

iQ ROADS

Good management of a nation's roads can result in less congestion, fewer accidents, less pollution and a more satisfying road experience for both drivers and pedestrians.

Intelligent Traffic Systems provide capabilities that can improve the overall traffic experience in many dimensions.

iOmniscient offers two packages. The Basic IQ Roads system has capabilities that are generally available from the main suppliers of such systems.

The Advanced IQ Roads system provides a number of additional capabilities that are quite unique based on patented technologies. No one else can offer many of these.

i  mniscient
High iQ Analytics



ROAD MANAGEMENT SYSTEM

Starter Pack

Standard Pack

	Starter Pack	Standard Pack
TRAFFIC MONITORING	Traffic Volume/counting <small>Count all sizes or one particular size of vehicle</small>	✓ <small>Count all sizes or three specific sizes of vehicle</small>
	Multi-directional counting E.g Counting cars that turn left or right	✗
	Comprehensive Reporting across multiple cameras	✗
	Congestion Management <small>Measurement of Density using Zone Occupancy</small>	✓ <small>Measurement of Density using Zone Occupancy AND Calculation or number of Vehicles</small>
	Headway Measurement Distance between vehicles	✗
	Traffic Speed (Not infringement quality)	✗
	Sudden Slow Down	✗
INFRINGEMENT NOTICE	Accurate vehicle Speed Detection Sufficient for infringement Notice	✗ Optional Extra using radar + camera
INCIDENT DETECTION	Intrusion of bikes/humans on the road	✓
	Detection of Accidents <small>Detection in an Empty space</small>	✓ <small>Detection of Accidents including in Heavy Traffic</small>
	Detection of fallen Debris <small>Detection in an Empty space</small>	✓ <small>Detection of Accidents including in Heavy Traffic</small>
	Detection of wrong direction	✓
	Detection of near misses	✗
	Color based Detection	✗
	Improper Lane change monitoring	✓
EVENT DATA MANAGEMENT	Alarm Management <small>Notification, acknowledgement, Archiving & Viewing Reporting Remote/Centralized Standalone/Anywhere on the network</small>	✓
	Alarm Notification via email	✗
	Event based recording	✓
	Archive Management	✓
	Network/Power disconnection	✓
Camera Diagnostics	Out of Focus	✗
	Sabotage/Vandalism	✗
	Camera Moved	✗
	Low visibility E.g Foggy weather	✗

ARTIFICIAL INTELLIGENCE BASED MULTI-SENSORY ANALYTICS

iOmniscient has been providing solutions based on its own patented Artificial Intelligence technologies for around two decades. Its uniqueness is that it is very computing light - no GPU is required.

It requires minimal training, fewer and lower resolution cameras and around 90% less storage and network bandwidth than other system.

AUTOMATED RESPONSE SYSTEM

As an option, the IQ-Roads system can be enhanced with iOmniscient's patented Automated Response System. With this a sensor such as a camera or microphone, can detect an event, find the nearest appropriate responder (eg the fire brigade if it detects a fire) and tell the responder where to go and what to do.

This capability can reduce the response time for street incidents by over 80% greatly enhancing the productivity of officers responsible for managing the traffic. For victims of a traffic incident the faster response from emergency services can mean the difference between life and death.

MAKING BIG DATA SMALL

While the system can provide timely alerts for events, it also generates a large amount of useful information which can be analysed in both spacial and temporal dimensions to help understand the environment better. It can provide information on why accidents happen in specific situations at certain times. It can help understand the causes of different types of events.

The uniqueness of the iOmniscient offering is that unlike other systems all the data is processed through iOmniscient's NAMS module (Nuisance Alarm Minimization System). This essentially removes the noise reducing the amount of data that has to be processed – making the Big Data small.

THE COMPLETE SOLUTION FROM IOMNISCIENT

A successful implementation requires cameras and other infrastructure that has been optimized for the analytics. While iOmniscient solutions are open and can work with any cameras, these are in fact the eyes that provide the information to the software which is the brain of the system.

If the eyes provide the right information the brain can make good decisions. iOmniscient can provide, if required, a total solution including the cameras, IOT devices, servers and other infrastructure necessary using components that have been specially designed for optimal performance with our analytics.

		Starter Pack	Standard Pack
SPECIAL FEATURES	Nuisance Alarm Minization System (Nams)	✓ Standard NAMS included	✓ Advanced NAMS included
	Jump to Event	✓ Jump to alarm included	✓ Jump to Event included
	Continuous Learning	✓	✓
	Integrated Map	✗	✓
	Integrated GIS	✗	Customized Option
	Perspective	✗	✓
	Scheduling	✗	✓
	iQ-Hawk		✓
	Converging Detection and identification on same camera	✗	✓ Included up to 1 mega pixel
SPECIAL TUNNEL APPLICATIONS	License plate recognition	✗	Optional Extra
	Advanced Smoke & Fire Detection	✗	Optional Extra
SPECIAL HIGHWAY APPLICATIONS	Vehicle height detection at the start of the tunnel	✗	Optional Extra
	Accurate Average speed detection for individual vehicles over a distance	✗	Optional Extra Requires License plate recognition at two points; cannot be run simultaneously with other products on the same camera
	Cars in bus Lane	✓	Optional Extra iQ-LPR for automated number plate recognition
	Detection of car stopped on the shoulder	✗	✓
SPECIAL URBAN APPLICATIONS	Detection of slow moving vehicles	✗	✓
	Red Light Violation	✗	Accurate Speeding sufficient for Infringement Notices: cannot be run simultaneously with other products; Needs iQ-LPR for automated License plate recognition
	Traffic light management based on number of pedestrians at the light	✗	Included; Cannot be run Simultaneously with other products
	Vehicle height detection before bridges	✗	Available; Cannot be run simultaneously with other applications
	Bridge and Infrastructure protection	✗	Detection of suspicious objects (including bombs) that may put infrastructure at risk
	Queue Buildup	✗	✓
	Jaywalking	✓	✓
FLEXIBLE ARCHITECTURE	Cars in bus lane	✗	✓ Optional Extra iQ-LPR for automated number plate recognition
	Viewing/Monitoring capability	✓	✓
	Reporting	✓	✓
	Viewing of historic data	✓	✓