



**ADVANCED TRAFFIC TECHNOLOGY**  
COUNTS, SEPARATES & CLASSIFIES IN **ALL** CONDITIONS

Technical Sheet No. 9

## **Idris®**

### **LOOP TECHNOLOGY**

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Loop sensing technology has been in use since the early 1960's. The basic premise is simple - run multiple turns of wire in a loop in the road surface and a detection device will tell you when a vehicle passes over it. Although loop technology has been around for over 40 years, the inductive loop has not stood still. Today's loop detectors are digital electronic and offer more information than just pulse or presence outputs. There are several areas where durability and the ability to collect information has improved dramatically.

Since 1995, Diamond Consulting Services Ltd (DCS) has been conducting research and development on enhancing the output of loop detectors through advanced signal processing techniques. Extensive data analysis has resulted in the development of sophisticated algorithms. The output from these algorithms represents a quantum leap in the count and classification accuracy levels previously associated with loops. As well as patenting the algorithms DCS has designed and patented loop configurations which provide additional loop information enabling accurate axle counting and enhancing the profiling capabilities of the Idris Technology.

#### **BACKGROUND**

The Idris Technology uses a signal processing technique to extract a vehicle signature from the changes in the inductance registered on an inductive loop. The loops are continuously monitored and as each vehicle passes over the loop site the system extracts the dynamic inductance changes which are then processed. These changes are analysed to determine the number of axles, vehicle type, speed and direction of vehicle movement under conditions ranging from free flowing to stop and go traffic or total congestion.

**Idris achieves volume accuracies of:-**

*"Better than 99.99% count accuracy in free flow traffic"*

*"Better than 99.9% count accuracy in congestion"*

*"Better than 99.7% axle class accuracy in express lane tolling"*

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# Idris®


## LOOP TECHNOLOGY

### LOCATION & LIFE SPAN

The Idris Technology and Loops provide additional benefits apart from superior accuracy. Due to the fact loops are underground, they are unaffected by adverse weather conditions such as fog, ice, hurricanes or lightning strikes. This means the Idris Technology can be installed in any environment. Another advantage of loop technology is there is no need for overhead gantries or additional infrastructure to be installed. Correctly installed loops will operate for as long as the road surface lasts and they require little or no maintenance, making them a cost effective solution.

### CONCLUSION

The Idris advanced technology will accurately separate vehicles regardless of volume, speed or position on the road, in both constrained lanes (such as manual toll lanes) and multi-lane express lane environments. This now allows the deployment of a complete vehicle classification system based solely on in-road loops. The accuracy of the technology, the ease of commissioning, life span and low maintenance costs make the system robust, reliable and suitable for all types of traffic applications.



*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*

*Idris® is a registered trademark of Diamond Consulting Services Ltd.*

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