



OPONENT'S REPORT ON THE MASTER'S THESIS

Master's thesis name **Transport safety assessment of road adaptive lighting implementation**
Author (including degrees) **Bc. Daniel Hamrle**
Master's thesis supervisor (including degrees) **Ing. Zuzana Bělinová, Ph.D.**
FH-Prof. DI Dr. Christian Brunner

Evaluation criteria and their classification

Fulfilment of the Master's thesis requirements and goals	B (very good) ... 1,5
Self-action and own initiative during the Master's thesis elaboration	unclassified
Application of knowledge gained by self-study and from scientific literature	B (very good) ... 1,5
Usage of groundwork and data from practise	B (very good) ... 1,5
Scientific level and contribution of the Master's thesis	C (good) ... 2,0
Formal aspects of the Master's thesis	C (good) ... 2,0

Further comments to the Master's thesis:

The aim of Bc. Daniel Hamrle's master's thesis was to assess possible changes in road safety caused by the decreased lighting intensity by comparing the safety influencing factors – mean speed and speed variance.

In the 1st part of the master's thesis a lighting section of an adaptive lighting system is described. The description is simple, structured and clear. Just technical comparison of described lighting sources (e.g. luminous efficacy, CRI) is missing.

In the next part various ways how the road safety may be assessed are explained and one of them is chosen. It is a question how suitable the chosen way is. There is dependence between qualitative and quantitative lighting parameters and a road safety which is missing in this thesis. Also a reference to the "public lighting" standard and the lighting levels used in the adaptive lighting system are missing. In some case it could happen that on one hand the lighting level will decrease but on the other hand the road safety will still increase thanks to the quality of the "new" lighting system. This fact is very important and was not considered or at least outlined. Its absence affects the next chapter in which null and alternative hypothesis are set and examined.

This part of the thesis I found very interesting and there is a possibility of further work in adaptive lighting system and a road safety evaluation.

The conclusion of the thesis corresponds with the note above – although the lighting level was lowered there is no proof of road safety decrease.

I have few comments to the text:

- when controlling a luminaire – primary a luminous flux is changed, not the luminance
- lamp is a synonym for lighting source, the whole lighting device is usually called luminaire
- page 26, 2nd article – do you really found it too early to make an evaluation after 12 years of testing the adaptive lighting system ?
- page 26, 2nd article – how it is possible to reach 37% reduction of full energy consumption of a non dimmed HPS ?
- 5.2 a reference to Austrian and European standards (not norms) is missing
- page 54, 1. H1 – luminance should decrease not increase, same page 2. H1 – speed variance should decrease not increase

Questions:

- what's the difference between remote control of public lighting and adaptive lighting ?
- could be speed increase caused by lighting level decrease?

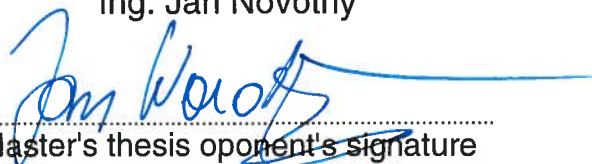
Despite above mentioned comments and minor lack of some information the master's thesis fulfills its goals and requirements.

I recommend the Master's thesis for the defence.

Summary classification of the Master's thesis

B (very good) ... 1,5

Master's thesis oponent's name
Ing. Jan Novotný



Master's thesis oponent's signature

In Prague.....08.01.2015