

ECONOMY ON WHEELS

fast changes, slow structures

INTERNATIONAL SYMPOSIUM ON HEAVY VEHICLE TRANSPORT TECHNOLOGY

Symposium agenda

Scientific sessions overview



DAY 1 TUESDAY 2 OCTOBER 12.00 pm – 12.50 pm, ROOM PLATE

SMART DOLLY

Lateral control of an A-double combination considering different measurement signals and dolly steering configurations

Maliheh Sadeghi Kati¹, Jonas Fredriksson¹, Bengt Jacobson¹, Leo Laine²
¹Chalmers University of Technology, ²Volvo Group Trucks Technology

Feasibility study of a steered and powered dolly for an A-double high capacity vehicle

A.G.P. Parfant¹, R.M.C.M. Wouters², I.J.M. Besselink²
¹Altran Netherlands, ²Eindhoven University of Technology

DAY 1 TUESDAY 2 OCTOBER 12.00 pm – 12.50 pm, ROOM MEES

DRIVER INVOLVED SAFETY STRATEGIES - 1

Integrating safety technology and management practice for improved fleet safety

John Woodrooffe
Woodrooffe Dynamics Ltd.

The face of the project - Regulating for soft and hard skills in driver training to support the implementation of high performance vehicles.

A. Efron¹, G. Corvalan²
¹BraLe Consulting/EMaBi, ²EMabi, Government San Luis

DAY 1 TUESDAY 2 OCTOBER 12.00 pm – 12.50 pm, ROOM VAN RIJCKEVORSEL

PAVEMENT AND BRIDGE LOADING

Characterizing in-service truck loads for improved pavement and bridge performance: experiences from Manitoba, Canada

J.D. Regehr, B. Algohi, A. Mufti, A. Shalaby
University of Manitoba

Pavement and bridge impact assessment of vehicles within project FALCON

M.G. Arroyo Contreras¹, Franziska Schmidt², Carl van Geem³, E. van Kerkhof³, Bernard Jacob²
¹Autonomous University of Queretaro, ²IFSTTAR, ³Belgian Road Research Center

DAY 1 TUESDAY 2 OCTOBER 2.00 pm – 3.40 pm, ROOM VAN RIJCKEVORSEL

ROADS FOSTERING MULTIMODAL TRANSPORT

Understanding modal choice: a review

I. Vierth¹, S. Lindgren¹, A. Lobig², P. Niérat³, E. Bogers⁴, I. Davidenko⁵, A. Burgess⁶, S. van de Ree⁶
¹VTI, ²DLR, ³IFSTTAR, ⁴HAN University of Applied Sciences, ⁵TNO, ⁶Panteia

FALCON III : Defining a PBS framework for HCV in Europe.

C. de Saxe¹, K. Kural², S. Kharrazi³, F. Schmidt⁴, C. van Geem⁵, R. Berman¹, John Woodrooffe⁶, D. Cebon⁷
¹CSIR, ²HAN University of Applied Sciences, ³VTI, ⁴IFSTTAR, ⁵Belgian Road Research Institute, ⁶Woodrooffe Dynamics Ltd, ⁷University of Cambridge

FALCON II: Input for a European PBS definition: review of vehicle legislations and infrastructure design criteria.

Franziska Schmidt¹, Sogol Kharrazi², Sigurdur Erlingsson², Carl van Geem³, Xavier Cocu³, Bernard Jacob¹
¹IFSTTAR, ²VTI, ³Belgian Road Research Center

FALCON IV: Validation of smart infrastructure access policy.

K. Kural¹, F. Schmidt², S. Erlingsson³, C. van Geem⁴, I. Vierth³, D. Cebon⁵, A. Lobig⁶, G. Liedtke⁶
¹HAN University of Applied Sciences, ²IFSTTAR, ³VTI, ⁴Belgian Road Research Center, ⁵University of Cambridge, ⁶DLR

DAY 1 TUESDAY 2 OCTOBER 2.00 pm – 3.40 pm, ROOM RUYLS

ROADMAPS FOR GREENER TRANSPORT

Aerodynamic and flexible trucks for next generation of long distance road transport (AEROFLEX).

B. Kraaijenhagen¹, C. v.d. Zweep², A. Lischke³, J. Engasser¹, P. Elofsson⁴, M. Ölback⁵, A. Frexas⁶, M. Tobar⁶, G. Koornneef⁷
¹MAN Truck & Bus AG, ²Uniresearch, ³DLR, ⁴Scania, ⁵Volvo Group, ⁶IDIADA, ⁷TNO

Swedish roadmap for electric road systems.

M. Lindgren, J. Pettersson, A. Berndtsson
Swedish Transport Administration

The commercial vehicles of the future: an integrated approach for sustainable truck operations.

Tim Breemers¹, Lars Akkermans¹, Marc Billiet²
¹Transport & Mobility Leuven, ²International Road Transport Union

Professionalized road freight operators for truck fleet energy management.

Sophie Punte, Boyong Wang, Su Li, Bonne Goedhart, Chris Douglas
Smart Freight Center

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DAY 1 TUESDAY 2 OCTOBER 2.00 pm – 3.40 pm, ROOM PLATE

PERFORMANCE ASSESSMENT OF HIGH PRODUCTIVITY VEHICLES

Duo Trailer an innovative transport solution co-optimizing multi vehicle combinations.

Lennart Cider¹, Lena Larsson¹, Heléne Jarlsson²

¹Volvo GTT, ²ÅF Industry AB

Investigation of a 9-axle configuration for log-hauling in British Columbia.

Séamus Parker

FPIInnovations

Generic framework for assessment and extraction of envelopes for long combination vehicles.

Krishna Kashampur, Bengt Jacobson, Manjurul Islam

University of Chalmers

DAY 1 TUESDAY 2 OCTOBER 4.10 pm – 5.25 pm, ROOM PLATE

UNEVEN ROAD VEHICLE PERFORMANCE

Rolling road.

H. Bramer, D. Aalderink, D. Verbeek

VDL-Weweler

A mechanistic approach toward estimating the roughness-induced rolling resistance and fuel consumption for articulated trucks.

Imen Zaabar, Karim Chatti, Nizar Lajnef

Michigan State University

DAY 1 TUESDAY 2 OCTOBER 4.10 pm – 5.25 pm, ROOM VAN RIJCKEVORSEL

SAFETY OF HIGH PRODUCTIVITY VEHICLES

Heavy vehicle safety performance.

J. Deiss¹, R. Berman², P. Nordengen², C. de Saxe², A. Steenkamp², F. Kienhöfer¹

¹University of the Witwatersrand, ²CSIR

A new class of ventilated disc brakes.

Frank Kienhöfer, Michael Atkins, Tongbeum Kim

University of the Witwatersrand

Hyperperformance: advanced PBS performance prediction.

R. Berman¹, P. Nordengen¹, B. Rosman¹, B. van Niekerk²

¹CSIR, ²University of the Witwatersrand

DAY 1 TUESDAY 2 OCTOBER 4.10 pm – 5.25 pm, ROOM MEES

COMPLIANCE AND ENFORCEMENT

NMI Weigh – motion - standard

H. van Loo¹, C. Oosterman²

¹Corner Stone International, ²NMI Certin

Perceptions of the road transport management system (RTMS): promoting voluntary certification.

A. Kamdar⁴, F. Kienhöfer¹, B. Emwanu¹, G. Heyns², P. Nordengen³

¹University of the Witwatersrand, ²University of Johannesburg, ³CSIR, ⁴KDG Logistics

Re-engineering road networks through on-board mass (OBM) systems

Chris Konditsiotis, Gavin Hill

Transport Certification Australia

DAY 2 WEDNESDAY 3 OCTOBER 8.30 am – 9.45 am, ROOM MEES

TRUCK PLATOONING AND HPV'S: OVERCOMING THE BOUNDARIES OF THE INFRASTRUCTURE

PBS for connected and automated vehicles.

John De Pont

TERNZ Ltd.

Truck platooning and the structural reliability of bridges

R.M.L. Nelisse¹, A.H.J.M. Vervuurt¹, D.G. Schaafsma²

¹TNO, ²Dept. of Waterways and Public Works, Ministry of Infrastructure and Water Management

ITS applications for higher productivity of road freight transport.

R. Aronietis, T. Voegelé

International Transport Forum at the OECD

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DAY 2 WEDNESDAY 3 OCTOBER 8.30 am – 9.45 am, ROOM VAN RIJCKEVORSEL

DRIVER INVOLVED SAFETY STRATEGIES - 2

FAST DASH: a program to evaluate promising safety technologies for truck and bus operations.

Richard J. Hanowski, Andrew Krum

Center for Truck and Bus Studies, Virginia Tech Transportation Institute

Closed loop performance of heavy goods vehicles.

Joop Pauwelussen

HAN University of Applied Sciences

Trucks that refuse to crash: new objectives for self-driving vehicles, the role of artificial intelligence.

John Woodrooffe

Woodrooffe Dynamics Ltd.

DAY 2 WEDNESDAY 3 OCTOBER 8.30 am – 9.45 am, ROOM PLATE

THE COST OF ROAD USE BY HEAVY VEHICLES

Methodology for estimating the road wear costs of heavy vehicles on a road network.

L. Kemp, A.J. Steenkamp, P. Nordengen

CSIR

Relationship between freight traffic and management/maintenance costs.

Henri Palm¹, Marc van den Elzen², Martin Kraan³

¹*DAT.Mobility*, ²*Goudappel Coffeng*, ³*Dept. Water management & Public Works/TRAIMCO*

Reduced pavement service life - causes and costs.

J. Granlund

WSP Sverige AB

DAY 2 WEDNESDAY 3 OCTOBER 2.00 pm – 3.40 pm, ROOM PLATE

PUBLIC POLICIES IN FREIGHT TRANSPORT

Road freight policy in The Netherlands.

Joris Cornelissen

Dept. of Waterways and Public Works, Ministry of Infrastructure and Water Management

A policy framework for implementation of appropriate regulatory tools aimed at promoting utilization of smart technology in the regulation of heavy vehicles: the case of eastern and southern Africa region.

S.G. Khumalo, Etivel Chibira

Cross-Border Road Transport Agency

Impact of disruptive innovations on road transport strategy.

T.M. Chen

TNO

DAY 2 WEDNESDAY 3 OCTOBER 2.00 pm – 3.40 pm, ROOM RUYSS

URBAN AND REGIONAL VITALITY

Infrastructure solutions for increased efficiency and productivity of construction material transports in cities.

A. Treiber, P. Bark

TFK - Transport Research Institute Sweden

FLUXNET: A toolbox for logistics oriented development (LOD)..

Robert Broesi¹, Tertius Hanekamp², Jos Arts³

¹*Must*, ²*TEMAH*, ³*University of Groningen*

Zero emission city logistics.

H.J. Quak, N. Nesterova

TNO

Will automatic driving light electric freight vehicles be the future solution for urban Transport As A Service.

Frank Rieck¹, Susanne Balm², Constant Staal¹, Roeland Hogt³

¹*Rotterdam University of Applied Sciences*, ²*Amsterdam University of Applied Sciences*, ³*Regional Education Center Noorderpoort*

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INTELLIGENT ACCESS

Estonian Velub system for more efficient and greener transport.

Taavi Tõnts, Meelis Toome, Mait Klein
Estonian Road Administration (ERA)

Regulation on the road in the digital age - challenges and opportunities

C. Walker, A. Moulis
University of New South Wales

In search of a Dutch logistic core road network

Jan Top
Dept. of Waterways and Public Works, Ministry of Infrastructure and Water Management

Intelligent road access & weight control system - first application for high capacity transport vehicles

Sten Wandel¹, Thomas Asp²
¹University of Lund, ²Swedish Transport Administration

DAY 2 WEDNESDAY 3 OCTOBER 4.10 pm – 5.00 pm, ROOM PLATE

AERODYNAMICS

Assessing the fuel savings of aerodynamic trailer devices in realistic conditions.

R. Veldhuizen, J.P. van der Krieke, G.M.R. van Raemdonck
WABCO

Assessment of innovation concepts for Truck-semitrailer combinations within the TRANSFORMERS project.

S. Wilkins¹, G. Hommen¹, S. van Zyl¹, E. van Eijk¹, A. Balau¹, G.J. Koornneef¹, R. Baert¹, B. Hillbrand², S. Wagner³, F. Jonkers⁴, C. Maillet⁵, P. Adams⁵
¹TNO, ²Virtual Vehicle, ³Fraunhofer-IVI, ⁴DAF Trucks, ⁵Volvo Group Trucks Technology

DAY 2 WEDNESDAY 3 OCTOBER 4.10 pm – 5.00 pm, ROOM MEES

URBAN FREIGHT VEHICLES

Design of urban freight vehicles to maximise capacity.

Chris Eddy, David Cebon
University of Cambridge

Performance based standards and the urban rigid truck.

Ken Cowell¹, Kim Hassall²
¹Heavy Vehicle Industry Australia, ²University of Melbourne

DAY 2 WEDNESDAY 3 OCTOBER 4.10 pm – 5.00 pm, ROOM VAN RIJCKEVORSEL

MANAGING THE PERFORMANCE BASED STANDARDS (PBS) PROCESS

Type vehicles multi-vehicle combinations.

Lena Larsson, Emil Pettersson, Nikolas Fröjd
Volvo GTT

Leveraging cloud computing for heavy vehicle optimization and in-service performance assessment.

C. Lopez, M. Coleman
Tiger Spider Pty Ltd.

DAY 3 THURSDAY 4 OCTOBER 8.30 am – 9.45 am, ROOM MEES

TRUCK AUTOMATION AND PLATOONING DEPLOYMENT

Truck platooning: an update after the European Truck Platooning Challenge.

Arjan van Vliet¹, Robbert Jansen², Joris Cornelissen³
¹The Netherlands National Vehicle Authority (RDW), ²TNO, ³Dept. of Waterways and Public Works, Ministry of Infrastructure and Water Management

Truck Platooning: expected benefits and implementation conditions at highways.

B. Jacob, O. Arbeit de Chalendar
IFSTTAR

Safety assessment of platooning trucks - streetwise.

O. op den Camp, R. Wouters, J.-P. Paardekooper
TNO

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SOCIETAL CHALLENGES OF HIGH PRODUCTIVITY VEHICLES

High productivity freight vehicles: challenges faced by local governments road managers.

R. Di Cristoforo

Advantia Transport Consulting Pty, Ltd.

Comparison of noise emission of HCT and classic vehicle combinations for timber transportation in Sweden.

Ulf Sandberg¹, Sogol Kharrazi¹, Piotr Mioduszewski²

¹VTI, ²Gdansk University of Technology

OECD/ITF study on high capacity transport (HCT) – final report.

Jerker Sjögren.

Jesjo Konsult

DAY 3 THURSDAY 4 OCTOBER 8.30 am – 9.45 am, ROOM PLATE

TYRE PERFORMANCE AND DURABILITY

On tyre blowouts and overheating brakes towards safer trucks

J. Subel, F.W. Kienhöfer, J.H. Lange

University of the Witwatersrand

A framework for heavy vehicle tyre cornering performance assessment and classification within the Performance Based Standard scheme

Marcus Coleman

Tiger Spider Pty Ltd

Empirical estimation of heavy goods vehicle tyre wear.

J. Lepine, S. Burgess, D. Cebon

University of Cambridge

DAY 3 THURSDAY 4 OCTOBER 2.00 pm – 3.40 pm, ROOM MEES

ELECTRIFICATION AND HYBRIDIZATION

Electrified heavy duty road transport.

P. Akkerman, H. Gruenjes, M. Lehmann

Siemens Mobility

Architectural proposal for low-cost low-emission high productivity freight vehicles with electric traction systems.

J. Allwright¹, A. Kulkarni¹, M. Coleman²

¹Swinburne University of Technology, ²Tiger Spider Pty Ltd.

Ultra-capacitor based kinetic energy recovery system for heavy goods vehicles

D. Ainalis¹, P. Achurra-Gonzalez¹, A. Gaudin², J. Garcia de la Cruz³, P. Angeloudis¹, W. Ochieng¹, M. Stettler¹

¹Imperial College London, ²ENSTA Paris Tech & National University of Singapore, ³Universidad Politécnica Madrid

ORCA project: optimization framework for next generation heavy duty hybrids.

Steven Wilkins¹, Thinh Pham¹, Duong Tran², Omar Hegazy², Noshin Omar²

¹TNO, ²Vrije Universiteit Brussel

DAY 3 THURSDAY 4 OCTOBER 2.00 pm – 3.40 pm, ROOM PLATE

DRIVER SUPPORT AND CHASSIS MANAGEMENT

Minimum swept path control for autonomous reversing of long combination vehicles.

Xuanzuo Liu, David Cebon

University of Cambridge

Heavy vehicle braking using friction estimation for controller optimization.

B.E. Westerhof¹, D. Kalakos², L. Henderson³, B. J. H. Jacobson⁴, S. Zhu⁴

¹Delft University of Technology, ²KTH, ³Volvo GTT, ⁴Chalmers University of Technology

Path following bi-directional controller for articulated vehicles.

A. Tomar, K. Kural, R. Kuskumar, A. Naren

HAN University of Applied Sciences

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GLOBAL EXPERIENCES WITH HIGH PRODUCTIVITY VEHICLES

An overview of the performance-based standards pilot project in South Africa.

P. Nordengen¹, R. Berman¹, C. de Saxe¹, J. Deiss²

¹CSIR, ²University of the Witwatersrand

Finding the edge of the envelope - the evolution of high productivity motor vehicles in New Zealand.

John De Pont¹, Don Hutchinson², James Smith³

¹TERNZ Ltd., ²New Zealand Transport Agency, ³Halls Transport

Performance based standards project in Sweden.

Sogol Kharrazi

VTI

A study of the introduction of high productivity vehicles into Uruguay.

Alejandra Efrón¹, Bob Pearson²

¹BrAle/EMaBi, ²Pearson Transport Research Center - PTRC