23/03| October 2023

ISWIM NEWSLETTER

In this issue

Message from the ISWIM president

ISWIM Members and Friends,

Welcome to this special edition of the ISWIM newsletter dedicated to the forthcoming Technology Convergence 23 in Brisbane, Australia.

Technology Convergence 2023 is nearly upon us. I am pleased to advise that we have a very strong and relevant program including over 80 papers from across the globe. I can also advise of strong interest locally and internationally. We also have a showcase exhibition at the conference. I would like to thank all sponsors and exhibitors for supporting Technology Convergence 2023.

I would like to thank the efforts of both Boards – ISWIM and HVTT Forum in their cooperation to work in making Technology Convergence 2023 possible.

It is particularly pleasing for me that the conference is being held in Australia. Australian governments and industry have worked over many years to increase the productivity and safety of heavy vehicle operations. The collection and use of mass information has been one key enabler to achieving this and I know this is being showcased at the conference.

I look forward to catching up with friends and colleagues and importantly I look forward to seeing all ISWIM and HVTT Forum members in Brisbane.

This is my last Newsletter in the capcity of ISWIM President. My term will naturally end at Technology Convergence 2023. It has been an honour and pleaseure to assist ISWIM since 2016 as President. I look forward to seing ISWIM grow and prosper.

Chris Koniditsiotis, President of ISWIM

■ Chris Koniditsiotis | ChrisK2.0@bigpond.com

TECHNOLOGY CONVERGENCE 2023

Setting the wheels in motion

Reimagining the future of heavy vehicles, roads and freight.

The joint conference 'Technology Convergence 2023' in Brisbane, Australia being hosted by the ISWIM with HVTT Forum and is approaching fast. With over 80 papers from more than 200 authors across the globe and strong interest locally and internationally, the joint conference is shaping up to be a major event. The conference will run from 6 to 10 November 2023, the program at a glance is shown below, while the full program is available at: www.is-wim.net/events/coming-events/icwim9/topics-program/.

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

Conference Program

TECHNOLOGY CONVERGENCE 2023

Monday 6 November	Tuesday 7 November	Wednesday 8 November	Thursday 9 November	Friday 10 November
	Morning Session (9:30 to 10:30 am)	Morning Session (8:30 to 10:30 am)	Morning Session (8:30 to 10:00 am)	Morning Session (9:00 to 11:00 am)
	Official Opening/Plenary Session 1 Technology Convergence: Reimagining the Future	Plenary Session 2 Measuring Heavy Vehicle Mass: Creating Value By Understanding Different Uses and Users	National Automated Access System (NAAS) Functionality Requirements Workshop	Plenary Session 3 Leveraging Technology Convergence: Where to From Here?
			Morning Tea (10:00 to 10:30 am)	
	Morning Tea (10:30 to 11:00 am)		Late Morning Sessions (10:30 to 12:30 pm)	Morning Tea (11:00 to 11:30 am)
	Late Morning Sessions (11:00 to 12:30 pm)			Late Morning Sessions (11:30 to 1:00 pm)
	Reimagining heavy vehicles & freight / Technology convergence & the digital revolution	Measuring mass through technology convergence (2) / The road to zero emissions	End-user Sessions/ Workshop 1 / End-user Sessions/ Workshop 2	Road network access & utilisation / Using WIM for compliance & enforcement
	Lunch (12:30 to 1:30 pm)			Lunch (1:00 to 2:00 pm)
	Early Afternoon Sessions (1:30 to 3:00 pm)			Afternoon Sessions (2:00 to 3:30 pm)
	Optimising fuel efficiency & emissions / Advancing the science of road management	Electrification of heavy vehicles & trailers / WIM developments, standards & requirements	Global regulatory developments / Using mass technologies to optimise infrastructure (1)	Evaluating heavy vehicle performance & safety / Optimising freight supply chains
	Afternoon Tea (3:00 to 3:30 pm)			Afternoon Tea (3:30 to 4:00 pm)
	Late Afternoon Sessions (3:30 to 5:00 pm)			Conference Summary & Closing (4:00 to 5:00 pm)
Delegate registrations from 5:00 pm	Measuring mass through technology convergence (1) / Safety through technology convergence	Latest research into heavy vehicle performance / Global adoption of intelligent access	Developments in performance based standards / Using mass technologies to optimise infrastructure (2)	
	Evening Functions (after 5:00 pm)			
		ISWIM General Assembly	HVTT Forum General Assembly	
Welcome Reception	Panel session & networking event by National Women in Transport	Gala Dinner	Social Dinner (Aussie BBQ)	

Disclaimer

The projects described, ideas shared, and claims made in this Newsletter do not necessary represent the official view or position of ISWIM.

While care has been taken in the preparation of the content of this Newsletter, ISWIM accepts no responsibility in its use, for any omission, or damage that may be caused and does not endorse any specific product or result presented in the Newsletter.

ISWIM Website

Please visit the official ISWIM website: www.is-wim.**net**. Here you will find information on our society, all Newsletters, past ISWIM Events, the Guide for Users of WIM and links to our all Vendors & Consultants.
New is our online, searchable library with over 300 articles, papers and reports related to Weigh-In-Motion.

The conference is being held at Plaza Level of the Brisbane Convention & Exhibition Centre (BCEC). Further information about the BCEC is available here: www.bcec.com.au. The BCEC is located on the southern side of the Brisbane River in the area known as 'South Bank'. Further information about Brisbane and the South Bank is available here: www.visitbrisbane.com.au.

View of the city of Brisbane.

The theme Technology Convergence '23 – "Setting the wheels in motion – Reimagining the future of heavy vehicles, roads and freight" is relevant and timely. This relevance and timeliness acknowledge the impact of the convergence in technology within the sector in delivering concurrently improved productivity, safety and environmental outcomes. Furthermore, these outcomes are being achieved by bringing the world of heavy vehicles and Weigh-In-Motion together.

Online registration for the conference and ticket purchases are available at: www.icwim.is-wim.net *and* www.techconverge23.org. Early bird full-delegate price will be AU$ 1,650 plus GST (VAT), and will be available until October 22nd 2023. Post this date the delegate price will be AU$ 1,950 plus GST. Single day tickets and additional tickets for the Welcome Reception, Gala Dinner and Aussie BBQ will also be available prior to and during the conference.

A showcase exhibition for manufacturers, users, government agencies and related industries will be held in conjunction with the joint conference. A very limited number of spaces are available, so get in touch by contacting Andy Lees at: andrew.lees@q-free.com. If needed, a formal letter of invitation can be arranged by contacting Gavin Hill on gavinh@tca.gov.au.

The latest information on the conference, papers, program, registration for delegates, and possible sponsoring and participating in the exhibition is available on: www.techconverge23.org, www.is-wim.net, www.hvtt.org and www.linkedin.com/groups/13400438/ or contact the Chairs of the Organizing Committee:

- **Chris Koniditsiotis, President of ISWIM** | ChrisK2.0@bigpond.com
- **Gavin Hill, Vice-President HVTT Forum** | GavinH@tca.gov.au

Platinum Sponsors

Q-Free is a leading designer and manufacturer of a complete range of traffic monitoring solutions.
Q-Free has supplied low speed and high speed WIM systems and traffic counter classifiers with real time event monitoring applications all around the world for 20 years.
Q-Free's HI-TRAC® TMU4 is the flagship instrument and is used to provide dynamic high speed WIM and vehicle classification data with high speed pre-selection used for bridge monitoring, weight enforcement and detailed vehicle by vehicle records.
www.q-free.com

V-DAQ's DRIVE EASY is a simple, plug-and-play road access solution enabling heavy vehicle transport operators to seamlessly manage their data, quickly comply with new regulatory measures, and access value-added opportunities boosting profitability and efficiency.
Get up and running instantly, and without disruptions to your normal business operations. Manage the safety and security of your assets, with complete control and transparency of your entire supply-chain.
www.v-daq.com.au

National Women in Transport Reception

National Women in Transport is proud to be hosting a panel session and networking reception at the upcoming 2023 Technology Convergence Conference in Brisbane. The panel session on leading technology and transformation in the transport sector will feature:

- Carolyn Walsh, Chair, National Transport Commission
- Rahila David, Exc. Director, Centre for Connected and Autonomous Vehicles
- Flora Salim, Professor and Cisco Chair of Digital Transport and AI, UNSW
- Silje Troseth, Vice President APAC & General Manager Australia, Q-Free ASA

This panel will be moderated by Anne Moffat, Chief Operations Officer, Department of Transport and Main Roads.

All of the speakers and moderator are drawn from the National Women in Transport speaker bureau which showcases women leading transport in Australia. This panel will showcase the incredible work that is being done by women in the transport industry around Australia. The panelists will share their insights and experiences transforming the transport system and driving the adoption of new technology.

Drinks and nibbles will be served after the panel at a networking reception on the terrace outside. Attendance for this panel and reception is included in the conference registration. If you are not attending the conference but wish to attend this National Women in Transport event you can register here: https://www.eventbrite.com/e/national-women-in-transport-panel-and-networking-reception-tickets-731476173927?aff=oddtdtcreatorx

■ **Raewyn Fisher** | enquiries@womenintransport.gov.au

Gala Dinner and Aussie BBQ

The official **Gala Dinner** of the conference will be held on the evening of Wednesday 8 November on site at the Brisbane Convention & Exhibition Centre (BCEC). Besides meeting other delegates the Gala Dinner will be an opportunity to celebrate our achievements, thank our sponsors and acknowledge those who are retiring from the boards of ISWIM and the HVTT Forum.

Special Gold Sponsor

Queensland Government

The Queensland **Department of Transport and Main Roads** moves and connects people, places, goods and services safely, efficiently and effectively across Queensland. It plans, manages and delivers Queensland's integrated transport environment to achieve sustainable transport solutions for road, rail, air and sea.

Through their integrated transport planning approach TMR ensures to contribute to people's quality of life, Queensland's economic wellbeing and a sustainable environment.
TMR's objective is a transport system that is accessible and connects customers and communities.
www.tmr.qld.gov.au

ISWIM LinkedIn Group

Besides the new ISWIM website and the periodical Newsletter there is another way of keeping up to date with the latest developments in Weigh-In-Motion; the ISWIM LinkedIn Group.

In this group, researchers, end-users and vendors can find AND post short articles on initiatives, new projects, test result, or other developments related to WIM-technology, applications and data.

The ISWIM LinkedIn Group has currently more than **480** members. If you want to join, please visit:
linkedin.com/groups/13400438

View of Brisbane from the Greek Club.

In addition there will be an Aussie BBQ will be held on the evening of Thursday 9 November at The Greek Club. A short walk from the BCEC, The Greek Club is recognised as one of Queensland's leading venues with sweeping views of Brisbane's city skyline. The Aussie BBQ at The Greek Club will provide an opportunity to socialise and network on the final evening of Technology Convergence 2023.

■ **Gavin Hill, Vice-President HVTT Forum** | GavinH@tca.gov.au

Keynote Speakers at TC '23

Aleš Žnidarič

Aleš is the Director of the Slovenian National Building and Civil Engineering Institute (ZAG) and President of the Forum of European National Highway Research Laboratories (FEHRL), based in Brussels, Belgium. He is an expert in condition and safety assessment of bridges and traffic loading, and a manager of national and international research projects. Aleš is the current Information Officer of ISWIM.

Geoff Allan

Geoff is the Chief Executive of Austroads and the Managing Director of Transport Certification Australia (TCA)and is the Vice President of the World Road Association (PIARC). Geoff is an experienced chief executive, managing director and senior leader, with a record of transformational leadership. He holds a PhD in public sector management.

Peter Kolesnik

Peter is the Executive Director of Safer Roads Infrastructure, Engineering and Technology within the Department of Transport and Main Roads. Peters team is responsible for the delivery of the $1.85b Targeted Road Safety Program in Queensland which includes the piloting of cooperative vehicle technology and ITS solution integration. With a philosophy that no person should be killed or seriously injured on our roads, Peter and his team are dedicated to introducing innovation and best practice to ensure road trauma is reduced on Queensland Roads.

Gold Sponsors - 1

Airtec Corporation is a global leader in the design, development and distribution of digital tyre inflation systems, truck scales and spare parts. For more than 20 years their extensive range of digital tyre inflators have been used every day, by millions of people in different industries around the world to safely manage tyre pressure.
Their innovative range of digital truck scales and mobile applications help transport operators optimize vehicle axle load weights in real-time without relying on weighbridges.
www.airteccorporation.com

CAMEA was founded in 1995 and is a leading provider of WIM technology solutions with a focus on improvement of axle load control management. We specialize in top quality transportation systems within a platform of mutually compatible technologies, providing the user with complex data, protecting the infrastructure, and bringing safer and more efficient traffic. With more than 1,550 traffic lanes monitored worldwide, the WIM systems cover nearly 900 lanes worldwide (more than 200 are used for direct enforcement).
www.cameatechnology.com

CESTEL d.o.o. is a world-leading Bridge Weigh-in-Motion producer. It is a Slovenian company with young and energetic professionals affiliated with scientific organizations and associations. We have participated as a leading partner in numerous successful international projects.
CESTEL's SiWIM® Bridge WIM system is used to weigh vehicles and monitor bridge behaviour. As entirely portable, the SiWIM® system can be installed and configured in just a few hours, without any interfering in or even closing the traffic.
www.cestel.eu

Gary Mahon

Gary is the Chief Executive Officer of the Queensland Trucking Association (QTA) – the peak road transport body in the state of Queensland, Australia. Gary excels at working with government and industry stakeholders to influence change in policy, regulation and reform to support the future viability of a profitable, efficient and safe industry. Prior to joining the QTA, Gary held senior executive positions in the Queensland Government, and he currently holds a number of board positions across government and industry.

Michael Caltabiano

Michael is the Chief Executive Officer of the National Transport Research Organisation (NTRO). He has over 25 years' experience in the transport industry, with previous positions placing him in charge of the Australian Asphalt Pavement Association (AAPA) and as the Director-General of the Queensland Department of Transport and Main Roads (TMR). He has extensive knowledge, not only from an engineer's viewpoint, but from a change management perspective too.

Sal Petroccitto

Sal is the Chief Executive Officer of the National Heavy Vehicle Regulator (NHVR) in Australia. He has an extensive knowledge of heavy vehicle policy, strategy, regulation, and business reform, having held senior leadership roles in transport, freight, ports and logistics, strategic land use and transport planning, business process improvement and innovation across state and local government and the private sector.

Loes Aarts

Loes is the President of the International Forum for Heavy Vehicle Transport & Technology (HVTT Forum). She is also Senior Advisor Freight Transport at Rijkswaterstaat (The National Road Authority within the Ministry of Infrastructure and Water Management of The Netherlands). Loes is jointly responsible for the strategic agenda of road administration on transport and logistics. Her current focus is on the balance between road freight transport (productivity, sustainability) and asset management (infrastructural costs, access policy). She is also involved in debates on weights and dimensions of commercial vehicles, and in-field operational tests with high capacity vehicles and automated and connected transport on public roads.

Gold Sponsors - 2

CROSS Zlín is a Czech based company with almost 30 years of experience in development, delivery, installation and maintenance of road traffic technology worldwide. CROSS covers a wide range of traffic product areas with several unique products for traffic control, Weigh-In-Motion, traffic detection, traffic violation systems, road weather systems and parking. CROSS's OptiWIM is a world first free-flow dynamic weights system which weighs vehicles in full width independently of the instantaneous position of the wheels during crossing. www.cross.cz

Excel Technology is an innovative Intelligent Transport Systems (ITS) company that designs, develops, manufactures, and distributes global solutions for precise road network analysis. Founded in 1989, the company is providing a wide range of ITS solutions; we have products and services represented across the world. Excel Technology's WIM solutions are based the versatile XL-1000 platform allowing for multiple functions including high-accuracy WIM, axle-based classification, presence and incident detection.
www.exceltech.com.au

Intercomp designs and manufactures fixed & portable weighing solutions for static or WIM wheel, axle, and vehicle weighing applications. We rely on 35 plus years of global industry and applications experience to provide our customers superior quality and reliability. Intercomp's WIM products include both in-ground and portable scales and systems. We manufacture scales and sensors that are integrated with customer electronics and software, or complete WIM systems.
www.intercompcompany.com

Tony McMullan

Tony is the Chief Executive Officer of the Truck Industry Council (TIC). TIC is Australia's peak body representing truck manufacturers, importers and major component suppliers, an promotes the community benefits of modern truck technologies, which are greener, safer and essential. Tony will provide Technology Convergence 2023 with an insight into global technological developments, with an Australian perspective.

Chris Koniditsiotis

Chris is the President of ISWIM, and is an advisor and consultant with 38+ years of experience in the broad industry sector of infrastructure, transport and digital transformation. Chris' expertise lies in implementing public policy and private sector initiatives into sustainable operational practices. Chris has a solid technical foundation and a spirit of stakeholder engagement in an increasingly complex public/private sector environment that necessitates integrated and seamless solutions to implementation. Since 2016, Chris has been President of ISWIM.

Deborah Walker

Deborah is a Senior Research Engineer with the Federal Highway Administration (FHWA) specializing in highway research. She manages the traffic data collection and communication activities for the Long-Term Pavement Performance (LTPP) program. She oversees the technical and administrative duties for collecting quality traffic data for nearly 2,000 pavement test sections located throughout North America. She also leads and directs the publication of LTPP outreach material for its State and industry partners. Ms. Walker is the General Secretary of ISWIM and is also a member of the Transportation Research Board (TRB) Highway Traffic Monitoring Committee and CoChair of the TRB WIM Subcommittee.

Axtec at 'Vita Nova Centre' in the UK

The UK's leading axle weighing specialist, Axtec, has installed its Series 5000 Dynamic Axle Weighbridge at Brit European's new 100% carbon neutral operating site in Middlewich – the Vita Nova Centre. Axtec's dynamic weighbridge provides axle and total weights for a six-axle tractor and trailer in 40-seconds to an accuracy of +/- 0.2% - enabling its use for compliance, public and regulatory purposes.

Gold Sponsors - 3

International Road Dynamics Inc. (IRD) is a multi-disciplinary Intelligent Transportation Systems (ITS) company with the expertise to develop integrated technical solutions to solve unique and challenging transportation problems. IRD supplies Weigh-in-Motion (WIM) scale and sensor systems for applications including weight enforcement, weight-based tolling (WIM@TOLL®), traffic data collection, border/port security, and weighing at freight terminals. IRD's scales have been used in commercial vehicle weigh station bypass systems for over 30 years.
www.irdinc.com

VanJee Technology is a world leading Intelligent Transport System (ITS) company from China. VanJee is also a publicly traded company in Shenzhen Stock Exchange. Founded in 1994, VanJee is dedicated to consistently provide best customer service and best ITS technologies.
VanJee has 1400 motivated employees and everyone desires to provide best traffic service all over the world. VanJee has four prominent products: LiDAR, Weigh-In-Motion (WIM), Electronic Toll Collection (ETC) and V2X.
www.vanjee.net

TECHNOLOGY CONVERGENCE 2023

The vehicle is simply driven across the flush mounted platform at a constant speed of up to 2.5 mph before instant weight figures are shown on a large digital display. Vita Nova Centre is Brit European's new distribution and headquarters facility in Middlewich, UK. Designed with two core environmental objectives in mind; it is 100% carbon neutral in its build and operation, and it is completely off grid. The site fulfills a requirement as a 75-vehicle distribution hub and a head office for 50 staff, and comprises several environmentally protective amenities, including ground-breaking vertical axis wind turbines, the wide-spread use of solar power and the capture and filtering of rain-water for truck washing and toilet flushing.

Axtec Dynamic Axle Weighbridge at the Vita Nova Centre in the UK.

Brit European reports the new Axtec weighbridge has already been delivering fast, reliable results, and has ensured its vehicle fleet remains within legal weight limits. Fleet Optimization Manager, Andy Evans, said, "The new Axtec weighbridge has already proved to be an excellent compliance benefit for us. It's very quick, it's very simple and it's very accurate, and I can see it delivering significant efficiencies across the fleet. For further information, please contact:

■ **Alasdair Littlejohn** | salesadmin@axtec.co.uk

CVSA–ISWIM-FHWA WIM Webinar

Over the years the Commercial Vehicle Safety Alliance (CVSA), Federal Highway Administration (FHWA) and ISWIM have held a number of successful events focused on the use of WIM systems for weight enforcement. The next in this line of events will be a Webinar on the use of WIM systems for weight enforcement and traffic safety. The full program of the webinar is available at: *www.iswim.net/events/coming-events/.* The webinar will be held on Thursday November 30th 2023 from 13:00-14:30 (EST). Participation will be free of charge, you just have to register for the Zoom meeting via this link: *https://us02web.zoom.us/webinar/register/WN_eTHi5K9yS1as_pRQrJHdA#/registration*

Silver Sponsors -1

APM PRO is based in Bielsko-Biała, in southern Poland.

We have been providing comprehensive ITS solutions since 1994 in Poland, Europe and several countries around the world. We have been involved in WIM systems since 2010, contributing to improving the safety and comfort of travellers.

We support the implementation of innovative ITS projects from the concept stage, through design, to implementation and maintenance. We work with passion because road safety and traveller comfort are our priorities.
www.apm.pl

TrafficSensors supplies only the highest quality High and Slow Speed WIM systems and Traffic Monitoring equipment from the world's leading manufacturers: Mikros, Intercomp, Kistler, TE Connect, VanJee, and many others to all state road authorities and local government departments around Australia & New Zealand. Our systems utilize different sensor technologies for both permanent and portable short-term applications. We also offer full installation and maintenance service on all items.
www.trafficsensors.com

Tramanco is a family owned and operated company in Brisbane. We have always been involved with the commercial vehicle equipment industry with specialized design and manufacture of products as the electronic weighing systems CHEK-WAY® and KWIK-CHEK®. These systems are software based and report to various GPS monitoring systems including Tramanco's own system called Tran-N-Way®.

If you need consistent weighing solution with repeatable accuracy and then contact Tramanco to discuss how we can partner together.
www.tramanco.com.au

CVSA-ISWIM Symposiumon WIM for Enforcement in 2019

The objectives of the webinar are to provide an introduction to Weigh-In-Motion technology and its application, with special attention for the use of WIM systems for size & weight enforcement. To present the status quo of the collection and use of WIM data in the USA. And finally the recent experiences with the application of WIM for traffic safety. In addition it will provide a possibility for the exchange of experiences between different groups of end users, from weight enforcement, WIM data collection and transport operation. The webinar will be moderated by Mark Mills (CVSA); the program consists of the following speakers and topics:

- Hans van Loo (ISWIM): A brief introduction on the basics of WIM systems, data and their applications for weight enforcement intended for new staff.
- Steven Jessberger (FHWA): An overview of the national US network of WIM systems, the WIM data that is collected and what are the main applications.
- Kendal Jackson (CVSA): Experiences with the use of WIM systems for size & weight enforcement in the US including as a pre-selection/screening tool for road side controls and measurement of load distribution for traffic safety.
- Dawn Harrison & Tanvi Pandya (NYC): An update on the recent installation, certification and application of WIM systems for the direct, automatic weight enforcement in New York City.
- Ben Timerson & Joseph Podolsky (Min-DOT): Applications and experiences with the use of new WIM systems capable of detecting overinflated, underinflated or missing tires and can be used for improved traffic safety.

The webinar will be concluded with a discussion and questions & answers. For more information on the webinar contact:

■ **Hans van Loo** | hans.vanloo.int@gmail.com

Silver Sponsors -2

AustRoads is the association of the Australian and New Zealand transport agencies, representing all levels of government.

We are a not-for-profit, nonpartisan organization. Austroads solves problems for transport agencies in Australia and New Zealand. We focus on making mobility safer and more reliable for all users and our transport infrastructure sustainable and future-proof. We also provide national services that help transport agencies to operate seamlessly across state borders and bring national efficiencies to their operations. www.austroads.com.au

The **National Heavy Vehicle Regulator (NHVR)** is Australia's regulator for heavy vehicles. We were established in 2013 as a statutory authority to administer one set of laws – the Heavy Vehicle National Law (HVNL) – which applies in all Australia's states and territories except the Northern Territory and Western Australia.
Our vision is to have a safe, efficient and productive heavy vehicle industry serving the needs of Australia. We aim to achieve this by working collaboratively with industry, governments and partner agencies. www.nhvr.gov.au

TECHNOLOGY CONVERGENCE 2023

Guide on the calibration of WIM systems

This guide is being developed by ISWIM volunteers to assist WIM contractors and transportation agency personnel involved in field WIM equipment calibration. In addition, road owners responsible for developing WIM programs may find this document useful in establishing their specific requirements for a successful WIM operation.

This document will offer recommendations based on proven best practices and published documentation for con-ducting a successful WIM calibration for in-road and bridge WIM technologies. The purpose of this document is to describe step-by-step procedures to perform an initial or routine calibration of WIM equipment installed for high-speed WIM data collection to support highway monitoring and transportation statistics.

This guide should be used only for systems that are for general traffic monitoring, statistical applications and WIM pre-selection. This guide is NOT aimed at systems used for legal metrology applications such as direct enforcement and does not circumvent any available standard WIM specifications.

All ISWIM Practitioners' Guides are available via the ISWIM website: www.is-wim.net.

■ Debbie Walker | Deborah.Walker@dot.gov

Heavy goods traffic safely under control

Commercial vehicle enforcement with Weigh In Motion by Kistler proves itself in Luxembourg

Luxembourg has opted for Kistler's KiTraffic Plus Weigh In Motion system as it implements new commercial vehicle enforcement to meet European Union requirements. The complete KiTraffic Plus system weighs trucks and delivery vans without interrupting motorway traffic, providing the basis for efficient weight enforcement.

Maintaining and safeguarding roads and bridges and reduce the risk of accidents caused by overloaded vehicles the European Union enacting its new Directive 2015/719 in 2015. It standardizes the permitted maximum weight for each type of commercial vehicle, as well as obligating the member states to implement commercial vehicle enforcement and report the results to Brussels.

The new EU Directive presented Luxembourg with the task of setting up at least one commercial vehicle enforcement station. A market study undertaken by the Administration of the Ministry of Mobility and Public Works in Luxembourg soon made it clear that Weigh In Motion (WIM) by Kistler would be the solution of choice. Automatic weight measurement during travel plus optical vehicle detection and recording ensures efficient preselection of trucks and vans, which are then weighed statically again and checked for any other violations (tires, dimensions, validity of documentation, and more).

Coming Events
(subject to change)

Technology Convergence 2023
(ICWIM9 + HVTT17)
Brisbane, Australia
6-10 November 2023
www.is-wim.net

Gulf Traffic
Dubai, UAE
21-23 November 2023
www.gulftraffic.com

CVSA-FHWA-ISWIM Webinar
Virtual Workshop
30 November 2023 (13:00-14:30 EST)
www.cvsa.org

Transport Research Board (TRB)
Washington, USA
7-11 January 2024
www.trb.com

Transport Research Arena (TRA)
Dublin, Ireland
15-18 April 2024
www.traconference.eu

Intertraffic
Amsterdam, The Netherlands
16-19 April 2024
www.intertraffic.com

NaTMEC
Boise, Idaho, USA
2-5 June 2024
www.natmec.org

Southern African Transport Conf.
Pretoria, South Africa
8 -11 July, 2024
www.satc.org.za

CVSA Annual Conference
Big Sky, Montana, USA
8-12 September 2024
www.cvsa.org

ITS World Congress
Dubai, UAE
16-20 September 2024
www.itsworldcongress.com

ISWIM Regional Seminar
Brasilia, Brazil
November 2024
www.is-wim.net

Do you know other WIM-related events?
Please contact:
■ Hans van Loo | hans.vanloo.int@gmail.com

Installing the Lineas sensors on the A6 motorway in Luxembourg

(Picture source: Kistler Group)

The electronic equipment required for the system, including the WIM Data Logger, can be delivered prewired and preconfigured on request, and is accommodated in a control cabinet located near the sensor installation. The police tablets connected to the WIM system run Kistler's Checkpoint software, which clearly displays all information on the detected vehicle at a glance. Thus far the solution from Kistler has proven to be highly reliable in practice: as well as enabling efficient preselection, automated weight detection of overloaded vehicles at high speeds supports handling of the entire process.

■ Lukas Koch | Lukas.Koch@kistler.com

■ Christoph Klauser | Christoph.Klauser@kistler.com

BISON; Innovating WIM across All Seasons

Roadworks are an omnipresent sight, a constant feature of our daily lives. Year-round, road managers work diligently to maintain safe and efficient transportation networks, addressing the ever-changing needs of our evolving road infrastructure. The challenge they face is maintaining operational roads in harsh weather conditions, necessitating adaptability in response to the constantly shifting road environment. Regardless of the season, the need for a safe and efficient road network remains a top priority, requiring ongoing maintenance efforts.

The BISON WIM system was designed with the goal of aiding road managers. This innovative system provides highly accurate data, rapid analysis, and real-time monitoring capabilities, ensuring that roads remain safe and fully operational. Its reliance on optical fiber sensors and stainless steel components guarantees not only functionality but also durability in extreme weather conditions, making it an indispensable tool for road authorities and authorities throughout the year

ISWIM Guide for Users of WIM

The ISWIM Guide for Users of Weigh-In-Motion serves as a basic, yet comprehensive introduction to Weigh-In-Motion. The Guide covers different aspects related to the working, specifying, buying, installing, testing, maintaining and using of WIM systems and data. To enhance accessibility for users starting with WIM, these topics are described in easy-to-understand language.

This document covers different aspects related to the working, specification, purchase, installation, testing, operation and maintenance of WIM systems, and the application of the data they produce.

To enhance accessibility for users starting with WIM, these topics are described in an easy-to-understand language. This means that sometimes a simplified description is given that may not be completely in line with the latest scientific results. For those interested in more detailed and scientific explanations, references to these detailed reports are included.

A PDF version of the WIM User Guide can be downloaded at the ISWIM website: www.is-wim.net.

■ Hans van Loo | hans.vanloo.int@gmail.com

Installing a BISON WIM system during winter conditions.

Thanks to technologies like the BISON WIM system, road maintenance can continue uninterrupted, enhancing the safety and upkeep of our roadways in all seasons. The absence of delicate electrical components guarantees its resilience in sub-zero temperatures, making the BISON system a reliable solution for year-round road. Moreover, the system's robust design allows the installation in any conditions and season without affecting its functionality, enabling a fast and cost-effective procedure.

■ Luca Trainotti | Luca.trainotti@iwim.it

WIM & Tire Anomaly Enforcement in Idaho, USA

International Road Dynamics Inc. (IRD) is a leading turn-key provider of complete WIM solutions, from manufacturing and integrating components to providing field services and advanced software analytics. The Idaho Department of Transportation recently contracted with IRD to streamline the process of handling the high volume of trucks at the Declo weigh station, striking an optimal balance between efficiency and safety. The advanced weigh station solution boasts a Weigh-in-Motion (WIM) screening system, a Tire Anomaly and Classification System (TACS), and an IRD e-screening system for both westbound (WB) and eastbound (EB) directions.

SLC WIM Scale and TACS Installation – Declo Idaho

Single Load Cell (SLC) WIM scales were selected for durability and to provide high-speed preclearance weighing to ASTM Type III standards. The TACS system enables tire anomaly detection, including flat, missing, mismatched diameter and underinfated tires.

History of International Conferences on Weigh-In-Motion

So far 8 International Conferences on Weigh-In-Motion have been held and the 9th edition is scheduled for November next year in Brisbane, Australia. The conferences are:

ICWIM-1
Zurich, Switzerland
8-10 March 1995

ICWIM-2
Lisbon, Portugal
14-16 September 1998

ICWIM-3
Orlando, Florida, USA
13-15 May 2002

ICWIM-4
Taipei, Taiwan, ROC
20-23 February 2005

ICWIM-5
Paris, France
19-22 May 2008

ICWIM-7
Foz do Iguaçu, Brazil
7-10 November 2016

ICWIM-8
Prague, Czech Republic
19-23 May 2019

ICWIM-9
(Technology Convergence ’23)
Brisbane, Australia
6-10 November 2023

All papers of the past ICWIM conferences can be found at:
www.is-wim.net/library/

For questions, please contact:

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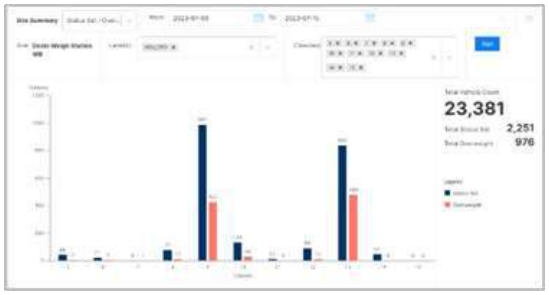
WB Station and Operator Displays

All commercially classed vehicles visiting the Declo weigh station have their license plates captured and extracted by Optical Character Recognition (OCR) technology. For those vehicles equipped with an Automatic Vehicle Identification (AVI) transponder, the AVI reader collects the transponder information. The compliance status of the vehicle, alongside its status in the e-screening database, is considered when determining whether vehicles should report for inspection.

IRD's VI^{2}M software provides real-time traffic data from Declo and other connected weigh station sites, offering historical reporting within a cloud-based environment. The comprehensive VI^{2}M data set includes traffic count, volume, and vehicle classification data, integrated with commercial vehicle information and individual site sort decisions.



VI^{2}M Reporting – Class/Vehicle Count, Tire Anomalies by Date

The westbound system is fully installed and screening vehicles already and is providing Idaho DOT and the Idaho State Patrol with more efficient and accurate commercial vehicle enforcement.

■ Peter Fedechko | peter.fedechko@irdinc.com

Enhancing Road Safety in Nevada with Strain Gauge Strip Sensors

In North America, due to the association between vehicle overloading and vehicle safety, many road enforcement organizations have adopted strategies where vehicle overloading and other safety attributes are inspected at the same physical locations by enforcement personnel. A vital component of this strategy is the Virtual Weigh Station (VWS), a manifestation of high-performance WIM sites designed for enforcement screening. The State of Nevada's Vehicle Size and Weight Enforcement Program is an example of how WIM has evolved to become a central element of road safety programs in North America.

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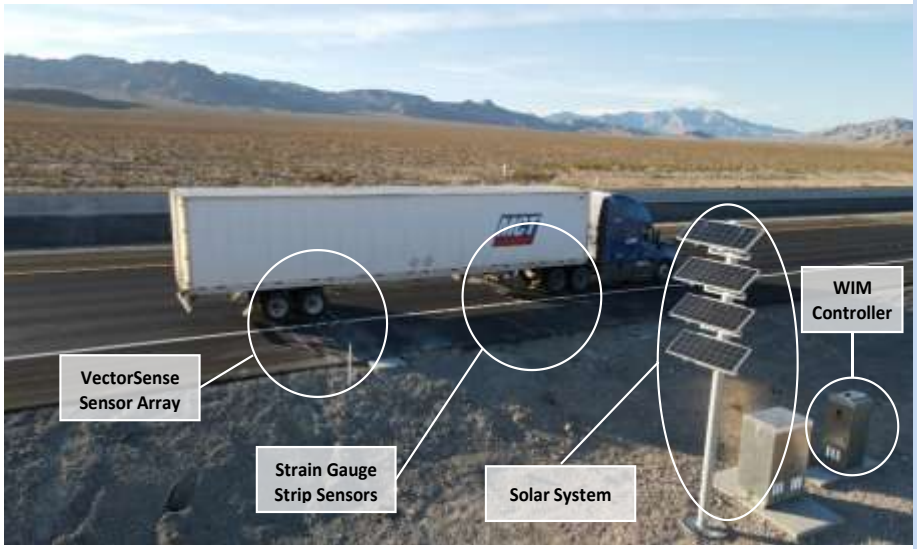
Nevada's network of VWS stations with Strain Gauge Strip Sensors currently consists of 17 lanes equipped with high-performance WIM systems deployed by Intelligent Transportation Systems (ITS) integrator International Road Dynamics (IRD).

VWS installations in Nevada are configured with one or two pairs of Strain Gauge Strip Sensors, designed to maintain accuracy within the wide temperature ranges typical of these sites. They meet the ASTM E1318-09 Type I and Type III specifications for WIM accuracy, respectively. The WIM systems comprise Intercomp Strip Sensors and IRD's iSINC® electronics.



Intercom Virtual Weigh Station in Osino, Nevada

Furthermore, WIM systems in Nevada seamlessly integrate with Tire Anomaly and Classification Systems (TACS), customized for vehicle screening at highway speeds. TACS utilizes VectorSense tire sensors to deliver tire footprint measurements with a 10mm resolution. TACS plays a pivotal role in detecting tire anomalies, including flat, missing, or mismatched diameter tires in dual tire sets. The strategic convergence of high-speed WIM and Tire Screening technologies at Virtual Weigh Stations underscores the commitment to enhancing road safety in North America. These sophisticated systems not only optimize weight enforcement but also significantly raise vehicle safety standards, ultimately fostering safer roadways for all.

■ **Leonardo Perim Guerson** | leonardog@intercompcompany.com

CAMEA WIM helping road protection in Kenya

With more than 30 WIM stations installed, Kenya is the leader in axle load control in East Africa. It is the first country in the region to implement the Weigh-In-Motion technology countrywide as the Kenya National Highways Authority (KeNHA) took up the onerous journey of automating weighbridges and monitoring them in a single data center.

Some of these CAMEA WIM stations are used for pre-selecting potentially overloaded vehicles and capturing those who evade the screening lane. But more than 20 stations are the so-called Virtual Weighbridges - automatic free-flow unmanned systems. These had been type approved by the National Weights and Measures Laboratory of the Weights and Measures Department of Kenya and are used to generate tickets for enforcing the overloaded vehicles.

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Currently, this is being done using mobile or static weighbridges but is planned to be replaced with instant fining through Short Messages Service (SMS).

The Data Center at the KeNHA headquarters

As recently presented by KeNHA at a workshop organized by the Czech Transport Research Centre (CDV) during the World Road Conference in Prague, the drop in offences was significant and there are elevated levels of compliance across the country with other African countries coming to Kenya for benchmarking.

■ **Jan Fučík** | j.fucik@camea.cz

TECHNOLOGY CONVERGENCE 2023

WIM system in Australia by CROSS Zlín, a.s.

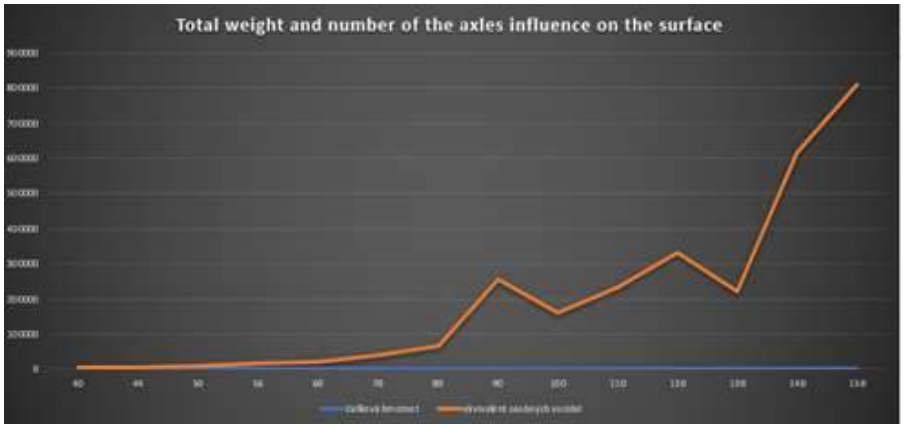
With In 2023, the installation of the weigh in motion system was realised in Queensland Australia. The system meets the strict local demanding criteria and ensures accurate measurement results. The installation was realised on a state road near to the Sunshine Coast and was installed with respect to the surrounding nature, citizens and highway users. CROSS delivered and installed the WIM system in cooperation with the highly experienced local partner company Hyperion Technology and their partners. The solution has been proposed to measure all the vehicles and specially to single out overloaded vehicles for additional accurate measurement.

The project also included, the integration of a new camera supplier approved for the local market and is ready for several upgrades in the future. Integration of other sensors/detectors enhances the CrossWIM solution to another level of measurement and detection.

CROSS´s system as a modular solution can combine up to 5 different sensor types from several suppliers in one installation lane and the computing unit can be configured as the customer desires.

The high-quality road surface in Australian roads ensures a very long lifespan, so CROSS´s "U-bed" unique solution will be highly appreciated. The biggest advantage is independent replacement of sensors without damaging the surface, or on the other hand surface repairing/replacement without the need to replace or damage the sensors.

Additionally, CROSS conducted research on the benefits of WIM systems installations. Using recent traffic data in combination with ageless and valuable data from the AASHO road test carried out in the late 1950s in Ottawa. The research found high benefits and a saving effect influence on the road life span. The research's main result is – the cost of CrossWIM system installation is negligible in comparison to money savings with extending the road lifespan. Also, an additional feature of the CrossWIM system – under/over inflated tyres detection has great benefits due to the number of axles/tyres real influence to the damage of the pavement.



Effects of traffic loading on road lifespan.

The last, but not the least to mention are the next planned steps, which are aimed to supply the central management platform InVipo with CrossWIM integration. The platform can supply cooperative functionalities with other road technologies like: HSWIM, traffic detection, weather stations, enforcement systems, monitoring systems, V2X, and any other existing, or future road and city technologies. The smart city platform can make the technologies cooperative thanks to customizable pre-set rule engines, but this is a different CROSS story.

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Hope to see you in Brisbane.

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