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2nd “UIC Research and Innovation Awards” presented in Paris on the occasion of the General Assembly of the worldwide railway association

(Paris, 8 December 2014) The second edition of the UIC Railway Research and Innovation Awards was held in Paris on 3 December, during the General Assembly of the International Union of Railways (UIC).

The award ceremony took place in the presence of UIC Chairman **Vladimir Yakunin**, Vice Chairman **Michele Elia**, as well as Director-General **Jean-Pierre Loubinoux**. The awards were presented by Mr **Boris Lapidus**, Director-General of the Russian Railway Research Institute (VNIIZhT), Chairman of the Scientific Committee at Russian Railways (RZD), and Chairman of the UIC International Railway Research Board (IRRB) as well as by **Jerzy Wisniewski**, Director of Fundamental Values at UIC.

The awards went to the following six categories:

-Safety / Security: *Masamichi Sogabe*, from Rail Technical Research Institute – Japan
Mr Sogabe worked on *Risk Assessment for Train-Running Safety* during Seismicity on Railway Lines. He developed an analytical method to analyse dynamic interaction between railway vehicles and large structures to assess running safety during seismicity.

-Sustainable Development: *Byung-Song Lee*, from Korea Railroad Research Institute – South Korea
Mr Byung-Song Lee worked on *Wireless Power Transfer (WPT) for Railways*. He developed a method for supplying power to electric trains by using Wireless Power Transmission, based on the magnetic resonance and near-field coupling of two coils.
A new 180 kW single-phase wireless power transfer system for a tram was demonstrated.

-Rail System Technology: *Christoph Tyssen / Marco Tami*, from SBB – Swiss Federal Railways – Switzerland
Mr Christoph Tyssen and Mr Marcus Völker worked on the *Adaptive Control (ADL) Project* –. They developed an adaptive control system to optimise driving speed profiles by minimising unplanned halts and breaking. ADL saves energy amounting to 2.1% at current rail traffic density.

-Rail Freight Services: *P. Mortimer / C. O’Neil*, from NewRail / TruckTrain Developments Ltd – United Kingdom
Mr P. Mortimer and Mr C. O’Neil worked on the *TopHat(R) project*. They identified practical and effective opportunities for rail to make a sustained inroad into growing volumes of HVTs

traffic moving in trailers. This supports EU aspirations on significant modal shift with full size top-lifting tri-axle semi-trailers used in European domestic and international inter-modal traffic.

-Passenger Services: *Jaeho Kwak*, Korea Railroad Research Institute – South Korea

Mr Jaeho Kwak worked on the *Wireless (catenary free) Battery Tram*. The wireless battery tram with 5 modules, 32m in length, 42 tonnes and 162 kwh lithium-ion battery has been developed. The tram had travelled 53 km on a single charge without load. The wireless battery tram avoids high current stress within urban areas and requires less powerful substations, saving construction costs.

-Cost reduction and Sustainable Development: *Brigita Altenbaher*, from Elpa d.o.o – Slovenia

Ms Brigita Altenbaher worked on *DRYproANNSYS “bs” – wheel flange lubrication system*. She developed an innovative on-board wheel flange lubrication system which doesn't need any compressed air and applies the material onto the wheel flanges/rims. This is an environmentally-friendly solution with less wear, noise/squealing and screeching.

Two other prizes were delivered:

-Life Time Achievement: *François Lacôte*, from France

Mr Lacôte joined SNCF in 1974, where he occupied various positions. In 1981 he joined the Rolling Stock Division, first as Head of Locomotives and Trainset Programmes, then from the end of 1982 onwards, as Head of TGV Programmes. In this capacity, he supervised the design and creation of successive generations of TGV trains, and oversaw the test campaign which on 18 May 1990 set a world rail-speed record of 515.3 kph. In November 2000 he joined the Board of Alstom Transport as Senior Vice President, Technical Division. Co-managing with SNCF and RFF the test programme which led to a new world rail-speed record of 574,8 kph being set in April 2007, he has sat since September 2009 on the Executive Committee of Alstom Transport where he occupies the function of Senior Vice President and Technical Adviser to the President.

-Young Research Award: *Maidier Oregui*, from TU Delft - Netherlands

Ms Maidier Oregui worked on investigating vertical track dynamics. She investigated rail-pad and fastening deterioration with 3D FE models + laboratory tests.

- Identified characteristic frequencies of damage track:
- Improved defect detection measures.
- Improved maintenance measures.
- Developed preventive maintenance measures.

To finish, two special prizes were awarded to:

-Olivier Grossat, UIC, for developing new functional options of 3D printing of documents. The current project consists of experimenting with large-format 3D concrete printing for engineering and architectural functions. Moreover, this will be the first OpenSource concrete printing project: the machine, the layout diagrams and software used for its operation are available and can be used by all (<http://impression-concrete.blogspot.fr/>).

-Grigore Havarneanu, UIC, for his major research and innovation contribution in the RESTRAIL project. He developed a toolbox (<http://www.restrail.eu/toolbox/>) for decision makers – the first online guide that provides evidence-based recommendations for choosing and implementing cost-effective measures to prevent railway suicides and trespassing accidents and to mitigate the consequences of these incidents.

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