FRONTEX 'BIOMETRICS ON THE MOVE'

ON THE MOVE, IN BALANCE

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SAFRAN MORPHO: A GLOBAL IDENTITY AND SECURITY LEADER

KEY FIGURES

Workforce

8,600+ employees

In nearly **55** countries

More than **€ 1.5** billion in sales

A global presence — **71** subsidiaries in the world

8% of revenue invested in R&D

R&D more than **30%** of the group's workforce

Figures as of December 31, 2014

We serve 4 key markets

CIVIL IDENTITY

DIGITAL ID & SMART TRANSACTIONS

PUBLIC SECURITY

AVIATION & BORDER SECURITY

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SOME REFERENCES

European Union VIS-BMS

- EU VIS integrating a biometric matching service (October 2011)

- Stores Schengen Visa applications for **30 Schengen countries** :
  Alphanumeric, facial and fingerprint (10 fingers flat) data base
  - up to **70 million records**
  - up to **13 million applications**/year
  - real-time visa verification at the border via fingerprints)

United Arab Emirates e-Borders

- 4 touchpoints
  - eCounter
  - Back-end
  - eRegistration
  - eGate
- integrating 3 biometrics
  - fingerprint
  - Iris
  - face

- Using MRZ passports and UAE ID cards

- Arrivals and departures
- Multiple airports

eGate

eCounter

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ON-THE-MOVE   Biometric Enablers

Morpho IAD	MorphoWave	MorphoFACE

Iris At a Distance capture

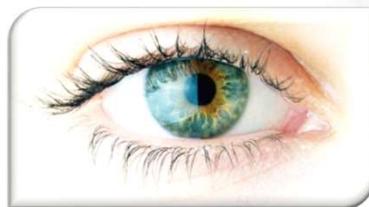**Contactless 4-Fingerprint capture in a single wave**

Face capture 'on the move'

Safran Morpho algorithms
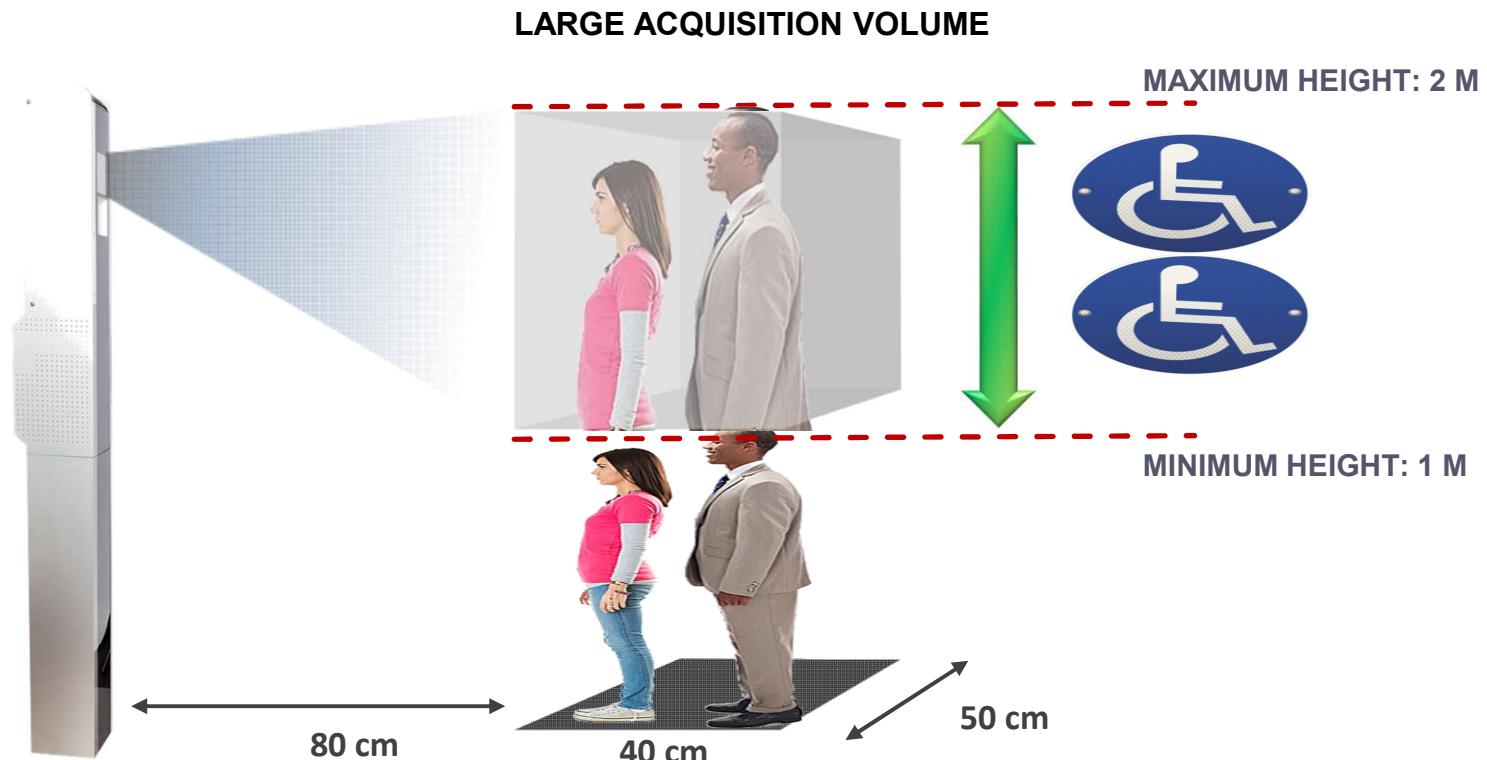
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Biometric Enabler: MORPHO IAD™

Iris-At-a-Distance

- 2 Irises

- Fast acquisition < 1 SECOND

- Effortless, non-intrusive

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IAD Iris-at-a-Distance: WELL SUITED TO EVERYONE

LARGE ACQUISITION VOLUME

MAXIMUM HEIGHT: 2 M

MINIMUM HEIGHT: 1 M

80 cm

40 cm

50 cm

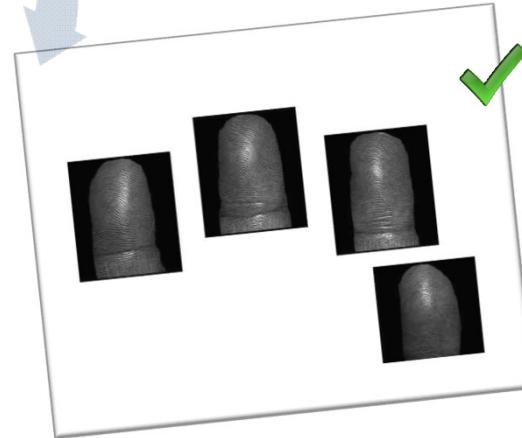Safran Morpho algorithms

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Morpho IAD

Biometric Enabler: MorphoWAVE

"FINGER-on-the-fly" technology

- One single wave for 4 fingers
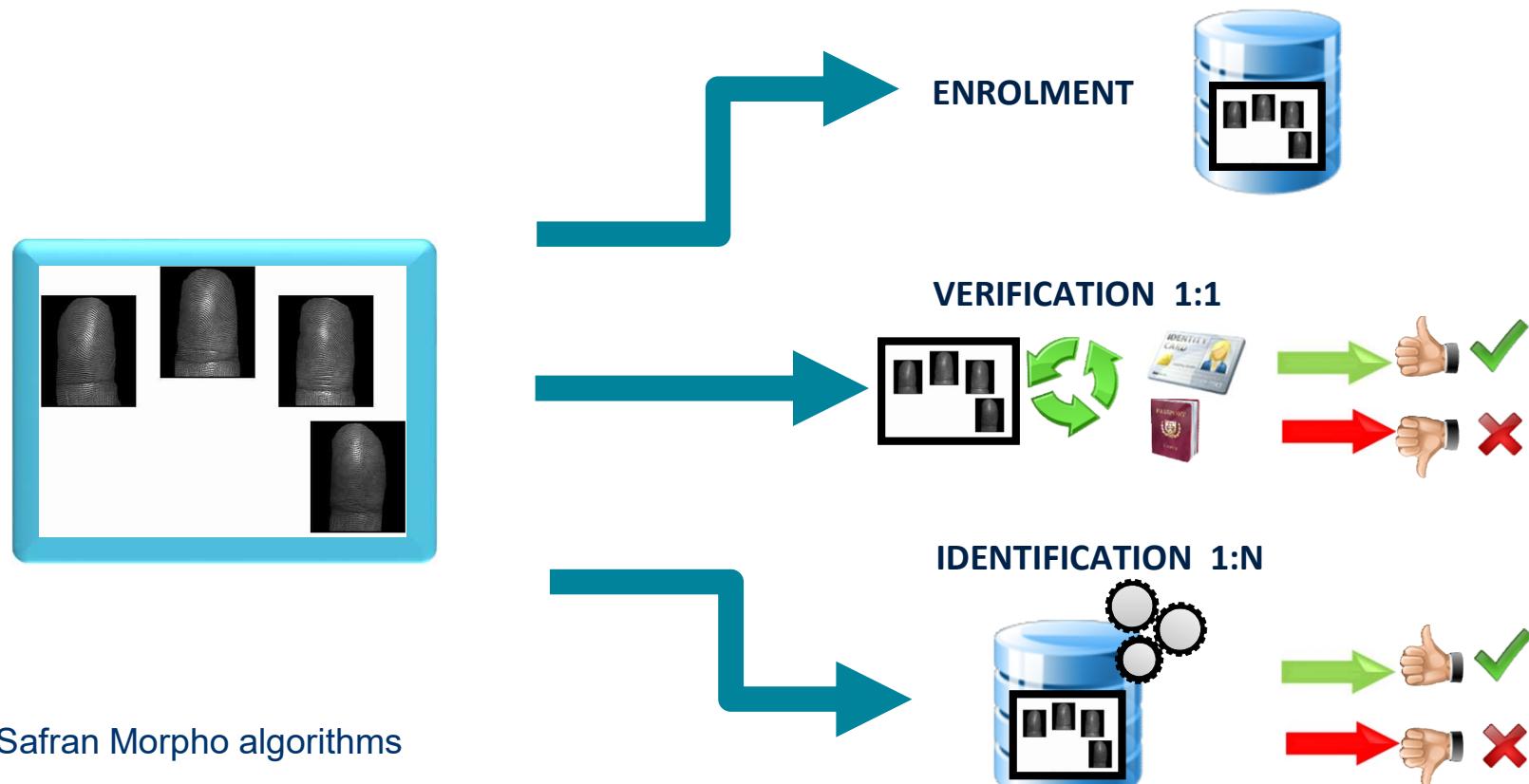- Contactless
- Compatible with AFIS databases

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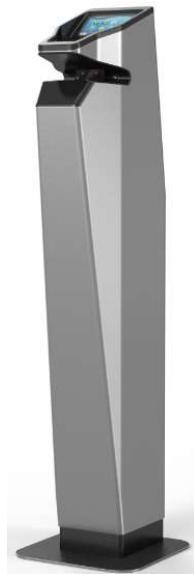
MORPHOWAVE™ - A BREAKTHROUGH SOLUTION

ENROLMENT

VERIFICATION 1:1

IDENTIFICATION 1:N

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MORPHOWAVE™ - IMPROVED THROUGHPUT

- **FAST**

  - ✓ One wave of the hand

  - ✓ Simultaneous acquisition of 4 fingerprints

  - ✓ Less than 1 second

- **CONTACTLESS**

  - ✓ Mitigates cultural and hygienic concerns

  - ✓ No ghost images left

  - ✓ Meets the challenge of dry and wet fingers

- **HIGH IMAGE QUALITY**

  - ✓ Compatible with existing law enforcement AFIS databases

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MorphoWAVE – Example Access Gate

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Biometric Enabler: MorphoFACE
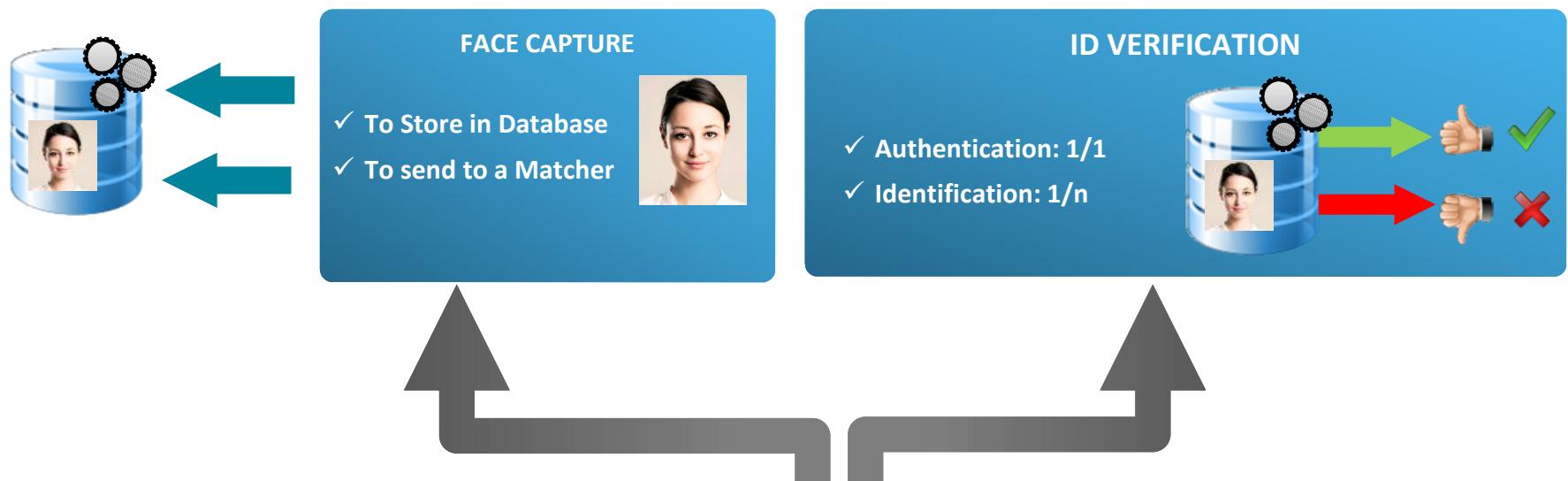
''FACE-on-the-Fly'' technology

- Face Authentication & identification

- Intuitive, non-intrusive capture

- Compatible with wearing glasses

- Uses ambient light

- Small form factor

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MorphoFACE – Use cases

FACE CAPTURE

✓ To Store in Database

✓ To send to a Matcher

ID VERIFICATION

✓ Authentication: 1/1

✓ Identification: 1/n

"MorphoFACE is a one-stop answer for seamless face capture & accurate, on-the-spot identity verification"

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MorphoFACE - Main Functions

Tracking, acquisition field

✔

User Identified

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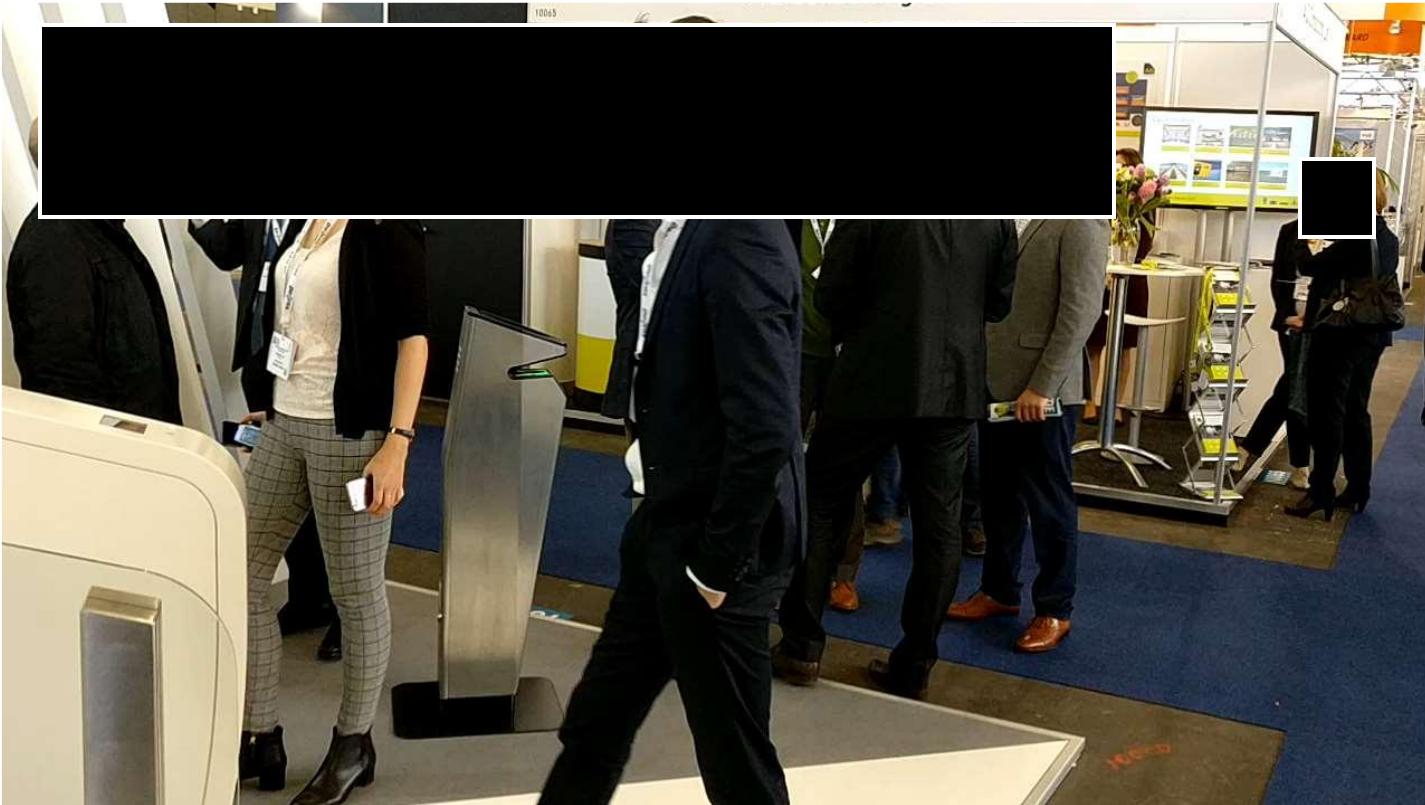
3D capture zone: continuous & simultaneous
> Video tracking
  - Many photos (shots, angles)
  - multiface
> Liveness detection
> Face capturing
  - Best image
> Image processing
  - Frontalization & expression neutralization
> Biometric matching
  - 1:1 Live photo vs Document photo
  - 1:n Live photo vs Database
> Decision

Using customizable processes
> Adjustable thread-off
  - capture time, FRR, FAR
> ID verification time

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MorphoFACE – Example Self-boarding gate

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MorphoFACE

Enhances Security

MorphoFACE integrates **state-of-the-art** face biometric algorithms to ensure highly **accurate results** & **resistance** to fraud

Decreases Waiting Time

MorphoFACE enables a steady flow of users, keeping them '**on-the-move**' at all times.
Customizable capture and matching time, **depending on the use case**.
Example: self boarding use case, the capture & matching time is **< 2s**

Improves User's Experience

MorphoFACE copes with a wide range of user **heights** and **behaviors**.
It performs a **non-intrusive** face capture with minimal user cooperation, and can be **used with glasses**

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ON THE MOVE: THE OTHER SIDE

THE PROBLEM

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Biometric Enabler: Morpho ARGUS

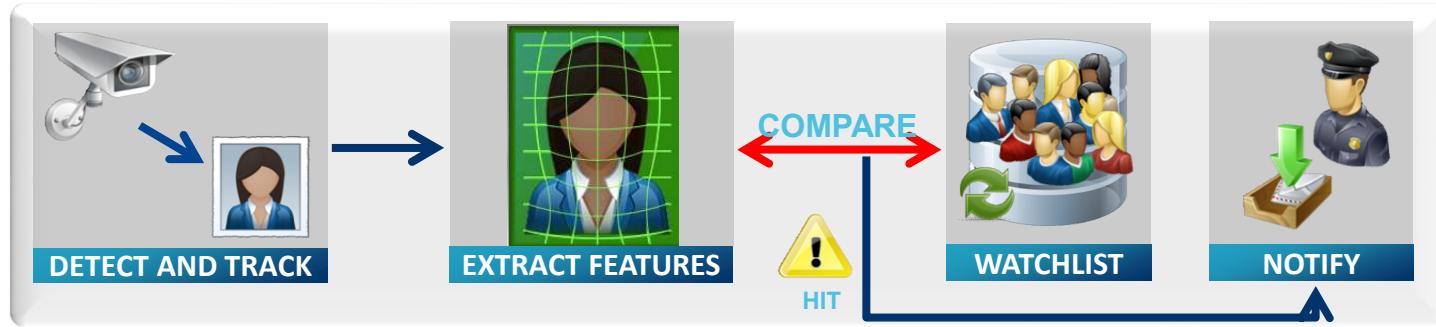A real time face recognition system in live video feeds

- Alarm mode using watch list

- Record mode for later investigation

- Per camera configurable AND/OR

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ARGUS: Two running modes

ALARM MODE

| DETECT AND TRACK | EXTRACT FEATURES | WATCHLIST | NOTIFY |

COMPARE

HIT

RECORD MODE

| DETECT AND TRACK | EXTRACT FEATURES | ADD TO DATABASE |

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ARGUS - Typical applications

IDENTIFY KNOWN PEOPLE

TRACK KNOWN PEOPLE

WHO WAS WHERE WHEN

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MORPHO ARGUS Key features

✓ **Operator managed:**   displays alarms and search results, operator decides

✓ **On the move notification:**   Notification to roaming officers in the field

✓ **Accuracy:**   uses superior algorithms for face detection, face pose correction and face matching

✓ **Speed:**   generates alerts less than 5 seconds after a person of Interest is detected

✓ **Scalable architecture:**   up to 200 cameras and 500 000 people in the watchlist database

✓ **Flexibility:**   Possibility for each camera to screen and/or record.

✓ **Integration in existing environment**: Use of existing CCTV cameras, existing face database

✓ **Maximize operators efficiency:**   Demanding task of visually finding people in a flow of persons no longer required

✓ **Safran's biometric algorithms and technology:**
                              o Uses multiple face images of the same person and selects the "best shot"
                              o 3D modeling tool to rebuild frontal faces from pictures taken from side

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BIOMETRICS ON THE MOVE, IN BALANCE

Morpho IAD	MorphoWave	MorphoFACE

- ✓ **Stakeholders**
- ✓ **Privacy regulations**
- ✓ **Use case**
- ✓ **Biometric data acquisition process**
- ✓ **User**
- ✓ **Infrastructure**
- ✓ **Environment**

"The right balance is the KEY"

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THANK YOU FOR YOUR ATTENTION

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