Quantum overview

THE NEW GLOBAL STANDARD FOR VEHICLE DETECTION & CLASSIFICATION

Quantum Target Acquisition will identify the target, acquire the relevant information and classify vehicles, including motorbikes, delivering count accuracies of 99.96% and 99.9% or better axle class accuracy in all traffic conditions using a Quantum Array.

What it does

For over 20 years, systems integrators, toll authorities, roadway operators and others looking for the best possible results for vehicle detection and classification systems have turned to the team behind Quantum for their vehicle detection solution.

That's because RedfoxID's innovative software technology has been proven to deliver greater accuracy and a more advanced detection technology than any other solutions provider.

Our detection and classification solution serve integration partners who use RedfoxID technology in large-scale ITS projects including electronic toll collection, open road tolling, express toll lanes and advanced custom detection solutions.

Quantum software analyses vehicle signatures provided by in-ground sensors, in real-time, to produce information on all vehicle types passing across the detection zone. This includes classifying each vehicle, placing the vehicle in the correct lane, recording the speed and direction of travel. Additional, optional, sensors provide triggers for front and rear ANPR cameras and a sophisticated correlation engine allows additional sensor data, for example tag reads, to be combined with the vehicle data to provide a single comprehensive transaction for each vehicle.

The richness of data and flexibility provided by Quantum enables systems integrators to offer a powerful vehicle identification solution easily customised to the operator's requirements. Whilst Quantum's architecture provides a powerful platform that greatly simplifies the design of the lane side software.

Vehicle detection & classification

Quantum uses both inductive loops and Quantum strip sensors to target and acquire the information required for accurate vehicle detection and classification. An inductive and axle detection signature is produced for every vehicle which travels through the detection zone. Quantum analyses this signature to produce a data packet containing comprehensive details of that vehicle. The software analyses the information from all the sensors simultaneously to determine the events occurring across the zone thereby producing an accurate picture of the vehicles traversing the detection zone.

Quantum's unique algorithms offer superior detection and classification accuracies ensuring increased toll collection revenue, leading to fewer errors resulting in increased customer satisfaction.

Trajectory prediction allows integrators to design cost effective, single or multi-gantry tolling solutions with both solutions allowing the association between front and rear ANPR image sets with the vehicle transaction.

The technology ensures accurate vehicle separation, even with poor lane discipline, stop and go, or tailgating traffic in multi-lane open road installations. Quantum has demonstrated the ability to separate, count and classify accurately vehicles towing or tailgating at speeds under 15kph to speeds in excess of 200kph regardless of presentation to the detection zone.

Patented technology

A Quantum installation is based around a unique Quantum Array (patent pending) suitable for any road layout, single or multi-lane. The technology has been created to improve the accuracy in stop-start/ congested traffic sites, simplify site selection and accommodate poor lane discipline. Quantum vehicle class tables are defined using a rules based engine and are easily modified to suit customer requirements allowing tailor made vehicle classification solutions.

Easy installation & set-to-work

The Quantum array is designed for easy and quick installation, all slot depths are the same and all loops are wound in the same way.

Quantum's new 'set-to-work' toolset has been designed to allow road side engineers to efficiently and quickly set a new site to work. The detector tuning tool contains unique features that provides a simultaneous overview of the streaming data from the detectors. Combined with the ability to directly control each individual detector channel via the software the tool provides a comprehensive level of control from both the roadside or from remote locations. The ability to remotely tune sites and view live streaming data is a feature unique to Quantum.

Quantum Toolkit Suite

The software licence package comes complete with the tools to set-up, support and maintain all Quantum products. Analysis tools for site configuration, data analysis and error resolution are provided in both web browser and stand-alone format with full training offered. See 'Quantum Vision' information sheet for further details.
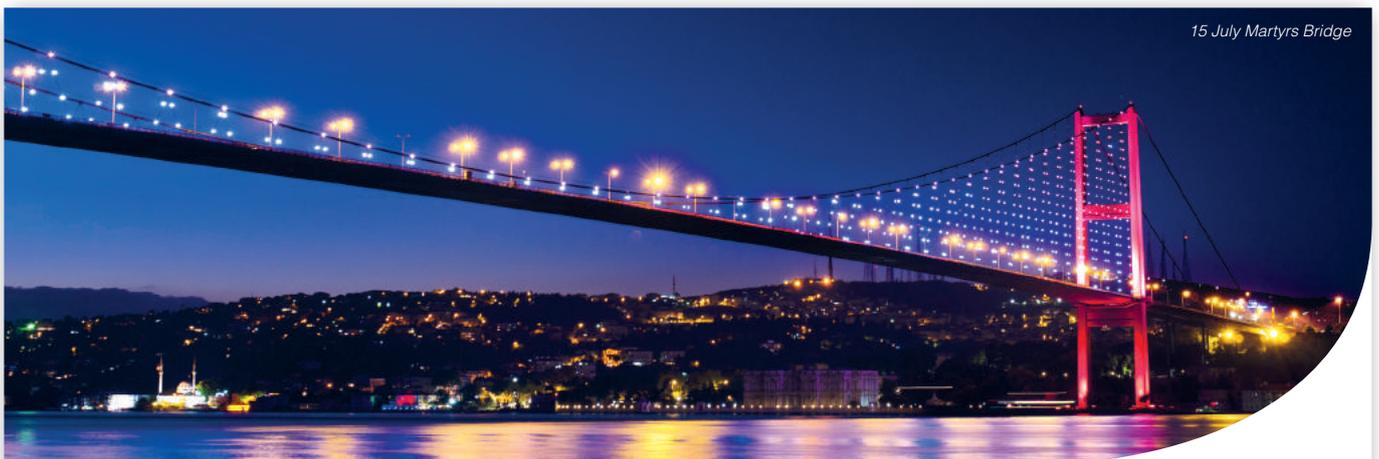
15 July Martyrs Bridge

RedfoxID at work
2015
- RedfoxID completed a novel design for a six-lane tolling requirement on Istanbul's Fatih Sultan Mehmet Bridge (also known as the FSM or Second Bosphorus Bridge). This system is currently in full revenue collection and processing around 125,000 vehicles per day.

2016
- RedfoxID was chosen as the free flow AVC provider and Quantum the technology of choice for installation on the new Yavuz Sultan Selim Bridge (also known as the 3rd Bosphorus Bridge)

in Turkey. The installation comprises fifteen multi-lane free-flow sites with new inter-connector sites being planned for June/July 2017. It is expected that at least 135,000 vehicles will use the bridge daily in each direction with the majority of these expected to be multi-axles (due to temporary bans on multi-axles on the FSM). Site topology varies from 5 travel lanes plus a service lane to 2 travel lanes.

2017
- RedfoxID was chosen as the free flow AVC provider for the Mahmutbey toll plaza in Istanbul, Mahmutbey is the busiest toll plaza in the entire network

with approximately 195,000 vehicles daily. This is four travel lanes plus a service lane in each direction.

- RedfoxID was chosen as the free flow AVC provider for the merge lanes on the Fatih Sultan Mehmet Bridge (FSM Bridge).

- RedfoxID was chosen as the free flow AVC provider for the 15 July Martyrs Bridge (previously known as the Bosphorus Bridge or the First Bridge). Approximately 90,000 vehicles pass daily in both directions. Currently only the East bound traffic is tolled, but this will change to both directions later in the year.

LEARN MORE.   **EMAIL:** info@redfoxid.co.uk │ **PHONE:** +44(0)1636 627194 │ **WEBSITE:** redfoxid.co.uk

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