

S*Gate

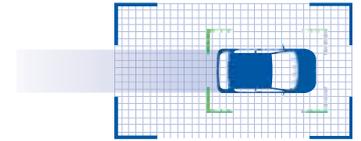
Reliability, accuracy, fast processing and easy deployment for the comprehensive management of free-flow tolling on roads, bridges and tunnels.

An adaptive smart system, strongly based on AI, 3D object tracking and machine learning technologies to reach the highest level of accuracy in vehicle detection, classification and processing, in any condition.

Over 25 years of tolling experience mixed up with cutting-edge technology to reduce electronic devices at field level, with a significant lowering of the total cost of ownership.



RSE Components



Cameras

Fast, reliable and errorproof vehicle detection, tracking and classification with any lighting and weather conditions are the key factors to achieve optimal results. The "eyes" of S*Gate are crafted from cutting edge video technology with multiple optics, multiple sensors and AI engines.

Machine Learning

Artificial Intelligence is the way to push technology beyond its limits: several machine learning engines are embedded in S*Gate to provide the smarter approach to analyze the field data and make the most out from them, reducing the backoffice processing effort.

Tracking And Classification

The combination of AI and 3D vehicle-tracking applied to real-time video-stream analysis delivers the highest level of insight. The arrangement of the imaging devices allows for an all-overhead solution, with no in-road sensors needed.

Creating a detailed picture

OCR CAMERA

Automatic license plate number recognition with multiple OCR engines on-camera and on edge computer



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EFC TAG DETECTION



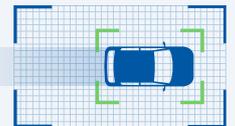
TRACKING INFRARED THERMAL CAMERAS

Vehicle detection and motion tracking in all lighting conditions



DYNAMIC VEHICLE FINGERPRINT DETECTION

TRACKING



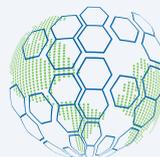
CLASSIFICATION



Vehicle size, class, colour, manufacturer and other key parameters to define its 'fingerprint'

Machine Learning neural network to get the most from collected data and push the backoffice work to a new level

TRANSACTION ENGINE



Smart data storage to provide data security, extremely fast and reliable data correlation to disambiguate complex events and speed-up the transaction processing

Software Architecture

Flexibility

.01

Modular software architecture based on Docker microservices to effectively model system functionalities.

.02

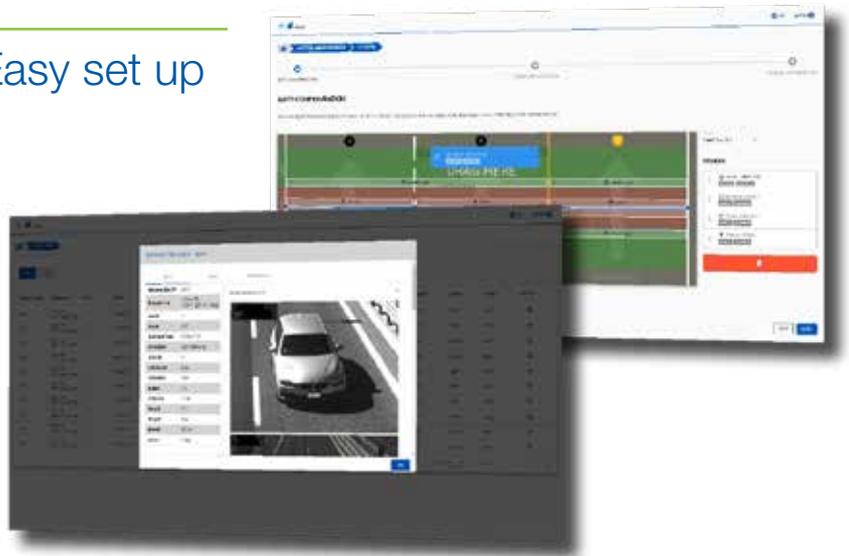
Completely hardware agnostic to integrate any device in the system.

Intuitive Web Interface

Each gantry toll-zone controller provides a simple web interface to easily perform both daily monitoring and diagnostic activities.

Plug&Toll configuration. Easy set up and control

Real time transaction list and details



Data Security

Collected data are totally private and secure

Anonymized at source, all data are transmitted to the host through secure interfaces and stored in hardened structures to preserve their integrity.

Redundant, all-overhead, small-footprint solution that can be easily implemented in existing single or dual gantries.



Key benefits



SMARTER BACKOFFICE

The latest technology in artificial intelligence and machine learning to ensure high performance and minimized back-office re-processing.



SIMPLE CONFIGURATION

"Plug&Toll" capabilities to reduce operational efforts over time.



LOW TCO

Less field equipment reduces procurement, installation and maintenance costs.



ADVANCED ANALYTICS

Advanced analytic tools to smartly extract KPIs from data.



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