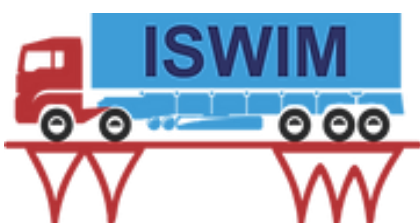


Official Conference Program



Brisbane Convention & Exhibition Centre (BCEC)
Plaza Level

6 to 10 November 2023



FORUM



Technology Convergence 2023
Setting the Wheels In Motion:
Reimagining the Future of Heavy Vehicles, Roads and Freight



Monday 6 November			
Registration	5:00 to 7:00 pm	Plaza Level Concourse (P6)	
Evening Function	7:00 to 9:00 pm	Welcome Reception	Sponsored by V-DAQ
	Exhibition Hall (P6, P7 & P8)		

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The conference program continues on the following pages.

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Tuesday 7 November			
Exhibition	All Day	Exhibition Hall (P6, P7 & P8)	
Conference Start	9:30 am	(P10 & P11)	
Official Opening/ Plenary Session 1	Technology Convergence: Reimagining the Future Loes Aarts – President, International Forum for Heavy Vehicle Transport & Technology (HVTT Forum) Chris Koniditsiotis – President, International Society for Weigh-In-Motion (ISWIM) <i>Moderator: Gavin Hill – Vice President, Australasia and Pacific, HVTT Forum</i>		
Morning Tea	10:30 to 11:00 am	Exhibition Hall (P6, P7 & P8)	
Parallel Session 1 Reimagining heavy vehicles & freight (P10) Chair Mats Harborn	Road freight electrification around the world using electric road systems P. DESHPANDE, C. DE SAXE, D. AINALIS, J. MILES, D. CEBON Zero Emission, flexible vehicle platforms with modular powertrains serving the long-haul Freight Eco System (ZEFES) O. HEGAZY, B. KRAAIJENHAGEN Towards the development of a trucking fleet concept of operations (CONOPS) for managing automated driving system-equipped trucks in mixed fleets R. HANOWSKI, A. KRUM, X. JIN	Parallel Session 1 Technology convergence & the digital revolution (P11) Chair Jonathan Regehr	Automated docking of tractor semitrailer with driver in the loop via 5G teleoperation K.KURAL, N. MUTHAKANA, D. DEVASIA, G. VAN STEKELENBURG, B. HETJES, R. KUSUMAKAR, O.HELD, J. JUZA Individual Vehicle Record (IVR) signature re-identification methods and new truck travel attribute results S. JESSBERGER, S.JENG, L. CHU Designing high speed weigh-in-motion system with local linear regression in Wollonia (Belgium) – towards direct weight enforcement L. WARSCOTTE, J. BOREUX How does WIM data provide value to ITS industry? P. WANG, Z. CHEN
Lunch	12:30 to 1:30 pm	Exhibition Hall (P6, P7 & P8)	
Parallel Session 2 Optimising fuel efficiency & emissions (P10) Chair Dom Kalasih	Truck tire and real-life fuel consumption F. DOMPROBST, J. BEAUPERE Analysis of axle configuration, tire pressure, and tire temperature on fuel consumption of HCT combinations L. CIDER, K. PÅLSSON, E. PETTERSSON, L. LARSSON, T. JOHANSSON, S. JOHANSSON, G. IVEN, S. KÖPPEN, C. REPLINGER Introducing a novel method for measuring rolling resistance and dynamic vertical load on a semi-trailer suspension W. LEVESQUE, A. BÉGIN-DROLET, J. LÉPINE	Parallel Session 2 Advancing the science of road management (P11) Chair Steven Jessberger	Overweight vehicles: Impact on road infrastructure and safety T. BREEMERSCH, I. KNIGHT, S. FONTUL, S. VIEIRA GOMES, B. JACOB Testing of next generation wide base tyres – pavement impacts A. GERMANCHEV, L. BRUZSA, C. LOOSE High-capacity transport in cities and the impact on the roads S. RAHMAN, S. KHARRAZI, S. ERLINGSSON Enhanced synergic identification of prestress force and moving force in prestressed concrete bridges K. JEYAMOHAN, T. CHAN, K. NGUYEN DECRA, D. THAMBIRATNAM
Afternoon Tea	3:00 to 3:30 pm	Exhibition Hall (P6, P7, and P8)	
Parallel Session 3 Measuring mass through technology convergence (1) (P10) Chair Aleš Žnidarič	Using Electronic Braking System (EBS) for Smart OBM R. MICHAUD Utilising Dynamic Excursions of Mass (DEM) from On-Board Mass (OBM) systems for monitoring infrastructure and truck suspension conditions R. SACK Smart OBM in Australia – learnings and insights J. GORDON, G. HILL Determining the traffic load distribution across a large portion of the road network with short-term B-WIM measurements: A case study of the Republic of Serbia M. HAUTPMAN, R. BRANKOVIĆ	Parallel Session 3 Safety through technology convergence (P11) Chair Lena Larsson	Performance-based heavy vehicle driver fatigue management trial D. KALASIH, R. LEHEN, B.PEACOCK Performance analysis of an A-Double in roundabouts using naturalistic driving data A. BEHERA, S. KHARRAZI, E. FRISK Perspectives on the use of Weigh-in-Motion (WIM) for road safety applications in North America L. GUERSON, T. HAICHERT
Evening Function	5:00 to 7:00 pm	(P11)	
Panel session & networking event hosted by National Women in Transport			

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Wednesday 8 November			
Exhibition	All Day	Exhibition Hall (P6, P7 & P8)	
Conference Start	8:30 am	(P10 & P11)	
Plenary Session 2	Measuring Heavy Vehicle Mass: Creating Value By Understanding Different Uses and Users Dr Geoff Allan – Chief Executive, Austroads, Vice President World Road Association (PIARC) Peter Kolesnik – Executive Director, Department of Transport and Main Roads (TMR) Sal Petrocchio OAM – Chief Executive Officer, National Heavy Vehicle Regulator (NHVR) Deborah Walker – Senior Research Engineer, Federal Highway Administration (FHWA) Moderator: Chris Koniditsiotis – President, ISWIM		
Morning Tea	10:30 to 11:00 am	Exhibition Hall (P6, P7 & P8)	
Parallel Session 4 Measuring mass through technology convergence (2) (P10) Chair Andy Lees	WIM placement on road networks: Optimization models and a proposed deployment process L. FRANCESCHI, C. SOBROSA, G. OTTO, H. VAN LOO, W. REPETTE, A. VALENTE Use of WIM sensors and geophones to increase the accuracy of weighing systems G. OTTO, L. FRANCESCHI, B. GEVAERD, A. ALMEIDA, C. SOBROSA Virtual weigh-in-motion: The use of additional datasets to enhance WIM K. LEWIS, C. KARL, R. HEYWOOD, D. WARD, E. DANN	Parallel Session 4 The road to zero emissions (P11) Chair Christopher de Saxe	Strategies for greening cross-border road freight transport, in South Africa N. SOKHETYE, V. TSAKO, S. DYODO Transporting from the South America's lithium triangle: Sustainable challenges in meeting the white gold rush A. EFRÓN, J. GUIVANT, B. DWYER, V. VACAZUR, A. CERÚSICO, O. DIP, G. HUGHES, G. RIMOLDI Decarbonising the UK's heavy goods vehicles: Lessons from the UK for Australia D. AINALIS, C. DE SAXE, J. MILES, D. CEBON
Lunch	12:30 to 1:30 pm	Exhibition Hall (P6, P7 & P8)	
Parallel Session 5 Electrification of heavy vehicles & trailers (P10) Chair Alejandra Efrón	E-Trailer, emission reduction based on electrically propelled trailer J. ABO AISH, J. PAUWELUSSEN, K. KURAL, K. VAN MEELE, M. VAN KLINK, R. KOPPEJAN Benefit analysis of introducing electric propulsion on converter dollies T. GHANDRIZ, F. BRUZELIUS, B. JACOBSON, L. LARSSON Axle design as a key factor for greening road freight transport H. KOPFLOW	Parallel Session 5 WIM developments, standards & requirements (P11) Chair Deborah Walker	Brazilian guide for performance monitoring of HS-WIM system K. SHINOHARA, G. OTTO, E. GARCIA, A. ALMEIDA, V. TANI, W. REPETTE Development of a novel weighing digital sensor for further evolution of WIM technology O. FUČÍK, M. JUHAS, J. FUČÍK Tire width-based screening at a WIM preclearance site D. PRATT, T. HAICHERT
Afternoon Tea	3:00 to 3:30 pm	Exhibition Hall (P6, P7 & P8)	
Parallel Session 6 Latest research into heavy vehicle performance (P10) Chair John de Pont	Characterisation of vibration response spectra of road transport vehicles M. LAMB, V. ROUILLARD Investigation on dynamic loads on couplings of heavy high productivity freight vehicles A. BUCKO, D. SIMMS, A. BUCKERIDGE The ARTSA-i heavy vehicle brake calculator P. HART Modelling of articulated heavy vehicles for computation of accurate safe operating envelope for yaw stability U. ERDINC, M. JONASSON, M. KATI, B. JACOBSON, J. FREDRIKSSON, L. LAINE	Parallel Session 6 Global adoption of intelligent access (P11) Chair Chris Walker	Two decades of intelligent access in its birthplace of Australia – where we've been and where we're going G. HILL, C. KONIDITSIOTIS Results from CEDR-work done around intelligent access T. ASP, L. AARTS Intelligent access pilot for special road transport G. VAN STEKELBURG, N. KNEPPERS, R. KUSUMAKAR, K. KURAL, R. HULKOTI Lessons learned from the pilot intelligent access for special road freight transport in The Netherlands M. OTTO, L. AARTS
ISWIM General Assembly	5:00 to 5:45 pm	(P10)	HVTT Forum Board Meeting (1) 5:00 to 5:45 pm (Concord Board Room) <i>for HVTT Forum Board members only</i>
Evening Function	6:30 to 10:30 pm	(M3 on Mezzanine Level)	Gala Dinner

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Thursday 9 November					
Exhibition	All Day Exhibition Hall (P6, P7 & P8)				
Conference Start	8:30 am (P10 & P11)				
Workshop	National Automated Access System (NAAS) Functionality Requirements Workshop				
Morning Tea	10:00 to 10:30 am Exhibition Hall (P6, P7 & P8)				
End-User Session/ Workshop 1 (P10)	Innovations in Intelligent Telematics and On-board Weighing Technologies Smart OBM - The Australian Weigh for On Road Pressures Dynamic Excursion of Mass - A Newtonian Approach Optimising Vehicle Overload Control: Best practices in Strip Sensor Applications Development of a Novel Weighing Digital Sensor for Evolution of WIM Technology Structural Bridge WIM Diagnostics	V-DAQ AIRTEC TRAMANCO INTERCOMP CAMEA CESTEL	End-User Session/ Workshop 2 (P11)	Application of Innovative Technologies WIM Systems in Poland Ukraine Weigh-In-Motion Network for Automatic Enforcement How will VanJee LiDAR Provide Valuable Data for WIM systems? Innovations in Intelligent Telematics and On-board Weighing Technologies	IRD APM Q-FREE VANJEE V-DAQ
Chair Andy Lees			Chair Hans van Loo		
Lunch	12:30 to 1:30 pm Exhibition Hall (P6, P7 & P8)				
Parallel Session 7 Matching vehicles with roads (P10) Chair Thomas Asp	History and future of EU HDV weights and dimensions policy: Insights in policy preparation T. BREEMERSCH, I. KNIGHT, M. RODRIGUES Heavy Vehicle Access Management System (HVAMS) - Tasmania M. ELISCHER Moving away from black boxes on wheels: The path to better policy information on the impact of freight transport on road assets F. SCHMIDT, O. QUOY, L. AARTS		Parallel Session 7 Using mass technologies to optimise infrastructure (1) (P11) Chair Hans van Loo	Artificial intelligence. Using machine learning to monitor OSOM heavy vehicle traffic on bridges M. BUCKLEY, A. SINHA, K. LEWIS, M. BERENI, T. WANG, S. LYNCH, M. HALDANE Cataloging method and evaluation of pavement structure stability for HS-WIM system installation A. ALMEIDA, G. OTTO, S. SANTILLAN, K. SHINOHARA, A. MOROSSINO, F. MORI, V. TANI, A. VALENTE The temperature dependence of the dynamic amplification factor J. KALIN, A. ŽNIDARIČ, A. ANŽLIN, D. HEKIČ Towards a more practical bridge monitoring system using a novel bridge-WIM for multiple-vehicle events A. MOGHADAM, R. SARLO, M. ALHAMAYDEH	
Afternoon Tea	3:00 to 3:30 pm Exhibition Hall (P6, P7 & P8)				
Parallel Session 8 Developments in performance based standards (P10) Chair Karel Kural	A comparison of the Australian and New Zealand approaches to PBS J. DE PONT Simulations and field testing of super-single tyres for PBS A. BUCKO, D. SIMMS, B. CHUANG Auxiliary braking. A performance based standard proposal S. SAAVEDRA Australian performance based standards: Past, present and future K. HASSALL, L. BRUZSA, A. GIBSON		Parallel Session 8 Using mass technologies to optimise infrastructure (2) (P11) Chair Chris Koniditsiotis	Fusion of WIM and permit data S. STAWSKA, J. CHMIELEWSKI, A. NOWAK Structural analysis using Bridge Weigh-In-Motion (B-WIM) system K. SHINOHARA, E. GARCIA, R. PINTO, P. JUNGES, W. REPETTE, A. VALENTE Model updating of a multi-span highway viaduct with data from bridge weigh-in-motion sensors D. HEKIČ, A. ANŽLIN, A. ŽNIDARIČ, J. KALIN, P. ČEŠAREK Bridge monitoring and data-driven structural asset management R. HEYWOOD, T. PAPE, D. WARD, P. SHAW, A. VOLL, M. HALDANE	
HVTT Forum General Assembly	5:00 to 5:45 pm (P10)				
Evening Function	6:30 to 10:30 pm (The Greek Club, 29 Edmondstone St. South Brisbane)		Social Dinner		Sponsored by

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Friday 10 November			
Exhibition	All Day	Exhibition Hall (P6, P7 & P8)	
ISWIM Board Meeting	7:30 to 8:45 am	(Concord Board Room) <i>for ISWIM Board members only</i>	
Conference Start	9:00 am	(P10 & P11)	
Plenary Session 3	Leveraging Technology Convergence - Where to From Here?	Micheal Caltabiano – Chief Executive Officer, National Transport Research Organisation (NTR0) Gary Mahon – Chief Executive Officer, Queensland Trucking Association (QTA) Anthony McMullan – Chief Executive Officer, Truck Industry Council (TIC) Aleš Žnidarič – President, Forum of European National Highway Research Laboratories (FEHRL) Moderator: Loes Aarts – President, HVTT Forum	
Morning Tea	11:00 to 11:30 am	Exhibition Hall (P6, P7 & P8)	
Parallel Session 9 Road network access & utilisation (P10) Chair Gavin Hill	A review of more than a decade of research and field tests on longer vehicle combinations in Sweden that supported road approval S. KHARRAZI, L. LAINE, L. LARSSON, J. SANDIN, B. JACOBSON, T. ASP, O. BAGDADI High productivity freight vehicles for the physical internet R. THOMPSON Automating route mapping for PBS vehicles M. COLEMAN, S. BUXTON, R. IBRAHIM Comparative analysis of truck volumes from traffic counts and probe-based data: A case study in the Winnipeg Metropolitan Region, Canada C. ZROBEK, G. GRANDE, J. REGEHR, B. MEHRAN	Parallel Session 9 Using WIM for compliance & enforcement (P11) Chair Rish Malhotra	A comparison of axle weight masses from a low-speed weigh-in-motion scale and a static weighbridge scale for the purpose of broadening law enforcement efforts P. BINDA DNIT technological model for direct enforcement on Brazilian federal highways G. OTTO, D. MELO, B. JUNIOR, A. ALMEIDA, W. REPETTE, A. VALENTE Addressing the reliability challenges of High-Speed WIM (HS-WIM) for direct enforcement T. KONIOR, J. IZYDORCZYK, A. RYGULA, L. GUERSON Challenges of applying and improving WIM systems for weight enforcement in Republic of Korea D. LEE, J. LEE, H. KIM, T. KIM, Y. JUNG, J. KIM
Lunch	1:00 to 2:00 pm	Exhibition Hall (P6, P7 & P8)	HVTT Forum Board Meeting (2) 1:00 to 2:00 pm (Concord Board Room) <i>for HVTT Forum Board members only</i>
Parallel Session 10 Evaluating heavy vehicle performance & safety (P10) Chair Les Bruzsa	Feasibility study on the application of modular combination vehicles in China road transport Z. HAO, M. HARBORN, T. XU Improving concrete pump road safety assessment methods and standards M. COLEMAN, B. COLEMAN, J. ALLWRIGHT, J. UPADHYAY An open assessment tool for standardized performance measures of long combination vehicles B. JACOBSON, S. KHARRAZI, N. FRÖJD, T. GHANDRIZ, O. BAGDADI	Parallel Session 10 Optimising freight supply chains (P11) Chair Loes Aarts	Coronavirus and road freight supply chains in Australia – impact and implications S. JONES, J. RIVER-GONZALEZ Farm Gate – a case study in the value of telematics and public policy discourse B. COLEMAN, P. PULVER High-fidelity in-service performance evaluation of heavy goods vehicles in South Africa M. ATKINS, C. DE SAXE, A. KAMDAR, X. NA, L. KHUMALO, D. AINALIS, D. CEBON
Afternoon Tea	3:30 to 4:00 pm	Exhibition Hall (P6, P7 & P8)	
Conference Summary & Closing	4:00 to 5:00 pm	(P10 & P11)	

Online Program and Papers

Tuesday



Wednesday



Thursday



Friday



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