Traffic Software News

Issue No.40 | December 2006 | www.trlsoftware.co.uk

# PCMOVA for VISSIM and S-PARAMICS traffic microsimulation launched in January 2007

Earlier this year TRL successfully released PCMOVA version 1.0 which allowed users of the S-PARAMICS traffic microsimulation model to implement MOVA traffic signal control within their off-line models (see TSN Issue 37). In January, TRL will be releasing a revised version of PCMOVA which is compatible with the VISSIM traffic microsimulation model, and which also has a number of additional refinements.

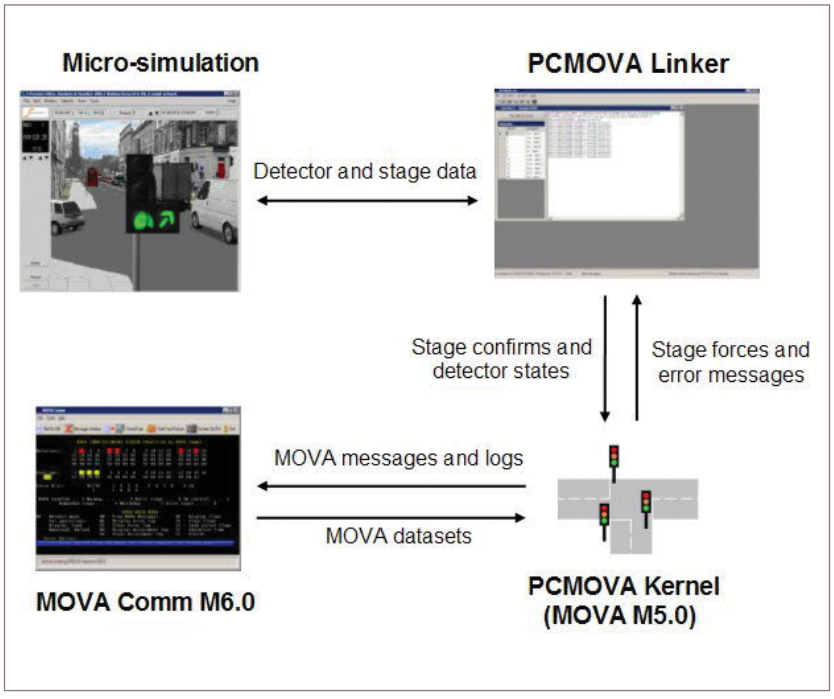
The PCMOVA product contains the same MOVA traffic signal control system as implemented on-street. PCMOVA is therefore of significant benefit to users of VISSIM or S-PARAMICS if:

- Your existing traffic microsimulation model includes signalised junctions which are controlled by MOVA on-street (only by using PCMOVA can MOVA traffic signal control be represented realistically within your model);
- You wish to assess the benefits of introducing MOVA traffic signal control within your traffic microsimulation model prior to implementation on-street.
- You wish to test different MOVA traffic signal control configurations within your traffic microsimulation model, or test proposed changes to existing installations prior to implementation on-street.

PCMOVA communicates with traffic microsimulation models through a 'linking' application, the PCMOVA Linker (not to be confused with linked MOVA where MOVA junctions may be co-ordinated). The PCMOVA Linker allows users to create mappings between junction nodes in the traffic microsimulation model and MOVA datasets (junction specific configuration data required by MOVA), and between modelled detectors and MOVA detector channels.

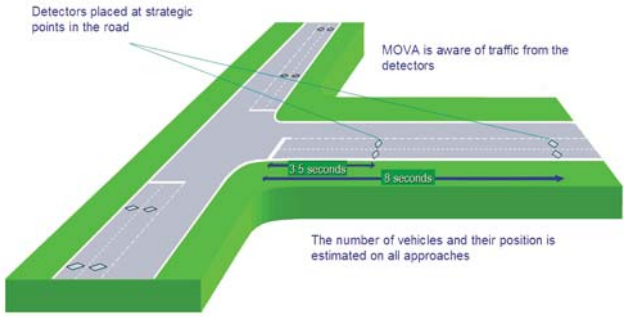
The new release of PCMOVA has the following features:

- The ability to link to VISSIM as well as to S-PARAMICS;
- In VISSIM, phases (or signal groups) are controlled directly and PCMOVA now has a signal controller emulator that allows the translation of stages into phases (with S-PARAMICS, PCMOVA makes use of P-controller);






# PCMOVA for VISSIM and S-PARAMICS traffic microsimulation




MOVA decides when to change signals by working out, second-by-second, the balance of delay to stopped vehicles versus the potential delay to and the cost of stopping those vehicles on green

- MOVA is increasingly being used in small networks, especially signal controlled roundabouts. The linking signals between junctions can now be implemented in a way that is similar to that currently used in practice;
- Queue detection, often used in linked situations, can be implemented;
- A simple pedestrian model has been implemented to avoid the more complicated modelling within microscopic simulation, for occasions when a simple model is all that is needed, just to exercise the pedestrian facilities at a MOVA controlled junction;

The new release of PCMOVA will be supplied as a FREE upgrade to existing PCMOVA licence holders. Pricing and purchasing instructions for new customers can be found on the TRL Software website at www.trlsoftware.co.uk.

PCMOVA has been well received within the traffic microsimulation community and with existing MOVA users. The linkage to both VISSIM and S-PARAMICS demonstrates TRL's continued commitment to innovation. We are considering the development of PCMOVA for other traffic microsimulation packages, and we would be very happy to receive feedback from users and potential users.

For more information on PCMOVA for VISSIM and S-PARAMICS, please visit TRL's software website, **www.trlsoftware.co.uk** or email **softwarebureau@trl.co.uk**

**Jennie Lowe** **email: jlowe@trl.co.uk**
**Mark Crabtree** **email: mcrabtree@trl.co.uk**

# OSCADY PRO

## Free Introductory Seminars

TRL is running a number of free half day introductory OSCADY PRO seminars across the country in December and January. For further details and booking instructions, contact the TRL Software Bureau, or visit **www.trlsoftware.co.uk**

**STOP PRESS** Due to popular demand, additional OSCADY PRO seminar dates are being organised in Ireland.

TRL is happy to consider running additional seminars to meet customer demand. Contact the TRL Software Bureau to discuss your requirements.

Customers are reminded that the special offer discounts will expire on March 31st 2007

# Demystifying MOVA traffic signal control – with TRL training courses

TRL has just completed the delivery of a three day MOVA training event, comprising a 1-day 'Introduction to MOVA' course followed by a 2-day 'Engineers' MOVA training course.

The one day course was suitable for engineers new to MOVA, and for managers responsible for policy and implementation. The 20 attendees were introduced to MOVA, the way it works and why it works so well. Performance results were presented, including vehicle delay savings and safety, as well as newer MOVA developments such as Compact and linked MOVA. The PCMOVA linkage to traffic microsimulation was demonstrated, and news on the new VISSIM link provided.

The two day 'engineers' course was run immediately following the introductory course, with a number of delegates attending both courses. The 'engineers' course was held at a residential conference centre conveniently close to Maidenhead. TRL's Mark Crabtree and Alastair Maxwell were the course tutors. The delegates were instructed in the detail of how MOVA works and how to design, configure, commission and validate MOVA sites. Presentations were interspersed with practical sessions, including designing detector layouts, configuring MOVA data, measuring cruise speeds, and understanding MOVA messages and using the 'commissioning screen' (using on-line simulation).

Those delegates staying at the conference centre, in the beautiful village of Cookham, benefited from the centres facilities, including leisure facilities and a gym.

Both courses were very well received, and TRL will be running further courses in the near future.

For more details, and to register your interest in future training courses, contact the TRL Software Bureau at **softwarebureau@trl.co.uk.**

# PERS V2: AUDITING STREETS AND SPACES FOR PEOPLE

Local authorities are increasingly focussing their attention towards improving pedestrian environments and developing high quality streetscapes. TRL have produced an expanded and updated version of a software auditing tool – PERS v2 – which local authorities can use to assist them in deciding which aspects of public spaces and streetscapes to upgrade and how to prioritise funding.

The latest Local Transport Plan Guidance (2005) identifies that local authorities can make a major contribution to the quality of public spaces through good design, maintenance, traffic management measures, encouraging walking and cycling, and measures such as de-cluttering, use of greenery, lighting and signage. With pedestrian movement and the importance of streetscapes recognised within national and local policy, a method is required to effectively assess these types of environment and to identify ways to encourage people to use them.

## PERS v2

PERS (the Pedestrian Environment Review System) was originally conceived by TRL with the London Borough of Bromley who had identified that there was no set methodology in place to consistently and holistically assess pedestrian environments. PERS aimed to meet this need, providing a resource for local authorities to effectively evaluate provision for pedestrians and to highlight problems in the pedestrian environment and prioritise resources.

PERS consisted of audit frameworks to assess the links, crossings and routes available to pedestrians in a given area. TRL have recently finalised the development of PERS v2, which is an expanded and updated version of the original tool. This version has been developed with Transport for London. PERS v2 provides new audit frameworks for interchange spaces, public spaces and public transport waiting areas, and enables the auditor to not only consider public spaces and streets as pedestrian environments, but also as environments used for social purposes.
PERS v2 consists of three integrated components - a handbook for users giving guidance on the parameters to assess and for conducting the site

review, data collection sheets for links, crossings, routes, public transport waiting areas, interchange spaces and public spaces for use on-site, and a simple software tool for data input and subsequent comparative route analysis.

The audit frameworks have been developed from extensive literature research, including existing systems of pedestrian review and national guidance on making provision for pedestrians. These frameworks form the basis of a comprehensive tool for auditing a range of pedestrian environments which can be undertaken in a short space of time. Typically, a town centre audit can be undertaken in one to two days.

## PERS v2 in action

The auditor is required to use a review form for each link, crossing, route or space within the chosen environment, using a framework of parameters as the method for on-site assessment. The system asks the reviewer to assess the pedestrian environment from an 'end-user perspective', taking into account the needs of vulnerable pedestrians within the review framework. PERS v2 ensures that the needs of pedestrians across all levels of mobility are considered, in terms of their ability to access the environment. Critically, the review forms provide the opportunity to record any supporting information as comments to verify the quantitative values given. These comments are of key importance as they provide both the reasoning for the scores given and may identify potential improvements to the walking environment.

The scores and comments from the on-site assessment are entered into the PERS v2 software. The scores are automatically factored with an appropriate weighting applied to each parameter to emphasise the importance of each of the elements within the pedestrian environment. From this input, the outputs produced consist of a score of each parameter under review along with an overall score and a percentage score. The scores are also automatically attributed a red, amber or green (RAG) (poor to good) rating. The scores and RAG enable analysis of the audited environment in a number of ways. Charts can be produced to assess the performance of individual facilities or to assess comparative performance, both in aggregate and feature by feature. The software also enables a GIS output of the results and the use of a sketch map facility for assessment.

This analysis enables objective comparison of the level of service of the reviewed environment to inform strategic decision making and targeting of investment by local authorities. A PERS v2 audit can also be complemented by on-street surveys to gauge public views and perceptions to the local pedestrian environment and stakeholder consultation.

## PERS v2: Application

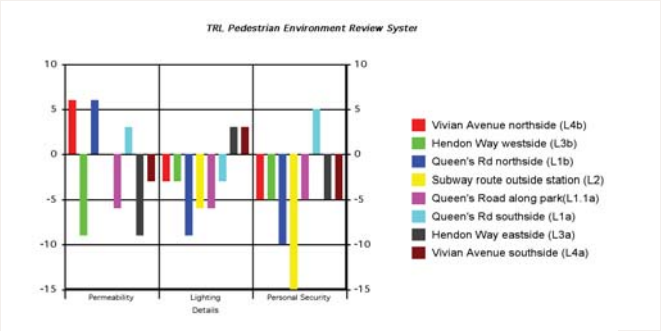
PERS and PERS v2 have been applied in a range of environments including:

- Town centres such as Orpington in Bromley, Farnham in Surrey and Eltham in Greenwich
- The environment around a cluster of schools in Northwood, Hillingdon
- Pedestrian environments for regeneration such as the 'Imax Tunnels' near Waterloo Station.
- Bognor Regis Home Zone
- A north-south walking route in the London Borough of Lambeth
- The new Vauxhall Cross transportinterchange

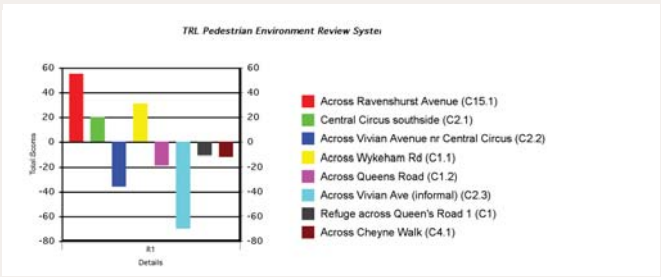
The tool has been used as a method to identify strategic and localised solutions to improve pedestrian environments, to lever in funds and to prioritise future resources. PERS has also been applied hypothetically to assess the potential level of service improvement if advised changes are made to the pedestrian network.

TRL are providing on-going training in PERS v2 for TfL area team staff and this year has been commissioned by TfL, to undertake two phases of PERS audits at over 40 sites across Greater London for the identification of improvements to pedestrian environments.

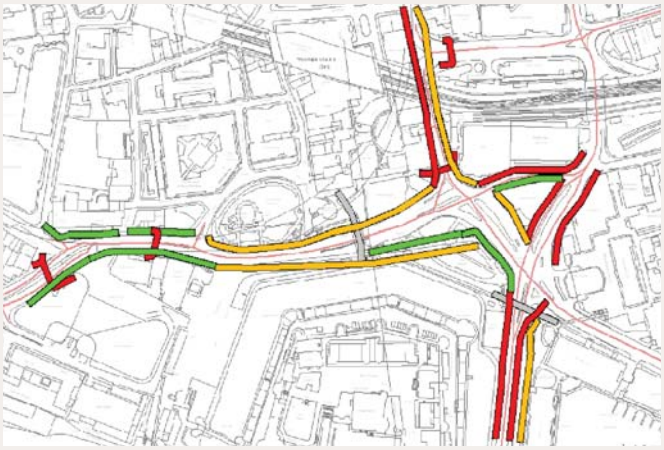
The PERS v2 software is available for purchase now. Alternatively, TRL can undertake a PERS v2 audit on a consultancy basis. TRL also provides training in the use of PERS v2.




PERS GRAPH SHOWING PARTICULAR LINK PARAMETER SCORES




PERS GRAPH SHOWING TOTAL SCORES FOR CROSSINGS AUDITED



A LINK RAG PERS OUTPUT FOR TACTILE INFORMATION

MAP OF OUTPUT OF LINK RAG SCORES FOR DELAY

**If you would like to find out more about PERS v2, please contact David Allen at dallen@trl.co.uk (01344 770281). To purchase a copy, please contact the TRL Software Bureau at softwarebureau@trl.co.uk (01344 770758 or 770558).**

# Helping to inform infrastructure investment decisions overseas

## - A Road Data Manager system that links to HDM-4.

TRL has recently been supporting the government of Malawi to develop a more effective pavement management system. The main components of this pavement management system are a customised central database that can export data to a road investment decision support tool. This provides the means to investigate possible future impacts of alternative road development and preservation strategies. An example of this is the Road Data Manager (RDM) system for Malawi that links to HDM-4 (Highway Development and Management tool).

Road infrastructure is one of the major driver's of a country's economy and the management of that asset is therefore a critical operation for any country's economic development. The importance of the maintenance of those roads cannot be over emphasised. It is the lifeline of the very existence of road networks and the means by which expensive investments are preserved in order to be of maximum benefit to the road users and the wider economy.

However, due to resource limitations many agencies responsible for the management of their road network are challenged to justify their road maintenance programmes, and more importantly to implement programmes that make the most effective use of available resources.

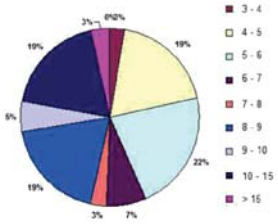
A solution to this is to develop a central database for storing and processing information on an agency's road network, which can be based on existing survey techniques. The centralised database can process the data and produce customised reports on the state of the road network for managers. It can also be linked to a road investment decision support tool, e.g. Highway Development and Management tool (HDM-4), by means of generating export files.

This produces a powerful system for any agency to address their road investment options.

A recent example of this type of system is where the Malawi National Roads Authority (NRA) commissioned TRL to develop a sustainable pavement management system that would provide accurate information to support and justify its road maintenance strategies. The RDM database was developed for storing and processing information on Malawi's road network, based on survey forms already in use by NRA. The data held in RDM includes ordnance, inventory, condition, traffic, pavement layer details, works history etc. which can be displayed in reports in both tabular and graphical formats. These reports provide up-to-date information on the state of the road network for NRA's management and government at large.

**Measured Roughness**

| IRI | Length of Sub-links (km) | Length of Sub-links (%) |
|---|---|---|
| < 3 | 0.0 | 0.0 |
| 3 - 4 | 1.0 | 2.7 |
| 4 - 5 | 7.0 | 19.0 |
| 5 - 6 | 8.0 | 21.7 |
| 6 - 7 | 2.7 | 7.3 |
| 7 - 8 | 1.0 | 2.7 |
| 8 - 9 | 7.0 | 19.0 |
| 9 - 10 | 2.0 | 5.4 |
| 10 - 15 | 7.0 | 19.0 |
| > 15 | 1.2 | 3.3 |
| TOTAL | 36.9 | 100 |




The road investment tool selected to link to RDM was HDM-4, which provides a powerful system for the analysis of road management and investment alternatives and has been used throughout the world over the past two decades. HDM-4 allows the user to conduct technical and economic appraisals of road investment projects, and analyse strategies and standards for road network improvements.

A routine was developed in RDM to create homogenous sections of road according to a series of user-definable selection criteria. The selection criteria are based on condition and inventory characteristics and combine adjacent lengths of road into homogenous sections. When the user is satisfied with the sectioning, RDM creates an export file that is compatible with the HDM-4 input requirements. This file can be exported to either HDM-4 version 1 or 2. Due to the requirement of HDM-4 that all data fields are populated, customised default look-up tables have been created in RDM to populate missing data during the export process.

Through RDM and HDM-4 it is now possible to develop prioritised multi-year works programmes under user-specified budget constraints and to examine the economic viability of long term road policy objectives of the Malawi government. This new pavement management system enables the NRA to prioritise its road works activities based on sound economic criteria.

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**Greg Morosiuk** email: gmorosiuk@trl.co.uk

# CURRENT PROGRAM VERSIONS

| | |
|---|---|
| ARCADY | V6.0 AD/4 |
| PICADY | V5.0 AC/3 |
| OSCADY | V5.0 AB/2 |
| OSCADY PRO | V1.01 |
| TRANSYT | V12.0 AD/4 |

(ALL ABOVE HAVE RIGHT/LEFT CAPABILITY)

| | |
|---|---|
| BUNDLE 3 | V3.1 Issue 4 |
| PC MOVA | 1.0 |
| MOVA SETUP | M5.0.0 |
| MOVA Comm | M6.0.0 |
| CONTRAM 8 | V 8.3 |
| MAAP (for Windows) | 4.3.0 |
| SafeNET | 2.03 |
| PERS | 1.1 |
| MTV | V 2.1 |

# Who's Who

**Andrew Lewis**

Andrew has recently gained a First Class Honours Masters degree in Software Engineering at the University of Southampton. Working in the Software Development Group at TRL he has been involved in the development of ARCADY as well as maintaining various TRL software products. He has also been closely involved with the testing of the new OSCADY PRO product.

He has a keen interest in Computer Graphics Theory as well as in Real-time and Embedded Systems. Outside of TRL Andrew enjoys hiking and photography.

# COURSES, SEMINARS & USER GROUPS 2007

**SCOOT**
2 day Training Course at TRL
6th - 7th March 2007

**ARCADY / PICADY**
2 day Training Course in Maidenhead
27th - 28th March 2007

**TRANSYT**
2 day Training Course in Maidenhead
24th - 25th April 2007

**OSCADY PRO**
2 day Training Course in Maidenhead
3rd - 4th July 2007

N.B. Some dates provisional

# New Style TRL Software Website Launched


Our dedicated software website **www.trlsoftware.co.uk** has undergone a major refurbishment bringing it into line with corporate TRL branding and style. We have taken this opportunity to also introduce a number of new features such as improving the search facility, improved e-commerce, as well as the ability for previous customers to be invoiced rather than paying for their software by credit card.

There is a full back catalogue of Traffic Software News downloadable in PDF format, as well as our monthly email software bulletins, meaning you can readily keep up to date on the latest developments in TRL Software. Also enhanced is our Knowledge base which answers most common questions about our software as well as the more complex modelling and application enquiries we often receive.

We are always looking for ways to improve the site further so if there things you would like to see on our site, please do drop us a line so that we can take your views and ideas on board.

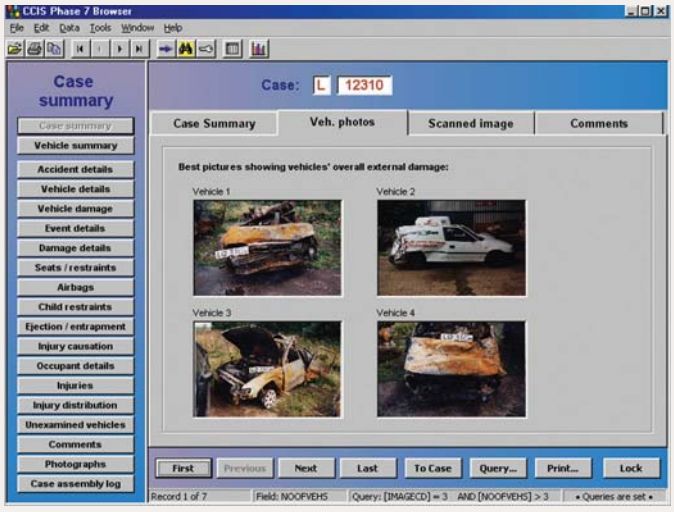
**Chris Edge**
**cedge@trl.co.uk**

# TRL Software Development Consultancy Services

TRL is known across the world for its traffic and transportation software products. But did you know that TRL can also carry out bespoke software development tailored to meet *your unique requirements?*

The TRL Software Development Team has carried out numerous bespoke software development projects for customers including the Department for Transport, the Highways Agency, and the Vehicle & Operator Services Agency. A few case studies can be seen in the 'Consultancy' section of our new website.

We can carry out the complete software development life cycle, from analysis, specification and design, through implementation and testing, to ongoing maintenance and support.




All our work is Quality Assured and externally accredited. Database design and development is a particular speciality. To discuss your unique software development requirements, contact **Glyn Rhys-Tyler, email grhys-tyler@trl.co.uk.**

If you would like more information on any of the issues raised in this issue please contact us **email: softwarebureau@trl.co.uk** or visit us at **web: www.trlsoftware.co.uk**

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