



FaRe 3.1 Hybrid
Identity Certification and Face Recognition Platform

Euklis

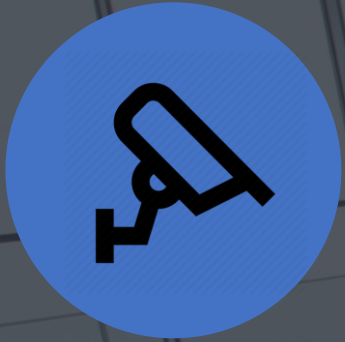
- Since 2007, **Euklis** is an Italian video surveillance *brand*.
- Since 2017, **Euklis srl** is a *Start-up company* specialized in video analytics, face recognition and artificial intelligence for the protection of critical infrastructures.
- The Most innovative Technology of Euklis is the Client-Server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





Genesis of FaRe Hybrid's Innovation and Philosophy

How is a Security System made of?



Videosurveillance



Access Control



Anti Intrusion



Fire Alarm

How to integrate Face Recognition?



Available on the market

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



Bottom-Up
Approach – From
the Technologies



Euklis FaRe Hybrid

- 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.



Top-Down
Approach – From
the 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.



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.

FaRe Hybrid - Identity Certification and Face Recognition Platform



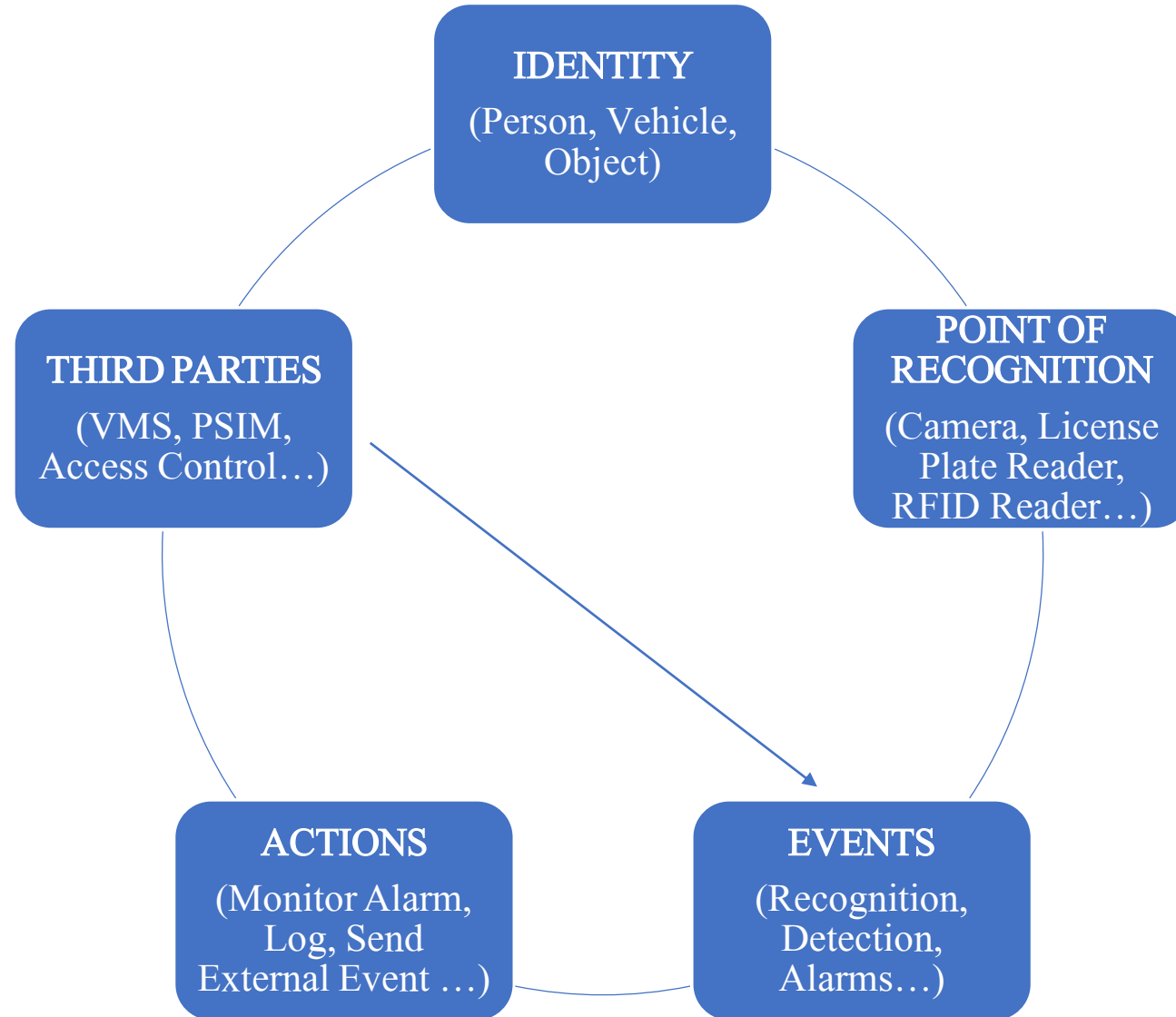
- Integrates various VMS, Access Control, PSIM and proprietary systems. Among them: Milestone, Genetec, Indigo Vision, Zucchetti and Honeywell.
- Euklis provides tools to integrate any type of third party component.

FaRe Hybrid - Identity Certification and Face Recognition Platform

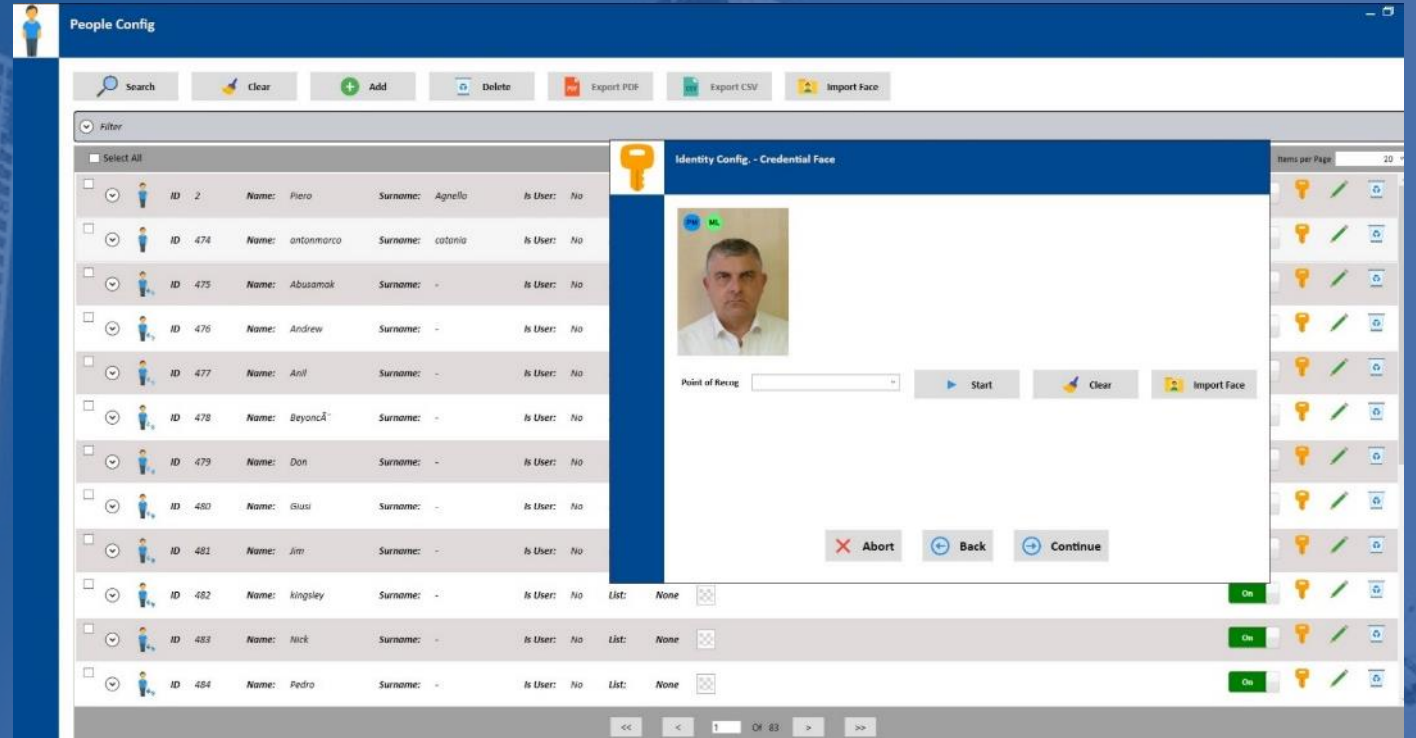
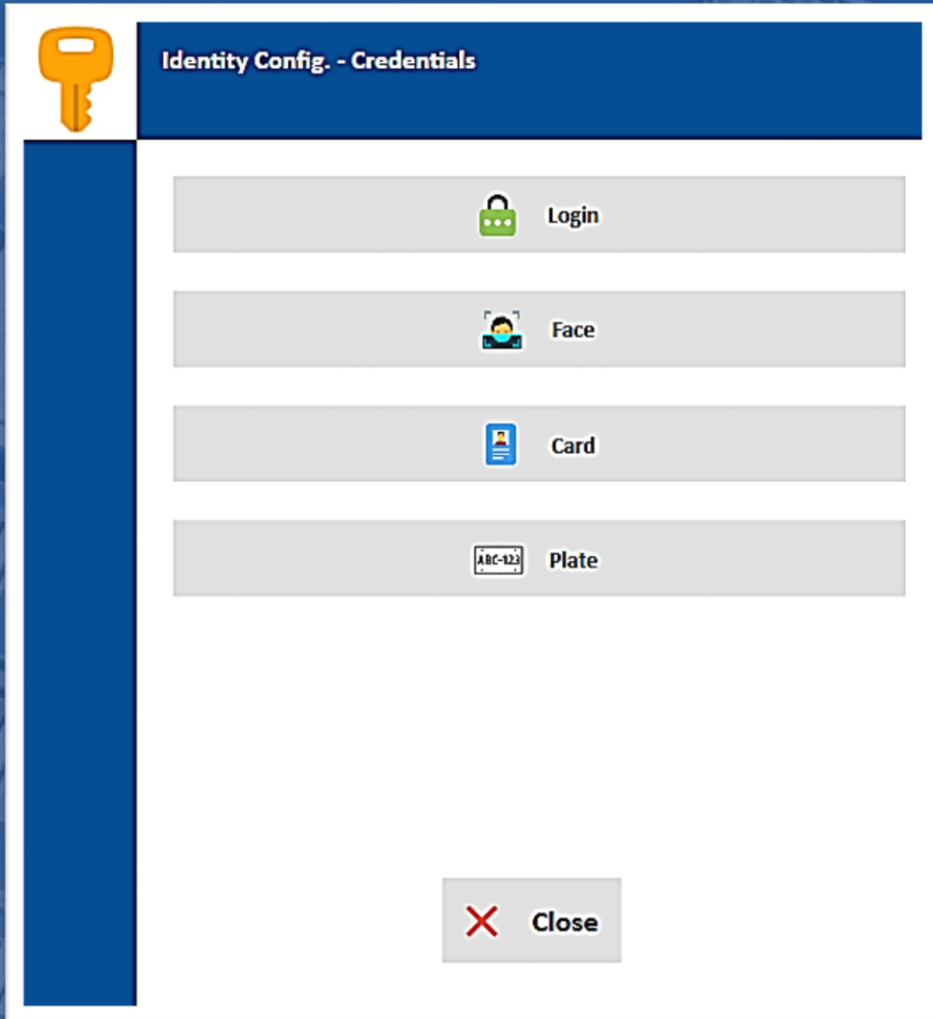
- Allows the addition of customized functions to meet specific site needs.




Filosofia del Sistema:




Identity





Identity





Identities List

 Search








 Clear

 Add

 Delete

 Filter

☐ Select All

<input type="checkbox"/>	ID	7	Name:	Authorized Vehicles	Color:		Description:
<input type="checkbox"/>	ID	6	Name:	VIP	Color:		Description:
<input type="checkbox"/>	ID	5	Name:	Visitors	Color:		Description:
<input type="checkbox"/>	ID	4	Name:	Terrorist	Color:		Description:
<input type="checkbox"/>	ID	3	Name:	Celebrity	Color:		Description:
<input type="checkbox"/>	ID	2	Name:	Reported	Color:		Description:
<input type="checkbox"/>	ID	1	Name:	Euklis employees	Color:		Description:

Simple Points of Recognition



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


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

Face Forensics


Face Forensics


Clean

Search


Image

Threshold







4/2/2020 5:59:34 PM



Karin Laviat 100%



4/2/2020 5:59:34 PM

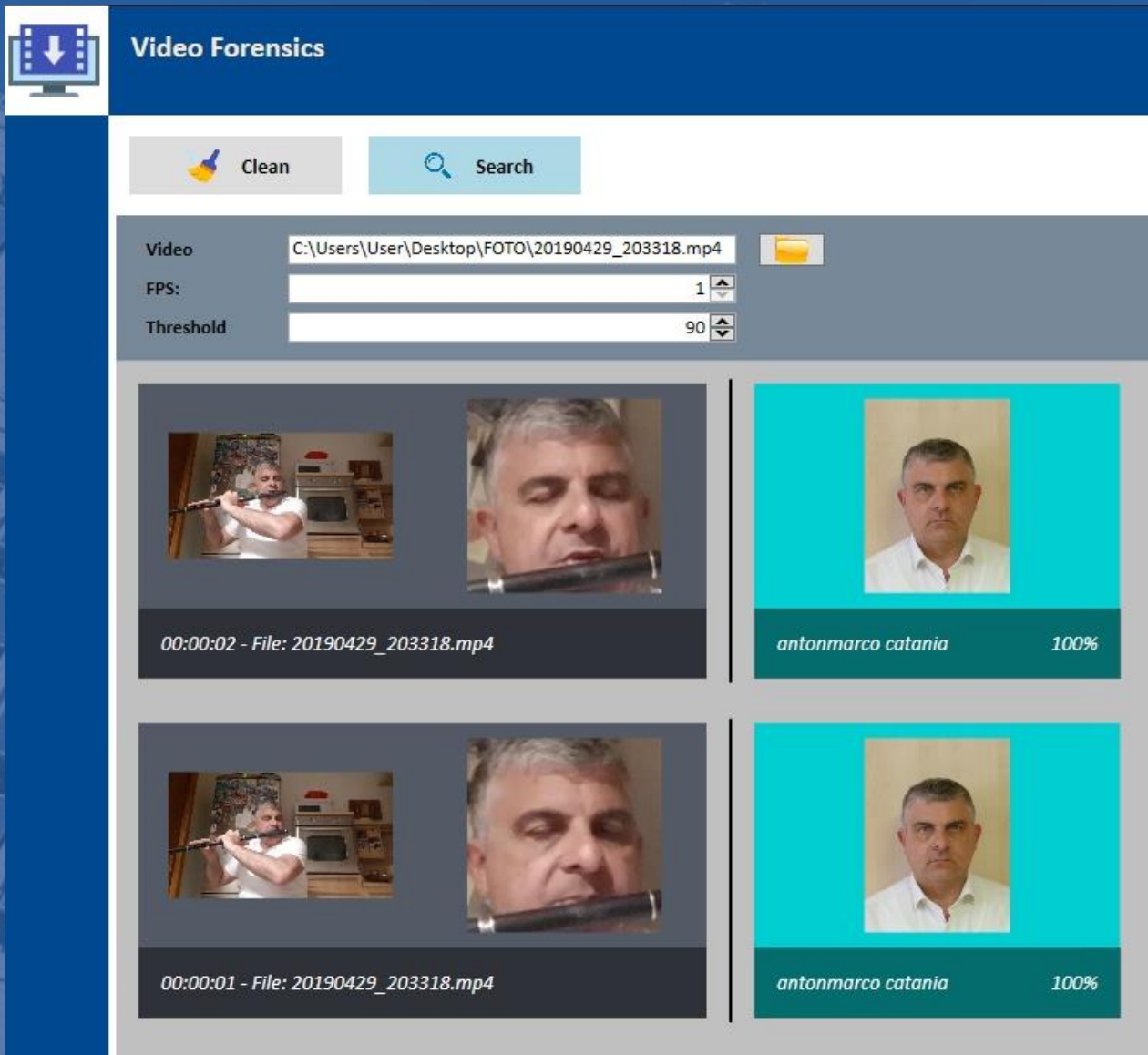


antonmarco catania 100%


- 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

 Clean  Search

FPS:



Threshold:

Third Part:


Source Camera:

From Datetime:



To Datetime:




4/2/2020 6:00:11 PM - Camera: EuklisLite KLISLite IP CUBE-IR-POE (192.168.0.142) - Camera 1



White List A283 100%



4/2/2020 6:00:10 PM - Camera: EuklisLite KLISLite IP CUBE-IR-POE (192.168.0.142) - Camera 1





White List A115 100%



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

People Detection

Monitor Detection - MiniDome



 Clean

 Video



4/2/2020 6:13:50 PM


Has Eyes: Yes Age: 45 - 55
Gender: male
Smiling: False
Occlusion: 99.85 %





4/2/2020 6:12:04 PM



Has Eyes: Yes Age: 45 - 55
Gender: male
Smiling: False
Occlusion: 1.72 %

- a) Subject with uncovered face.
- b) Subject with covered face.
- c) Man / woman / estimated age.

 Monitor Detection - MiniDome FHD



 Clean

 Video



3/10/2020 10:01:41 AM

Age: 55
Gender: male
Smiling: False
Sentiment: -79.88 %
Occlusion: 4.35 %







3/10/2020 10:01:41 AM

Age: 31
Gender: male
Smiling: False
Sentiment: -64.72 %
Occlusion: 3.61 %


Vehicle Detection

Monitor Detection - PTZ on the roof

Clean Video

 4/10/2020 11:38:57 AM	Plate: EG193PB State:
 4/10/2020 11:38:57 AM	Plate: EG193PB State:
 4/10/2020 11:38:55 AM	Plate: FT298KF State:
 4/10/2020 11:38:55 AM	Plate: EG193PB State:
	Plate: FP602F1

Monitor Video - PTZ on the roof



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

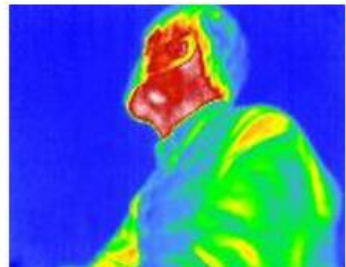
Thermo Detection

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.



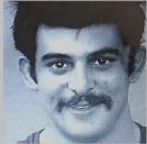


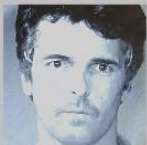





People Recognition

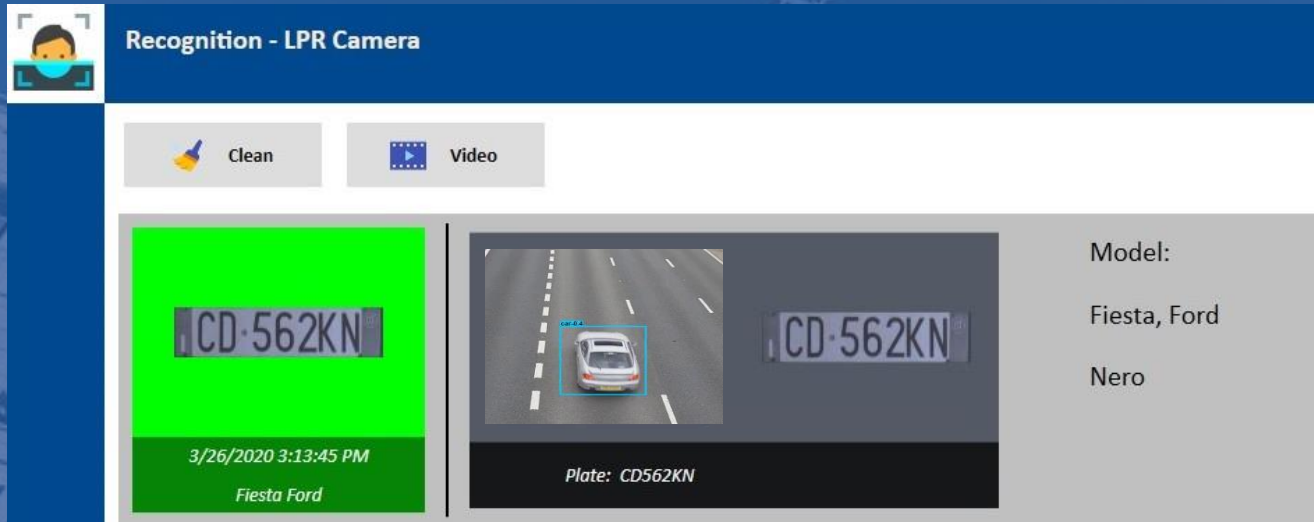
- **Recognition:** presents all the faces recognized among those reported by any recognition point.

Recognition - Cube camera

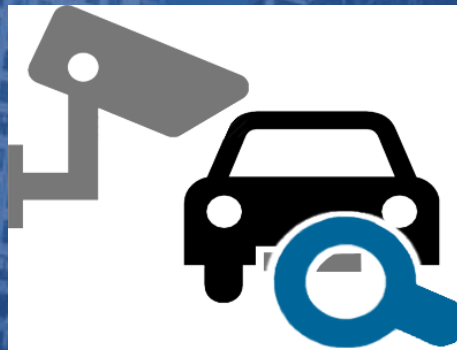
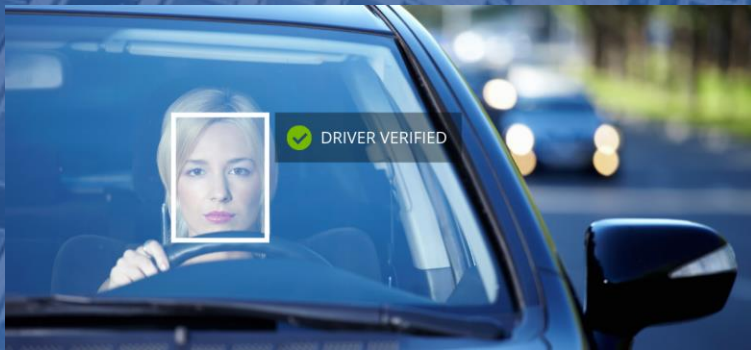
Clean Video

 4/2/2020 6:17:16 PM White List A29	  White List A29 100%
 4/2/2020 6:17:15 PM White List A452	  White List A452 99.82%
 4/2/2020 6:17:14 PM White List A101	  White List A101 100%

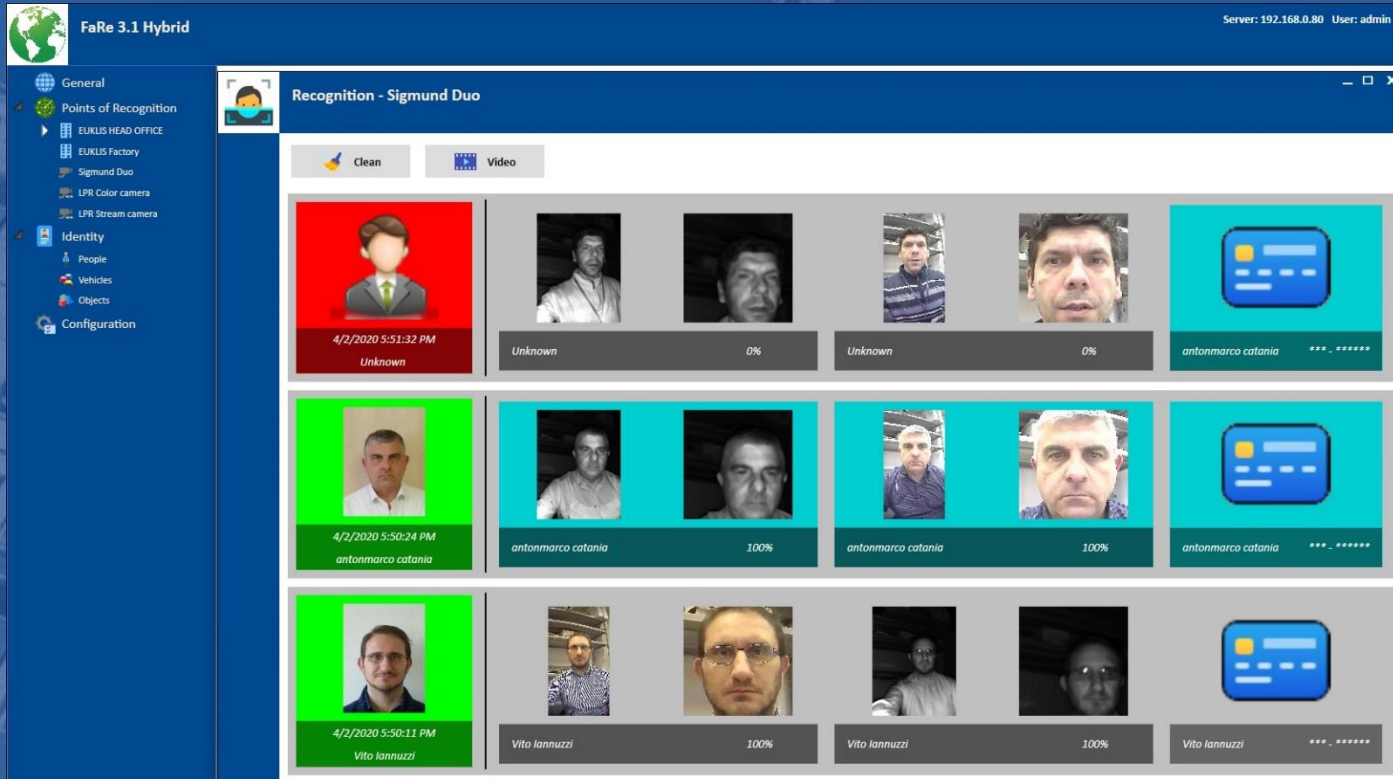
Vehicle Recognition



- **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

Events Archive

 Search

 Clean

 Export PDF

 Export CSV

Filter

From Date:

To Date:

Event Type: Recognition

Name:

Point of Recog:

Sub Event:

Surname:

Operator:

Entity ID:

Select All

☐

ID: 1187486

Event: Recognition

Sub Event: Face Recog

Date: 3/27/2020 5:46:37 PM


Name:

Description: White List A221' recognized on 'Rnd Camera'


Reliability: 100.00 %

Recognition system: Machine learning


Algorithm: OneToMany



Recognized image:



Detected image:



Context Camera

☐

ID: 1187483

Event: Recognition

Sub Event: Face Recog

Date: 3/27/2020 5:46:37 PM

Name:

☐

ID: 1187479

Event: Recognition

Sub Event: Face Recog

Date: 3/27/2020 5:46:36 PM

Name:

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

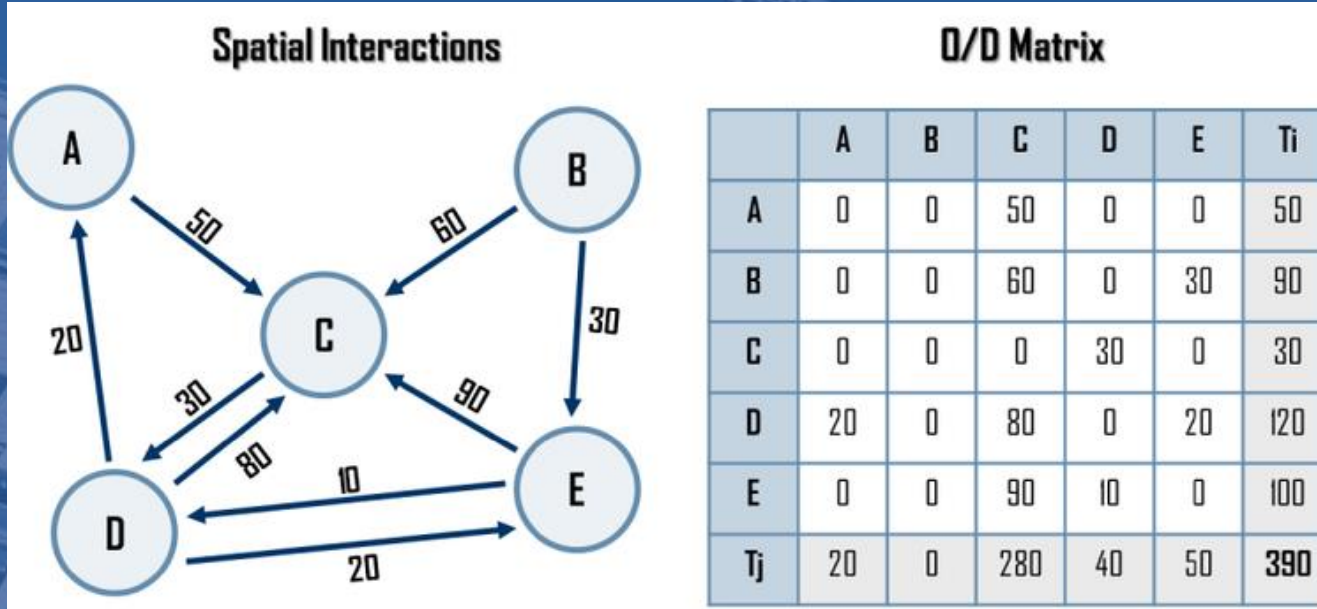
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Police DB Reported Subjects & Vehicles

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

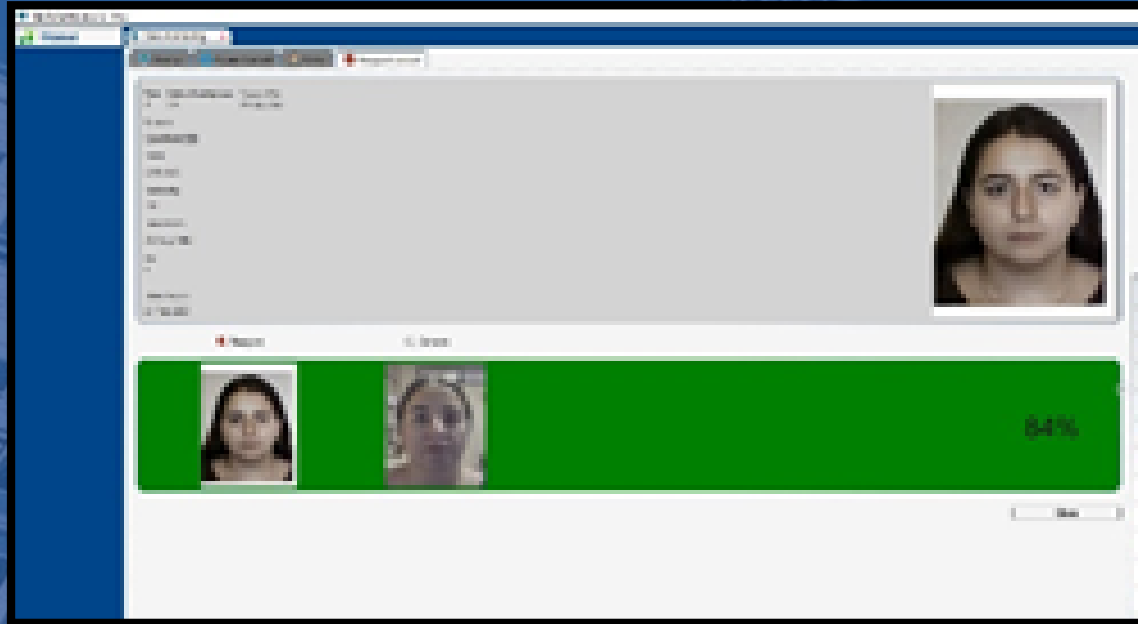


Tracking



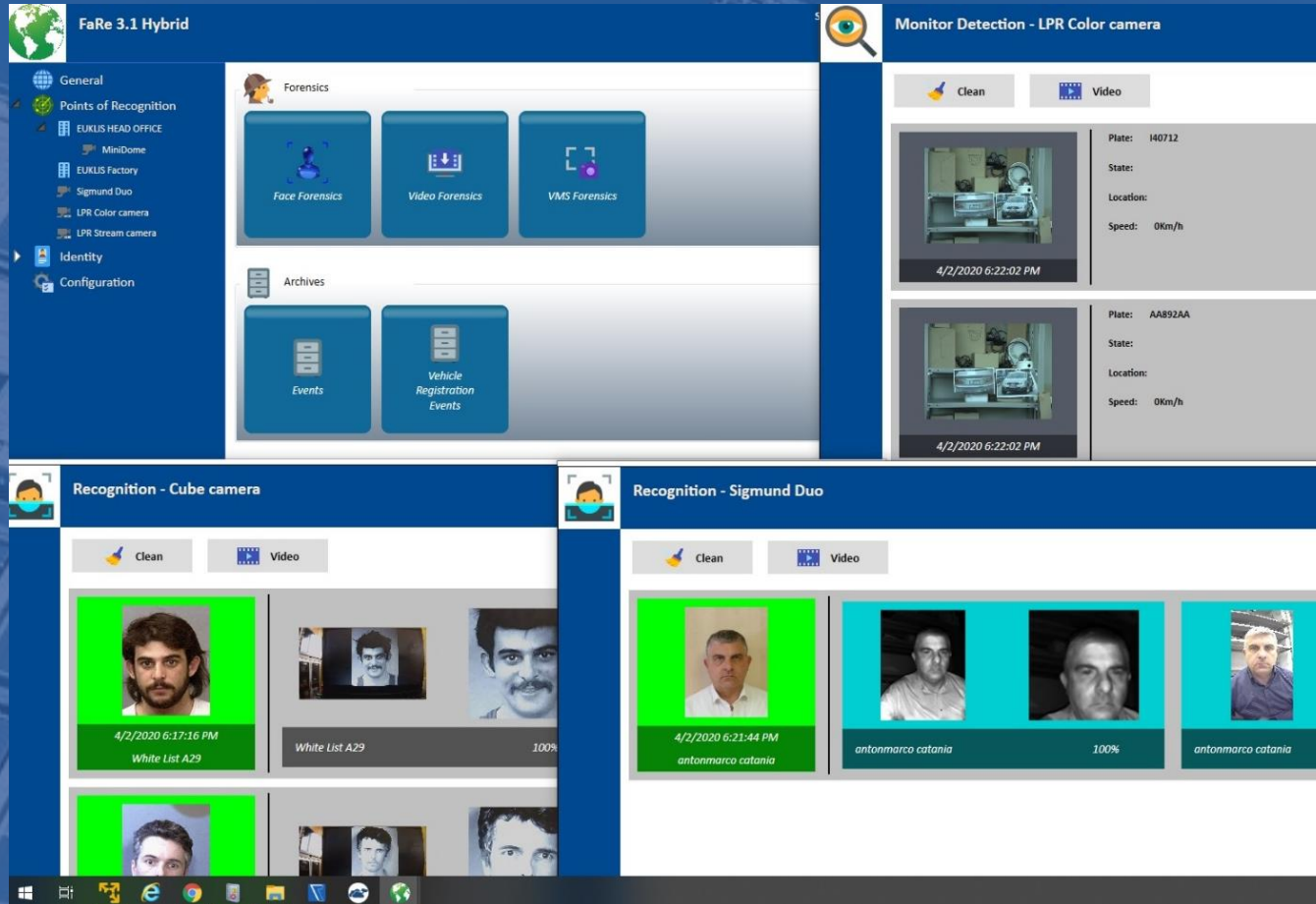
- **Tracking:** to obtain the O/D matrix of entities - people, cars.

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

A low-angle, upward-looking photograph of several modern skyscrapers against a clear blue sky. The central focus is a tall, cylindrical glass skyscraper with horizontal bands of windows. To its right is a tall, rectangular skyscraper with a grid-like facade. Other buildings are visible on the left and bottom edges. A large, semi-transparent blue circle is overlaid on the central glass skyscraper, and the text "Thank You" is written in white serif font across its center.

Thank You