## Features

### Licence Plate Recognition Engine

Ipsotek's VISuite LPR utilises advanced Licence Plate Recognition (LPR) algorithms to automatically detect number plates even in a busy scene. Precise and accurate data formed from the reading of plates can then be stored or compared to a database, for a multitude of applications.

### Watchlist

The watchlist solution detects plates that have previously been enrolled to a Watchlist and raises an alarm when a match is found. This technology enhances security by detecting wanted vehicles, tracking VIPs, allowing access only to authorised vehicles or can be used for a number of other bespoke detection criteria.

### Average Speed Detection

The average speed of a vehicle can be calculated if the time taken to traverse a certain distance is measured. VISuite LPR can read a number plate at a certain point in the road and start a timer. The LPR engine will recognise when the same car passes the second camera, and from the time taken to travel this known distance, calculate the individual vehicle's average speed.

### Incident Response

VISuite LPR actively monitors large networks of cameras and captures number plates in real-time throughout the camera FOV. Advanced trackers and AI detectors are used to maintain a track on every number plate. Incident Response is an ergonomically designed GUI that allows operator to define an event and then search through hours of video in seconds, and to track individual vehicles across multiple overlapping and non-overlapping cameras.

| Features | VISuite LPR Products | | |
| --- | --- | --- | --- |
| | VISuite LPR | VISuite LPR Forensics | VISuite LPR Investigation |
| License Plate Recognition | ✓ | ✓ | ✓ |
| Watchlist | ✓ | ✓ | ✓ |
| Hostile Reconnaissance | ✓ | ✓ | ✓ |
| Average Speed | ✓ | ✓ | ✓ |
| Multi Factory Authentication | ✓ | ✓ | ✓ |
| Violations Evidence Pack | ✓ | ✓ | ✓ |
| Augmented Reality | ✓ | ✓ | ✓ |
| Traffic Reports | ✓ | ✓ | ✓ |
| Forensics Search | | ✓ | ✓ |
| Tag and Track Multi-Camera Tracking | | | ✓ |

## System Architecture

Ipsotek's VISuite LPR system architecture consists of Management Node(s), Processing Node(s), and Database Nodes(s) that manage rules and user interfaces, perform LPR and provide event and metadata storage respectively. These Nodes can be deployed in a distributed manner and/or coexist on the same physical or virtual server.
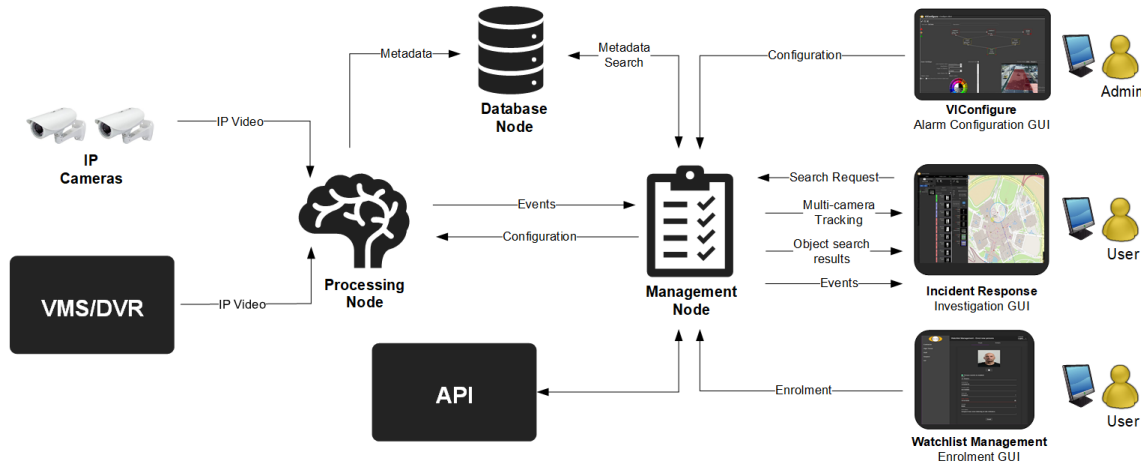


| System Component | Description |
|---|---|
| IP Camera | VISuite can analyse the Video Stream of sufficient quality from an incumbent surveillance camera network. |
| Processing Node | A server that houses Nvidia GPUs. Highly-trained Neural Networks analyse the video stream, classifying objects and detecting number plates. |
| Database Node | A database that stores the produced plate information can be installed on the same machine as the processing node, or a dedicated machine. |
| Management Node | Federates and manages the processing and database nodes. Configuration is sent to the wider system from the management node, whereas events raised by the processor and database queries are received as an output. |
| VIConfigure | The GUI used to configure the system and define rules. VISuite LPR licensing model enables up to 32 rules to be applied to a camera channel through a perpetual software license. |
| Incident Response | Ipsotek's Incident Response GUI which helps operators to investigate, track and search for vehicles in real-time and retrospectively. |
| Watchlist Management | Operators can enrol Licence Plates and information to watchlists. When a plate is detected an alarm can be raised or a vehicle admitted in a black/whitelist style. |
| API Integration | The API is typically used by VMS/PSIM systems to access live generated data and/or to query the database by parameters such as events by date, time, or location |

### Scalability
VISuite's modular composition allows nodal roles to be installed in various locations. This allows for an unlimited system scalability, subject to number of servers and hardware requirements.

### Supported Hardware
Ipsotek's VISuite V11 supports all Nvidia GPUs with Pascal Architecture or later. For further details of hardware supporting VISuite AI, please refer to Ipsotek's Hardware Specification Datasheet.

### 3rd Party Integration
Ipsotek's VISuite FR has been integrated with many of world's leading security manufacturer's products. For a full up to date list of integrations please contact support@ipsotek.com

## Rule Modules and Licenses

| Type | Description | Application | VISuite LPR | VISuite LPR Forensics | VISuite LPR Investigation |
|---|---|---|---|---|---|
| Number Plate Detection | Detect Number Plates | Forensics Search | ✓ | ✓ | ✓ |
| Number Plate Recognition | Detect and recognise Number Plates | Watchlist, Access Control | ✓ | ✓ | ✓ |
| Average Speed | Estimate average speed by detecting Number Plate in two locations and comparing time and distance travelled | Traffic Management | ✓ | ✓ | ✓ |
| Forensics Search | Appearance based searching | Content based video retrieval | | ✓ | ✓ |
| Tag and Track | Multi-camera tracking | Tracking of vehicles across multiple cameras for security or safety applications | | | ✓ |

## Graphical User Interface

### Incident Response
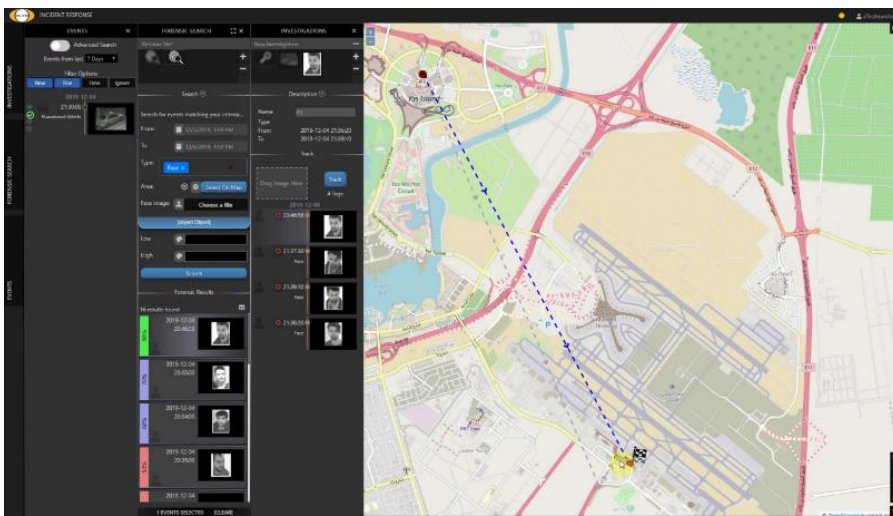


Both Forensics Search and Tag and Track are part of Ipsotek's Incident Response frontend:

- The Forensic Search tool operates on the metadata provided by VISuite LPR to scan through pre-analysed video and search for number plates. Operators can quickly scan through hours of footage to find a vehicle.

- Tag and Track is a patented and award-winning Video Content Analysis based tracking system that operates on a network of overlapping and non-overlapping cameras to track a "tagged" number plate. Vehicles can be tracked across the network of cameras in real-time with their path overlaid on to a map enhancing increased situational awareness.

### Performance

- Recommend 20 pixels height on each character
- Can be placed on an overhead Gantry or Roadside configuration
- Camera pitch angle (vertical rotation of the camera) ≤ 40° for Gantry
- Camera yaw angle (horizontal rotation of the camera) ≤ 25° for Roadside

For further details on environmental considerations and License Plate Recognition performance, please refer to Ipsotek's Camera Selection and Configuration Guidelines document.
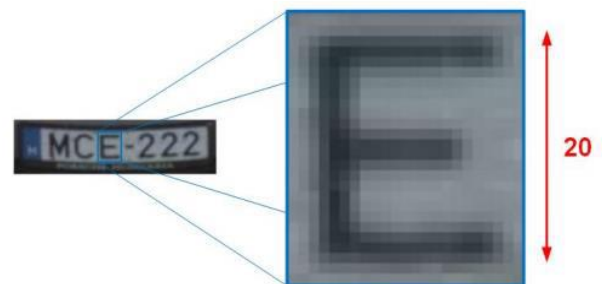


### Alphabets Supported

Latin and Arabic (others available on request)

### Supported Cameras

- Visual cameras
- IR day/night cameras

For a full list of supported cameras please contact support@ipsotek.com

## Contact Us

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