CTU
CZECH TECHNICAL UNIVERSITY IN PRAGUE

THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Map Merging for UAV Swarms**
Author's name:	**Jan Maděra**
Type of thesis :	Master
Faculty/Institute:	Faculty of Electrical Engineering
Department:	Department of Cybernetics
Thesis reviewer:	Karel Košnar
Reviewer's department:	CIIRC

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **Select: challenging**

How demanding was the assigned project?

Fulfilment of assignment **Select: 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 student fulfilled all the points of the thesis assignment.

Methodology **Grade: B**

Comment on the correctness of the approach and/or the solution methods.

The final choice of the merging method is only weakly justified. As it is already mentioned in the thesis, better will be to compare multiple methods (even on limited datasets). As is stated in section 3.1.2, three methods seem suitable and no clear reason why the genetic method was selected.

Technical level **Grade: A**

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 description of the solution is technically sound and shows the student's understanding to the topic. Experiments are well described and prove the functionality of the solution.

Formal level and language level, scope of thesis **Grade: B**

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 very well written and what I like is the "interesting ideas" section. On the other side, the introduction of the "compounding notation" is redundant. This notation doesn't simplify the text in comparison to the "standard" notation of homogeneous coordinates and brings only an additional operator. Also, I find the graphs (e.g. Figure 4.4) a little confusing as there are many lines with the same colors. I prefer to split the graphs into multiple figures or plot only one representative from each error setting.

Selection of sources, citation correctness	**Grade: A**
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 well selected and the citation follows 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.
The provided source codes are documented and provided with the necessary information for the build process. Also the I appreciate the presence of launch files.

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

The thesis is well written and shows the students ability to solve complex technical problems. The functionality of described solution is verified by real-world experiments.

1. Why you choose the genetic method?
2. Is the possibility to use the prior knowledge of the approximate relative pose advantage or disadvantage in your use-case?

The grade that I award for the thesis is **B**

Date: 24/08/2020

Name and signature:

Karel Košnar