

Metro Entente Cordiale



NewRail Director, Prof. Mark Robinson and Technical Director, Dr. Stephen Ingleton, recently met Richard McClean, Managing Director of DeutschBahn Metro, Newcastle's light railway system to explore opportunities to work together in the future.

New Projects

OSIRIS

Urban rail systems are complex environments and their energy consumption is characterised by a wide range of inter-dependent factors. This means that it is often extremely difficult to assess the net benefits of introducing new energy saving technologies. Whilst a new technology might yield improvements in certain areas, it might also compromise other aspects of system performance. OSIRIS aims at an holistic approach for the reduction of energy consumption for urban rail systems embracing vehicles, infrastructure and operation. The project will define Key Performance Indicators and Standard Duty Cycles to measure energy consumption in urban rail systems. Then, rather than focusing only on specific technologies, it will address the issue from the system-level ensuring that progress on energy reduction is substantial. The effectiveness of solutions and their full potential will be proven by means of simulations and pilot tests. OSIRIS will introduce the entire discovered knowledge into a Decision Support Tool, to aid strategic decision making in

companies (i.e. operators) and governments (i.e. public authorities).

NewRail's Roberto Palacin will lead the work packages contributing to the definition and development of operational requirements and needs as well as the integration of technical results and economic assessment for Decision Support.

HERMES



The HERMES ("Establishing a CompreHensive transport Research information Management and Exchange System") project kicked off in Newcastle in November. The project aims to develop a closer and more effective communication between researchers working in the field of transport technologies in the EU, and their counterparts around the world by facilitating the exchange of information and developing a framework for long term collaboration.

The project, coordinated by the Newcastle University (NewRail), includes partners WEGEMT (European association of universities carrying out research in marine technology), the European Aeronautics Science Network, Euromobilita (SME specialising in IT with an expertise in transport) and UIC. It also relies on the association and active support of the Transportation Research Board (USA), the Royal Melbourne Institute of Technology (Australia) and the Institute of Transport Economics (Japan). HERMES will establish a common portal for accessing information from databases of past and ongoing research projects worldwide, in collaboration with database managers. As part of these activities HERMES will seek to obtain agreement for a harmonisation of database

architectures, so that information can be accessed easily by researchers.

A second aspect of the HERMES project is to engage the major players in transport research worldwide and bring them together in round table discussions to address the obstacles and concerns that restrict closer international collaboration in transportation R&D and provide a list of recommendations that will allow the creation of a truly global transport research community. Contact george.kotsikos@ncl.ac.uk

D-RAIL



D-RAIL kicked off in October in Paris and is being managed by Prof. Mark Robinson and Roberto Palacin. D-RAIL will focus on freight traffic, identifying root causes of derailment of particular significance to freight vehicles, which have a wider range of operating parameters (as a result of the huge range in loads, speeds and maintenance quality) than passenger vehicles. One key question that will be studied is how independent minor faults (e.g. a slight track twist and a failing bearing) could combine to cause a derailment. D-RAIL will extend this study to include the expected demands on the rail freight system forecast for 2050, such as heavier axle loads, faster freight vehicle speeds for time-sensitive - low volume high value high speed services (LVHVHS) - goods, radically new vehicle designs, or longer train consists. A set of alarm limits will be specified which can be selected as appropriate by infrastructure managers, depending on local conditions.

In tandem with the above analysis, current monitoring systems (both wayside and vehicle-mounted) and developing technologies will be assessed with respect to their ability to identify developing faults and potential dangers. Where current systems are shown to be deficient, the

requirements for future monitoring systems will be specified. D-RAIL will also examine vehicle identification technologies, such as the standards- and interoperability-focussed RFID system being implemented by GS1 and Trafikverket. Integration of alarm limits, monitoring systems and vehicles across national borders and network boundaries will be examined and a deployment plan set out based on RAMS and LCC analyses. Procedures for applying speed limits to faulty vehicles, or taking them out of service, will be set out; this will include communication with the parties responsible for the transport of the freight and for maintenance of the vehicle. This will input to standards, regulations and international contracts. For field testing and validation, D-RAIL will have access to VUZ's test track in the Czech Republic. Contact newrail@ncl.ac.uk

Cab Model on display



Left to right - Conor O'Neill, Professor Mark Robinson, Dr. John Appleby, Dr. Stephen Ingleton

The lightweight, crashworthy cab model which was developed during the DE-LIGHT project is normally on display at our base in the Stephenson Building at Newcastle University where it has its own very special mirrored cabinet as pictured above.

NewRail had a stand at the prestigious Innovation Convention 2011 in Brussels on the 5th and 6th December 2011 hosted by the European Commission and the cab was on display there.

RiFLE holds international workshop in Bulgaria



Tom Zunder and Dr. Marin Marinov (centre) with RiFLE project colleagues

The International Workshop "Educational Programmes in Rail Freight and Logistics" was held on 3 November 2011 as an accompanying event to the 20th International Scientific Conference TRANSPORT 2011 at Todor Kableskov University of Transport, Bulgaria. The workshop is part of the work programme of the RiFLE project "Rail Freight and Logistics Curriculum Development" funded by the EACEA within the LLP/Erasmus programme. The seminar was attended by representatives of the Human Resource Development Centre (HRDC), university partners, guests from European educational institutions and representatives of associated partners, Bulgarian companies from the rail and logistics sector. The innovative idea of this project is that the MSc courses developed will be offered in the participating institutions and will be compatible thus making possible for students to study some of the modules in partner universities. The curriculum of the MSc course in Rail Freight and Logistics at Newcastle University will cover the complete cycle of study using a multidisciplinary approach and innovative tools for curriculum modelling.

Contact: marin.marinov@ncl.ac.uk

Finalists in Action 2011

NewRail had two projects which reached the finals of Action 2011. This Sustainability competition was launched in February and

challenged Newcastle University's researchers to use their ingenuity to solve real-world problems. Dr. Paulus Aditjandra's team presented Sync - A consultancy that brings together scientific research and public needs and Dr. Marin Marinov's team presented EasyTalk - A niche information exchange solution.

Completed Projects TUNRail

The two year rail education oriented project TUNRail: "Tuning transatlantic cooperation in Higher Education", has been completed. A major outcome of TUNRail is a comprehensive electronic railway education handbook that outlines:

- Comprehensive inventory and analysis (comparison and benchmarking) of current railway systems (both freight and passenger), railway higher education programmes and practice in the EU and the US.
- Examples of better practice and successful stories in railway higher education and training.
- Specific recommendations and strategies for enhanced transatlantic knowledge transfer and for development of new programmes or improvement of current programmes.

The electronic handbook consolidates all the material developed throughout the project into one document which can be downloaded from the TUNRail website at www.tunrail.info.

Alternatively you can download it from the NewRail website at:

www.newrail.org/assets/docs/tunrail.hb.pdf

For more information contact Marin Marinov - marin.marinov@ncl.ac.uk.

SafeInteriors

The four year FP6 funded SafeInteriors project concluded recently. The project's objectives were interior design and validation of different crash scenarios for occupant survivability, sledge design and components supply for crash tests. The project results will be developed into Technical Requirements and some of these will be owned by the EU Commission. A UK group

standard has been set and more information can be obtained from Roberto Palacin - roberto.palacin@ncl.ac.uk.

TransNEW

The TransNEW project is coming to a close and NewRailers who have been working on it have had a very busy autumn attending and running workshops and meetings in Hungary, Serbia, Slovenia, Lithuania, and Slovakia. The project finishes in December and full reports on its activities can be found at www.transnew.eu.

e-Freight 2012 Conference Announced

The e-Freight 2012 conference is being held on the 9th and 10th May in Delft, the Netherlands. Conference registration and more information can be accessed at: <http://bit.ly/seOcW4>

RailNewcastle Summer School

The dates for the *Rail*Newcastle summer school in rail logistics for undergraduate students have been announced: 25 June-13 July 2012. Registration will open soon and will be announced on our website and via Twitter. More information from marin.marinov@ncl.ac.uk

Staff News

Tom Zunder becomes Chartered Fellow of CILT

NewRail's Tom Zunder, Manager of the Rail Freight and Logistics Group has been elected Chartered Fellow of The Chartered Institute of Logistics. Members of The Chartered Institute of Logistics and Transport (UK) are part of an internationally-recognised network of professionals.

More information about CILT can be found at: <http://www.ciltuk.org.uk/pages/home>

Tom has also joined the UK Advisory Group for Rail Research and Innovation, AGRRI <http://www.agrri.org.uk/>

New Staff

Research Associate **Emmanuel Matsika** has joined us from Bolton University where he has just completed his PhD on rail vehicle interior crashworthiness. He'll be joining the Vehicles Group to work alongside Conor O'Neill on the SECUREMETRO project, as well as supporting the vehicle design aspects of SPECTRUM and SUSTRAIL.



Our new Database Manager is **Dr. Corry Gellatly**, is a research scientist with in-depth experience of database design, web-based data management tools and working with large-scale datasets. He is working on the TransNEW and HERMES projects at NewRail.

Research Associate **Elena Meneguz** whose PhD "Measurements of the statistical properties of particle segregation in turbulent flows" has been a successful theoretical and numerical joint project with Imperial College London. She will be working initially on the CleanER-D project with Roberto Palacin. She recently gained 4th place out of 60 in the Osborne Reynolds Colloquium student awards for work in fluid dynamics.

Goodbye Joe

We wish Dr. Joe Carruthers good luck in his new job at NetComposites as their Operations Director.

NewRail brochure

Our glossy NewRail brochure which was first made public at Innotrans 2010 is now available in PDF format on our website. Go to <http://www.ncl.ac.uk/newrail/news/brochure.htm> to look at it. If you would like the printed version please email: karen.mctigue@ncl.ac.uk