

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Reinforcement Learning for Swarm Control of Unmanned Aerial Vehicles</b>
<b>Author's name:</b>	<b>Karel Poncar</b>
<b>Type of thesis :</b>	bachelor
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Cybernetics
<b>Thesis reviewer:</b>	Robert Pěnička
<b>Reviewer's department:</b>	Department of Cybernetics

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>extraordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
I consider the assignment to be very challenging as it required from the student to learn new topics (beyond his study field) such as robotics and deep reinforcement learning.	

<b>Fulfilment of assignment</b>	<b>fulfilled</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>	
To the best of my knowledge the assignment was fully fulfilled.	

<b>Activity and independence when creating final thesis</b>	<b>B - very good.</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>	
The student was proactive in solving the given problem, however, his independence in coming up with his own ideas was limited (most probably due to the difficulty and novelty of the problem at hand).	

<b>Technical level</b>	<b>A - excellent.</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>	
The technical level of the final thesis is of good quality.	

<b>Formal level and language level, scope of thesis</b>	<b>A - excellent.</b>
<i>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?</i>	
The formal aspects of the thesis are correct, the thesis is well organized and written in good English.	

<b>Selection of sources, citation correctness</b>	<b>A - excellent.</b>
<i>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?</i>	
The sources selection is adequate and the citations are correct.	



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

The topic of the thesis, learning drone swarm control using deep reinforcement learning, was very challenging. Yet the student fulfilled all required tasks. The thesis is well-readable and inspiring for further research of agile swarming of unmanned aerial vehicles. Therefore, the grade that I award for the thesis is **A - excellent**.

Date: **29.5.2023**

Signature: