THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Classification of Respiratory System Compliance Changes during Mechanical Ventilation Using Electrical Impedance Tomography**
Author's name:	**Bc. Lukáš Mařík**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Cybernetics
Thesis reviewer:	Ing. Jan Havlík, Ph.D.
Reviewer's department:	Department of Circuit Theory

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

How demanding was the assigned project?

The assignment requires an analysis of PEEP titration measurements of porcine models, a derivation of suitable features that enable quantification and description of regional compliance changes and combining these features to a single value that evaluates the ventilation from the perspective of local compliance.

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 assignment has been completely 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 diploma project was realized during the double-degree study at RWTH Aachen, only minor aspects were discussed at CTU in Prague.

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 technical level of the thesis is very high. The workflow of the study is systematic. The student proved his expertise and ability to professional work.

Formal level and language level, scope of thesis **A - excellent.**

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 at high formal level.

Selection of sources, citation correctness **A - excellent.**

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 sources are cited correctly. The selection of sources corresponds with the research topic.

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.

no additional comments

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

The student presents the work in the field of mechanical ventilation. He deals with data analysis from PEEP titration experiments and proposes a set of features that enable quantification of local compliance. One of the most important results of the work is the finding that the local information could provide a better evaluation of ventilation performance than the typically used overall parameters.

The submitted work is comprehensive, at a high professional level. The student proved his expertise.

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

Date: **13.1.2020**

Signature:

Ing. Jan Havlík, Ph.D.