

Workshop 1. Integrating rail and bus based modes (including BRT) into a user-relevant transport system

Chair: [Professor Graham Currie](#)

Rapporteur: [Dr Dario Hidalgo](#)

This workshop focusses on the challenges in finding an appropriate role of rail and bus modes (including Bus Rapid Transit, BRT) and how they can best be integrated together and with other modes like bicycle and car parking/kiss-and-ride, into a user relevant transport system. It focusses on the tensions between public transport modes such as rail vs bus (BRT) but also the benefits to be had by getting them to work better together. The workshop covers three main areas; intermodal integration, and as a contrast to this, intermodal competition between public transport modes. It also has a focus on BRT system development and challenges in realising its potential in contemporary world practice compared to rail.

Some 13 research papers are presented covering 5 groups of topics including:

- A. Perspectives on Intermodal Integration (4 papers)
- B. Perspectives on Intermodal Competition (4 papers)
- C. User and Operational Perspectives on BRT System Performance (2 papers)
- D. BRT Design and Development Challenges (2 papers)
- E. BRT Implementation and Future Pathways (1 paper)

Organised as shown in the Workshop Plan (below).

The major research questions explored and to be resolved by the workshop include:

Intermodal Integration

- What is transit mode integration, how is it best enhanced and what are the challenges in achieving modal integration
- What are best practices in transit mode integration?
- What are the user relevant aspects of:
 - Integration between transit modes
 - Transit mode performance?

Intermodal Competition

- Why does competition between transit modes occur, what is its impact and how can this be best managed to achieve user objectives for transit system performance
- Can appropriate roles of transit modes be defined, what are they, what are the trade-offs to be explored between the relative roles of modes to achieve planning, operator and user objectives for public transport

BRT System Development Challenges

- What are the challenges and opportunities for development of new transit modes such as BRT and how can they best be addressed to improve user focussed and integration outcomes.

Workshop 1. Plan

The presenting author is shown in underlined font. The number in square brackets [0] refers to the number of the electronic paper file.

Monday 14 August		
Workshop session I		A. Perspectives on intermodal integration
13:30	Graham Currie (Chair)	Introduction: Aims, Objectives, Approach, Work Plan
	<u>Geoffrey Clifton</u> and Corinne Mulley	Barriers and facilitators of integration between buses with a higher level of service and rail: an Australian case study [43]
	Sanmay Shelat, Raymond Huisman and <u>Niels van Oort</u>	Understanding the trip and user characteristics of the combined bicycle and transit mode [56]
	Questions and discussion	
15:00	<i>Afternoon tea</i>	
Workshop session II		A. Perspectives on intermodal integration (cont.)
15:30	<u>Nobuhiro Sanko</u> and Chodai Takamiyagi	Preferences for park/kiss and bus rapid transit ride in Okinawa, Japan [138]
	Questions and discussion	
16:50	<i>Short break</i>	
Workshop session III		A. Perspectives on intermodal integration (cont.)
17:00	<u>Todor Stojanovski</u>	Multimodal transportation performance certificates (MTPC) for buildings and neighborhoods – comparing methods for benchmarking the effect of built environment on travel [23]
	Questions and discussion	
	Review session – Intermodal integration	
18:00	<i>Close</i>	
Tuesday 15 August		
Workshop session IV		B. Perspectives on intermodal competition
09:00	<u>Nils Fearnley</u> , Graham Currie, Stefan Flügel, Fredrik A. Gregersen, Marit Killi, Jeremy Toner and Mark Wardman	Competition and substitution between public transport modes [48]
	<u>Barbara T.H. Yena</u> , Wen-Chun Tseng and Corinne Mulley	Inter-modal competition in an urbanized area: heavy rail and busways [35]
	Questions and discussion	
10:30	<i>Morning tea</i>	
Workshop session V		B. Perspectives on intermodal competition (cont.)
11:00	<u>Camila Balbontin</u> , David A. Hensher, Chinh Q. Ho and Corinne Mulley	Cross-cultural contrasts of preferences for Bus Rapid Transit and Light Rail Transit [72]
	<u>David O'Connor</u> and Brian Caulfield	Level of service and the transit neighbourhood - observations from the Greater Dublin Area [90]
	Questions and discussion	
12:30	<i>Lunch</i>	

Workshop session VI		C. User and operational perspectives on BRT performance
13:30	Review session – Intermodal competition	
	<u>Jaime Allen</u> , Juan Carlos Muñoz and Juan De Dios Ortúzar	Modelling perceived service quality in Latin-American BRT-type systems [133]
	Thet Hein Tun, <u>Pablo Guarda</u> , Camila Ramos and Dario Hidalgo	Understanding Bus Rapid Transit (BRT) performance: examining the relationship between speed and BRT design indicators [71]
	Questions and discussion	
15:00	<i>Afternoon tea</i>	
Workshop session VII		D. BRT design and development challenges
15:30	Maria Spandou and <u>Rosário Macário</u>	Institutional design challenges: a review of BRT systems [119]
	<u>Dario Hidalgo</u>	Bus Rapid Transit: End of a love affair in Latin America and South Asia? No, moving to a serious and long lasting relationship [178]
	Questions and discussion	
16:50	<i>Short break</i>	
Workshop session VIII		E. BRT implementation and future pathways
17:00	Cecília L. Sabat, Katarini W.G. Araújo, Maurício O. Andrade and <u>Maria L.A. Maia</u>	The future of BRT: analysis of the use of autonomous vehicles in a metropolitan transport network in Brazil [75]
	Questions and discussion	
	Review session – BRT	
18:00	<i>Close</i>	
Wednesday 16 August		
Workshop session IX		Developing the workshop report
09:00	Developing the workshop report (Part 1)	
10:30	<i>Morning tea</i>	
Workshop session X		Developing the workshop report
11:00	Developing the workshop report (Part 2)	
12:30	<i>Lunch (end of workshop sessions)</i>	