

PROVISIONAL PROGRAM

CORE2021

CONFERENCE ON RAILWAY EXCELLENCE

Collaborating to Master Complexity **RTSA**

21-23 JUNE 2021 | PERTH AUSTRALIA

Live

Virtual

On Demand

Monday 21 June 2021

07:00 - 14:00	Exhibition Build
14:00 - 17:00	Exhibitor Move In
14:00 - 18:00	Registration Desk Open
17:30 - 19:00	Welcome Reception, CORE 2021 Exhibition

Tuesday 22 June 2021

07:00 - 18:00	Registration Desk Open
07:15 - 08:00	Presenter and Session Chair Breakfast , Compulsory for all chairs and presenters for the day
07:00 - 19:00	Exhibition Open
08:15 - 09:50	PLENARY SESSION
08:15 - 08:35	Welcome to Country
08:35 - 08:40	Welcome: Master of Ceremonies
08:40 - 08:50	RTSA Welcome: Roy Unny, RTSA Executive Chair
08:50 - 09:00	Official Opening: Graham Holden, Conference Organising Committee Chair
09:00 - 09:15	Ministerial Address: WA State Minister for Transport
09:15 - 09:50	Keynote Address: Anne O'Neil, P.E., CSEP, Systems Engineering Catalyst and Industry Advisor, Anne O'Neil Consultants
09:50 - 10:25	Morning Tea

10:30 - 12:35 CONCURRENT SESSIONS

	1A Track Maintenance and Upgrades	1B Rolling Stock; Vehicle Design Manufacture and Maintenance	1C Signals and Train Control Systems	1D Operating Safety and Human Factors
10:30	Automating an \$70m/Year Track Renewals Program Lachlan Prescott, Aurizon Network, QLD, Australia	Collaborative Approach to Bringing Railcar Manufacturing to Western Australia Garry Taylor, Public Transport Authority, WA, Australia	Level Crossing Performance Modelling Using Timed Petri Nets Steven Gibson, RGB Assurance, WA, Australia	Early Human Factors Analysis – A Risk-Based Approach for Understanding What Should Be Done and When Andrew Sutherland, HF Integration Pty Ltd, WA, Australia
11:00	Inertial Standards Development for Track Maintenance Colin Cole, Central Queensland University, QLD, Australia	Does Demonstration of Design Compliance Also Demonstrate Engineering Due Diligence? Alexander Bidanov, SNC Lavalin Rail & Transit, NSW, Australia	Sydney Automatic Train Protection Program – Technology Integration in a Brownfield Moving Baseline Oliver Lake, Sydney Trains, NSW, Australia	Development of a Modelling Approach to Integrate the Human Factors Aspects Into Cybersecurity and Safety Assessments Grace Kennedy, University of Wollongong, SA, Australia
11:30	A Reappraisal of Head Wear Limits for Heat Treated Rails Under Heavy Haul Conditions Iman Salehi, Institute of Railway Technology VIC, Australia	Potential to Adopt Condition-Based Maintenance to Optimise Obsolescence Management for Rolling Stock in Western Australia Adriane Ho, Aurecon Australasia Pty Ltd, WA, Australia	The Potential Benefits of Advanced Train Management System (ATMS) Ian Fox, Australian Rail Track Corporation, SA, Australia Gary Evans, Australian Rail Track Corporation, SA, Australia	Sleep Apnoea: An Under Diagnosed Threat to Railway Safety James Michel, Marsh Rail Practice, Marsh and McLennan, DC, United States

	1A Track Maintenance	1B Rolling Stock Vehicle Design and Manufacture	1C Signals and Train Control Systems	1D Operating Safety and Human Factors
12:00	Mainline Track Upgrades: Auckland – Wellington and Sydney – Melbourne Philip Laird, University of Wollongong	Implementing New Wheel and Rail Profiles Using Digital Data on the Central Queensland Coal Network William Schuh, Aurizon, QLD, Australia	Proximity Reminders on the Country Regional Network, Adding Another Layer of Safety Tony Crosby, 4tel, NSW, Australia	Signal Colour-Misconceptions from Prescription Lenses Worn by Train Drivers Gregoire Larue, ACRI, QLD, Australia
12:30 - 13:30	Lunch served in the Exhibition Hall			
13:35 - 15:35 CONCURRENT SESSIONS				
	2A Track Formation and Geotechnical	2B Wheel/Rail Interaction	2C Safety, Prevention and Investigation	2D Transit Planning and Urban Design
13:35	Inland Rail – Earthworks Value Engineering Mark Drechsler, Smec Australia Pty Ltd, SA, Australia	RCF and Wear Prediction to Develop a Rail Maintenance Regime for New Metro Train Infrastructure Robert Schweiger, John Holland, SA, Australia	Visual Intelligence and Connected Event and Video Recorder to Enhance Train Operations and Safety J. David Semple, Wi-tronix, NSW, Australia Roger Martinez, Wi-tronix, NSW, Australia	Total Rail: An Integrated Approach TC Chew, Arup, London, UK
14:05	Design of Rail Formation and Subgrade – Matching Testing to Design Parameters Andy Doe, ARTC, QLD, Australia	Rail Profile Grinding Strategy for the ARTC Hunter Valley Heavy Haul Network Darrien Welsby, Institute of Railway Technology, VIC, Australia	Delivering a Safe Railway: Safety Case Approach Applied to Passenger Operations on Sydney Metro Northwest Andrew Ward, John Holland, NSW, Australia	Preparation of the Pedestrian Management Plans for Epping to Chatswood Rail Line Station Link Programme Pietro Crovato, Jacobs, NSW, Australia
14:35	Track Support Floating Soil Beam on Helical Piles - Canadian National Railway Bala Subdivision Edward Wu, CN, Ontario, Canada Mario Ruel, CN, Ontario, Canada	Parallel Computing Rail Heat Transfer Simulation for Track Measured Temperature Data Chris Bosomworth, Central Queensland University, QLD, Australia	Kaikoura Earthquake – Use of Remote Monitoring and Operational Controls for Reopening the Main North Line Daniel Headifen, KiwiRail, Wellington, New Zealand	Rail Network Long-Term Planning: Comparing Challenges and Practices in Switzerland and Australia Julien Morizet, WSP Australia Pty Limited, VIC, Australia
15:05	Improved Performance of Mechanically Stabilised Capping/ Structural Fill Layers Under Cyclic Loading Rajesh Bhavsar, Geofabrics Australasia Pty Ltd, VIC, Australia	Managing the Wheel Rail Interface – the Benefit of Comprehensive Wheel/Rail Study at the Project Phase Harry De Lange, Roy Hill, WA, Australia	TBC	Disrupt Disruption: A Data Driven Approach to Optimise Bus Planning During Rail Disruptions Alan Trestour, Systra, NSW, Australia
15:35 - 16:00	Afternoon Tea served in the Exhibition Hall			

16:05 - 17:35 CONCURRENT SESSIONS				
	3A Track; Turnouts and Joints <i>Session sponsored by ARTC</i>	3B Rolling Stock; Brake and Bogie Systems	3C Environmental Issues and Energy Efficiency	3D Structures; Bridges and Stations
16:05	Rail Contact Surface Inclination in Turnouts – A Review of Current Practice Matvey Klopov, ARTC	Optimum Brake Control Via Multi-Mode Shifting of Slip Control Zone Sundar Shrestha, Centre for Railway Engineering, QLD, Australia	Are Hybrids Just Hype? Frank Szanto, Downer Rail, NSW, Australia	Kiwirail Long-Term Rail Bridge Renewal Management Through a Structures Health Prioritisation Process Rudolph Kotze, Kiwirail, New Zealand, New Zealand
16:35	Expanding Our Understanding of the Not So Insignificant Rail Expansion Joint Andrew Matthews, GHD Pty Ltd, Vic, Australia	From Friction Measurement to Track Damage Indexes in High Adhesion Locomotive Studies Maksym Spiryagin, Central Queensland University, QLD, Australia	Lessons Learned in How to Model Strategic Noise Impacts From Entire Freight Rail Networks Cost Effectively Luke Zoontjens, SLR Consulting Australia, WA, Australia	Rail Structure Interaction – An Essential Methodology for Improving Bridge Safety and Passenger Comfort David Crump, GHD Ltd, VIC, Australia
17:05	TBC	Why Change AS7524 Couplers and Drawgear? Scott Simson, Bradken, NSW, Australia	Rapid Charging Concept for Hybrid Heavy Haul Locomotive Consists Shah Ahmad, Centre for Railway Engineering, CQ University, QLD, Australia	Underground Station Design Development - A Case Study - Cross River Rail Joseph Donohue, Arup
17:40 - 19:00 Networking Session				

Wednesday 23 June 2021

07:00 - 18:00	Registration Desk Open			
07:15 - 08:00	Presenter and Session Chair Breakfast , Compulsory for all chairs and presenters for the day			
07:00 - 19:00	Exhibition Open			
08:30 - 10:00 DAY 2 PLENARY SESSION				
08:30 - 08:35	Welcome Day 2: Master of Ceremonies			
08:35 - 08:50	Young Professional Scholarship Presentations			
08:50 - 09:05	2018 Young Professional Scholarship Winner Presentation			
09:05 - 09:35	Keynote Address: Dr Neil Preston, Director and Founder, Psy0pus			
09:35 - 10:00	Keynote Address: Speaker to be confirmed			
10:00 - 10:30	Morning Tea			
10:35 - 12:35 CONCURRENT SESSIONS				
	4A Track Conditioning Monitoring and Data Analytics	4B Rolling Stock Vehicle Dynamics	4C Overhead Traction Systems	4D Communications Systems
10:35	Broken Rail Detection – A Reliable and Accurate Onboard Solution Roy Leslie, Siemens Mobility, WA, Australia	Assessing Wagon Instability in Long Trains Using Parallel Co-Simulation Technique Qing Wu, CQUniversity, QLD, Australia	Remote Isolating and Rail Connecting - The Conception of the e Dt and the Feeder Circuit Status Evaluator David Stuart-Smith, Arup, NSW, Australia	Managing Complexity on Digital Systems; A Model-Based Systems Engineering Approach Donovan Roodt, Shoal Group, NSW Australia & Malaeka Nadeem, Transport for NSW, NSW, Australia

	4A Track Conditioning Monitoring and Data Analytics	4B Rolling Stock Vehicle Dynamics	4C Overhead Traction Systems	4D Communications Systems
11:05	Developments in the Rail Profile Quality Index Darrien Welsby, Institute of Railway Technology, VIC, Australia	Rolling Stock and Twist Test Inputs Ian Goldney, SNC-Lavalin, QLD, Australia	New Dynamic DC Fault Level Modelling for Railway Networks Medhat Al Zaman, Middleton Group, VIC, Australia	Mirroring Futures - MCX Vs FRMCS Rodrigo Alvarez, Rail Systems Australia, WA, Australia
11:35	Artificial Intelligence for the Automation of Rail and Corridor Inspections Nicholas Smith, Cordel, NSW Australia	On-Board Wheel Flat Detection for Heavy Haul Wagons Using Ultra-Low Power Sensor Nodes Eseban Bernal, Centre for Railway Engineering, CQUniversity, QLD, Australia	The Operator Pathway to Remote Isolation Michael Briggs, Australian Rail Technology, NSW, Australia	Netflix for Rollingstock – Driver Video on Demand Stephen Endicott, Public Transport Authority, WA, Australia
12:05	Using Augmented Reality to Assist Track Inspectors for Turnout Inspections Siva Naidoo, Institute of Railway Technology, VIC, Australia	Modernisation of Dynamic Load Factors Andrei Khaidurov, Aurizon, QLD, Australia	Development of a Hyrail for 25KV Line Running; A Case Study Chris Shaw, Safeearth	The Internet of Trains (IoT) – A Perspective on Technology in a Modern Railway Yang Phay, Public Transport Authority, WA, Australia

12:35 - 13:30 **Lunch** served in the Exhibition Hall

13:35 - 15:35 CONCURRENT SESSIONS

	5A Track- Rail Welding	5B Track- Rail Maintenance	5C Light Rail	5D Engineering Design Systems and Research
13:35	Key Issues in Managing Field Welding of Rail John Cookson, Institute of Railway Technology, VIC, Australia	Title TBA Alan Elliot, Hird Rail Development Ltd, Doncaster, UK	Passengers - Are They Protected in a Crash? Jademon Kiang, SNC-lavalin Atkins, NSW, Australia	What's Behind the 'Why'? The Importance of Human Centred Infrastructure Design Stuart Allabush, WSP, NSW, Australia
14:05	Thermal Modelling to Optimise the Vertical Alignment of Aluminothermic Welds Cong Qiu, Institute of Railway Technology, VIC, Australia	Advanced Rail-Defect Management with Rail Milling Richard Stock, Linmag, Austria, Austria	Minimising Vehicle to Tram Collisions Mike Ford, Jacobs, VIC, Australia Anna Loughnan, Jacobs, VIC, Australia	Communication of Complex Project Information Using Diagrammatic Tools - Sydney Metro Northwest OTS IC Allen Ho, GHD, NSW, Australia
14:35	Basic Mechanical Properties and Ratcheting Behaviour of Flash Butt Welds in High Strength Steel Rails Hang Su, Monash University, VIC, Australia	Influence of Laser Cladding in Railway Maintenance: A Review Panahsadat Fasihi, Monash University, VIC, Australia	Entering the Wireless World – Using Technology with Light Rail to Shape a Modern City Scott Ney, WSP, NSW, Australia	Managing Ageing Assets for World Class Railway Operators – Experience Sharing CS Chang, Key Direction, Hong Kong

15:05 - 15:30 **Afternoon Tea**

15:30 - 16:30 Closing Session

Keynote Address: Speaker to be confirmed

19:00 - Late **Gala Dinner**, Sponsored by 