Extending Your Vision

VRS VIP - Vehicle Inspection Package

Product Details

Overview

The VRS VIP (Vehicle Inspection Package) system is a video based system enabling automated vehicle valet and management.

VRS Vehicle Inspection Package (VIP) enables the car park management to cost effectively document, store, retrieve, review, verify and report the condition of each vehicle upon entry and exit from the car park in order to assess the validity of damage claims. In addition, the system can provide more effective vehicle retrieval, along with parking spot and process management.

The VRS VIP system is easily integrated, installed and configured. It also provides valuable reporting, monitoring and operational data. It is fully web-enabled, supporting these functions from any standard browser. Individual vehicle reports may also be exported as PDF files by the car park management to the vehicle owner when relevant.

The systems are comprised of the HTS line of VRS hardware and software; N50 or N60 Imaging Units, Lane Controllers and a specific add on module of SeeControl for extended functionality.
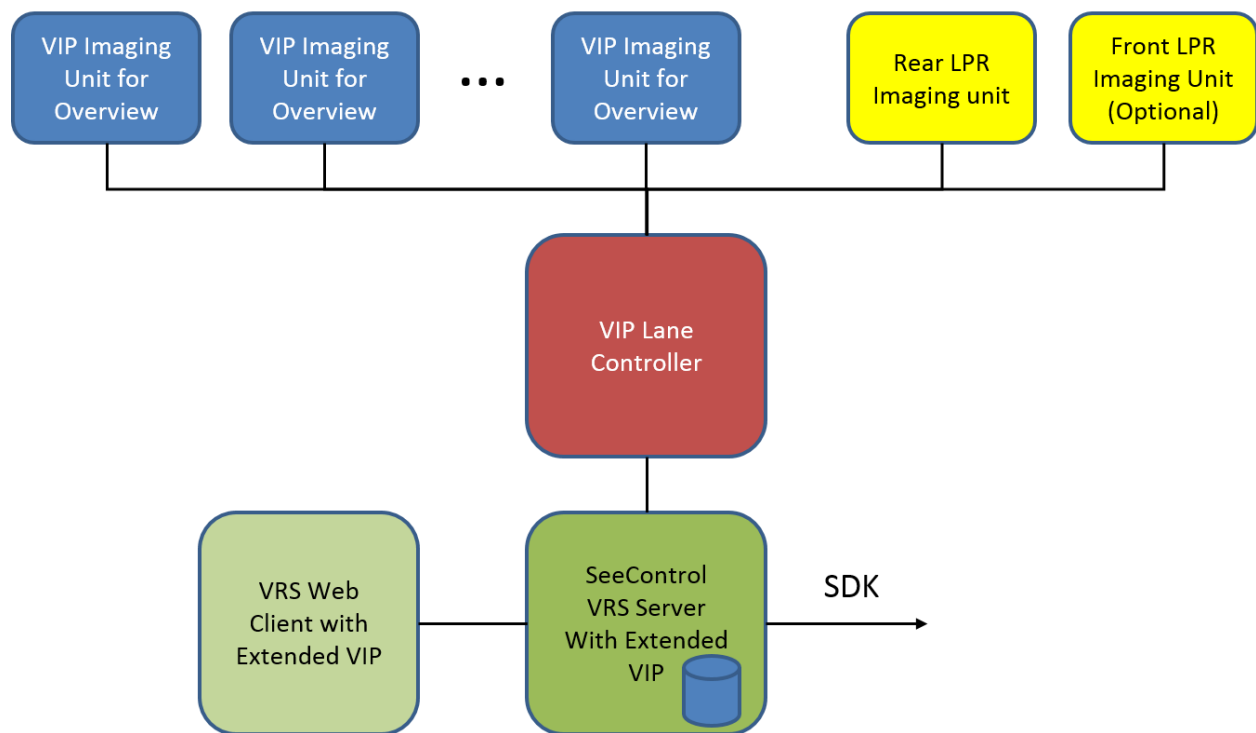
System Architecture

The VIP system is illustrated below. The system comprises imaging units that act as overview imagers, imaging units that act as LPR imagers, a lane controller to collect video and images from all imaging units and a SeeControl Server to store and manage the VIP application. The VIP user interface is a web interface such that any laptop or tablet can be used to control and operate the system.

Vehicle presence is indicated through dry-contact sensors such as a loop detectors.

An optional output is the gate relay open signal, which can be used to open the gate for vehicles, once the drop off process has been completed and the vehicle receives authorization to proceed.

The SDK is the output to any third party system with which the VRS VIP systems share information.

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┌──────────────┐  ┌──────────────┐          ┌──────────────┐     ┌──────────────┐  ┌──────────────┐
│ VIP Imaging  │  │ VIP Imaging  │          │ VIP Imaging  │     │  Rear LPR    │  │ Front LPR    │
│  Unit for    │  │  Unit for    │   ● ● ●   │  Unit for    │     │ Imaging unit │  │ Imaging Unit │
│  Overview    │  │  Overview    │          │  Overview    │     │              │  │ (Optional)   │
└──────────────┘  └──────────────┘          └──────────────┘     └──────────────┘  └──────────────┘

                              ┌──────────────┐
                              │  VIP Lane    │
                              │  Controller  │
                              └──────────────┘

     ┌──────────────┐         ┌──────────────┐
     │  VRS Web     │         │ SeeControl   │    SDK
     │ Client with  │         │ VRS Server   │ ───────────→
     │ Extended VIP │         │ With Extended│
     │              │         │     VIP      │
     └──────────────┘         └──────────────┘
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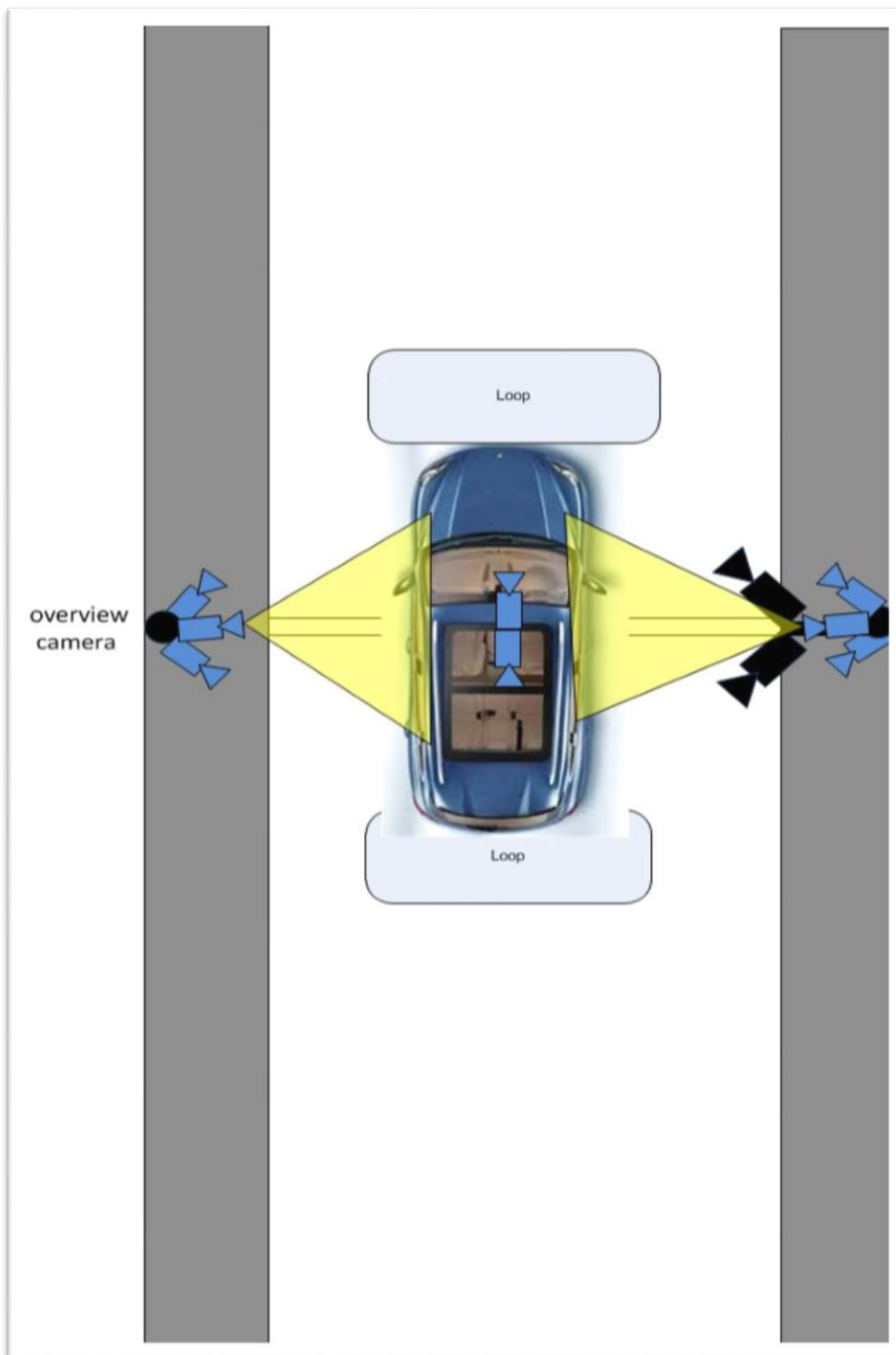
Typical Operational Process

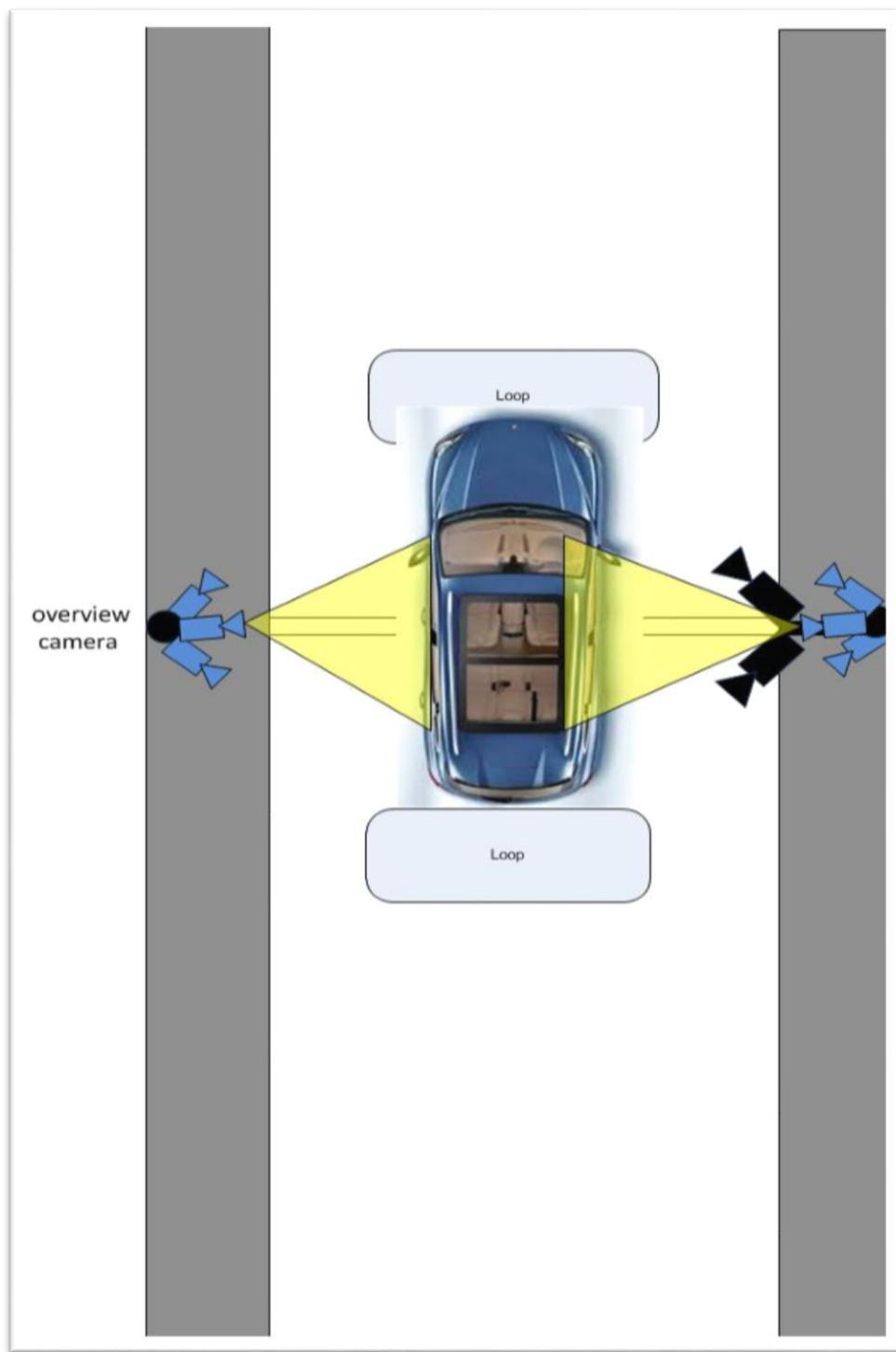## Vehicle Drop-off Lane Configuration (Hardware)
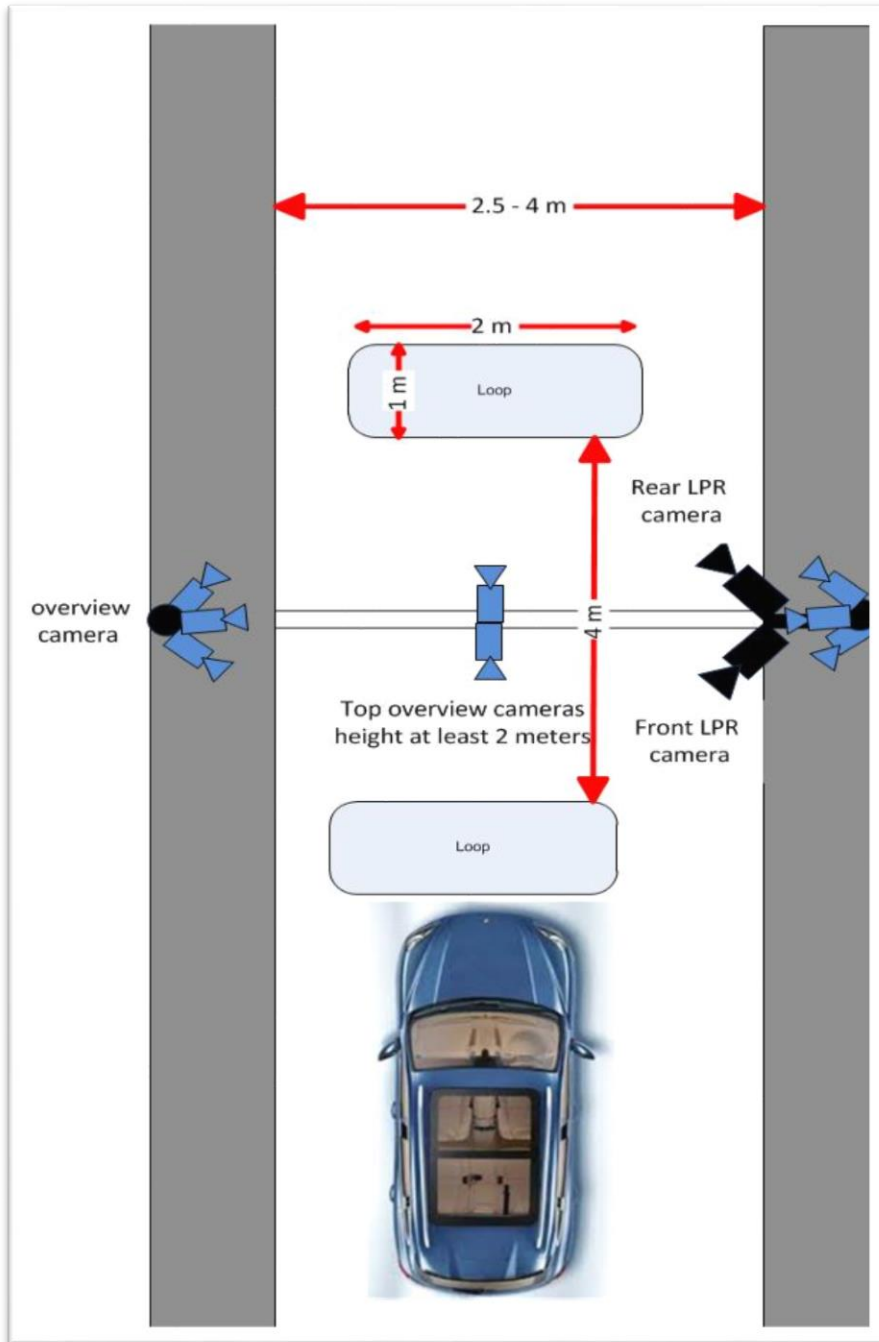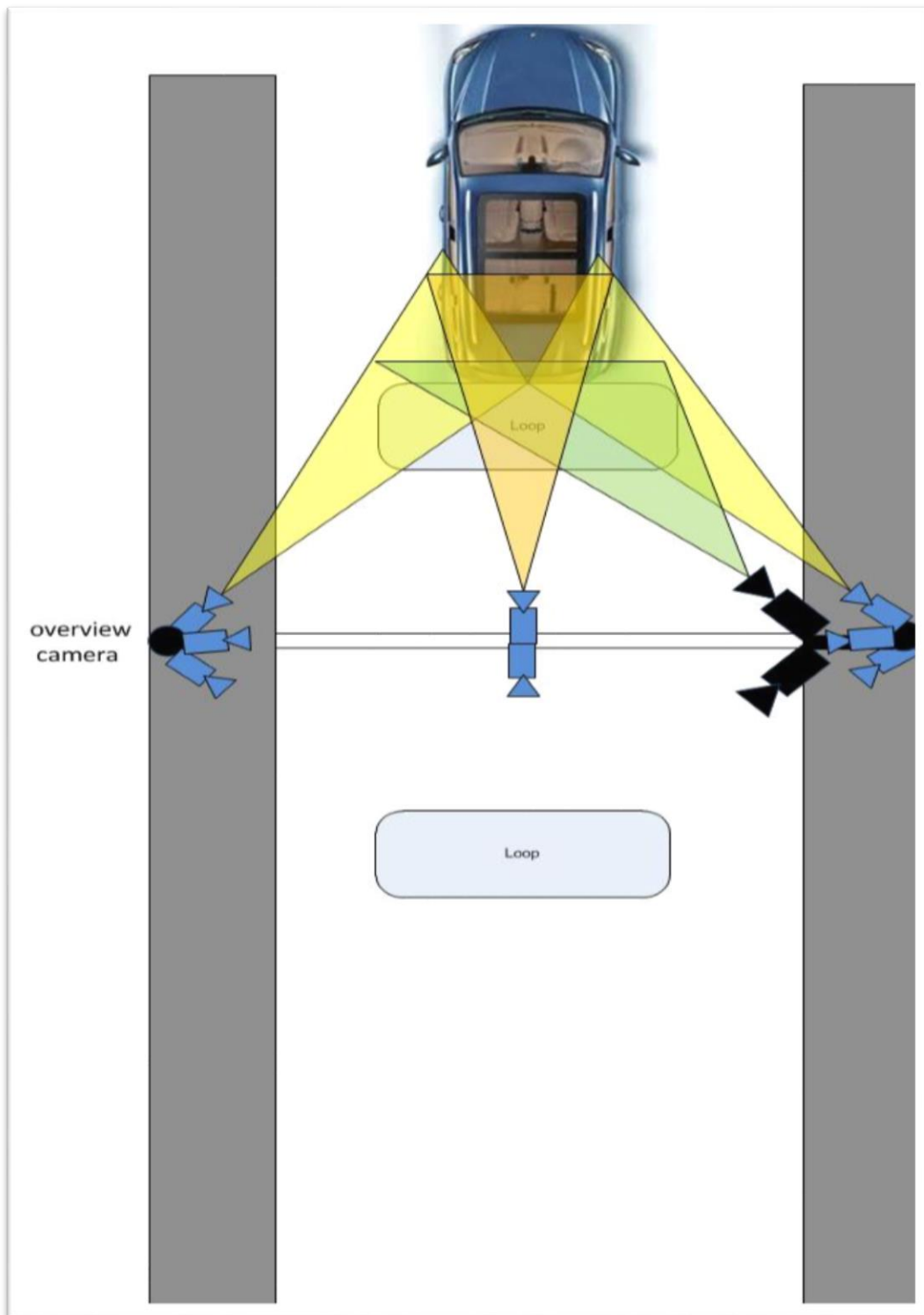
VIP Front Capture
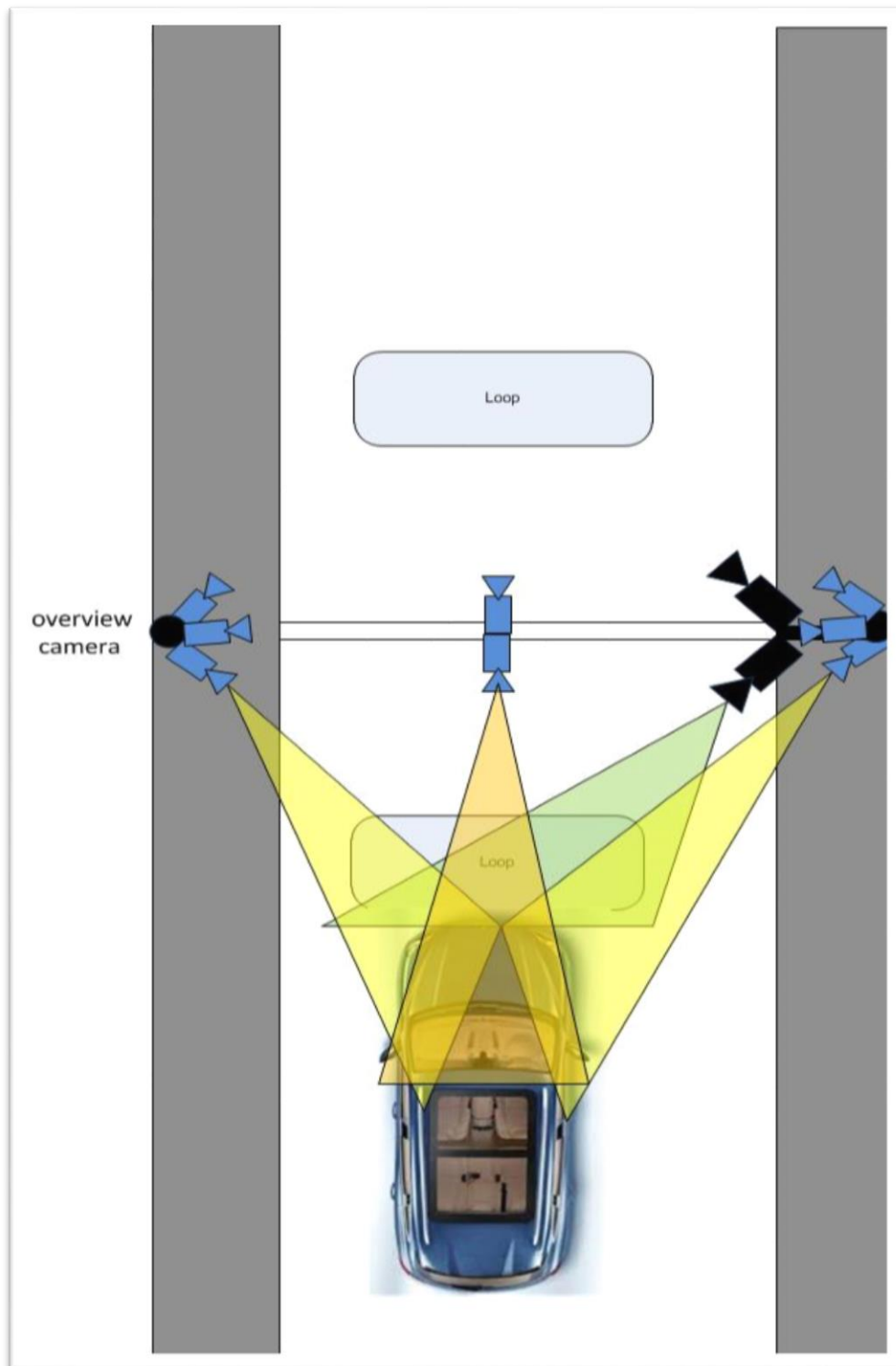
## VIP First Center Capture

VIP Second Center Capture

VIP Rear Capture

New Vehicle Drop-off Event

As the Vehicle triggers the loops, the system generates LPR and overview images of the vehicle from all relevant angles. The user can also add and store the parking spot number assigned or any other type of ID associated with the event. A time and date stamp will be associated with this event.
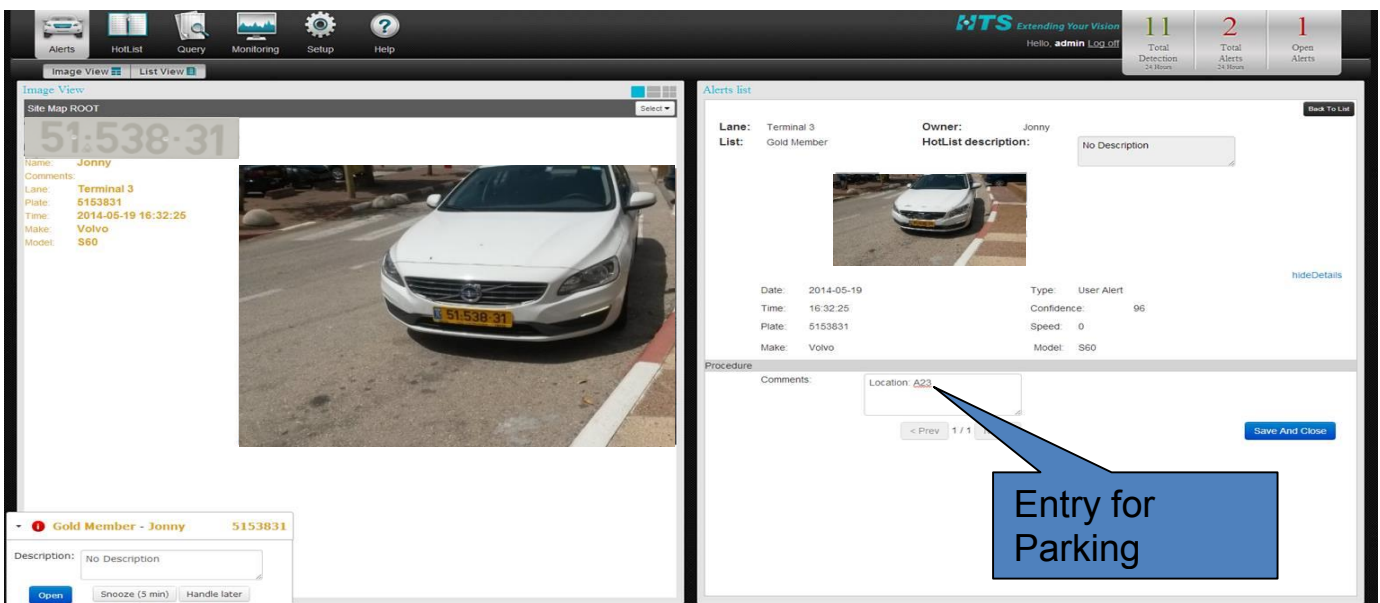
Vehicle Out

The vehicle exits the facility in the same way it entered, via the lane/s set up specifically for this process (see diagram in Vehicle Drop-off). The user can also insert the word "vehicle out" or other relevant information in the "comments" section of the screen.

All information associated with this event will be stored in a database. The duration of the events stored is decided by the customer for future queries.

Vehicle Retrieval

The user can retrieve the event from the database via the license plate number as well as the vehicle's parking spot based on the comments in the original record. This data can also serve to verify each other for an extra level of security along with the pictures of the vehicle stored in the database.

Claims and Report Generation

If and when a claim is submitted to the car park owner or operator, the vehicle plate number is queried in the system and all vehicle transactions in the event file are displayed.

Reports can be generated according to a number of parameters including; License plate number, time, date etc. and the report can be exported into a PDF file for transfer to the customer/complainant

System Components

Hardware Components

The primary hardware components are as follows:

- Imaging Units - VRS N50, N60, for License Plate Recognition and Damage Inspection overview images. These units are available in a number of illumination options to cover all plate types, environments and lighting conditions, both indoor and outdoor.
- Ruggedized outdoor Lane Controller - LC 2100 is made for industrial use and can be deployed over a variety of sites and environments, exhibiting high performance and longevity.
- Additional Accessories - In addition, there are ancillary hardware components which as an option may be provided by HTS such as; Hardware triggers (loops and loop detection matrix), power supplies (see spec sheets), network switches, auxiliary cabinets and I/O over IP.

Specifications

VRS N50 Imaging Unit

Camera	
Sensor Type	1/3''
Shutter Type	Progressive scan (rolling shutter)
Lens	Vari-focal 9-22mm
IRIS	SW Controlled DC-IRIS
Effective Pixels	1920 x 1080
Field of view	2.5 - 4.5m (8.2 – 14.8 ft.)
Built in illumination	Warm White, IR 850nm, Yellow
Working distance	4m – 16m (13 – 52 ft.)

Operation	
Video compression	H.264/MJPEG
Frame rate	25/30fps
Web server	Yes (IE 8.0 or above)
Network protocols	HTTP, TCP/IP, UDP, RTP, RTSP, SNMP, NTP, ONVIF
Triggers	Input/output
Security	Multi-level passwords /HTTP encryption

Mechanical and Environmental	
Dimensions	Φ11.5cm x 25.3cm (Φ4.5" x 10")
Weight	1.25kg (2.75 Pounds)
IP rating	IP66
Connectors	RJ-45, Power & alarm I/O terminal block
Operating temperature	-40°C~50°C / -40°F~122°F (PoE only -10°C/14°F)
Power requirement	POE 802.3af / 12VDC / 24VAC
Power consumption	15W max
Operating humidity	90% RH (no condensation)

Safety and Regulatory Compliance	
FCC	Class B
CE regulation	Class B

VRS N60 Imaging Unit

Camera	
Sensor Type	1/3''
Shutter Type	Progressive scan (rolling shutter)
Lens	Motorized 3-10mm
IRIS	P-IRIS
Effective Pixels	1920 x 1080
Field of view	2.5 - 4.5m (8.2 – 14.8 ft.)
Built in illumination	Warm White, IR 850nm, IR 730nm
Working distance	2m – 10m (6.5 – 32 ft.)

Operation	
Video compression	H.264/MJPEG
Frame rate	25/30/60 fps
Web server	Yes (IE 8.0 or above)
Network protocols	HTTP, TCP/IP, UDP, RTP, RTSP, SNMP, NTP, ONVIF
Triggers	Input/output
Security	Multi-level passwords /HTTP encryption

Mechanical and Environmental	
Dimensions	269mm (H), Φ121mm, 328mm (D),
Weight	1.9kg (4.19 Pounds)
IP rating	IP67
Vandal rating	IK8
Connectors	RJ-45, Power & alarm I/O terminal block
Operating temperature	-40°C~60°C / -40°F~140°F
Power requirement	POE+ 802.3at / 12VDC / 24VAC
Power consumption	20W max
Operating humidity	90% RH (no condensation)

Safety and Regulatory Compliance	
FCC	YES
CE regulation	YES

VRS Lane Controllers LC2000 and LC 2100

Device	LC 2000 - Ruggedized Lane Controller	LC 2100 - Ruggedized Lane Controller & VRS Server
Certifications	CE, UL, RoHS, CCC, CSA, FCC	CE, UL, RoHS, CCC, CSA, FCC
Dimensions	25.5 x 15.2 x 6.9 cm (10 x 6 x 2.7 in)	25.5 x 15.2 x 6.9 cm (10 x 6 x 2.7 in)
Mounting	Wall mount	Wall mount
Power consumption	40W typical	40W typical
Voltage	9-39 VDC AT/ATX	9-39 VDC AT/ATX
Weight	3 kg	3 kg
OS Support	Windows 7 Pro	Windows 7 Pro

System Hardware		
CPU	Intel® Core™ i7	Intel® Core™ i7
Memory	4GB DDR3 SDRAM built in	8GB DDR3 SDRAM built in
Storage	120GB SSD	256GB SSD

I/O Interfaces		
Serial Ports	2* RG-232 *RS-232/422/485 with DBS connectors, automatic RS-485 data flow control	2* RG-232 *RS-232/422/485 with DBS connectors, automatic RS-485 data flow control
LAN	4* Intel 10/100/1000 base-T RJ45 ports	4* Intel 10/100/1000 base-T RJ45 ports
USB Ports	6 USB 2.0	6 USB 2.0

Environment		
Humidity	95% @40° C (non condensing)	95% @40° C (non condensing)
Operating Temperature	-10° to 60° C (14°-140° F)	-10° to 60° C (14°-140° F)
Shock Protection	IEC 600068-2-27 CompactFlash 50G@ wall mount , half sine 11ms HSS 20G wall mount, half sine 11 ms	IEC 600068-2-27 CompactFlash 50G@ wall mount, half sine 11ms HSS 20G wall mount, half sine 11 ms

- Also available in Rack Mount Configuration: LC 1000, LC1100

Software and Management Components

The VIP SW package works together with, and is an add-on to the HTS SeeControl management suite. The VIP Module provides valuable reporting, monitoring and operational data through real-time vehicle identification, inspection and assessment, as well as retrospective forensic analysis.

SeeControl VIP (Vehicle Inspection Package) with extended functionality added, enables SeeControl to manage unlimited Imaging units per lane as required by the process (both license plate recognition and overview imaging units). The SeeControl VIP module also enables a richer and more robust query, reporting and management capability in order to build event files, find vehicle parking locations, streamline the management process and access archives for claims purposes.

SeeControl is the HTS comprehensive vehicle recognition software solution, transforming vehicle and license plate data into valuable information. This information is utilized for quick and effective decision-making, for security, logistic, revenue or operational purposes.

The SeeControl management suite provides robust activity reporting, and commands a powerful event and alarm engine for instantaneous exception notification. SeeControl installs, configures and administers all HTS Vehicle Recognition Imaging Units and monitors device health.

The heart of the SeeControl solution is its proprietary intelligence engine, which powers functionality with distinct user advantages—instantly recognizing targeted vehicles of interest and drawing essential insights by analyzing license plate data, vehicle characteristics, movement, time and location. This proprietary engine includes OCR recognition software, with off the shelf libraries for more than 40 countries and all 50 states of the USA.

The system can centrally manage multiple complex sites via a web application interface, sharing data and knowledge across deployments and networks, while scaling to a large number of VRS and VIP installations and sites, as described in the diagram below. The architecture below enables full redundancy to protect the valuable data and to ensure operational continuity.

Multi-Site Architecture
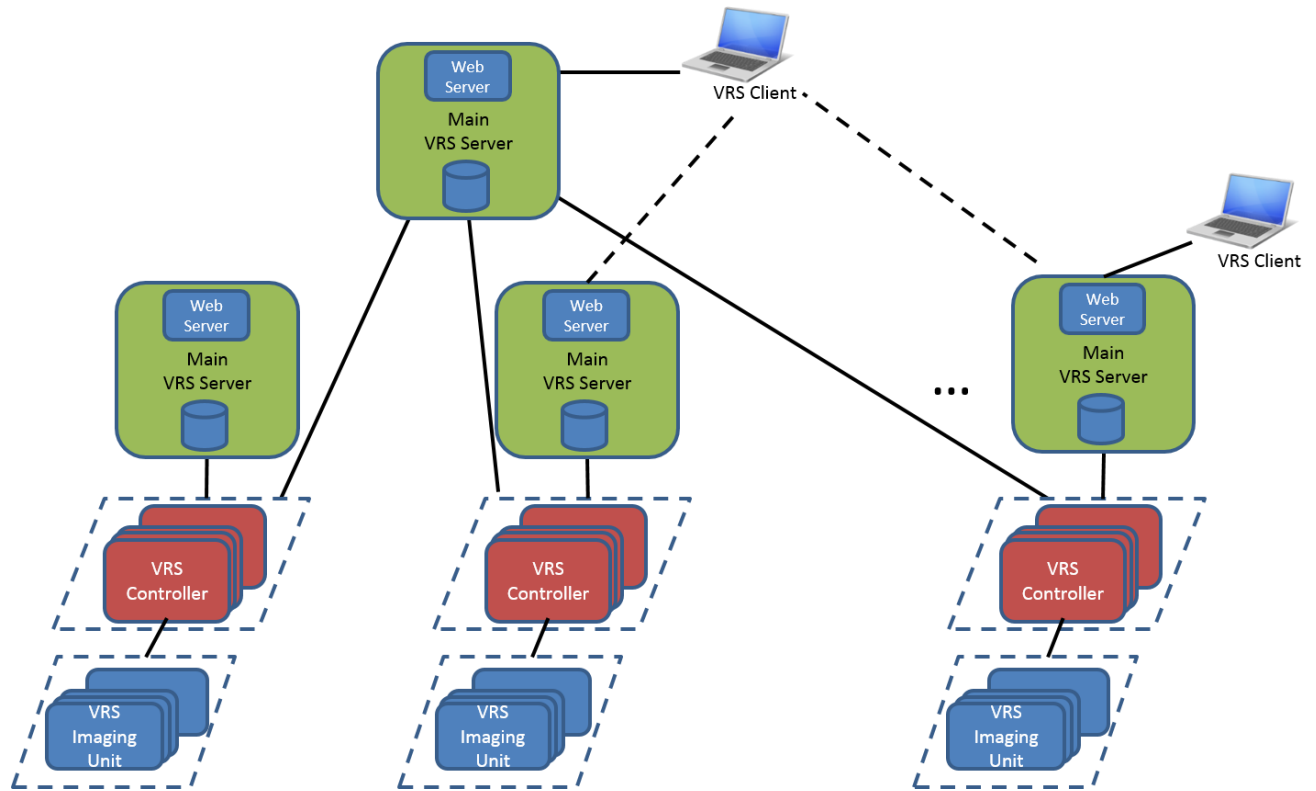
Integration of Software

The VRS VIP system can operate as a standalone system or be easily integrated with third party systems via the SeeControl SDK. The SDK is based on a WCF communication protocol, for scalable and efficient integration to various platforms and applications.