



Video Analysis for Face Recognition

The video analysis function VCA Face-Recognition allows to detect and notify automatically and in real time the identity of a person among the ones stored in a reference image database, by biometric face recognition.



Law Enforcement

- Identification of suspects, wanted criminals, shoplifters, missing persons
- Screening of persons at borders, sensitive places or critical infrastructures
- Forensic investigations



Access Control

- Automatic access management for restricted areas, buildings and facilities
- Identification of unauthorized, unknown or unwanted persons
- Device or process login



Business Intelligence

- Identification of VIP or loyal customers
- Digital signage and tailored messages management

Technical specifications

General architecture

Modular and hardware-independent software architecture, available for Windows o.s. 32/64bit

Video flow acquisition from:

- IP cameras compatible* or acquirable through standard protocols RTP/RTSP, MJPEG or ONVIF
- analogue cameras (optical or thermal) through IP video encoders or Hybrid DVR/NVR, compatible or acquirable through standard protocols RTP/RTSP, MJPEG or ONVIF
- compatible VMS/DVR/NVR platforms
- off-line videos in all standard formats (avi, asf, mpg, mov, ...)

Automatic and real time notifications to:

- MULTIEYE-CentralManager client, local or remote
- MULTIEYE or compatible VMS/DVR/NVR platforms
- I/O contacts through Modbus protocol
- network http or TCP notification, customizable
- e-mail, with in attachment the image related to the generated alarm (with overlay the bounding box and the trajectory of the detected target)
- FTP client, saving the video clip related to the generated alarm (with overlay of the bounding box and the trajectory of the detected target)

Enrolment of the faces images through:

- Real time acquisition of the detected face
- Import faces images and data coming from external databases (police mugshots, personnel archives, ...)
- Manual entry of images or off-line videos

Identity data editing by:

- Manual entry
- Data import from external databases (by project)

Ability to configure real time alarm notifications in case of:

- Person recognized among a configured group of persons stored in the database
- Person recognized, but not present in any of the configured groups of persons in the database
- Person unknown

Ability to detect and identify several faces present in the image at the same time

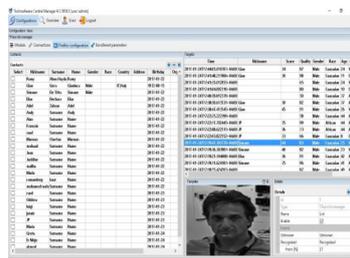
MULTIEYE-CentralManager for:

- centralized configuration of unlimited local and/or remote VCA modules
- automatic detection of all VCA servers connected in the same sub-network
- centralized real time live view of the connected local and/or remote VCA modules
- centralized real time visualization and management of the alarms, notified by unlimited connected local and/or remote VCA modules
- real time or off line simulation of the processing results, to verify the correctness of the configuration
- visualization of the bounding box and trajectories of the detected targets, either in the live view and in the alarms panel
- recording and storing in local directories of continuous or event-based video clips
- centralized configuration of different user levels, allowing or inhibiting for each one of them the access to specific areas of the module
- ability to generate reports of the alarm events occurred in a defined timeframe, in PDF format

Off-line interrogation of the identified faces database, time-based or by individual face search

Enabling/disabling of the modules by:

- an interrupt from an external input, through cgi call
- the polling of the status of an external I/O contact, through http or TCP call
- time scheduling, by timetabled configuration
- manually, by MULTIEYE-CentralManager interface



Ability to stream out the real time processed video flow with data overlays by rtsp protocol, for being acquired by compatible* third parties platforms

Module configuration features

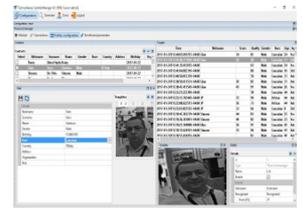
- Ability to set up unlimited cameras and parameters configurations, according to timetabled or manual scheduling
- Ability to import/export a configuration database previously set up
- Unlimited configurable independent alarm zones, of any shape and size
- Ability to crop and process independently unlimited image portions of the acquired video flow
- Unlimited configurable no-processing zones, to inhibit not-of-interest areas in the image
- Ability to manage different configurations for different configured presets of a PTZ camera
- Ability to process the acquired video flow at a lower resolution and frame rate

Diagnostic

- Watchdog function, for the automatic restart of the module in case of critical error or manual restart of the hardware unit
- HeartBeat function, for periodical notification of the correct working of the module to an external device
- Ability to check the status of the active configuration by html/xml request, or by using the relative view in the VCA-CentralManager
- Tampering function, to trigger an alarm on detection of camera obscured, dazzled or moved for longer than a configured time
- VideoLoss function, to trigger an alarm on the loss of the video flow communication to the module

Licensing

- Licensing per each video flow
- No server licenses needed, no added plug-in licenses needed
- Local or remote VCA license management through MULTIEYE-Central Manager client
- Full availability of failover license management



Technical requirements

Conditions of the target in the image in order to be effectively detected:

- clearly visible to the naked eye in the image, even in difficult environmental conditions (night, heavy rain, snow, fog, sun glare, reflections, artificial lights, under/overexposed camera, obstacles, ...)
- entirely visible in the indicated proper conditions in the image for at least 10-15 continuous frames
- minimum resolution required: in order to guarantee at least 80 pixels eye-to-eye at the point where the face is meant to be identified
- angle of pan and tilt inclination of the camera in respect with the perpendicular of face plane: not wider than 20°-25°

Supported OS: Windows 7 and later ones

Computational need (see the table on the right):

- CPU: about 125k comparisons/second, with a single core 3,2GHZ
- RAM: about 9kB per enrolled template