supervisor's department:</b>	Department of Telecommunication Engineering

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>ordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
The task included both numerical simulations and practical measurement on an existing hardware set. The assignment is demanding on average.	

<b>Fulfilment of assignment</b>	<b>fulfilled with major objections</b>
<i>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.</i>	
Mr. Baptista performed only a few predefined simulations to show the existence of the FWM phenomenon (that is a generally accepted view) and experimentally measured some options that were supposed to be the reference configurations for further parametric sweep and much deeper investigation. The topic offers huge space for testing the FWM under many different conditions, but the student performed only the absolute minimum of experiments.	
I should mention that we agreed on making a series of appointments at the end of July to complete the measurements (for which I interrupted my vacation), but Mr. Baptista didn't show up and didn't even inform me that he was not coming. I was only informed post-fact, after the last possible day of measurement. The lacking measurements have never been made up, which contributes to my <b>major objections</b> .	
I consider the goals of the work as <b>partially fulfilled</b> .	

<b>Activity and independence when creating final thesis</b>	<b>F - failed.</b>
<i>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.</i>	
It is with regret to report that the student's involvement was very low. Since grades should be properly justified, let me mention several facts that speak for themselves.	
<ol style="list-style-type: none"> <li>1. It took Mr. Baptista about one year to manage to run the simulator and obtain any result, most things were done in July and August 2020, just before the very final deadline. Before that, he failed to complete the semester project at the 1<sup>st</sup> attempt.</li> <li>2. The student wasn't able to run or reconfigure the experimental setup (although he already saw it in the classes); my assistance was beyond the standard level of supervision.</li> <li>3. The student ignored the information content of emails; the fact that Mr. Baptista picked the official assignment from Dr. Pravda the last possible day, which was the day of submission, speaks for itself.</li> </ol>	
Overall, Mr. Baptista hasn't shown neither progress, nor creativity or involvement, therefore my evaluation of his activity and independence must be <b>negative</b> ; even though I provided my assistance till the very end.	

<b>Technical level</b>	<b>F - failed.</b>
<i>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?</i>	

1. The student is able to report from observation, but is not able to analyze problems, which is the ground of most engineering and technical tasks.
2. The student limited the scope of simulations to the simplest setups. To clarify: a regular lab assignment with one-week deadline was more advanced and inventive than what is proposed in Fig. 4 and Fig. 12.
3. The student wasn't able to diagnose or fix problems.

In my opinion, Mr. Baptista is unable to rerun the experimental setup without my assistance or to propose a numerical solution from scratch.

### **Formal level and language level, scope of thesis**

**C - 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 language level is probably the strongest side of this work, since Mr. Baptista is a native speaker of English. The work is logically split into chapters, goals are clearly specified. The quality of discussion corresponds to the advancement of the results themselves. The quality of figures and diagrams, in terms of resolution and readability, meets today's requirements.

### **Selection of sources, citation correctness**

**D - satisfactory.**

*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 work was supposed to be the continuation of another thesis about a similar topic, but in most aspects, it doesn't go any deeper. The student was recommended to use the revised conference and journal papers from the IEEE database; he uses a few of them accompanied by a number of websites and technical documentation. The used ideas are clearly distinguished from Mr. Baptista's own results.

My recommendation is that each reference record should include the complete information, and that each reference should be formatted in the same way (even the authors' names look different in each reference).

### **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.*

Please insert your comments here.

## **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.*

I recommend the thesis for defense and leave it open to final decision of the Committee.

The grade that I award for the thesis is **E - sufficient**.

Date: **25.8.2020**

Signature: