



CASE STUDY



UniSA

CUSTOMER PROFILE

The Transport Systems Centre (TSC), Barbara Hardy Institute at the University of South Australia, is an international centre of excellence in transport and logistics.

It offers education at the undergraduate and postgraduate level as well as:

- Training through specialist courses tailored to users needs
- Research and development
- Consulting and expert advisory services.

Executive Summary

At a time when cities and traffic in general are becoming more congested, urban planning software such as Pitney Bowes Software's Paramics is becoming an essential tool for tertiary educational institutions in creating world-class urban planning and engineering courses.

For engineering students at the Barbara Hardy Institute – Transport Systems Centre (TSC) at the University of South Australia (UniSA), Paramics software has been instrumental in planning highly detailed urban traffic and pedestrian modelling based on real-life city infrastructure.

UniSA has been using the Paramics software for over 10 years to teach its students how to best plan urban infrastructure, with many students using the modelling software to complete their thesis.

Challenge

Students at UniSA are introduced to the basics of micro-simulation through the set of lectures in courses such as Graduate Certificate in Engineering (Transport Systems Engineering) ICER, Transport Network Analysis (CIVE 5025) and Advanced Transport Network Analysis (CIVE 5071).

UniSA needed a cutting-edge urban traffic and pedestrian modelling software package to teach its students how to best plan urban infrastructure.

The University wanted to ensure that its students were receiving first-class training in these courses and that they would go on to gain positions with government and private urban planning and engineering firms. A micro-simulation tool with immense detail was needed for this to allow their students to truly model highly complex traffic and transportation assessments and have the skills to assist with planning new transportation options.

“For our students, it is the traffic optimisation and scenario comparison together with the 3D virtual display that is particularly useful and puts this software amongst the leading micro-simulation packages in the world.”

Branko Stazic
Research Associate
and Lecturer

Solution

UniSA Research Associate and Lecturer, Branko Stazic, says that the University has been using the software to teach its students how to best plan urban infrastructure, with many using the modelling software to complete their thesis.

“Paramics has been integrated into our teaching programs at undergraduate and postgraduate levels for more than ten years, providing our students with hands-on experience in the use and application of micro-simulation,” said Stazic.

“Because of its detailed nature, it is used mainly for large-scale traffic and engineering modelling that take around three to six months to plan. For our students, it is the traffic optimisation and scenario comparison together with the 3D virtual display that is particularly useful and puts this software amongst the leading micro-simulation packages in the world.”

The sophisticated planning software is used by around 80 countries worldwide and has been in use by the University for well over a decade to design efficient, economical driver and pedestrian friendly transport infrastructure to plan for current and future urban planning scenarios.

The TSC has also conducted courses in micro-simulation using Paramics with the latest example being a course delivered to students at the Khon Kaen University, Thailand in 2010.

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TECHNOLOGY USED

- Paramics is a leading traffic simulation software package used by planning professionals in over 80 countries to design efficient, economical, driver and pedestrian friendly transportation infrastructure.
- Paramics simulation software allows operational assessment for current and future year traffic conditions, detailed reporting of key MOE's and high definition presentations to non-technical stake holders.

Results and Benefits

In addition to micro-simulation basics, students utilise Paramics as part of their thesis and various case studies. Student projects conducted so far include:

Modelling of the complex SCATS queue relocation logic at the grade level crossings

Incident modelling of Goodwood Road, Adelaide and evaluation of the North Terrace traffic signal upgrades

Performance studies of the Southern Expressway and evaluation of the signal coordination for triangular networks

Simulation of the O-Bahn buses re-routing in the Adelaide CBD and impact assessment of the tramway extension in Adelaide.

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Branko Stazic
Research Associate
and Lecturer

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