Transport Research Institute, Edinburgh Napier University

and

Hanshin Expressway Co

Workshop on

Autonomous vehicles and a new era of the transportation system

Friday 14th September 2018

Merchiston Glass Room

Autonomous vehicles are rapidly becoming a reality in the modern world. Through rising companies and technology advancement a shift in the automotive industry is rapidly observed. The technology for self-driving vehicles is already there. It is not going to be long before autonomous vehicles hit our roads. Implications of autonomous vehicles and self-driving scenarios on the society, safety, traffic management cannot be ignored. Further, assessing implications of such technologies needs major thinking and considerations. There have been many studies and research carried out to analyse the legal, practical and technological requirements to implement and adopt fully autonomous vehicles into the modern traffic model. There are still many gaps and related research questions need further considerations.

This workshop is organized jointly by Transport Research Institute at Edinburgh Napier University and Dr. Akito Higatani, Hanshin Expressway Company who is currently a visiting Post Doc working with Professor Wafaa Saleh. The aim of the workshop is to bring together researchers and practitioners to elaborate on the potential, implications and future scenarios of autonomous vehicles.

There are few available places available at the workshop which will be assigned on first come first served ethics.

Program

Edinburgh Napier University and Hanshin Expressway Co

Program of workshop on 14th September 2018 (latest draft)

Merchiston Glass Room

Time	Speaker	Title of Presentation/ notes
9.00-9.10	Edinburgh Napier University welcome	
9.10-9.15	Hanshin Expressway Co. welcome	
	Session I: Hanshin Expressway	
9:15-9:40	Mr Takumi Uno, Hanshin Expressway Co.	Outline of Hanshin Expressway: -Aiming advanced highway service
	Mr Takashi Kodama, Hanshin Expressway Co.	A study on the way of traffic data and management in the era of autonomous vehicles
9.40-10.05	Associate Prof. Jan-Dirk Schmocker, Kyoto University	Long-term Hanshin Expressway Demand Trends Considering Japanese Demographic Changes
10.05 - 10.35	**Coffee break + Poster session**	
	Session II: Societal Implications of Automation	
10.35-11.00	Professor Yasuo Asakura, Tokyo Institute of Technology	Smart Ridesharing Transport with Autonomous Vehicles
11.00 -11.25	Associate Prof. Hiroshi Shimamoto Miyazaki University	Evaluation of ensuring mobility using ride-sharing model considering the adjustment of behaviour

11.25 -11.50	Associate Prof. Toshiyuki Nakamura Nagoya University	Aging society and Autonomous technology
11.50 -12.15	Professor Mohammed Quddus, Loughborough University	Safety Impacts of connected and autonomous vehicles
12.15-13.10	**Lunch + Poster session**	
	Session III: Implications of Automation on Traffic Control	
13.10 - 13.35	Professor Masao Kuwahara, Tohoku University	Traffic Monitoring using Various Sensing Data under a Disaster
13.35-14:00	Professor Nobuhiro Uno Kyoto University	In-laboratory Experiment Using Driving Simulator: Analysis of Speed Reduction during Earthquake on Urban Expressway
14.00-14.25	Professor Toshio Yoshii, Ehime University	Effective Traffic Management for Minimizing the Accident Risk
14.25 - 14.50	Professor Fumitaka Kurauchi Gifu University	Dynamic Traffic Control on Urban Expressway by Flexible Fare Adjustment
14.50 - 15.15	Associate Prof. Achille Fonzone Edinburgh Napier University	tbc
15.15-15.30	**Coffee break and Poster session**	
	Session IV: Assessment of Implications of Automation	
15.30-15.55	Associate Prof. Yasuhiro Shiomi, Ritsumeikan University	Estimation of CO2 emission from freeway network based on multi-class traffic state estimation

15.55-16.10	Mr. Ryota Horiguchi i-Transport Lab. Co., Ltd	Impact assessment of autonomous vehicles on expressways using microscopic traffic simulation model
16.10-16.25	Mr. Norihito Shinkai Regional Futures Research Center Co., Ltd	Investigation of Measures to Congestion Occurrence by Speed Control with Variational Theory
16.25-16.50	Dr. Akito Higatani and Professor Wafaa Saleh, Edinburgh Napier University	Can we model autonomous vehicle reliably in microsimulation?
16.50-17.30	**Session IV: Conclusions, discussions and closing session**	

Poster Presentations

Time	Poster author	Title of Presentation
10.30 - 10.45	**Coffee break + Poster session**	
12.50- 13.45	**Lunch + Poster session**	
15.00- 15.15	**Coffee break and Poster session**	
Poster	Hanshin Expressway Co Mr. Yasuyuki Iwasato	Generation of real-time accident risk information and application to traffic control
	Hanshin Expressway Co Mr. Hiroyuki Masumoto	Effect of the Moving Light Guidance System in Urban Expressway for Traffic Congestion Mitigation
	Hanshin Expressway Co Mr. Takehiro Nishi	Application of ETC data for precise quantified estimation of mischoice of Expressway exit
	Mr. Ryota Horiguchi i-Transport Lab. Co., Ltd	Impact assessment of autonomous vehicles on expressways using microscopic traffic simulation model
	Mr. Masakazu Nakanishi Regional Futures Research Center Co., Ltd	Investigation of Measures to Congestion Occurrence by Speed Control with Variational Theory