



VEHICLE DETECTOR

Vehicle and License Plate Number Identification

Vis-à-pix Vehicle Detector identifies vehicles and their license plate numbers from video streams and saves this data in a database. Vehicle Detector makes it easy to control entering cars and analyse traffic flow with minimal technical effort. The software reads the license plate numbers of incoming vehicles automatically, compares them with an existing corpus of rules and records the time of entry or exit. Vehicles can be searched by license plate number or by time of entry and exit.

This makes Vehicle Detector the perfect solution for car rental companies, car park operators, factories with wide-stretched premises as well as for public institutions and administrations wanting to identify unauthorised vehicles and secure their properties against their entry.

The system is composed of an intelligent video content analysis software, an optical character recognition software that extracts the license plate numbers, a management software to configure the system and control further interfaces, and a database to save all information.

The superior quality of Vis-à-pix Vehicle Detector is provided by this combination of complementing systems. An approaching vehicle will be detected automatically by Vis-à-pix's intelligent video content analysis software or the sensors connected to it. The system identifies vehicles and reads all current European and international license plates. It verifies the received data with the integrated database. Depending on the information from the database, Vis-à-pix Vehicle Detector can deny a vehicle access, or identify cars being searched for.

If a vehicle is admitted, barriers or other entry systems can be activated automatically. If access is denied, security personnel can be notified or an alarm will be raised.

FEATURES UND BENEFITS

High Identification Rates and Performance

Identification rates at 99% with high performance even on several lanes at once and at high speed. The system reliably identifies rotated license plates.

Flexible I/O Interface

Ports for sensors or admission control systems allow Vehicle Detector to be integrated into existing environments and processes. Alarm systems can also be attached to it.

Easy to Use

The analysis software is easy to configure and runs on any current Windows PC. The user-friendly interface of the Vis-à-pix product family makes it simple and convenient to use and install the software.

Cost-efficient

No need for additional admission control systems, low personnel costs. Identifying the number of occupied parking spots ensures efficient space management.

Discover Attempts to Defraud

Lost parking tickets or unjustified claims in case of alleged damage events can easily be identified.

Detailed Recording

Storage of license plate numbers, times of entry and exit, and durations of stay, even over several waypoints.

High Robustness

Vehicle Detector works under moderate light conditions and detects acts of sabotage automatically.

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Application areas

Parking Garage Management

Vis-à-pix Vehicle Detector makes it easy to monitor entering and exiting vehicles in a parking garage. Staff can access recorded data anytime in order to verify the exact time of entry and exit. One system can monitor up to four lanes at the same time. It saves the license plate number as well as the time of entry and a picture of the vehicle.

The screenshot displays the Vis-à-pix Vehicle Detector software interface. On the left, there is a table listing detected vehicles with columns for Sign, Time / Date, and Gate. The table contains 30 rows of data. Below the table is a search bar labeled 'Sign:' with a search button. The main area of the interface shows a live video feed of a car with its headlights on, driving through a parking garage. Above the video feed, there are several smaller thumbnail images showing different camera views. The software title 'Vehicle Detector' and the Vis-à-pix logo are visible at the top of the window.

Sign	Time / Date	Gate
BKC0994	09:30:10 18.04.2006	Gate West
BCC3138	09:32:11 18.04.2006	Gate West
BPJ5777	09:32:45 18.04.2006	Gate West
PHN642	09:33:00 18.04.2006	Gate West
PJG388	09:33:45 18.04.2006	Gate West
KCZ5011	09:34:17 18.04.2006	Gate West
PMR9849	09:35:00 18.04.2006	Gate West
BWR429	09:36:20 18.04.2006	Gate West
BSC752	09:36:47 18.04.2006	Gate West
KLEV766	09:37:10 18.04.2006	Gate West
BAE2141	09:40:00 18.04.2006	Gate West
BCL6880	09:41:24 18.04.2006	Gate West
HVLS123	09:42:20 18.04.2006	Gate West
DUNDL311	09:42:40 18.04.2006	Gate West
PMV111	09:43:19 18.04.2006	Gate West
BCC3168	09:43:55 18.04.2006	Gate West
BCC3168	09:44:00 18.04.2006	Gate West
BPJ5777	09:48:00 18.04.2006	Gate West
PHN642	09:48:22 18.04.2006	Gate West
PJG388	09:48:40 18.04.2006	Gate West
KCZ5011	09:49:10 18.04.2006	Gate West
DOM57723	09:51:20 18.04.2006	Gate West
BWR429	09:52:55 18.04.2006	Gate West
PMH832	09:53:20 18.04.2006	Gate West
HVLJ5633	09:53:47 18.04.2006	Gate West
HHC721	09:54:06 18.04.2006	Gate West
DUNDL304	09:54:22 18.04.2006	Gate West
HVLS123	09:55:23 18.04.2006	Gate West
BMN771	09:58:32 18.04.2006	Gate West
BCC4141	09:59:00 18.04.2006	Gate West
PJ51	10:00:34 18.04.2006	Gate West

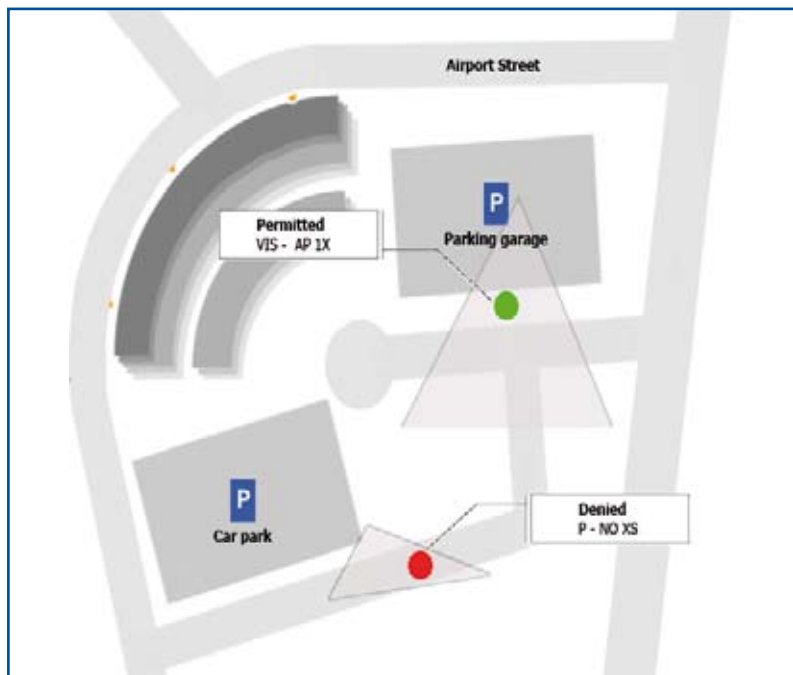
LiveStream mode

Access control

Vis-à-pix Vehicle Detector can control access to and waypoints at company premises or private parking lots. It detects unauthorised cars immediately, improving the efficiency of existing control systems. Vehicle Detector can automatically detect the exit of a car at an unusual time and notify staff. Automatic counters display the current number of occupied and available parking places in the car park.

Traffic monitoring*

In order to identify unauthorised vehicles travelling in limited access lanes, such as in bus lanes or on tramlines, Vis-à-pix Vehicle Detector automatically distinguishes between authorised vehicles such as buses, trams, taxis or emergency vehicles, and unauthorised ones. A photo, video recording and information like location, license plate number, date and time of any unauthorised vehicle detected is saved in a database for use in subsequent prosecution.



Layout mode

Tracking down stolen vehicles*

It takes a huge staff to track down stolen cars in overcrowded parking lots, on the streets or in moving traffic, which makes it an extremely expensive and almost impossible task. Vehicle Detector compares the license plate numbers of cars on a video stream with data on stolen vehicles and raises the alarm immediately. Missing cars, stolen trucks and trailers can be detected among a huge number of vehicles with a minimum of effort in terms of staff and money.

SYSTEM REQUIREMENTS, SCOPE OF SUPPLY, UPGRADES

Supported Operating System

Microsoft® Windows® XP Professional Edition SP 2

Hardware System

Fujitsu Siemens PC (included in delivery)

Camera types

Analogue CVBS, IP cameras (Vivotek, Canon, Sanyo, Sony, Axis)

Number of Cameras per CPU

Up to 8

Camera Orientation

Frontal, max. 45° inclined

Installation Geometry

Height of characters min. 20 pixels

Application

Indoors and outdoors

Default Settings

Front side of the vehicle visible in the bottom of the camera image

Sabotage Detection

Signal drop out, defocusing, occlusion caused by graffiti, partial occlusion by large objects, rapid changes in brightness

Accuracy of Detection

Up to 99% under adequate light conditions

Configuration

Camera ID, IP address

License plate number area

List of license number plates admitted/denied

Order and time frames of waypoints

Date/time

Output

SQL, XML via TCP/IP,

Central external management (guard rings, alarm prioritisation)

Relay, language, e-mail, FTP, PDA, GSM, WLAN

Upgrades

Vehicle Detector Ident – learning of types of vehicles for automatic classification

Scope of Supply

Vehicle Detector basic – Fujitsu Siemens PC with pre-installed software, installation CD and documentation

* Upgrade Vehicle Detector Ident only

Vis-à-pix Vehicle Detector is part of the **product line Vis-à-pix IQ 100**. The product line combines complementing solutions for intelligent video content analysis. Its modular design allows the software product line to flexibly adapt to any task. The existing Vis-à-pix solution can anytime be expanded by other modules in case the tasks grow. This makes the Vis-à-pix IQ 100 product line a perfect long term solution for any field of application.



The different modules of the **Vis-à-pix IQ 100 product line** are available as stand-alone products, but can also easily be integrated into existing OEM systems.

Vehicle Detector	Reliable license plate number recognition and vehicle classification for parking garage management and traffic monitoring
People Counter	Customer counting, route tracing statistics, waiting lines in a layout
Intrusion Detector	Continuous admission control to critical areas
LostBaggage Detector	Detection of left or stolen items
Graffiti Detector	Reliable detection of graffiti sprayers, even under most difficult light conditions

Vis-à-pix – High-End Video Content Analysis

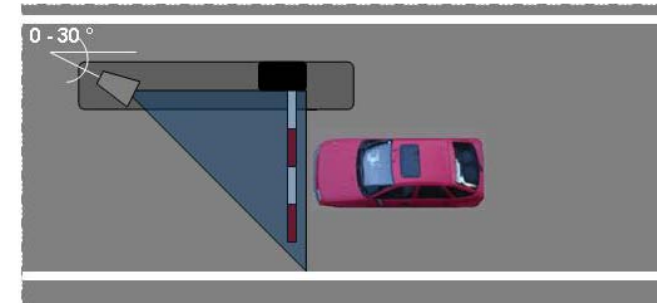
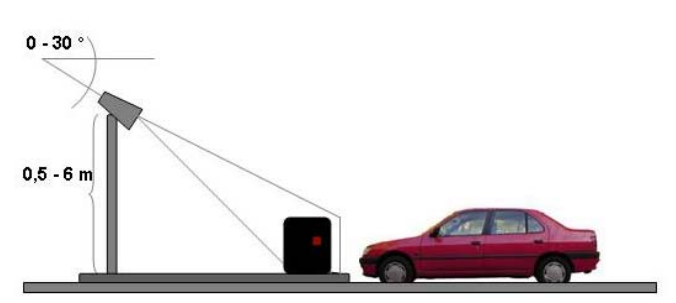
The specialists in the field of intelligent video content analysis turn the results of many years of research into products that show up new ways in the video surveillance market. Its mathematical analytical methods reach an all-time level of quality in automatic analysis and storage of analogue and digital video data. For these achievements, Vis-à-pix GmbH has been awarded winner of "Multimedia Start-Up of the Year 2006" by the German Federal Ministry of Economics and Technology in February, 2006.

Vis-à-pix distributes its solutions to the end customer (airports, museums, logistics companies, parking garage operators) through an indirect distribution system. The strategic "Vis-à-pix Partner Alliance" positions the company as a technology supplier for installers, system integrators and manufacturers of security management systems.

If you wish to optimise your video surveillance or become a partner to our programme, please visit us at www.visapix.com

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Vehicle Detector

	
<p>Automatic detection of license plate numbers via Infrared-Camera, with a tilt angle of 0 - 30° horizontally</p>	<p>Cameras can be installed at 0,5 - 6 m height in a tilt angle of up to 30° horizontally</p>

Industrial Premises

- Automatic access control
- Notification about vehicle movement during unusual times

Cargo Zone

- Identification of permitted vehicles and allocation to white- and black lists
- License plate detection
- Name of the owner as well as access authorization are compared with the databank

Pedestrian Zone

- Control in traffic-free zones

Barrier-control and License Administration

- Choice between automatic and manual opening
- Trigger per I/O or motion detection

Shopping-Centers/Arenas

- Analysis of trading area
- Evaluation and coordination of promotion activities in the area
- Surveillance of cargo zones

Car-park Management

- Measures the duration of stay
- Theft protection
- Search for licences of stolen vehicles in highly frequented areas, use of the licence data-bank
- Detection of fraud in case of lost tickets
- Display of degree of occupancy
- Automatic barrier-control
- No necessity for further counting systems, less personal required and efficient car-park management
- Camera installation in 0,5 - 6 m height, 0 - 30° horizontally and to the right angle

Car Rentals

- automatic return control outside of working hours

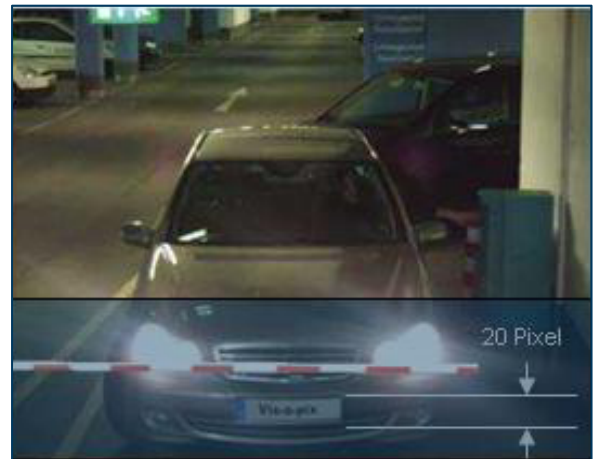
Administration of Staff

- Automatic detection of car entries and exits

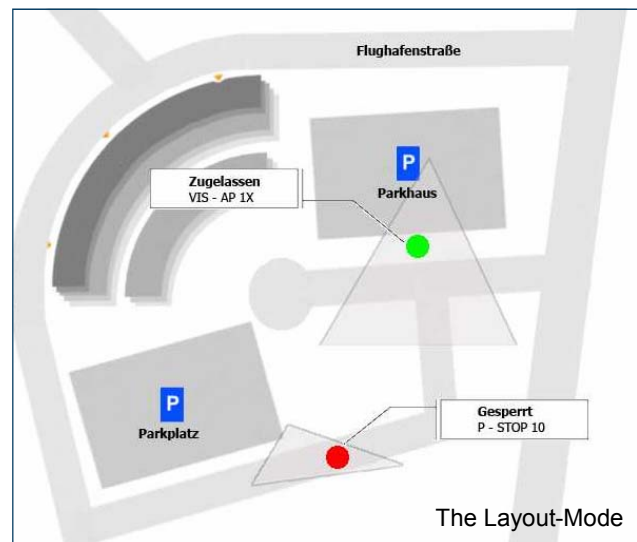
The Vis-à-pix Vehicle Detector

- Automatic license plate detection
- Saving of the data allows a pointed search in data-banks and to track the movement of particular vehicles later on
- Automatic bar-control is time and cost saving

System Requirements, Scope of Delivery and Upgrades	
Software System	Microsoft Windows XP Professional Edition SP2
Hardware System	PC (included in delivery: PC mind. 3GHz, preferably Dual Core Intel 1GB RAM, graphic on PCI-e) Screen solution: 1280x1024
Camera-Types	FBAS-Analogue, IP-Cameras (Vivotek, Canon, Sanyo, Axis, Mobotix)
No. of Cameras per CPU	Up to 8 (QCIF), recommended 4 x CIF
Alignment of Camera	Frontal to up to max. 30° to the side
Contrast	Recommended >20 Digital Units between licence plate and background
Geometrics of Installation	The licence numbers have to have a minimum height of 20 pixel
Parameter pre-setting	Front of the vehicle covers lower third of the picture
Reading Time	0,4 s
Accuracy of Licence Detection	Up to 98% under adequate light conditions; to avoid glare the use of infrared lightning is highly recommended
Configuration	Area of the licence, list of admitted/blocked licences, order and time-span of the bypassing-points, time/date
Readout	SQL, XML per TCP/IP, I/O, language, Email, FTP, WLAN
Upgrades	Vehicle Detector System Vehicle Detector Admin
Scope of Delivery Vehicle Detector Basis	Software will be delivered on pre-installed PC, Dongle, installation-CD and documentation



In order to guarantee an optimal readout, the ciphers on the plate should have a minimum height of 20 pixel. The front of the vehicle covers the lower third of the picture



Example of configuration: 4 Video Streams with an IP-Camera
1 x 500104 Complete System Vehicle Detector IP 4x
4 x 400006 Installation
Optional
1 x 300100 Vehicle Detector System
1 x 300108 Vehicle Detector Admin

	Vehicle Detector Basis	Vehicle Detector System	Vehicle Detector Admin
Upgrades	Four lanes, infrared cameras recommended, editable data base, access control, list of accepted vehicles and vehicles to be rejected with log file, driver name and affiliation, parking time management (long time parking, price computation), 8 digital in-/o	System wide identification of arbitrary number of cameras, up to 6 analysis events per 2s.	Administration module for interlinked systems, central configuration, live-view, editable database, database search. (2. Quarter 2007)