



Location: United Kingdom

Application: Vehicle Priority - Peek Traffics Prism Unit

Idris Technology Partner: Peek Traffic Ltd, UK

Background: One of the Idris technology applications is for Vehicle Priority, it is this application that Peek Traffic have integrated into their own product - Prism. The unit is based around technology that was been developed and enhanced over the last 10 years ago by Diamond Consulting Services.

Using standard in-ground loops and a series of patented and highly complex algorithms, Idris is able to measure the speed, direction of travel, length and classification of any vehicle passing over a loop array. Widely used in the USA to classify vehicles as they pass through tolling plazas, the Idris technology is now increasingly seen as a data-profiling tool for the real-time management of traffic in a variety of situations, including bus priority.

At the core of the technology are the Idris patented algorithms and a high level scripting language. This language has been developed to describe the inductive profiles of vehicles as they travel over a loop array. The scripting language, stored in a rule file, along with the associated software components to read the file, allows suitably qualified engineers to adjust or change the profiles being determined. This ability enables specific vehicles with distinctive loop signatures to be identified, for example, bus models from a regional bus fleet.

Product Functionality: The function of the Prism unit is to detect relevant vehicles and place a demand on junction controllers. The unit, by placing the priority demand, is only a part of the overall system, it is the responsibility of the junction controller to act upon that demand and adjust the phasing of the junction accordingly.

The Prism product, requires no on-board equipment and using a standard configuration with two loops per lane, any number of approaches can be monitored. Once configured the system operates as a stand alone unit without the need for expensive communication systems. In addition to this data-profiling function, it is possible for the Idris system to initiate a vehicle violation trigger to discourage non-priority vehicles from using the specified lanes.

Prism in action: In the City of Aberdeen, an urban traffic management scheme has resulted in buses completing their routes well ahead of schedule and has required a new timetable to be published. The picture is the same in York and other cities in the UK where bus priority schemes linked to traffic light controls have allowed public service vehicles to avoid the worst consequences of congested streets. In each case, the highly accurate data profiling system, Prism, has allowed priority to be given to public service vehicles on the approaches to automatic traffic lights.

“Like every other city in the UK, bus running times in Aberdeen were suffering as a result of traffic congestion.” said Colin Gibb, an ITS engineer with the local authority. “About five years ago we got together with Peek Traffic to install their highly accurate Prism bus priority system on the three main routes into the City centre. Very quickly, we found that buses on these routes were knocking an average of 18% off their journey times.”

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Deployed in Aberdeen on single carriageway roads, the scheme is unusual in that all traffic in the immediate vicinity of a bus is likely to benefit from the priority signalling. “The cross flow traffic at these priority signal junctions,” said Colin, “is not heavy and the 15 minute headway between each bus means that there is no appreciable interruption to vehicles on these minor routes.”

Also in Scotland is another, major deployment of the data-profiling capability of the Idris-based system. Between the town of Kilmarnock and the ferry port at Ardossan, in Ayrshire is a bus route that must contend with no less than thirteen, light-controlled junctions, all of which have the potential to disrupt bus running times. To solve the problem, Prism has been installed at all the junctions within the last few months and is now helping to reduce bus delays.

A few hundred miles to the south of Ayrshire, in Coventry, the City Council is in the process of constructing a £42m (€70m) city-wide bus priority network known as Prime Line. The 4 year project, which started in 2004, has, to date, installed five priority signal sites at some of the most seriously congested junctions. More are expected to follow as the programme rolls out.

Unlike Aberdeen, Coventry uses dedicated bus lanes and the approaches to junctions are controlled by ‘gates’ in which buses are given priority over other traffic. “We specifically recommended the Idris-based system,” said Barry Auckland, a consultant with Jacobs Babbie, “because of the known accuracy and reliability of their data-profiling capabilities.”

Across the Irish Sea, in Cork, the City authorities are part-way through a five year, €10 million, Green Routes programme designed to provide a range of improvements for all road users including cyclists, pedestrians and buses. A major part of the project is the upgrading of all the bus routes in the City centre.

“From the start,” said Ian Winning, Senior Executive Engineer with the Traffic Division of Cork City Council, “we specified Prism for our bus priority system for two reasons. In the first place, we wanted an accurate, robust and trouble-free system for giving buses priorities at certain critical junctions, while in the second place we wanted a system that did not require the fitting of any in-vehicle equipment before it would work. Apart from the stand-alone installation in Black Ash, all the junctions equipped under the Green Routes programme will be linked to the existing SCOOT system. This will ensure that any temporary disruption caused by the priority given to our buses will be dealt with by the ‘recovery’ algorithm within SCOOT”.

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The Idris Technology is protected by one or more of the following patents: [EP0879457](#), [USA 6345228](#), [6337640](#) and [6483443](#).

[Patent Applications Pending in other Countries](#)

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