



Location: A30 trunk road from Exeter to Honiton, Devon, United Kingdom

Client: Connect A30/A35 Limited.

Application: Shadow Tolling

Product: Idris DR410 & Drakewell C2 system

Project: D.B.F.O (Design Build Finance and Operate). To provide reliable and accurate data recording technology with a user friendly interface for traffic monitoring on the A30.

Background: The A30 is a privately operated road set up under contract between the Highways Agency and Connect A30/A35 Limited. The construction of the trunk road from Exeter to Honiton began on October 1st 1996 and was completed on the 31st March 2000. Connect was awarded the contract to replace the existing congested road as well as a 9km dual carriageway bypass. The bypass construction was to take the trunk road traffic out of the picturesque villages of Puddletown and Tolpuddle in Dorset. This carriageway was intended to ease congestion, which in-turn, would enhance the environment and improve safety in these small villages. The scheme would also provide additional capacity to improve traffic flow and help to accommodate future predicted traffic growth.

History: For some time the volume of traffic using the A30 had been an issue as the flow varied with significant seasonal variations. When traffic was at its peak during the holiday periods, there could be in excess of 24,000 vehicles traveling the route with HGV's making up around 10% of the figure.

Project Detail: A contractor awarded a D.B.F.O project is paid by shadow tolling the stretch of road. Shadow tolling is tolling but without the physical presence of tollbooths and the road users do not actually pay charges to the operators. The term "shadow tolling" is used when there is a requirement to record the number and type of vehicles using a road in order to set a value against this usage. The Highways Agency pay Connect for the A30 project on an annual basis depending upon the volume of traffic using the road. For this reason it is paramount the shadow tolling system meets the highest levels of accuracy so neither party is under or over paid.

Drakewell Ltd, who specialise in data collection and traffic analysis reporting, were contracted by Connect to carry out the shadow tolling on the A30. Drakwell implemented their C2 software and the Idris DR410 product to gather the data required to form the system.



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How it works: The data collected was sent to Drakewell's C2 system which provides a platform for the data to be recorded onto. From there the data can be viewed and stored in an industry standard database. The C2 system is ideal for manipulating statistics and data into a usable format for shadow tolling statistics and issuing the various types of report.

Idris counts and monitors the number of vehicles traveling the A30 via fourteen DR410 units housed in road side cabinets. The DR410 achieves vehicle count accuracy of 99.9% and was selected as the data recorder for this project due its high accuracy levels. Amongst other information Idris records the vehicles direction of travel, length, speed and class. This is achieved by the DR410 analysing vehicle signatures as they travel over an in-ground loop array and then processing this inductive loop data. Patented Idris algorithms translate the information into accurate per vehicle records. The DR410 is able to place vehicles into a number of classifications however, for this project only two classifications were required; vehicles over 5.2m in length and vehicles less than 5.2m. The vehicles in the higher category are likely to be heavy goods vehicles, therefore a higher fee would be charged as they contribute more to the wear and tear of the road surface. The data, i.e. the number of vehicles using the road per day and their size, is collected and forms the revenue charge passed to the Highways Agency.

Results: Using Idris as part of the shadow tolling system means data can be continually collected, in all weather conditions and in total congestion. The accuracy and end results are achieved regardless of the various traffic situations, from total congestion (stop/start) through to free flow. The accuracy of the technology is due to Idris' ability to distinguish between vehicles towing, tailgating and ones that straddle lanes. This level of accuracy allows both Connect & the HA to be confident in their financing and payment for the project.

The Idris DR400 range is the ideal choice for any data recording application.

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