FACULTY OF TRANSPORTATION SCIENCES
Prof. Ing. ONDŘEJ PŘIBYL, Ph.D.
DEPARTMENT OF APPLIED MATHEMATICS

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Supervisor's Review:

Local level routing to reduce travel times in urban networks

Master's thesis by: Andre Maia Pereira
Supervisor: **Prof. Ing. Ondřej Přibyl, Ph.D.**

This thesis has several contributions, among others the overview of the state-of-the-art, detailed problem formulation, definition and implementation of a novel local level routing algorithm and its evaluation using microscopic simulation tool - SUMO. The algorithms were implemented and integrated into the simulation environment, which requires different skills including knowledge of the Python language or SUMO environment. Each of these contributions is significant and contributes to the field and state-of-the-art.

The thesis has a very clear structure. Each section starts with a clear overview of existing approaches followed by own contribution. The algorithms are explained and examples are provided if needed. The author also prepared some clear illustrations. The thesis provides and discusses also the results of traffic microsimulation model.

This big amount of work invested into the thesis however also led to the fact, that the thesis might be too long. At some points the author might have provided maybe too much description and text. In my opinion, last revision and slightly better structuring (especially focusing on the most important contributions and decision what should be placed in the appendixes) might be useful.

The topic of this thesis, Local level routing, is very actual. It was identified within the current European H2020 project – MAVEN (Managing Automated Vehicles Enhances Network). The thesis' author has been working on this project and the algorithm and the results of this thesis will be further used within the project. Also the opponent of this thesis is working in a company TomTom, the leader in the field of routing algorithms and partner in the project MAVEN.
I believe this clearly demonstrates the actuality and novelty of the topic as well as quality of results.

The author has demonstrated high motivation and the ability to work independently, while consulting the partial results and findings with the supervisor as well as other project members.

I would also like to point out that the preparatory work on the thesis resulted in two published papers indexed in Scopus and Web of Science, which is for a Master's thesis outstanding result. Overall, I believe this thesis is outstanding and with some slight focus on the evaluation methods could pass for a PhD thesis.

I recommend as overall mark for this thesis: A (excellent).

Best Regards,

Ondřej Přibyl