EUKLIS

FaRe 3.1 Hybrid
Identity Certification and Face Recognition Platform

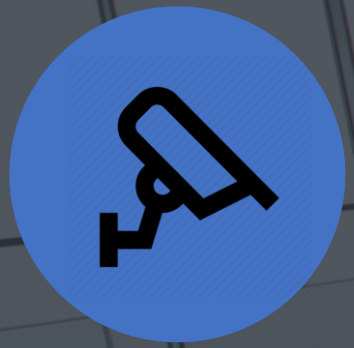
Euklis

- Since 2007, **Euklis** is an Italian video surveillance *brand*.
- Since 2017, **Euklis srl** is a *Start-up company* specialized in video analytics, face recognition and artificial intelligence for the protection of critical infrastructures.
- The Most innovative Technology of Euklis is the Client-Server Plug&Play Identity Certification & Face Recognition Platform, FaRe Hybrid.

Genesis of FaRe Hybrid's Innovation and Philosophy

EUKLIS

How is a Security System made of?



Videosurveillance

Access Control

Anti Intrusion

Fire Alarm

How to integrate Face Recognition?

Available on the market

Bottom-Up Approach – From the Technologies

- **Single Algorithms** of face and license plate recognition are applied to video surveillance, access control, anti intrusion and fire alarm systems.

EUKLIS

Euklis FaRe Hybrid

Top-Down Approach – From the Identity

- FaRe Hybrid makes available a **Security Intelligence Platform** using **Multiple Detection and Recognition Algorithms** defining the rules of the new security paradigm represented by IDENTITY.

What does an IDENTITY represent?

Person

Vehicle

Object

FaRe Hybrid - Identity Certification and Face Recognition Platform

- **Client-Server platform** that provides a suite of advanced functions for the automatic identification and authentication of people, vehicles and objects.

FaRe Hybrid - Identity Certification and Face Recognition Platform

- **Plug&Play system** designed to give intelligence to Security and Safety systems already present to protect the site, preserving the investment made.

FaRe Hybrid - Identity Certification and Face Recognition Platform

- Applies simultaneously **multiple Pattern Matching** and **Machine Learning** recognition technologies.

EUKLIS

FaRe Hybrid - Identity Certification and Face Recognition Platform

- **Independent** from the type and brand of "Point Of Recognition" that captures the information: video surveillance cameras, RFID readers, license plate readers, document readers, barcode readers, etc.

EUKLIS

FaRe Hybrid - Identity Certification and Face Recognition Platform

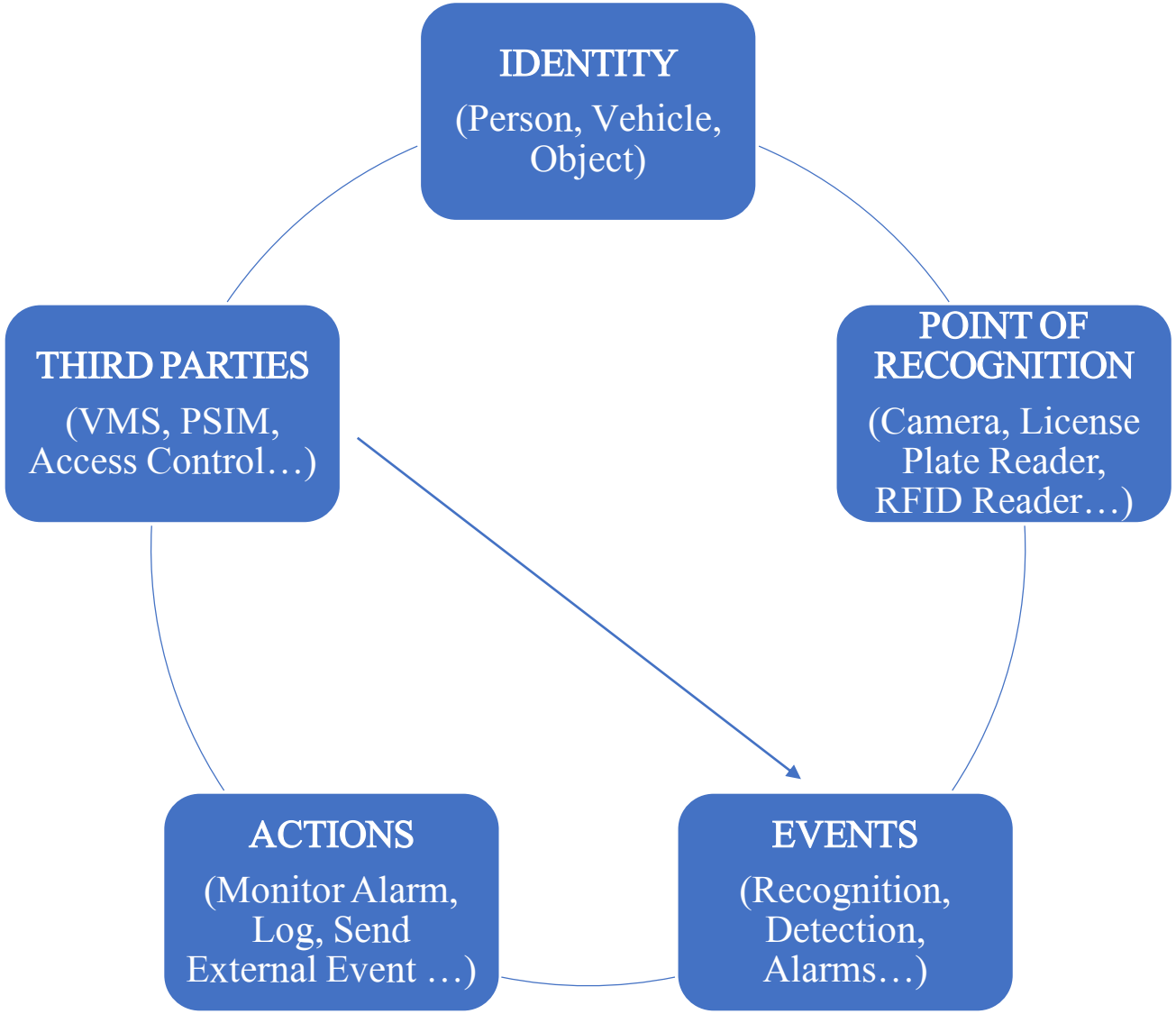
- Integrates various VMS, Access Control, PSIM and proprietary systems. Among them: Milestone, Genetec, Indigo Vision, Zucchetti and Honeywell.
- Euklis provides tools to integrate any type of third party component.

EUKLIS

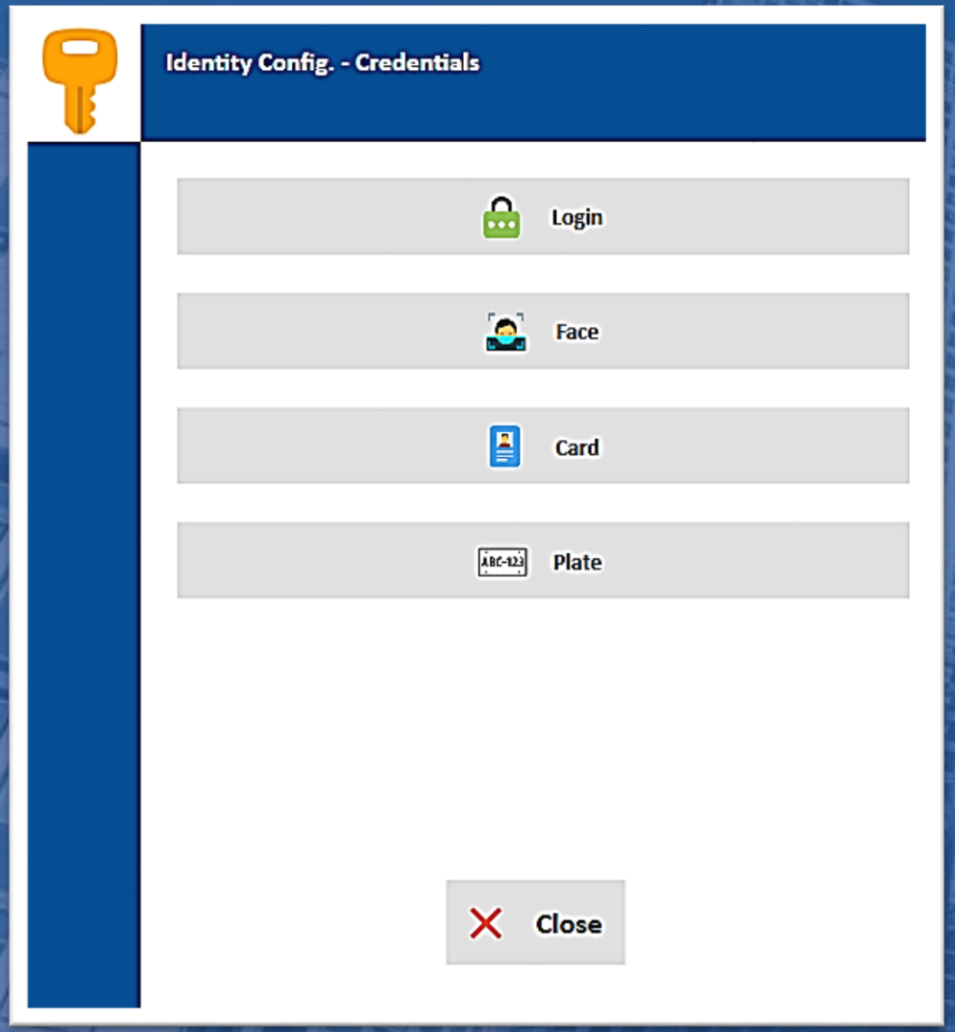
FaRe Hybrid - Identity Certification and Face Recognition Platform

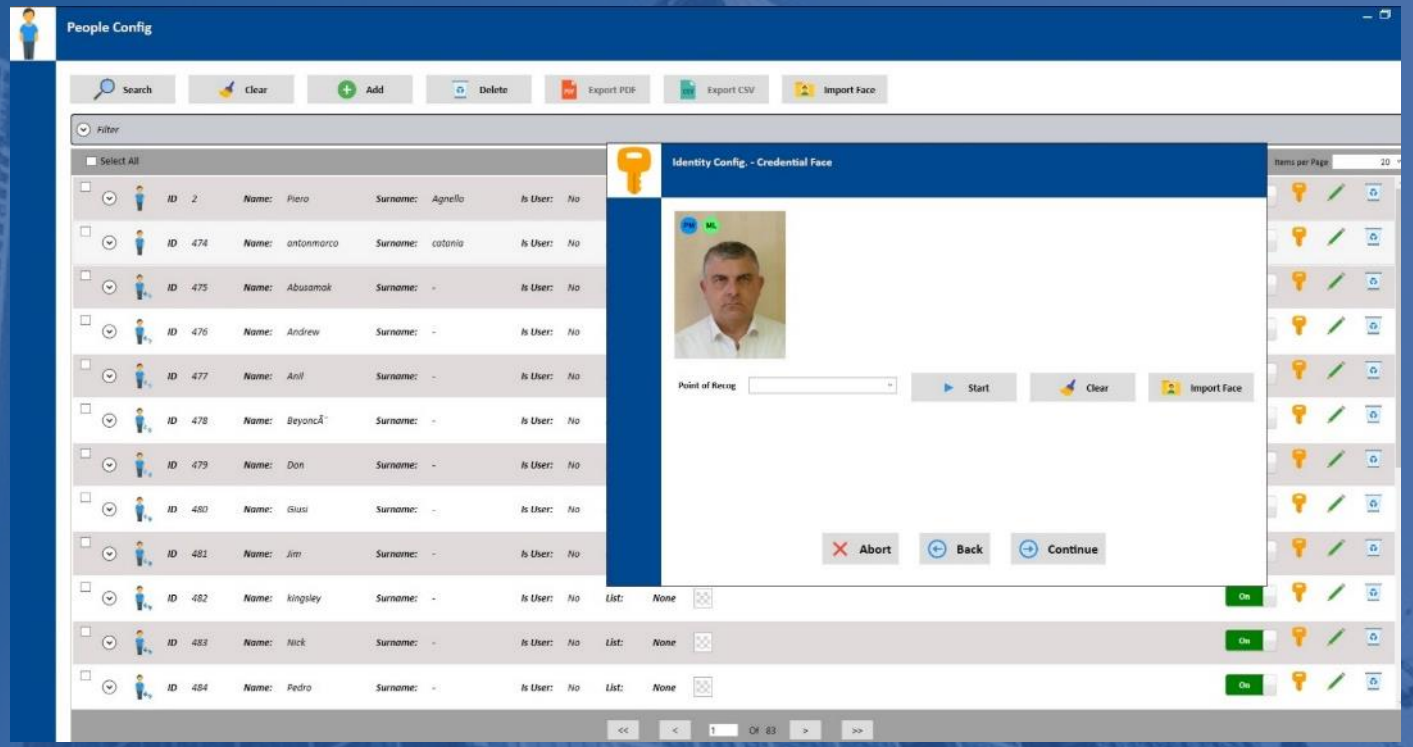
- Allows the addition of customized functions to meet specific site needs.

Filosofia del Sistema:

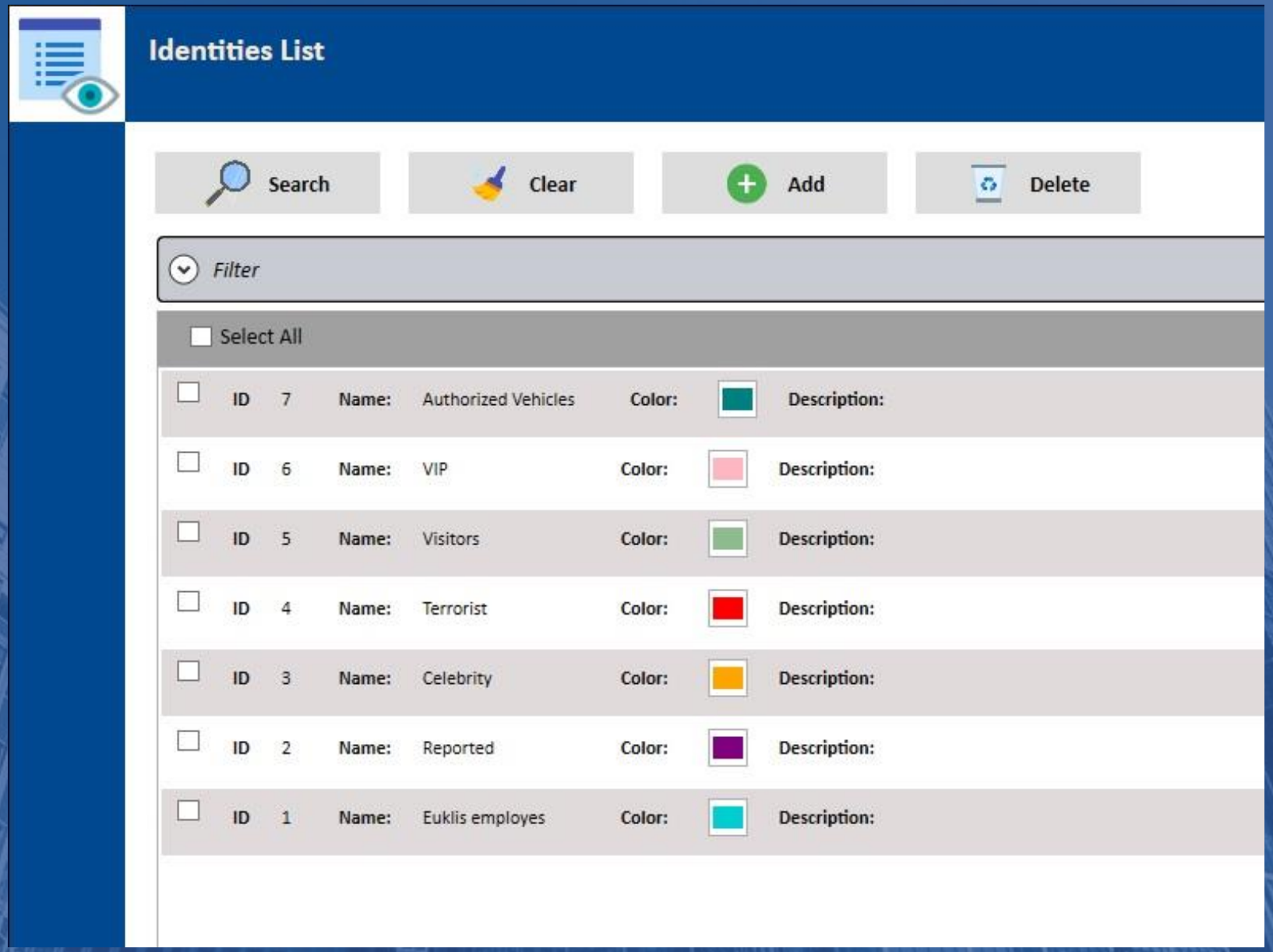


Identity


Identity Config. - Credentials
Login
Face
Card
Plate
Close


People Config
Search
Clear
Add
Delete
Export PDF
Export CSV
Import Face
Filter
Select All
Identity Config. - Credential Face
Point of Recog
Start
Clear
Import Face
Abort
Back
Continue

Identity


Identities List
Search
Clear
Add
Delete
Filter
Select All
ID 7 Name: Authorized Vehicles Color: Description:
ID 6 Name: VIP Color: Description:
ID 5 Name: Visitors Color: Description:
ID 4 Name: Terrorist Color: Description:
ID 3 Name: Celebrity Color: Description:
ID 2 Name: Reported Color: Description:
ID 1 Name: Euklis employes Color: Description:

Simple Points of Recognition

- Fixed camera
- Pan & Tilt camera
- Badge reader
- License plate reader
- QR Code reader
- Etc.

EUKLIS

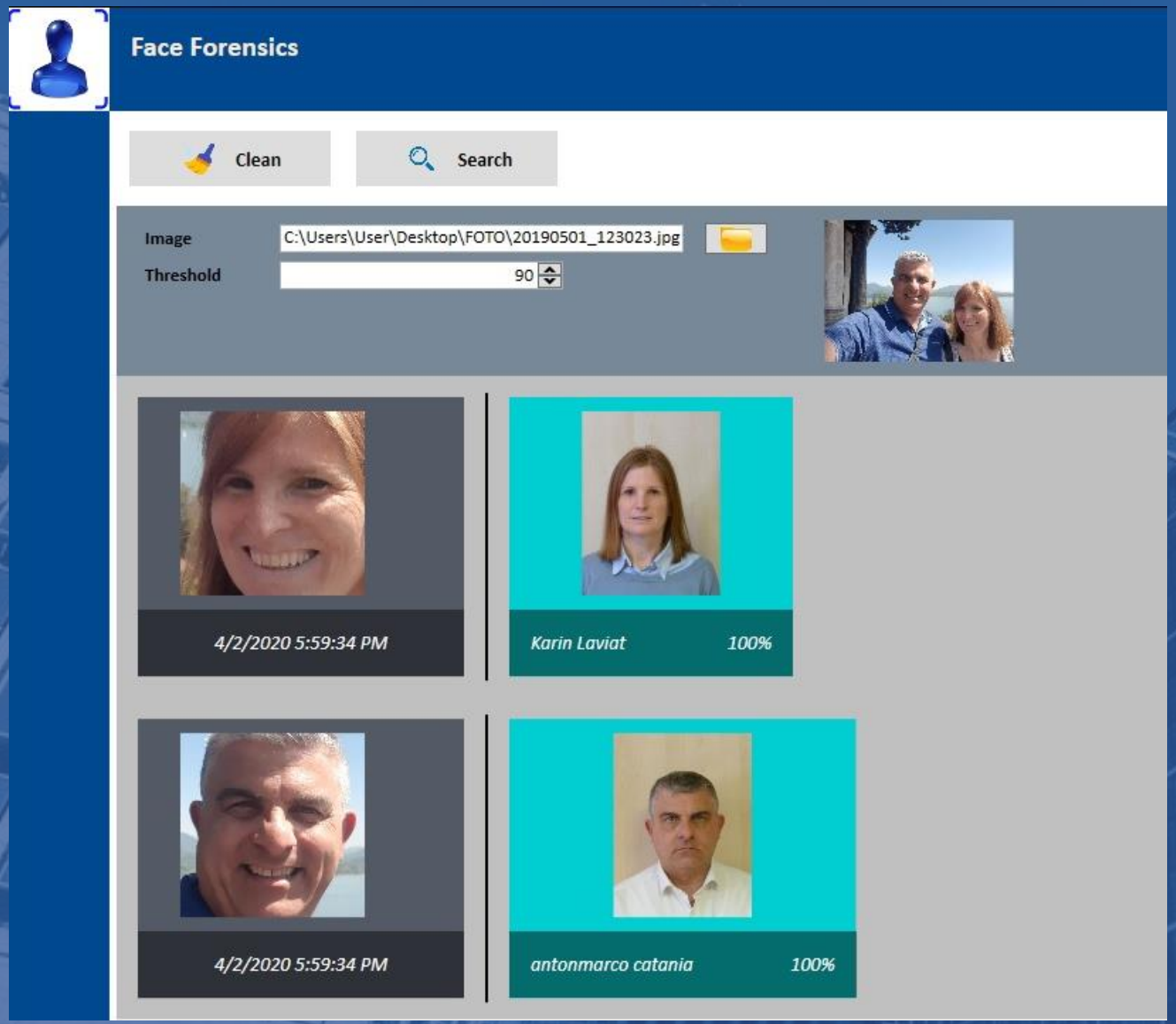
Composite Points of Recognition

- Camera + badge reader
- 2D camera + 3D camera + badge reader
- 2D camera + license plate reader
- Document reader + 3D camera
- 3D camera + QR Code reader
- Etc.

FaRe 3.1 Hybrid: Functions

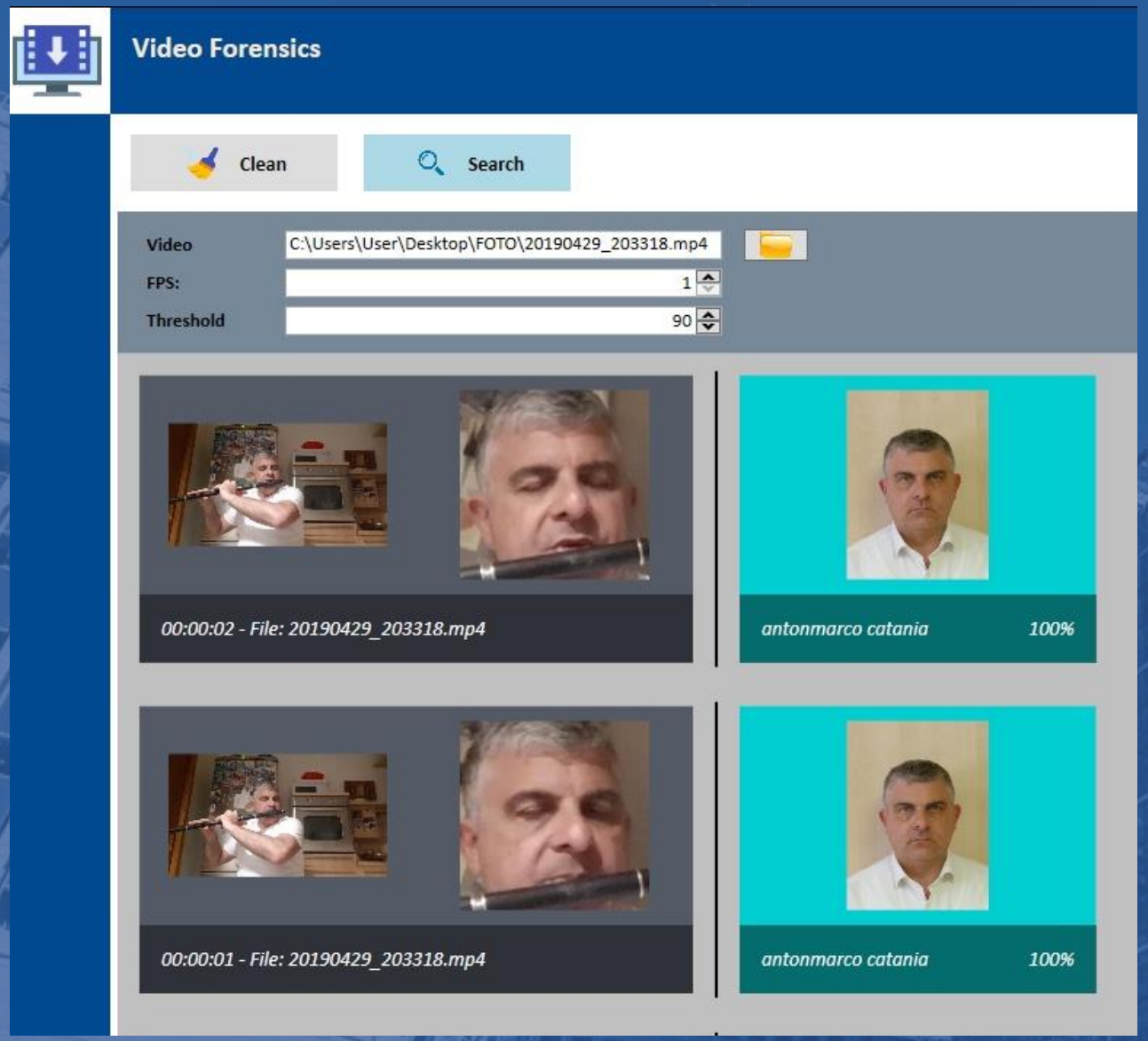
EUKLIS

Face Forensics



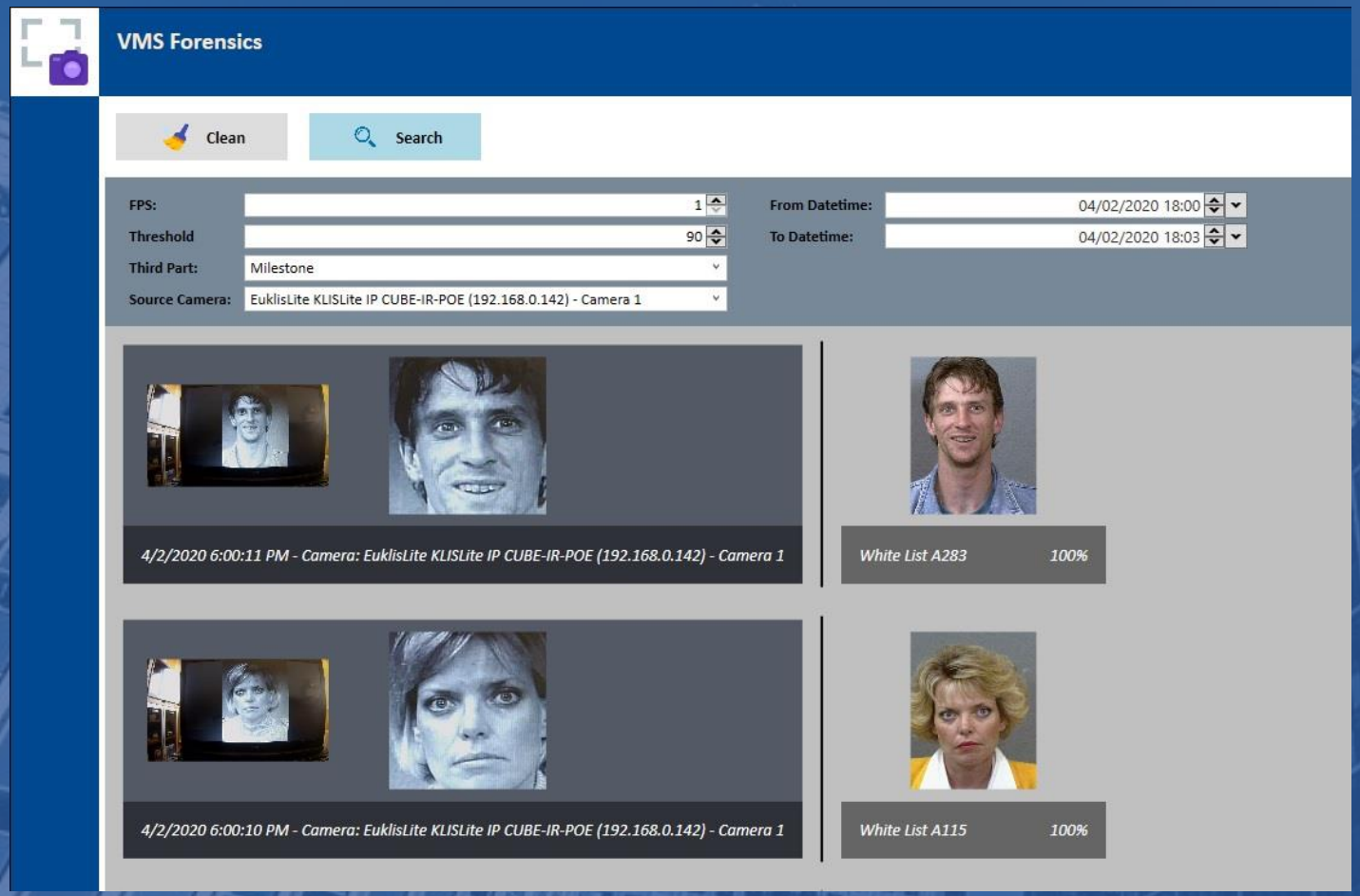
- **Face Forensics**: identifies a subject from a photo in a database of reported subjects.

Video Forensics



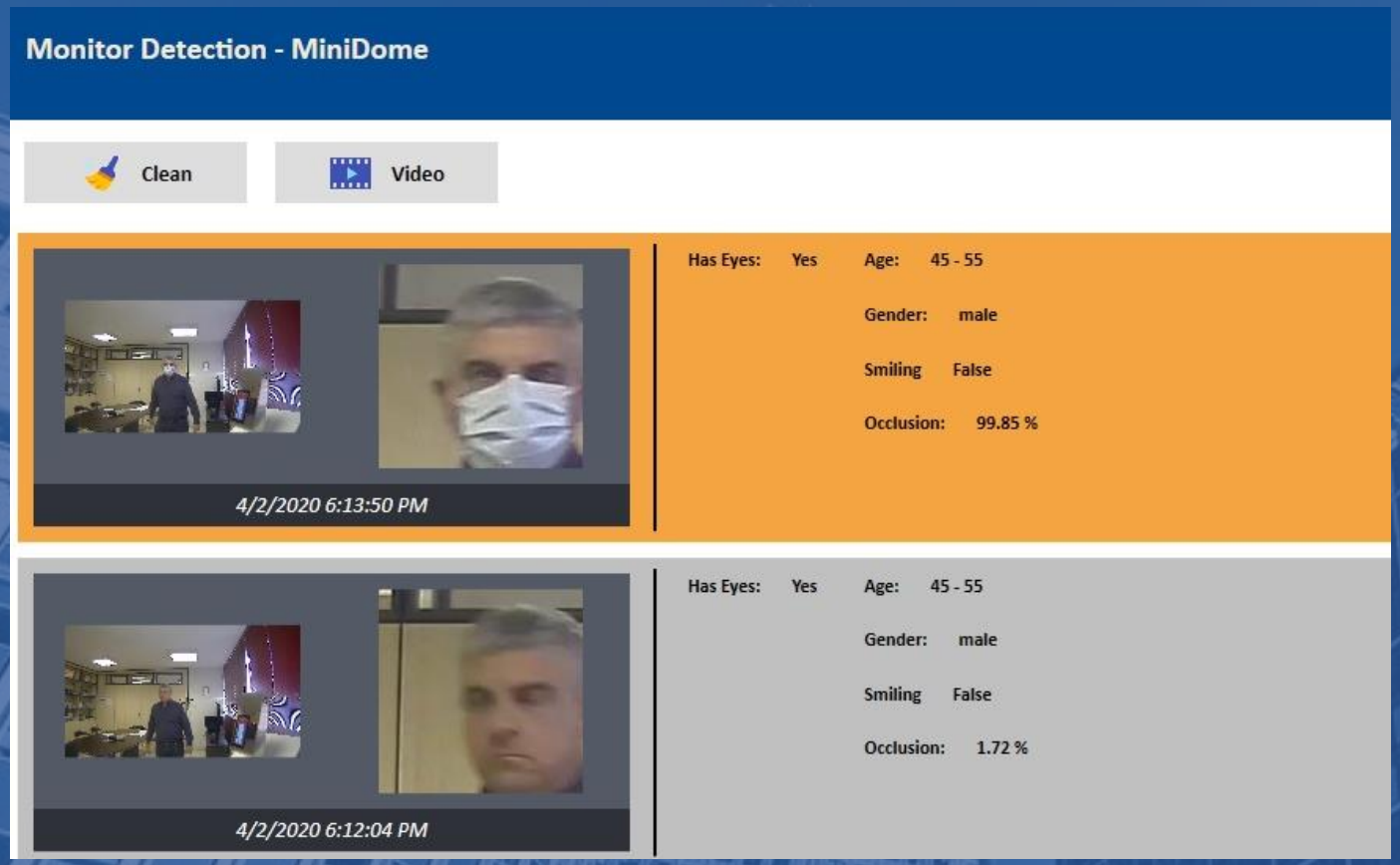
- **Video Forensics**: searches faces and reported subjects from a folder of videos in any format.

VMS Forensics



- **VMS Forensics**: searches faces and reported subjects from a VMS as Milestone, Genetec and others.

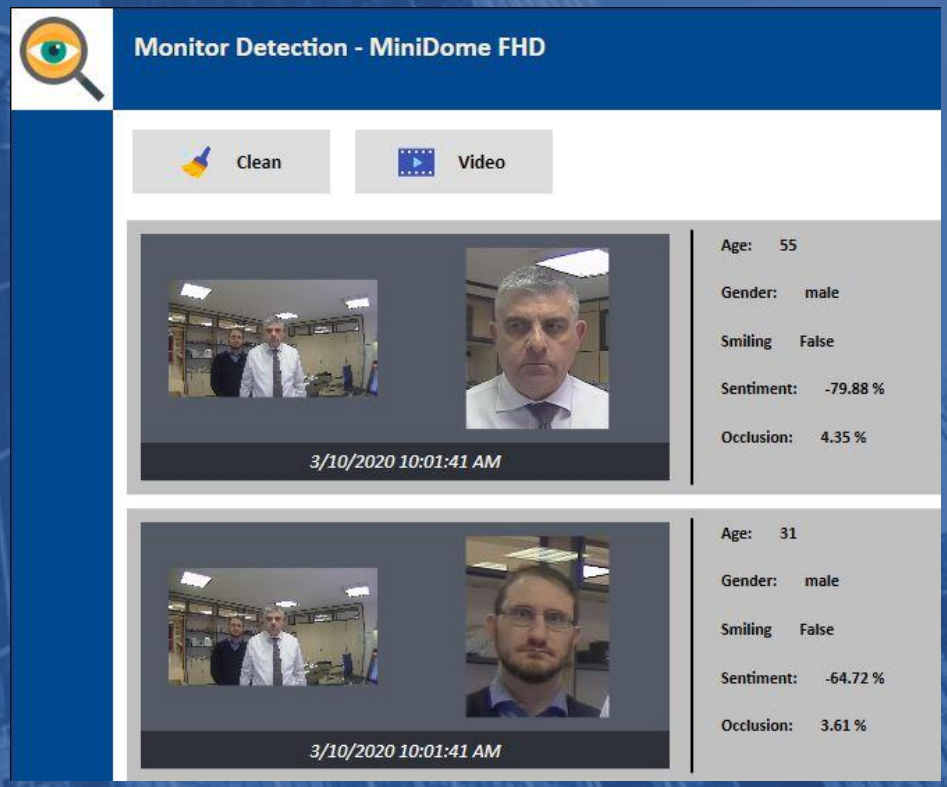
People Detection



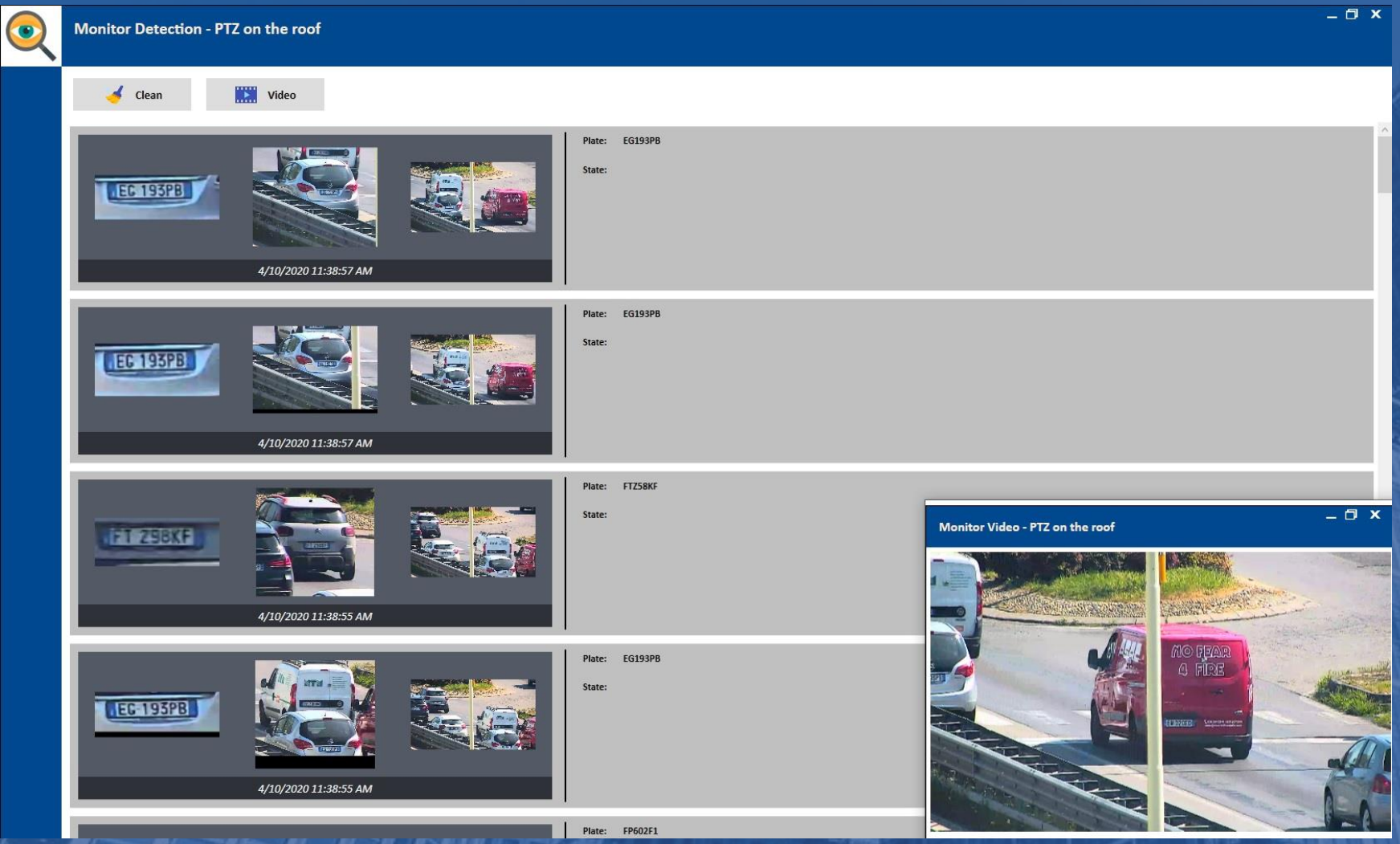
a) Subject with uncovered face.

b) Subject with covered face.

c) Man / woman / estimated age.



Vehicle Detection



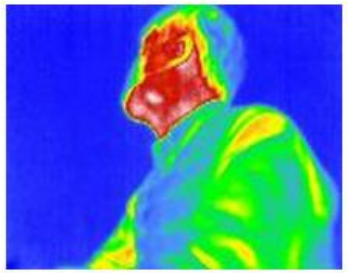
a) Vehicle with readable plate.
b) Vehicle with unreadable license plate.
c) Car / motorcycle / truck
d) Color

Thermo Detection

Used as *Elevated Skin Temperature*

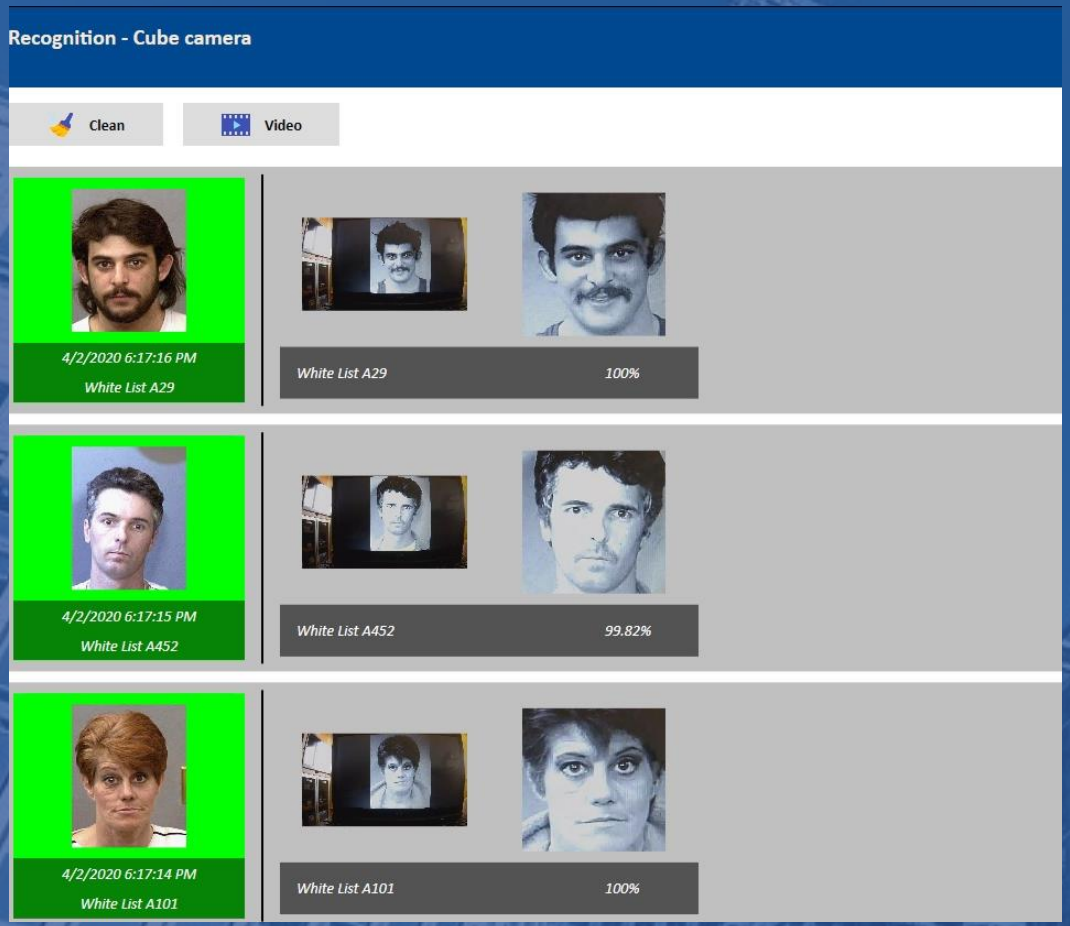
Dual Lens Camera: Thermal & Visual for the measurement of body temperature.

DETECTION EVENT: the temperature is higher than a programmed level.



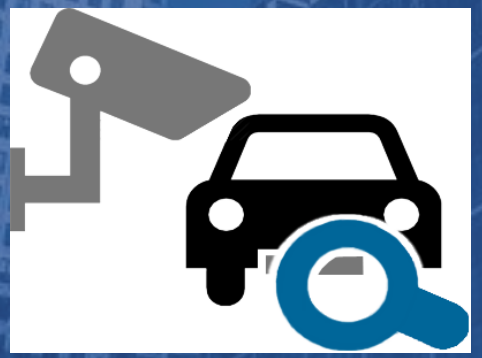
EUKLIS

People Recognition



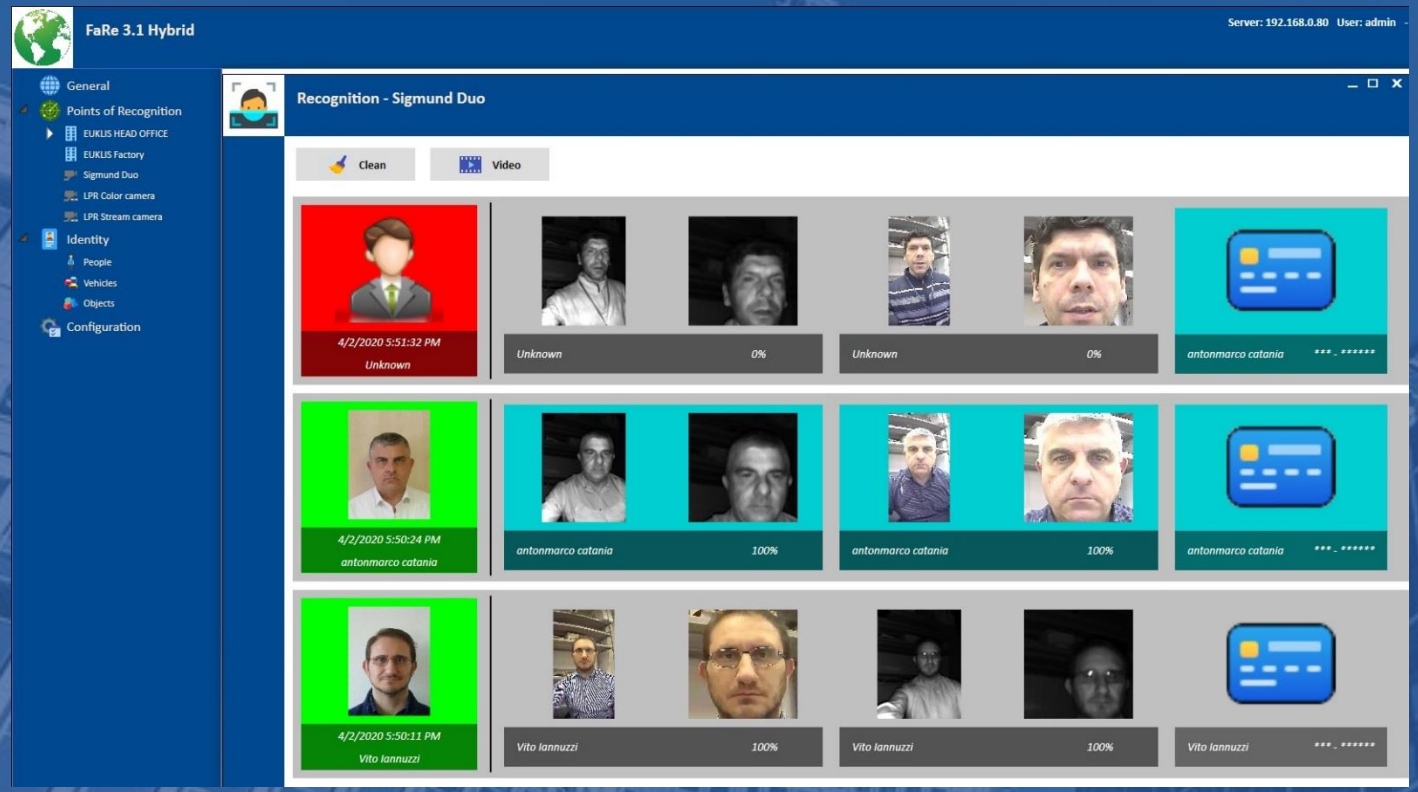
- **Recognition**: presents all the faces recognized among those reported by any recognition point.

Vehicle Recognition



- **Recognition:** presents all the plates recognized among those reported by any recognition point.
- The point of recognition can be simple (i.e. number plate) or composite (number plate + face).

Access Control



- **Access Control:** certifies the identity of the person who accesses through an identification point.

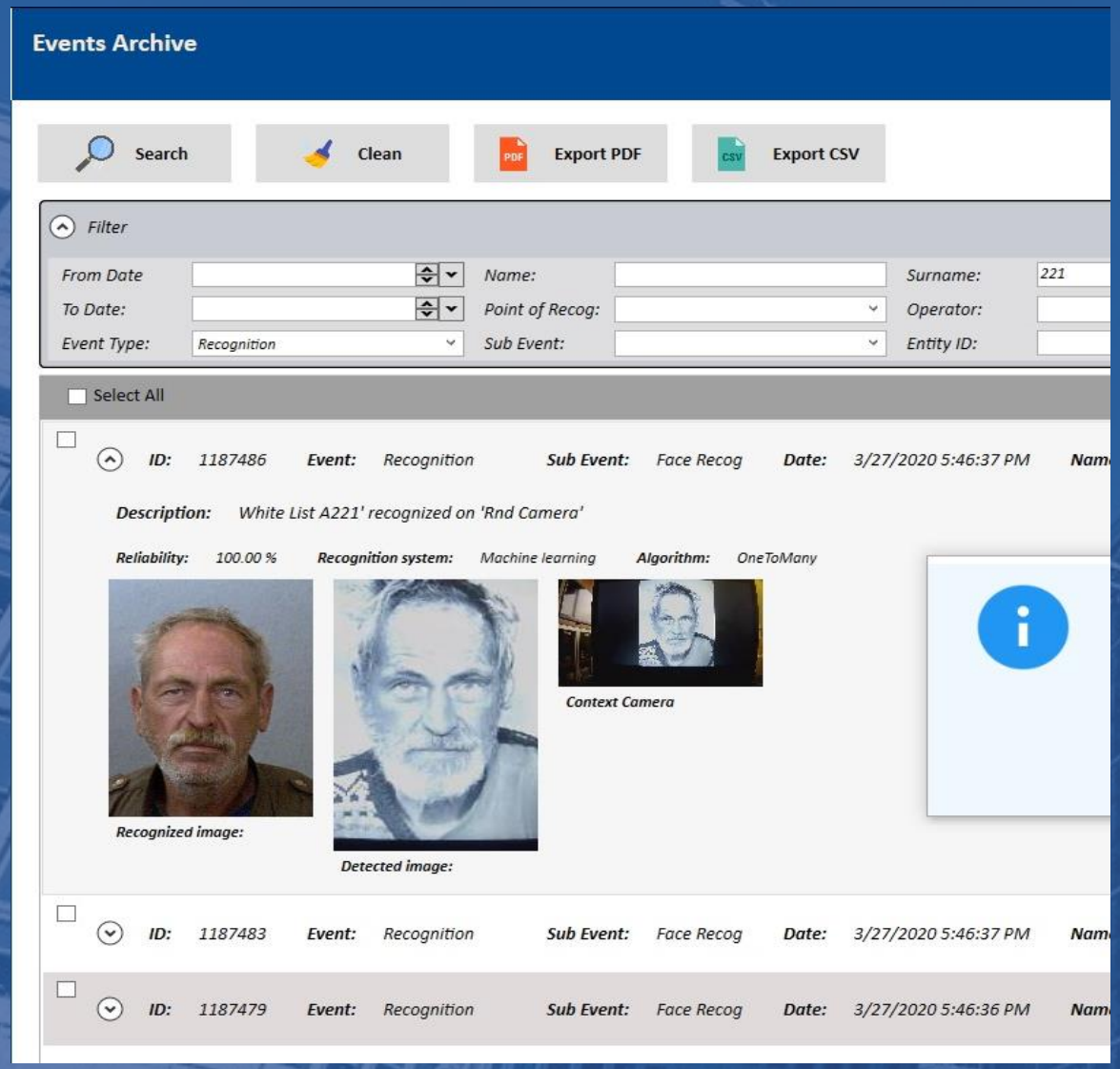
Anti spoofing

- **Anti spoofing function:** to prevent attack attempts with photographs, videos and masks through the management of 3D cameras.

Welcome & Track

- **Welcome & Track:** to send a customizable message on a monitor to the detected subject and to the recognized subject.

Event & Archive Management

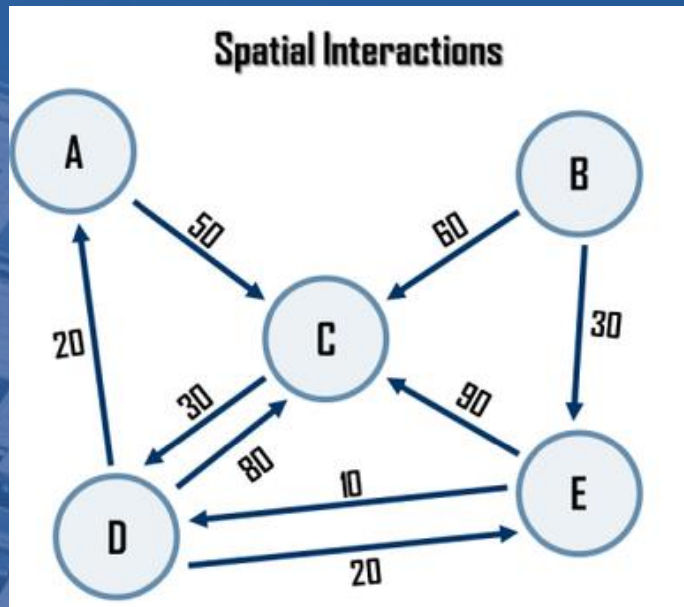


- **Event archive:** to access and export all the events recorded by the system.
- **Marketing:** to report statistics on people and cars detected.

Police DB Reported Subjects & Vehicles

- **Police DB Reported Subjects & Vehicles:** generates an event if a subject or a license plate number is reported in the Police external database.

Tracking

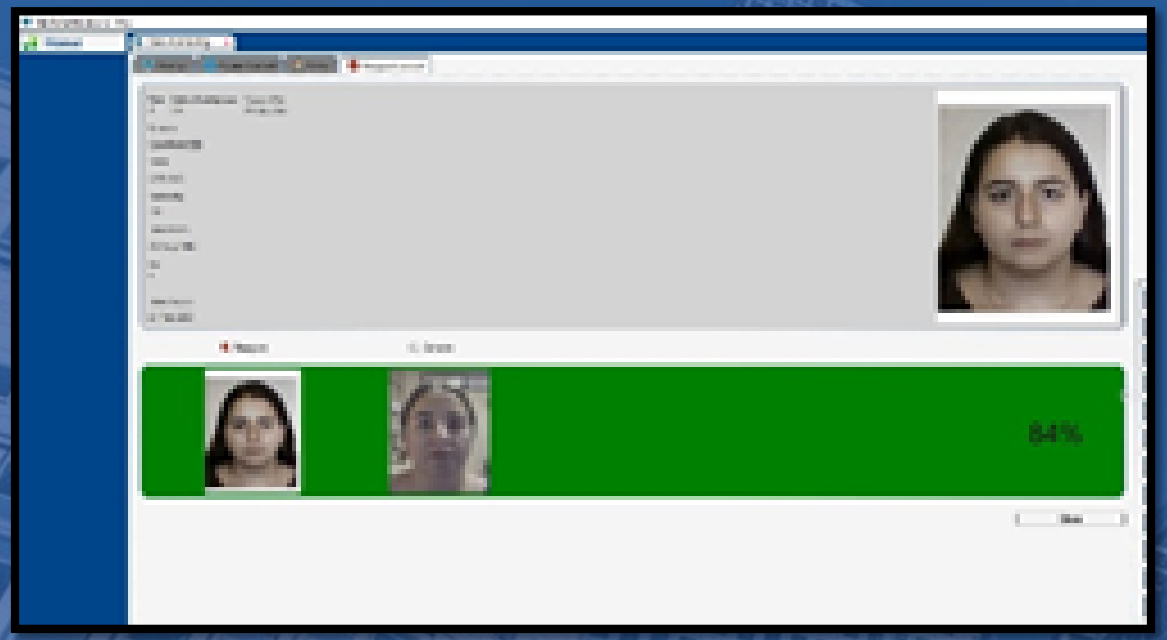


O/D Matrix

	A	B	C	D	E	Ti
A	0	0	50	0	0	50
B	0	0	60	0	30	90
C	0	0	0	30	0	30
D	20	0	80	0	20	120
E	0	0	90	10	0	100
Tj	20	0	280	40	50	**390**

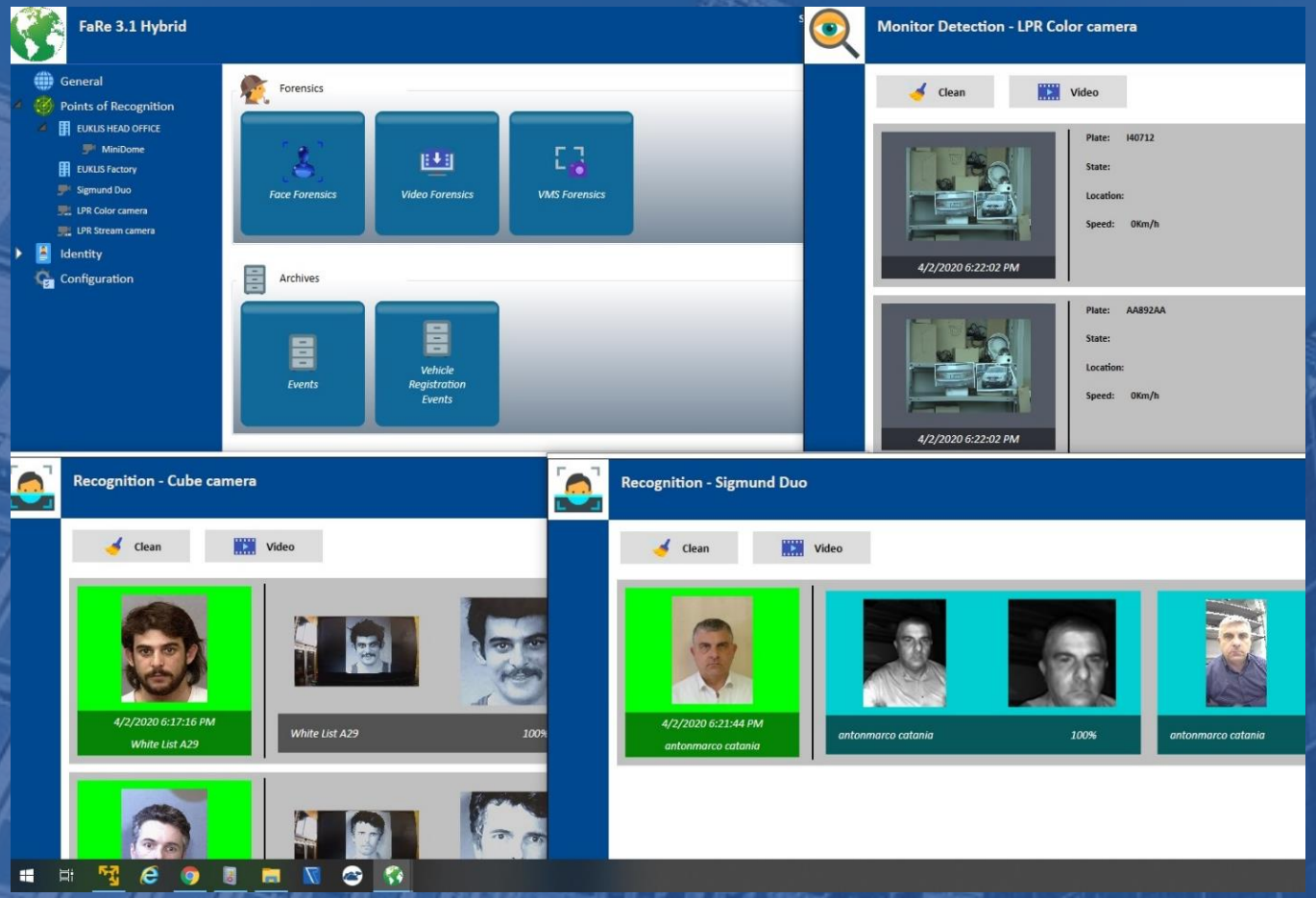
- **Tracking:** to obtain the O/D matrix of entities - people, cars.

Electronic Document Control



- **Electronic Document Control:** to read and verify electronic documents (passport and identity cards) and grant access after checking the face detected by the camera with the image contained in the document chipset.

System Performance



- Identity DB size: Unlimited
- Point of Recognition DB size: Unlimited
- Number of Client Connections: Unlimited
- Detection speed: <100ms
- Recognition Speed: <50 ms
- Face definition image: > 25 pixels between the pupils

GDPR

- The suite fits perfectly into the GDPR context: all data are AES265 and RSA 2048 bit encrypted.
- All access and management data are recorded. Personal data can be selected and deleted individually. The auto-elimination time is programmable.
- Unrecognized faces can be immediately deleted.
- A backup database is present and a failover mechanism can be activated.
- The image is saved with a hash function from which the face cannot be reconstructed.
- Communication between server and client is authenticated with security certificates.

Areas of use:

- Security
- Safety
- Industrial Process Control
- Building Automation

v

Thank You