

# Intelligent transport system offers more effective tolling

**Diamond Consulting Services (DCS) design and develop intelligent transport systems that provide very accurate data on individual vehicles for tolling and traffic data recording purposes. A powerful technique, developed with the support of a Smart Award, helps identify the number of axles per vehicle using inductive loop technology. The IDRIS axle classification system offers a simple and cost effective method for charging tolls, which is being adopted by authorities in North America and Europe.**

Diamond Consulting Services is a family run firm, based in Aylesbury, which is rapidly building an international reputation for development of intelligent transport systems. The company developed a patented technique, which provides accurate data on vehicles for tolling, monitoring and enforcement purposes under any weather or traffic conditions.

The company was set up by Fiona and husband Bob Lees, a systems engineer who had been working for WS Atkins on a fledgling incident detection system in 1993/4. Later they were joined by Bob's brother Andy Lees, a software engineer who had worked on defence projects in Australia.

The original IDRIS (Incident Detection for Road Information and Safety) system was designed to detect any halted vehicles in the Penmaenbach Tunnel, as part of

the A55 North Wales coast road upgrade. Bob recognised there was further commercial potential in the technology, and subsequently developed a similar system for use in the tunnels at Heathrow Airport.

DCS then focused on developing a new system to help count vehicles and classify them for shadow tolling, in line with Government plans for DBFO (Design, Build, Finance and Operate) and PFI (Public Finance Initiative) road building initiatives. In 1996, DCS licensed the technology to Peek Traffic in the UK. With a change in Government, which had different road building objectives, they refocused on the US market.

## Vehicle axle classification

In 1998, DCS secured a £30,000 Smart Award for a £100,000 programme to develop an innovative loop vehicle axle classification system.

"We patented a series of algorithms and the IDRIS Smart Loop System, which uses inductive loop output to detect the presence of many vehicle classifications, including motorcycles, cars, trucks and commercial vehicles in all weather and traffic conditions."



The first sale was made in 1999 to Delaware Department of Transport, closely followed by several other North American states. Trials are underway in Portugal, Malaysia and Australia. DCS is also involved in discussion for schemes around the UK.



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The technology is also being offered by Peek Traffic for bus lane enforcement.

### **Tolling revolution**

“Our intelligent transport system offers a revolution for the tolling industry,” says Fiona. DCS maintains its system is easier to install and more efficient than traditional, electro-optical transport tolling and monitoring systems, which require overhead gantries and complex arrays of lights and cameras to handle different transport and weather conditions.

“The Smart Award came at a crucial time, as an R&D company which had no external sources of

funding. The Smart Award enabled us to develop world beating technology, which is poised to be a huge success internationally,” says Bob.

### **Lesson Learnt**

- **End-users often need convincing that new and less complex installations will do a better job than traditional systems**
- **It takes patience to introduce revolutionary technology**
- **Finding the right Licensing partner(s) and managing the business relationship is key to success**



## **At a Glance**

### **CONCEPT**

Intelligent transport system

### **POTENTIAL MARKET**

Global road transportation systems

### **INSPIRATION**

Identified need for accurate vehicle detection for tolling purposes

### **CURRENT**

Installations in US, Europe, Asia and Australia

### **FUTURE**

Massive growth prospects here and abroad