



10th WORLD CONGRESS ON RAILWAY RESEARCH

25th - 28th Nov 2013 | Sydney Convention and Exhibition Centre, Australia

SHARING KNOWLEDGE TO KEEP AHEAD OF THE CURVE



The WCRR 2013 will see the exchange of best practice between researchers, manufacturers and operators from across the global rail industry.

Be part of this unique international forum and:

- Meet 1000+ of the leading rail industry researchers and executives from across all facets of the industry, including: rollingstock, safety, performance and capacity, and signalling and communications
- Showcase your latest products in front of this unique gathering and gain real time feedback on the future direction of the industry
- Raise your profile and increase your brand value in the global rail sector
- Great networking opportunities with the rail industry's leaders and leading researchers

To find out how we can tailor-make the sponsorship or exhibition packages for your organisation, please contact

Deborah Bocoock on:

Tel: +61 (0)2 9080 4348 or

Email:

deborah.bocoock@informa.com.au

www.wcrr2013.org

12:00 Pre-event registration – desk opens at SCEC

15:30 Briefing for all WCRR Session Chairs

16:00 Pre-event registration desk closes

16:45 Boat transfer from SCEC Darling Harbour to WCRR Official Welcome Reception

Please note you **MUST** be registered and have your delegate badge to attend the Welcome Reception, please allow time to collect it from the registration desk

17:30 WCRR Official Welcome Reception at Taronga Zoo

19:30 Close of WCRR Official Welcome Reception

19:45 Return boat transfer to Darling Harbour departs

WCRR conference agenda listings commence on the next page

WORLD CONGRESS ON RAILWAY RESEARCH 2013 OFFICIAL WELCOME RECEPTION



Image from Tourism NSW Courtesy of DSRD

Harbour View Ballroom at the Taronga Zoo Function Centre

24th November 2013 | 5.30pm – 7.30pm

Dress Code: Smart casual

Enjoy an incredible welcome to Sydney at the Official Welcome Reception. The Taronga Zoo Function Centre affords spectacular views across the harbour, and the function will serve as a fantastic introduction to the Congress, your fellow delegates, and some of Australia's unique wildlife!

Join delegates and partners for drinks and canapés, enjoy a traditional welcome to country and also experience some of Australia's unique wild life at close quarters.

*Return boat transfer from SCEC Darling Harbour to WCRR Official Welcome Reception is provided, please see the program for full details. Please note you **MUST** be registered and have your delegate badge to attend the Welcome Reception, please allow time to collect it from the registration desk.*

WORLD CONGRESS ON RAILWAY RESEARCH 2013 GALA DINNER CRUISE



Images courtesy of Capitan Cook Cruises

MV Sydney 2000

26th November 2013 | 6.30pm – 11.00pm

Embarkation at Darling Harbour will begin at 6.30pm for a 7pm departure

Dress Code: Cocktail

Step aboard the Sydney MV 2000 for a night of glamour on the waters of Sydney Harbour. This fantastic dinner cruise will take you around the sights of the harbour as you enjoy a sumptuous three course meal in the company of fellow delegates and partners.

It's a great opportunity to network and make new acquaintances as well as enjoying the very best views of this famous harbour city.

The dinner is separately bookable from the main Congress so if you wish to attend please ensure you select it as an extra when you register. It is included in the partners program, partners not attending the partners program are welcome to register separately. Space is strictly limited so please book early to avoid disappointment.

WORLD CONGRESS ON RAILWAY RESEARCH TECHNICAL FIELD DAY TOUR



Image courtesy of Nomad Tales

29th November 2013 | 7.45am – 6.00pm

Dress Code: Casual

After the conference if you are still in Sydney then join us on the technical field day to examine key elements of the Hunter Valley Coal Chain. Australia is a world leader in Heavy Haul Rail operations and this tour will showcase the ARTC Train Control Centre at Broadmeadow and also the PWCS Coal Loader at Kooragang Island.

The tour will continue on to the spectacular Hunter Valley wine region where lunch will be served at the fantastic Potters Brewery, tastings optional!

The technical field day tour is limited to 100 spaces, please confirm your attendance when booking your delegate pass and inform us immediately if your plans change to ensure everyone who wishes to attend is able to.

PLENARY SESSIONS

8:45 Welcome Briefing
 9:00 **Chairmans Welcome**
 David George, CEO, CRC for Rail Innovation

9:20 **Ministerial Presentation**
 9:40 **WCRR EXECUTIVE PANEL**
The role of Rail Research in shaping rail operations

10:15 Morning tea served within the exhibition

	BAYSIDE AUDITORIUM B	BAYSIDE 102	BAYSIDE 103	BAYSIDE 104
	Rollingstock: Comfort/ride quality/human health	Infrastructure and Electrical: Structures (bridges, tunnels etc)	Infrastructure and Electrical: High Reliability/availability of infrastructure	Performance and Capacity: Increasing Freight Capacity
11.00	Crowded House: Australian and Indian carriage handholds and passenger placement decisions Ms Lily Hirsch, PhD Candidate, Appleton Institute, CQUUniversity/ CRC for Rail Innovation (Australia)*	Evaluation of a Hybrid Composite Beam Span Bridge Under Heavy Axle Load Traffic Mr Stephen Dick, Principal Engineer, Transportation Technology Center, Inc. (US)	Impact of Eddy-Current Brake on High Speed Lines Infrastructure Mrs Julia Plu, Engineer, SNCF (France)	Stepwise infrastructure adjustment for longer freight services Dr Olov Lindfeldt, Technical Director, Vectura Consulting (Sweden)
11.30	Seat Comfort – Dynamic behaviour specification Dr Cedric Gallais, Project Manager, SNCF (France)	Railway bridge dynamics under new Multiple Units on the European network Ms Céline Anicotte, Civil Engineer, SNCF (France)*	A study of interacting modes of track deterioration in heavy haul curves Dr David Rhodes, Technical Director, Pandrol	Conceptualisation of an Innovative Rail Freight Vehicle for Transporting LDHV Cargo in an EU Context Dr Emmanuel Matsika, Research Associate, Newcastle University (UK)
12.00	A Ride Comfort Evaluation Method to Reflect the Effect of High-Frequency Vibration Dr Chizuru Nakagawa, Senior Researcher, Railway Technical Research Institute (Japan)	Research on Dynamic Performances of A Combined Highway and Railway Cable-stayed Bridge with Ballastless Track Mrs Gao Mangmang, Research Professor, China Academy of Railway Sciences (China)	Optimization of track maintenance standards based on vehicle simulation Mr Frederic Coudert, Head of "Vehicle - Track Interaction" Division, SNCF (France)	A Study on Improvement of Loading/Unloading and Shunting System for Freight Train Mr Kim Hag-Seoung, Principal Researcher, Korea Railroad Research Institute (Korea)
12.30	Lunch served within the exhibition			
	Rollingstock: Innovative Maintenance Practices	Infrastructure and Electrical: Condition Monitoring, inspection, innovation detection technologies	Infrastructure and electrical: Ballast and subgrade	Performance and Capacity: Reducing Locomotive energy use
14.00	Brake Effectiveness Tests using Wayside Temperature Detectors Mr Steve Belpont, Senior Engineer, Transportation Technology Center Inc (US)	Evaluation of train running stability on slab track with vibration exciter Mr Hiroaki Sakamoto, Sub Leader/Structural Engineering Office, West Japan Railway Company (Japan)	Dynamic interaction within the boundary layer between a sleeper and ballasts based on in-situ field measurements Dr Akira Aikawa, Senior Researcher, Railway Technical Research Institute (Japan)	Multi-Parameter Optimisation of Train Control Mr Mitchell McClanahan, Research Engineer, Central Queensland University (Australia)
14.30	Innovative application of Acoustic Bearing Condition Monitoring in High Speed Train Depots Dr Henri Tsukahara, Wheelset Maintenance Manager, SNCF (France)	Railway Vehicle Accident Prevention in Railway Tunnels using Wayside Checking Gates Mr Gianfranco Girardi, Product Line Manager - Rolling Stock Diagnostic Systems, MERMEC Group (Italy)	Multi-unit tamping machine: beyond the linear performance Dr Charles Voivret, Project Manager, SNCF (France)	The Application of Optimization Algorithms in Minimizing the Energy Consumption of Train Mr Xuanyong Dong, Master, Southwest Jiaotong University (China)*
15.00	Paper TBC Speaker TBC	Measuring the deflection of a sequence of sleepers at a transition zone Dr Paul Weston, Research Fellow, University of Birmingham (UK)	A Four-Year Finnish Research Program "Life-Cycle Cost Efficient Track" – Highlights of Substructure, Ballast and Sleeper Research Professor Antti Nurmikolu, Associate Professor, Tampere University of Technology (Finland)	Ecology and energy-saving in the life cycle cost engineering of diesel locomotives Dr Adam Tulecki, Head of Section, Cracow University of Technology
15.30	Afternoon tea served within the exhibition			

* Author indicated they will be under 30 at the time of the conference

	BAYSIDE 105	BAYSIDE GALLERY A	BAYSIDE GALLERY B	BAYSIDE 202 AND 203
	Systems and Information: Vehicle Track interaction (including wheel rail and friction management)	Safety: Railway Level Crossing Safety (including rolling stock lighting and visibility)	Signalling, communications and Operations: Innovations in Train Control Systems	Economics/Policy: Encouraging investment
11.00	Track-Ex: A Comprehensive Track-Damage Management Tool Mr Mark Dembosky, Vehicle Dynamics Expert, Network Rail (UK)	Wireless Control System and Network of Embedded Anti-Collision Devices for Railway Level Crossing Safety Professor Anatoly Levchenkov, Professor, Riga Technical University (Latvia)	Rail odometry enabled by Satellite Navigation - ready for industrialisation Mr Emilio Gonzalez, Senior Technical Manager, Ineco (Spain)	Evidence of wider economic impacts of railway infrastructure investments in Sydney Mr Baojin Wang, Manager, Economic and Financial Evaluations, Transport for NSW (Australia)
11.30	Development and numerical optimization of an innovative adhesion model in the railway field Mr Alessandro Ridolfi, Ph.D. student in Industrial Engineering, University of Florence (Italy)*	Trialling Low-cost Level Crossing Warning Devices in Australia Dr Christian Wullems, Postdoctoral Research Fellow, Cooperative Research Centre for Rail Innovation (Australia)	Model-based testing for the design of a satellite-based train control system with Coloured Petri Nets Mr Hansjoerg Manz, Research Associate, TU Braunschweig - iVA (Germany)*	A study on the Proper Spacing of Railway Stations Mr Ho-Hwan Jang, Research Policy & Planning / Manager, Korea Rail Network Authority (Korea)
12.00	Reducing the Diameter of Freight Vehicle Wheels – The Suitability of Q/D as a Control for Wheel-Rail Contact Stress Mr Julian Stow, Assistant Director, Institute of Railway Research - University of Huddersfield (UK)	Holistic overview of freight train derailments in Europe: causal and impact analysis Mrs Gordana Vasic Franklin, Researcher, NewRail, Newcastle University (UK)	ERTMS over satellite: Italian pilot line Mr Nazzereno Filippini, ERTMS NPM, Rete Ferroviaria Italiana (Italy)	Introduction of A Synthetic Analysis System for Pre-feasibility Studies on Transport Systems Planning in Korea Dr Jinki Eom, Head of Transport Systems Research Team, Korea Railroad Research Institute (Korea)
12.30	Lunch served within the exhibition			
	Systems and Information: Aerodynamics	Safety: Urban Rail safety and security	Signalling, communications and Operations: Train Management Systems (including timetables)	Economics/Policy: Improving the accuracy of demand forecasting
14.00	Quantifying accuracy in the assessment of aerodynamics, running dynamics and pantograph-catenary interaction for vehicle authorisation Dr Riccardo Licciardello, Researcher, SAPIENZA Università di Roma (Italy)	Metro Vehicle Blast Testing: Mitigating the effects of Terrorist Attacks on Metro Vehicles Mr Conor O'Neill, Senior Research Associate, NewRail, Newcastle University (UK)	Rule based decision support for mass transit operations Dr Stefan Wegele, Product Manager, Siemens (Germany)	Better understanding of booking demand for improved forecasting Ms Maguelonne Chandesris, Revenue Optimization, SNCF
14.30	The validation of the use of moving model experiments for the measurement of train aerodynamic parameters in the open air Professor Chris Baker, Director, Birmingham Centre for Railway Research and Education, University of Birmingham (UK)	RIKOV – Risk analysis of terrorist threats to rail-bound public transportation - Development of an integrated planning solution for economic and organizational efficient measures Mr Florian Brauner, Scientific Assistant, Cologne University of Applied Sciences (Germany)*	New Train Run Monitoring system: Getting the most out of an ERTMS level 2 Signaling system Mr Troels Richter, Senior Analyst, Rail Net Denmark	Triple rail freight demand by 2050 in EU27 – realistic, optimistic or farfetched imagination? Dr Dewan Islam, Freight Logistics Academic and Researcher, NewRail, Newcastle University (UK)
15.00	Simulation Analysis and Validation on Aerodynamics of Train Passing through Tunnel on High Speed Railways Ms Li Hongmei, Doctoral candidate, China Academy of Railway Science, Railway Science & Technology Research & Development Center (China)	Development of Bridge Girder Impact Detector Mr Shinya Ohnishi, Chief Clerk, JR West Japan Consultants Company (Japan)	Development of the Transport Planning System for Tokaido Shinkansen Mr Dasuke Okada, Manager, Central Japan Railway Company (Japan)	Paper TBC Speaker TBC
15.30	Afternoon tea served within the exhibition			

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	BAYSIDE AUDITORIUM B	BAYSIDE 102	BAYSIDE 103	BAYSIDE 104
	Rollingstock: Rolling Stock Design – crashworthiness	Infrastructure and Electrical: Structures (bridges, tunnels etc)	Infrastructure and Electrical: Track Components	Performance and Capacity: Maintenance Management Systems
16.00	Multi-body Dynamics Modelling and Simulation Analysis for Australian Rolling Stock Crash worthiness Dr Yan Sun, Senior Research Engineer, Centre for Railway Engineering, Central Queensland University (Australia)	Fast fatigue characterisation of metallic materials from ancient French railway bridges: a comparative study Dr Stephane Sire, Associate Professor, University of Brest (France)	Experimental Modelling of Rail End Lipping in Insulated Joints Mr Philip Beaty, Research and Development Engineer, LBFoster Rail Technologies and The University of Sheffield (UK)*	Towards Rail Grinding Best Practices for Australian Heavy Haul Rail Dr Dhamodharan Raman, Senior Post Doc Research Fellow, Centre for Railway Engineering, Central Queensland University (Australia)
16.30	Train Crash Test Facilities and application Dr Jin Sung Kim, Senior Researcher, Korea Railroad Research Institute (Korea)	Designing out platform legacy issues to optimize mobility in the station environment Mr Vincent Moug, Rail CRC Researcher, Monash University (Australia)	Development and application of a fatigue testing procedure for the underhead region of aluminothermic rail welds Dr Iman Salehi, Senior Research Engineer, Institute of Railway Technology-Monash University (Australia)	A Novel Method of Reconstructing the Railway Track Geometry Using the Particle Filter and the Possibility of the Reconstruction of the Three-Dimensional Track Geometry Professor Akiyoshi Yoshimura, Emeritus Professor, Tokyo University of Technology (Japan)
17.00	Next Generation Train – NGT an innovative vehicle concept for high speed rail Dr Joachim Winter, Project Manager “Next Generation Train - NGT”, German Aerospace Center (Deutsches Zentrum für Luft-und Raumfahrt - DLR) (Germany)	Impact of site effects for earthquake ground motions observed along railway lines in the Tokyo Metropolitan Area, during the 2011 off the Pacific coast of Tohoku Earthquake (Mw 9.0) Dr Seiji Tsuno, Assistant Senior Researcher, Railway Technical Research Institute (Japan)	Stress analysis of inserted rail joints Dr Nirmal Mandal, Senior Lecturer, Centre for Railway Engineering, Central Queensland University	The development of Meridium in the Italian Railway Network Dr Pasquale Petriccione, Maintenance Engineer, Rete Ferroviaria Italiana - Gruppo Ferrovie dello State Italiane (Italy)

	BAYSIDE 105	BAYSIDE GALLERY A	BAYSIDE GALLERY B	BAYSIDE 202 AND 203
	Systems and Information: Pantographs, Catenararies	Safety: Safety Management Systems	Signalling, communications and Operations: Operations and Traffic Management	Environment: A more environmentally friendly railway
16.00	Development of Japanese Measurement System for Arc Detection Mr Takamasa Hayasaka, Assistant Senior Researcher/ Contact Line Structures, Railway Technical Research Institute (Japan)	Design and Test of an Innovative Localization Algorithm for Railway Vehicles based on Odometry and INS Dr Gregorio Vettori, PhD student, University of Florence (Italy)*	Implementation and design of the high-speed train’s running simulation platform based on HLA Mr Xuan Lin, Student, Southwest Jiaotong University (China)	Environmental benefits of Remanufacturing - Railway wheelset bearings Mr Stewart McLellan, Business Development Manager, Railway Service & Aftermarket, SKF (UK)
16.30	Innovative pneumatic active control system for pantograph-catenary interaction Dr Roberto Tieri, Rolling Stock and Energy Technical Assistant, UIC (France)*	Keeping Rail on Track: Organisational Culture and Safety in the Australian Rail Industry Dr Verna Blewitt, Associate Professor, Work Health and Safety, Central Queensland University, Appleton Institute (Australia)	Using timing windows to allow energy-efficient recovery from delays Dr Peter Pudney, Senior Research Fellow, University of South Australia (Australia)	Environmental Protection Supervision during the Railway Construction in China Dr Zhang Jieyu, Associate Professor, China Academy of Railway Sciences (China)
17.00	Control Parameter Optimization of Active Control Pantograph Based on Steepest Descent Method Dr Shigeyuki Kobayashi, Researcher, Railway Technical Research Institute (Japan)*	Study on the security system of China high-speed rail’s information system Professor Yan Zhang, Deputy Director, China Academy of Railway Sciences (China)	Prediction of Passenger Train Delay Using an Adaptive Neuro-Fuzzy Inference System Dr Masoud Yaghini, Faculty Member, Iran University of Science and Technology (Iran)	Contribution of the Railway Edges to the Dynamics of Urban Biodiversity Mr Jean-Pierre Pujols, Landscape Architect, SNCF (France)

PLENARY SESSIONS

8:45 Welcome Briefing
 9:00 **WCRR/AusRail Opening Remarks and Introduction**
 Bryan Nye, CEO, Australasian Railway Association (ARA)

9:20 **State Ministerial Address**
 TBC

9:40 **CEO/ CTO Forum “The importance of R&D in supporting Rail Business”**
 Sir David Higgins, CEO, Network Rail UK
 John Fullerton, CEO, Australian Rail Track Corporation

10:40 Morning tea served within the exhibition

	BAYSIDE AUDITORIUM B	BAYSIDE 102	BAYSIDE 103	BAYSIDE 104
	AusRAIL Combined Plenary	Infrastructure and Electrical: Condition Monitoring, inspection, innovation detection technologies	Infrastructure and Electrical: Switches and special track work	Performance and Capacity: Data Collection and Performance Measurement
11.15	Improving access to urban passenger rail stations in Australia Professor Phil Charles, Professor of Transport, The University of Queensland (Australia)	Remote sensing approaches to assessing railway ground hazards: Applications to Canadian railways for rock slope and sensitive clay slide areas Prof D Jean Hutchinson, Professor and Department Head, Geological Engineering, Queen’s University (Canada)	REPOINT – Redundantly Engineered Points for Enhanced Reliability and Capacity of Railway Track Switching Mr Samuel Bemment, Research Engineer, Loughborough University (UK)*	How we have succeeded in regaining Punctuality in Tokyo Metropolitan Railway Network? Professor Norio Tomii, Department of Computer Science, Chiba Institute of Technology (Japan)
11:45	Energy storage technologies in railway applications : development of methodology for evaluation, comparison and help in the choice of investment Dr Yan Riffonneau, Project Manager, SNCF (France)*	Research on the Micro-electro-mechanical Sensing Technique in Application of Railway Slope Stability Monitoring Mr Cai De-gou, Associate Researcher, Railway Construction Institute of China Academy of Railway Sciences (China)	Innovative Switch and Crossing Designs for Heavy Haul Operations Mr David Davis, Senior Scientist, Transportation Technology Center, Inc (US)	Cutting through the Gordian knot at the heart of Sydney’s rail network Mr Bill Palazzi, Director / Project Manager, PalazziRail (Australia)
12:15	Investigating the application of leading and lagging indicators to the GB rail industry (Measuring Safety Performance) Ms Jan Heavisides, Senior Risk Analyst, RSSB (UK)	Contribution of Terrestrial Laser Scanning for monitoring and inspection of railway infrastructure Mr Pierre Assali, PhD Student, SNCF (France)	Wheel Matching Technology (WMT) for Railway Crossovers Mr Harry Skoblenick, BT Expert LIM & Primove, Bombardier Transportation (Canada)	Precise and accurate train run data: Approximation of actual arrival and departure times Mr Troels Richter, Senior Analyst, Rail Net Denmark
12.45	Lunch served within the exhibition			

	BAYSIDE 105	BAYSIDE GALLERY A	BAYSIDE GALLERY B	BAYSIDE 202 AND 203
	Systems and Information: Electro Magnetic Compatibility (EMC)	Safety: Train Driver Interface Technologies	Signalling, communications and Operations: Design and Maintenance of signalling and communications systems	Environment: Vibration Abatement
11.15	Evaluation of the influence of the railway platform in the currents in the rails: experimental validation Dr Maria Alejandra Mora, EMC Engineer, SNCF (France)	The introduction of Non-Technical Skills into the Competence Management System for Train Drivers: A Case Study with First Great Western Dr Andrew Russell, Managing Director, Rail Training International (UK)	LTE as the Future Railway Communication System: Benefits and Challenges Mr Jaime Calle, Research Engineer, Technical University of Madrid (Spain)	RIVAS project: mitigation measures for ground vibration reduction, from the track maintenance to the propagation path Dr Estelle Bongini, Research Project Manager, SNCF (France)
11:45	EMF issue in Railway systems – Evaluation of Biological Effects and Trends of Regulation in Japan Dr Masateru Ikehata, Senior Researcher, Railway Technical Research Institute (Japan)	Statistical Modeling of Freight Train Derailments at Highway-Rail Grade Crossings Ms Samantha Chadwick, Graduate Research Assistant, University of Illinois at Urbana-Champaign (US)*	Multi-carrier Handover Scheme for Railroad Communications in 4G Wireless Networks Professor Ronny Yongho Kim, Assistant Professor, Korea National University of Transportation (Korea)	Research on the Application Effects of Railway Ground Barrier Mrs Xiaon Gu, Professor, China Academy of Railway Science (China)
12:15	Multiconductor calculus solution for the power supply system and traction return current with experimental validation Mr Hamou Benhabib, EMC Engineer, SNCF (France)	Cease and Resist! Two case studies highlighting resistance to technology in the rail environment Dr Anjum Naweed, Senior Postdoctoral Research Fellow, Central Queensland University (Australia)	Research on application of Ultra-wide band system in Communication Based Train Control system Dr Xianqiong Zhao, Research Associate, China Academy of Railway Sciences	Ground dynamics of high-speed trains crossing soft soils Professor Peter Woodward, Professor of Railway Geotechnical Engineering, Heriot-Watt University (UK)
12.45	Lunch served within the exhibition			

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	BAYSIDE AUDITORIUM B	BAYSIDE 102	BAYSIDE 103	BAYSIDE 104
	Rollingstock: Train control/ onboard diagnosis/IT applications	Infrastructure and Electrical: Structures (bridges, tunnels etc)	Infrastructure and Electrical: Design and maintenance of power supply systems and catenaries	Performance and Capacity: Human Performance in Rail and Rail Workforce development
14:00	A modular monitoring system for onboard vehicle diagnostic Dr Nicola Bosso, Assistant Professor, Politecnico di Torino (Italy)	Mechanisms causing the deterioration of concrete tunnel lining Dr Hiroshi Ueda, Laboratory Head, Railway Technical Research Institute (Japan)	Fatigue crack initiation risk analysis and crack propagation modelling in the catenary contact wire for high speed lines Dr Mac-Lan NGUYEN-TAJAN, Leader of "Structural Mechanics and Dynamics" research group, SNCF (France)	Articulating Train Drivers: A Data Collection and Analysis Toolkit for Eliciting Expertise Dr Anjum Naweed, Senior Postdoctoral Research Fellow, Central Queensland University (Australia)
14:30	Innovative Condition Monitoring for Safety Related Bogie Components Dr Lars Müller, Head of Project Management, Deutsche Bahn Systemtechnik (Germany)	Fatigue Assessment of Old Riveted Railway Bridges in French Railway Network Dr Suzhe Yang, Engineer, SNCF (France)	Power converters for the feeding system of Shinkansen Mr Ken Kunomura, Chief of Section, Central Japan Railway Company (Japan)	Developing leadership performance and capacity in volatile and turbulent times Dr Tom Short, CRC Research Fellow, University of South Australia
15:00	On-board Train Driving Assist Device for Energy Saving Mr Morimasa Hayashida, Assistant Senior Researcher/ Contact Line Structures, Railway Technical Research Institute (Japan)	Topic TBC TBC	Comparative review of the current collection quality parameters between catenary and pantograph by measuring the contact force and arcs simultaneously during New Korean High Speed Train Trial Runs Dr Sam-young Kwon, Principal Researcher, Korea Railroad Research Institute (Korea)	A Human Performance Operational Railway Index to estimate operators' error probability Mr Miltos Kyriakidis, Research Student, Imperial College London (UK)
15:30	Afternoon tea served within the exhibition			
	Rollingstock: Innovative Maintenance Practices	Infrastructure and Electrical: Condition Monitoring, inspection, innovation detection technologies	Infrastructure and electrical: Ballast and subgrade	Performance and Capacity: Reducing emissions, alternate energy sources and management
16:00	Dynamic maintenance strategies of rolling stock door system based on bayesian networks Dr Laurent Bouillaut, Researcher, IFSTTAR	A novel on-train measurement system for early detection of squats and other track defects Dr Zili Li, Associate Professor, Delft University of Technology (Netherlands)	Initial Compression Characteristics of railway embankment after opening to traffic Mr SeongYong Park, Senior Researcher, Hanwha Engineering and Construction (Korea)	Bombardier - New Wayside Energy storage System Mrs Salwa Fouda, Product Manager, Bombardier Transportation (Canada)
16:30	A new wheelset maintenance concept Mr Riccardo Gallo, Engineering and Customer Service Manager, LucchiniRS (Italy)	Track geometry condition monitoring system for non-intrusive measurements on commercial trains based on wireless sensor networks Mrs Oriane Gatin, Project Manager, SNCF Innovation & Research (France)	Artificial ballast as an innovative solution for railway infrastructure Mr Pedro González-Requejo, R+D Director, Fundación Caminos de Hierro (Spain)	Study on Location Setting and Capacity Configuration of Ground-Mounted Super-Capacitor Energy Storage System of Urban Rail Transit Mr Huan Xia, Student, Beijing Jiaotong University*
17:00	The Development and Evaluation of Next Generation Bogie Designs for North American Freight Service Mr Harry Tournay, Senior Scientist, Transportation Technology Center Inc. (US)	Real-time Measurement for the Angle of Steady Arm on High-speed Railways Mr Yan-guo Wang, Project Manager, China Academy of Railway Sciences (China)*	Identification of Ballast Flight Risk Factors and Risk Mitigation Strategies for High-Speed Rail Implementation in the U.S. Mr Francesco Bedini Jacobini, Graduate Research Assistant, University of Illinois at Urbana-Champaign (US)	Benefits of the first Railway Smart Grid in terms of emissions, alternative energy sources and energy efficiency Ms Amelia Alvarez de Sotomayor Gragera, R&D Project Manager, Telvent Energy (Spain)

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	BAYSIDE 105	BAYSIDE GALLERY A	BAYSIDE GALLERY B	BAYSIDE 202 AND 203
	Systems and Information: Aerodynamics	Safety: Urban Rail safety and security	Signalling, communications and Operations: Capacity Management	Environment: Noise Abatement
14:00	Study on under-floor flow of railway vehicle using on-track tests with Laser Doppler Velocimetry and a moving model tests with comb stagnation pressure tube Dr Atsushi Ido, Senior Researcher, Railway Technical Research Institute (Japan)	Terror Threats In Public Transportation - A Study About Customers' Perception Of Security And Uncertainties Mr Florian Brauner, Scientific Assistant, Cologne University of Applied Sciences (Germany)*	Increasing station and junction capacity with existing infrastructure constraints Dr John Armstrong, Senior Research Fellow, University of Southampton (UK)	A study on the abatement of brake squeal noise Dr Byeong Choon Goo, Researcher, Korea Railroad Research Institute (Korea)
14:30	Comparison between CFD and Wind-Tunnel experiment for slender bodies of aspect-ratio O(1) in the presence/absence of cross-wind Mr Keith Weinman, DLR Göttingen (Germany)	Causal Analysis of Passenger Train Accidents on Freight Rail Corridors Mr Chen-Yu Lin, Graduate Research Assistant, University of Illinois at Urbana-Champaign (US)*	Economic evaluation of timetable strategies with simulation Ms Jennifer Warg, PhD-student, KTH Stockholm (Sweden)*	Impacts of gauge face lubrication and top-of-rail friction modification on curve noise Dr Jiandong Jiang, Noise Specialist, Transport for NSW (Australia)
15:00	The underfloor flow of a generic high-speed train model measured with high-speed PIV in a water towing tank Mr Mattias Jönsson, Research Associate, German Aerospace Center (Germany)	Socio-Technical Analysis of Technology to Improve Track Worker Safety Mr Mitchell Mcclanachan, Research Engineer, Central Queensland University (Australia)	UIC Leaflet 406 - Capacity, New Release 2012 Mr Hans-Peter Huber, Senior Infrastructure Engineer, OeBB Infrastruktur (Austria)	Global pass-by noise of high-speed train running onto slab track and ballasted track Dr Franck Poisson, Deputy Manager, SNCF (France)
15:30	Afternoon tea served within the exhibition			
	Systems and Information: Vehicle Track Interaction (including wheel rail and friction management)	Safety: Safety Management Systems	Economics/Policy: The business trends and drivers for investing in urban and intercity Rail (including external factors)	Environment: Assessing and responding to changing patterns in extreme weather events or natural disasters
16:00	Development and Application of the Simulation of Dynamic Interaction between the Multiple Vehicles Connected High-Speed Train and the Long-Distance Railway Track Mr Yoshiyuki Kawasaki, Chief Research Engineer, Central Japan Railway Company (Japan)	A Proposal of Quantitative Criteria for the Soundness of Boulder-type Rockfall on Slope along the Railway Mr Takahiro Fukata, Manager, West Japan Railway Company (Japan)	The Role of Regional Rail in a Transport System to Limit the Impact of Global Warming Mr Gerard Drew, Research Coordinator, Beyond Zero Emissions (Australia)*	The Effects of Weather on Transit Passengers' Travel Patterns Using Smart Card Data Dr Kwang Sub Lee, Senior Researcher, Korea Railroad Research Institute (Korea)
16:30	Maintenance and Management of High-Speed Railway Track Considering Vehicle/Track Interaction Dr Masahiro Miwa, Senior Research Engineer, Central Japan Railway Company (Japan)	Integrated Risk Management Framework for Improving the Transportation Safety of Hazardous Materials Transportation by Rail Mr Xiang Liu, Graduate Research Assistant, University of Illinois at Urbana-Champaign (US)*	Selection of the optimum exploitation scenario for an interurban railway corridor by the help of mathematical models Professor Christos Pyrgidis, Professor in Railways, Aristotle University of Thessaloniki (Greece)	A method of safety evaluation for a train under strong wind condition Mr Keiji Araki, Senior Researcher, Railway Technical Research Institute (Japan)
17:00	Numerical investigation on the influence of a lateral component of a coupler force and track lateral defects on the wagon dynamics under different wind conditions Dr Maksym Spiryagin, Research Fellow, Central Queensland University, Centre for Railway Engineering (Australia)	Decision optimisation of railway facilities involving safety risks Mr Gamar Mahboob, PhD student, Technische Universität Dresden (Germany)	Liberalization of European passenger rail transportation: Competitive business strategies in the long-distance market Mr Tobias Schmidt, Master Student, Berlin School of Economics and Law (Germany)*	Natural hazards management integrated within the railway system Dr Nicolas Pollet, Safety and Maintenance Expert, SNCF (France)

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NOTE

1 The WCRR Opening session and plenary will be combined with Australia's largest Rail Conference (AusRail). AusRail attracts well over 1,000 people. The session papers in Venue A from 10:45 until 12:15 will be delivered to a combined Ausrail and WCRR audience

PLENARY SESSIONS

9:00 **Opening Remarks and Introduction**
 Bryan Nye, CEO, Australasian Railway Association (ARA)

9:15 **Rail Suppliers CEO Forum**
 Ross Spicer, Chief Executive Officer, Downer Rail
 Alan Beacham, Executive General Manager Rail, UGL
 Iñaki Mendizabal, Area Director, CAF

Bernard Joyce, Managing Director, Alstom Transport
 Lyle Jackson, Chairman, Ansaldo STS Australia

10:05 Morning tea served within the exhibition

	BAYSIDE AUDITORIUM B	BAYSIDE 102	BAYSIDE 103	BAYSIDE 104
	Rollingstock: Rolling Stock Design - Structures, Traction Components	Infrastructure and Electrical: Innovative Maintenance practices	Infrastructure and Electrical: Track Components	Performance and Capacity: Energy Systems
10:45	Development of high performance wheel mounted brake disc Dr Seiji Kanamori, Research Engineer, Central Japan Railway Company (Japan)	3D X-FEM crack propagation under rolling contact fatigue accounting for actual residual stresses in the rail Mr Benoit Trollé, PhD Student, SNCF / LAMCOS (France)*	Finite Element Models of Prestressed Concrete Sleepers and Fastening Systems in North America Dr Moochul Shin, Post-doctoral Research Associate, University of Illinois at Urbana-Champaign (US)	Peak Demand Reduction Control for Railway Power Supply System Mr Tsutomu Miyauchi, Senior Researcher, Hitachi Research Laboratory (Japan)
11:15	Development of a Pneumatic Tilting Damper Device Mr Yuske Yamanaga, Assistant Senior Resercher, Railway Technical Research Institute (Japan)	Demand-based Track Maintenance and Rehabilitation Design using Integrated Analysis of Track Geometry, GPR and Laser Scanner Data Mr Mika Silvast, Office Manager, Roadscanners Oy	Research on the Environmental Adaptability of Different Types of Ballastless Track Structures Professor Ji-jun Wang, Professor, China Academy of Railway Sciences (China)	Smart Energy Nodes to Provide Management Capability to the Railway Electrical Grids and an Increase their Efficiency Mr Oliver Martinez, R&D Manager, WinInertia (Spain)
11:45	Research of Converter Design Technology Ms Hong Li, Project Manager, China Academy of Railway Sciences (China)	Track maintenance for higher speed operation of Shinkansen by using "New Ride Quality Management System" Mr Keita Kataoka, Staff/Track Maintenance, East Japan Railway Company (Japan)	The investigation for occurrence situation and growing mechanism of "High rail corrugation" Mr Hirofumi Tanaka, Assistant Senior Researcher, Railway Technical Research Institute (Japan)	Protecting the track circuit detection layers by automatic tracing of faulty trains producing interference currents Mr Rene Koopal, EMC consultant, ProRail (Netherlands)
12:15	Lunch served within the exhibition			
	Rollingstock: Train Dynamics Management	Infrastructure and Electrical: Condition Monitoring, inspection, innovation detection technologies	Infrastructure and Electrical: High Reliability/availability of infrastructure	Performance and Capacity: Data Collection and Performance Measurement
14:00	Development of a test stand for magnetically levitated vehicle dynamics evaluation Dr Michael Hendry, Assistant Professor, Canadian Rail Research Laboratory - University of Alberta (Canada) Mr Shuichiro Ota, Assistant Manager, Central Japan Railway Company / Sophia University (Japan)	Safe train operations over a moving landslide Dr Michael Hendry, Assistant Professor, Canadian Rail Research Laboratory - University of Alberta (Canada)	Vision-based measurement system for contact force of pantograph in High-Speed TRAIN Dr Makoto Niwakawa, Senior Engineer, Meidensha Corp (Japan)	Network effects of infrastructure measures in integral fixed-interval timetables Mr Patrick Frank, Research Assistant, ETH Zürich - Institute for Transport Planning and Systems (Switzerland)*
14.30	Study on the dynamic evaluation method of lateral running stability of high speed railway vehicle Ms Lixia Sun, Doctoral Candidate, China Academy of Railway Science (China)	DETEC Monitoring System Mr David Perez Martin, Track Technology Engineer, INECO (Spain)*	Railway transitional zones: the challenges of very high speeds Dr Sofia Costa D'Aguar, Project Manager, SNCF (France)	Railway infrastructure asset and condition data collection, data usage and deterioration modelling for maintenance performance measurement Mr Pietro Pace, Senior Consultant, MERMEC Group (Italy)
15.00	Development of Electro Hydraulic Steering Actuator Equipped with Fail-safe Function Mr Soichiro Watanabe, Researcher, Kyushu Railway Company (Japan)	Development of non-destructive inspection method for concrete elements in tunnel linings using remote laser sensing Mr Norikazu Misaki, Chief Researcher, West Japan Railway Company (Japan)	Methodology to estimate lighting risk for Railway Signalling Systems Mr Yuto Ono, Researcher, Railway Technical Research Institute (Japan)*	A Strategic Approach to Reliability Improvement: Doubling Capacity through Reliability Modelling on the GB Mainline Mr Guy Woodroffe, Head of Technical Strategy, RSSB (UK)

* Author indicated they will be under 30 at the time of the conference

	BAYSIDE 105	BAYSIDE GALLERY A	BAYSIDE GALLERY B	BAYSIDE 202 AND 203
	Systems and Information: Interoperability	Signalling, communications and Operations: Innovations in Train Control Systems	Economics/Policy: Infrastructure financing, pricing, ownership and public private investment	Systems and Information: Alternative train system concepts (lightweight, innovative loading systems, alternative fuel storage systems etc)
10:45	Low frequency instability of electrical railways networks Mr Eric Guillaume, Reserach Engineer, SNCF (France)	Testing and certification of ETCS on High-Speed Trains Mr Jerry Borger, Project Manager, Lloyd's Register Rail Europe B.V.	Implications of proposed road pricing on the public transport sector in Australia Dr Suman Sen, Research fellow, Southern Cross University (Australia)	Urban Maglev at Incheon International Airport Dr Doh Park, Head, Korea Institute of Machinery and Materials (Korea)
11:15	Innovative platform for interoperability of multimedia applications on board trains paves the way for better services and new market perspectives Mr Paolo Umiliacchi, CEO, CNC Centro Nuova Comunicazione (Italy)	ERTMS: SNCF experience and performance in France and in Europe (Thalys, TGV Dasye, Euroduplex): Tools and methods developed by the Rolling Stock Engineering Centre at SNCF (CIM) Mr Diego Herrero Murillas, Rolling Stock ERTMS specialist, SNCF (France)	Cost-driven infrastructure access charges Dr Stefan Marschnig, Assistant Professor, Graz University of Technology (Austria)	A Study on Vehicle Motion Characteristics of a Superconducting Maglev Train Set With Model Experiments Dr Erimitsu Suzuki, Senior Research Engineer, Railway Technical Research Institute (Japan)
11:45	Interoperability on Metro Systems Mr Ajai Menon, PhD Student, University of Birmingham (UK)	Optimizing Headway with ETCS and ATO Mr David Morton, Senior Specialist for ETCS, Siemens (Germany)	EU Railway Infrastructure Tariff Systems: 2005-2012 Trends and Benchmarking Mr Aleksandr Prodan, Researcher in Railways, PhD Candidate, Technical University of Lisbon (Portugal)*	Investigation of Hybrid Locomotive Options for Mixed Freight and Inter-Modal Trains Professor Colin Cole, Director - Centre for Railway Engineering, Central Queensland University (Australia)
12:15	Lunch served within the exhibition			
	Systems and Information: Aerodynamics	Performance and Capacity: Materials and Products (wheel steels, rail steels, joints, switches & Crossings, sleepers etc)	Economics/Policy: Encouraging investment	Environment: Innovations to promote carbon abatement
14.00	Novel technique to reduce the aerodynamic drag of high speed trains by using SD plasma actuator Dr Hyung-Woo Lee, Senior Researcher, Korea Railroad Research Institute (Korea)	In situ performance of a complex urban turnout grillage system with fibre-reinforced foamed urethane (FFU) bearers Dr Sakdirat Kaewunruen, Technical Specialist, RailCorp (Australia)	Optimising design speed for new high-speed lines Dr Oskar Fröidh, Researcher, KTH Railway Group (Sweden)	Overall Efficiency and Carbon Emissions of Electric, Diesel, and Hydrogen Traction Dr Arnold Miller, President, Vehicle Projects Inc (US)
14.30	Validation of a potential flow model for the prediction of the aerodynamic loads on track side objects Ms Sabrina Rutschmann, PhD Student, German Aerospace Center (DLR) (Germany)*	Evaluation of improved brake rigging designs to prevent asymmetric wheel flange wear Mr Scott Cummings, Principal Investigator, Transportation Technology Center, Inc. (US)	A Study on Impact of High Speed Rail in Thailand Mr Kenji Shimizu, Deputy Director, Japan International Transport Institute (Japan)	Session TBC Speaker TBC
15.00	Experimental study of the pressure waves inside a railway tunnel during a passage of a high-speed train model Ms Daniela Heine, PhD-Student, German Aerospace Center (Germany)*	Evolution of manganese crossing: innovative high performance steel for crossing Dr Marc Antoni, Head of Technological Innovation Department, SNCF (France)	High Speed Rail as a Case Study For a Superior Infrastructure Appraisal Process Mr Gerard Drew, Research Coordinator, Beyond Zero Emissions (Australia)*	Session TBC Speaker TBC

NB This agenda is compiled with the details of the lead author listed at the time of submission, details are author entered

15.15 **Presentation of WCRR prizes**

15.30 **WCRR summary**

15.45 **WCRR handover ceremony and closing remarks**

16.00 **WCRR close**