# 13th International Conference on Automated People Movers and Transit Systems 2011

## From People Movers to Fully Automated Urban Mass Transit

**Paris, France 22 – 25 May 2011** 

#### **Editors:**

William H. Leder William J. Sproule

ISBN: 978-1-63439-388-1

#### Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by the American Society of Civil Engineers All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the American Society of Civil Engineers at the address below.

American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191

Phone: (800) 548-2723 Fax: (703) 295-6333

www.asce.org

#### Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA

Phone: 845-758-0400 Fax: 845-758-2634

Email: curran@proceedings.com Web: www.proceedings.com

### **Contents**

#### Airports

MIA Mover—Project Delivery in a Constrained Financial Environment	. 1
Miami International Airport (MIA)—Overcoming Challenges Related to Huge Capital Improvement Programs  Daniel J. McFadden and Juan Carlos Arteaga	, 9
Skylink Modification Mitigates Station Water Intrusion	25
How to Move Passengers in a Comfortable Way?	34
DFW Skylink: Enhancements to Station Quality  David Taliaferro	43
Integrating Systems Integration with Safety Certification	<b>49</b>
PHX Sky Train—Positioned for Success	59
PHX Sky Train: Transit Design for Smart Airport and Community Growth	79
A Cableway People Mover for a Strategic Interchange Node	)4
PHX Sky Train: APM Adaptation for Phoenix	14
BART OAC Project: Moving Forward at Last	26
Integration of Transit Systems at Seattle-Tacoma International Airport	35
Re-Entrant Corner Cracking on Bulb Tees on the Miami Airport MIA  Mover APM System Project	14
The CDG Val Roissy: The On-Going Extension	53
Newark Airport ATS Circulator System Studies	64
Refurbishment of the Inter Terminal Shuttle, Gatwick Airport, UK	74

Dulles International Airport Automated People Mover System: Design and Construction of the Main Terminal and Tier 2 Stations	186
Major Activity Centers	
<b>Downtown People Movers—History and Future in U.S. Cities</b> William J. Sproule and William H. Leder	197
Planning and Procurement of an Urban People Mover System in Doha, West-Bay	208
Kamel-Eddine Mokhtech, Sanjeev Shah, Ghanim Hassan Al-Ibrahim, and Sultan Al-Enazi	200
Simulation Analysis of a PRT System in a University Campus Setting	218
Mandalay Bay People Mover: Safe Operations for 10+ Years	229
New Systems	
<b>Gravity Powered Transport Systems for Rail, Road, Water, and Airport Use</b> Rajaram Bojji	
The Future of High Capacity PRT	250
BeemCar—The Innovative "Plastic" PRT Solution Peter Lovering	263
Concept and Feature of Energy Saving Urban Transportation System "EcoRide"	273
Y. Suda, H. Omote, Y. Kanayama, A. Sekiguchi, K. Nakano, T. Hirasawa, D. Yamaguchi, M. Aki, and Y. Otowa	213
Sustainable "Green" Transportation Systems: Integrating Renewable Energy Technologies into Automated Fixed Guideway Systems Steven M. Castaneda and J. David Mori	283
PRT—Modeling and Dynamic Simulation of Track and Vehicle	294
Considerations for Planning and Implementing FRT and PRT Systems in Carbon Neutral Environments  D. Menichetti and T. van Vuren	307
Analytical Capacity Limits of Personal Rapid Transit Stations	326
PRT Vehicle Architecture and Control in Masdar City	339
Policies, Planning, and Perspectives for APMs	
Strategic Procurement Planning—A P3 Case Study	349

Cityval or the Rubber Tire APM for Our Cities' New Development
Strategic Urban Public Transport Improvement in Japan
Design Considerations for Capacity in PRT Networks
System Improvements
Automation of Line 1: A Real Opportunity for the Parisian Metro
<b>End-of-Life Overhaul of the California Exposition and State Fair Monorail</b>
Pearlridge Monorail: Reinvestment in a Critical Transit Link
The Renovation Requirements for the VAL Manless System in Lille
Measuring the Performance of Automated People Mover Systems
Transportation Policy and Perspective for Large Metropolitan Areas with Fully Automated Metros
Unattended Metro Lines Offer Low Cost Service Adaptation Possibilities: Regular Full Night Public Service Operations; Unforeseen or Planned Public Service Adaptations to Occasional Needs
Reflections on the Development of a Common Incident/Accident Model for Urban Guided Transport in Europe
Osmose Station: Three Urban and Transport Projects
Use of the Independent Safety Assessor in the Early Project Phases
Urban Metro Applications
Automation of High Density Metro Lines: Rome Line A Case Study
Siemens CBTC Solution in Barcelona—The First Driverless Metro in Spain 502 Gérard Yelloz