Travel Time Estimation Using Bluetooth Technology with a Focus on Reliability and Accuracy

PhD Defense by Bahar Namaki Araghi,
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INVITATION TO PHD DEFENSE

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By: Bahar Namaki Araghi
Thursday 15th of May 2014, 1pm

Room C1/12 I, Skibbrogade 5, Aalborg

The thesis is the result of an Industrial PhD project in cooperation with Department of Development & Planning, Aalborg University, Danish Road Directorate and BlipSystems.

Summary: The thesis provides a comprehensive overview of the application of Bluetooth technology for travel time estimation. The thesis introduces the challenges facing the application of Bluetooth technology for travel time estimation including accuracy and reliability of estimated travel time, low sampling rate and the difficulty of distinguishing between multiple travel modes (e.g. motor vehicles, bicycles and pedestrians).

The thesis evaluates the accuracy and reliability of travel time estimated by Bluetooth data and tries to develop methods to make Bluetooth based travel time estimates more accurate and reliable. Moreover, it investigates the choice of aggregation method and the required sample size for improving the accuracy of travel time profile generated using Bluetooth data.

Additionally, the thesis presents an algorithm to estimate mode-specific travel time using Bluetooth data in a heterogeneous traffic environment (i.e. arterial roads with mixed traffic). Lastly, the thesis provides a comprehensive side-by-side evaluation of Bluetooth sensors versus other conventional methods in the context of travel time estimation.

Assessment Committee:
Associate Professor, Ph.D. Erik Kjems, Aalborg University (Chairman of the committee)
Professor John Polak, Imperial College London
Traffic Engineer, Ph.D. Jan Kildebogaard ÅF – Hansen og Henneberg
Moderator of the defence, Associate Professor, Ph.D., Lars Bolet, Aalborg University

Supervisor: Associate Professor, Ph.D., Harry Lahrmann, Aalborg University
Co-supervisor: Dr Rajesh Krishnan, Imperial College London

After the defense Department of Development & Planning will host a small reception.
If you plan to join the defence at 1 o’clock and/or the reception at 4 o’clock please report your participation to http://doodle.com/8kmehanct5zyep8y or by email to ch@land.aau.dk not later than May 12.