



**Project:** New Jersey Turnpike Authority' s EZ Pass Toll System

**Location:** Exit 1, New Jersey Turnpike, USA  
I-295 on the Delaware Memorial Bridge in Carneys Point Township

**Idris Technology**

**Partner (ITP):** ACS State and Local Solutions (ACS)



**Client:** New Jersey Turnpike Authority (NJTA)

**Application:** Idris AT700 Tolling part of ACS' Vector Express Tolling Solution  
Two lane configuration in each direction designed to provide ORT (Open Road Tolling) functionality.

**Background:** With 44,000 vehicles a day the Exit 1 tolling plaza on the New Jersey Turnpike is one of the busiest in the United States. Yet as late as 2004, traffic was being forced to use a plaza that had remained largely unaltered since the middle of the last century.

As early as 1999, the NJTA had made attempts to improve traffic flow and eradicate the 30 mile queues which were a common feature on the approaches to the plaza at busy holiday periods. An outsourcing contract resulted in the introduction of ETC (Electronic Toll Collection) technology and the provision of four express lanes (two in each direction).

The initiative was not, unfortunately, a success and huge problems in terms of false violation detections and a myriad of other difficulties plagued the new technology. The situation rapidly deteriorated to the point where the NJTA felt obliged to call for a change not only in the service provider but also the underlying ETC technology that was seen to be failing.

**Project Details:** For the subsequent tendering process, at the end of 2002, the NJTA laid down a number of strict criteria that any service provider would be expected to meet. It was clear that the authority, having been once bitten was twice shy. Among the criteria was a crucial requirement for the accurate detection and classification of vehicles using the express ETC lanes.

Any system would need to be able to handle very high volumes of traffic traveling at up to 65 miles per hour (the legal maximum on this section of Interstate 295). Any failure in this regard would unquestionably have led to a further drop in public confidence and immense embarrassment for the Authority.

The Idris AT700 from Diamond Consulting Services more than fulfilled the requirements set down in the Invitation to Tender. Capable of accurately classifying vehicles traveling at speeds

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well in excess of the legal limit in over 99.8% of occasions, the system is ideally geared to the demanding environment of ORT.

**Results:** With the move to the new plaza, Exit 1 was opened in the summer of 2004 and the Idris AT700 went into operational use. The impact was immediate, with the number of violations dropping from 6.6% before the introduction of the Idris technology, to 1.8% - the lowest of any tolling plaza in the US.

Nor were the improvements confined to the vast numbers of private motorists who choose to use the turnpike, including the 150,000 new customers for the E-Z Pass system in 2004. The exceptional accuracy of the Idris system meant that it comfortably dealt with heavy goods, multiple axle vehicles, allowing the correct toll fees to be charged automatically according to the classification of each vehicle. Perhaps more to the point, the express lanes meant fewer delays leading to improved customer satisfaction and increased revenue for the client.

**Conclusion:** At the heart of the system are the Idris advanced algorithms that not only perform the detection and classification functions, but also process data with such accuracy and speed as to generate a unique identifier or vehicle signature. This enables real-time correlation to be made between the in-vehicle tag and the signals produced by the inductive loops - the Idris AVI Correlation feature.

Due to the success of the ACS tolling solution "Vector Express", NJTA are continuing the deployment of the Idris Technology on all their multi-lane express lanes on both the Garden State Parkway and New Jersey Turnpike.

Idris® is a registered trade mark of Diamond Consulting Services Ltd.

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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