Video Analytics - *VCAsys* OVERVIEW

VCAsys

- A cost effective set of Video Analytics packages covering a range of CCTV platforms including IP camera, encoders and PC based central server solutions
- The family brand of VCA technology's product lineup
- 2 levels of functionality: *VCApresence, VCAsurveillance*
- 3 types of platform based package: *VCAsysIP, VCAsysPC, VCAsysPCopen*
- 2 specific purpose solution: *VCAretail, VCAtransport*

FEATURES

High quality tracking engine
- High performance *VCAsys* tracker, comparable with the best in the industry

Quick and easy to use
- Intuitive graphical interface
- No algorithm parameters to confuse users

***VCApresence* included free with UDP's PC cards, IPE and NVC**
- Intruder and perimeter detection package included free of charge

Realistic OEM prices
- High-end *VCAsurveillance* package – optional upgrade

VCApresence

- Included high-end VCAsys tracker
- Far more advanced than video motion detection
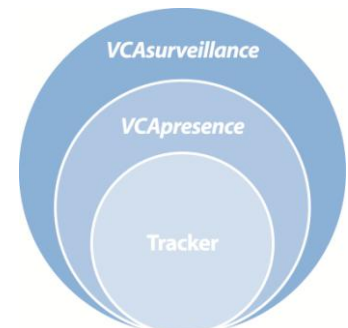
  - Intruder and perimeter detection

  - Camera shake cancellation

  - Camera tamper detection

- The ability to track stopped and loitering objects
- Included **free of charge** with UDP's PC cards, IPE cameras, NVC encoders

VCAsurveillance

- Included all features of *VCApresence*
- Extensive range of detection functionalities

  - Enter and Exit filters.

  - Appear and Disappear filters

  - Stopping filter

  - Dwell filter

  - Direction filter

- Counting linked to the detection rule
- On-screen display of object classification, speed, area and height
- Unique, easy to use, 3D calibration
- Additional functionalities (to be released)

  - Auto PTZ tracking

  - Abandoned object detection

  - Removed object detection

Video Analytics - *VCAsys* DETAILS

VCAsys is a cost effective set of Video Analytics packages covering a range of CCTV platforms including IP cameras, encoders and PC based central server solutions. There are 2 levels of functionality: **VCApresence** for intruder and perimeter detection and **VCAsurveillance** which includes all the features of VCApresence plus an extensive range of video analysis tools.

VCAsysIP *(VCApresIP & VCAsurvIP)* are embedded in 'Edge' devices such as UDP's NVC encoders and IPE network cameras. **VCAsysPC** (*VCApresPC & VCAsurvPC)* that run on the PC platform are integrated with UDP's range of NCP, ECP, ECPR, MP and HP series video capture cards. **VCAsysPCopen** *(VCApresPCopen & VCAsurvPCopen)* also runs on the PC platform but independently of there being any UDP hardware in the system and hence can be used with any type of PC or IP capture device from other manufacturers.

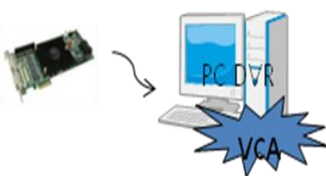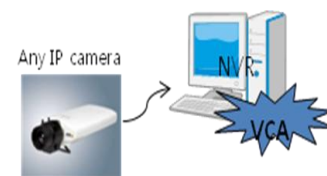Figure1. *VCAsysIP*   Figure2. *VCAsysPC*   Figure3. *VCAsysPCopen*

The entry-level **VCApresence** is much more advanced than any Video Motion Detection (VMD) solution and includes features such a tamper detection, camera shake cancellation and the tracking of stopped and slow-moving objects that VMDs can't support. **VCApresIP & VCApresPC** will be included free of charge in all the above UDP products and can be easily upgraded to **VCAsurveillance** by means of a software license. The high-end **VCAsurveillance** lineup **VCAsurvIP, VCAsurvPC, VCAsurvPCopen** provide additional functionality including a wide range of behavior filters and counting functions suitable for a many different CCTV analysis applications.

VCAsysIP, VCAsysPC, VCAsysPCopen are released now and **VCAretail** with flow analysis, counting, queue management, and other functions, and **VCAtransport with** traffic flow analysis, vehicle counting, and other functions in early 2010.

The high performance of VCApresence and VCAsurveillance is due to the underlying high quality tracker. It results in a much lower false alarm rate and higher detection rate than many other video Analytics systems.

GENERAL FEATURES

- High performance, comparable with the best in the industry
- Quick and easy to use – intuitive graphical interface (also no algorithm parameters to confuse users)
- Realistic OEM prices

TRACKER

High-end VCAsys tracker.
- Tracks up to 100 targets simultaneously.
- Up to 40 general purpose, user-defined, polygonal detection zones
- Camera shake cancellation – tracker works even though the camera is on a swaying pole
- Tracks objects when they stop or move very slowly
- Continues to track objects which pass each other, ensuring that the trail is continuous and unbroken.
- Continues tracking when objects are partially or completely obscured temporarily

- Ignores changes in light due to clouds and switching on artificial lights or camera auto-iris operation
- Ignores repetitive movement – waving trees, rippling water
- Ignores cloud shadows passing across the ground
- Ignores video interference and missing video frames
- Adjusts to image degradation caused by rain, fog, dirty camera lens and low sun position causing dazzle
- Does not false alarm due to PTZ camera movement.
- Tracks objects on 100% of screen area (except in any non-detection zones defined by the user)
- Includes on-screen Annotation Metadata – draws drawing bounding boxes and object trails. Highlights alarmed and non-alarmed objects in different colours

VCApresence FEATURES

1. Includes VCAsys tracker
2. The Presence filter detects when an object such as a person or vehicle is inside or is crossing a zone or a line
3. Camera attack detection: detects moving, defocusing or covering of the camera. It does not respond to slow changes such as build-up of dirt on the camera lens or natural variations in daylight levels. (in next release)
4. Detection zones are polygonal with variable number of vertices so that any shape can be supported.
5. Detection zone can also be a line, which can have one or many segments
6. Includes non-detection zones for masking possible sources of false alarms
7. Fast moving objects are detected even if they pass through the zone or line quickly

VCAsurveillance FEATURES

1. Includes all features of VCApresence
2. Up to 40 On-screen counters linked to the detection rules
3. Direction filter with independent adjustment of direction and acceptance angle
4. Stopping filter – with variable time threshold
5. Dwell filter – with variable time threshold, used for detecting loitering people, etc.
6. Enter and Exit filters
7. Appear and Disappear filters
8. Unique, easy to use, 3D calibration suitable for overhead and side-viewing cameras. Calibration in metric or imperial units
9. On-screen display of object classification, speed, area and height.
10. Speed filter with upper and lower speed thresholds
11. Filter on object class – for example people, group of people, vehicle, clutter, etc..
12. Filter out small animals, birds and blowing trash by excluding objects in the clutter category
13. Object classes can be changed by the user
14. Combined filter using object class and one other filter
15. Includes full Forensic Metadata stream in XML format for customer use.
16. Abandoned object and removed object (in next release)

INTERFACES

- Web browser interface gives complete access to all the features of the Analytics package.
- Real-time on-screen annotation of the object tracking and segmentation bitmap (blobs) gives information about the operation of the VCA.
- All configuration and control is done by the HTTP API.
- VCA event causes digital output contact, email or API message
- API includes event messages detailing the bounding box, trail, rule, zone, time and event ID of alarms
- Metadata is in the form of an XML data stream

Revision History

Revision	Date	Description
A	2009-06-26	Created. (Reference Document : TN0501E VCASYS summary of feature.doc, VCA OVERVIEW-UDP v9_2_)
B	2009-11-17	Modified.