

Intelligent Traffic and Vehicle Systems

The University of Southampton's Transportation Research Group (TRG) is developing better traffic systems to keep people moving. Researchers are helping create sustainable and efficient road transport networks in cities in the UK and elsewhere in the world and advanced technological systems to forecast motorway traffic flows. They are also working with Jaguar to improve dashboard information systems to cut accidents and improve the driving experience.

The UK government has promised to establish a transport system which will be 'an engine for economic growth, but one that is also greener and safer and improves the quality of life in our communities.' The TRG shares this aim and has worked for four decades to apply its cutting-edge research to complex transport problems.

Major research projects by TRG Director, Professor Nick Hounsell and his team have resulted in the production of algorithms for advanced bus priority systems in London, which were used to great effect during the 2012 Olympic Games. Transport for London (TfL) says the systems have generated economic benefits of £29million a year between 2009 and 2014. New tools have also been developed for the UK's National Traffic Control Centre to analyse and forecast motorway traffic flows. Early detection and identification of incidents is estimated to have saved around £50m a year from 2008-13.

Neville Stanton, Professor of Human Factors at the TRG, is interested in developing in-vehicle information systems, which can reduce accidents, increase the number of cars which can use the roads safely at one time and boost driver satisfaction. His project with Jaguar is looking at the best ways of introducing voice-activated systems in cars and is estimated to be worth £1m a year to the business.

Academics and postgraduate research students have enjoyed taking their work to the people through a series of interactive exhibits showcasing various ways of improving road, rail and air travel. A sophisticated simulation using a giant Scalextric set to illustrate traffic signal control was shown at the Royal Society's Summer Science Exhibition in 2011, the first time any university-based transport group had taken part. It attracted more than 14,000 visitors, including senior policymakers and MPs, and featured in an article in the Guardian and on the BBC television programme The One Show. The exhibit was designed with the Transport Research Laboratory, the Motor Industry Research Association, innovITS and Siemens, who were all industrial partners in the research. It has also fascinated people at the Cheltenham Science Festival and music lovers at Bestival, the four-day festival on the Isle of Wight.