



**SEMINAR**

Jointly organized with

Department of Civil and Structural Engineering, The Hong Kong Polytechnic University

**THE FUTURE FOR ROUTE GUIDANCE AND JOURNEY PLANNERS**

by

**Prof. Michael G.H. Bell**

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**Abstract:**

Efficient transport systems are a necessary but not a sufficient condition for efficient travel. Equally important is the ability to accurately plan and execute a trip, as this determines the efficiency with which transport systems can be used, either by people or by freight. Recently vehicle navigation systems, particularly portable navigation devices, have achieved great popularity by offering drivers guidance at a reasonable price, even though the electronic maps and assumed link travel times have often been inaccurate. At the same time, journey planners have become more widespread and available to travellers who can access the internet via their mobile phones. Advances in mobile phones open up the possibility of personal, multi-modal guidance systems that can navigate the traveller across transport systems from origin to destination. In addition, there have been advances in algorithms making guidance more reliable, user friendly and responsive to on-trip events. The construction of hyperpaths allows travellers to take advantage of variations in bus or tram arrival times or unforeseen variations in link travel times. Alternatively, hyperpaths can allow for taste variations by offering the driver the full set of Pareto optimal alternatives. This paper reviews the field and presents an algorithm for generating hyperpaths for journey planners. The paper closes with a vision of the future for personal, multi-modal guidance systems.

**Biography:**

Prof. Michael Bell is Professor of Transport Operations at Imperial College London. Having graduated in 1975 from Cambridge University with a BA in Economics, he obtained an MSc in 1976 and a PhD in 1981, both in the field of transportation and both from Leeds University. Between 1979 and 1982 he worked as a Research Associate at University College London, before moving to the Institut für Verkehrswesen at the Technical University of Karlsruhe as an Alexander von Humboldt post-doctoral Research Fellow. He returned to the UK in 1984 to a New Blood lectureship at the University of Newcastle. In 1992 he became the Deputy Director of the Transport Operations Research Group (TORG), becoming its Director in 1996. He was promoted to a Personal Readership in 1994 and a Personal Chair in 1996. In January 2002, he moved to Imperial College London, and in 2005 he established the Port Operations Research and Technology Centre (PORTeC), of which he is Director. His research and teaching interests span transport network modelling, traffic engineering and control, intelligent transport systems, ports and logistics. An important methodological theme has been decision-making under uncertainty and transport network reliability. Recent projects include robust and adaptive algorithms for navigation in multi-modal networks.

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**Date:** 12 December 2009, Saturday  
**Time :** 3:00 pm – 5:00 pm (3:00 - 3:30 reception)  
**Venue :** Room AG710, The Hong Kong Polytechnic University

\*\*\* ALL INTERESTED ARE WELCOME \*\*\*

**An attendance certificate will be issued to each registered participant.**  
**For further information call Prof. William H.K. Lam at Tel.: 2766-6045**  
**FREE Admission. Please reserve your seat by sending the following reply slip to**  
**Ms. Connie Lam at Tel.: 2766-6070, Fax: 2334-6389 or Email: [cecfylam@polyu.edu.hk](mailto:cecfylam@polyu.edu.hk)**

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**Reply Slip** (Seminar on 12 December 2009: The Future for Route Guidance and Journey Planners)

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