



# ISWIM NEWSLETTER

## Message from the ISWIM president

Dear Readers,

Welcome to the August 2019 edition of the ISWIM Newsletter.

It is pleasing to see another full and complete newsletter with all WIM stakeholder groups represented. This comes off the back of a successful International Conference for WIM that was held at the end of May in the beautiful city of Prague. The conference saw new records set in both attendance, depth of scientific and technical program and end-user engagement, including the networking and engagement opportunities.

I would like to remind readers of the release of the ISWIM User Guide. This guide is available gratis from the ISWIM website and I invite all to download this important document.

It is pleasing to see ISWIM continue the support for young researchers through its young researcher award (detailed in the newsletter).

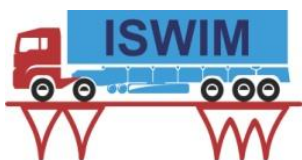
The newsletter contains stories identifying developments, installations type approvals and the advancements through case studies of WIM technology and importantly its usage.

As always happy to chat to the WIM community, please enjoy and share the newsletter.

President – ISWIM

Chris Koniditsiotis

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## Young Researcher Award

Every year, ISWIM offers scholarships to bachelor, master and PhD students, or post docs up to five years after graduation working on WIM-related research projects. Participants must demonstrate a passion for WIM through either their studies or early professional life and show “substantial evidence” of their research. “Substantial evidence” could be an original contribution in the form of a journal or conference paper; a report; or a series of presentations that clearly defines the scope of the project, technical approach, and anticipated or final conclusion(s). ISWIM will fully sponsor the travel and registration expenses for recipients to present their work at an ISWIM event worldwide, such as ICWIM, an ISWIM seminar, or a sponsored session by ISWIM at other conferences. Sponsorship from ISWIM will not exceed 2500 Euro.

Applicants should send their CV, two reference letters, and an abstract up to 1000 words with supporting “substantial evidence” of their work if it is not fully documented in the abstract. Submissions should be emailed to Lily Poulikakos at [lily.poulikakos@empa.ch](mailto:lily.poulikakos@empa.ch). Deadline is October 31st of every year and awards announced by December 31st.

■ [Lily Poulikakos](mailto:Lily.Poulikakos@empa.ch) | [Lily.Poulikakos@empa.ch](mailto:Lily.Poulikakos@empa.ch)

## Kistler WIM-system for Pre-selection in Turkey.

There are about 100 static weighing stations installed all over Turkey. Every truck passing a station had to stop and wait until its weight was measured and approved. In order to make this process more efficient Turkey's General Directorate of Highways of Turkey (KGM) has decided to implement a pre-selection weight enforcement system. In future, trucks will only have to enter the weighing stations if they are above the weight limit. Fewer lorries will pass through the weighing stations, so traffic will flow more freely.

The WIM system was installed at a trial site by the Mosaş Group, the local system integrator. The complete WIM system includes Kistler Lineas 9195G quartz sensors and the WIM 5204A data logger. These rugged system components deliver high-precision measurements throughout long service lifetimes.

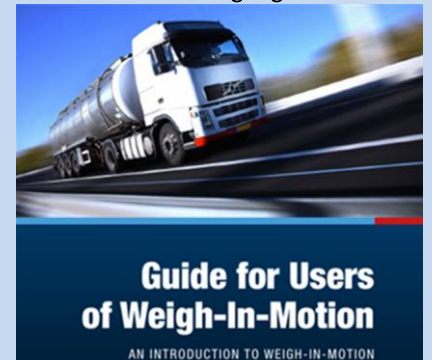


*Installation of Lineas sensors in Turkey.*

## ISWIM User Guide

The new ISWIM Guide for Users of Weigh-In-Motion was launched last May during the 8th International Conference on WIM in Prague, Czech Republic. All delegates of the conference received a free hard copy of the guide.

It 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.



The guide was well received at the conference both by vendors of WIM systems and end users of WIM data. As one of the vendors said: “This is exactly what we needed. We are definitely going to use the guide in our contacts with customers especially the ones that are new to WIM”.

For those of you that were not able to participate at the ICWIM8 a .PDF version of the WIM User Guide can be downloaded at the ISWIM website: <https://lnkd.in/euW9KuZ>.

■ [Hans van Loo](mailto:hans.vanloo.int@gmail.com) | [hans.vanloo.int@gmail.com](mailto:hans.vanloo.int@gmail.com)

Installation of the Lineas WIM sensors in the road pavement is fast and easy. Two sensors were installed in a staggered layout on each of the two lanes. After several runs with a calibration truck, a maximum deviation of  $\pm 2.3\%$  was recorded, far below the required deviation of  $\pm 10\%$  stated in KGM's specifications.

Kistler specialists were on site to train the integrator on the WIM system. "Kistler's support during the installation phase was ideal," in the words of Ahmet Eneç, at the Mosaş Group. "Field results from these products are good, and we are now going ahead to install the remaining sensors. At the same time, we are optimizing the system's performance." More information can be found here <https://www.kistler.com/uploads/961-307e.pdf>

■ **Tomas Pospisek** | [Tomas.Pospisek@kistler.com](mailto:Tomas.Pospisek@kistler.com)

## Portable WIM System Testing in Canada

On-road, high-speed portable WIM has been explored as a low-cost method to gain a wider geographical representation of axle load data. It is of particular interest in areas with a low density of permanently-installed WIM stations, which is common on secondary highways.

The University of Manitoba, in partnership with Manitoba Infrastructure, is currently evaluating a portable WIM system in Manitoba, Canada. The WIM system consists of commercially-available components, with the controller and power supply mounted on a trailer.



**Installation of portable WIM system(left) and sensor (right)**

The first installation of the portable system has begun, with the system being installed alongside an existing permanent piezo-quartz WIM system. The piezo-quartz system provides the most accurate truck load data available in Manitoba, and will allow for the accuracy of the portable system to be assessed through comparison of the two systems' load measurements.

Other installations will be completed in 2019 to provide a detailed picture of the accuracy capabilities of the portable WIM system.

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 ■ **Jonathan Regehr** | [Jonathan.Regehr@umanitoba.ca](mailto:Jonathan.Regehr@umanitoba.ca)

## WIM Workshop at TRB 2020

At TRB 2020, on Sunday January 12th from 13:30-16:30 in the Convention Center, there will be a workshop titled 'Employing Weigh-in-Motion Data to Design, Rate, Manage, and Preserve the Nation's Bridge Structures'. This workshop is sponsored by the Standing Committee on Truck Size and Weight; and the Standing Committee on Highway Traffic Monitoring. It is also endorsed by ISWIM and will have several ISWIM members participating.

## Coming Events

### CVSA Annual Conference + Exhibition

Biloxi, Mississippi, USA  
 Sept. 22-26, 2019  
[www.cvsa.org](http://www.cvsa.org)

### PIARC, 26<sup>th</sup> World Road Congress

Abu Dhabi, UAE  
 Oct. 6-10, 2019  
[www.piarc.org](http://www.piarc.org)

### 26<sup>th</sup> ITS World Congress

Singapore, Singapore  
 Oct. 21-25, 2019  
[www.itworldcongress2019.com](http://www.itworldcongress2019.com)

### 3<sup>rd</sup> ANTT WIM Workshop

Brasilia, Brazil  
 Dec. 5-6, 2019  
[www.antt.gov.br](http://www.antt.gov.br)

### TRB Annual Meeting

Washington DC, USA  
 Jan. 12-16, 2020  
[www.trb.org](http://www.trb.org)

### Intertraffic Amsterdam

Amsterdam, the Netherlands  
 April 21-24 2020  
[www.intertraffic.com](http://www.intertraffic.com)

### Transport Research Arena

Helsinki, Finland  
 Apr. 27-30, 2020  
[www.traconference.eu](http://www.traconference.eu)

### NaTMEC 2020

Raleigh, North Carolina, USA  
 JUN. 1-4, 2020  
[www.natmec.org](http://www.natmec.org)

### International WIM Symposium

Cape Town, South Africa  
 Spring 2021  
[www.is-wim.org](http://www.is-wim.org)

### ICWIM-9

Melbourne, Australia  
 2023  
[www.is-wim.org](http://www.is-wim.org)

If you know other WIM-related events please contact:

■ **Hans van Loo** | [hans.vanloo.int@gmail.com](mailto:hans.vanloo.int@gmail.com)



The nation's transportation system depends upon the load-carrying capacity of its bridges. Weigh-in-motion technology measures and characterizes actual truck traffic loadings in the field. This workshop brings together bridge and traffic data-collection experts and practitioners to discuss how real-world data from existing technologies can be leveraged to reduce risk and more efficiently address bridge needs and utilization of funding."

■ **Anne-Marie McDonnell** | [Annemarie.McDonnell@ct.gov](mailto:Annemarie.McDonnell@ct.gov)

## China WIM Policy Change

### From Toll-by-Weight to No Entry for Overloaded Trucks

China has the world's largest expressway system which has reached 142,500 kilometers by the end of 2018. This expressway system is experiencing the great policy change and weigh-in-motion is an important part among this change.

In March 2019, Ministry of Transport of China decided to abolish the toll-by-weight and adopted the No Entry to Expressway toward overloaded trucks in the expressway entrance. Under the toll-by-weight policy, the basic rate for truck driver is 0.08 yuan per ton kilometer. The Chinese government concluded that toll-by-weight would generate excessive cost for logistics and this would become a great burden on economic development.



**VanJee WIM system for 'No Entry' for overloaded trucks**

As the change, the Transport Authority adopted the No Entry policy. If the truck is overloaded, the truck is not allowed to drive onto the expressway and the truck has to take a U-Turn back. Under the new policy, the expressway operator would charge a fee based on vehicle class which is the truck's axle number. The policy change create the great market opportunity for WIM suppliers especially for VanJee. VanJee is making significant effort to supply WIM system in most Chinese Expressway entrance stations.

VanJee WIM system would not only measure truck weight and count the number of axles, but also would provide a WIM management system. The system would generate a blacklist for trucks which have too many violation records in order to improve overloaded truck U-Turn efficiency.

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## CVSA Annual Conference and Exhibition

The Commercial Vehicle Safety Alliance (CVSA) is a non-profit association comprised of local, state and federal commercial motor vehicle safety officials and industry representatives.

Its mission is to improve commercial motor vehicle safety and uniformity throughout Canada, Mexico and the United States by providing guidance and education to enforcement, industry and policy makers.

This years CVSA's Annual Conference & Exhibition will be held from 22-25 September 2019 at the Mississippi Coast Convention Center, Biloxi, Mississippi, USA.

The CVSA Size and Weight Committee is hosting a symposium to explore state-of-the-art WIM technology used for weight and safety enforcement. CVSA previously held a similar one-day WIM workshop in 2015.

This year's event will present the advances in WIM technology and applications, lessons learned by safety enforcement agencies and discuss WIM enforcement implementation issues.

ISWIM will sponsor the event through the presentation of international developments in WIM for weight enforcement. In addition several ISWIM Vendors will be present to show their technologies and solution at the exhibit hall.

■ **Hans van Loo** | [hans.vanloo.int@gmail.com](mailto:hans.vanloo.int@gmail.com)

## Improving Infrastructure in East-Africa

Kenya leads the way in axle load control and management automation in East Africa, as it is the first country in the region to implement the Weigh-In-Motion (WIM) technology countrywide. Kenya National Highways Authority took up the onerous journey of automating and removing the human hand at the weighbridges from the year 2013. As of today, an integrated system of fifteen WIM stations, complete with a dynamic 24-hour manned control centre, has been commissioned. The technology has been provided by CAMEA in cooperation with AEA Limited.



**Installation of WIM sensors in Kenya.**

The objective of weighing vehicles is to reduce overloading, monitor the country's road network as well as collecting real time traffic data for design and planning purposes. The expected effects of pre-selection are long-queue elimination, facilitating trade; through faster and easier movement through the weighbridge system, as only those vehicles suspected to be overloaded are diverted, automatically, to the static scales for weight verification. This is where theory meets reality in Kenya.

*"We are pleased to report the observed reality on Kenyan National roads. Queues at the static weigh stations are significantly shorter, compared to before implementing the Weigh-In-Motion. The WIM solution, both at the static and virtual weigh stations, helps reduce overloading, facilitate trade and protects both infrastructure and people in the long run."*

Eng MuitaNgatia, Dept Director, Road Assesment Management, Kenya

■ [Prokop Kudlik](mailto:P.Kudlik@camea.cz) | P.Kudlik@camea.cz

## Type Certificate for Cross OptiWIM.

Demanding testing of the new OptiWIM product has been completed by CROSS Zlín, manufacturer and supplier of road traffic technologies. Its patented dynamic fiber weighing technology has received a certificate for its type.

Thanks to this, OptiWIM® is classified as a proven measuring device. Currently, the system is being validated for a further 5 sites, with live installations in the winter of this year. Certified OptiWIM® was officially presented at this year's ISWIM international conference, but won the first prize a year earlier at the world's largest Intertraffic trade fair in Amsterdam, where it won the Innovation Award in the transport infrastructure category.

## ISWIM Vendors

### Axtec

[www.axtec.co.uk](http://www.axtec.co.uk)

### Betamont

[www.betamont.sk](http://www.betamont.sk)

### Camea

[www.cameatechnology.com](http://www.cameatechnology.com)

### Captels

[www.pesage-captels.com](http://www.pesage-captels.com)

### Cestel

[www.cestel.eu](http://www.cestel.eu)

### Corner Stone Int.

[www.corner-stone-int.com](http://www.corner-stone-int.com)

### Cross

[www.cross.cz](http://www.cross.cz)

### ECM

[www.ecm-france.com](http://www.ecm-france.com)

### Haenni

[www.haenni-scales.com](http://www.haenni-scales.com)

### Intercomp

[www.intercompcompany.com](http://www.intercompcompany.com)

### IRD / PAT Traffic

[www.irdinc.com](http://www.irdinc.com)

### Kapsch

[www.kapsch.net](http://www.kapsch.net)

### Kistler

[www.kistler.com](http://www.kistler.com)

### Mettler Toledo

[www.mt.com](http://www.mt.com)

### Mikros

[www.mikros.co.za](http://www.mikros.co.za)

### Q-free / TDC

[www.tdcsystems.co.uk](http://www.tdcsystems.co.uk)

### Sterela

[www.sterela.fr](http://www.sterela.fr)

### TE Connectivity

[www.te.com](http://www.te.com)

### Traffic Data Systems

[www.traffic-data-systems.net](http://www.traffic-data-systems.net)

### Tramanco

[www.tramanco.com.au](http://www.tramanco.com.au)

### VanJee Technology

[www.wanji.net.cn](http://www.wanji.net.cn)

### Wheelright

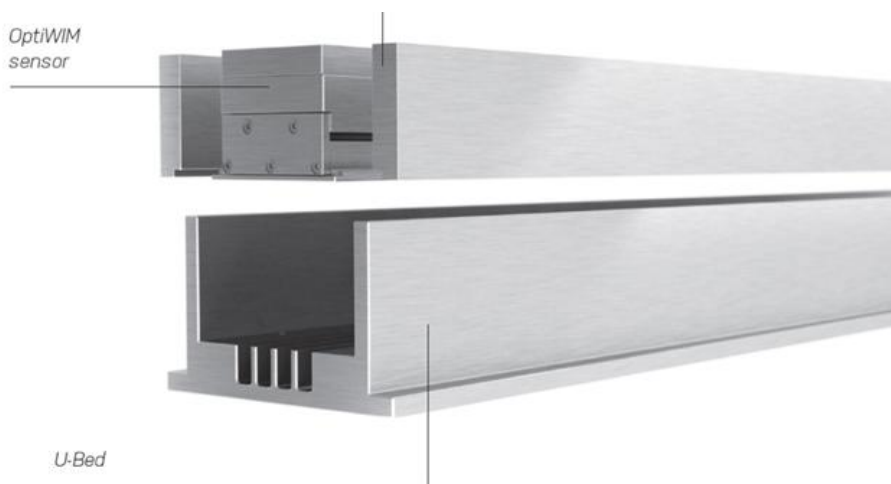
[www.wheelright.co.uk](http://www.wheelright.co.uk)

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 ■ [Hans van Loo](mailto:hans.vanloo.int@gmail.com) | hans.vanloo.int@gmail.com



### *Weighing in free flow conditions*

World's first free-flow dynamic scale for Weigh-In-Motion OptiWIM® can measure the weight of passing vehicles with high accuracy regardless of the wheel position and direction. This unique ability eliminates possible violation and irregularities and makes the device the first one of its kind as the inability of measurement in the whole width of the road is the most crucial weakness of current technologies. OptiWIM® represents a new generation of WIM that fully enables rapid development of direct enforcement and opens a new category of required tolling application Toll-per-Tonne.



### *The OptiWIM sensor*

The system requires only a U-Bed shape for the assembly to be placed into the road surface. Once the U-bed shape is installed, the maintenance and possible replacement after 10 years of the sensors lifetime consists only of changing the insides without the need of any other intervention into the road surface.

■ **Libor Sušil** | [Susil@cross.cz](mailto:Susil@cross.cz)

## Commercial Vehicle Safety Screening in South Dakota

International Road Dynamics (IRD) has implemented advance WIM screening at ports-of-entry and weigh stations across South Dakota. At these sites, approaching commercial vehicles are weighed by IRD's Single Load Cell (SLC) WIM scales. The WIM and other measurements determine if vehicles are compliant with weight restrictions and vehicle dimension regulations.

## New ISWIM Members

In the last months ISWIM has welcomed three new members in its Vendors & Consultants College:

**Tramanco**, a leading supplier to heavy transport industries in Australia, New Zealand and South East Asia. Supplying on-board truck scales, weigh-bridge's and truck mounted crane scales.

Tramanco have been specialists with supply and installation of on-board weighing systems for heavy vehicles since 1975. The CHEK-WAY® Eliminator series of electronic on-board scales has recently been type approved by Transport Certification Australia.

[www.tramanco.com.au](http://www.tramanco.com.au)

**Mettler Toledo**, a world leading manufacturer of weighing systems, has offered solutions for commercial vehicle weight enforcement and screening, data collection for transportation planning, industrial applications, and more.

It's fixed facility weigh station and virtual weigh station solutions continue to prove their operational reliability and accuracy in high-volume applications. Mettler Toledo also provides WIM solutions for other vehicle weighing applications such as border crossings, toll roads and bridges, sea-ports, and trucking.

[www.mt.com](http://www.mt.com)

**Corner Stone International** is an independent consultant specialised in Weigh-In-Motion with more than 20 years international experience in WIM. This includes working with different end-users, vendors, technologies and applications of WIM systems.

Corner Stone can assist through: specifying and selecting the right WIM system for specific applications and operational conditions; e.g. in the preparation of tender documents and evaluation of offers;

[www.corner-stone-int.com](http://www.corner-stone-int.com)



As a truck approaches the weigh station, IRD's iSINC® WIM controller and iROC (Intelligent Roadside Operations Computer) check the vehicle's safety status, registration and fuel tax status, and legal weight limit. Automated license plate readers (ALPR) read license plates, and Dedicated Short Range Communications (DSRC) read transponders to identify commercial vehicles.



#### ***South Dakota Advance Screening Site***

Trucks that are determined to be within allowable weights, and pass credential and safety requirements, are directed by message signs to proceed past the weigh station without stopping. Bypasses reduce delays and save operation costs of about \$2.50 per minute for each vehicle. The system allows compliant trucks to bypass 95% of the time.



#### ***Multiple VectorSense™ Sensors to Screen Based on Tire Footprints***

In addition to the existing port-of-entry and weigh station systems currently in operation, another system will be in operation next year and will also integrate IRD's TACS™ (Tire Anomaly and Classification System) to screen for flat, missing, or mismatched tires. IRD's TACS™ is one of the most effective technologies for commercial vehicle safety screening, as the system provides accurate results that are verified by vehicle inspections and leads to placing unsafe vehicles out of service.

■ **Rish Malhotra** | [Rish.Malhotra@irdinc.com](mailto:Rish.Malhotra@irdinc.com)

## Contact ISWIM

### Website:

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## Another OIML Approval for Intercomp

Adding to their earlier LS-WIM scale certification for use at low speeds, Intercomp has received OIML R134 certification for their Weigh-In-Motion Strip Sensors at high-speeds such as those experienced on the mainline. Evaluation of the strip sensors was conducted by UK-based testing laboratory NMO, with field testing done on at a site on the interstate in Minnesota, U.S.A.

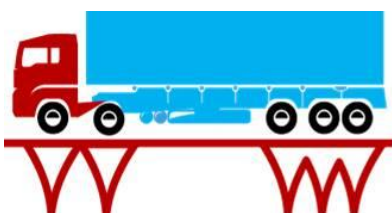
Installed in channels cut into the pavement and operating in pairs, Intercomp Strip Sensors are employed around the world in applications at both low and high speeds. Designed to require minimal ongoing maintenance, the Strip Sensors are used for data collection, screening and direct enforcement, tolling, and industrial weighing. Importantly for the increasingly-adopted mainline WIM applications at higher speeds, the OIML certificate includes 2, 3 or 4 rows of sensors up to 100km/h.



### *Dual Threshold Strip Sensors*

With the increasing adoption of WIM throughout the world, access to OIML certified equipment for low and high speeds gives integrators flexibility in almost any geography where opportunities may arise. In locations where static weighing is still required, Intercomp anticipates announcing in the near future OIML R76 certification for portable scales to complement their WIM products.

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**ISWIM**  
International Society for Weigh in Motion